Appendix D TM-1

Raw Water Infrastructure Reliability Review

Technical Memorandum

EBMUD Water Supply Management Plan 2040	
Subject:	**Raw Water Infrastructure Reliability Review**
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1. Introduction

East Bay Municipal Utility District's (EBMUD or the District) raw water system is a complex network of reservoirs, aqueducts, pump stations, wasteways, and flow controls that span a wide range of geomorphic and environmental conditions. Integral to the raw water system are the Mokelumne Aqueducts, which cross 82 miles of terrain from Pardee Reservoir in the Sierra foothills to the District's terminal reservoirs in the East Bay.

EBMUD has completed infrastructure reliability reports for various parts of its raw water system. These documents summarize the condition of key components, describe performance of the system under normal operating conditions and project their operational capability after stress events such as seismic or flood events and estimated time to put these facilities back into operation. This technical memorandum (TM) summarizes the previous studies on infrastructure reliability by raw water component. Additional information needs are also described that would further refine the reliability of the raw water system.

Also included in this technical memorandum is an assessment of the District's 6-month emergency storage policy. In the event of a raw water outage such as a failure of all three Mokelumne aqueducts in the Delta, the District would primarily rely on local terminal reservoir storage. The availability of terminal storage and duration that it could be used to supply demands is estimated in this TM and compared to District estimates of time to repair raw water infrastructure following certain failure scenarios.

This document will be used as the basis for assessing reliability of alternative water supply portfolios being developed for the Water Supply Management Program (WSMP) 2040 planning process.

2. Document Review and Data Gap Analysis

This goal of this section is to briefly summarize key documents related to infrastructure reliability (Section 2.1) and to identify data gaps, if any (Section 2.2). Table 1 and Table 2 list the sources of information provided by the District related to the reliability of raw water infrastructure. Additional data sources may existing within the District's offices (e.g. at the Stockton office); however the analyses presented herein were prepared using the documents and information referenced in the tables below.

Table 1: Sources of infrastructure Reliability Information

Year	Document	Author
1992	Mokelumne Aqueduct Security Plan	Kaiser Engineers/Calpine
1993	Seismic Assessment of Tunnels	Geomatrix Consultants
1996	Lafayette Aqueduct No. 1 Repair Study	Carollo Engineering
1997	Raw Water System – Seismic Assessment	G&E Engineering Systems Inc.
1999	Post Earthquake Recovery, Mokelumne Aqueduct No. 3	CH2MHill
2000	Fire Management Plan	EBMUD
2001	Raw Water Infrastructure Strategic Plan	Mark Lewis & Nicholas J. Irias
2007	Raw Water Infrastructure Study, Aqueduct No. 1 Analysis	EBMUD
2007	Draft TM No.1 "Strategy for Protecting the Aqueducts in the Delta"	EBMUD
2007	Draft TM No.2 "Preliminary Cost Estimates"	EBMUD
2007	Draft TM No.3 "Strategy for Protecting the Aqueducts in the Delta Summary Report"	EBMUD
2007	Phase 1 Delta Risk Management Strategy Report	URS Corporation/Jack R. Benjamin & Associates
2007	Emergency Response - Repair of Aqueduct No. 3	EBMUD
2007	WSMP 2040, Appendix A – Field Notes, 2007	EBMUD

Table 2: Other Sources of Infrastructure Reliability Information

Month/Year	Other Sources of Information
July 2007	Infrastructure Workshop
July – August 2007	EBMUD Staff Interviews
August 2007	Tour of Walnut Creek Pumping Plants, Lafayette Aqueducts, Moraga Aqueduct, Orinda Control Works, Briones Center, and Lafayette Control Works
August 2007	Tour of Delta facilities from Clyde Wasteway to Stockton

2.1 Document Review

A summary of key raw water system evaluation reports completed since the 1992 WSMP is given in this section. Key findings and recommendations are summarized where appropriate.

Mokelumne Aqueduct Security Plan, 1992

The purpose of this study was to investigate the seismic response and structural strength of the Mokelumne aqueduct support systems and of the aqueduct river crossings. The report also established alternatives for securing the Mokelumne aqueduct system in the San Joaquin Delta from earthquake and flood-related damages along with associated costs of repair or replacement. This document was compiled as part of the EIS/EIR for the District's Water Supply Management Plan and Water Supply Improvements Project. The assessment utilized a 1991 report entitled *Probabilistic Seismic Risk Analysis*, newly collected geotechnical data, and a probabilistic analysis to evaluate costs and outage durations.

Summary of findings:

- The report indicated that the two primary causes of aqueduct failure are rupture of buried sections at river crossings due to liquefaction and failure of structural elements in the elevated sections due to ground accelerations and liquefaction.
- The probability of a failure at one or more river crossings causing an outage of all three aqueducts during the next 30 years was estimated to be 85 percent.
- The probability of an earthquake causing massive failure (damage to the extent that aqueducts would have to be replaced) of the elevated sections of all three aqueducts and some river crossings during the next 30 years was calculated to be 50 percent.

The report recommended bracing of bearing connection of Aqueduct No. 2 and strengthening the elevated sections and river crossings of Aqueduct No. 3.

Seismic Assessment of Tunnels, EBMUD Water System Seismic Evaluation Program, 1993

The purpose of this report was to evaluate damage to the transmission tunnels due to selected earthquake scenarios and provide an estimate of the time and cost to repair the damage. This document pulled together information from several studies conducted as part of the District's Water System Seismic Evaluation Program. Recommendations for seismic upgrades are given for the Claremont, San Pablo, and Upper San Leandro (USL) Tunnels. The report also recommended that all tunnels be inspected to adequately assess their current condition, an exception being the USL tunnel.

Lafayette Aqueduct No. 1 Repair Study, 1996

The purpose of this study was to investigate known leakage problems between Walnut Creek Filter Plant and Lafayette Control Works; to identify and evaluate long-term repair alternatives; and to develop the most cost-effective, public-sensitive, and environmentally responsible long-term repair strategy. The study also evaluated reliability issues related to seismic events and unstable soil conditions.

Raw Water System – Seismic Assessment, 1997

This document describes the reliability of the raw water transmission system from Bixler to the District's six water treatment plants. Performance levels are measured in terms of the probability that raw water can be delivered to the treatment plants following earthquakes on the Hayward, Calaveras or Concord faults. Several earthquake scenarios were analyzed and the probabilities of damage to the system due to ground shaking, liquefaction, landslide, and fault offset were assessed.

Several minor and major weaknesses in this portion of the raw water system were identified, their failure modes discussed, and mitigation measures recommended. The report focused on pipeline damage, but other vulnerable infrastructure such as tunnels were analyzed and a mitigation program was recommended.

Post Earthquake Recovery Report Mokelumne Aqueduct No. 3, 1999

The purpose of this report was to develop guidelines and recommendations to be considered in a supplement to the District's Emergency Operations Plan. The 1995 Final Report for the Seismic Upgrade Project was based on a 500-year return interval with damage limited to that which could be repaired within 6 months, based on the District's ability at the time to store a 7 month supply in local reservoirs. This report provides information on the preparedness for restoration of Mokelumne No. 3 Aqueduct following an earthquake.

Several earthquake damage scenarios were developed and the required response and repair time calculated for each. A summary of these scenarios is given below:

- River Crossings (Old River, Middle River, San Joaquin River) – Possible failure scenarios included joint failures of varying magnitude and failure of waterside levee slopes.
- Buried Pipe – Possible failure scenarios included joint failures of low to very low probability of occurrence.
- Elevated Pipe (from Indian Slough to Holt) – Possible failure scenarios included pipe joint failures and undermining of supports of low to very low probability of occurrence.

EBMUD Fire Management Plan, 2000

In 1996, the District's Board of Directors (BOD) adopted the East Bay Watershed Master Plan (EBWMP) and the programmatic environmental impact report (EIR). The EIR analysis compared the impacts associated with implementing fire management strategies proposed in the EBWMP to existing watershed conditions. One component of the EBWMP was the development and implementation of the Fire Management Plan (FMP).

This FMP document represents the results of that planning effort. The FMP is a guide to implementation of fire protection and preparedness activities that meet key watershed management objectives for the East Bay Terminal Reservoirs. The FMP provides a brief history of fire management in the East Bay, describes recent planning and management efforts to enable more proactive fire management practices, and presents fire assessment, fire reduction, and fire management implementation strategies and tactics.

Raw Water Infrastructure Strategic Plan, December 2001

The purpose of the Raw Water Infrastructure Strategic Plan (RWISP) was to review the overall raw water system, propose upgrade needs, recommend areas where detailed assessment are still required, and generate a long-term plan to prioritize the implementation of those recommendations. Specific components of the raw water system investigated were tunnels, pipelines, and bridges as well as wasteway, flow, and operation controls. Each of these components was analyzed for possible failure modes and repair times. Control and operational improvements were recommended to reduce the likelihood of failures and to reduce response time if such events were to occur.

The product of this report was a list of projects that, if implemented, would help mitigate reliability issues. These projects were either physical improvements to the system or studies which would gather necessary information to more accurately describe the condition of infrastructure components. These projects were prioritized and ranked on the basis of importance to safety, regulatory compliance, and system reliability.

Raw Water Infrastructure Study, Aqueduct No. 1 Analysis, 2007

This report was completed to summarize the current conditions of the Mokelumne Aqueduct No. 1 based on available information and identify alternative scenarios for the long-term operation of Aqueduct No. 1 (i.e. to maintain, upgrade or replace). The results were presented to management for direction on preferred alternatives for further study.

A Summary of Findings:

- Aqueduct pipe and mechanical equipment should be useable for foreseeable future. Corrosion protection and preventative maintenance actions appear to be sufficient to maintain integrity of system.
- Certain pipe supports, mostly located in the Delta, are deteriorating but do not pose an immediate risk of causing aqueduct failure under normal operating conditions (flow and gravity).
- The aqueduct is highly vulnerable to damage from flooding and earthquakes.

Delta Risk Management Strategy Project, 2007

The Delta Risk Management Strategy (DMRS) project was authorized by the Department of Water Resources (DWR) to perform a risk analysis of the Delta and Suisun Marsh (Phase 1) and to develop a set of improvement strategies to manage those risks (Phase 2). The overarching philosophy of the DRMS project is to use existing ("off-the-shelf") results to calculate several natural hazard risks in the Delta. A full characterization of risk is presented in the Risk Analysis Report. In that report, the integration of the probable initiating events, the conditional probable response of the Delta levee system and the expected probable consequences are integrated in the risk analysis module to develop a complete assessment of risk to the Delta. The final Phase 1 Report is scheduled for released in October of 2007 and Phase 2 is scheduled for December, 2007.

A total of 12 Technical Memoranda have been developed as the basis for the Phase 1 Report. These documents are useful references for understanding planning initiatives that seek to protect infrastructure, such as the Districts aqueducts, from the Delta's dynamic environment. At the time that this document was prepared, drafts for eight of the topical areas covered in the Phase 1 Risk Report have been completed:

- Climate Change Draft (June 15, 2007)
- Emergency Response & Repair Draft (June 15, 2007)
- Infrastructure Draft (June 15, 2007)
- Levee Vulnerability Draft (June 15, 2007)
- Seismology Draft (June 15, 2007)

- Subsidence Draft (February 1, 2007)
- Water Analysis Module Draft (June 15, 2007)
- Wind Wave Analysis Draft (June 15, 2007)

Under DRMS Phase 2, these building blocks will be combined into scenarios. A risk model will be run for each scenario along with calculations of risk reduction, associated benefits, and identification of costs/impacts. Currently, the three scenarios under consideration include:

- "Improved Levees" Scenario
- "Armored Pathway" Through Delta Conveyance Scenario
- "Isolated Conveyance" Scenario

Draft Technical Memorandum No.1 "Strategy for Protecting the Aqueducts in the Delta", 2007

This document is the first of a series of technical memoranda with the goal of developing a risk-based evaluation of the Mokelumne Aqueduct system and to analyze alternatives to protect the aqueducts. The District will utilize the results from DWR's Delta Risk Management Strategy to understand risks and mitigation measures.

Technical Memorandum No. 1 identifies mitigation alternatives, hazards associated with earthquakes and flooding and the probability of their occurrence. It also gives a complete description of the raw water system and its condition from the San Joaquin River Crossing to Bixler Yard. A qualitative assessment of the impact of natural hazards on the aqueducts based on existing records is presented. The planning horizon for this study is 2040. Sixteen alternatives (14 recommended for further study) were identified and if implemented, these projects would reduce risks associated with:

- Subsidence
- Earthquakes
- Storm Floods
- Climate Change (with rising sea levels)
- Combination of the above

Draft Technical Memorandum No.2 "Preliminary Cost Estimates", 2007

This document is the second of a series of technical memoranda with the goal to develop a risk-based evaluation of the Mokelumne Aqueduct system and analyze project alternatives to protect the aqueducts. This TM developed preliminary cost estimates for the 14 alternatives recommended for further study by TM No. 1.

Draft Technical Memorandum No.3 "Strategy for Protecting the Aqueducts in the Delta Summary Report"

As the final document in a series of technical memoranda, this document makes final recommendations to protect the aqueducts in the Delta. A single, long-term project is recommended along with several short-term alternatives. The recommended long-term option is a tunnel below the Delta to enclose dual pipelines. By providing a high degree of protection against all identified hazards, the tunnel would provide a reliable water supply for EBMUD's customers. This option was considered the best of all alternatives studied because of its:

- Reliability against flood and seismic hazards.
- Low life-cycle cost considering its reliability.
- Least risk of unacceptable service interruption.

Aqueduct Emergency Response and Recovery Plan – Delta Levee Failure and Repair of Mokelumne Aqueduct No. 3, 2007

The Aqueduct Emergency Response and Recovery Plan addresses a major failure of all three Mokelumne Aqueducts in the Sacramento Delta region. This particular document describes several failure scenarios and lays out a plan for repair of the more critical Aqueduct No. 3 within six months, before local reservoir storage is depleted. The plan is detailed – it provides maps, drawings, and emergency protocol information. Below is a summary of the major failure scenarios described:

- Scenario A: An earthquake destroys aqueduct crossing under the Middle River and levees fail but do not affect the immediate work area. The estimated time to repair the aqueduct is 8.1 months in this scenario.
- Scenario B: An earthquake destroys 1,000 feet of elevated aqueduct and the surrounding area is flooded by levee failure. The estimated time to repair the aqueduct is 6 months in this scenario.
- Scenario C: An earthquake destroys 1,000 feet of buried aqueduct and the surrounding area is flooded by levee failure. The estimated time to repair the aqueduct is 6 months in this scenario.

WSMP 2040 Appendix A – Field Notes, 2007

This document is part of the development of the Raw Water Master Plan and will serve as information for the 2040 Water Supply Master Plan. The information in this document is based on interviews with maintenance supervisors and site visits from Pardee to the terminal reservoirs with the purpose to observe the condition of system features (wasteways, structures, crossings, etc.) and to determine operational and reliability issues.

2.2 Data Gap Analysis

The documents described herein cover a wide range of raw water infrastructure reliability topics. The goal of this section is to categorize the coverage, range and types of studies conducted since the last WSMP was completed in 1992. This section will address information shortcomings (gaps) in raw water system.

2.2.1 Approach

A matrix approach has been utilized to summarize the documentation of the condition and reliability of the EBMUD raw water infrastructure. Reliability is broken down into categories or topics shown in Table 3. The overall matrix is presented in Table 4. The scoring system presented in the matrix is based on the level of documentation. A highly studied and well-understood component would rate a "3" on a scale of 1 to 3, whereas a component that is not well-understood or studied would rate a 1. This then illustrates potential gaps in available information that may need to be addressed by EBMUD.

Table 3: Key Topic Areas for Evaluating Report Effectiveness

Topic	Score	Description/Scoring Metric
Infrastructure Condition		
How well does the document report on the condition of infrastructure and what components are assessed?	***3 points***	*The report documented infrastructure condition and/or recommended specific improvements.*
	2 points	*The report either described general infrastructure condition or gave adequate information so that a general conclusion could be made.*
	1 point	*The report either concluded that more information is necessary or loosely assessed the infrastructure condition.*
Location		
What geographic components of the system have been assessed?	*3 points*	*The report assessed all necessary infrastructure at this location.*
	2 points	*The report assessed most necessary infrastructure in this location.*
	1 point	*The report assessed some infrastructure at this location.*
Hazard Scenarios		
How well does the document describe the system performance under various hazard events?	*3 points*	*The report documented the infrastructure performance and/or recommended specific improvements.*
	2 points	*The report generally assessed infrastructure performance.*
	1 point	*The study concluded that more information is needed or it did not address this issue as it directly relates to the reliability of EBMUD's infrastructure.*
Special Topics		
How well does the document describe long-term changes in the environmental setting, how might these changes affect infrastructure, and how well is the District prepared to deal with these changes?	*3 points*	*The report specifically addressed the topic and makes recommendations to protect EBMUD's infrastructure.*
	2 points	*The report qualitatively discussed the risks associated with this issue or a general conclusion could be made based on information in the report.*
	1 point	*The report concluded that more information is necessary to make specific conclusions.*

Table 4: Matrix of Infrastructure Reliability Topics[1]

		Infrastructure Condition											Location			Hazard Scenario										Special Topics		
Year	Document	Mokelumne Aqueduct No. 1	Mokelumne Aqueduct No. 2	Mokelumne Aqueduct No. 3	Moraga, Lafayette, Briones Pipes	Pump Station	Wasteway/Flow Control	Valving	Diversion Structure	Building/Structure	Tunnels	Bridges[2]	Pardee/Up-Country	Delta	Terminal Reservoirs	Flooding - Scour/undermining	Flooding - over-toppling	Earthquake - Liquefaction	Earthquake - Ground Shaking	Earthquake - Fault Offset	Earthquake or Flood - Landslide	Subsidence	Fire	Security Vulnerability	Emergency Response/Recovery	Climate Change	Sea-Level Rise
1992	Mokelumne Aqueduct Security Plan	2	2	2										3		3	3	3	3	2		3			3		
1993	Seismic Assessment of Tunnels										1				3				3	3							
1997	Raw Water System – Seismic Assessment	2	2	2	2	2		2	2	3	1			1	3			3	3	3	3				3		
1996	Lafayette Aqueduct No. 1 Repair Study				3										3			2	2	2		2					
1999	Post Earthquake Recovery, Mokelumne Aqueduct No. 3			2										3	3	2	2	2	2	2					3		
2000	Fire Management Plan														3								1		3		
2001	Raw Water Infrastructure Strategic Plan	3	3	3	3	3	3	2	2	2	1	2	3	3	3			1	2			1					
2007	Raw Water Infrastructure Study, Aqueduct No. 1 Analysis	3				1	3	1					3	3	3	2	2	2	2	2							
2007	"Strategy for Protecting the Aqueducts in the Delta"	3	3	3		2	2	2		2				3		3	3	3	3	3		3					
2007	Draft TM No.2 "Preliminary Cost Estimates"													3													
2007	Delta Risk Management Strategy Reports													3		1	1	1	1	1	1	1				2	2
2007	Emergency Response - Repair of Aqueduct No. 3													3		1	1	1	1	1	1	1		1	3		
2007	WSMP 2040Appendix A – Field Notes, 2007	2	2	2	2	2	2	2	2	2	2	2	3	3	3												
	Totals	15	12	14	10	10	10	9	6	9	5	4	9	28	24	12	12	18	22	19	5	11	1	1	15	2	2

[1] Review of the reliability of EBMUD's dams and outlet towers is beyond the scope of this TM. These structures are regulated by the California Department of Safety of Dams (DSOD).
[2] Bridges not owned by EBMUD, but that pose a possible threat to the aqueducts.

2.2.2 Results of Data Gap Analysis

Results of the matrix analysis described in the previous section are summarized in Table 5 through Table 8, as shown below. Scores are determined by summing points for each sub-topic as described in Table 4.

Table 5: Infrastructure Condition Scores

Infrastructure Condition	Score
Mokelumne Aqueduct No. 1	15
Mokelumne Aqueduct No. 2	12
Mokelumne Aqueduct No. 3	14
Moraga, Lafayette, Briones Aqueducts	10
Pump Station	10
Wasteway/Flow Control	10
Building/Structure	9
Valving	9
Diversion Structure	6
Tunnels	5
Bridges	4

Table 6: Hazard Scenarios Scores

Hazard Scenarios	Score
Earthquake - Ground Shaking	22
Earthquake - Fault Offset	19
Earthquake - Liquefaction	18
Flooding - Scour/undermining	12
Flooding - over-toppling	12
Subsidence	11
Earthquake/Flood - Landslide	5
Fire	1
Security Vulnerability	1

Table 7: Special Topics Scores

Location	Score
Delta	28
Terminal Reservoirs	24
Pardee/Up-Country	9

Table 8: Location Scores

Special Topics	Score
Emergency Response/Recovery	15
Climate Change	2
Sea-Level Rise	2

2.2.3 Data Gap Discussion

The matrix analysis summarized in Section 2.2.2 is intended to present the level of understanding of reliability and risks to the District's raw water system. At a qualitative level, this exercise indicates that the District has a good understanding of the condition and reliability of its raw water infrastructure. As expected, some components and topics have been studied more thoroughly than others; particularly where risk is deemed higher, such as those components and associated risks along faults and in the Sacramento-San Joaquin Delta region. The susceptibility of the raw water system to levee failures and earthquakes, and the resulting failure scenarios, are adequately understood and documented. A number of studies have concentrated on the Mokelumne Aqueducts, including subsequent improvement projects. Information regarding the condition of tunnels, appurtenances, flow control facilities, diversion structures, and pump stations has also been adequately documented.

The matrix analysis shows that most sub-topics receive a score of at least three, which means the subtopic had to be directly and thoroughly addressed by at least one document. Four sub-topics received a score less than three: fires, security vulnerability, non-EBMUD bridges, climate change, and sea-level rise. These are subtopics and the potential information gaps are discussed below.

Fire: Fires can present a significant risk to water quality if subsequent rainstorms wash debris and toxins into the District's raw water reservoirs. EBMUD's 2000 Fire Management Plan presented mitigation measures to reduce this risk for the area surrounding the East Bay terminal reservoirs. The District is currently in the process of developing a Watershed Management Plan (WMP) for the upper Mokelumne River watershed, which will include fire management recommendations. The WMP environmental impact report is scheduled for publication in November 2007 (EBMUD Notice of Preparation, December 2006).

Security Vulnerability: In 2003, EBMUD conducted a security Vulnerability Assessment (VA) of its water system and submitted it to the US Environmental Protection Agency. This VA is a comprehensive assessment of potential security vulnerabilities of EBMUD facilities. According to the District's 2005 Urban Water Management Plan, the District has since taken steps to protect its infrastructure from security issues raised in the VA process. However, the VA document was not reviewed as part of this Infrastructure Review Project.

The ability of raw water infrastructure to withstand attacks is difficult to assess and such events are not predictable on a probabilistic basis. Based on conversations with EBMUD staff[3], infrastructure upgrades are generally designed to resist failures due to natural events such as floods and earthquakes because they are believed to be more probable, their effects are quantifiable, and their mitigation measures are effective.

[3]Telephone conversation with Robert Lau, August 21st, 2007

Climate Change and Sea Level Rise: While the threats of global warming, climatic variability, and sea-level rise to the District's raw water system have not been directly studied, some of their possible effects have: failure of the Delta levees and subsequent flooding around the aqueducts. The risks associated with Delta levee failure are well documented. As part of its "Strategy for Protecting the Aqueducts in the Delta", the District is in the process of developing a series of reports with the goal to develop a risk-based evaluation of the Mokelumne aqueduct system and to analyze project alternatives to protect the aqueducts. EBMUD should utilize the results of the Delta Risk Management Study (DRMS) prepared by the Department of Water Resources to assist in responding to potential improvement scenarios proposed by the State. Phase 1 of the DRMS report will present discrete probabilities of levee failure under several future scenarios as a result of climate change and sea-level rise.

3. Summary of Infrastructure Reliability

This section summarizes available information about the District's raw water system into a single document describing factors that may affect the District's ability to supply its customers under various hazard scenarios. Table 9 provides a summary of the risks to major infrastructure components. Risks are defined as potential hazards that would render the component inoperable; "damage only" risks are not considered. More detail discussion is given in Sections 3.1 through 3.8.

3.1 Mokelumne Aqueducts

A primary component of the District's raw water infrastructure is the Mokelumne Aqueduct system which crosses 82 miles of terrain between Pardee Reservoir and the District's service area. These three pipelines traverse corrosive soils, several fault zones, and the Sacramento-San Joaquin River Delta—a myriad of small natural and man-made sloughs held in place by an extensive and aging levee system. These challenging environments present significant risks to the reliability of EBMUD's Mokelumne Aqueducts, which currently convey 90% of the District's water supply. This section is a summary of the documented reliability of the Mokelumne Aqueducts under various scenarios

3.1.1 Normal Operating Conditions

The District's Mokelumne Aqueducts currently have varying levels of reliability. The aqueducts are generally considered reliable under normal operating conditions, as evidenced by infrequent outages since the commissioning of Mokelumne Aqueduct No. 1 in the 1920's. Parts of the Mokelumne Aqueducts are aging, but appear to be in a condition to meet near-term future demands with proper ongoing maintenance and improvements. The aqueducts are protected by 43 cathodic protection (CP) systems, and the CP system amperage draw and voltage differentials are monitored and checked at least monthly. In addition to these common maintenance practices, there are specific characteristics of the three aqueducts that present different reliability concerns. Reliability issues with Aqueduct No. 1 (the oldest aqueduct) under normal operating conditions are discussed below, followed by a short discussion of Aqueduct Nos. 2 and 3.

Table 9: Summary of Major Infrastructure Reliability Risks

Hazard	Infrastructure Component														
	Mokelumne Aqueduct No. 1	Mokelumne Aqueduct No. 2	Mokelumne Aqueduct No. 3	Moraga Aqueduct	Briones Aqueduct	Lafayette Aqueduct No. 1	Lafayette Aqueduct No. 2	Bixler High Pumping Plants	Walnut Creek PS	Briones Center	Moraga PS	Mokelumne Wasteways	Dams and Outlet Towers	Lafayette Tunnels	San Pablo Tunnels	Pardee Tunnel
Earthquake - Ground Shaking	3	2	1+	2		3	2	1					1		1	
Earthquake - Fault Offset	3	1	1			1									3	
Earthquake - Liquefaction	2	2	1	2												
Earthquake - Power Loss								1	1+	1	1					
Levee Failure - Toppling	2	1+	1+													
Levee Failure - Scour	2	2	2													
Erosion (non-levee related)					1											
Landslide				2												
Ground Settlement/Subsidence	1										1					
Flooding (non-levee related)												1				
Pressure Transients	1															
General Condition Failure[3]	3	1		1		3										1
Other Concerns	1[1]	1[1]	1[1]					3[2]								

1 Railroad bridges – see section 3.1.4.
2 This facility is not currently operable and there are concerns about the District's ability to use this facility in an emergency situation.
3 "General condition Failure" refers to a failure which may result from the condition of infrastructure such as pipe leaks or ageing components.

3	This hazard presents a significant risk over the 2040 planning period
2	This hazard presents a moderate risk over the 2040 planning period
1+	This hazard presents a low to moderate risk over the 2040 planning period
1	This hazard presents a low but reasonable risk, or there is a potential, undocumented risk over the 2040 planning period
	Specific risks are not known or are negligible

Mokelumne Aqueduct No. 1

Aqueduct No. 1 was built in 1929 and although its age has exceeded its design life, current maintenance and improvements appear to be sufficient to keep the pipeline in operation for years to come under normal operating conditions. Repainting of the exposed portions of the aqueduct are part of an ongoing capital improvement project; however, some of the elevated portions of the Aqueduct No. 1 in Jones Tract have failing coatings. An organic zinc coating is scheduled for application on these exposed sites in the Fall of 2007, which will significantly address this external corrosion issue.

Many of the pre-cast concrete bents supporting the elevated portions of Aqueduct No. 1 are spalled and cracked. The District is aware of this problem and plans to replace up to five bents per year on an as-needed basis (Raw Water Infrastructure Strategic Plan, 2001). Furthermore, at least two bents have toppled because wood pilings supporting the bents have deteriorated and can no longer safely bear loads. However, pile caps have been installed over the years whenever distressed supports have been observed. Because support deficiencies are not believed to be widespread and because the aqueduct can sustain vertical self-weight loads if every other bent were to fail, support failure does not pose a near-term risk of causing aqueduct failure under normal gravity operating conditions (Aqueduct No. 1 Analysis, 2007).

Pumped operation of Aqueduct No. 1 presents risk of failure. Aqueduct 1 is probably most susceptible to failure under pressure transients because of inadequate longitudinal seam welds, but surge protection installed in 1999 will help mitigate this problem. In its 2007 *Aqueduct No. 1 Analysis* Report, the District concluded that Aqueduct No. 1, its appurtenances, and associated equipment should be useable for the foreseeable future.

Buried potions of Aqueduct No. 1 on Roberts Island and a portion east of the San Joaquin River are supported on piles. A potential reliability issue exists with the reach through the Brookside Golf Course area where the piles were cut to allow pipeline settlement with the ground after dewatering for a housing development in the 1990's. Ground surface undulations have developed, suggesting uneven earth pressures on the pipe. A similar concern exists in the Delta due to island subsidence. Orwood, Woodward, Upper Jones, and Roberts Tracts have medium to high susceptibility for subsidence. Aqueduct No. 1 is more at risk to damage from uneven settlement than the other two aqueducts.

Mokelumne Aqueduct Nos. 2 and 3

The first phase of the Aqueduct Seismic Improvement Project revealed areas of damaged mortar lining in Aqueducts Nos. 2 and 3, and in 2001, EBMUD's Raw Water Infrastructure Strategic Plan recommended monitoring of this condition to assess any trends. Since then, extensive mapping of the damage has been conducted on Aqueduct No. 3 and the District plans to reline this pipe over the next five years when outages are possible. The extent of lining damage in Aqueduct No. 2 is less understood. Aqueduct

No. 2 was inspected during construction of the CCWD intertie, corroborating lining damage, and future inspections are planned to further map lining damage[4].

There is a significant amount of leakage at Station 295+ and underneath the Camanche Reservoir believed to be from Aqueduct No. 2 or 3. French drains have been installed at Station 295+ to mitigate erosion and ground settlement issues. These leaks are not believed to impair the structural integrity of the pipeline, but the rate of leakage is substantial (300,000 to 500,000 gallons per day or more) and long-term leakage could destabilize the slope in which the pipeline is embedded.

Despite spalling and leakage issues, Aqueducts No. 2 and 3 are reliable under normal operating conditions.

3.1.2 Earthquake Hazards

Earthquakes are among the greatest threat to reliable operation of the Mokelumne Aqueducts. Several inactive and potentially active faults cross the aqueduct alignment between Pardee Reservoir and the terminal treatment plants and reservoirs. On the basis of research conducted since the 1989 Loma Prieta earthquake, the U.S. Geological Survey (USGS) and other scientists (WGCEP, 2003) estimated a 62 percent probability that at least one magnitude 6.7 or greater quake will strike the San Francisco Bay region before 2032[5]. Parts of the District's system were designed and constructed during a period of little understanding of regional and local seismic settings and with little consideration for seismic design practices. The District has since taken measures to improve reliability, especially in the Delta region.

An earthquake event can trigger aqueduct failures as the result of strong ground shaking, faulting, soil liquefaction and/or lateral ground spreading. The expected performance of the Mokelumne Aqueducts during each of these phenomena is summarized below.

Ground Shaking

Aqueduct No. 1 is particularly vulnerable to ground-shaking. The elevated portion is vulnerable to damage because the original support structures were designed with little consideration for seismic design. There is a potential for collapse (pipe toppling off its supports) during an earthquake. However, the pipe would fail at seams or joints before it toppled. Buried portions of the aqueduct are not especially susceptible to damage from ground shaking, and these types of damages are considered manageable[6]. Aqueduct No. 1 is not expected to survive moderate to severe ground shaking.

The fabricated steel bents on the elevated portion of Mokelumne Aqueduct No. 2, from Holt to Bixler, were retrofitted with new machine bolts in 1992, and by 1994, all low-

[4] Telephone conversation with Mark Lewis (EBMUD) on September 19th, 2007
[5] Delta Risk Management Strategy, Phase 1 Report, September 2007
[6] "Raw Water Infrastructure Study, Aqueduct No. 1 Analysis" prepared by EBMUD, 2007

strength bolts on elevated portions of Aqueducts Nos. 2 and 3 were replaced with high-strength bolts. These projects increased the seismic reliability of the No. 2 aqueducts in vulnerable areas, but did not improve their reliability enough to ensure their survival following a major seismic event[7]. Concrete piles were not driven into firm soil and are therefore subject to settlement.

Seismic upgrades of Mokelumne Aqueduct No. 3 were completed in 1999 and included strengthening of levees at aqueduct crossings and of pipe foundations at river crossings, and reinforcing pipe joints on buried potions of the pipe. Buried pipes were designed to withstand the 500-year return period seismic event, while short elevated to buried pipe transition areas were designed to withstand the 2,000-year return period event. The river crossings at the Old River, Middle River, and the San Joaquin River were also designed to withstand the 500-year return period seismic event. However, there is risk that the foundation under the pipes at river crossings is non-uniform and could contribute to severing of a joint during an earthquake[8]. This was considered when the upgrades were completed. But due to high cost of replacing the underwater pipe at the three river crossings ($11 million in 1999), and because a repair was thought to take less than six months, the underwater pipelines were not replaced as part of the upgrades[8]. However, the District's more recent Aqueduct Emergency and Recovery Plan estimated that it would take 8.1 months to repair a failed Mokelumne Aqueduct No. 3 under Middle River.

In 2004, supports on the elevated portions were seismically retrofitted to withstand the 2,500-year seismic event with cross-framing and dampening systems. Aqueduct No. 3 is considered reliable and not expected to sustain major structural damage in Delta reaches following a major seismic event.

Fault Offset

The three Mokelumne Aqueducts all cross the Concord fault, which is the only fault that presents credible potential for rupture and are likely to rupture should surface faulting occur during a large magnitude earthquake[9]. Such damage would be localized and likely manageable in terms of repair[10]. Other than concrete encasements under nearby highway crossings, no improvements have been constructed in the Concord fault zone area.

Along the Concord fault, east of Bay Point and west of Clyde Wasteway, the Contra Costa Water District's raw water canal runs along a hillside above and parallel to all three aqueducts. If a major earthquake were to cause a failure of the raw water canals at this location, subsequent emptying of the canal in the area immediately surrounding the aqueducts may cause scour around the pipes. However, emergency wasteways in

[7] "Strategy for Protecting the Aqueducts in the Delta" prepared by EBMUD, 2007
[8] "Post Earthquake Recovery Report Mokelumne Aqueduct No. 3" prepared by Ch2MHill, 1999
[9] "Raw Water System Seismic Assessment" prepared by G&E Engineering Systems Inc., 1997
[10] "Raw Water Infrastructure Study, Aqueduct No. 1 Analysis" prepared by EBMUD, 2007

Contra Costa Water District canal system might provide the ability to drain the canals before significant scouring could take place.

Liquefaction

The Mokelumne Aqueducts traverse liquefiable soils in certain parts of the Delta region, and on both sides of the Delta in the cities of Stockton and Antioch. The aqueducts, consisting of a steel pipe with welded or riveted joints, have some capacity to accommodate settlements without failure. The buried reaches of Mokelumne Aqueduct No. 3, beginning at Brookside Road to the Holt Anchorage west of Stockton, were retrofitted with butt straps as part of the Seismic Upgrade Project. Mokelumne Aqueduct Nos. 1 and 2 to are susceptible to failure because the penetration depth of underlying concrete piles is inadequate in a number of areas in the Delta where potentially liquefiable soils exist. The extent of damage that could occur depends on the spatial length and magnitude of settlements. A site-specific study would be required to quantify potential settlement, with considerable uncertainty in the results. Mokelumne Aqueduct No. 1 is supported by wood piles through the Delta and the integrity of these piles to support ground increased drag loads as a result of ground settlement needs evaluation.

3.1.3 Flood Hazards

Flooding presents a significant risk to the reliability of the District's raw water infrastructure, specifically in the Delta region. The Mokelumne Aqueducts are not suited for long-term operation in flooded conditions because of corrosion, wave impacts, and pipeline buoyancy issues. In a flooded condition, the forces of waves against the pipes would be close to the lateral force capacity of the support systems for Aqueduct No. 2 and 3. The aqueducts are not positively attached to the support bents; if a rupture caused the pipes to drain the aqueducts would be lifter off their supports, subsequently causing more damage. Also, flood-induced scouring could undermine pipe support systems.

Perhaps the most probable cause of flooding around the aqueducts is failure of one or more of the Delta levees. Levee failures may occur due to:

- Instability as a result of high water levels
- Levee cross-sectional instabilities
- Physical damage from burrowing animals
- Seepage
- Diminishing levee elevation from wind
- Island dewatering or farming activities
- Weaknesses in foundation soils
- Seismic events

Floods are generally expected to become more frequent due to a combination of factors related to global climate change. Early spring snow-melt is almost certain due to rising temperatures which are expected to increase by 3°C by mid-century. Increases in storm intensity during winter months are predicted, as well as increased sea levels and changes in wind speeds affecting wind/wave action. Risk of levee failure, which may lead to aqueduct overtopping, will be elevated when increased river flows combine with long-term sea level rise to produce unusually high water levels.

Studies conducted as a part of the DRMS study have shown that the probability of levee failures will increase by a significant amount over 2005 conditions. Specifically the Phase 1 Report states:

- By 2050, the frequency of island flooding from seismic events is expected to increase by 12 percent over 2005 conditions.
- By 2100, the frequency of island flooding from seismic events is expected to increase by 27 percent over 2005 conditions.
- By 2050, the frequency of island flooding from flood events is also expected to increase. The vulnerability of the levees to floods (due to seepage and stability from subsidence and sea level rise) is expected to increase by 10 percent over 2005 conditions. The flood frequency is expected to increase by 50 percent. The combined effect would be an 80 percent increase. An increase in overtopping would be additional.
- By 2100, the frequency of island flooding from flood events is expected to increase. The vulnerability of the levees to floods (due to seepage and stability from subsidence and sea level rise) is expected to increase by 20 percent over 2005 conditions. The flood frequency is expected to increase by 100 percent. The combined effect would be a 240 percent increase. An increase in overtopping would be additional.

It is expected that a moderate to large earthquake capable of causing failures of multiple levees could happen within the next 25 years. The greatest chance of failures will come from the Hayward, Midland, Calaveras, and San Andreas faults. According the DRMS Phase 1 Report, thousands of feet, it not miles, of levees would be extensively damaged. This failure mechanism will cause rapid flooding of the affected islands, leaving little time for evacuation. Considering the probability of all seismic levee breaches under existing (2005) conditions, about 115 failures can be expected in the next 100 years. Repairs could take up to 6.5 years[11]. The Delta islands most likely to fail are generally located in the central-west area of the Delta, with a mean annual frequency of failure of 3-5%. The Mokelumne Aqueducts transverse islands designated by the DRMS study to have a "mean annual frequency of failure" of 1-3%.

[11] Delta Risk Management Strategy, Draft Phase 1 Report, September 2007.

A nearby levee failure could fail the aqueducts by scouring the foundation and undermining supports or by lateral spreading – soil mass would be displaced at the toe of the levee or railroad embankment and cause stresses on the pipeline or foundation. The potential for scour exists along the parallel levee at Woodward Island and the railroad embankment on Upper Jones Tract. A scour hole as deep as 77 feet was recorded at Mildred Island after a levee failed in 1983. The District has considered various schemes for protecting the aqueducts from scour along susceptible stretches of pipe, including installing sheet piles and a 200-foot concrete protection pad on either side of the aqueducts to protect against scouring in the event of levee failure.

In the event of a major levee failure, The California Department of Water Resources (DWR) will help mitigate the situation and prevent further damage. The State has recognized the importance of the Mokelumne Aqueducts and has developed a repair prioritization strategy to protect islands that house critical infrastructure such as EBMUD's Aqueducts, especially when an island has not yet been flooded but is under imminent threat of flooding. However, flooded islands may not be immediately remedied by the State and in some cases, repairs may never be made. The reasons for this could be high cost to repair levee breaches and dewater the islands or because critical infrastructure can be put back into service before an island is repaired and pumped out. DWR will play a crucial role in how EBMUD approaches planning for facility outages and repairs and establishes reliability requirements for its Delta facilities. DWR's Phase 2 Delta Risk Management Strategy (DRMS) Report (scheduled for public release in December 2007) will shed significant light on DWR's long-term plan to reduce risks in the Sacramento-San Joaquin Delta Region.

3.1.4 Railroad Bridges

A structural evaluation of at-grade railroad bridges crossing the Mokelumne Aqueducts was recommended in the 2001 Raw Water Infrastructure Strategic Plan. Recently, several improvements were made to these crossings, but some bridges still pose a threat to the aqueducts. One such crossing, at Station 1620, is the existing Burlington Northern railroad bridge, which is believed to be structurally deficient. EBMUD has designed mitigation measures to protect the Aqueducts, but construction requires approval from the Railroad. The design was submitted to the Railroad, but the Railroad has been unresponsive to date[12].

3.2 Moraga Aqueduct

The Moraga Aqueduct is connected to both Lafayette Aqueducts and is used to supply raw water to fill the Upper San Leandro terminal reservoir. It begins at the south end the Lafayette Aqueduct No. 2's Brown Tunnel as a 66" inside diameter mortar-lined and coated steel pipe. It continues to the Moraga pumping plant where it then becomes a pre-stressed concrete cylinder pipe protected by galvanic cathodic protection (CP) systems. Many anodes are nearing the end of their lives. Over the next three years, 87

[12] Telephone conversation with Chris Dodge (EBMUD) on September 18th, 2007 and Andy Enos (EBMUD) on August 21st, 2007

anodes are schedule for replacement. General maintenance appears to be sufficient and the aqueduct is considered reliable under normal operating conditions.

The Moraga Aqueduct is susceptible to damage from earthquake hazards, specifically seismically induced landslides and liquefaction. Portions of the alignment have suffered damage from downslope movements in the past, and the 1997 Raw Water Seismic Assessment indicated that earthquake-triggered landslides represent a weakness in the aqueduct's reliability. The aqueduct also passes through younger alluvial soils, which have the potential for liquefaction. Liquefaction could induce elevated pipe stresses, possibly leading to rupture.

3.3 Briones Aqueduct

The Briones Aqueduct moves water between Briones Center and the Briones Reservoir. The aqueduct is a 90" inside diameter steel pipe, mortar-lined and coated. The Briones Aqueduct was not installed with a CP system, but installation of a new CP system is in planning.

A vulnerability of this pipeline exists where it closely parallels San Pablo Creek. The bank of San Pablo Creek has slid and the creek is currently scouring the toe of the slope below the aqueduct. Based on conversations with EBMUD operators, the pipeline is benched into very stable ground/rock, but erosion mitigation would be prudent.

3.4 Lafayette Aqueducts

The Lafayette Aqueducts are vital to the supply of water east and west of the Berkeley-Oakland Hills, especially in the case of catastrophic failure of the Mokelumne Aqueducts. Several active faults are located in the vicinity, but no known active fault crosses these alignments. The Lafayette No. 1 aqueduct is especially susceptible to damage from strong ground shaking.

Both Lafayette Aqueducts travel through the Walnut Creek and Pleasant Hill Tunnels. These tunnel crossings are mainly through rock formations and would incur less damage in an earthquake than cut and cover portions of the pipeline. Lafayette Aqueduct Nos. 1 and 2 pass through an additional, yet separate, set of tunnels (referred to as the Lafayette No. 1 Tunnel and Lafayette No. 2 Tunnel), before reaching the Orinda Center and Briones Center, respectively. These tunnels are expected to remain functional following a major earthquake. Two raw water infrastructure reports, the 1997 Seismic Assessment and 2001 Strategic Plan, indicated that if there is damage to Lafayette No. 1 tunnel, the Orinda raw water channel would need to be isolated; however, no such emergency isolation capability currently exists.

3.4.1 Lafayette No. 1

Lafayette No. 1 conveys raw water from the terminus of Mokelumne Aqueduct Nos. 1 and 2 near the Walnut Creek Filter Plant to the Orinda Filter Plant, also supplying the Lafayette Filter Plant and the Moraga Pumping Plant along the way. The aqueduct is a

9-foot inside diameter, cast-in-place reinforced concrete pipe, originally constructed in 1928. Newer parts of the pipeline include two tunnels and two sections of buried pipe that have been replaced. Lafayette No. 1 is generally considered to be sufficiently reliable under normal operating conditions; however, the pipeline exhibits numerous cracks and significant leakage. The leakage tends to vary seasonally in quantity. Over the years, the District has made repairs as needed and has installed French drains to collect leakage and mitigate erosion. A 1994 inspection uncovered a section of spalled concrete severe enough to call the aqueduct's structural integrity into question. The section was repaired and, today, such repairs are initiated when necessary. These leaks may lead to a potential reliability issue and should be given consideration when assessing long-term reliability of the raw water system.

Lafayette No. 1 is susceptible to damage from strong ground shaking. Lafayette No. 2 provides redundancy and is expected to be more reliable in an earthquake situation; therefore damage to No.1 may be tolerable.

3.4.2 Lafayette No. 2

Originally constructed in 1963, Lafayette Aqueduct No. 2 is a 9-foot diameter, reinforced concrete cylinder pipe, mortar-lined and coated. The Lafayette No. 2 aqueduct has a moderate susceptibility to damage from strong ground shaking. This key aqueduct is required to convey terminal reservoir water to the Lafayette and Walnut Creek water treatment plants (WTPs) should the Mokelumne Aqueducts be out of service. Failure of the Lafayette No. 2 Aqueduct in conjunction with failure of the Mokelumne Aqueducts will result in loss of all raw water supply to both the Lafayette and Walnut Creek WTPs.

3.5 Pumping Facilities

The elevation of the District's raw water source, Pardee Reservoir, allows most of the system to be fed via gravity; however, pumping is required to meet high demands. This section describes reliability issues associated with EBMUD pumping facilities.

3.5.1 Bixler High Head and Low Head Pumping Plants

These pump stations are located on the western side of the Delta, near Indian Slough. The low-head pump withdraws water from Indian Slough and supplies water to the suction-side of the high head pumps. In an emergency, these pumping plants could be used to provide Delta water to the raw water system. However, neither station is operational at this time. Control cabinets in the high head station were destroyed in a fire, and the low head pumps and motors were recently rebuilt but have not been installed. New electrical and control cabinets will be installed at the high head pumping plant, and the low head pumps and motors will be reinstalled in Fall of 2007.

This facility was not included in the District's 1997 seismic evaluation, and its expected performance under a large seismic event is not well documented. Neither pumping plant has standby power.

3.5.2 Walnut Creek Pumping Plants

The Walnut Creek Pumping Plants consist of three pumping centers: Walnut Creek Nos. 1, 2, and 3. Walnut Creek Nos. 1 and 2 are housed below-grade in a single facility with a steel frame building that is above grade, and No. 3 is housed completely below-grade in a separate facility. The Walnut Creek Nos. 1 and 2 building is metal framed and has been retrofitted with cross-bracing members sufficient to withstand lateral seismic loads. The 1997 Raw Water Seismic Assessment concluded that a large earthquake would cause non-structural damage, and equipment damage would be limited to that which could be repaired in a reasonable time-period. Probably the most critical issue related to the plants ability to pump water immediately following an earthquake is loss of power supply. PG&E has the ability to provide power to the facility via two or more substations. This provides good reliability, but power ultimately depends on PG&E's ability to switch substations following an earthquake.

3.5.3 Briones Center

The Briones Center consists of three buildings housing two pumping plants and a weir structure. The Briones Center allows raw water from Lafayette Aqueduct No. 2 to be pumped into Briones Reservoir, and for raw water to be drafted from Briones Reservoir and delivered to the Orinda, Lafayette, and/or Walnut Creek Water Treatment Plants. No major structural damage to these facilities is expected following a major earthquake, but damage to the electrical substation could require several days to repair. There is an onsite electrical generator which could be used to power valves and small equipment only.

3.5.4 Moraga Pumping Plant

The Moraga Pumping Plant is a reinforced concrete structure, mostly buried, consisting of two structures. The main structure houses the pumping plant, which pumps water up to the Upper San Leandro Reservoir. Adjacent to the main structure is a small electrical substation.

There are two areas of concern for these facilities; ground settlement and earthquakes. There is evidence of ongoing ground movement below the electrical substation pad. Settlement may be due to improper subgrade compaction or rotation of the crib wall retaining structure below the substation pad and adjacent to Moraga Creek. The 1997 Seismic Evaluation recommended equipment anchorage upgrades to prevent a potentially extended outage should a large earthquake occur.

3.6 Wasteways on the Mokelumne Aqueducts

Several wasteways are located along the Mokelumne Aqueducts between Pardee and Walnut Creek. If one of the Mokelumne Aqueducts were to fail, these wasteways would drain the upstream portion of pipe and isolate portions of the aqueduct system after sensing an instantaneous drop in pressure or increase in flow. Emergency back-up generators located at these facilities will allow valves to operate in the event of a power outage.

The Clyde wasteway is subject to flooding due to tidal action and large storm events that cause the nearby creek to overflow. A portable sump pump is kept on hand and important electrical equipment is kept off of the ground. While floods are a concern, they are not believed to be serious reliability issue. However, this wasteway is close enough to the Concord fault to possibly be affected by ground shaking and subsequent soil liquefaction.

3.7 Dams and Outlet Towers

It was beyond the scope of this work to examine the reliability of the District's dams. These structures are regulated by the California Division of Safety of Dams (DSOD). Both up-country and terminal reservoir dams have previously been reviewed and improvements have been implemented such that they will likely not fail in large earthquakes. This work has been reviewed and approved by the DSOD[13].

Reservoir outlet towers are crucial to the District's ability to pull emergency water from terminal reservoirs following a possible loss of the Mokelumne Aqueducts. Materials Engineering Section (MES) has recently completed studies for Lafayette, Sobrante, Briones, and Chabot Towers. Studies are in progress for the Upper San Leandro Tower. Based on this information[14], Outlet towers at Briones, USL, San Pablo, Lafayette, and Pardee reservoirs may sustain structural damage following a major earthquake. Damage to the USL and Lafayette towers may reduce withdrawal capacity but will most likely not impair draft from these reservoirs. The Briones tower is also likely to suffer significant damage and the tower may become inoperable after a major seismic event. However, the ability to draw down Briones reservoir is not dependent on the functionality of the tower, although it is desirable to maintain control of the depth from which water is withdrawn. The Pardee outlet tower is susceptible to seismic damage, but water is expected to be able to enter the tunnel following a major seismic event[15].

The San Pablo tower, which serves the San Pablo WTP, is expected to suffer significant damage during a major earthquake, but the Sobrante tower offers reliable redundancy to pull water from San Pablo reservoir. However, during a raw water outage, water from Briones reservoir would need to be conserved for EOH demands, leaving Orinda, the District's largest capacity plant, mostly idle. Areas typically served by Orinda would likely be served by San Pablo and USL reservoirs via the Sobrante, USL, and San Pablo treatment plants. In this case, failure of the San Pablo tower would be a problem.

[13] "Raw Water System – Seismic Assessment" prepared by G&E Engineering Systems Inc., 1997
[14] Evaluations Fact Sheet submitted to RMC by Chris Dodge on August 21st, 2007.
[15] Robert Lau, EBMUD, in comments submitted to RMC on September 14th, 2007

3.8 Tunnels

The San Pablo tunnel supplies the San Pablo WTP. This tunnel crosses the Hayward fault, and is prone to failure due to fault offset following a large magnitude Hayward fault event. Damage to this tunnel is tolerable, as there is redundancy provided by the Sobrante WTP and Orinda Filter Plant.

The Pardee Tunnel is known to leak and these leaks may be worsening over time. The tunnel was inspected in 1961, but its condition has not been assessed since. However, no active faults are located in the general vicinity and the tunnel is set in bedrock so there is no immediate concern for its structural integrity. Nonetheless, this component of the raw water system has no redundancy and is therefore critical to conveying up-country water to the District.

4. Emergency Response and Recovery

A major seismic event in the East Bay is expected to cause a number of system interruptions, however, most repairs would be manageable and redundancy in the system will limit outage times. The event believed likeliest to cause the most significant outage to the District's raw water system is an earthquake or levee failure in the Delta (or possibly a combination of the two), which causes one or more of the Mokelumne Aqueducts to fail. Based on this assumption, the District is in the final stages of completing the Aqueduct Emergency Response and Recovery Plan. EBMUD has completed several other analyses to estimate the time to repair failures of the Aqueducts in the Delta.

In the event of Mokelumne Aqueduct outage, the District would primarily rely on storage in its terminal reservoirs to supply east-of-hills (EOH) and west-of-hills (WOH) demands. This section discusses the reasonableness of supplying customer demands with terminal storage if the Mokelumne Aqueducts were to fail, given expected repair times for probable failure scenarios.

4.1 Emergency Standby Storage

Four major factors will affect the Districts ability to use local storage to supply demands following the loss of all raw water supplies:

- Available terminal reservoirs that can be used to provide emergency water supply
- Terminal storage volumes at the time of the outage
- The level of customer demand
- Storage losses (evaporation) and gains (local rainfall runoff)

Each these factors are discussed in the following paragraphs. This information is used to establish the amount of time that expected available terminal storage at the onset of the event can serve demands.

Emergency Water Supply from Terminal Reservoirs

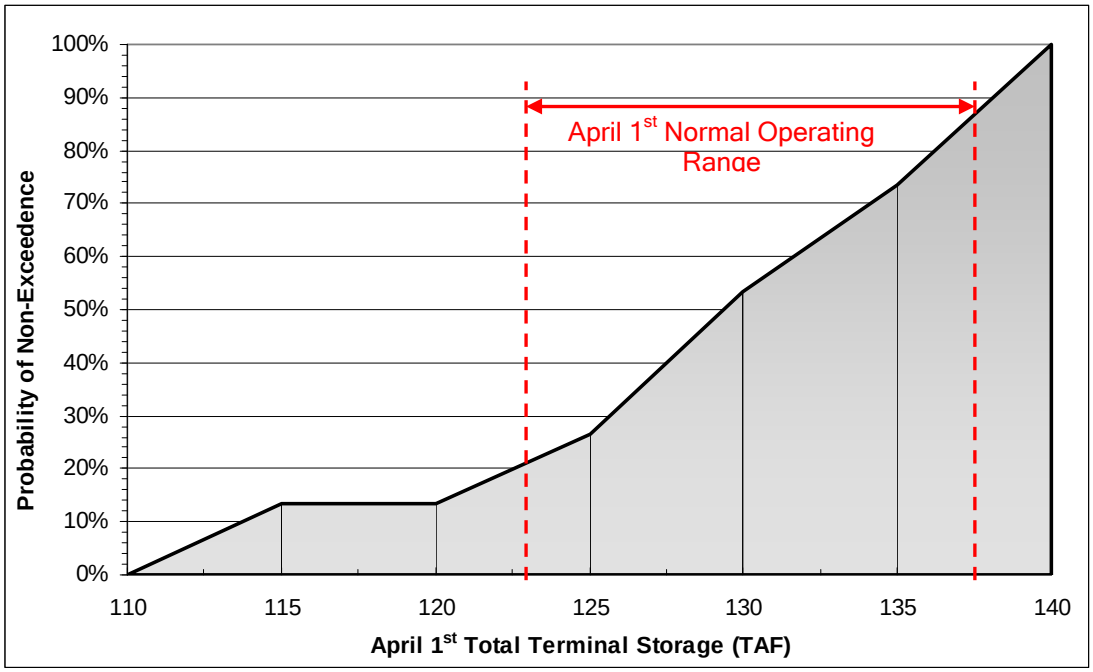
The District would rely on storage in San Pablo, Briones, and Upper San Leandro Reservoirs in the event of a Mokelumne Aqueduct outage. Discussions with EBMUD operations staff indicate that it is not likely that water from Chabot or Lafayette would be used. In order to take water from the Lafayette Reservoir, underground pipe would need to be installed to bring water to the Lafayette Filter Plant control structures where it could then be distributed to a treatment facility. Based on conversations with District maintenance and operations supervisors, this work would take approximately two to three weeks to complete in an emergency situation. The utility of Lafayette Reservoir as an emergency supply is questionable as it is the smallest of all the terminal reservoirs with maximum useable storage less than 4,000 acre-feet (AF). Withdrawal of water from Chabot Reservoir would require significant infrastructure augmentation because there is

not currently a direct connection to a pumping facility, treatment plant, or distribution connection. It is possible that the District could transfer water from Chabot Reservoir to an existing 8-inch raw water line currently serving a golf course; however, this option would require installation of a small, self-contained treatment plant. Rather than bringing the Chabot and Layette reservoirs online, it is more likely the District would pursue other emergency water supplies (see Section 4.2). Due to the extensive preparation work required to use Lafayette Reservoir and Chabot Reservoir as emergency supplies, it is assumed that water from these reservoirs would not be included as emergency sources of water in this TM.

Initial Storage Volumes

The volume of water available in the terminal reservoirs to serve demands during a Mokelumne Aqueduct outage is dependent on when the outage occurs. According to historic data on reservoir levels, reservoirs are at their lowest in August. However, significant pumping to the terminal reservoirs typically occurs between April and June and an outage that occurred in April would prevent normally-occurring storage boosts; existing volumes would therefore have to sustain high summer demands and evaporation rates. To determine the worst-case scenario – the scenario resulting in the fastest overall depletion of emergency storage – two scenarios where tested. One scenario started with typical reservoir levels on August 1st and the other started with typical April 1st storage levels.

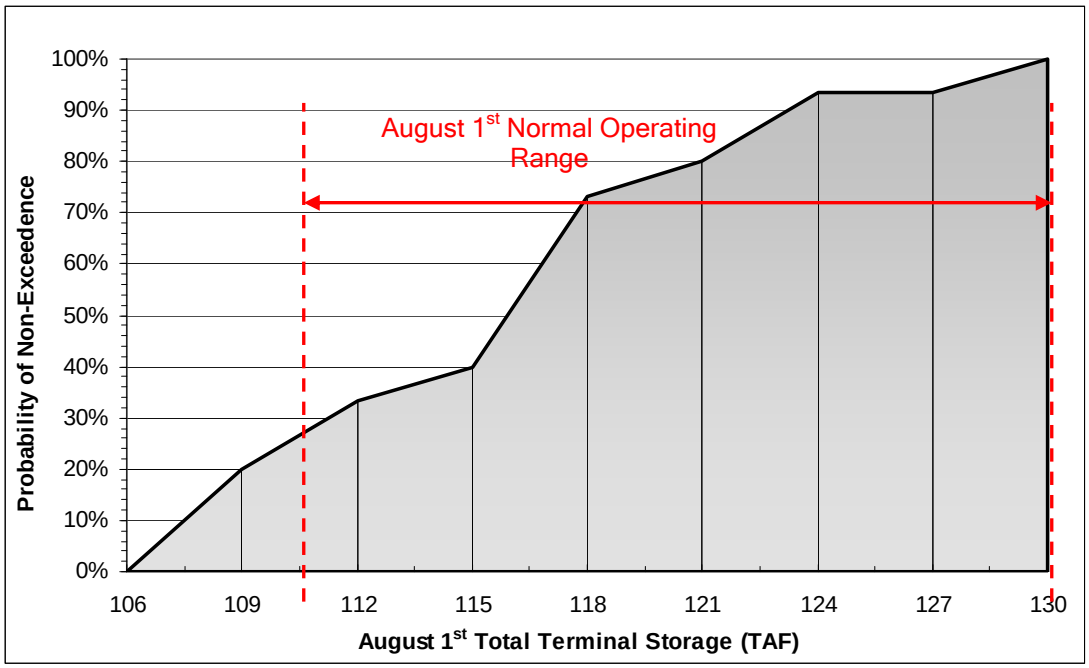
Terminal reservoir operators strive to maintain reservoir levels within predetermined operating minimum and maximum water level range, depending on season and demands, but historic records show that true reservoir levels sometimes fall below this normal operating range. Figure 1 show the non-exceedence probability of total storage volumes in San Pablo, Upper San Leandro, and Briones Reservoirs on April 1st and August 1st, respectively. The non-exceedence probability is the probability that storage levels are equal to or less than a given volume, based on reservoir levels between 1992 and 2007. The total dead storage for these three reservoirs is 13,530 AF. These figures include dead storage, but this volume is assumed unavailable to meet demand.



Note: Probabilities are calculated based on historic reservoir levels on April 1st from 1992 to 2007. These volumes include dead storage.

Figure 1: Non-Exceedence Probability for April 1st Storage Volumes (Excluding Chabot and Lafayette Reservoirs)[16]

[16] Probabilities are calculated based on historic reservoir levels on April 1st from 1992 to 2007. These volumes include dead storage.



Note: Probabilities are calculated based on historic reservoir levels on August 1st from 1992 to 2007. These volumes include dead storage.

Figure 2: Non-Exceedence Probability for August 1st Storage Volumes (Excluding Chabot and Lafayette Reservoirs)

Initial storage levels for the April 1st and August 1st outage scenarios were selected to correspond with the 10%, 20%, and 40% probabilities of non-exceedence. These percentages were selected to define the lower range of possible initial storage volumes. Initial storage volumes used in this analysis are given in Table 10.

Table 10: Initial Storage Volumes

Probability of Non-Exceedence	April 1st Scenario	August 1st Scenario
	Initial Storage (AF)	
10%	114,000	107,500
20%	122,500	109,000
40%	127,500	115,000

Note: This table includes dead storage, but this volume is assumed unavailable to meet demand.

4.1.1 Demands

To assess the duration over which terminal storage can be utilized in the event of a Mokelumne Aqueduct outage, the service area demands must be understood. The demands used in this analysis were based on preliminary projections developed for the EBMUD WSMP 2040. These demands were prepared using two different approaches. In both approaches, existing water demands were used as a starting point for the

demand analysis, disaggregated to reflect conservation efforts and recycled water projects currently underway and planned. In the first demand projection approach, land use data were used to project System Input water demands starting in 1996. Land use unit demands (or LUDs) were developed and adjusted to reflect changing land-use. The updated LUDs were then applied to land use acreages as obtained from each service area community's General Plan to estimate future demands. In the second approach, projected future water demands were derived from population projection growth rates previously developed by the Association of Bay Area Governments (ABAG). The population increases associated with the city spheres of influence and remaining unincorporated areas within the ultimate service boundary were determined, and the projected population increases then extended to 2035.

An average of the land use and population-based projection methods resulted in a 2040 demand projection of 248 MGD. This procedure was repeated for interim years 2010, 2020, and 2030. The resulting demand projections are shown in Table 11. Demand projections do not accounted for global warming or changes to the District's recycled water development and conservation goals.

It is assumed that once a catastrophic event occurs, the District will immediately implement maximum rationing with a district-wide goal of 25%, equal to the 'Critical Shortage' reduction goals in the District's Drought Management Program (DMP). To meet this goal, the DMP expects cutbacks from individual user categories based on the following schedule[17]

- Single-family residential - 32%
- Multi-family residential - 15%
- Commercial / institutional - 20%
- Industrial - 5%
- Irrigation - 45%

It is important to note that once implemented, significant demand reductions may not occur immediately. For the purposes of this analysis, hysteresis is neglected. However, reductions greater than 25% are also possible. During the District's most critical drought, 1976 to1977, EBMUD implemented a program to cut total customer water use by 25% which was later increased to 35% as the severity of the drought materialized. Customers responded by cutting water use by 39%. Table 11 shows expected annual demands, both with and without 25% total rationing.

[17] 2005 Urban Water Management Plan, Table 3-3, "Customer Drought Reduction Goals" prepared by EBMUD

Table 11: Annual Demand Projections [18]

Level of Demand	Annual Water Use (AF)	Annual Water Use with Rationing (AF)
2010	245,280	182,325
2020	249,760	185,655
2030	264,320	196,478
2040	277,760	206,468

Note: Annual water use with rationing is calculated based on 25% rationing occurring for an entire year.

Demands are highest during the months of June through September, with July having the highest water use. A monthly demand distribution, presented in Table 12, was determined by comparing historical east-of-hills (EOH) and west-of-hills (WOH) monthly usage to annual usage in these areas between 1999 and 2003. The percent of demand in each month was averaged for EOH and WOH data and then applied to annual demand projections (Table 13).

Table 12: Monthly Demands as a Percent of Annual Demand [19]

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
WOH (%)	6.1	5.5	6.5	7.4	9.4	10.3	11.3	11.0	10.1	9.1	7.0	6.3
EOH (%)	3.9	3.6	4.8	6.6	9.8	11.8	13.6	13.4	12.0	9.6	6.2	4.7
Average (%)	**5.0**	**4.5**	**5.7**	**7.0**	**9.6**	**11.1**	**12.4**	**12.2**	**11.0**	**9.4**	**6.6**	**5.5**

Table 13: Projected Monthly Demands with Rationing (AF)

Month	2010	2020	2030	2040
Jan	9,116	9,283	9,824	10,323
Feb	8,275	8,427	8,918	9,371
Mar	10,356	10,546	11,160	11,728
Apr	12,814	13,048	13,808	14,510
May	17,451	17,770	18,806	19,762
Jun	20,186	20,554	21,753	22,859
Jul	22,651	23,065	24,409	25,651
Aug	22,279	22,686	24,008	25,229
Sep	20,089	20,456	21,649	22,750
Oct	17,067	17,379	18,392	19,327
Nov	12,086	12,307	13,025	13,687
Dec	10,006	10,189	10,783	11,331

[18] These demand estimates are based on the current trajectory of EBMUD's conservation programs. Irrigation and recycled water demands are not included.

[19] Monthly peaking factors were determined based on 1999 to 2003 EOH and WOH monthly demands

4.1.2 Storage Losses and Gains

Evaporative losses will reduce storage levels and local rainfall runoff will augment levels. Because climatic conditions are highly variable, it may not be prudent to assume variables influencing storage losses and gains will be normal during an emergency. Instead, high temperatures and drought may accompany a raw water outage. For the purposes of this analysis, a probabilistic approach was used and a 10% probability threshold was selected to develop a *reasonable* worst-case scenario. Monthly evaporation and rainfall volumes were selected so that there is a 10% chance that evaporation will be higher and a 10% chance storage inflows will be lower in any given month.

Monthly evaporative loss and runoff gain data since 1987 were obtained from the District. From this information, non-exceedence probability distributions for losses and gains for each month were constructed. These probability distributions are similar to the non-exceedence distributions for terminal storage. Monthly rainfalls totals for the three reservoirs of interest were selected to correspond with a 10% chance of *non-exceedence* and evaporative losses were selected to correspond with a 10% chance of *exceedence*. In other words this analysis conservatively assumes that for any given month, there is a 10% chance rainfall contributions will be lower and a 90% chance they will be higher. Because evaporation is a negative contribution to storage, *exceedence* probability is used. There is a 10% chance that evaporation will be greater in any given month and a 90% chance it will be lower. More detailed information about these probabilities is given in Appendix B.

Table 14: Monthly Distribution of Evaporative Losses and Rainfall Gains from San Pablo, Briones, and USL Reservoirs (Acre-Feet)

Month	Evaporation	Rainfall
January	150	1,000
February	225	1,750
March	480	1,500
April	712	800
May	1,065	600
June	1,215	550
July	1,290	500
August	1,132	500
September	832	250
October	495	500
November	225	500
December	114	750

4.1.3 Results

The duration that demands can be supplied from the San Pablo, Briones, and Upper San Leandro Reservoirs is defined as the time from the outage event to depletion of available terminal storage. Results for both scenarios are presented in Table 15 and Table 16. More detailed results are presented in Appendix A.

Table 15: Number of Months to Reservoir Depletion for Outage Event on April 1st

	April 1st Scenario (Probability that initial storage will be lower)		
Level of Demand	(10%)	(20%)	(40%)
2010	5.1 Months	5.6 Months	5.8 Months
2020	5.1 Months	5.5 Months	5.7 Months
2030	4.8 Months	5.2 Months	5.4 Months
2040	4.7 Months	5.0 Months	5.2 Months

Table 16: Number of Months to Reservoir Depletion for Outage Event on August 1st

	August 1st Scenario (Probability that initial storage will be lower)		
Level of Demand	(10%)	(20%)	(40%)
2010	6.7 Months	6.8 Months	7.5 Months
2020	7.2 Months	6.6 Months	7.3 Months
2030	5.7 Months	5.8 Months	6.6 Months
2040	5.1 Months	5.3 Months	6.0 Months

The results indicate that although initial storage levels would be lower if the outage occurred on August 1st, higher demands in the months between April and August result in a faster overall reservoir depletion if an outage occurred in April. The April 1st outage scenario is therefore the worst-case. The resulting differences in depletion times are also attributed to rainfall-runoff contributions which occur to a far greater extent in the August 1st scenario than in the April 1st scenario.

Table 17 shows the additional local water supply necessary for the District to meet 6 months of demand during an emergency raw water outage. Table 18 shows the additional water necessary if a raw water outage lasts for 8 months (as in the river crossing failure scenario depicted in the 2007 Aqueduct Emergency Response and Recovery Plan)

Table 17: Additional Local Water Needed to Meet 6-Months Demand

Level of Demand	(Probability that initial storage will be lower)		
	(10%)	(20%)	(40%)
2010	18 TAF	9 TAF	4 TAF
2020	20 TAF	12 TAF	6 TAF
2030	27 TAF	18 TAF	14 TAF
2040	33 TAF	25 TAF	20 TAF

Table 18: Additional Local Water Needed to Meet 8-Months Demand

Level of Demand	(Probability that initial storage will be lower)		
	(10%)	(20%)	(40%)
2010	47 TAF	38 TAF	33 TAF
2020	50 TAF	41 TAF	35 TAF
2030	58 TAF	49 TAF	45 TAF
2040	65 TAF	57 TAF	53 TAF

4.1.4 Assumptions and Limitations

This analysis assumes that there are no limitations in distributing water from the terminal reservoirs to areas on either side the Berkeley-Oakland Hills. The Southern Loop connection will improve operational flexibility by allowing water to be distributed between Castro Valley (WOH) and San Ramon (EOH). Even so, the District will likely need to implement operational contingencies similar to those employed during the Claremont Tunnel seismic improvement outage in 2004 to 2007. These contingencies may include utilization of temporary pumping facilities and additional treatment capacity from the San Pablo Treatment Plant, which is not part of the District's normal operations.

WOH demands are typically served by the San Pablo, USL, and Orinda treatment plants. EOH demands are served by Lafayette and Walnut Creek treatment plants. Lafayette Aqueduct No. 2 can be operated in reverse so that water from Briones Reservoir can be delivered to Orinda, Lafayette, or Walnut Creek treatment facilities while water from San Pablo and USL reservoirs can only be delivered to San Pablo, USL, and Sobrante treatment plants. During a raw water outage, water from Briones reservoir would need to be conserved for EOH demands, leaving Orinda, the District's largest capacity plant, mostly idle. Areas typically served by Orinda would likely be served by San Pablo and USL reservoirs via the Sobrante, USL, and San Pablo treatment plants; temporary pumping facilities would be necessary to move treated water into the Orinda service area[20].

Finally, this analysis also assumes that water from terminal reservoirs can be treated to acceptable levels by the District's in-line filtration plants, even as the reservoirs are

[20] Telephone Conversation with Rey Encarnacion (EBMUD) on September 19th, 2007.

drawn down to dead storage. Based on a conversation with EBMUD's Water Treatment Superintendent, this is a reasonable assumption[21].

4.2 Additional Emergency Supplies

In addition to relying on local reservoir storage, EBMUD has additional water supply options in an emergency. The Bixler low-head and high-head pump stations are located on the western side of the Delta, near Indian Slough. In an emergency, these pumping plants could be used to deliver Delta water into the raw water system. However, neither station is currently operational. Based on conversations with maintenance and operations supervisors, once the needed parts and equipment are on-hand, it would take approximately 30 to 90 days to get the pumping plants operational. It is important to note that start-up procedures do not currently exist nor have the aqueducts been filled from the Bixler pump station—a fact which may hinder the District's ability to bring these facilities online quickly. Additionally, a Department of Fish and Game 1601 permit would be required and intake screens would need to be improved to meet current fish protection standards.

Interties may currently be the most viable source of additional emergency supply. EBMUD has several transfer and exchange agreements with Contra Costa Water District (CCWD), the City of Hayward, the Dublin San Ramon Services District (DSRSD), and the San Francisco Public Utilities Commission (SFPUC). Interties with these agencies are capable of delivering up to 54.9 MGD to the District[22]. It should be noted, however, that in the event of a major earthquake or Delta failure (or a combination of the two), these agencies may also suffer disruptions to their raw water supply and intertie water may be limited.

4.3 Emergency Recovery

The duration over which terminal storage will be needed to supply demands depends on the time it takes to repair damaged raw water facilities. EBMUD has complete several reports analyzing various hazard events, failure scenarios and expected outage times. During a catastrophic event in which all three aqueducts fail, resources would be concentrated to repair Mokelumne Aqueduct No. 3 first, as this pipe has the largest capacity and best overall reliability.

The 1999 Post Earthquake Recovery Report describes several earthquake damage scenarios along with the required time to repair Mokelumne Aqueduct No. 3. This report considers seismic improvements made in 1999, which strengthened river crossings and buried portions of the aqueduct. A summary of failure scenarios is given below:

- River Crossings (Old River, Middle River, San Joaquin River) – Possible failure scenarios include joint failures of varying magnitude and failure of waterside levee slopes. Repair time is estimated to take 6 weeks to 5 months, depending

[21] Telephone Conversation with Peter Martin (EBMUD) on September 20h, 2007.
[22] 2005 Urban Water Management Plan, East Bay Municipal Utility District, Chapter 2.

on failure mode. The "severed joint" damage would take about 5 month to repair and is estimated to have medium probability of occurrence during the design earthquake.

- Buried Pipe – Possible failure scenarios include joint failures of low to very low probability of occurrence. Repair time is estimated to take 6 weeks to 5 months, depending on failure mode. The "severed joint" damage would take about 5 months to repair and is estimated to have very low probability of occurrence.
- Elevated Pipe (9 miles, from Indian Slough to Holt) – Possible failure scenarios include pipe joint failures and undermining of supports of low to very low probability of occurrence. Repair time is estimated to take 4 weeks to 5 months, depending on failure mode. "Undermined support" damage would take about 5 months to repair and is estimated to have medium probability of occurrence.

The 2007 Aqueduct Emergency Response and Recovery Plan (Mokelumne Aqueduct No. 3) describes three failure and repair scenarios in the Delta:

- Scenario A: An earthquake destroys the crossing under Middle River and levees fail but do not affect the immediate work area. The time estimated for repairs is 8.1 months.
- Scenario B: An earthquake destroys 1,000 feet of elevated aqueduct and the surrounding area is flooded by levee failure. The time estimated for repairs is 6 months.
- Scenario C: An earthquake destroys 1,000 feet of buried aqueduct and the surrounding area is flooded by levee failure. The time estimated for repairs is 6 months.

It is important to note that in the case of a major earthquake and/or multiple levee failures, demand for materials and equipment throughout the affected region and availability of needed resources could extend these projected repair times. For example, repair of a toppled aqueduct in a flooded area will require barges. Such barges could be in limited supply following a major levee failure and particularly in the case of multiple levee failures. Contracts for materials and equipment should be in place prior to such an event to the greatest extend possible, though this may not guarantee availability after the event.

5. Summary and Conclusions

The District has adequately documented current conditions and known risks to its raw water infrastructure. The document review described in this memorandum analyzed the coverage of reliability topics and, to the extent practical, the quality of information contained in these reports. However, long-term planning efforts may require detailed probability analyses to develop cost-risk comparisons. While the probabilities of seismic risks, especially in the Delta, have been adequately documented, discrete probabilities of other future events may not be documented to the degree desired for large planning initiatives. For example, the probability that rising sea-level and increased wind-wave action will increase levee failure risk may not be well understood. Another factor in understanding and mitigating risk for Delta facilities is the ongoing DWR DRMS study, which will shed significant light on long-term risks and risk management in the Delta.

Overall, the District has a good understanding of the risks to its raw water system and is in a good position to develop long-term water supply planning initiatives. In summary, the District's raw water system is considered sufficiently reliable under normal operating conditions and is expected to withstand most seismic events (which are possible in almost all parts of the raw water system) to an extent sufficient to allow continued operation. However, significant reliability concerns exist in the Delta region due to the potential for levee failures and flooding associated with large seismic events.

The reliability of Mokelumne Aqueduct No. 3 has been significantly improved in the last decade and it is expected to perform well during severe earthquakes and flooding; however, it is not indestructible. If Mokelumne Aqueduct No. 3 were to fail, No. 1 and No. 2 would almost certainly fail as well, resulting in a complete loss of the District's raw water supply until completion of repairs. The District would likely be able to meet demands for 5 to 6 months (assuming maximum 25% rationing) at the 2010 level of demand, decreasing to 4 to 5 months at the 2040 level of demand (again, assuming 25% rationing). Based on previous reports, repair of Mokelumne Aqueduct No. 3 could take from 4 weeks to 8 months, depending on the failure scenario, but most situations could be repaired in 6 months. It is likely that additional water will be necessary beyond that available in local reservoirs. It would be prudent for the District to pursue additional local water supply sources in order to supply demands during an emergency raw water outage and continue to make improvements to its raw water system.

6. References

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Appendix A: Additional Results

1. Appendix A: Additional Results

The volume of water available in the terminal reservoirs to serve demands during a raw water outage is dependent on when the outage occurs. To determine the worst-case scenario – the scenario resulting in the fastest overall depletion of emergency storage – two scenarios where tested. One scenario started with typical reservoir levels on August 1st and the other started with typical April 1st storage levels.

April 1st Scenario: In this scenario all three Mokelumne Aqueducts fail on or around April 1st, and the District is forced to rely on local storage in San Pablo, Upper San Leandro (USL), and Briones reservoirs to meet spring and summer demands. An outage that occurred in April would prevent normally-occurring storage boosts which typically occur between April and June; existing volumes would therefore have to sustain high summer demands and evaporation rates.

August 1st Scenario: In this scenario all three Mokelumne Aqueducts fail on or around August 1st when reservoirs levels are typically at their lowest and the District is forced to rely on local storage in San Pablo, Upper San Leandro (USL), and Briones reservoirs to meet fall and winter demands. The significance of this scenario is that the reservoirs are at their minimum levels, though demand is beginning to level off and drop.

The figures in this Appendix represent the depletion of reservoir storage over the course of several months, given two aforementioned scenarios. Each figure displays three curves representing a range of possible initial storage volumes. Initial storage levels were selected to correspond with the 10%, 20%, and 40% probabilities of non-exceedence. The non-exceedence probability is the probability that storage levels are equal to or less than a given volume, based on historic reservoir levels between 1992 and 2007. These non-exceedence probabilities were selected to define the lower bound range of possible initial storage volumes. These figures do not include dead storage because this volume is assumed unavailable to meet demand. A useable storage of zero corresponds to reservoir levels at the top of their dead storage range.

Outage Occurring on April 1st

Figure 1 through Figure 4 show the expected standby storages at the 2010, 2020, 2030, and 2040 levels of demand if a Mokelumne Aqueduct outage were to occur on April 1st.

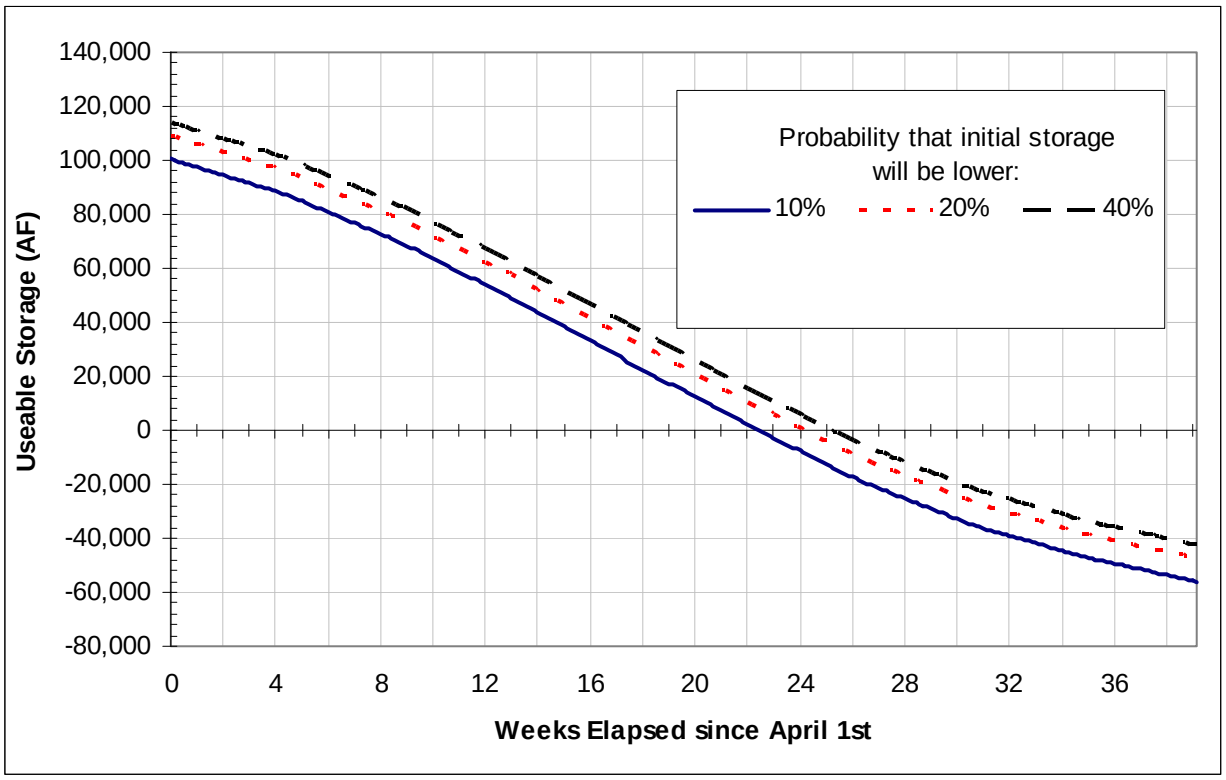

Figure 1: Standby Storage at the 2010 Level of Demand

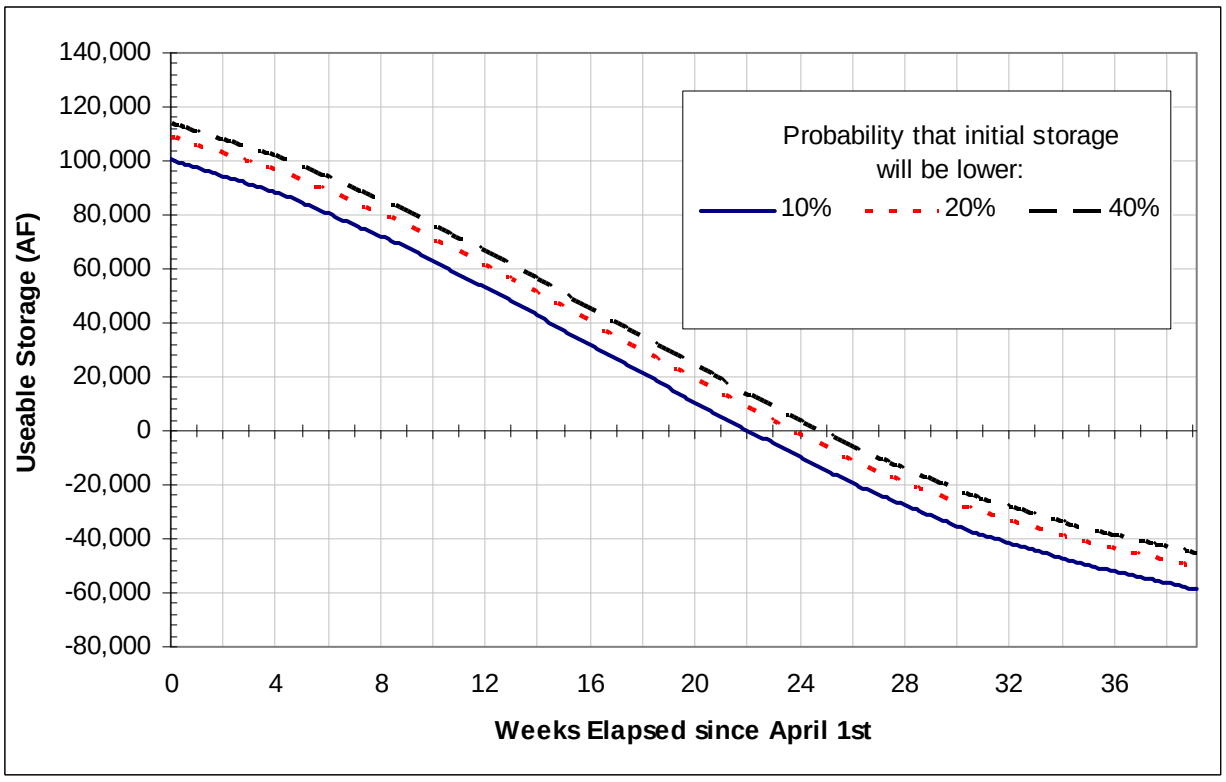

Figure 2: Standby Storage at the 2020 Level of Demand

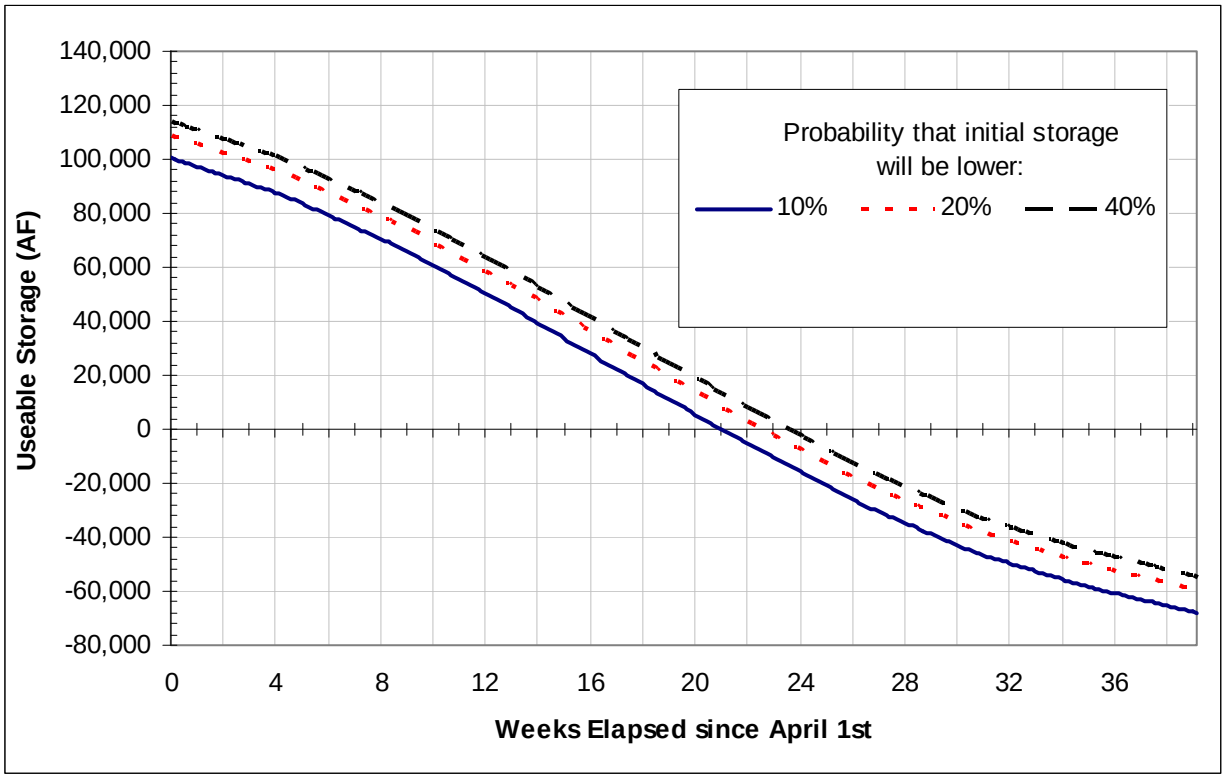

Figure 3: Standby Storage at the 2030 Level of Demand

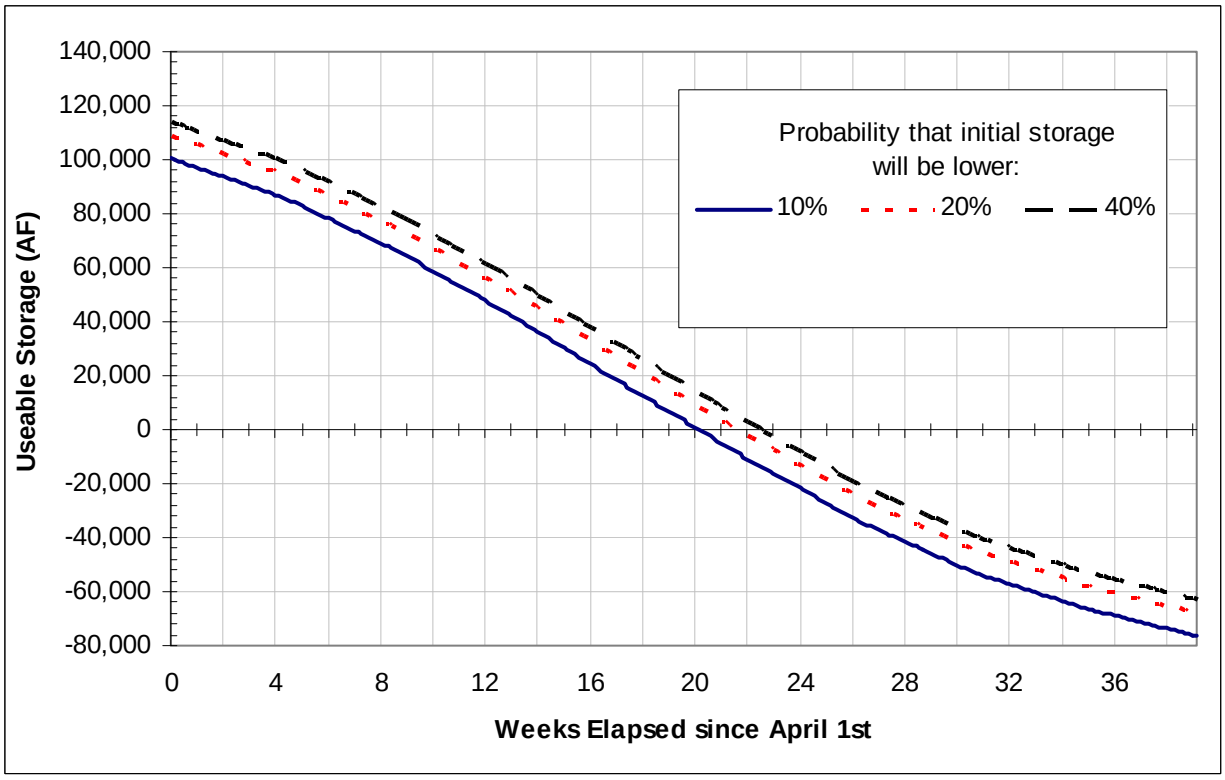

Figure 4: Standby Storage at the 2040 Level of Demand

Outage Occurring on August 1st

Figure 5 through Figure 8 show the expected standby storages at the 2010, 2020, 2030, and 2040 levels of demand if a Mokelumne Aqueduct outage were to occur on August 1st.

The following curves flatten out around week 16th as a result of local rainfall-runoff contributions to storage. Because rainfall is highly variable, it may not be prudent to assume these gains will occur in the volume and months assumed in this investigation. An additional analysis was conducted to determine how long demands could be supplied if rainfall contributions were neglected. The results show that even if rainfall contributions in the August scenario are ignored, storage will still be depleted fasted in the April scenario. The results of this "no-precipitation" analysis are presented in Appendix B.

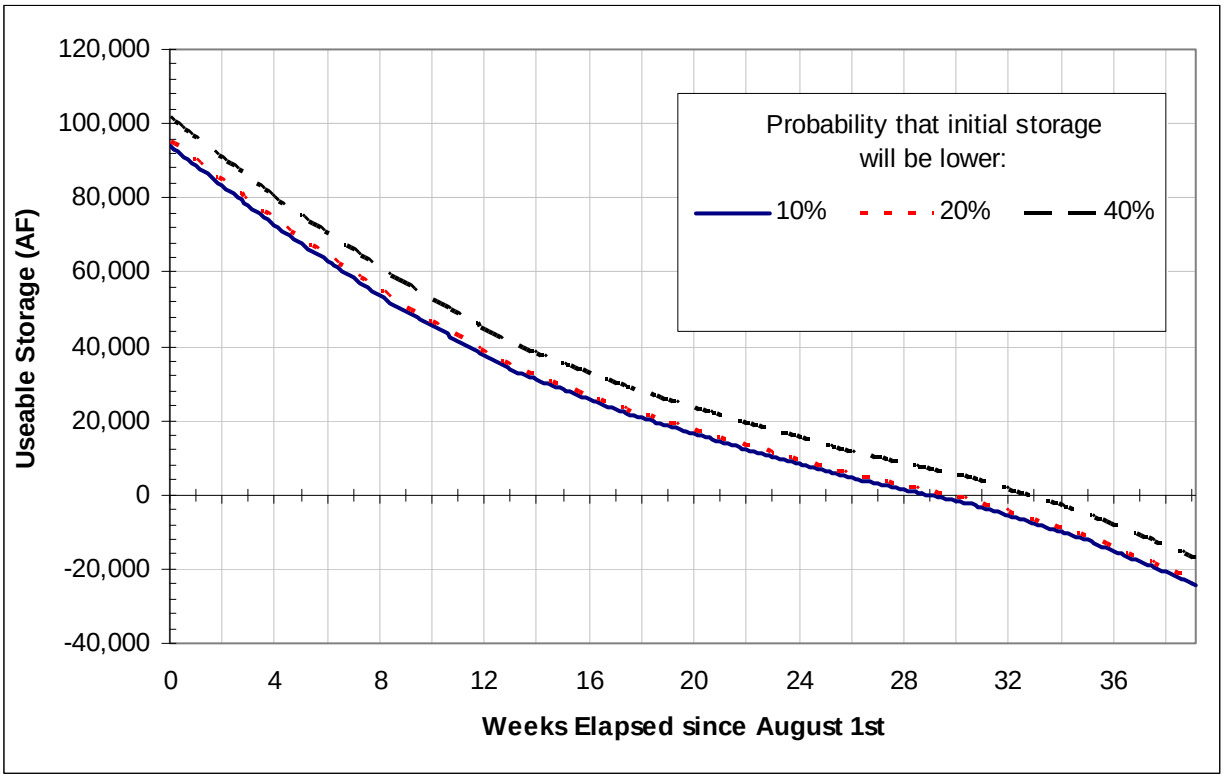

Figure 5: Standby Storage at the 2010 Level of Demand (Outage Starting in August)

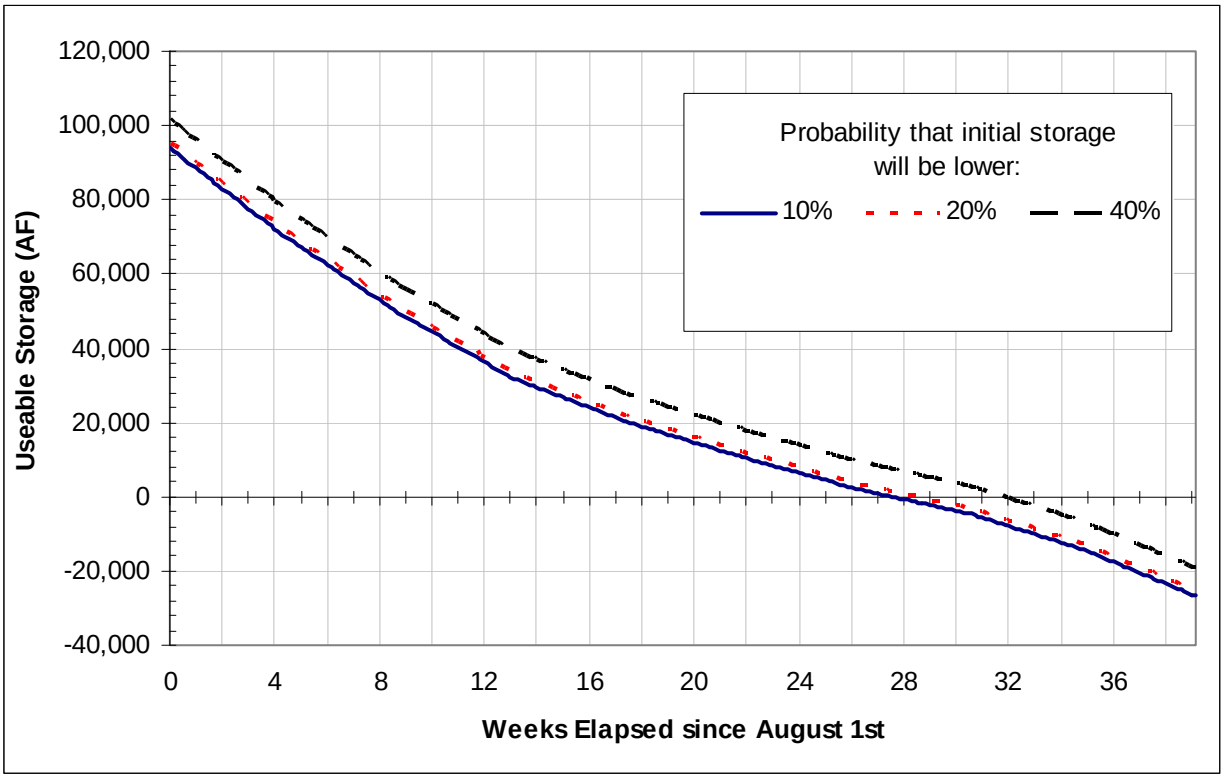

Figure 6: Standby Storage at the 2020 Level of Demand (Outage Starting in August)

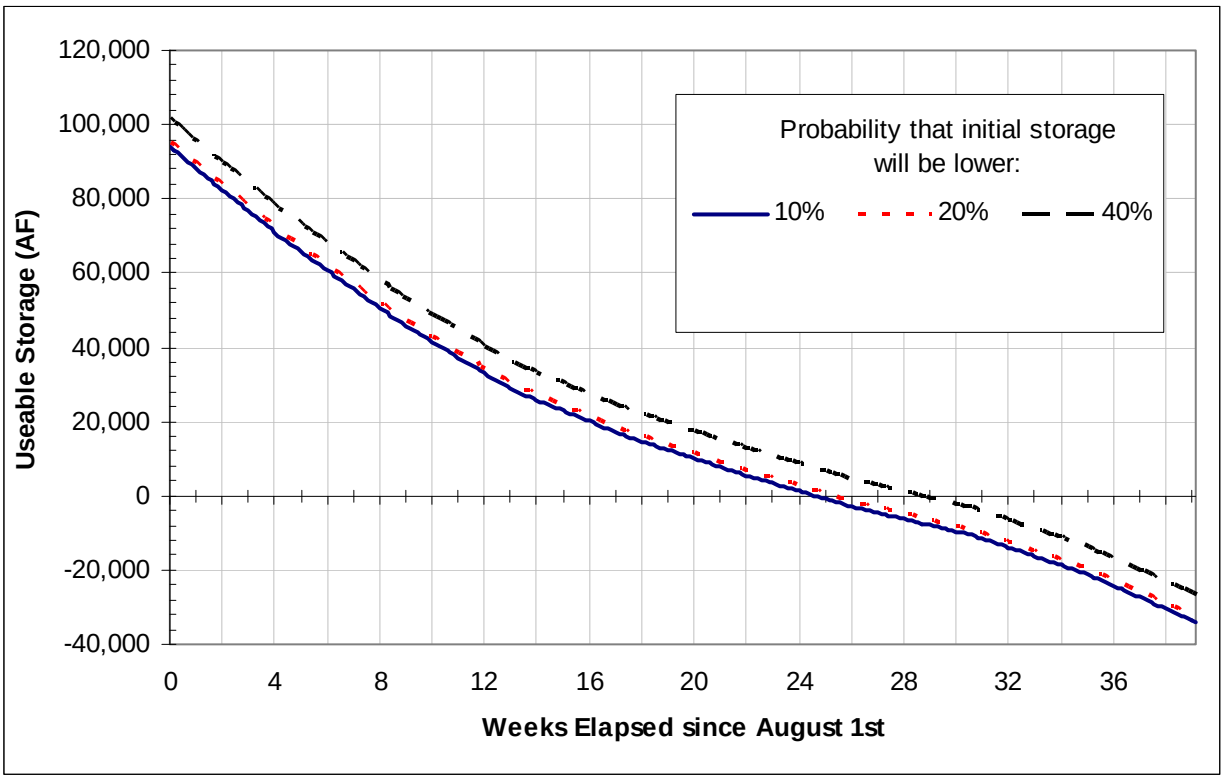

Figure 7: Standby Storage at the 2030 Level of Demand (Outage Starting in August)

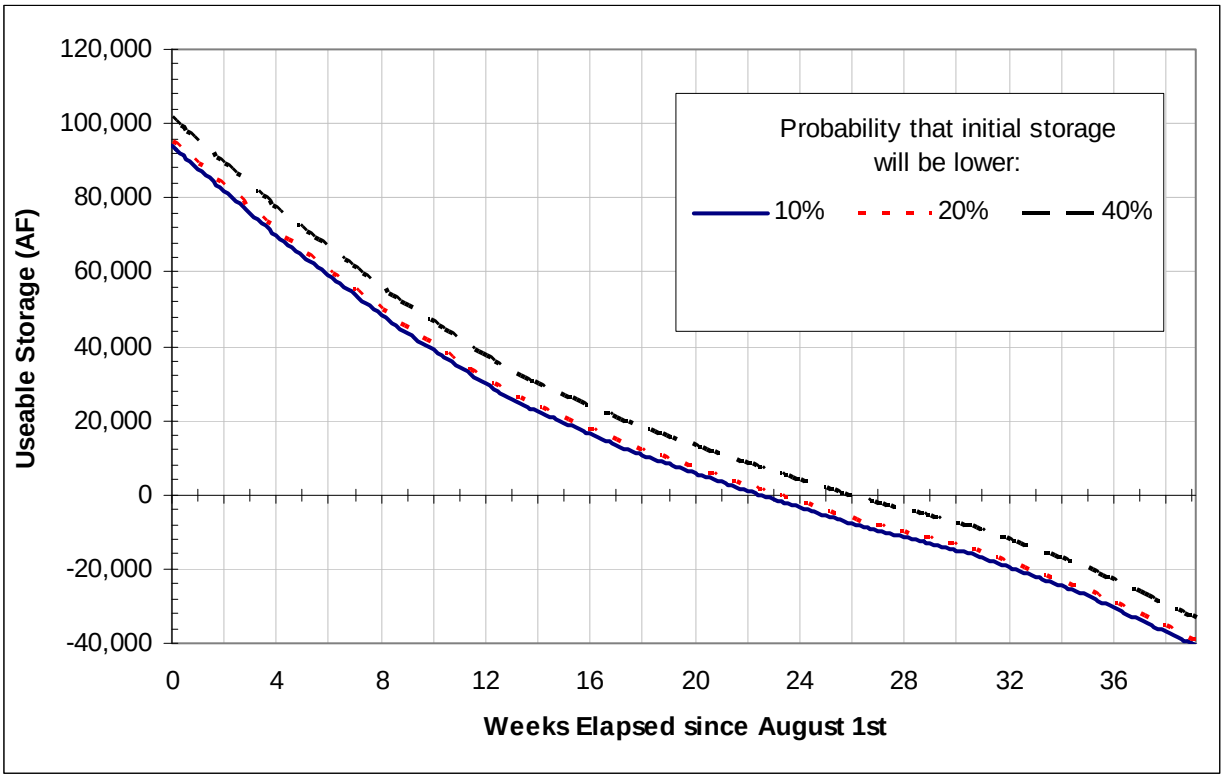

Figure 8: Standby Storage at the 2040 Level of Demand (Outage Starting in August)

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Appendix B: Precipitation and Evaporation

Appendix B: Precipitation and Evaporation Probabilities

Monthly evaporative loss and runoff data since 1987 were obtained from the District for San Pablo, Briones, and Upper San Leandro reservoirs. From this information, probability distributions for losses and gains for each month were constructed. Monthly rainfalls totals for the three reservoirs of interest were selected to correspond with a 10% chance of *non-exceedence* and evaporative losses were selected to correspond with a 10% chance of *exceedence*. In other words, this analysis conservatively assumes that for any given month, there is a 10% chance rainfall contributions will be lower and a 90% chance they will be higher. Because evaporation is a negative contribution to storage, *exceedence* probability is used. There is a 10% chance that evaporation will be greater in any given month and a 90% chance it will be lower.

Precipitation

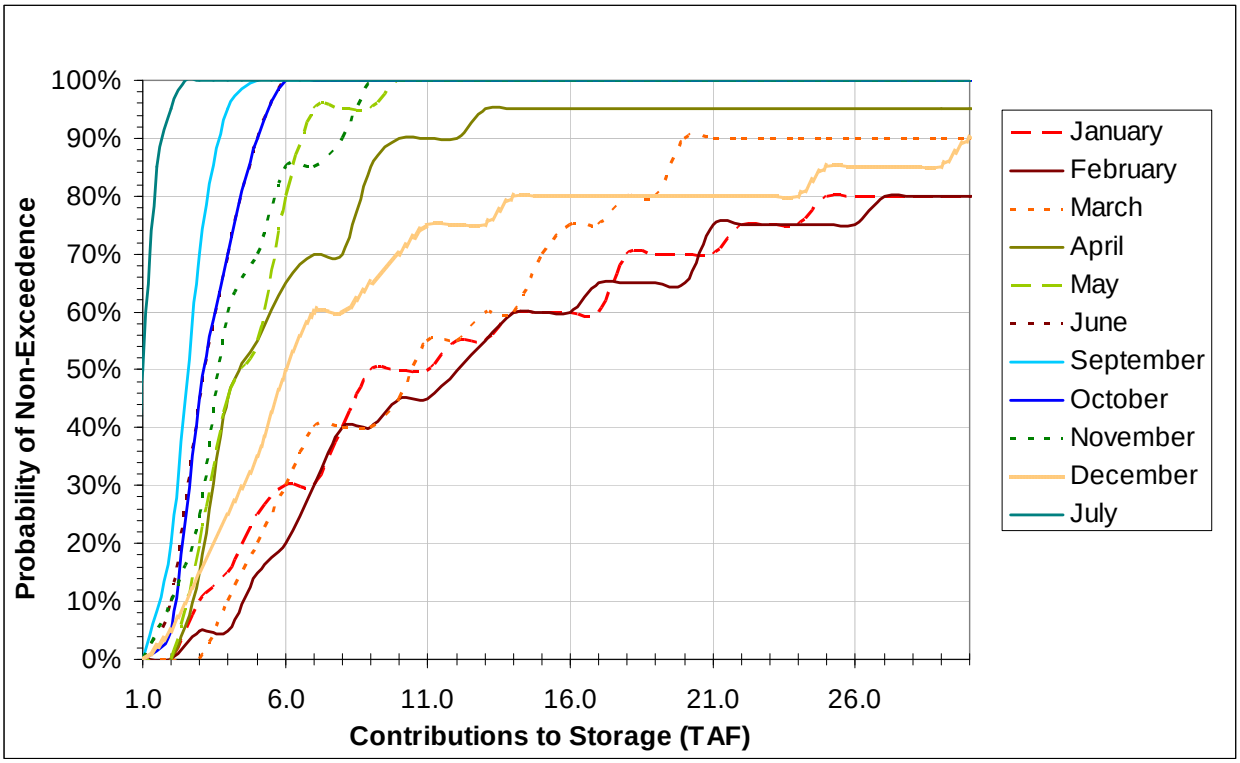

Figure 1: Probability of Non-Exceedence for Rainfall Runoff Contributions to Storage

Evaporation

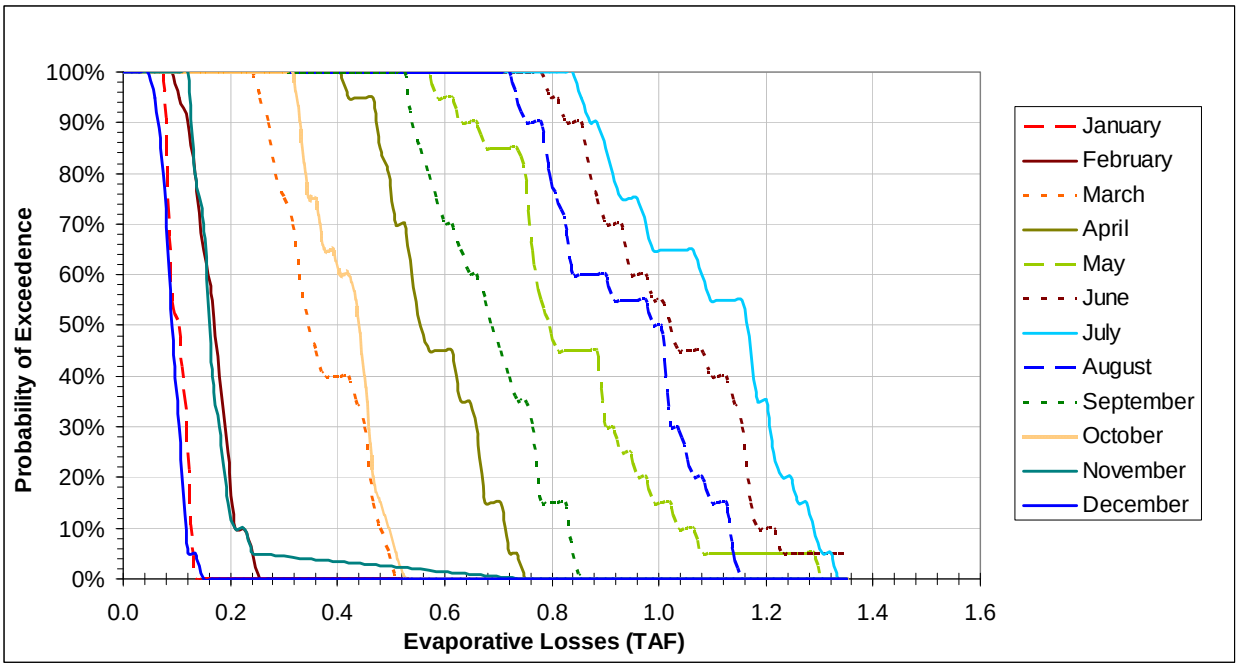

Figure 2: Probability of Exceedence for Evaporative Losses from Storage

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Appendix C: Recommended Projects

Appendix C: Recommended Projects

Based on the raw water infrastructure review conducted as part of this Technical Memorandum, the projects listed in Tables 1 through 3 are proposed for consideration in future planning initiatives. The aforementioned review included a summary of known infrastructure reliability concerns based on available reports and conversations with EBMUD engineers, therefore, the projects contained in these tables are a reflection of known issues.

Selected Projects

There are a number of projects that must be implemented in years to come in order to maintain reliability of the system, including routine maintenance and basic capital improvement projects. Not all of these projects are listed in this Appendix. Instead, recommended projects are those which:

1. Will have a significant impact on the reliability of the raw water system; or
2. Are necessary to reliably supply water to customers following an extreme event, such as a failure of one or more of the Mokelumne and/or Lafayette Aqueducts.

Also, projects to enhance Mokelumne Aqueduct No. 1 are not included. This pipeline is beyond its design service life and requires significant improvements to make it sufficiently reliable in extreme conditions such as floods or earthquakes. Mokelumne Aqueducts Nos. 2 and 3 are more reliable and offer an acceptable level of redundancy.

Prioritization

Recommended projects are categorized as High, Medium, or Low priority. These categories are defined as follows:

1. High priority projects are those projects necessary to mitigate an imminent or very credible risk to parts of the system for which there is no redundancy.
2. Medium priority projects are projects which are necessary to ensure the long-term reliably of system components. Risks are generally less severe than for “high priority” projects and/or there is redundancy in the system.
3. Low priority projects will improve reliability, however, risks do not present an immediate problem and/or there is redundancy in the system.

High Priority Projects

Table 1: High Priority Projects

Project	Status	Project Description	Report	Cost[1]
Reinforce river crossings, stockpile pipe and levee repair material, and install limited scour protection	Conceptual	This alternative would reduce the potential for levee failures at river crossings and reduce the potential for structural failure to Mokelumne Aqueduct No. 3 due to scour damage. It is desirable that this Aqueduct be reliable under all reasonable circumstances (if Aqueduct No. 3 fails, it is likely the other two Mokelumne Aqueducts will also fail, resulting in a total loss of raw water supply). EBMUD has a limited inventory of pipeline replacement materials. EBMUD's "Aqueduct Emergency Response and Recovery Plan" was developed to bring the aqueducts back into service, but does not address levee repairs that would be needed. By stockpiling pipe and levee repair material, emergency response and repair times will be reduced	Project is recommended in the District's October, 2007 *Strategy for Protecting the Aqueducts in the Delta* report	($83M in October, 2007)
Aqueduct cross-connections	Conceptual	Aqueduct Nos. 1 and 2 are more likely to be out of service following an earthquake, in which case Aqueduct No. 3 would be the sole conveyance pipeline across the delta since it is of modern construction and was recently strengthened. By 2040, pumping on Mokelumne Aqueduct No. 3 will not be able to meet demands even with 25% rationing. Cross connections between the aqueducts would allow water to by-pass segments of the pipelines that are out of service and increase capacity from 177 MGD to 246MGD. These cross connections will increase water supply rates following an emergency outage of Aqueduct Nos. 1 and 2 and, therefore, extend the duration of supply from terminal storage and Aqueduct No. 3. The points of connection would be at Brookside Road, in the east, and near Bixler Road in the west. NOTE: This alternative does not lower the probability of damage to the facilities, but reduces the consequence of damage and hence reduces total risk.	Project is recommended in the District's October, 2007 *Strategy for Protecting the Aqueducts in the Delta* report	($10M in October, 2007)
Preemptive planning and design	Conceptual	This alternative consists of conducting the necessary planning and pre-design of the "Tunnel Under Delta Project:" as described in the medium priority projects list. Planning activities include sizing and lay-out of facilities, land surveying or hydrographic profiling (sounding), and biological or cultural surveys to expedite California Environmental Quality Act documents. Pre-design activities would follow along the prior planning activities and include detailed records research and compilation of as-built information, geotechnical reconnaissance, testing, and reports, plus design of facilities up to a conceptual level. The anticipated benefit derived from this alternative is a shorter repair time after a flood or earthquake that damages the aqueducts or levees.	Project is recommended in the District's October, 2007 *Strategy for Protecting the Aqueducts in the Delta* report	($20M in October, 2007)
Increase Local Water Supplies	Conceptual	Severing of an Aqueduct No. 3 joint under river crossings is possible during an earthquake. The District has estimated this failure mode to take 8.1 months to repair. Current terminal storage cannot sustain customer demands for that long. Local terminal reservoir storage and/or supplemental local supplies should be pursued.	This technical memorandum, *Raw Water Infrastructure Reliability Review,* has identified current terminal storage as being insufficient to meet current and future demands.	Not Available
Lafayette Aqueduct No. 1 Isolation Valve or Slide Gate Installation	Planned	Lafayette Aqueduct No. 1 is vulnerable to failure. Isolating Aqueduct No. 1 is necessary in order to ensure a reliable water supply to Orinda WTP. Currently, the Orinda WTP must undergo a complete outage and a temporary dam constructed in the channel in order to isolate Lafayette No. 1. This project will increase operational capabilities following a raw water system failure.	2001 *Raw Water Infrastructure Strategic Plan* and 1997 *Raw Water Seismic Assessment*. This project is also identified in the Water Treatment and Transmission Master Plan to meet system reliability criteria.	$67K ($48K in 1996)

[1] Costs are given in 2007 Dollars, unless specified otherwise. Original estimated cost and date are indicated in parentheses. Costs have been adjusted using ENR CCI average annual cost index with January to September 2007 average CCI index of 9089.59 as the benchmark for current dollars.

Medium Priority Projects

Table 2: Medium Priority Projects

Project	Status	Project Description	Report	Cost[1]
Tunnel under Delta (for long-term reliability)	Conceptual	A tunnel below the Delta enclosing two pipelines would mitigate seismic, liquefaction, scour, subsidence, lateral spreading and flood risks which currently pose a threat to the Mokelumne Aqueducts. By providing a high degree of protection against all identified hazards, the tunnel would provide a long-term, reliable water supply for EBMUD's customers. The tunnel would be approximately 10.5 miles long, running parallel and approximately 80 feet beneath the existing aqueducts between Holt and Bixler. This option was considered the best of all alternatives studied because of its reliability against flood and seismic hazards, low life-cycle cost considering its reliability, and least risk of unacceptable service interruption. This project is considered a "medium" priority project as long as high-priority projects are implemented first and as soon as possible. With these high-priority projects in place, if the Mokelumne Aqueducts were to fail the district would likely be able to get No. 3 back online while supplying demands from local supplies High priority projects will minimize the extent of damage and reduce repair times. The District could then continue to supply water by pumping on No. 3. The cross-connect project will allow Mokelumne No. 3 to supply up to 246 MGD, thus giving the District time to construct the Tunnel Project (as long as this scenario occurs before demands exceed 246MGD). The "Preemptive Planning and Design" project would reduce the time that the District relies solely on No. 3 by reducing construction time. It is important to note that even with the high priority projects in place, the risk of levee failures which could cause failure of one or more of the aqueducts is expected to increase over the 2040 planning horizon. This is due to a number of factors including sea level rise, climate change, and island subsidence. At a point, delta risks become increasingly severe and demands exceedingly high that the tunnel project will become a high-priority in order to provide a reliable source of water.	Project is recommended in the District's October, 2007 *Strategy for Protecting the Aqueducts in the Delta* report	($445M - $950M in October, 2007)
Mokelumne Aqueduct No. 2 Lining Inspection and Replacement	Planned	Mokelumne Aqueduct No. 2 was inspected during construction of the CCWD intertie, corroborating lining damage. Future inspections are planned to further map lining damage. The lining should be replaced as necessary to ensure long-term reliability of this pipeline.	2001 *Raw Water Infrastructure Strategic Plan*	Not available
Mokelumne Aqueduct No. 3 Lining Replacement	Planned	Inspections of Mokelumne Aqueduct No. 3 have revealed areas of damaged mortar lining and the problem areas have since been thoroughly mapped. The cement mortar lining in the elevated portion of Mokelumne Aqueduct No. 3 should be replaced. This project is necessary to ensure the long-term reliability of Mokelumne Aqueduct No. 3.	2001 *Raw Water Infrastructure Strategic Plan*	$22M ($18M in 2001)
Moraga Aqueduct Anode Replacement	Planned	The Moraga Aqueduct is protected from corrosion with a series of magnesium anode stations. This project will replace the expired anodes, thereby extending the useful life of the transmission pipeline. This project is necessary to ensure long-term reliability of the Moraga Aqueduct.	2001 *Raw Water Infrastructure Strategic Plan*	$61K ($50K in 2001)
Briones Aqueduct Cathodic Projection	Planned	The Briones Aqueduct was not constructed with a cathodic protection (CP) system. This project consists of design and construction of a CP system. This project is necessary to ensure long-term reliability of the Briones Aqueduct	2001 *Raw Water Infrastructure Strategic Plan*	$122K ($100K in 2001)
Reactivate the Mokelumne No. 2 Surge Valve at Clyde Wasteway	Planned	Surge studies as part of the Folsom South Canal Connection project indicate that reactivation of the surge valve at Clyde Wasteway will reduce stress on the aqueduct in the event of a trip at Walnut Creek Pumping Plant No. 2. This project will help improve long-term reliability of Mokelumne Aqueduct No. 2.	2001 *Raw Water Infrastructure Strategic Plan*	$25K ($20K in 2001)

[1] Costs are given in 2007 Dollars, unless specified otherwise. Original estimated cost and date are indicated in parentheses. Costs have been adjusted using ENR CCI average annual cost index with January to September 2007 average CCI index of 9089.59 as the benchmark for current dollars.

Project	Status	Project Description	Report	Cost[1]
Lafayette Aqueduct No. 1 Liner Improvements	Unknown	Lafayette Aqueduct No. 1 is not expected to survive even a moderate earthquake on the Hayward or Concord Fault. Improvements are necessary to ensure its seismic and long-term reliability. Installation of a steel liner within the Lafayette Aqueduct No. 1 will virtually eliminate water lost to leakage, protect property from damage caused by flooding if it should rupture, and will improve the seismic integrity of this main transmission pipeline. NOTE: Lafayette Aqueduct No. 2 provides redundancy and is expected to be more reliable in an earthquake situation; therefore damage to No.1 may be tolerable.	2001 *Raw Water Infrastructure Strategic Plan*	$19.0M ($13.7M in 1996)
Lafayette No. 1 and No. 2 Crossover Valve Rearrangement at Walnut Creek East Portal	Conceptual	Neither Lafayette Aqueduct Nos. 1 nor 2 can be isolated without an extensive outage of the entire Mokelumne Aqueduct system. The proposed project will move one of the existing Walnut Creek East Portal cross-over valves to a line valve on the No. 1 Lafayette Aqueduct and install a new line valve in the Lafayette No. 2 Aqueduct at the East Portal. This project will increase operational capabilities following a raw water system failure.	2001 *Raw Water Infrastructure Strategic Plan*. This project is also identified in the Water Treatment and Transmission Master Plan to meet system reliability criteria.	Not available
Walnut Creek Pumping Plant (WCPP) Nos. 1 and 2 Electrical Upgrades	Conceptual	Electrical switch gears at WCPP Nos. 1 and 2 are outdated and may not be able to handle a full load trip. This equipment must be capable of handling significant current in the system when an electrical trip occurs, and if they cannot, there is risk of major electrical equipment failure. This project will increase the reliability of WCPP, especially after a seismic event.	2001 *Raw Water Infrastructure Strategic Plan* and conversations with Andy Enos (EBMUD)	Not Available

Low Priority Projects

Table 3: Low Priority Projects

Project	Status	Project Description	Report	Cost[1]
San Pablo Outlet Tower Seismic Upgrades	Conceptual	The San Pablo tower, which serves the San Pablo WTP via the San Tunnel, is expected to suffer significant damage during a major earthquake. This situation could coincide with a raw water outage, in which case water from Briones Reservoir would need to be conserved for 'East of the Hill' demands, leaving Orinda, the District's largest capacity plant, mostly idle. Areas typically served by Orinda would likely be served by San Pablo and Upper San Leandro (USL) Reservoirs via the Sobrante, USL, and San Pablo treatment plants. In this case, failure of the San Pablo tower would be a problem. This project proposes to install a steel jacket, fiber reinforced polymer jacket, or concrete encasement to reinforce the tower in the case of a severe seismic event. NOTE: Significant upgrades to the tower may not be effective considering the low reliability of the San Pablo Tunnel.	Jacobs Associates, 2005, developed retrofit schemes and cost estimates based on the Quest Structures, 2005, analysis results[2].	Steel: $1.5M (2006), FRP jacket, $2.3M (2006) RC: $1.3M (2006) (cost will be higher if cofferdam is constructed)
Pardee Tunnel Inspection	Conceptual	The Pardee Tunnel is known to leak and these leaks may be worsening over time. The tunnel was inspected in 1961, but its condition has not been assessed since. However, no active faults are located in the general vicinity and the tunnel is set in bedrock, so there is no immediate concern for its structural integrity. Nonetheless, this component of the raw water system has no redundancy and is therefore critical to conveying Mokelumne water to the District. The project would include an outage and inspection of the 2.2 mile Pardee Tunnel and subsequent evaluation of the condition of this structure.	2001 *Raw Water Infrastructure Strategic Plan*	$1.2M ($1M in 2001)
Mokelumne Aqueduct No. 2 and 3 Concrete Cylinder Pipe Evaluation.	Conceptual	There is a significant amount of leakage at Station 295+ and underneath the Camanche Reservoir, believed to be from Aqueduct Nos. 2 or 3. French drains have been installed at Station 295+ to mitigate erosion and ground settlement issues. These leaks are not believed to impair the structural integrity of the pipeline, but the rate of leakage is substantial (300,000 to 500,000 gallons per day or more) and long-term leakage could destabilize the slope in which the pipeline is embedded. This project will assess the nature and cause of leakage of certain sections of pipe in the Camanche Reservoir vicinity and evaluate the various mitigation and repair alternatives. It will require an outage and partial draining of each Aqueduct. Internal repairs will be made as time permits.	2001 *Raw Water Infrastructure Strategic Plan*	$122K conceptual estimate (100K in 2001)
Upgrade Mokelumne Aqueduct No. 3 Between Bixler and Walnut Creek	Conceptual	There is a known liquefaction potential between Bixler and Walnut Creek. This project will further increase the ability of Mokelumne Aqueduct No.3 to withstand liquefaction hazards west of the Delta. NOTE: This project is relatively expensive and should be compared with other alternatives for increasing reliability in the Delta and Concord Fault areas.	Issue and project identified in the 1997 *Raw Water Seismic Assessment.* Ranked as "lower priority" project	$140M ($101M in 1996)
Briones Center - Third Discharge Valve Installation	Planned	During a raw water outage, higher discharges from Briones may be necessary to meet demands. This project will replace the abandoned Briones No. 1 pump with a sleeve or polyjet valve to increase the safe discharge capability from the Briones Aqueduct to 200 MGD.	2001 *Raw Water Infrastructure Strategic Plan*	Not Available
Protect Mokelumne Aqueducts at Railroad Bridges	Planned	A structural evaluation of at-grade railroad bridges crossing the Mokelumne Aqueducts was recommended in the 2001 Raw Water Infrastructure Strategic Plan. One such crossing, at Station 1620, is the existing Burlington Northern railroad bridge which is believed to be structurally deficient. EBMUD has designed mitigation measures to protect the Aqueducts, but construction requires approval from the railroad. The design was submitted to the railroad, but they have been unresponsive[1]. Further action by the District should be taken to ensure aqueduct security.	2001 *Raw Water Infrastructure Strategic Plan*	Not Available

[1] Costs are given in 2007 Dollars, unless specified otherwise. Original estimated cost and date are indicated in parentheses. Costs have been adjusted using ENR CCI average annual cost index with January to September 2007 average CCI index of 9089.59 as the benchmark for current dollars.
[2] Evaluations Fact Sheet submitted to RMC by Chris Dodge on August 21st, 2007.
[1] Telephone conversation with Chris Dodge (EBMUD) on September 18th, 2007 and Andy Enos (EBMUD) on August 21st, 2007

Project	Status	Project Description	Report	Cost[1]
Bixler High Head Pumping Plant Fire Restoration and Low Head Pump Installation	Planned	Replace motor control centers for units 5 and 6 at Bixler High Head Pumping Plant that were destroyed in a battery fire in 1994. The low head pumps and motors were recently rebuilt but have not been installed. NOTE: This project will theoretically allow the Bixler facility to draw water from the Delta during a drought or raw water outage. However, it is possible that a failure of the Mokelumne Aqueducts in the Delta coincides with levee failures which can degrade Delta water quality to such a degree that the water cannot be treated by the District's treatment plants. In this case, the Bixler facility may not increase supply reliability.	2001 *Raw Water Infrastructure Strategic Plan* and Infrastructure Reliability Workshop, July 2007	Not Available
Anchor Electrical Equipment at Pumping Plants	Planned	This project will increase post-earthquake reliability by anchoring electrical equipment at Walnut Creek, Moraga, & Briones Pumping Plants	1997 *Raw Water Seismic Assessment*	$20K (13.9K in 1996)

Appendix D TM-2

Recycled Water Information in Support of WSMP 2040 – Existing Projects

——> copy to Leslie for Need-for-Water Analysis

EAST BAY MUNICIPAL UTILITY DISTRICT

TECHNICAL MEMORANDUM #1

DATE: March 12, 2007

TO: Linda H. Hu
Supervisor of the Office of Water Recycling

FROM: Heidi G. Oriol HGO
Associate Civil Engineer

SUBJECT: Recycled Water Information in Support of the Water Supply Management Plan (WSMP) 2040 – Existing Projects

INTRODUCTION

The East Bay Municipal Utility District's (EBMUD's) Office of Water Recycling has been asked to provide information on existing and planned recycled water projects to EBMUD's consultant. This information will be used to develop several alternatives for cost-effective expansion of recycled water within the EBMUD water service area. The effort is in support of EBMUD's Water Supply Management Plan (WSMP) 2040. The following information will be provided to the consultant:

- TM #1: Summary of existing recycled water projects, including existing treatment and distribution facilities, and recycled water customers and projects currently under construction.
- TM #2: Previously identified recycled water projects proposed for consideration in WSMP alternatives. Implementation of some of these projects are currently underway in the planning or design phases.
- TM #3: Updated potential recycled water customer information within the proposed project areas, including location, current potable water usage, and type of use.

As described in the WSMP 2040 consultant scope of work Task C.5, the consultant will use the information provided in this TM, and those following, to deliver to EBMUD a technical memorandum providing draft text of the recycled water analysis and feasibility, including recycled water project descriptions, mapping of recycled water projects, and tabular cost data, to include in the WSMP 2040 document.

This Technical Memorandum #1 provides information on EBMUD's existing recycled water projects, including projects that are currently in construction. This TM also provides a brief description of EBMUD's raw water projects. All supporting documentation is provided in the attachments. The documents and files listed in the

tables below apply to the overall water recycling program. Additional, project-specific, attachments and electronic files are described in the following sections of the TM.

Attachment	Title
1	2006 EBMUD Water Recycling Annual Report
2	TM1-Existing Projects CD (contains all electronic files referenced in TM #1)

Attachment 2 CD	
File Name	**Contents**
Water Recycling Program Yields CY 1999 to 2005.xls	Summary of recycled water demands for all existing customers up through 2005.

BACKGROUND

EBMUD has been recycling water for irrigation and in-plant processes at its main wastewater treatment plant since 1971. To centralize and expand water recycling, EBMUD's Board of Directors approved the Office of Water Recycling (OWR) within the Wastewater Department in 1988. The initial goal of the EBMUD recycled water program was to expedite recycled water projects in response to the second year of the drought that lasted from 1987 until 1992. Today, the goal of the program continues to be the planning, development, and implementation of recycled water projects throughout EBMUD's service area in order to reduce the demand on EBMUD's high-quality drinking water supplies.

Recognizing water recycling as an important method for stretching limited water supply resources, EBMUD's Board of Directors adopted the WSMP in 1993 with recycled water included as a key element in a diverse and balanced supply portfolio. The Board set a water recycling goal of 14 million gallons per day (MGD) by 2020. This amount of water would free enough of EBMUD's potable supply to meet the indoor and outdoor water needs of approximately 90,000 EBMUD customers and would help reduce the severity of water rationing that could be required in future droughts.

The following section describes EBMUD's existing recycled water projects, including two that are currently under construction. For each project, a description of the project facilities and a list of customers are provided. Customer contracts, which detail the terms of service, length of contract, and price of recycled water, are available upon request.

EXISTING RECYLCED WATER PROJECTS

San Ramon Valley Recycled Water Program – Phase 1

The San Ramon Valley Recycled Water Program (SRVRWP) is a multi-phase, joint regional program between EBMUD and DSRSD to serve recycled water to their customers within portions of the Blackhawk, Danville, Dublin, and San Ramon areas. In

1995, the two agencies formed a Joint Powers Authority called the DSRSD-EBMUD Recycled Water Authority (DERWA) to implement the program. DERWA's mission is to provide a safe, reliable, and consistent supply of recycled water, and to maximize the amount of recycled water delivered.

Project Summary	
Year in Service	2006
Wastewater Source	Dublin San Ramon Services District (DSRSD)
Treatment Level	Tertiary
Expected Average Annual Demand	0.7 mgd
Number of Customer Sites	42
Types of Use	Irrigation

DERWA and its member agencies developed policies regarding specific responsibilities for and identification of facilities and recycled water ownership. Since the project is located in both EBMUD and DSRSD water service areas, each of DERWA's member agencies is responsible for designing and constructing the recycled water infrastructure within each respective service area and marketing recycled water to its respective customers. DERWA's role is to design, build and operate the recycled water treatment facilities, as well as the main backbone transmission system.

The SRVRWP ultimately will provide 5.7 MGD of recycled water from the tertiary-treatment facility constructed at the DSRSD Wastewater Treatment Plant. DSRSD customers will receive up to 3.3 MGD, and EBMUD customers will receive up to 2.4 MGD. EBMUD's initial Phase 1 delivery of approximately 0.7 MGD of recycled water is being used for existing landscape irrigation customers located in San Ramon. Phase 1 recycled wter deliveries began in February 2006.

The SRVRWP has received state and federal funding. The State water Resources Control Board (SWRCB) approved a $5 million grant and a $24.8 million low-interest loan for the first phase of the SRVRP. The federal Water Resources Development Act of 1999 authorized $15 million for the SRVRWP. To date, $3.7 million has been appropriated for design and construction of Phase 2 components.

Current status of the SRVRWP include:

- Distribution and storage facilities -- Phase 1 distribution and transmission pipelines have been installed and two storage tanks have been completed in San Ramon (2003 to 2005).

- Treatment facilities -- DERWA completed the SRVRWP recycled water tertiary-treatment facilities (Recycled Water Factory) at DSRSD's wastewater treatment plant (WWTP). Treatment includes sand filtration and disinfection using ultra-violet light and chlorine.

- Retrofits -- EBMUD began working on customer retrofits in 2005 and first started supplying recycled water in February 2006. Currently, EBMUD has connected a total of 32 out of 42 Phase 1 sites to the recycled water system. The rest of the sites will be connected by early 2008.

In addition to the Phase 1 facilities that have been constructed, EBMUD has designed and constructed a portion of the facilities to serve SRVRWP Phase 3. These distribution facilities were constructed as part of the new construction of the Alamo Creak development. These facilities will be served with potable water until recycled water is available.

The documents and files listed in the table below provide additional information about Phase 1 of the SRVRWP. The CEQA documents are attached because the SRVRWP is a multi-phase project with plans to expand beyond the existing Phase 1. In addition to the DEIR and FEIR listed below, two Mitigated Negative Declarations (MNDs) have been completed for two DERWA reservoirs. Those MNDs are available upon request.

Attachment	Title
3	Draft Environmental Impact Report for the San Ramon Valley Recycled Water Program (August 1996)
4	Final Environmental Impact Report for the San Ramon Valley Recycled Water Program (December 1996)
5	San Ramon Valley Recycled Water Program Engineering Report (February 2005)
6	DERWA San Ramon Valley Recycled Water Program Facilities Location Map (July 2005)

Attachment 2 CD Folder Name: SRVRWP	
File Name	**Contents**
SRVRWP 2006-07 Water Use.xls	SRVRWP Phase 1 customers, account #s, location, in-service date, 2006 water usage
Agency Responsibility Map 081805.pdf	DERWA San Ramon Valley Recycled Water Program Facilities Location Map
SRVRWP Phase 1 Demands.xls	Expected demands for Phase 1 customers, shown by month

East Bayshore Recycled Water Project – Phase 1A

The East Bayshore Recycled Water Project (EBRWP) is a multi-phased project that, when completed, could provide an annual average of up to 2.5 MGD of recycled water from EBMUD's Main Wastewater Treatment Plant (MWWTP) in Oakland to portions of Alameda, Albany, Berkeley, Emeryville, and Oakland. Phase 1A of the EBRWP,

currently under construction, will serve approximately 0.7 mgd of recycled water for multiple uses including:

- Irrigation (e.g. parks, schools, greenbelts, and golf courses)
- Industrial/commercial (cooling towers, industrial processes, toilet flushing in a high-rise office building and at EBMUD's headquarters)
- Horseracing track spray down

Project Summary	
Year in Service	Expected May 2007
Wastewater Source	EBMUD Main Wastewater Treatment Plant (MMWTP)
Treatment Level	Tertiary
Expected Average Annual Demand	0.6 mgd
Number of Customer Sites	42
Types of Use	Irrigation, Industrial, Toilet Flushing

The Phase 1A project includes the construction of a new 2.88 MGD recycled water tertiary-treatment facility (RWTTF), a 1.5 MG storage tank, pump station, and transmission and distribution pipelines. The RWTTF and on-site storage tank at the MWWTP have been completed, and start-up testing has begun. Construction of the 4.4-mile long Oakland transmission pipeline has been completed along with a majority of the distribution pipeline in downtown Oakland. The remainder of the Oakland distribution pipeline will be completed by the end of 2007. Customer retrofit work began in February of 2007. Service to Phase 1A customers is expected to begin in May of 2007 and all customers for Phase 1A will be connected to the system by the end of 2008.

The State Water Resources Control Board (SWRCB) has approved a $4.4 million grant and a $20.1 million low-interest loan for this project. The documents and files listed in the table below provide additional information about Phase 1A of the EBRWP. The CEQA documents are attached because the EBRWP is a multi-phase project with plans to expand beyond Phase 1A. Note that EBMUD is still awaiting approval from DHS of the EBRWP Engineering Report.

Attachment	Title
7	Draft Environmental Impact Report for the East Bayshore Recycled Water Project on compact disk (January 2001)
8	Final Environmental Impact Report for the East Bayshore Recycled Water Project (May 2001)
9	East Bayshore Recycled Water Project Engineering Report (November 2006)
10	East Bayshore Recycled Water Project Fact Sheet

Attachment 2 CD Folder Name: EBRWP	
File Name	**Contents**
Subsequent MND.doc	EBRWP Subsequent Mitigated Negative Declaration (October 2002)
Subs MND Response to Comments.doc	EBRWP Subsequent MND Response to Comments (November 2002)
Subsequent MMRP.doc	EBRWP Subsequent Mitigation Monitoring and Reporting Plan (December 2002)
EBRWP Customer List 2-28-07.xls	EBRWP Phase 1A customers, tap #s, location, expected in-service date, expected water usage

San Leandro Water Reclamation Facility Expansion Project – Phases 1 and 2

In 1988, EBMUD constructed the San Leandro Water Reclamation Facility (SLWRF) to serve customers with treated wastewater produced by the City of San Leandro's Water Pollution Control Plant (WPCP). Dual media filtration followed by disinfection with sodium hypochlorite is used to meet Title 22 standards for restricted irrigation applications. The water recycling treatment facilities include a high head pumping station, chlorination and dechlorination facilities, and surge control systems.

Project Summary	
Year in Service	1988
Wastewater Source	City of San Leandro Water Pollution Control Plant (WPCP)
Treatment Level	Secondary
Average Annual Demand	0.4 mgd
Number of Customer Sites	3
Types of Use	Irrigation

The current SLWRF currently supplies approximately 400,000 gallons per day of secondary-treated recycled water for irrigation at the Metropolitan Golf Links (formerly known as Galbraith Golf Course) in Oakland, the Chuck Corica Golf Complex, and Harbor Bay Parkway in Alameda. The service numbers for the SLWRF customers are as follows:

Metropolitan Golf Links	5025394
Chuck Corica Golf Complex	5024221
Harbor Bay Parkway	5024226

The SLWRF Project was constructed in two phases, with the Metropolitan Golf Links (known at the time as Galbraith Golf Course) served in Phase I and the Chuck Corica Golf Complex and Harbor Bay Parkway added in Phase II. When examining customer demands, it should be noted that there was a period from 1995 to 2002 where the golf course was being rebuilt and had minimal to no water demand. Additionally, demands for the Metropolitan Golf Links have decreased since 2003 when the golf course

constructed a groundwater well. Metropolitan currently uses a combination of groundwater and recycled water for irrigation.

EBMUD received a SWRCB Loan for construction of the Phase I of the SLWRF in the amount of $121,875. Loan repayments are scheduled to end in 2009. The following document provides additional information about the existing SLWRF.

Attachment	Title
11	Chuck Corica Golf Complex, Metropolitan Golf Links, and Harbor Bay Parkway Map

North Richmond Water Reclamation Plant & Improvement Project

EBMUD's North Richmond Water Reclamation Plant (NRWRP) was completed in 1996 to produce recycled water for cooling tower use at the Chevron Refinery in Richmond. The Chevron Refinery is EBMUD's largest customer for both potable and recycled water, with a total water demand of about 12 MGD. The NRWRP uses secondary effluent from the West County Wastewater District (WCWD) and treats it further to meet the California Department of Health Services' tertiary treatment standards, as well as meeting specific water quality requirements for cooling towers.

Project Summary	
Year in Service	1996
Wastewater Source	West County Wastewater District (WCWD)
Treatment Level	Tertiary
Expected Average Annual Demand	4.0 mgd
Number of Customer Sites	1
Type of Use	Industrial Cooling

Chevron's historical recycled water demand from the NRWRP has been about 3 MGD. In 2005, EBMUD and Chevron determined that improvements were needed at EBMUD's NRWRP and at the Chevron Refinery in order to enhance Chevron's ability to increase the use of recycled water. During the summer of 2006, EBMUD commenced work at the NRWRP to improve the quality and reliability of the recycled water supplied to Chevron for cooling tower use. With the NRWRP and Chevron improvements in place, Chevron increased its cooling tower use of recycled water in January of 2007 and expects to use an average of 4 MGD.

EBMUD received a SWRCB loan for the NRWRP in the amount of $23 million. Loan repayments are scheduled to end in 2014. The service number for the recycled water service to the Chevron Cooling towers is **5033668.**

The following document provides additional information about the existing NRWRF.

Attachment	Title
12	Chevron Cooling Tower Map

Richmond Country Club Water Recycling Project

In 1984, EBMUD began operating its first golf course irrigation project at the Richmond Country Club using recycled water supplied from the WCWD wastewater treatment plant. The WCWD treatment plant provides pretreatment, primary clarification, activated sludge secondary treatment, and chlorination. It produces a secondary effluent which meets Title 22 standards for restricted golf course irrigation. Richmond Country Club uses an average of 0.18 MGD of recycled water to irrigate approximately 150 acres. EBMUD contracts out the maintenance and operation of the pump station to WCWD. The Richmond Country Club owns the pump station, transmission pipeline, and a 3-acre storage pond on the site.

Project Summary	
Year in Service	1984
Wastewater Source	WCWD
Treatment Level	Secondary
Average Annual Demand	0.18 mgd
Number of Customer Sites	1
Type of Use	Irrigation

The Richmond Country Club is the only EBMUD recycled water customer that does not have an EBMUD billing meter. WCWD tracks water usage and costs for the Country Club and invoices EBMUD quarterly. EBMUD, in turn, invoices the Country Club for those costs plus an administration fee. It is important to note that the Richmond Country Club recycled water usage **will not** appear in any queries of EBMUD's customer or water consumption databases. The Country Club's recent historical water use is provided in the Excel file, *Water Recycling Program Yields CY 1999 to 2005.xls*, described on page 1 of this TM.

EBMUD's proposed Richmond Advanced Recycled Expansion (RARE) Water Project may necessitate a relocation of the recycled water service, or a return to potable water service, for the Richmond Country Club. However, the RARE Water Project is supply limited during the summer and, if the Richmond Country Club were returned to potable water service, any recycled water demand lost would likely be replaced by Chevron's demand. The RARE Water Project will be described in more detail in TM #2.

The following document provides additional information about the existing Richmond Country Club Project.

Attachment	Title
13	Richmond Golf Course and Country Club Irrigation Map

Recycled Water Use at EBMUD's MWWTP

Recycled water is also used at EBMUD's MWWTP (also known as SD-1) for a variety of uses, including process water and landscape irrigation. This additional use for recycled water reduces the amount of wastewater discharged to San Francisco Bay.

Project Summary	
Year in Service	1971
Wastewater Source	WCWD
Treatment Level	Secondary
Average Annual Demand	5.9 mgd
Number of Customer Sites	1
Type of Use	Industrial, Irrigation

The following file provides additional information about the existing use of recycled water at EBMUD's MWWTP.

Attachment 2 CD Folder Name: SD-1	
File Name	**Contents**
SD-1 2W & 3W Historical Use.xls	Metered and Estimated Use of Recycled Water at MWWTP from 2002 through 2006.

EBMUD's Raw Water Projects

In addition to recycled water service, EBMUD currently provides raw water service to three customers:

Customer	Location	Service Number
Sunset View Cemetery	El Cerrito	5041080
Lake Chabot Golf Course	Oakland	5054716
Willow Park Golf Course	Castro Valley	5024048

These three customers use untreated water for irrigation. This water can be a combination of local water and water delivered from the Pardee system. Sunset View Cemetery receives raw water from a connection to the El Sobrante Filter Plant. Lake Chabot Golf Course and Willow Park Golf Course both receive raw water from EBMUD's Lake Chabot. The average annual demand for these three customers has been

approximately 0.25 mgd. EBMUD does not currently propose expanding the use of raw water.

In 2004, a new revenue meter was installed for the Lake Chabot Golf Course. The new meter is located closer to the storage tank. This new meter prompted the creation of a new service number (5054716). Therefore, EBMUD's consumption database will only carry data for this service number from 2004 to the present. Consumption data prior to 2004 will be located under the previous service number, which was 5024397.

The following documents provide additional information about EBMUD's existing raw water customers.

Attachment	Title
14	Chabot Golf Course Irrigation Map
15	Willow Park Golf Course Irrigation Map

SUMMARY

EBMUD's existing recycled water projects, combined with those currently in construction, will serve approximately 6 mgd of recycled water to more than 85 customers by the end of 2008. Additionally, EBMUD further conserves treated water by serving certain customers with raw water and reduces wastewater discharges to the Bay by using recycled water for industrial and irrigation use at the MWWTP.

If any additional information is needed to perform the duties listed in the WSMP 2040 scope of work, the consultant may contact Heidi Oriol, Associate Civil Engineer, at (510)287-0779 or horiol@ebmud.com

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Attachments

Appendix D TM-3

Recycled Water Information in Support of WSMP 2040 – Proposed Projects

061-04

EAST BAY MUNICIPAL UTILITY DISTRICT

TECHNICAL MEMORANDUM #2

DATE: April 3, 2007

TO: Linda H. Hu
Supervisor of the Office of Water Recycling

FROM: Heidi G. Oriol HGO
Associate Civil Engineer

SUBJECT: Recycled Water Information in Support of the Water Supply Management Plan (WSMP) 2040 – Proposed Projects

INTRODUCTION

The East Bay Municipal Utility District's (EBMUD's) Office of Water Recycling has been asked to provide information on existing and planned recycled water projects to EBMUD's consultant. This information will be used to develop several alternatives for cost-effective expansion of recycled water within the EBMUD water service area. The effort is in support of EBMUD's Water Supply Management Plan (WSMP) 2040. The following information will be provided to the consultant:

- TM #1: Summary of existing recycled water projects, including existing treatment and distribution facilities, and recycled water customers and projects currently under construction.
- TM #2: Previously identified recycled water projects proposed for consideration in WSMP alternatives. Implementation of some of these projects is currently underway in the planning or design phases.
- TM #3: Updated potential recycled water customer information within the proposed project areas, including location, estimated recycled water usage, and type of use.

As described in the WSMP 2040 consultant scope of work Task C.5, the consultant will use the information provided in the TMs to deliver to EBMUD a technical memorandum providing draft text of the recycled water analysis and feasibility, including recycled water project descriptions, mapping of recycled water projects, and tabular cost data, to include in the WSMP 2040 document.

This Technical Memorandum #2 provides information on EBMUD's proposed recycled water projects. All supporting documentation is provided in the attachments. The attachments listed in the table below provide information on EBMUD's recycled water program. The CD listed in the table contains electronic files pertaining to the proposed

projects. Project-specific attachments and electronic files are described in the following sections of the TM.

Attachment	Title
1	TM2-Proposed Projects CD (contains all electronic files referenced in TM #2)
2	EBMUD Policy 8.01: Non-Potable Water
3	Section 30 of the Regulations Governing Water Service to Customers of EBMUD: Nonpotable Water Service

BACKGROUND

Recognizing water recycling as an important method for stretching limited water supply resources, EBMUD's Board of Directors adopted the WSMP in 1993 with recycled water included as a key element in a diverse and balanced supply portfolio. The water recycling alternatives considered in the 1993 WSMP analysis a wide range of projects combined into primary components that would increase water recycling by 8 to 37 mgd. After comparing all water supply options, the Board set a water recycling goal of a total of 14 mgd by 2020. This amount of water would free enough of EBMUD's potable supply to meet the indoor and outdoor water needs of approximately 90,000 EBMUD customers and would help reduce the severity of water rationing that could be required in future droughts.

EBMUD's most recent Urban Water Management Plan (UWMP), completed in 2005, includes recycled water as a significant portion of EBMUD's water supply. EBMUD's recycled water projects, including all existing projects, projects under construction, and proposed projects in planning, are summarized on Table 5-4, page 5-6 of EBMUD's UWMP 2005. The UWMP estimates a recycled water demand of 14.5 mgd in the year 2030.

The UWMP also contains valuable information on the wastewater supplies within EBMUD's water service area. Figure 5-1 shows the municipal wastewater agencies in the area and Table 5-3 lists the projected flows for each of those agencies through the year 2030. To date, EBMUD has proposed recycled water projects which would utilize flows from many, but not all of these wastewater agencies. In addition to municipal wastewater supplies, the consultant also should consider the potential for supplying recycled water projects with industrial wastewater currently discharged to the Bay. This topic is discussed further under the descriptions of the proposed North Richmond Water Reclamation Plant Expansion Project and the RARE Water Project.

EBMUD's Policy 8.01 and Regulation 30 (listed above) are included as attachments in this TM. EBMUD's Policy 8.01 requires that customers of EBMUD use non-potable water, including recycled water, for non-domestic purposes when it is of adequate quality and quantity, available at reasonable cost, not detrimental to public health, and not injurious to plant life, fish and wildlife. In furtherance of Policy 8.01, EBMUD's Regulation 30 identifies the types of water uses for which non-potable water is

appropriate; the factors considered in determining the feasibility of non-potable water service; and the procedure for notification to applicants and customers that non-potable water use is required. It is requested that the consultant evaluate these documents and recommend any beneficial changes.

A major incentive for customers to use recycled water is the reliability of the supply during a drought. In addition, EBMUD provides a number of incentives to encourage the use recycled water by customers within EBMUD's service area. These are primarily in the form of subsidized costs and reduced rates for recycled water. Often these incentives are needed to achieve the projected quantity of recycled water use.

- Subsidized costs – To help promote the use of recycled water, it is EBMUD's policy to fund cost-effective site retrofits required to accommodate the use of recycled water for existing customers. EBMUD also funds the training of customers'staff in the proper use of recycled water, and provides technical support for customers who receive recycled water. However, EBMUD requires future new developments to pay for the facilities to deliver recycled water to the use site.

- Connection fee discounts – The connection fees charged to new customers for recycled water are lower than those charged to new customers who use potable water. This is reflective of the fact that, unlike EBMUD's existing potable water distribution systems, the new recycled water distribution systems do not require upgrades and seismic retrofits.

- Rate discounts – Current policy is to offer new recycled water customers a 20% volumetric rate discount for the recycled water as compared to the adopted potable water rate. Some existing customers have funded retrofits in the past and have individual contracts with EBMUD that set a rate lower than the potable water rate. In certain cases, such as for large, specialized industrial water projects, EBMUD may continue to have individually-negotiated customer contracts that set a water rate that differs from the standard recycled water rate.

The sections below describe EBMUD's previously proposed recycled water projects. These projects have been through a variety of stages of planning and design at various points in time. Some projects have more information available than others. For each project, a description of the proposed project facilities is provided, along with any useful planning work that has been done in the past. In addition to developing new ideas for projects, EBMUD would like the consultant to consider the following potential water recycling projects:

Expansion of Existing Recycled Water Projects

- San Ramon Valley Recycled Water Program – Phases 2, 3, and 4
- East Bayshore Recycled Water Project – Phases 1A and 2
- San Leandro Water Reclamation Facility Project – Phase 3
- North Richmond Water Reclamation Plant Expansion Project

Independent Recycled Water Projects

- Richmond Advanced Recycled Expansion Water Project
- ConocoPhillips Recycled Water Projects
- Diablo Valley Recycled Water Project
- Satellite Recycled Water Treatment Plant Project

POTENTIAL EXPANSION OF EXISTING RECYLCED WATER PROJECTS

San Ramon Valley Recycled Water Program – Phases 2, 3, and 4

As described in TM #1, the SRVRWP is organized into three distinct portions: DERWA facilities, which support the treatment and distribution of water to both member agencies; EBMUD facilities; and DSRSD facilities.

The DERWA/SRVRWP ultimately will provide 5.7 mgd of recycled water from the tertiary-treatment facility constructed at the DSRSD Wastewater Treatment Plant. DSRSD customers will receive up to 3.3 mgd, and EBMUD customers will receive up to 2.4 mgd. EBMUD's Phase 1 will deliver approximately 0.7 mgd to existing landscape irrigation customers in San Ramon (discussed in TM #1). EBMUD Phases 2, 3, and 4 will provide additional supplies up to 1.7 mgd of recycled water to customers located in parts of Blackhawk, Danville, and San Ramon. Recycled water uses will include golf courses, parks, common planted areas within homeowner associations, roadway medians and greenbelts, schools and office complexes.

DERWA/SRVRWP Phase 2 includes Pump Station R200A and Pipeline IH. Pipeline IH is in Bollinger Canyon Road from the Iron Horse Trail to the Bridges Golf Course. These two components complete the DERWA backbone system and are jointly owned by EBMUD and DSRSD. Design of these components was completed in 2006. Because funding has been secured, DERWA/SRVRWP Phase 2 can be advertised and will likely start construction in the next few months. Construction should continue through spring 2008.

EBMUD succeeded in securing an FY07 federal appropriation for $1.5 million (made to the U.S. Army Corps of Engineers' budget) for construction of the DERWA/SRVRWP Phase 2 Project. The federal appropriation comes under the original $15 million project authorization contained in the Water Resources Development Act (WRDA) of 1999, Section 219. Since the first appropriation under WRDA in FY02, federal funding for the

DERWA/SRVRWP Phase 2 Project has totaled $5.2 million (including the FY07 appropriation). EBMUD is currently working to secure another $4.8 million for FY08.

The EBMUD phases of the SRVRWP are solely owned by EBMUD. A significant amount of planning has gone into the future phases of the SRVRWP. It is unlikely that EBMUD would drastically change the planned facilities for the project. However, the new customer query (to be included in TM #3) may show that some pipelines and customers should be updated.

Phase 2 includes distribution pipelines throughout Bishop Ranch and along Bollinger Canyon Road. The schedule for EBMUD Phase 2 and future phases is currently dependent on funding; EBMUD does not plan to proceed with future phases unless outside funding is secured.

Phase 3 includes Pump Station R3000, Reservoir R3000, and distribution pipelines that serve customers off of Dougherty Road, Crow Canyon Road, and Camino Tassajara. Reservoir R3000 has been designed and will likely go out to bid in 2007. A portion of the pipeline in Camino Tassajara and within the Alamo Creek development has been constructed. Phase 4 will bring recycled water to Blackhawk and includes Pump Station R4000 and distribution pipelines.

The SRVRWP may be eligible for additional grant and low-interest funding for EBMUD Phases 2, 3, and 4 if the program meets the SWRCB funding and schedule requirements.

When considering the SRVRWP in comparison to other potential EBMUD recycled water projects, it is important to note that the wastewater supply from DSRSD is limited. The DERWA supply agreement defines recycled water service to the two member agencies as first-come, first-served. This means that the availability of water is dependent upon how quickly EBMUD expands its distribution system versus how quickly DSRSD develops its program. Also, recall that a portion of the facilities to serve Alamo Creek in Phase 3 have already been constructed. The Alamo Creek Development has a water budget to maintain, which requires the use of recycled water.

The following documents and files provide additional information about Phases 2, 3, and 4 of the SRVRWP. In addition, please refer to the CEQA documents for the SRVRWP that were submitted as part of TM #1.

Attachment	Title
4	CD: Draft Mitigated Negative Declaration for DERWA's SRVRWP Tank 1 Project
5	DERWA San Ramon Valley Recycled Water Program Facilities Location Map (with EBMUD's phases identified)
6	SRVRWP Facilities Plan (July 1996)

Attachment 1 CD Folder: SRVRWP	
File Name	**Contents**
Phases 2_3_4 Cost Projections Oct 06.xls	Cost estimates for future phases of SRVRWP
SRV Demand Projection revised 02-06-06.xls	Customers proposed for all phases of SRVRWP

East Bayshore Recycled Water Project – Phases 1B and 2

The EBRWP, anticipated to provide an average supply of up to 2.5 mgd of recycled water, is proposed to be implemented in multiple phases. Phase 1A, now under construction, will provide an average supply of 0.6 mgd. The remaining phases -- Phases 1B and 2 could provide additional average supplies of up to 1.9 mgd.

Construction of the new 2.88 mgd recycled water treatment facility for Phase 1A has been completed. Phase 1B does not require any increase of the treatment capacity and is essentially an expansion of the distribution system to Alameda, Oakland, and the surrounding areas. The scope of the Phase 2 project is to be determined. The 2000 EBRWP Facilities Plan is included in the attachments (described below), and provides a description of the facilities and customers that were planned for Phases 1B and 2. Please note that this document is now somewhat out-of-date and the Phase 1 description is inaccurate. The Phase 1 information provided in TM #1 (customers and pipeline alignments) is the correct information.

One potential recycled water use site identified for Phase 2 is the redevelopment of the former Naval Station Treasure Island (TI). The San Francisco Public Utility Commission (SFPUC) treats wastewater from the existing Treasure Island and Yerba Buena development on-site at the existing treatment plant located at the northeastern corner of TI and will continue to do so until the proposed Treasure Island Community Development (TICD) and new capacity is online. The SFPUC has no off-island treatment capacity, and it does not have plans to build the infrastructure necessary to support off-island treatment.

In 2004, Caltrans included three pipelines (potable, sanitary sewer, and "reclaimed water") as part of the design of the Bay Bridge Eastern Span Seismic Safety Project (ESSSP). EBMUD proposed to treat the wastewater from the TICD at EBMUD's Main Wastewater Treatment Plant (MWWTP) in Oakland, and to provide recycled water from the EBRWP facility. TICD contracted Brown and Caldwell to evaluate planning level wastewater and recycled water options for the proposed redevelopment of TI, including alternatives combining on-island and off-island treatment for wastewater and recycled water. Currently, Caltrans is installing a 6-inch diameter recycled water pipeline on the bridge as part of the ESSSP. The completion date is unknown at this time. The consultant should use the Brown and Caldwell report as reference, update wastewater and recycled water demands, based on the latest TICD plans, and determine the feasibility

and cost-effectiveness of serving TICD in Phase 2 of the EBRWP. Information on other identified potential future customers that could be served by EBRWP Phases 1B or 2 will be included as part of TM #3.

The EBRWP may be eligible for additional grant and low-interest loan funding for Phases 1B and 2 if the project meets the SWRCB funding and schedule requirements.

The following documents provide additional information about the future phases of the EBRWP. In addition, please refer to the CEQA documents for the EBRWP that were submitted as part of TM #1.

Attachment	Title
7	Facilities Plan for the East Bayshore Recycled Water Project (December 2000)
8	Brown and Caldwell – Evaluation of Wastewater and Recycled Water Treatment Alternatives for the Proposed Treasure Island Development, Revised Draft (October 2004)

San Leandro Water Reclamation Facility Expansion Project – Phase 3

The current San Leandro Water Reclamation Facility (SLWRF) provides approximately 0.4 mgd of disinfected secondary recycled water produced by the City of San Leandro's Water Pollution Control Plant (WPCP) for irrigation at the Metropolitan Golf Links in Oakland, the Chuck Corica Golf Complex, and Harbor Bay Parkway in Alameda. The existing project was built in two phases, and EBMUD has proposed expanding recycled water delivery with a third phase. It has been proposed to break Phase 3 into three sub phases:

- Phase 3A – add service to Oakland Airport irrigation meters
- Phase 3B – secondary-treated recycled water to multiple customers
- Phase 3C – additional customers plus upgraded tertiary-treated recycled water for all customers

Once recent data for customers in the area have been evaluated, this three-phase approach should be reassessed. In addition to EBMUD's project, the City of San Leandro also may potentially use recycled water to irrigate its public areas within EBMUD's water service areas. If successfully implemented, the City's recycled water project will offset approximately 0.1 mgd of EBMUD's potable water, which will help EBMUD reach its recycling goal. The consultant should reference the City's Recycled Water Facilities Planning Report and consult with the City to find out if they are making any progress on their recycled water project.

The following documents and files provide additional information about future phases of the SLWRF. Sufficient effluent supply is a concern for this project, particularly if the

City proceeds with its project. The documents and files below contain information on the availability of secondary effluent.

Attachment	Title
9	Draft Final Recycled Water Facilities Planning Report for City of San Leandro (July 2004)

Attachment 1 CD Folder: SLWRF	
File Name	**Contents**
SLWRF Potential Phase III Customers_051304.xls	Proposed customers for phases 3A, 3B, and 3C, including consumption info and cost estimates
SL Aug 03 Pumping Patterns.xls	Supply and demand data for existing and proposed recycled water projects using San Leandro effluent
SL largemap427.prt.pdf	Map of proposed pipelines and customers for future phases of SLWRF Expansion Project

North Richmond Water Reclamation Plant Expansion Project

As described in TM #1, EBMUD's North Richmond Water Reclamation Plant (NRWRP) has been providing recycled water for use in three cooling towers at Chevron's Richmond Refinery since 1996. The NRWRP uses secondary effluent from the West County Wastewater District (WCWD) and treats it further to meet the California Department of Health Services' tertiary treatment standards, as well as meeting specific water quality requirements for cooling towers. EBMUD currently supplies the Chevron cooling towers with approximately 4 mgd of recycled water.

In the past, EBMUD has considered possible expansion of the NRWRP to serve a fourth cooling tower at the Chevron Refinery and/or commercial or industrial customers in the area surrounding the NRWRP. Some of the analysis of the potential for future expansion of the NRWRP is included in the attachments described in this section (below). It is estimated that the fourth cooling tower at the refinery could use 1 mgd of recycled water.

Currently, EBMUD is proposing to provide high-purity recycled water for the boiler feedwater system at Chevron's Richmond Refinery through the RARE Water Project (described further in sections below). If implemented, this project would utilize all of the remaining secondary effluent from WCWD during dry weather. However, WCWD's flows are expected to increase in the future. Refer to EBMUD UWMP 2005 for projections of wastewater flows within the EBMUD water service area through the year 2030. Additionally, it is possible that, in the future, an alternate source (such as wastewater from Chevron's effluent treatment system or the City of Richmond) might provide a potential supply for the RARE Water Project. In that case, more WCWD flow would be available to supply a NRWRP expansion.

At this point, it is still uncertain if the RARE Water Project will remain in EBMUD's FY 08-12 budget. If the RARE Water Project is removed from the budget, it may not be possible to implement the project in the future. In that case, additional WCWD wastewater supply would be available for a NRWRP expansion to serve either a fourth cooling tower at the Chevron Refinery or local irrigation customers. The budget status should be known by the end of May 2007. EBMUD will inform the consultant of the status of the RARE Water Project as soon as it is known.

In either case, the consultant will need to look at the possibility of a NRWRP expansion project. The fate of the RARE Water Project will affect how much wastewater supply will be available from WCWD for such a project.

The following documents provide additional information about the NRWRP Expansion Project. The Environmental Impact Report for the NRWRP Project is not included as an attachment because the EIR covered the existing project only, not an expansion. Any expansion would require additional CEQA documentation. The EIR for the NRWRP was completed in 1989 and is available upon request. Some additional information about a possible expansion to serve the fourth cooling tower may be available upon request. The consultant should discuss this option further with EBMUD before developing it as an alternative.

Attachment	Title
10	Black & Veatch Technical Memorandum No. 1 – Customer Assessment for RARE Water Project Feasibility Study
11	Draft Technical Memo: NRWRP Recycled Water Service Area Expansion Study (March 2005)

POTENTIAL INDEPENDENT RECYLCED WATER PROJECTS

Richmond Advanced Recycled Expansion Water Project

Chevron's Richmond Refinery is EBMUD's largest customer for both potable and recycled water, with a total water need of about 12 mgd. As part of Chevron's refinery processes, potable water is further treated by Chevron to a higher level of purity in order to be used in its steam boilers. EBMUD proposes the RARE Water Project in order to both offset potable water demand and meet the water quality requirements of the customer.

The proposed RARE Water Project would consist of construction and operation of an advanced recycled water treatment plant within the Chevron Refinery property in Richmond. The new advanced water recycling facilities in the treatment plant would produce the high-purity recycled water using microfiltration and reverse osmosis that remove minerals and other constituents to prevent scaling and foaming problems in boilers.

The source water for the RARE Water Treatment Plant (WTP) would be the secondary effluent from the WCWD water pollution control plant. The RARE Water Project would generate recycled water that would be used as boiler makeup water in the Chevron Refinery. The process concentrate produced by the RARE water treatment process would be routed to the Chevron effluent treatment system or blended with Chevron's treated effluent and discharged through its existing outfall into San Pablo Bay. The RARE WTP would be owned and operated by EBMUD in parallel with its existing NRWRP.

The initial phase of the RARE Water Project is expected to be in operation by the end of 2009, and would be sized to deliver 3.5 mgd of recycled water to the Chevron boiler feed system. During dry weather the RARE Water Project, in conjunction with the existing NRWRP, would use all of the available supply from WCWD and may require supplementation with potable water during peak usage. However, all of the facilities for the RARE Water Project will be designed to facilitate an expansion to 4 mgd if future source water supply is identified in the future. Chevron's total demand for boiler feed water is estimated at 4.6 mgd. It may be possible to serve the total demand in the future using other available wastewater supplies. It is important to note that the RO treatment process use by the RARE WTP will recover approximately 85% of the water supplied to the system. Therefore, approximately 5.4 mgd of supply would be required to produce 4.6 mgd of high-purity recycled water.

The Draft EIR for the RARE Water project was circulated for public review comments from February 2nd to March 19th, 2007. The Final EIR is expected to be certified by the EBMUD Board of Directors on May 22, 2007. A feasibility study was completed for the RARE Water Project in 2005 and the project is currently approaching 30% design. Therefore, the consultant is not required to develop a proposed project layout or cost estimate. The information prepared by EBMUD should be included in the Draft WSMP text. The preliminary design report (PDR) summary will be available in mid April. The full PDR, including a thorough cost estimate, will be provided in May 2007.

As mentioned in TM #1, implementation of the RARE Water Project may necessitate a relocation of the recycled water service, or a return to potable water service, for the Richmond Country Club. However, the RARE Water Project is supply limited during the summer and, if the Richmond Country Club were returned to potable water service, any recycled water demand lost would likely be replaced by Chevron's demand.

The following document provides additional information about the RARE Water Project.

Attachment	Title
12	Richmond Advanced Recycled Expansion Water Project Draft Environmental Impact Report (January 2007)

ConocoPhillips Recycled Water Project

EBMUD is currently investigating the potential for a recycled water project at the ConocoPhillips (COP) Refinery in Rodeo. EBMUD and COP entered into a Memorandum of Understanding to evaluate the feasibility of developing the ConocoPhillips Recycled Water Project (COPRWP). The proposed project would deliver up to 2,400 gpm (3.46 mgd) of high-purity recycled water to replace potable water use at the COP Refinery in three phases:

- Phase 1A -- up to 1,200 gpm (1.73 mgd) to feedwater system for boilers
- Phase 1B -- up to 600 gpm (0.86 mgd) to half of the cooling towers
- Phase 2 -- up to 600 gpm (0.86 mgd) to the remaining half of the cooling towers

Several potential supply sources for the COPRWP include the Pinole-Hercules WWTP, the Rodeo WWTP, and/or the COP WWTP. EBMUD and COP have completed the first phase of the technical study, with results that indicate the project is feasible. The parties, in cooperation with the wastewater supply agencies, are now proceeding with the second phase of the technical study. The results of the study, along with a preliminary cost estimate, will be provided to the WSMP consultant once it is available. It is expected the cost estimate data will be available by the end of June 2007.

The proposed COPRWP would utilize all available dry weather wastewater flows from the supply treatment plants. If the consultant feels it would be beneficial to analyze other potential customers in the project area, the consultant should discuss this first with EBMUD.

Diablo Valley Recycled Water Project (Formerly Known As Lamorinda Recycled Water Project)

EBMUD has considered several variations of a project in the Lamorinda, Walnut Creek, and Pleasant Hill areas. All variations have proposed a partnership with the Central Contra Costa Sanitary District (CCCSD). The existing CCCSD recycled water treatment and distribution system would be extended to serve customers in the EBMUD service area. The original Lamorinda Recycled Water Project proposed an extensive distribution system with customers throughout Pleasant Hill, Walnut Creek, Lafayette, Moraga, and Orinda. The two large "anchor" customers were to be proposed golf courses in Moraga and Orinda. Additionally, an abandoned Shell high-pressure fuel line (purchased by CCCSD) was planned to be used as the major transmission line for the project. Since the time that the original project facilities plan was completed, both golf courses have been eliminated and the Shell pipeline has aged significantly.

In 2004, a new market assessment and conceptual project layout were prepared. At that point, it was determined that a project to serve wide reaching areas of Lafayette, Moraga, and Orinda is highly unlikely to be cost-effective. Several new alternatives were considered, all centralized around CCCSD's existing recycled water distribution system, which approaches fairly close to EBMUD's water service boundary. These alternatives

included customers in Pleasant Hill, Walnut Creek, and Lafayette. For this reason, the project name has been changed, for the time being, to the Diablo Valley Recycled Water Project (DVRWP).

In the past year, CCCSD has begun looking for a buyer for the majority of the Shell Pipeline. It should be assumed for the purposes of the WSMP analysis that the Shell Pipeline will not be available and that all distribution pipelines required for the project will be new construction.

Because the source of water for this project would be tertiary-treated water from the CCCSD, the potential cost of that water must be considered for the project. Any required improvements to the treatment plant also should be considered. The consultant should coordinate with CCCSD to determine potential costs for recycled water and the amount of supply available for EBMUD customers.

Based on the research performed in 2004, the recent customer query for the WSMP analysis has been limited to the areas near the northern boundary of EBMUD's water service area (closest to CCCSD's recycled water system). The following file provides additional information about the potential DVRWP. Additional information about the previously planned Lamorinda Recycled Water Project (including the 1998 EIR and Facilities Plan) is available upon request.

Attachment 1 CD Folder: DVRWP	
File Name	**Contents**
Lamorinda Cost Estimate Summary August 2004.xls	Customers and cost estimates for several variations of projects in the Diablo Valley.

Satellite Recycled Water Treatment Plant Project

EBMUD has planned several centralized recycled water projects throughout its service area. However, some of EBMUD's largest water users are located in areas where it would not be cost effective to reach with an extended distribution system from an existing wastewater treatment plant.

Satellite recycled water treatment plants (SRWTP) could be a cost effective way to serve some of these large water users without the need for extensive distribution systems. A SRWTP would take raw sewage from a wastewater collection pipeline and treat it to a tertiary level at the location of use. This could be a cost effective way to serve remotely located medium to large water users because the costly infrastructure required to transport water from the source to remotely located customers would be avoided.

In January 2005, EBMUD has completed a study to determine the feasibility of constructing a SRWTP. The feasibility study explored technologies available for satellite treatment systems. The study also identified three potential customers for a SRWTP Demonstration Project and included a cost-benefit analysis. For an initial project,

EBMUD considered only customers within the EBMUD wastewater service area so as to remove any institutional barriers that might arise from a project in another wastewater service area. The potential customers identified included Mountain View Cemetery (1 site), University of California Berkeley (3 sites), and Sequoyah Country Club (1 site). Recycled water maximum day demands at these five customer sites range from 41,000 gpd to 644,000 gpd.

A membrane bioreactor was recommended as the preferred treatment technology for a SRWTP. Based on the study results, a small-scale membrane bioreactor demonstration facility was recommended to be installed at the University of California Berkeley campus. A small-scale project would provide the opportunity to gain experience and knowledge with membrane bioreactors and SRWTPs before embarking on a large-scale SRWTP project.

After the Feasibility Study was completed, planning work continued with UC Berkeley. While the campus had many irrigation meters with sufficient demand, finding a suitable location for a water treatment plant proved quite difficult. After considering several locations, only one was approved by UC for the project. After further investigation, it was determined that this location had unexpected cost and construction implications due to upstream discharges of hot water from the campus Central Heating Plant. In February 2006, EBMUD and UC Berkeley jointly decided to stop pursuing the SRWTP Demonstration Project.

The following document provides additional information about potential SRWTP Projects. TM #3 will provide a list of proposed future developments that may provide opportunities for a SRWTP.

Attachment	Title
13	Satellite Recycled Water Treatment Plant Feasibility Study (January 2005)

SUMMARY

EBMUD has explored numerous options for expanding its water recycling program to offset the use of its limited, high-quality drinking water supply. The WSMP 2040 provides an opportunity to reexamine the opportunities for recycled water within EBMUD's service area. EBMUD looks forward to working with the consultant to identify potential customers and develop the scope of the proposed projects.

In addition to the analysis of the projects discussed above, EBMUD is eager to hear new ideas from the consultant. A wide range of alternatives will need to be available to combine to create meaningful components, which will form the various WSMP 2040 portfolios.

If any additional information is needed to perform the duties listed in the WSMP 2040 scope of work, the consultant may contact Heidi Oriol, Associate Civil Engineer, at (510)287-0779 or horiol@ebmud.com

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Attachments

Appendix D TM-4

Future Recycled Water Potential Analysis

DRAFT Technical Memorandum

Prepared for:	Linda Hu - EBMUD Office of Water Recycling
	Florence Wedington - EBMUD Office of Water Recycling
Prepared by:	Peter Kistenmacher – RMC
Reviewed by:	Helene Kubler – RMC
	Dave Richardson - RMC
CC:	Marcia Tobin – EDAW
Date:	August 29, 2007
Subject:	**Water Supply Management Program 2040 – Future Recycled Water Potential Analysis**

This technical memorandum (TM) presents the results of the future recycled water potential analysis conducted as part of the East Bay Municipal Utility District's (District's) Water Supply Management Program (WSMP) 2040. This TM also discusses any potential for raw water use and other non-potable water uses such as using salt water for fire suppression and groundwater for non-potable applications.

The goal of this TM is to define potential recycled water and raw water projects. The recycled water and raw water components, along with other water supply components (conservation, conjunctive use, aquifer storage and recovery, and supplemental supplies), will then be evaluated and screened to create preliminary water supply portfolios as illustrated in the overall District WSMP 2040 work plan provided in **Appendix A**.

The information presented in this TM will provide the basis for discussion for the WSMP steering committee meeting on conservation and recycled water scheduled in August 2007, and the Board of Directors workshop scheduled in September 2007. This information will be ultimately incorporated in the WSMP 2040 document. This TM is organized as follows:

1. Summary

Recycled water projects that are committed or currently being implemented within the District's water service area will offset approximately 9.3 mgd (10,450 acre-ft/year) of average annual potable water use. In order to reach the District's previously established water recycling goal of 14 mgd (15,700 acre-ft/year) by 2020, an additional 4.7 mgd (5,300 acre-ft/year) of water recycling projects will need to be implemented. The results of this future recycled water potential analysis are shown in **Table 1** and demonstrate that the District could implement a variety of recycled water alternatives to achieve this existing goal, as well as additional goals that may be developed as part of the WSMP 2040 effort. The remainder of this TM discusses the individual recycled water components, the methodology used to estimate demands, and a preliminary prioritization of the potential recycled water projects identified.

Table 1: Potential Demand Associated with Recycled Water Components

Recycled Water Component	Total Potential Demand (Annual, mgd or acre-ft/year)
Committed Projects	**Approximately 9.3 mgd (10,450 acre-ft/year)**
Potential Projects Within District Service Area	
Centralized Recycled Water	Up to 13.5 mgd (15,200 acre-ft/year)
Satellite Recycled Water	Up to 0.9 mgd (950 acre-ft/year)
Raw Water	Up to 0.3 mgd (300 acre-ft/year)
Subtotal	Up to 14.7 mgd (16,450 acre-ft/year)
Potential Upcountry and Sacramento Area Partnerships	Up to 17 mgd (19,000 acre-ft/year)
Total – All Potential Projects (Excludes Committed Projects)	**Up to 31.7 mgd (35,450 acre-ft/year)**

2. Background

This section provides background information on the District's water recycling program. The District has been recycling water for irrigation and in-plant processes at its main wastewater treatment plant since 1971. To expand water recycling, the District's Board of Directors established a recycled water program in 1988. The initial goal of the District's recycled water program was to expedite recycled water projects in response to the second year of the drought that lasted from 1987 until 1992. Today, the goal of the program continues to be the planning, development, and implementation of recycled water projects throughout the District's service area in order to reduce the demand on the District's high-quality drinking water supplies.

Recognizing water recycling as an important method for stretching limited water supply resources, the District's Board of Directors adopted the WSMP in 1993 with recycled water included as a key element in a diverse and balanced supply portfolio. The Board set a water recycling goal of 14 million gallons per day (mgd) by 2020. This amount of water would free enough of the District's potable supply to meet the indoor and outdoor water needs of approximately 90,000 District customers and would help reduce the severity of water rationing that could be required in future droughts.

3. Recycled Water Supply

Locations of the wastewater treatment plants (WWTPs) and recycled water plants situated within the District's potable water service area are shown in **Figure 1**. Projected wastewater supplies and recycled water production capabilities through the year 2040 are summarized in **Table 2**. This data was compiled based on information provided in the District's Urban Water Management Plan (2005) and discussion with District project staff.

Table 2: Wastewater Supply and Recycled Water Production Capabilities

Wastewater Treatment Plant												Collected and Treated Wastewater Flows (mgd)[2]								
Agency	Wastewater Supply Source	Location (City)	Secondary Treatment Capacity (mgd)	Planned Capacity Upgrade by 2040 (mgd)	Anticipated Year of Upgrade	Current Level of Treatment for Disposed Wastewater	Effluent Disposal Method	Key Regulatory Issues and Actions Being Considered to Address Them	Tertiary Treatment Capacity (mgd)	Planned Tertiary Treatment Capacity Upgrade by 2040 (mgd)	Anticipated Year of Tertiary Treatment Upgrade	2005	2010	2015	2020	2025	2030	2035[6]	2040[6]	Current Recycled Water Production (mgd)
EBMUD Special District No.1	EBMUD Main WWTP	Oakland	168.0	None	None	Secondary	SF Bay	Potential for high salinity levels in recycled water	2.88[1]	-	-	77	77	77	77	77	77	77	77	NA
City of San Leandro	City of San Leandro WPCP	San Leandro	9.7	None	None	Secondary	SF Bay (thru EBDA pipelines)	None	TBD	TBD	TBD	6.3	7	7.5	8	8.5	9	9	9	0.4
Dublin San Ramon Services District	DSRSD WWTP	Pleasanton	17.0	NA	NA	Secondary	SF Bay (thru LAVWMA/EBDA pipelines)	NA	9.7	16.5	TBD	12.6	13.9	15.8	16.7	17.4	17.8	18.0	18.2	4.5
Central Contra Costa Sanitary District	Central San WWTP	Martinez	70.0	NA	NA	Secondary	Suisun Bay	NA	4[3]	None	N/A	44.4	45.8	47.3	48.7	50.1	51.5	51.5	51.5	3
City of Pinole/Hercules	Pinole/Hercules WWTPs (Combined Discharge with Rodeo)	Pinole	4.1	NA	NA	Secondary	San Pablo Bay (thru Pinole/Hercules/Rodeo outfall)	Currently evaluating options for future wastewater treatment and disposal needs, including the potential to upgrade to tertiary treatment and discharge to San Pablo Bay through a shallow outfall	None	TBD	TBD	3.6	3.6	4	4	4	4	4	4	N/A
City of Richmond	Richmond WWTP	Richmond	16.0	NA	NA	Secondary	SF Bay	NA	NA	NA	NA	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	TBD
West County Wastewater District	WCWD WWTP	Richmond	12.5	NA	NA	Secondary	SF Bay (thru City of Richmond)	NA	NA	NA	NA	9.8	9.8[4]	10.7[4]	10.7	10.7	10.7	10.7	10.7	4.18[5]
Rodeo Sanitary District	Rodeo WWTP (Combined Discharge with Pinole/Hercules)	Rodeo	1.1	NA	NA	Secondary	San Pablo Bay (thru Pinole/Hercules/Rodeo outfall)	Currently addressing 2001 - 2006 outstanding violations	None	None	None	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	N/A
Oro Loma Sanitary District	Oro Loma WWTP	San Lorenzo	20.0	NA	NA	Secondary	SF Bay (thru EBDA pipelines)	NA	NA	NA	NA	13	13.5	14	14.5	15	17	17	17	TBD
Crockett-Valona Sanitary District	Crockett-Valona WWTP	Crockett	1.8	NA	NA	Secondary	Carquinez Strait	NA	NA	NA	NA	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	TBD
Total	-	-	**320**	-	-	-	-	-	-	-	-	**176.8**	**180.7**	**186.4**	**189.7**	**192.8**	**197.1**	**197.3**	**197.5**	**12.1**

[1] Does not include 5.9 mgd of recycled water used at the District's main WWTP for process water and landscape irrigation, which is exempt from meeting Title 22 requirements.
[2] Flows represent average dry weather flows.
[3] CCSD has plans to use approximately 3 mgd for its recycled water program. Therefore, up to 1 mgd of recycled water could potentially be made available to the EBMUD.
[4] Source: RARE Project Preliminary Design Report, EBMUD/Black & Veatch, April 2007.
[5] Includes approximately 4.0 mgd currently supplied to EBMUD's North Richmond Water Reclamation Plant.
[6] Data was not available. Flows are assumed to be equal to 2030 flows.
NA = Not Available N/A = Not Applicable TBD = To Be Determined

4. Raw Water Supply

The District currently provides raw water for irrigation to the customers listed in **Table 3**. The historical average annual demand for these customers has been approximately 0.28 mgd (315 acre-ft/year). However, raw water used by Sunset View Cemetery does not offset demand on Mokelumne Supply.

Table 3: Current District Raw Water Customers

Customer	Location	Raw Water Source	Average Annual Demand (mgd)
Sunset View Cemetery	El Cerrito	Connection to El Sobrante Filter Plant	0.07
Lake Chabot Golf Course	Oakland	Lake Chabot	0.13
Willow Park Golf Course	Castro Valley	Lake Chabot	0.08
Total Demand			**0.28**

The District is in the process of preparing a Raw Water Master Plan to chart the course for a comprehensive raw water program across its service area. In discussion with the District's water recycling team, RMC was tasked to investigate the expansion of the current raw water program by focusing on the following two areas:

- Raw water use around Lake Chabot[1]
- Raw water use around the Lafayette Reservoir[2]

RMC was provided with potable water use information for all customers in the vicinity of Lake Chabot and the Lafayette Reservoir. This information was used to identify potable water users with large irrigation demands (average annual recycled water demand greater than 25 acre-ft/year) located adjacent to, or close by, the respective raw water source.

[1] Lake Chabot is used for irrigation purposes only and is typically fed by local runoff, and on rare occurrences by controlled releases from the Upper San Leandro Reservoir.
[2] While the Lafayette Reservoir is fed almost exclusively by local runoff, it is connected to the Mokelumne system to potentially receive water during emergency situations. In wet years, excess water from the reservoir is discharged to a local creek.

5. Other Non-Potable Water Market

In addition to raw water and recycled water, other non-potable water applications include using saltwater for fire suppression and groundwater for non-potable purposes (e.g. irrigation). Use of these non-potable water supplies within the District's water service area could offset potable water demands. The project team's conclusions regarding the potential for these non-potable water uses are further discussed below. However, because no potential salt water or groundwater-based projects with substantial (greater than 100 acre/ft-yr) potable water offsets have been identified, this topic is not discussed elsewhere in this document.

5.1 Use of Salt-Water for Fire Suppression

Many communities within the District's Service Area are located adjacent to San Francisco Bay. These communities could construct salt water (Bay water) based fire suppression systems. For example the City of Berkeley has invested significant time and resources in investigating the feasibility and still has not implemented the system. Construction of salt water fire suppression systems would likely require costly construction and retrofit activities, which would render such projects infeasible from a cost/implementation perspective for potable offset. RMC therefore did not further evaluate the use of salt water for fire suppression. However, in the event that a community is planning a major retrofit or new construction of a fire suppression system, it may be possible to cost-effectively use salt water for fire suppression. In such instances, use of salt water for fire suppression should be further evaluated.

5.2 Use of Groundwater

In general, there is limited potential for significant use of groundwater within EBMUD's water service area. For potable water users located close to groundwater resources and far away from recycled water resources or potential recycled water satellite treatment opportunities (e.g. Tilden Park Golf Course), the use of groundwater for non-potable applications should be evaluated.

To the extent that communities identify future salt water or groundwater opportunities that are substantial, the District should consider partnerships for project implementation.

6. Recycled Water Market

The District's water recycling team provided information on existing and planned recycled water projects within the District water service area. This information was provided in a series of three TMs that included the following information:

- **TM1:** Summary of existing recycled water projects, including existing treatment and distribution facilities, recycled water customers and projects currently under construction.
- **TM2:** Previously identified recycled water projects proposed for consideration in WSMP alternatives. Implementation of some of these projects is currently underway in the planning or design phases.
- **TM3**: Updated potential recycled water customer information within the proposed projects areas, including location, current potable water usage, and type of use.

RMC was tasked to use this information to develop alternatives for cost-effective expansion of recycled water use within the District's service area in the 2040 timeframe. Towards that objective, RMC completed the following tasks:

- Assessed the potential market for urban reuse within the District's service area associated with existing water accounts and future urban development.
- Assessed the potential for recycled water partnerships with Upcountry and Sacramento area agencies.[1]
- Evaluated the potential for other recycled water uses, such as groundwater recharge with recycled water and environmental use of recycled water.

A discussion of the methodology employed for the recycled water market analysis is provided below.

6.1 Committed Projects

The District's water recycling team has developed a list of water recycling projects that are either currently in operation or in an advanced implementation stage. For the purposes of the WSMP 2040, these projects are referred to as 'committed projects' and are summarized in **Table 4** and shown on **Figure 1**. The total annual demand associated with the committed projects is approximately 9.3 mgd (10,450 acre-ft/yr). The committed projects will be included in the final WSMP 2040 solution component portfolio.

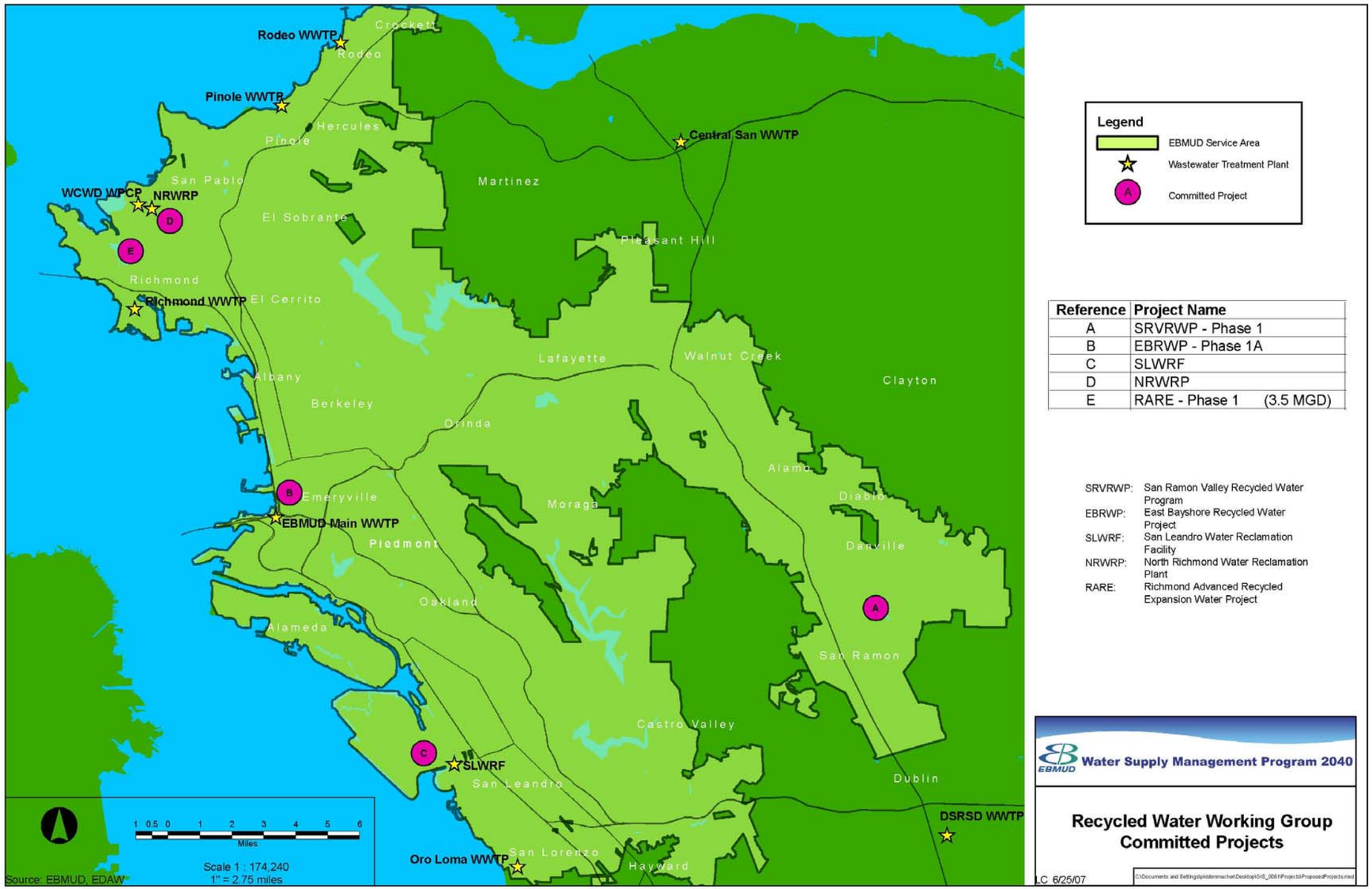
[1] These partnerships would involve the District providing funding and technical expertise to implement recycled water projects in the Upcountry and Sacramento areas. In exchange, potable water offset by use of recycled water in these areas would be made available to the District. Additional detail about these potential partnerships is provided in this TM.

Table 4: Committed Recycled Water Projects

Grouping	Reference Label	Project Name or Program Title	Demand (Annual, mgd or acre-ft/year) #, Range, or Max	Project On Line Date
Recycled Water	A	San Ramon Valley Recycled Water Program – Phase 1	0.7 mgd (800 acre-ft/yr)	Currently operating with approx. ¾ of Phase 1 customers connected. In operation since Feb. 2006. Anticipate full implementation / final customer connections by FY 2009.
	B	East Bayshore Recycled Water Project – Phase 1A	0.7 mgd (800 acre-ft/year)	Construction in progress, to be completed by FY09. Anticipated to begin first deliveries in 2007. Expect full implementation / final customer connections by FY 2009.
	C	San Leandro Water Reclamation Facility	0.4 mgd (450 acre-ft/year)	Currently operating. In operation since 1988.
	D	North Richmond Water Reclamation Plant	4.0 mgd (4,500 acre-ft/year)	Currently operating. Began operation in 1996; increased NRWRP production in January 2007.
	E	Richmond Advanced Recycled Expansion (RARE) Water Project - Phase 1	3.5 mgd (3,900 acre-ft/year)	Planning phase complete: FEIR was certified in May 2007; final design in progress; agreements w/customer being negotiated. Scheduled to begin operation in 2009.
Total			**9.3 mgd (10,450 acre-ft/year)**	

[1] *Demand rounded to nearest 0.1 mgd and 50 acre-ft/yr.*
[2] *Existing raw water projects (Willow Park and Lake Chabot golf courses) offset about 0.2 mgd of demand on Mokelumne supply. Raw water provided to Sunset View does not offset demand on Mokelumne supply.*

Figure 1: Committed Recycled Water Projects



6.2 Potential Market

In addition to the committed recycled water projects, the District's water recycling team has developed a range of water recycling projects and expansions of committed projects that are currently in the feasibility or preliminary planning stage. RMC further assessed the potential recycled water market for urban reuse and developed additional projects for expansion of the recycled water system in close coordination with The District's water recycling team. The following section describes the methodology used to identify the potential market and associated projects.

6.2.1 Existing Accounts

This section describes the methodology used to determine the potential recycled water demand associated with the District's existing potable water customers. The team's approach included the following tasks:

- Obtained 2002 through 2005 potable water use records for all customers within the District's service area with potable water use greater than 1.5 acre-ft/year (provided by the District as part of TM3)
- Quantified the potential recycled water demand of each customer based on customer's District assigned Business Classification Code (BCC) and estimated recycled water demand as a percentage of average potable water demand[1]
- Excluded users with potential recycled water demands less than 1.5 acre-ft/yr[2]

The potential recycled water demand associated with existing accounts is summarized in **Table 5** and shown in **Figure 2.** An electronic database of the potential recycled water demand associated with existing accounts is provided as part of **Appendix B**.

Table 5: Demand Potential Associated with Existing Accounts

Demand Type	Potential Annual Recycled Water Demand (mgd)[1]	Potential Annual Recycled Water Demand (acre-ft/yr)[1]
Irrigation of Public or Common Areas (Including Commercial and Industrial Sites)	19.5	22,000
Industrial In-Door	8.5	9,500
Commercial In-Door	2	2,000
Total	**30**	**33,500**

[1] *Demand estimate rounded to nearest 0.5 mgd or 500 acre-feet/year*

[1] See Appendix A for District BCC codes and associated recycled water percentages. Recycled water percentages were developed based on input from the District's water recycling team and RMC's experience with similar recycled water projects in California.

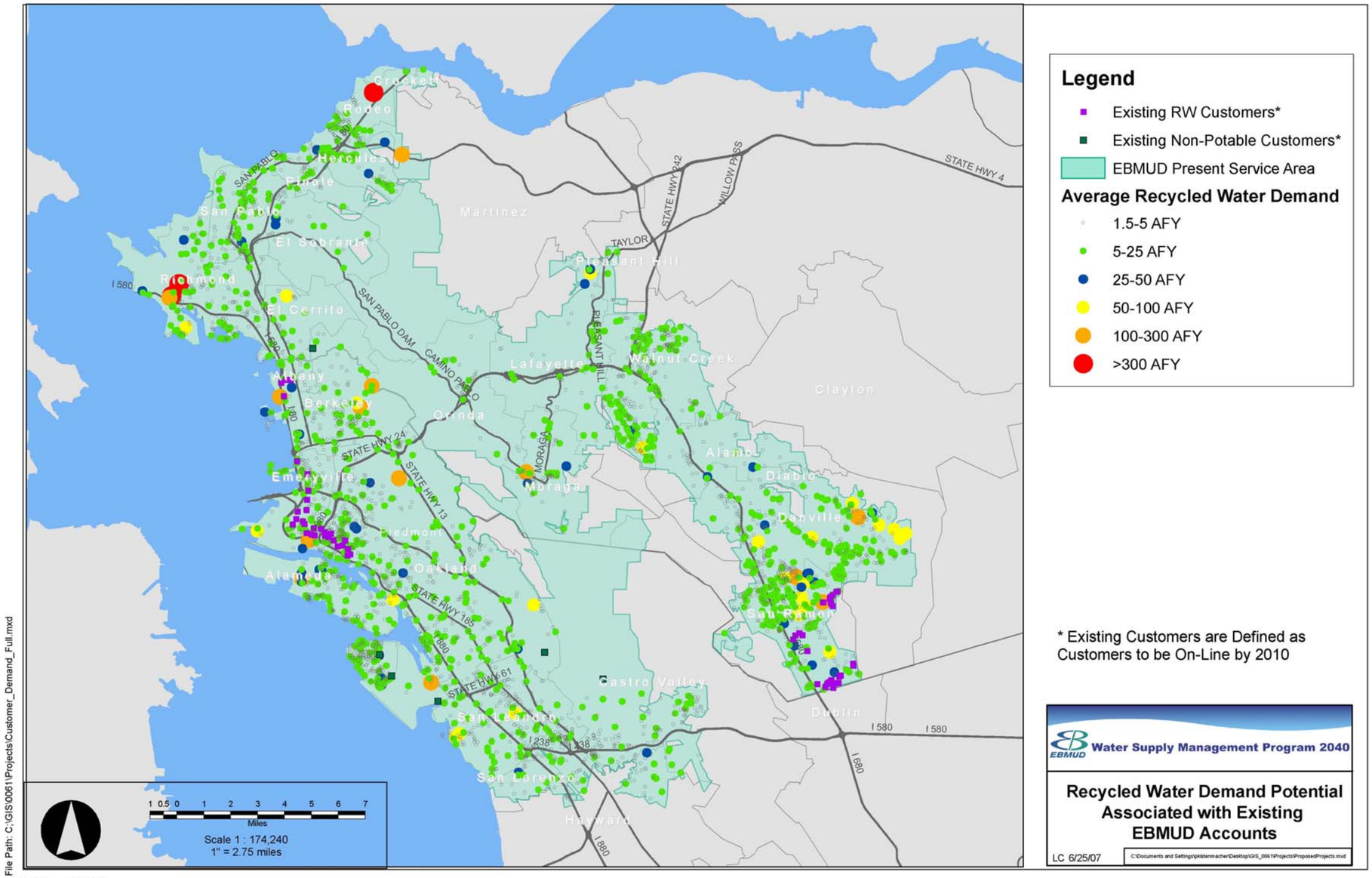
[2] Users with potential recycled water demand less than 1.5 acre-ft/yr were excluded because supply of recycled water to minor users is generally not cost-effective and minor users do not drive the development of recycled water projects. While minor users were not considered for project definition, they may receive recycled water service on opportunity basis if located along pipeline alignment.

While the demand estimate approach taken does not capture every potential recycled water customer within the District's service area, it should be noted that the water recycling team met its objective of supporting the goals of the WSMP 2040 by developing alternatives for cost-effective expansion of the District's recycled water system. As discussed above, the exclusion of customers with potential recycled water demands less than 1.5 acre-ft/yr restricted the team's approach to a minor degree. Other minor restrictions included:

- Customers with Business Classification Codes (BCCs) for which no water recycling potential was assumed (such as restaurants and single family residences) were excluded
- For certain customers, the assumed recycled water percentage (based on BCC code) may not accurately reflect potential demand.[1] In some of these instances, the project team manually adjusted the assumed recycled water percentage based on project experience.[2]

[1] For example a nursery may be categorized as retail users, but may use more than 10 percent recycled water as assigned by the retail user BCC code.
[2] For additional quality control, the team reviewed the demand database to confirm that the sixty largest potable water users were assigned accurate recycled water percentage based on BCC codes.

Figure 2: Recycled Water Demand Potential Associated with Existing District Accounts



6.2.2 Future Urban Development

This section describes the methodology used to determine the potential recycled water demand associated with future urban development within the District's service area. Future urban development can affect potential recycled water demands in the following two ways:

- Development of existing vacant land
- Urban infill and densification of existing developed land (e.g. commercial areas converted to high density office space)

In a parallel effort, the WSMP 2040 demand working group provided updated 2040 land use projections for the District service area. The updated land use projections were developed using General Plan data as well as information obtained in meetings with City planning agencies.[1]

RMC identified additional potential future users based on an examination of areas projected to undergo land use changes between 2005 and 2040. These areas are shown in **Appendix C** along with electronic GIS files providing additional detail on future development within the District's service area.

Recycled water demand estimates for identified potential future users were not developed due to current lack of detailed information on projected water demands for future users. The WSMP 2040 demand working group will develop estimated potable water demands associated with future development by October 2007. The WSMP 2040 water recycling working group will then develop recycled water demands associated with potential future development users.

6.2.3 Other Uses

Groundwater Recharge

The District has been investigating aquifer recharge with potable water (groundwater banking) in an effort to increase storage and supply reliability during drought years.[2] While it was found that there is some limited potential for groundwater banking projects within the District's service area, the implementation of an initial pilot project (the Bayside Groundwater Project) was technically challenging. Additionally, there is potential within the District's service area to directly offset potable water uses for non-potable applications with recycled water through the year 2040. Directly offsetting potable water uses for non-potable applications with recycled water is preferable and easier to implement than groundwater recharge (GWR) with recycled water (GWR-RW).

[1] A discussion of the future land use update process will be provided in a separate section of the WSMP 2040 document.
[2] This subject will be further discussed in a separate section of the WSMP 2040 document.

The District's policy number 7.10 directs the District to protect the public health of its customers by serving high quality water from the best available source in preference to reliance on additional treatment. Faced between groundwater recharge with high quality potable water or recycled water, recharge with potable water would clearly be the preferred alternative and would be in full compliance with policy number 7.10.

In conclusion, GWR-RW within the District's service area can be considered in the future only if there is not a more appropriate source of water for recharge (consistent with the District's current policies) and/or if there is no other preferred potential end use for the recycled water (including irrigation, industrial reuse, etc). It should be noted that GWR-RW is increasingly being considered or implemented in California to increase and stabilize water supplies; and has been successfully implemented in Southern California.

Environmental Uses

Environmental uses of recycled water include wetlands and/or stream flow augmentation. Although such projects do not directly replace potable water use, they can increase the chances for State and Federal funding because environmental uses are in direct compliance with DWR and CALFED objectives. The District's water recycling team directed RMC not to develop potential recycled water projects with the sole purpose of providing recycled water for environmental uses. However, potential environmental use projects along routes to other customers were considered within The District's service area (although no potential environmental use projects have been identified to date).

6.2.4 Uses Outside of the District's Water Service Area

In evaluating recycled water projects outside of District water service area, RMC focused on potential recycled water partnerships with agencies in the Upcountry region[1] and the greater Sacramento Area. Recycled water demands within these areas were evaluated based on:

- RMC Upcountry project experience
- Input from District staff
- Review of relevant background documents[2]
- Conversations with Upcountry and Sacramento area agencies

[1] For the purposes of this document, the Upcountry area includes portions of Amador, Calaveras, and San Joaquin Counties that surround the District's Mokelumne River watershed.
[2] Relevant background documents include Urban Water Management Plans, State Funding Applications, Integrated Regional Water Management Plans, Wastewater Management Plans and Water Recycling Studies.

7. Potential Recycled Water Projects

Proposed recycled water projects to be evaluated as part of the WSMP 2040 solutions component portfolio were categorized into the following project types:

- Projects within the District's service area
- Projects within Upcountry and Sacramento areas

Initial project alternatives were developed based on a review of the recycled water market and subsequently narrowed down based on discussion with District project staff. Estimated preliminary project costs were developed based on a review of relevant background information and discussion with District project staff, and are used only for the purpose of prioritizing projects within the recycled water program. Preliminary cost information will be revised to reflect normalized cost criteria once they are developed as part of the WSMP 2040 economic evaluation process.

Projects judged potentially feasible based on review of relevant background documents and discussion with District staff were identified for further evaluation are summarized in **Table 6** and shown in **Figure 3** (Projects within the District's water service area) and **Figure 4** (Upcountry and Sacramento area projects). Detailed information about location and targeted customers for proposed recycled water projects is provided in **Appendix E**. Several potential projects were found to be unlikely to be implemented within the 2040 timeframe and were therefore excluded from the list of proposed projects. Excluded projects, along with reasons for exclusion, are summarized in **Table 7.** Additional discussion of proposed recycled water projects, excluded projects, and the no-project alternative is provided below.

Table 6: Potential Recycled Water Projects

Project Type	Project Location[1]	Project Number	Project Name or Program Title	Potential Demand (Annual, mgd or acre-ft/year)[2] Range, or Max	Notes (Project Description, Status, Opportunities or Constraints)
Centralized Treatment	**Summary of Centralized Treatment Projects**			**Up to 13.5 mgd (15,200 acre-ft/yr)**	**Potential constraints: funding, recycled water supply availability, institutional.**
	San Ramon Valley	**1**	San Ramon Valley Recycled Water Program - Phase 2 Bishop Ranch	0.7 mgd (800 acre-ft / yr)	Design of DERWA Ph 2 complete, District's Ph 2 in planning. Scheduled to commence operation in FY 09-10, depending upon WRDA funding.
		2	San Ramon Valley Recycled Water Program - Phase 3 Danville East	0.7 mgd (800 acre-ft / year)	In planning. Includes 0.12 mgd for Alamo Creek development. Currently dependent on outside funding. Schedule of operation commencement unknown (no fixed date has been determined).
		3	San Ramon Valley Recycled Water Program - Phase 4 Blackhawk East	0.3 mgd (300 acre-ft / year)	In planning. Currently dependent on outside funding. Schedule of operation commencement unknown (no fixed date has been determined).
		4	San Ramon Valley Recycled Water Project - Phase 5 Blackhawk West	0.2 - 0.3 mgd (200-350 acre-ft/yr)	Project would be an expansion of SRVRWP phase 4 to serve portions of the Blackhawk Country Club not included in phase 4. Further investigation needed: recycled water supply availability.
		5	San Ramon Valley Recycled Water Program - Phase 6 Danville West	0.1 - 0.2 mgd (150-250 acre-ft/yr)	Project would be an expansion of SRVRWP phase 3 to serve customers along the northern portion of Camino Tassajara not included in phase 3. Further investigation needed: recycled water supply availability and system hydraulics.
	East Bayshore	**6**	East Bayshore Recycled Water Project - Phase 1B Alameda	0.5 - 1.7 mgd (550 - 1,950 acre-ft / year).	In planning. Dependent on new development within the service area (no fixed date has been determined). Schedule of operation commencement unknown. Redevelopment of Alameda Naval Air Station to be evaluated for potential recycled water service.
		7	East Bayshore Recycled Water Project - Phase 2 Future Expansion	0.1 - 0.5 mgd (100 - 550 acre-ft / year).	In planning. Dependent on new development within the service area (no fixed date has been determined). Schedule of operation commencement unknown. Future redevelopment in downtown Oakland area to be evaluated for potential recycled water service.
	San Leandro	**8**	San Leandro Water Reclamation Facility Expansion Project - Phase 3 Oakland/Alameda	0.1 - 1.3 mgd (100 - 1,450 acre-ft/year)	Conceptual. Schedule of operation commencement unknown.
	Richmond	**9**	Richmond Advanced Recycled Expansion (RARE) Water Project - Phase 2 Additional 0.5 mgd	0.5 mgd (550 acre-ft / year)	Planning phase complete. FEIR was certified in May 2007; final design in progress; agreement w/customer being negotiated. Phase 1 scheduled to begin operation in 2009. Schedule for Phase 2 will depend on supply availability.
		10	Richmond Advanced Recycled Expansion (RARE) Water Project - Future Expansion Additional 1.0 mgd	1.0 mgd (1,100 acre-ft / yr)	Conceptual. Possible expansion of RARE facilities to serve additional 1 mgd of demand for Chevron boilers. Dependent on availability of additional supply. Schedule of operation commencement unknown.
		11	North Richmond Water Reclamation Plant Expansion Project - Surrounding Area	0.2 - 1.7 mgd (150 - 1,900 acre-ft / year)	Conceptual. Dependent on supply availability. Schedule of operation commencement unknown. Future investigation needed: recycled water supply availability.
		12	Point Richmond Recycled Water Project	0.07 - 0.1 mgd (80-120 acre-ft/yr)	Recycled water service to Point Richmond customers was previously investigated as part of the NRWRP Expansion Study, and screened out because of long distance to recycled water source and limited supply. Closest wastewater supply is Richmond WWTP.

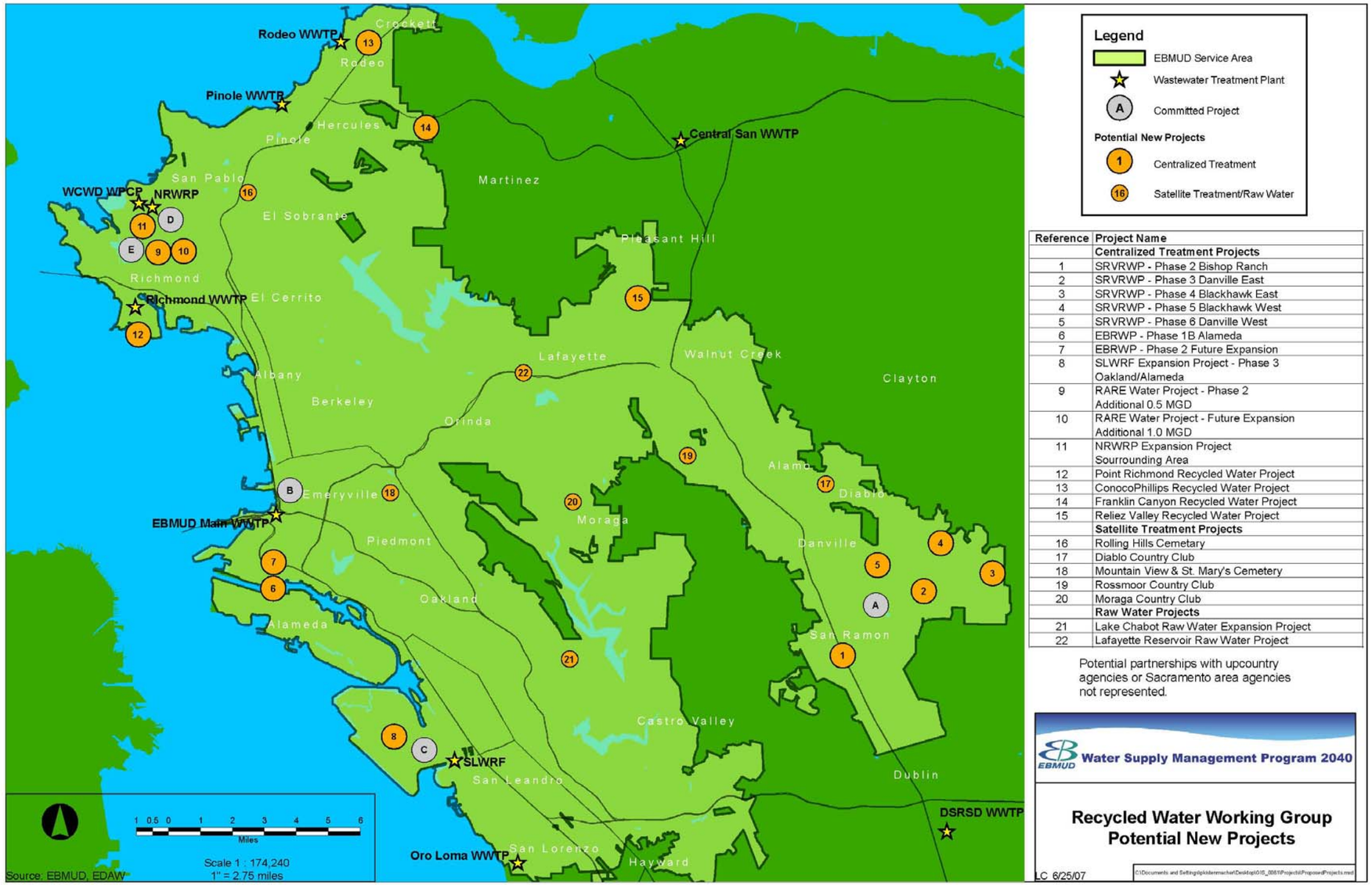
Project Type	Project Location[1]	Project Number	Project Name or Program Title	Potential Demand (Annual, mgd or acre-ft/year)[2] Range, or Max	Notes (Project Description, Status, Opportunities or Constraints)
	Pinole/Rodeo/ Hercules	13	ConocoPhillips Recycled Water Project	4.0 mgd (4,500 acre-ft / year)	In planning; 2nd phase of feasibility study underway. Schedule of operation commencement unknown. Potential demand estimate may increase based on recycled water demand associated with future industrial development of 400-acres of vacant land (estimated demand to be determined by October 2007).
		14	Franklin Canyon Recycled Water Project	0.2 - 0.3 mgd (200- 300 acre-ft/year)	Conceptual. Dependent on supply availability. Schedule of operation commencement unknown.
	Reliez Valley	15	Reliez Valley Recycled Water Project (Portion of former Lamorinda Project)	0.1 - 0.2 mgd (100 - 250 acre-ft/year)	Conceptual. Schedule of operation commencement unknown. Potential for partnership with Central Contra Costa Sanitary District to obtain recycled water.
Satellite Treatment	**Summary of Satellite Projects[3]**			**Up to 0.9 mgd (950 acre-ft/yr)**	**Conceptual. Satellite treatment projects have been previously identified and/or evaluated in 2005 Satellite Treatment Feasibility Study. Continue to explore satellite options with future new development.**
	San Pablo/ Richmond	16	Rolling Hills Cemetery	0.05 - 0.18 mgd (50 - 200 acre-ft/yr)	Further investigation needed: wastewater supply availability. Demand estimate includes future 45-acre cemetery expansion.
	Diablo Valley	17	Diablo Country Club	0.18 mgd (200 acre-ft/yr)	Diablo Country Club evaluated as part of SRVRWP Facilities Plan (1996). Further investigation needed: wastewater supply availability.
	Oakland	18	Mountain View & St. Mary's Cemetery	0.1 - 0.19 mgd (100 - 200 acre-ft/yr)	Satellite Treatment for Mountain View Cemetery was previously evaluated as part of 2005 Satellite Treatment Feasibility Study. No fatal flaw was found. High retrofit costs. Demand estimate includes future 40-acre cemetery expansion.
	Rossmoor Valley	19	Rossmoor Country Club	0.1 - 0.15 mgd (100 - 150 acre-ft/yr)	Potential Customers include Rossmoor Country Club, Park and HOAs. Further investigation needed: wastewater supply availability.
	Moraga	20	Moraga Country Club	0.1 - 0.2 mgd (100 - 200 acre-ft/yr)	Potential Customers include Moraga Country Club, St. Mary's College, City Park. Further investigation needed: wastewater supply availability.
Raw Water	**Summary of Raw Water Projects**			**Up to 0.3 mgd (300 acre-ft/yr)**	
	San Leandro/Oakland	21	Lake Chabot Raw Water Expansion Project	0.1 - 0.2 mgd (100 - 250 acre-ft/yr)	Provide raw water to Sequoyah Country Club, Oakland Zoo, and other nearby irrigation customers. As alternative to the raw water project, satellite treatment at Sequoyah Country Club could be further evaluated (satellite treatment at Sequoyah was previously evaluated as part of 2005 Satellite Treatment Feasibility Study).
	Lafayette	22	Lafayette Reservoir Raw Water Project	0.01 - 0.05 mgd (10 - 50 acre-ft/yr)	Provide raw water for irrigation at Lafayette reservoir and other potential nearby customers.
Upcountry Partnerships[7]	**Summary of Upcountry and Sacramento Regional Partnerships**			**Up to 17 mgd (19,000 acre-ft/yr)**	
	Amador County	N/A	Partnership with Jackson Valley Irrigation District and Amador County Wastewater Agencies (*expand water recycling to offset JVID's Mokelumne River diversions)*	2 - 3 mgd (2,250 - 3,350 acre-ft/yr)[4]	Feasibility level. Regional Wastewater Management Plan has been developed and includes recycled water use to offset JVID Mokelumne water use. Partnership with District could provide additional support for the project.
	Amador County	N/A	Partnership with Jackson Valley Irrigation District and Amador Water Agency/ future joint Lake Camanche WWTP *(expand water recycling to offset JVID's Mokelumne River diversions)*	1 mgd (1,100 acre-ft/yr)[5]	In planning. Planning studies have been conducted. AWA is an established partner with the District, and the District has previously been a partner on the joint Lake Camanche project.

Project Type	Project Location[1]	Project Number	Project Name or Program Title	Potential Demand (Annual, mgd or acre-ft/year)[2] Range, or Max	Notes (Project Description, Status, Opportunities or Constraints)
	Amador County	N/A	Partnership with Amador Water Agency *(expand water recycling to offset AWA's Mokelumne River diversions)*	1 mgd (1,100 acre-ft/yr)[6]	Conceptual. AWA is an established District partner.
	San Joaquin County	N/A	Partnership with Woodbridge Irrigation District *(expand water recycling to offset WID's Mokelumne River diversions)*	To be determined.	Conceptual. Cities within WID service area are currently evaluating recycled water program. Significant demand for recycled water within WID service area (to offset groundwater pumping) may not leave extra water for the District. In the event that funding issue impact project feasibility, partnership with the District would become more attractive.
Sac Regional Partnership	Sacramento County	N/A	Partnership with SRCSD and SCWA[8]	Potential for up to 11.6 mgd (13,000 acre-ft/yr) of potable water supply.	Conceptual. Concept includes District support for planned SRCSD water recycling projects in South Sacramento County. In exchange, SCWA would provide potable water supply (either through potable water exchange or direct transfer) to the District during dry years.

[1] For additional information on project location, refer to Figure 3.
[2] Demand rounded to nearest 0.1 mgd or 50 acre-ft/yr.
[3] Satellite treatment projects with potential demands less than 100 acre-ft/yr were screened out.
[4] Estimate based on current Mokelumne River diversions and water rights.
[5] Estimate based on current Mokelumne River diversions and anticipated capacity of future joint Lake Camanche WWTP.
[6] Estimate based on current water use within AWA service area. Recycled water would not be available in the event that partnership with JVID moves forward.
[7] See Figure 4.
*[8] Additional Information about the potential partnership with SRCSD and SCWA is provided in **Appendix C**.*

NA = Not Available N/A = Not Applicable

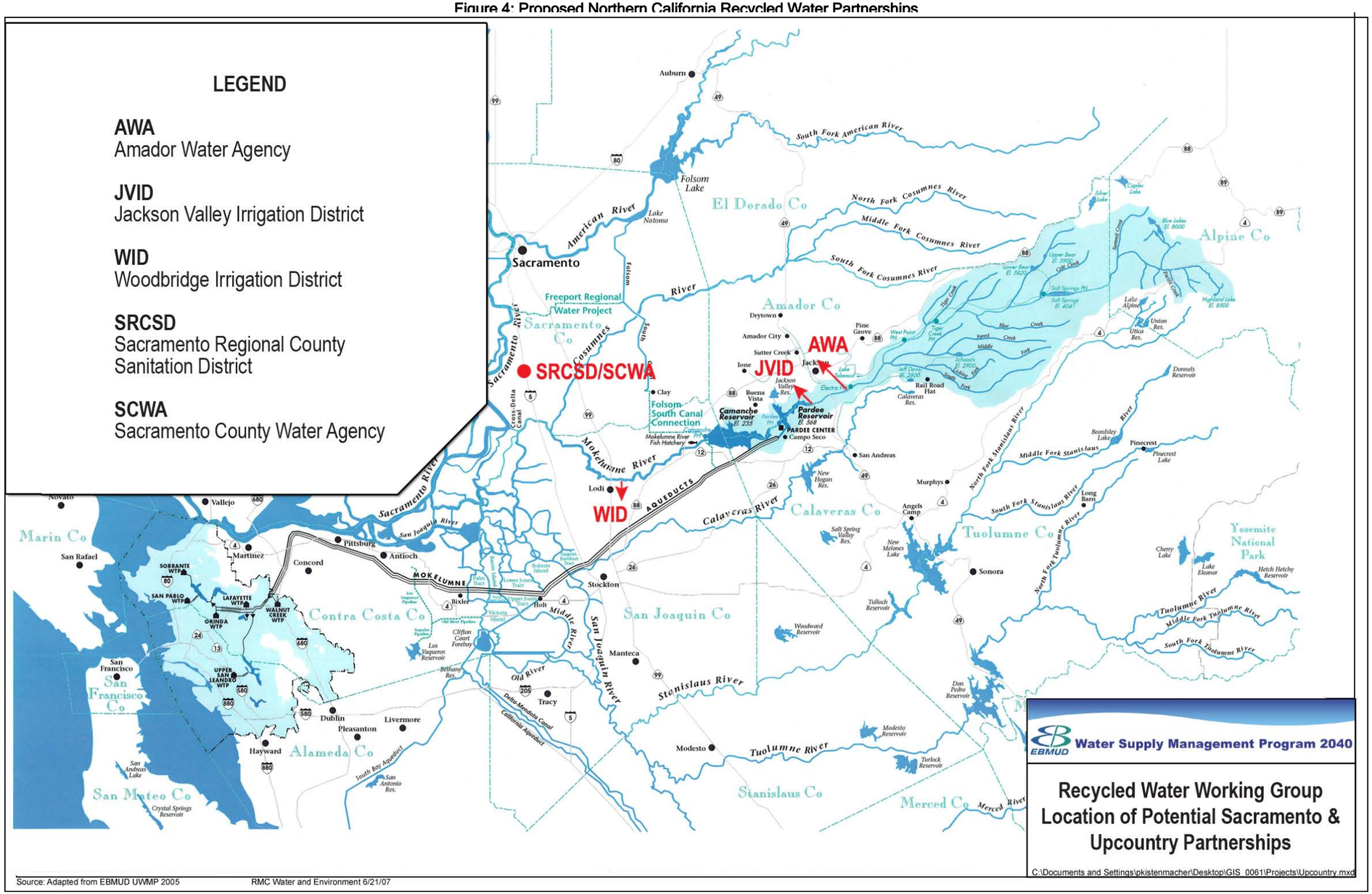
Figure 3: Potential Recycled Water Projects



Reference	Project Name
	Centralized Treatment Projects
1	SRVRWP - Phase 2 Bishop Ranch
2	SRVRWP - Phase 3 Danville East
3	SRVRWP - Phase 4 Blackhawk East
4	SRVRWP - Phase 5 Blackhawk West
5	SRVRWP - Phase 6 Danville West
6	EBRWP - Phase 1B Alameda
7	EBRWP - Phase 2 Future Expansion
8	SLWRF Expansion Project - Phase 3 Oakland/Alameda
9	RARE Water Project - Phase 2 Additional 0.5 MGD
10	RARE Water Project - Future Expansion Additional 1.0 MGD
11	NRWRP Expansion Project Sourrounding Area
12	Point Richmond Recycled Water Project
13	ConocoPhillips Recycled Water Project
14	Franklin Canyon Recycled Water Project
15	Reliez Valley Recycled Water Project
	Satellite Treatment Projects
16	Rolling Hills Cemetary
17	Diablo Country Club
18	Mountain View & St. Mary's Cemetery
19	Rossmoor Country Club
20	Moraga Country Club
	Raw Water Projects
21	Lake Chabot Raw Water Expansion Project
22	Lafayette Reservoir Raw Water Project

Potential partnerships with upcountry agencies or Sacramento area agencies not represented.

Figure 4: Proposed Northern California Recycled Water Partnerships



Source: Adapted from EBMUD UWMP 2005 RMC Water and Environment 6/21/07

7.1 Projects within the District's Water Service Area

Potential projects within the District's service area include recycled water centralized treatment, satellite treatment, and raw water opportunities. These projects, summarized in **Table 6** and shown in **Figure 3**, are further discussed below.

The potential demands associated with these projects were estimated based on the information provided in TM1 through 3, and in some instances adjusted to account for the results of the market analysis and input provided by District staff.

7.1.1 Centralized Treatment Projects

Centralized treatment projects would use recycled water produced at one of the WWTPs shown in **Figure 1**. Centralized treatment projects are either expansions of a committed recycled water project**,** or a newly developed, independent project. The major criteria used in evaluating centralized treatment projects included:

- Recycled water demand grouped within defined area and of sufficient size[1] to drive project development
- Availability of supply
- Proximity to supply
- Proximity to existing recycled water pipeline alignments
- Relevant information obtained in discussion with District staff and/or from review of background information provided in TMs 1 through 3.

7.1.2 Satellite Treatment Projects

Potential large users located a long distance from or at significantly higher elevations than existing recycled water supply sources or distribution systems were considered for satellite treatment opportunities. Due to limited cost-effectiveness of constructing small satellite treatment systems, only users with average annual demand greater than 100 acre-ft/yr were considered for satellite treatment opportunities. The list of potential satellite treatment opportunities was augmented and assessed based on discussion with District staff and information provided in the District's Satellite Treatment Plant Study (2005). Satellite treatment opportunities are summarized in **Table 6** and shown on **Figure 3.** Also, based on a review of land use updates, no immediate opportunities for future satellite treatment projects were identified. However, satellite opportunities can be explored in the future.

[1] Potential customers with grouped recycled water demands less than 0.1 mgd (100 acre-ft/year) are generally not sufficient to drive project development.

7.1.3 Raw Water Projects

As described in Table 6 and shown in Figure 3, the following potential raw water projects were identified:

- Lake Chabot Raw Water Expansion Project[1]
- Lafayette Reservoir Raw Water Project

Although these projects would offset relatively minor potable water demands, they present valuable public relations, outreach, and education opportunities due to their prominent location within the District's service area.

7.2 Projects within Northern California

Projects within Northern California are shown on Figure 4 and include recycled water partnerships with Upcountry and Sacramento area agencies.

Upcountry Area Partnerships

Several Upcountry water agencies divert potable water from the Mokelumne River, the District's main water supply. The concept of a District partnership with Upcountry water agencies involves the District providing technical expertise and funding assistance to implement Upcountry recycled water projects. In exchange, the potable water saved by use of recycle water would remain in the Mokelumne River and made available for the District's downstream use. Because the District has an established and successful relationship with several Upcountry agencies (e.g. the Amador Water Agency), recycled water partnerships would be built on a strong institutional foundation. Potential Upcountry partnerships are summarized in Table 6 and shown in Figure 4 . Two potential Upcountry partnerships were excluded and the main reasons for exclusion are summarized in Table 7. Potential demands associated with Upcountry partnerships were estimated according to the information and methodology presented in Section 6.2.4.

Sacramento Area Partnerships

The concept involves developing a partnership with Sacramento County Water Agency (SCWA) and Sacramento Regional County Sanitation District (SRCSD) to obtain dry year potable water supply for the District. SRCSD would implement a large-scale water recycling program in the Sacramento area which would offset the use of high-quality potable water. The District could provide recycled water expertise, funding assistance, and payment for dry-year water supplies to SRCSD and SCWA (the potable water purveyor). A detailed discussion of the concept, the basis for concept, and estimated demands and cost for a recycled water partnership with SRCSD and SCWA is provided in Appendix D.

[1] As alternative to a raw water project, satellite treatment at the Sequoyah Country Club could be further evaluated.

7.3 Excluded Projects

Based on discussion with District staff, several potential recycled water projects were excluded from the list of proposed projects. These projects, along with a discussion about reason for exclusion, are summarized in **Table 7.**

Table 7: Large Projects[1] Excluded From "Solution Component" Portfolio – Recycled Water

Project Type	Project Name or Program Title	Potential Demand (Annual, mgd or acre-ft/year) Range, or Max	Primary Reason Project is not Recommended for further Consideration
Local Projects	Groundwater Recharge with Recycled Water	NA	Recycled water recharge to be considered only if there is not a more appropriate source of water for recharge (consistent with the District's current policies) and/or if there is no other preferred potential end use for the recycled water (including irrigation, industrial reuse, etc)
	Recycled Water Service to Treasure Island	NA	Possible but unlikely. Project would not offset District potable water. Wastewater and recycled water pipes to be installed on new East Span of Bay Bridge by 2013. However, current plans include rehabilitation of an existing Treasure Island WWTP and future installation of a new WWTP with tertiary treatment to recycle wastewater on Treasure Island.
Local Projects Associated With Future Development	Redevelopment of Existing Commercial, Industrial and/or Residential Areas into Future Mixed Use Developments	NA	A number of existing areas within the District's water service area are anticipated to be redeveloped into mixed use developments by 2040. Potential recycled water demands associated with future mixed use areas were not evaluated at this time because of limited demand associated with mixed use developments. Mixed use developments may receive recycled water service if located along recycled water pipeline alignment.
	Redevelopment of Existing Vacant Land into Future Residential Developments	NA	Various existing vacant lands within the District's water service area are anticipated to be developed into residential areas by 2040. Larger (greater than 200 acres) residential developments have been proposed in the El Sobrante Hills, Berkeley Hills and Oakland Hills. Numerous smaller residential developments are slated for vacant land throughout the District service area. These projects were screened-out at this time due to elevation/implementation issues and limited recycled water demands associated with residential areas, but may receive recycled water service if located along recycled water pipeline alignment.

Project Type	Project Name or Program Title	Potential Demand (Annual, mgd or acre-ft/year) Range, or Max	Primary Reason Project is not Recommended for further Consideration
Upcountry Partnerships	Partnership with Calaveras County Water District *(expand water recycling to offset Mokelumne River diversions)*	0.9 - 1.8 mgd (1,000 - 2,000 acre-ft/yr)[2]	Limited potential for recycled water application; Limited information available on potential recycled water sources; No direct established partnerships between the District and CCWD.
	Partnership with North San Joaquin Water Conservation District *(expand water recycling to offset Mokelumne River diversions)*	0.9 - 2.7 mgd (1,000 - 3,000 acre-ft/yr)[2]	Limited information available on potential recycled water sources; No direct established partnerships between the District and NSJWCD.

[1] *This table includes large (potential demand greater than 100 acre-ft/yr) projects that were screened out. Several smaller projects (satellite treatment opportunities with demands less than 100 acre-ft/yr) were also screened-out but are not documented in this table, including the satellite opportunity with UC Berkeley that was previously evaluated.*

[2] *Demand estimate based on 2004 Mokelumne River diversions and water rights.*

7.4 No-Project Alternative

For the analysis of project alternatives under the California Environmental Quality Act (CEQA) there are two scenarios that will be evaluated as part of the WSMP 2040, in addition to the scenarios that will be evaluated as part of the range of components to be developed under this WSMP 2040. These two scenarios are defined as follows:

The Base-Need-for-Water scenario is identical to the list of "committed" recycled water projects (as discussed in **Section 6.1** of this document), and includes all recycled water projects that will be online by the year 2010. The total annual recycled water demand associated with this scenario is 9.3 mgd.

The CEQA-No-Action scenario is comprised of all the projects under the Base-Need-for-Water scenario, plus recycled water projects identified for implementation by the year 2020, as identified in the previous 1993 WSMP (these projects would provide an additional 4.7 mgd of recycled water). The CEQA-No-Action scenario therefore prescribes for the District to recycle a minimum of 14 mgd by the year 2020.

8. Implementation Considerations

This section describes implementation criteria to be considered when determining project inclusion in the final recommended list of recycled water components. Some minor opportunities[1] and potential constraints[2] related to project implementation have been identified but are not further discussed. The two implementation considerations worth mentioning are listed below.

8.1 Project Phasing and Constraints

Recycled water projects are mainly constrained by the availability of a recycled water supply. In some areas, recycled water supply is projected to run out in the future, and current recycled water supplies are available on a first-come-first-serve basis (e.g. SRVRWP). Additionally, to remain cost effective, the timing of construction for recycled water projects is often tied to concurrent redevelopment projects in the area (e.g. new residential developments or street construction). Therefore, phasing of recycled water projects must take into account the availability of supply and consider project phasing with concurrent redevelopment projects.

With the exception of these constraints, recycled water projects possess an advantage over other water supply options (e.g. raising Pardee Dam) because they can be

[1] E.g. the opportunity for potential use of PVC pipe in place of copper pipe for dual plumbing installation at new buildings. This opportunity presented itself due to a recent change in plumbing code and will reduce corrosion problems associated with copper piping.

[2] E.g. issues related to high salinity levels in recycled water produced at the District's main WWTP. High salinity levels could impact users associated with the East Bayshore project.

implemented within a couple of years in the event that the District's water supply diminishes unexpectedly. Additional detail about the phasing of the recommended recycled water components identified in this TM will be developed at the time that the overall preferred water supply portfolios will be evaluated.

8.2 Permitting

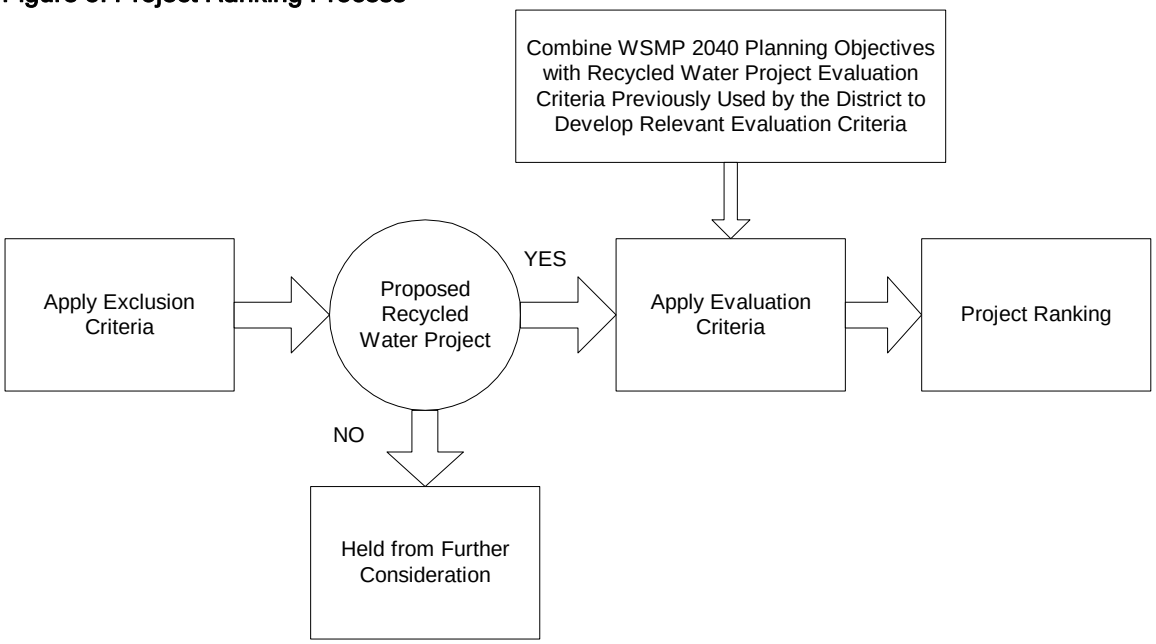
The proposed projects envision recycled water use for landscape irrigation, industrial uses such as cooling towers and boilers, and limited use in dual plumbed systems within new office space. Over the past decade, many projects with these uses have been successfully permitted by the Regional Water Quality Control Boards within the Bay Area and California. Permitting and compliance with Title 22 requirements is therefore not anticipated to be a major constraint to project implementation.

No specific constraints regarding CEQA and NEPA (if federal funding is sought) compliance for recycled water projects have been identified. Compliance is anticipated to require a similar level of effort as implementation of generic water or wastewater infrastructure construction projects.

9. Evaluation of Recycled Water Components

This section describes the methodology used to preliminarily evaluate recycled water projects and identify preferred recycled water projects for implementation. The ranking process is shown in **Figure 5** and described further below.

Figure 5: Project Ranking Process



9.1 WSMP 2040 Planning Objectives

The overall WSMP 2040 planning objectives are shown below. The planning objectives form the basis for development of evaluation criteria.

- Operations, engineering, legal & institutional
    - Provide water supply reliability
    - Preserve current water rights entitlements
    - Promote District involvement in regional, sustainable solutions
- Economic
    - Minimize cost to District customers
    - Minimized drought impacts to customers

- Public health, safety & community
    - Ensure the high quality of the District's water supply
    - Minimize adverse socio-cultural impacts (including environmental justice)
    - Minimize risks to public health & safety
    - Maximize security of infrastructure & water supply
- Environmental
    - Preserve & protect the environment for future generations
    - Preserve & protect biological resources
    - Contribute to reduction in carbon footprint
    - Promote recreational opportunities

9.2 Exclusion Criteria

As a first step, the water recycling team screened potential projects according to the following exclusion criteria. These exclusion criteria, developed as part of the overall WSMP 2040 effort, require projects to:

- Be technically feasible
- Not create geologic, hydrologic or toxic/hazardous material hazards
- Be logistically feasible – legal and institutionally (must meet water rights and dam/reservoir permit and license conditions).
- Provide reliability during Drought Planning Sequence

All proposed recycled water projects were found to meet the exclusion criteria. However, as described further in **Section 7.3** and shown in **Table 7**, some recycled water projects were excluded initially based on discussions with District staff.

9.3 Evaluation Criteria

The WSMP 2040 modeling working group has developed evaluation criteria based on the WSMP 2040 planning objectives. The recycled water working group combined these criteria with criteria previously used by the District to evaluate recycled water projects. The relevant evaluation criteria proposed for preliminary evaluation of recycled water components for the WSMP 2040 effort are summarized in **Table 8.**

Table 8: Evaluation Criteria for Recycled Water Components

Evaluation Criteria	Description/Comments
Minimize Cost to District Customers	Estimated preliminary project costs were developed based on a review of relevant background information and discussion with District project staff, and are used only for the purpose of prioritizing projects within the recycled water program[1]
Supply Availability	Is there enough supply to meet the demands of the project over the life of the project?
Reliability/ Yield	Does the project offset significant demands on the District's potable water supply and thereby add reliability to the District's potable water supply system?
Minimize Logistical Problems (Legal and Institutional)	Are there any institutional/legal issues that would prevent the project from moving forward? Are there agreements that would need to be reached with other entities and agencies? Is the project ready to proceed?

[1] *Standard cost estimating methods and guidance to calculate normalized unit cost will be developed by the WSMP 2040 finance/economics working group for fair and consistent comparison of alternatives, components and portfolios.*

9.4 Ranking of Recycled Water Components

In view of the fact that only some of the proposed recycled water projects may need to be implemented in order to meet the District's water recycling goals, and to minimize any implementation impacts (such as costs or institutional constraints) to the District, recycled water projects that best meet the preliminary evaluation criteria should be preferentially considered for implementation. Proposed recycled water projects were therefore ranked based on how effectively each project met the evaluation criteria. The results of the ranking process are summarized in **Table 9**.

Project scoring and ranking was completed by use of a point system allocating 1 to 3 points based on how closely each evaluation criteria is met (Low = 1 point, Medium = 2 points, High = 3 points). Project scoring with regards to the cost evaluation criteria was completed based on a point system allocating 1 to 5 points[1] (High unit water cost[2] = 1 point, Low unit water cost = 5 points). Projects were ranked according to the overall project score.

[1] Additional points were allocated to the cost evaluation criteria to reflect the relative importance of this criterion in the District's planning process.
[2] Unit water cost is defined as dollar/acre-ft/yr.

Table 9: Ranking of Potential Recycled Water Components

Project Name	Minimize Cost to District Customers[1,6]	High Supply Availability[2]	High Reliability/ Yield[3]	Minimize Logistical Problems (Legal and Institutional)[4]	Project Score[5]	Notes
LOCAL PROJECTS						
San Ramon Valley Recycled Water Program – Phase 2 Bishop Ranch	5	3	2	3	13	Expansion of committed project in design phase, established District partnership with DSRSD; Program EIR certified
East Bayshore Recycled Water Project – Phase 2 Future Expansion	5	3	2	2	12	Expansion of committed project; depended on redevelopment within service area; includes potential dual plumbing of new office buildings
San Ramon Valley Recycled Water Program – Phase 3 Danville East	4	3	2	3	12	Expansion of committed project in design phase, established District partnership with DSRSD
Richmond Advanced Recycled Expansion (RARE) Water Project - Phase 2 Additional 0.5 mgd	5	2	2	3	12	Expansion of committed project; planning phase complete; FEIR certified; design phase in progress; supply to increase over time; customer is established District project partner
ConocoPhillips Recycled Water Project	5	2	3	2	12	Project in planning phase; potential supply limitations; COP interested in financing and operating project
East Bayshore Recycled Water Project – Phase 1B Alameda	4	3	2	2	11	Expansion of committed project; adequate supply availability; implementation depended on timeline of redevelopment of Alameda Naval Air Station; construction across Alameda/Oakland estuary.
Richmond Advanced Recycled Expansion (RARE) Water Project - Future Expansion Additional 1.0 mgd	5	2	2	2	11	Expansion of committed project; potential supply limitations; customer is established District project partner
San Ramon Valley Recycled Water Program – Phase 4 Blackhawk East	3	2	1	3	9	Expansion of committed project; potential supply limitations; Program EIR certified
San Leandro Water Reclamation Facility Expansion Project – Phase 3 Oakland/Alameda	2[6]	2	2	3	9	Expansion of committed project; supply availability depends on City's plans for recycling; City of San Leandro is established District project partner.
Lake Chabot Raw Water Expansion Project	2	2	1	3	8	Expansion of existing raw water project; possible dry year supply limitations; limited demands and relatively long pumping distance and high elevation difference between source and demand
Lafayette Reservoir Raw Water Project	2	2	1	3	8	Limited demands; possible dry year supply limitations
North Richmond Water Reclamation Plant Expansion Project - Surrounding Area	2	1	2	3	8	Potential supply limitations; established partnership with West County Wastewater District
Reliez Valley Recycled Water Project (Portion of former Lamorinda Project)	2	3	1	2	8	Potential for partnership with Contra Costa Sanitary District to obtain recycled water
San Ramon Valley Recycled Water Project - Phase 5 Blackhawk West	3	1	1	3	8	Expansion of committed project; potential supply limitations

Project Name	Minimize Cost to District Customers[1,6]	High Supply Availability[2]	High Reliability/ Yield[3]	Minimize Logistical Problems (Legal and Institutional)[4]	Project Score[5]	Notes
San Ramon Valley Recycled Water Program – Phase 6 Danville West	3	1	1	3	8	Expansion of committed project; potential supply limitations
Point Richmond Recycled Water Project	2	2	1	2	7	Requires agreements and potential for long implementation time
Franklin Canyon Recycled Water Project	2	2	1	2	7	Potential supply limitations; long distance to recycled water supply
Rossmoor Country Club Satellite Project	1	2	1	2	6	Potential constraints: wastewater supply availability, site constraints, O&M staffing
Moraga Country Club Satellite Project	1	2	1	2	6	Potential constraints: wastewater supply availability, site constraints, O&M staffing
Rolling Hills Cemetery Satellite Project	1	2	1	2	6	Potential constraints: wastewater supply availability, site constraints, O&M staffing
Diablo Country Club Satellite Project	1	2	1	2	6	Potential constraints: wastewater supply availability, site constraints, O&M staffing
Mountain View & St. Mary's Cemetery Satellite Project	1	2	1	2	6	Potential constraints: wastewater supply availability, site constraints, O&M staffing
UPCOUNTRY AND SACRAMENTO AREA PROJECTS[7]						
Partnership with Jackson Valley Irrigation District and Amador County Wastewater Agencies	--	--	--	--	--	Potential supply limitations and long implementation time
Partnership with Jackson Valley Irrigation District and Amador Water Agency/ future joint Lake Camanche WWTP	--	--	--	--	--	Potential for long implementation time; requires agreement with multiple agencies
Partnership with Woodbridge Irrigation District	--	--	--	--	--	Potential supply limitations; requires agreement with multiple agencies
Partnership with Amador Water Agency	--	--	--	--	--	AWA is established District partner; Potential for long implementation time
Partnership with SRCSD and SCWA	--	--	--	--	--	Adequate supply availability; requires partnership with SRCSD and SCWA; recycled water project in planning phase; requires partnership and potable water transfer arrangement with SRSCD and SCWA

[1] Estimated preliminary project costs were developed based on a review of relevant background information and discussion with District project staff, and are used only for the purpose of prioritizing projects within the recycled water program.

[2] See Table 2 for additional supply availability information.

[3] See Table 6 additional yield information.

[4] Project ranking with respect to minimization of logistical problems was developed based on past experience and an overview of the projects.

[5] Project scoring and ranking was completed by use of a point system based on how closely each evaluation criteria is met (Low = 1 point, Medium = 2 points, High = 3 points). Project cost scoring was completed on a scale of 1 to 5 (High Project Cost = 1 point, Low Project Cost = 5 points).

[6] The cost for this project include WWTP upgrades to tertiary treatment and recycled water storage facilities.

[7] Upcountry and Sacramento Area projects were not compared to Local Projects because they are a separate set of projects. Upcountry and Sacramento Area projects were not ranked against each other because not enough information was available.

10. References

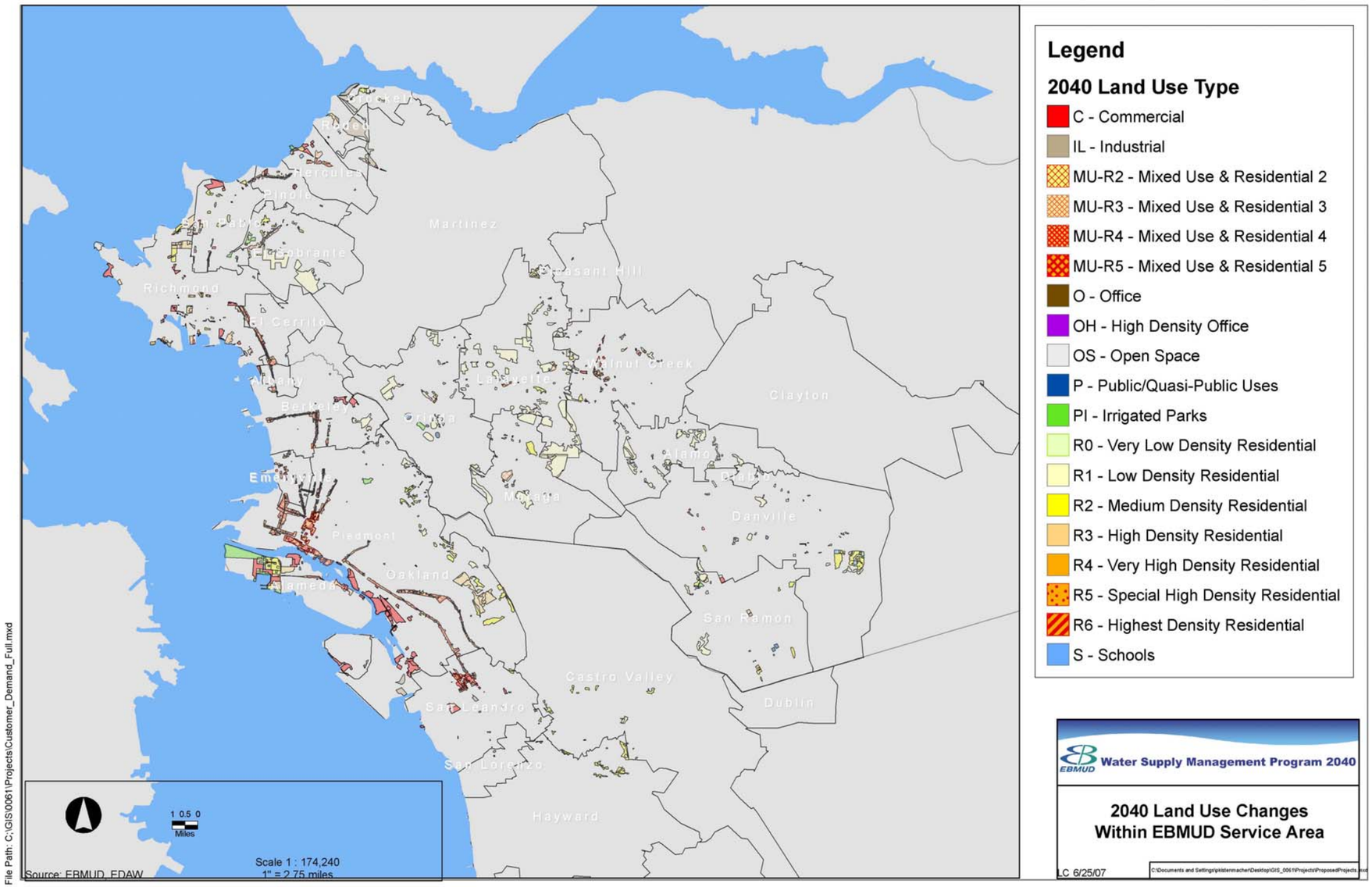
- EBMUD TM1
- EBMUD TM2
- EBMUD TM3
- EBMUD, Urban Water Management Plan, 2005

Appendix A: EBMUD WSMP 2040 Workplan

Appendix B: Recycled Water Market Database and EBMUD Business Classification Codes

Appendix C: Future Urban Development Information

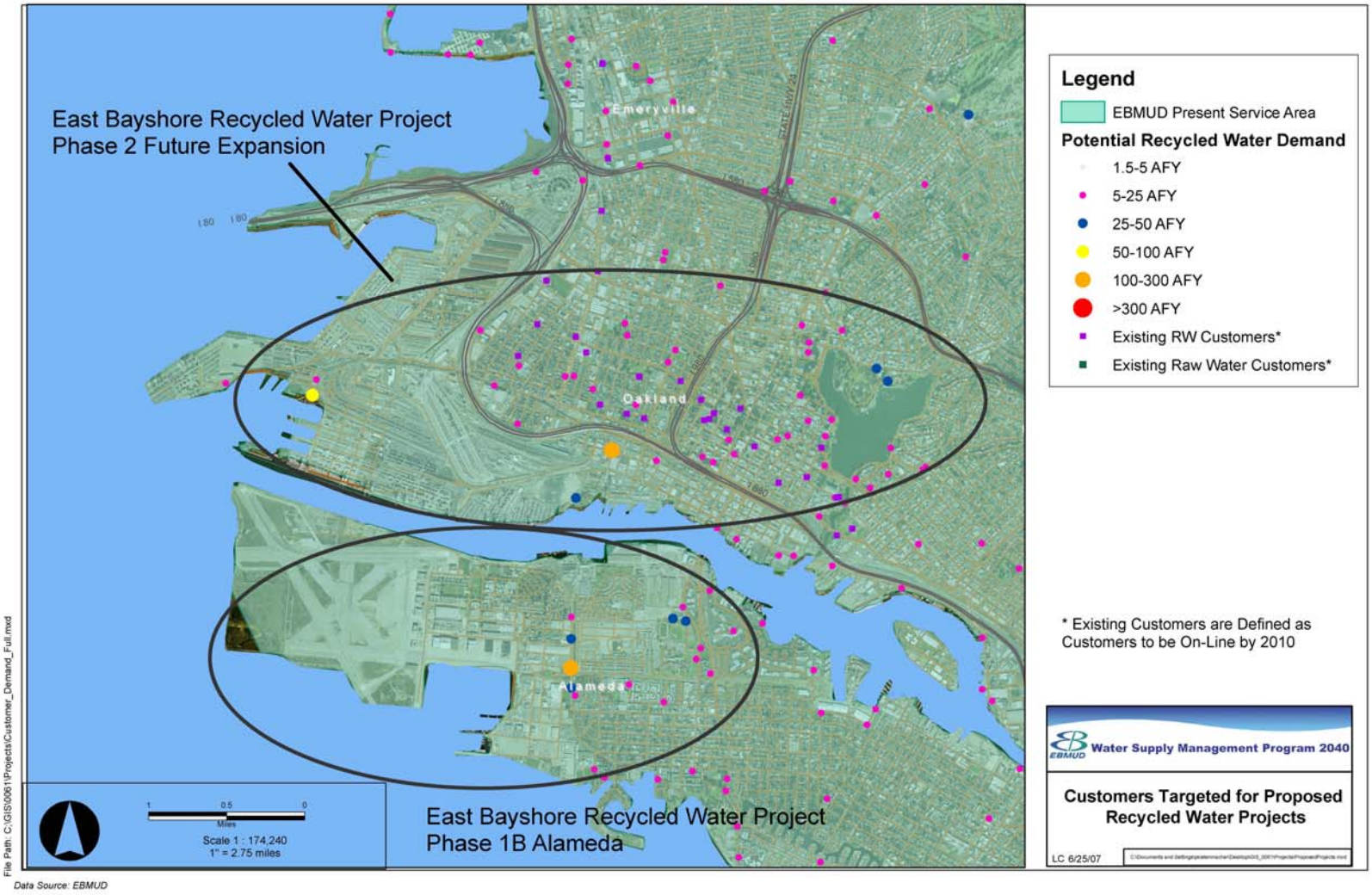
2040 Land Use Changes Within the District's Service Area

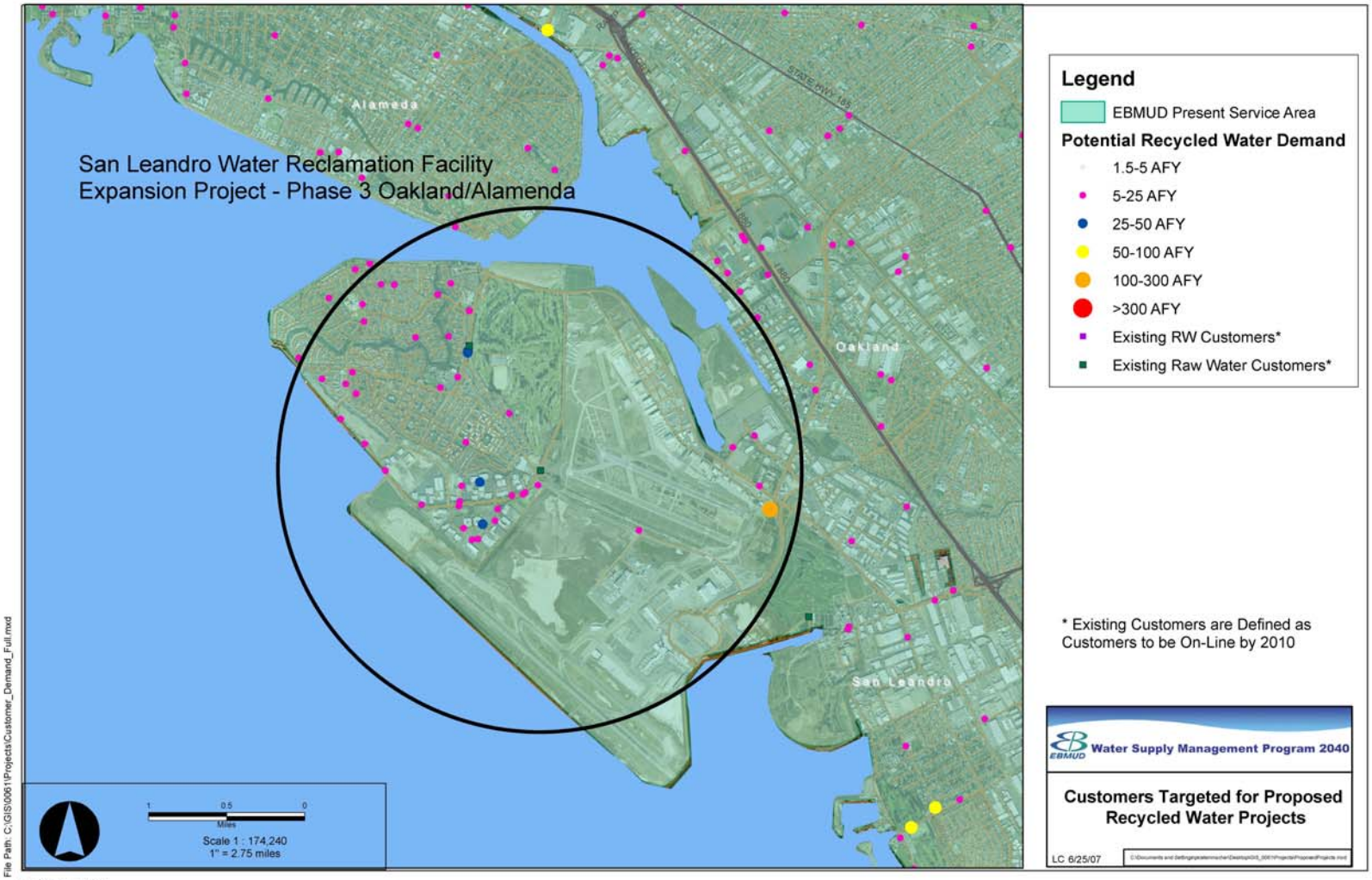


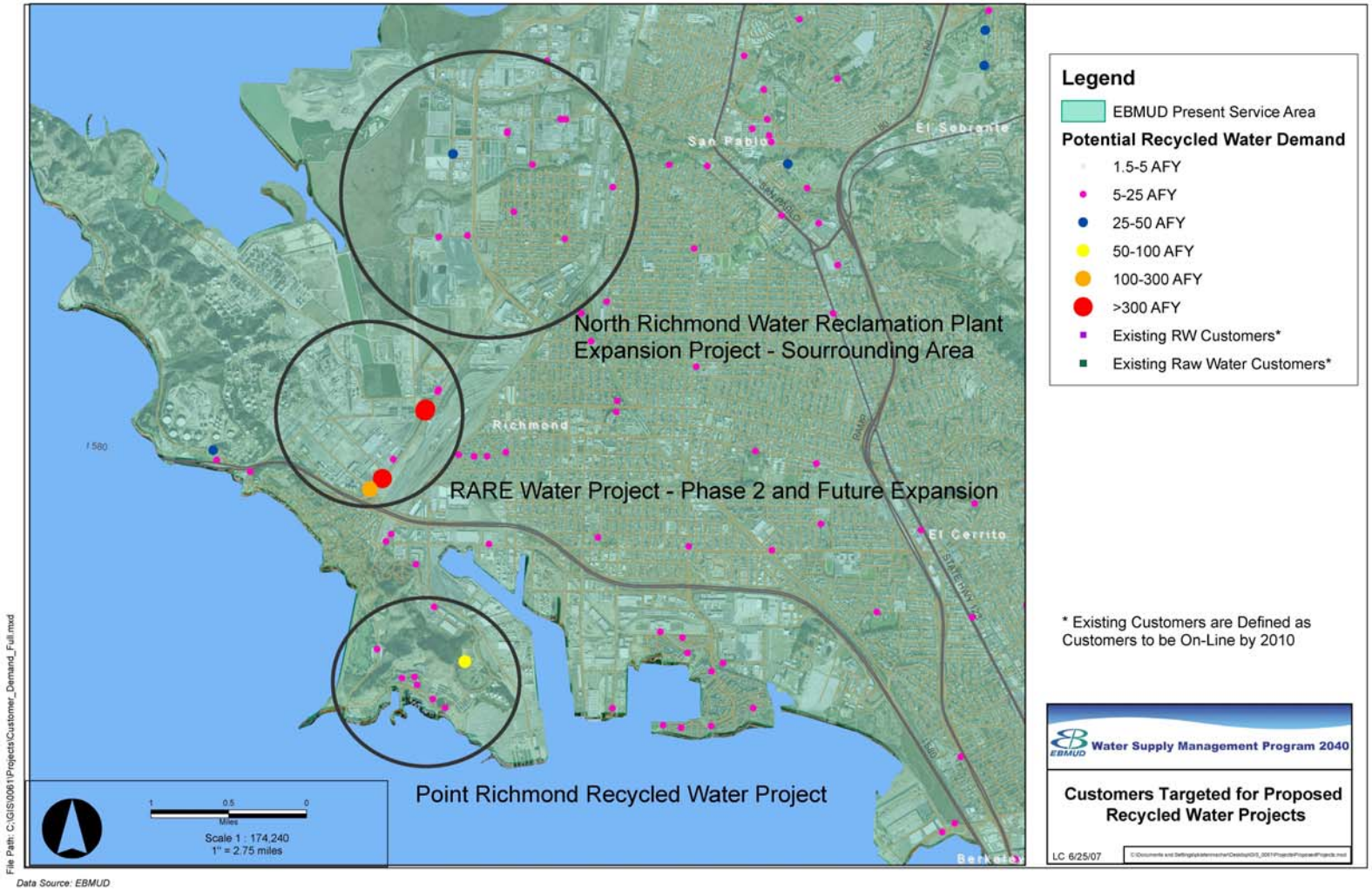
Data Source: EBMUD

Appendix D: Discussion of Partnership with Sacramento Regional County Sanitation District and Sacramento County Water Agency

Appendix E: Locations of Proposed Recycled Water Projects


East Bayshore Recycled Water Project
Phase 2 Future Expansion
Emeryville
Oakland
Alameda
East Bayshore Recycled Water Project
Phase 1B Alameda
Legend
EBMUD Present Service Area
Potential Recycled Water Demand
1.5-5 AFY
5-25 AFY
25-50 AFY
50-100 AFY
100-300 AFY
>300 AFY
Existing RW Customers*
Existing Raw Water Customers*
* Existing Customers are Defined as Customers to be On-Line by 2010
Water Supply Management Program 2040
Customers Targeted for Proposed Recycled Water Projects
LC 6/25/07
Scale 1 : 174,240
1" = 2.75 miles
File Path: C:\GIS\00611\Projects\Customer_Demand_Full.mxd
Data Source: EBMUD


San Leandro Water Reclamation Facility
Expansion Project - Phase 3 Oakland/Alamenda
Alameda
Oakland
San Leandro
Legend
EBMUD Present Service Area
Potential Recycled Water Demand
1.5-5 AFY
5-25 AFY
25-50 AFY
50-100 AFY
100-300 AFY
>300 AFY
Existing RW Customers*
Existing Raw Water Customers*
* Existing Customers are Defined as Customers to be On-Line by 2010
Water Supply Management Program 2040
Customers Targeted for Proposed Recycled Water Projects
LC 6/25/07
Scale 1 : 174,240
1" = 2.75 miles
File Path: C:\GIS\00611\Projects\Customer_Demand_Full.mxd
Data Source: EBMUD


North Richmond Water Reclamation Plant
Expansion Project - Sourrounding Area
RARE Water Project - Phase 2 and Future Expansion
Point Richmond Recycled Water Project
San Pablo
El Sobrante
Richmond
El Cerrito
Berkeley
I 580
Legend
EBMUD Present Service Area
Potential Recycled Water Demand
1.5-5 AFY
5-25 AFY
25-50 AFY
50-100 AFY
100-300 AFY
>300 AFY
Existing RW Customers*
Existing Raw Water Customers*
* Existing Customers are Defined as Customers to be On-Line by 2010
Water Supply Management Program 2040
Customers Targeted for Proposed Recycled Water Projects
LC 6/25/07
Scale 1 : 174,240
1" = 2.75 miles
File Path: C:\GIS\0061\Projects\Customer_Demand_Full.mxd
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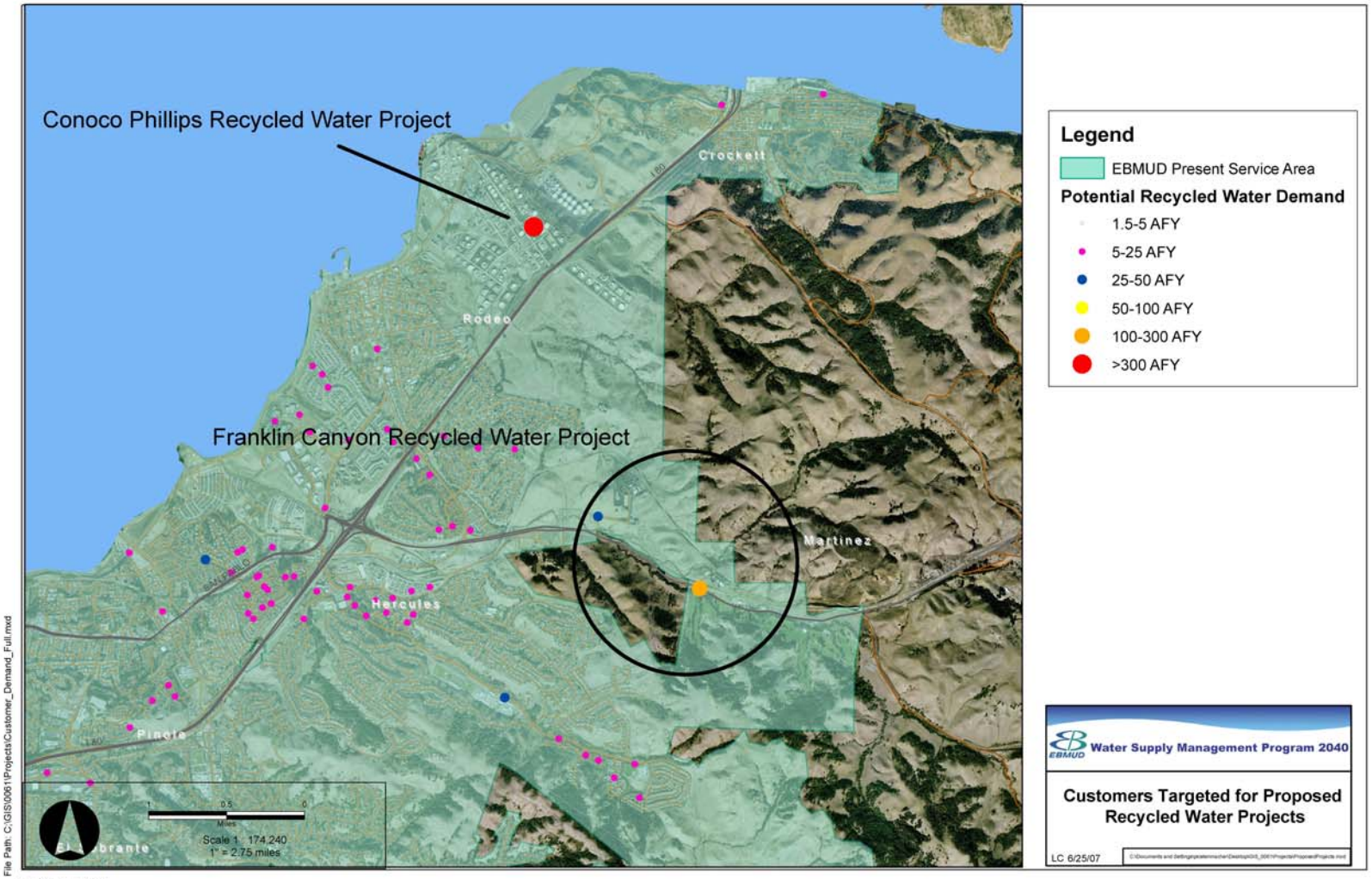
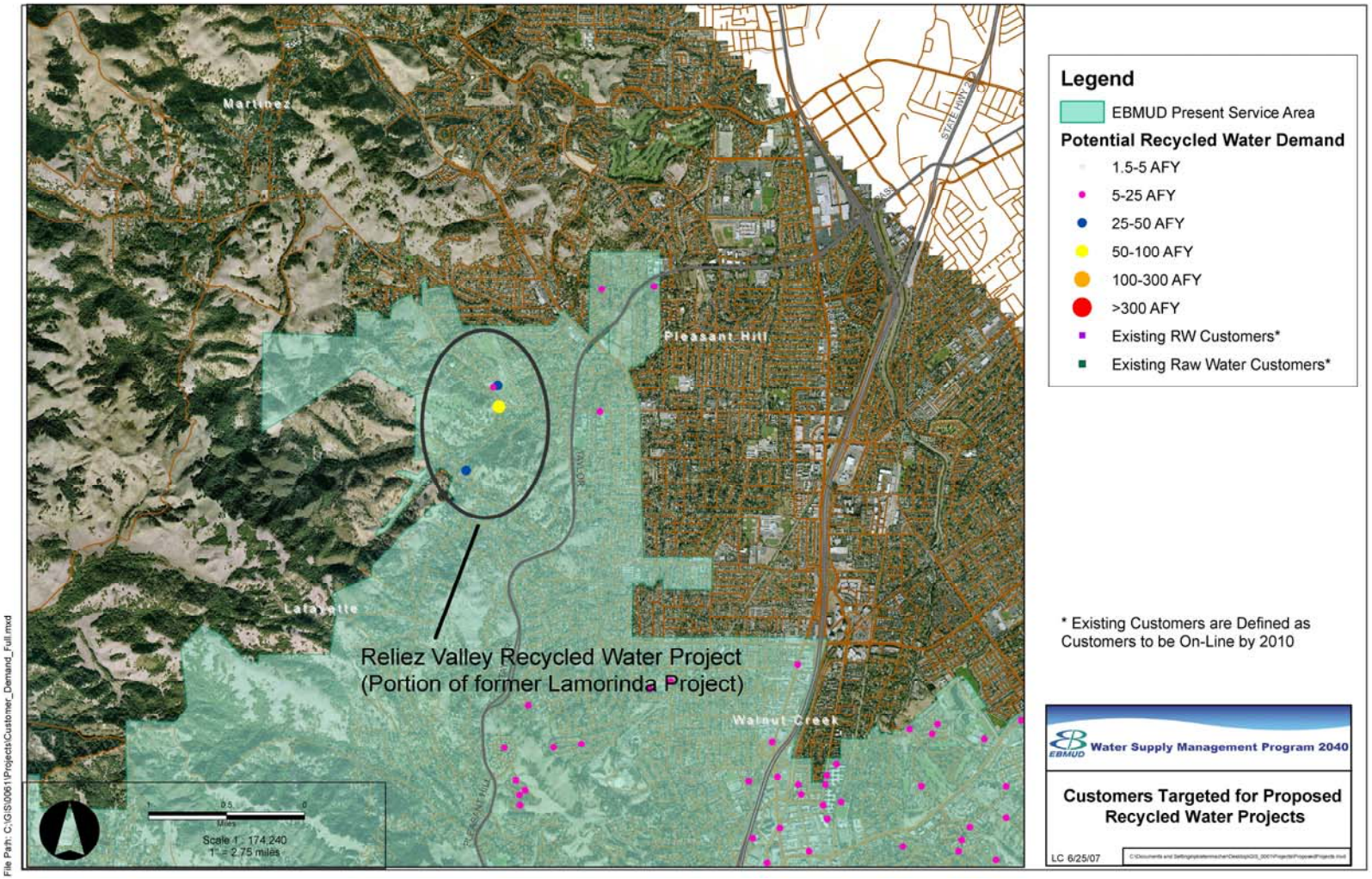
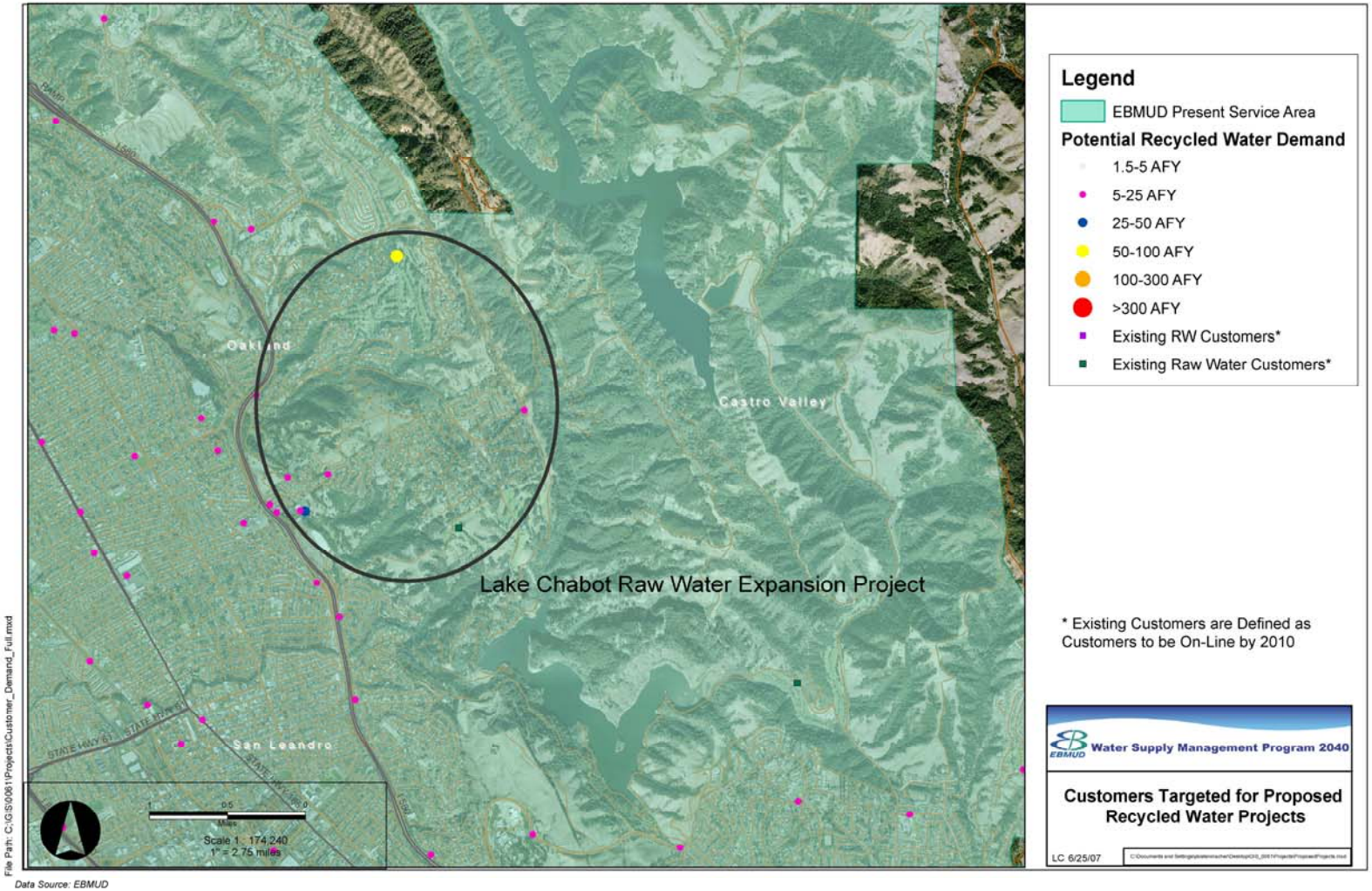
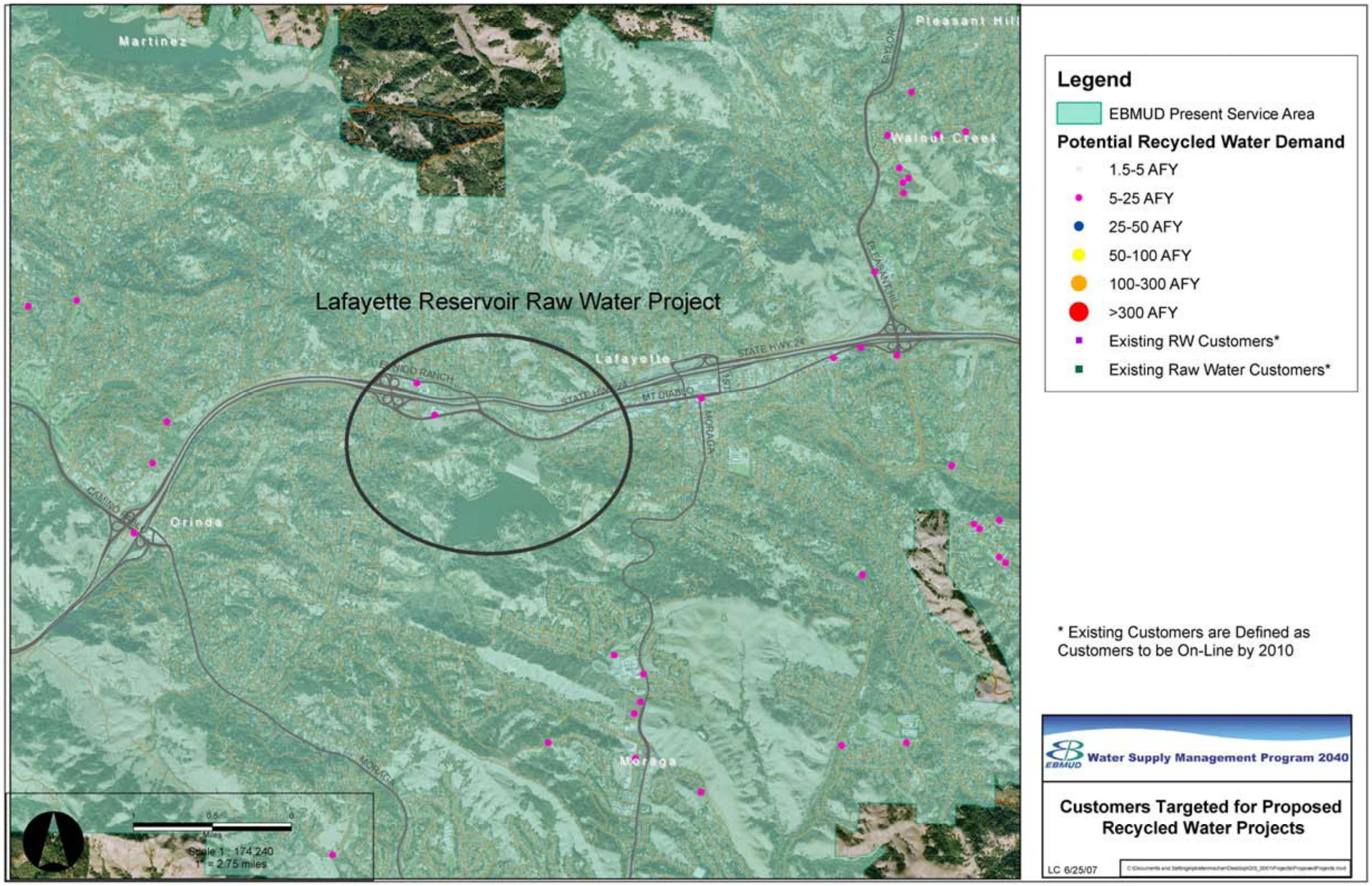

Conoco Phillips Recycled Water Project
Franklin Canyon Recycled Water Project
Crockett
Rodeo
Hercules
Pinole
Martinez
Legend
EBMUD Present Service Area
Potential Recycled Water Demand
1.5-5 AFY
5-25 AFY
25-50 AFY
50-100 AFY
100-300 AFY
>300 AFY
Scale 1 : 174,240
1" = 2.75 miles
Water Supply Management Program 2040
Customers Targeted for Proposed Recycled Water Projects
LC 6/25/07
File Path: C:\GIS\00611\Projects\Customer_Demand_Full.mxd
Data Source: EBMUD

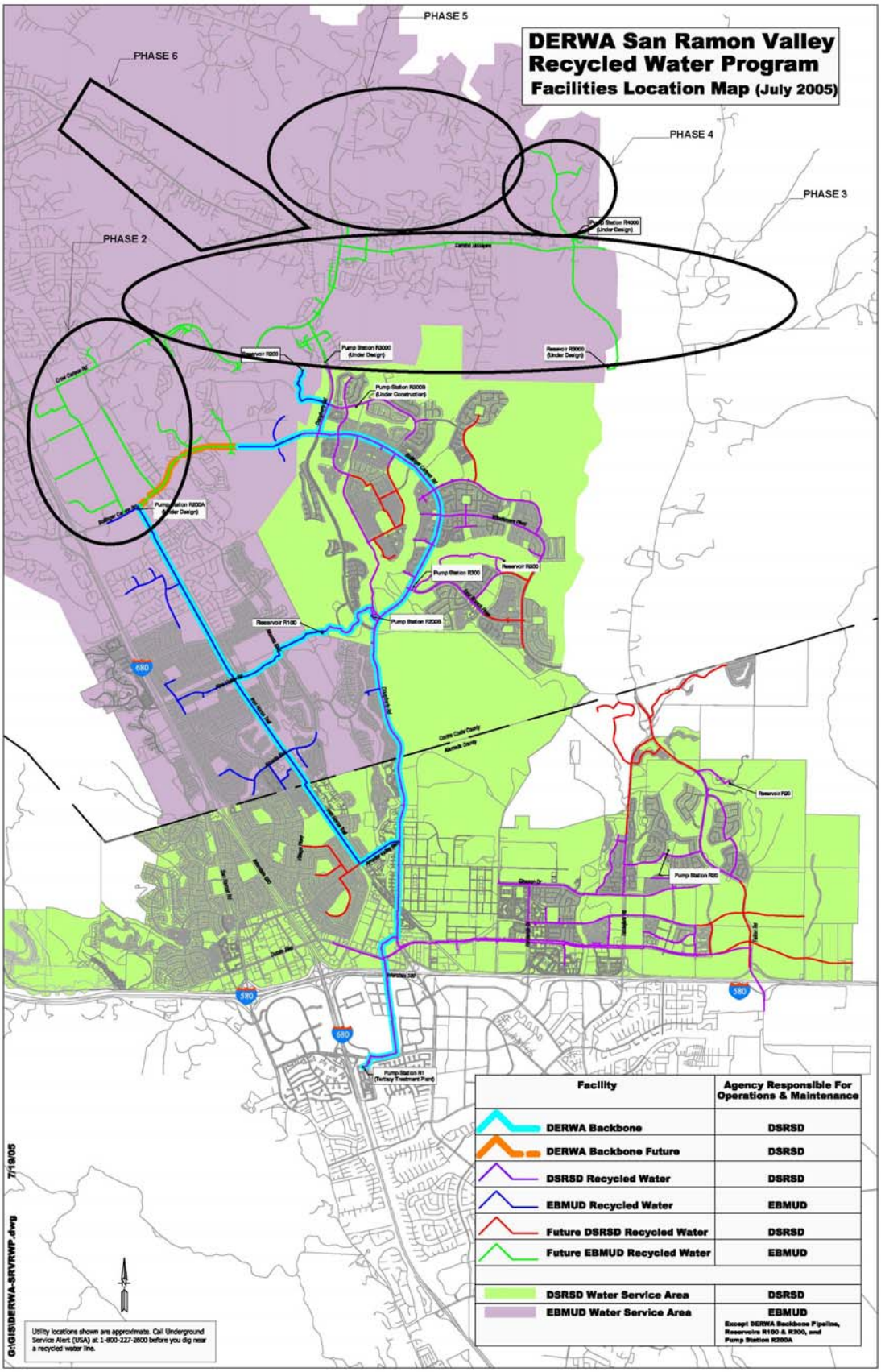

Martinez
Pleasant Hill
Lafayette
Walnut Creek
Reliez Valley Recycled Water Project
(Portion of former Lamorinda Project)
Legend
EBMUD Present Service Area
Potential Recycled Water Demand
1.5-5 AFY
5-25 AFY
25-50 AFY
50-100 AFY
100-300 AFY
>300 AFY
Existing RW Customers*
Existing Raw Water Customers*
* Existing Customers are Defined as Customers to be On-Line by 2010
Water Supply Management Program 2040
Customers Targeted for Proposed Recycled Water Projects
LC 6/25/07
Scale 1 : 174,240
1" = 2.75 miles
File Path: C:\GIS\00611\Projects\Customer_Demand_Full.mxd
Data Source: EBMUD


Legend
EBMUD Present Service Area
Potential Recycled Water Demand
1.5-5 AFY
5-25 AFY
25-50 AFY
50-100 AFY
100-300 AFY
>300 AFY
Existing RW Customers*
Existing Raw Water Customers*
Oakland
Castro Valley
San Leandro
Lake Chabot Raw Water Expansion Project
* Existing Customers are Defined as Customers to be On-Line by 2010
Water Supply Management Program 2040
Customers Targeted for Proposed Recycled Water Projects
LC 6/25/07
Scale 1 : 174,240
1" = 2.75 miles
File Path: C:\GIS\0061\Projects\Customer_Demand_Full.mxd
Data Source: EBMUD



File Path: C:\GIS\0061\Projects\Customer_Demand_Full.mxd

Data Source: EBMUD


DERWA San Ramon Valley
Recycled Water Program
Facilities Location Map (July 2005)
PHASE 5
PHASE 6
PHASE 4
PHASE 3
PHASE 2
Facility
Agency Responsible For Operations & Maintenance
DERWA Backbone
DSRSD
DERWA Backbone Future
DSRSD
DSRSD Recycled Water
DSRSD
EBMUD Recycled Water
EBMUD
Future DSRSD Recycled Water
DSRSD
Future EBMUD Recycled Water
EBMUD
DSRSD Water Service Area
DSRSD
EBMUD Water Service Area
EBMUD
Except DERWA Backbone Pipeline, Reservoirs R100 & R200, and Pump Station R200A
Utility locations shown are approximate. Call Underground Service Alert (USA) at 1-800-227-2600 before you dig near a recycled water line.
7/19/05
G:\GIS\DERWA-SRVRWP.dwg

Appendix D TM-5

Conservation Program Evaluation TM

MADDAUS WATER MANAGEMENT

CONSERVATION TECHNICAL ANALYSIS

Date: March 19, 2009

To: Richard Harris, East Bay Municipal Utility District

From: William Maddaus, Maddaus Water Management

Subject: ***Conservation Program Evaluation - Summary of Data Inputs, Assumptions and Results***

EXECUTIVE SUMMARY

Introduction

This conservation technical analysis was conducted by Maddaus Water Management (MWM) for the WSMP Project Team and the East Bay Municipal Utility District (EBMUD). The purpose of the analysis was to:

1. Identify and evaluate conservation measures that could be implemented by EBMUD to reduce future water demand.
2. Estimate the costs and water savings of those measures.
3. Combine the measures into increasingly more aggressive programs and evaluate the costs and water savings of the alternate programs.

Long-Term Conservation Program Analysis

A list of about 100 conservation measures considered potentially appropriate for the EBMUD service area was developed from known technology and services that would save water. Fifty three selected conservation measures were further analyzed and combined into five alternative component programs of increasingly higher water savings and implementation costs. Figure ES-1 shows the projected savings from these programs, labeled Conservation Program A (least aggressive), B, C, D and E (most aggressive). The programs are defined and water savings tabulated for 2040 in Table ES-1. Water savings in 2040, including the future effects of adopted and projected plumbing codes, range from about 19 to 41 MGD for conservation beyond implemented measures starting in the year 2010.

Table ES-2 shows the relative water savings (MGD), and program costs ($ millions) for the utility, customer, and community and cost of water saved ($/AF) of the alternate programs. The period of analysis is 2010 to 2040. Additional resources and customer contacts are required to reach higher levels of potential water savings. The plumbing code is included as passive baseline savings in addition to the long-term conservation program in Programs B-E. Most of the program water savings include indoor plumbing code and outdoor landscape improvements. More than 75 percent of the new potable water needed by EBMUD to accommodate planned growth could be met through aggressive conservation and planned recycled water projects.

Figure ES-1 graphically depicts the five programs. Program A reflects estimated water savings derived from only the plumbing code. The additional measures that create programs B, C, D, and E produce increasing incremental water savings and costs. The graph illustrates there are apparent diminishing returns when measures are added to each program beyond Program B.

Table ES-1
Conservation Program Description and Future Water Savings 2008-2040

Conservation Program	Description	2008-2010 Existing Programs	Additional 2010-2040 Water Savings, MGD	Total Year 2040 Water Savings*
A	No Conservation beyond Plumbing Code	NA	19	19
B	Similar to Current EBMUD Program 25 Measures	2	27	29
C	Add 15 Measures to Current Program	2	35	37
D	Add 3 Measures to Program C	2	37	39
E	Add 4 Measures to Program D	2	39	41

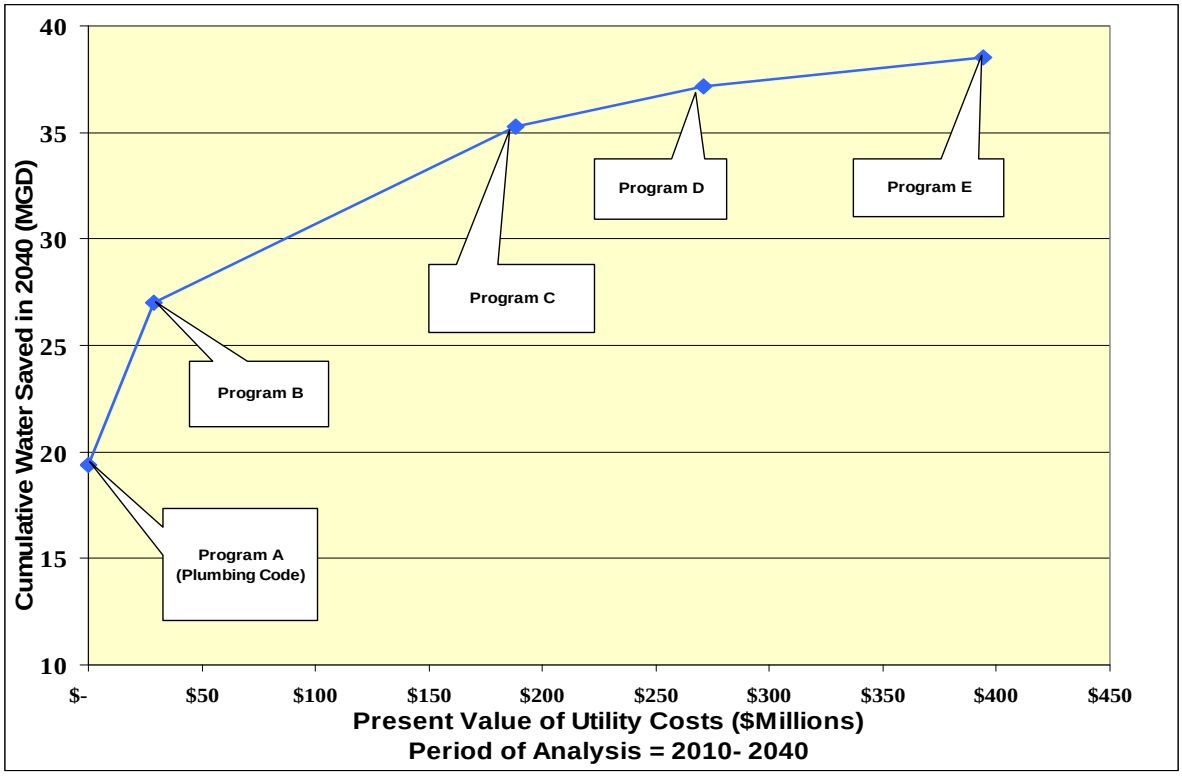
* Total savings includes new Programs B-E plus 2 MGD projected to be saved during 2008 and 2009 from Existing Programs

Table ES-2
Economic Analysis of Alternative Programs A thru E 2010 to 2040

Conservation Program	2040 Water Savings w/code (MGD)	2040 Indoor Water Savings (MGD)	2040 Outdoor Water Savings (MGD)	2040 Real Water Loss Savings (MGD)	Present Value of Water Utility Costs ($millions)	Present Value of Community Costs ($millions)	Present Value of Customer Costs ($millions)	Utility Cost of Water Saved ($/AF)	Community Cost of Water Saved ($/AF)	Portion of New Water Needed from 2010 to 2040
Program A (Plumbing Code)	19.4	19.4	0.0	0.0	NA	NA	NA	NA	NA	38.7%
Program B + Plumbing Code	27.0	25.3	1.7	0.0	$ 29	$ 220	$ 191	$ 143	$ 1,378	53.8%
Program C + Plumbing Code	35.3	29.6	2.7	3.0	$ 188	$ 540	$ 352	$ 480	$ 1,971	70.4%
Program D + Plumbing Code	37.2	29.8	2.9	4.4	$ 271	$ 708	$ 437	$ 634	$ 2,544	74.1%
Program E + Plumbing Code	38.6	29.9	4.3	4.4	$ 394	$ 972	$ 578	$ 845	$ 3,470	76.9%

Notes- Excludes 2 MGD in projected water savings for programs B – E from existing program during 2008 and 2009. Indoor water savings include plumbing code (Program A). Portion of new water needed refer to growth in demand without plumbing code.

Figure ES - 1
Present Value of Utility Costs versus Cumulative (Total) Water Saved in 2040



INTRODUCTION AND PURPOSE

The purpose of this report is to present an overview of the conservation evaluation process which has been completed for EBMUD. The evaluation was performed on a total of 53 individual measures. Multiple tiered measures analyzed range from moderate, to extensive market saturation levels covering both retrofits and new development standards.

The analysis includes quantifiable measures corresponding to the California Urban Water Conservation Best Management Practices (CUWCC BMPs). The conservation measures were analyzed using the Least Cost Planning Water Demand Management Decision Support System (DSS model). The evaluation includes new development measures to make new residential and business customers more water efficient. These conservation measures were then organized into five programs showing costs and water savings. The conservation savings are based on a 10% to 90% market saturation for existing accounts and new development ordinances (account participation). Each of these 53 individual measures and programs will be discussed in detail in this report.

Contents

This technical report provides a general overview for the methodology, assumptions, and results for the conservation analysis. The following five pieces of information are included in this memorandum and are discussed in individual sections below:

1. Overview of evaluation process

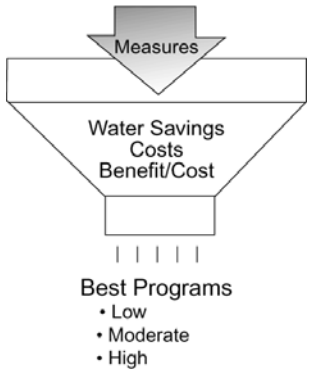
2. Baseline water demands with and without plumbing code
3. Comparison of individual conservation measures
4. Results of conservation program evaluation
5. Appendix 1: Assumptions for the Conservation Measures Evaluated

1. OVERVIEW OF EVALUATION PROCESS

Long Term Conservation Evaluation Process

During the evaluation process, water savings were estimated and costs, assumptions for the measures were developed by MWM and EBMUD Staff. Benefits and costs were compared in a formal present value analysis and conclusions were drawn about which measures produce cost-effective water savings. This process can be thought of as an economic screening process, shown in Figure 1. Packaging the best measures into alternative programs allows EBMUD to consider what level of conservation is appropriate.

Figure 1
Evaluation Process



Benefit-cost analysis has been used by many water agencies to evaluate and help select a water conservation measure best suited to local conditions. This analysis requires a locale-specific set of data, such as historical water consumption patterns by customer class, population projections, age of housing stock, and prior conservation efforts.

The following seven steps were used to implement the methodology by expanding upon the same DSS model used to prepare the demand projections.

1. **Use Demand Study Results to represent water use projections without the national plumbing code**. Projections cover each key customer category and are broken down into indoor and outdoor end uses. Note, the plumbing code refers to savings from the 1992, 2005 Federal Energy Policy Act; it is not the same as savings from CUWCC BMP conservation. The baseline water use projections (demand projections) for this project were matched to the 2040 Demand Projections for the Water Supply Management Program (2040 WSMP), net of existing conservation and existing and planned recycled water projects.
2. **Identify possible water conservation measures and screen the measures qualitatively** to identify those that are applicable to the service area. Develop appropriate unit water savings and cost factors for each measure.

3. **Estimate the affected customers (or number of accounts) for each conservation measure** by dividing the measure's projected customers (or accounts) that implements the measure by the total service area customers (accounts). This factor is called the increased market saturation or installation rate to be added to existing EBMUD conservation program market saturation levels.
4. **Estimate total annual average, seasonal and peak day water savings.** The water savings are computed by multiplying unit water savings, per measure, by the market saturation or installation rate (i.e. 10% to 90% of accounts), and then multiplying by the number of units in a particular service area (such as dwelling units) targeted by a particular measure.
5. **Determine initial and annual costs to implement the measures** based upon pilot projects, local experience, and the costs of goods, services, and labor in the community. This is multiplied by the number of units participating each year and then added to overall administration and promotion costs to arrive at a total measure cost, which may be averaged and spread over a number of years.
6. **Compare costs of measures** by computing the present value of costs and costs of water saved over the planning period.
7. **Compile programmatic packages** containing various new measures.

2. BASELINE WATER DEMANDS WITH AND WITHOUT PLUMBING CODE

Water demand projections were input to the year 2040 using the DSS model. This model incorporates information from the:

- Water Supply Management Program 2010–2040 Demand Study Demand Estimates.
- 2000 and 2005 Census data.
- 2007 ABAG Projections (population and employment).
- 2005 EBMUD Urban Water Management Plan.
- California Urban Water Conservation Council (CUWCC) BMP Reporting Database.
- Data provided by EBMUD staff including estimates for value of water saved, historical water use, past conservation efforts, and water system facilities.

National Plumbing Code

The Federal Energy Policy Act of 1992, as amended in 2005, requires only fixtures meeting the following standards can be installed in new buildings:

- Toilet – 1.6 gal/flush maximum
- Urinals – 1.0 gal/flush maximum
- Showerhead - 2.5 gal/min at 80 psi
- Residential Faucets – 2.2 gal/min at 60 psi
- Public Restroom Faucets - 0.5 gal/min at 60 psi
- Dishwashing pre-rinse spray valves – 1.6 gal/min at 60 psi

Replacement of fixtures in existing buildings is also governed by the Federal Energy Policy Act that requires only devices with the specified level of efficiency (shown above) can be sold today (2009). The net result of the plumbing code is that new buildings will be more efficient and old inefficient fixtures will slowly be replaced with new more efficient models. The national plumbing code is an important piece of legislation and carefully taken into consideration when analyzing the overall water efficiency of a service area.

In California two additional laws are relevant. Starting in 2010, updated landscape model ordinances are in effect statewide. Also, starting in 2014 toilets and urinals installed in buildings must be as follows:

- Toilet – 1.28 gal/flush maximum
- Urinals – 0.5 gal/flush maximum

In addition to the plumbing code the US Department of Energy regulates appliances such as residential clothes washers. Regulations to make these appliances more energy efficient has driven manufactures to dramatically reduce the amount of water these efficient machines use. Generally horizontal axis washing machines use 30-50 percent less water than conventional models (which are still available). In the analysis for EBMUD, the DSS Model forecasts a gradual transition to high efficiency clothes washers so that by the year 2020 this will be the only type of machines purchased. Given that machines last about 15 years eventually all machines in the EBMUD area will be of this type.

EBMUD Water Service Regulations

EBMUD Section 31-Water Efficiency Requirements, adopted in July 2007, establish minimum indoor and outdoor water-efficiency standards as a condition of service. Section 31 requirements apply to all new applicants and customers requesting new meters and meter upgrades. Meter sizing criteria was established through consideration of customer type; intended water use; number and square footage of dwelling units; square footage of irrigated landscaped areas; fixture counts; and number of occupants. The water-efficiency standards were established through scientific research, documented metered water use, established codes and ordinances, and professional and adopted water utility industry practice. Required water efficiency standards include plumbing fixtures, appliances, landscaping, food service equipment, cooling systems, and other products or practices that meet efficiency and eligibility criteria including (a) third party performance testing; (b) market availability; (c) demonstrated, achievable water savings; and (d) reasonable consumer cost. New accounts would be certified through EBMUD's water service application process via an EBMUD-administered check list and/or plan check review. EBMUD would have the right to inspect and verify compliance with the water service regulations as deemed necessary. The regulations are intended to be updated overtime as new water-use-efficiency standards are developed.

Demand Forecasts without the Plumbing Code

As part of the WSMP 2040, projected future EBMUD water demands were prepared by the Project Team and EBMUD (Demands Team) using a combination of land-use and population projections. EBMUD-wide demand projections represent system input, the quantity of water that enters the distribution system. System input includes treated water delivered from EBMUD's treatment plants, groundwater inflow to the Claremont Tunnel, and adjustments for changes in distribution storage. The demand projections were then adjusted to reflect water savings from

current conservation efforts and recycled water projects. Current conservation efforts include all programs in place through 2008. Recycled water projects incorporated in the base demand projections include all projects that will be in service by 2010. The resulting "adjusted demand" was 280 MGD in the year 2040.

In order to avoid double counting between future conservation and future recycled water projects, further adjustments were made to the demands for the conservation analysis. Recycled water projects that were planned in the WSMP were accounted for by subtracting their projected potable water use offset. The adjustment provided by the Demands Team to MWM started with 4.5 MGD in 2010 and grew to 14.5 MGD in 2040. This resulted in a final adjusted projected demand of 266 MGD in 2040. Accounting for future recycled water results in a lower overall conservation potential. This is a necessary step because conservation projects could have lowered water use on the sites that will be switching to use of recycled water and this step avoids double counting savings.

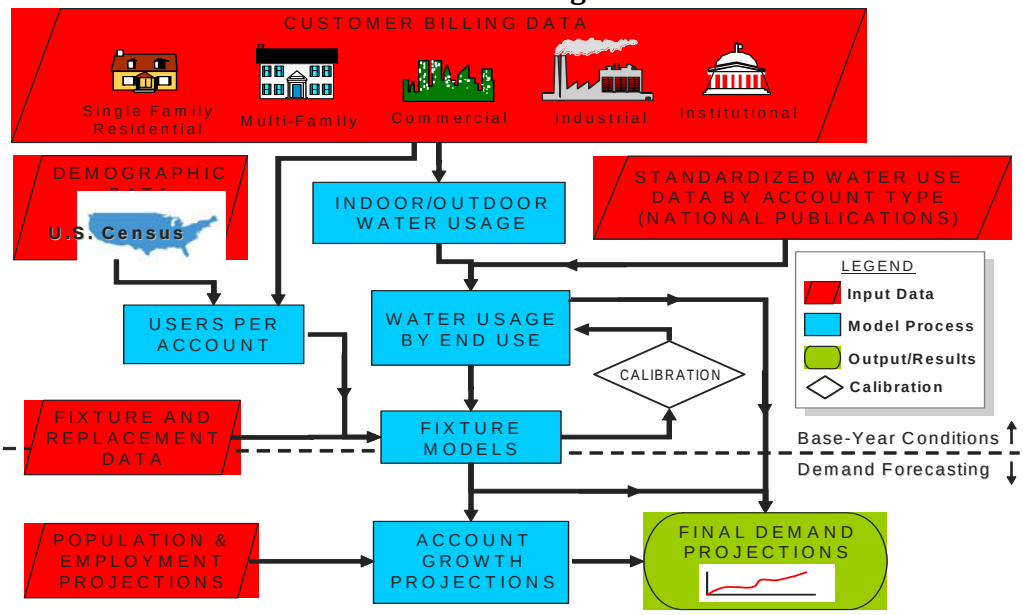
Demand Forecasts with the Plumbing Code

The DSS model as outlined by the Figure 2 was used to generate an additional demand projection "with the plumbing code" to take into account the plumbing fixture changes and appliance changes described above It is important to generate a demand projection "with the plumbing code" to determine the existing and future level of efficient products within the EBMUD service area. For example, the "with the plumbing code" demand takes into account all of the toilets that have been or would be changed from high flush volumes to the more efficient 1.6 gallons or 1.28 gallons per flush. New homes built since 1992 and those in the future will have these low flow fixtures. This is a very important step that is taken to ensure that the effects of the plumbing code and future EBMUD water conservation potential are properly analyzed.

Figure 2 below describes how the above listed items are incorporated into the flow of information in the DSS Model.

Figure 2

DSS Model Overview Used to Make Potable Water Demand Projection "With the Plumbing Code"



Key Assumptions for the DSS Model

Table 1 shows the key assumptions used in the model. The assumptions having the most dramatic effect on future demands are the natural replacement rate of fixtures, how residential or commercial future use is projected, and finally the percent of estimated real water losses.

- *Base Year* - This is the starting year for the analysis. For this project, a base year of 2010 was selected as an appropriate starting point as it was the approved base year for the 2040 WSMP Project. The necessary data for the base year was provided in the EBMUD Demands Team.
- *Average gal/day/acct* - This is the amount of water in gallons that is used per day, per account.
- *Average gal/day/capita* - This is the amount of water in gallons that is used per day, per capita.
- *Indoor/outdoor water use* - This is the amount of water per account split into the percent that is used indoors and outdoors.
- *Consumption by customer class* - This shows the annual amount of water used for an entire calendar year, broken down by customer class including Single Family, New Single Family, Condos (2 to 4 units), Multifamily (Apartments more than 5 units), Commercial, Institutional, Industrial, Irrigation and Petroleum.
- *Non Revenue Water* - Sum of all water input to system that is not billed (metered and unmetered) water consumption, including apparent (metering accuracy) and real losses. An average value of 10.3 percent was used for future planning purposes.
- *Water Produced* - This is the total amount of potable water produced by EBMUD net of existing and planned recycled water.
- *Peak day factor* - The ratio of water produced on the maximum day of the year to that produced on the average day. A value of 1.55 is used for this analysis as provided by EBMUD.

Figure 3 shows the potable water demand projection at five-year increments. The graph shows projections for demand with and without the plumbing code through 2040.

Table 2 presents the water demands projection which includes the following:

1. The water demand projections are based on the WSMP 2040 demand projections.
2. The water demands in 2040 without plumbing code are the same as the WSMP 2040 demand projections; net of existing and planned recycle water projects.
3. Projections were made *with and without* the plumbing codes.

The plumbing codes and appliance standards will reduce 2040 demands 19.4 MGD or 7.9 percent of demands w/o the plumbing code and net of recycled water. We include these savings in the overall savings projected for EBMUD. Further reductions in demand due to voluntary and regulatory conservation measures are calculated from an end use version of the demands "with plumbing code".

Table 1
List of Baseline Demand Projection Assumptions for DSS Model

Parameter	Model Input Value, Assumptions, and Key References
Base Year	2010
Peak Day Factor	1.55 provided by EBMUD
Non Revenue Water, % of Water Production	Non Revenue Water 12.1% provided by EBMUD
Population and Employment Projection, 2005 to 2030	2007 ABAG Projections calculated for EBMUD Service Area by EBMUD Staff, June 2007 2005 EBMUD Urban Water Management Plan Table 1-2 page 1-6. Table values updated by errata sheet December 29, 2006
Number of Water Accounts for Base Year	2005 Billing Data
Distribution of Water Use Among Categories	2005 EBMUD Water Consumption Data
Indoor/Outdoor Water Use Split by Category, % of Total	Estimated from Billing Data
Residential End Uses, %	2001 EBMUD Residential End Use Study; AWWARF Report "Residential End Uses of Water" 1999
Non-Residential End Uses, %	Professional judgment and AWWARF Report "Commercial and Institutional End Uses of Water" 1999
Efficient Residential Fixture Current Installation Rates	EBMUD Estimates, Census 2005, Housing age by type of dwelling plus natural replacement plus rebate program (if any). Reference "High Efficiency Plumbing Fixtures - Toilets and Urinals" Koeller & Company July 23, 2005. Reference Consortium for Efficient Energy (www.cee1.org)
Water Savings for Fixtures, gal/capita/day	2001 EBMUD Residential End Use Study, AWWARF Report "Residential End Uses of Water" 1999
Non-Residential Fixture Efficiency Current Installation Rates	EBMUD Estimates, Census 2005, assume commercial establishments built at same rate as housing, plus natural replacement
Residential Frequency of Use Data, Toilets, Showers, Washers, Uses/user/day	Falls within ranges in 2001 EBMUD Residential End Use Study, AWWARF Report "Residential End Uses of Water" 1999
Non-Residential Frequency of Use Data, Toilets and Urinals, Uses/user/day	Estimated based using AWWARF Report "Commercial and Institutional End Uses of Water" 1999
Natural Replacement Rate of Fixtures	Residential Toilets 2% (post-1992 toilets), 2.75% (pre-1992) Commercial Toilets 2% (post-1992 toilets), 2.75% (pre-1992) Residential Showers 3% Residential Clothes washers 6.7% A 3% replacement rate corresponds to 33year life of a new fixture. A 6.67% replacement rate corresponds to 15 year washer life based on "Bern Clothes Washer Study, Final Report, Energy Division, Oak Ridge National Laboratory, for U.S. Department of Energy, March 1998, Internet address: www.energystar.gov
Future Residential	Increases Based on Total Demand Projection
Future Non-Residential Water Use	Increases Based on Total Demand Projection

Figure 3
Baseline Average Day Potable Water Use Projections for EBMUD Potable System (Net of Existing and Future Recycled Water)

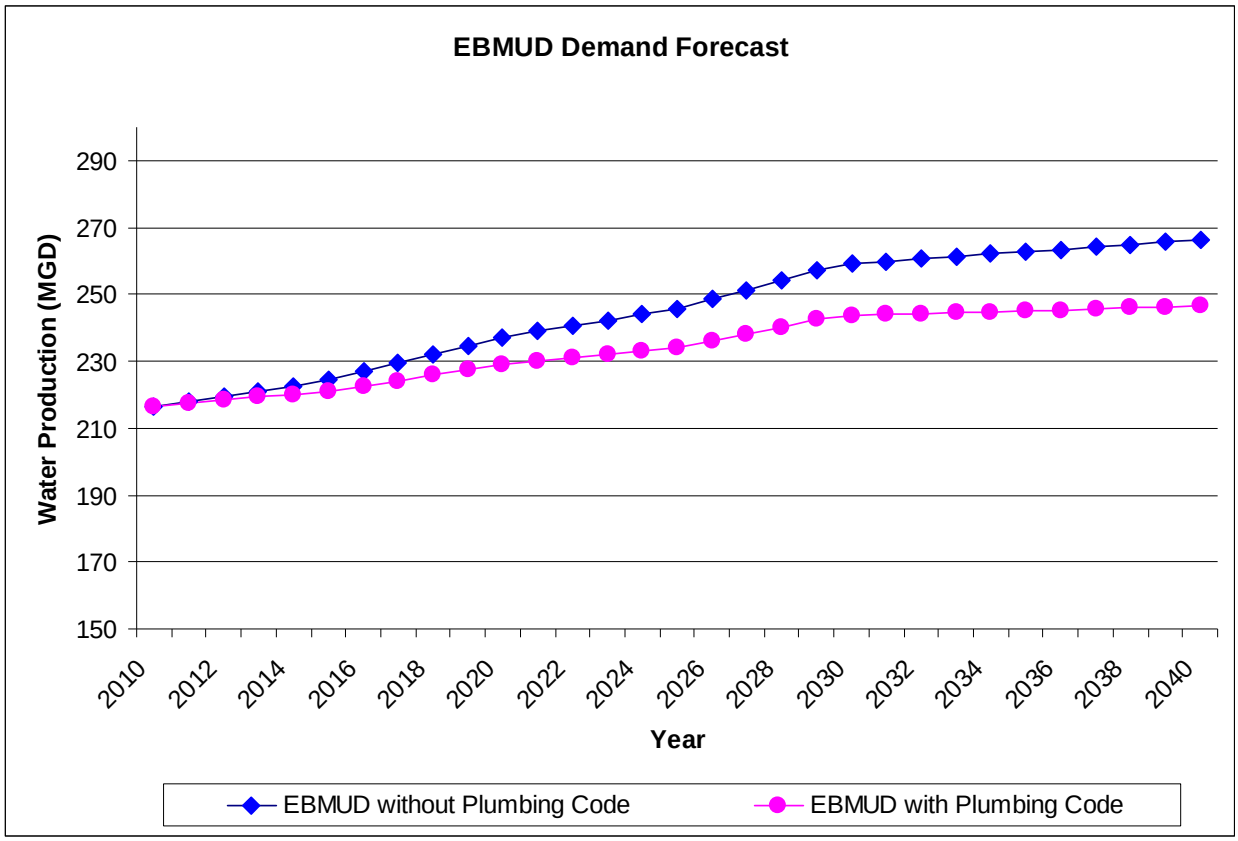


Table 2
Baseline Average Day Potable Water Use Projections for EBMUD Potable System (Net of Existing and Future Recycled Water)

Data Source for Projection	Plumbing Code	Water Production, Average Day (MGD)*						
Residential & Non-Residential		2010	2015	2020	2025	2030	2035	2040
2040 WSMP Demand Estimate	Not Included	216	224	237	246	259	263	266
2040 WSMP Demand Estimate	Included	216	221	229	234	244	245	247

*Total water use is potable only. Demand without plumbing code; closely match demands in WSMP Demand Projection, net of existing and planned use of recycled water

3. COMPARISON OF INDIVIDUAL CONSERVATION MEASURES

Selecting Conservation Measures to be Evaluated (Conservation Measure Screening):

A list of about 100 potential conservation measures considered potentially appropriate for the EBMUD service area was developed from known technology and services that included devices or programs (e.g., such as a new high-efficiency toilet) that would save water if installed or practiced by EBMUD, contractor, or customer. A description of the potential conservation measures were developed that addressed the methods through which a device or program will be implemented, including the distribution method, or mechanism, that would be used to activate the device or program.

A screening process was undertaken to reduce the number of measures and eliminate those measures that overlap each other to avoid double counting, or are not as well suited to the Alameda and Contra Costa County area. Each potential measure was screened based on four qualitative criteria (below), scored on a scale of 1 to 5, with 5 being the most acceptable, and 20 being the maximum possible number of points for all criteria. This screening process follows the recommended procedure in the American Water Works Association Water Conservation Planning Manual, M-52. The list of measures was further reviewed by EBMUD staff, where additional measures were added and others adjusted to reflect the EBMUD service area demographics. In the end 53 measures were selected for evaluation with the DSS Model.

Qualitative Criteria

The rating group used the following criteria to evaluate the measures:

- **Technology/Market Maturity** – Refers to whether the technology needed to implement the conservation measure, such as an irrigation control device, is commercially available and supported by the local service industry. A measure was scored low if the technology was not commercially available or high if the technology was widely available in the service area. A device may be screened out if it is not yet commercially available in the region.
- **Service Area Match** – Refers to whether the measure or related technology is appropriate for the area's climate, building stock, or lifestyle. For example, promoting low water use gardens for multi-family or commercial sites may not be appropriate where water use analysis indicates little outdoor irrigation. Thus, a measure scored low in this category if it was not well suited for the area's characteristics and could not save water. A measure scored high in this criterion if it was well suited for the area and could save water.
- **Customer Acceptance/Equity** – Refers to whether retail customers within the wholesale customer service area would be willing to implement and accept the voluntary conservation measures. For example, would retail customers attend homeowner irrigation classes and implement lessons learned from these classes? If not, then the water savings associated with this measure would be reduced and a measure with this characteristic would score low for this criterion. This criterion also refers to retail customer equitability (i.e., one category of retail customers receives benefit while another pays the costs without receiving benefits). Retail customer acceptance may be also based on convenience, economics, perceived fairness, or aesthetics.

- **Relative Effectiveness of Measure Available** – Refers to the selection of the most effective measure if alternate conservation measures address the same end use. If the measures are equally effective the most appropriate was selected (e.g., the measure that was easier or more cost-effective to implement).

Perspectives on Benefits and Costs

The determination of the economic feasibility of water conservation programs depends on comparing the costs of the programs to the benefits provided. The analysis was performed using the DSS model. The DSS model calculates savings at the end-use level; for example, the model determines the amount of water a toilet rebate program saves in daily toilet use for each single family account.

Present value analysis is used to discount costs and benefits to the base year. From this analysis benefit-cost ratios of each measure are computed. When measures are put together in programs the interactions are accounted for by multiplying water use reduction factors together at the end use level. A water use reduction factor is 1.0 minus the water savings, expressed as a decimal. This avoids double counting when more than one measure acts to reduce the same end use of water.

Economic analysis can be performed from several different perspectives, based on which party is affected. For planning water conservation programs for utilities, the perspectives most commonly used for benefit-cost analyses include the utility and the community. The "utility" benefit-cost analysis is based on the benefits and costs to the water provider. The "community" benefit-cost analysis includes the utility benefit and costs together with account owner/customer benefits and costs. These include customer energy and other capital or operating cost benefits plus costs of implementing the measure, beyond what the utility pays.

The utility perspective offers two advantages for this analysis. First, it considers only the program costs that will be directly borne by the utility. This enables the utility to fairly compare potential investments for saving and supplying water. Second, because revenue shifts are treated as transfer payments, the analysis is not complicated with uncertainties associated with long-term rate projections and retail rate design assumptions. Because it is the water provider's role in developing a conservation plan that is paramount in this study, the utility perspective was primarily used to evaluate elements of the plan.

The community perspective is defined to include the utility and the customer costs and benefits. Costs incurred by customers striving to save water while participating in conservation programs are considered, as well as the benefits received in terms of reduced energy bills (from water heating costs) and wastewater savings, among others. Other factors external to the utility, such as environmental effects, are not included in the benefit-cost analysis. Because these external factors are often difficult to quantify, are not necessarily under the control of the utility, they are therefore frequently excluded from economic analyses, including this one.

Present Value Parameters

The time value of money is explicitly considered. The value of all future costs and benefits is discounted to 2010 (the base year) at the real interest rate of 3.0%. The DSS model calculates this real interest rate, adjusting the current nominal interest rate (assumed to be approximately 6.1%) by the assumed rate of inflation (3.0%). Cash flows discounted in this manner are herein referred to as "Present Value" sums.

Assumptions about Costs

Costs were determined for each of the measures based on industry knowledge, past experience and data provided by EBMUD. Costs may include incentive costs, usually determined on a per-participant basis; fixed costs, such as marketing; variable costs, such as the costs to staff the measures and to obtain and maintain equipment; and a one-time set-up cost. The set-up cost is for measure design by staff or consultants, any required pilot testing, and preparation of materials that will be used in marketing the measure. Measure costs were estimated for each year between 2010 and 2040. Costs were spread over the time period depending on the length of the implementation period for the measure and estimated voluntary customer participation levels.

Lost revenue due to reduced water sales is not included as a cost because the conservation measures evaluated herein generally take effect over a span of time that is sufficient to enable timely rate adjustments, if necessary, to meet fixed cost obligations.

Water Savings

Data necessary to forecast water savings of measures include specific data on water use, demographics, market saturation, and unit water savings. Savings normally develop at a measured and predetermined pace, reaching full maturity after the target market saturation is achieved. This may occur three to ten years after the start of implementation, depending upon the implementation schedule.

Conservation Measures Evaluated with the DSS Model

Upon inspection of the overall list of new measures it became apparent that some measures could be combined and others could be separated into two categories as follows:

- Measures that were voluntary and incentive based
- Measures that were regulatory and/or applied to new development

Voluntary measures target selected types of customers and offer a range of incentives to enhance participation. New development measures target single family homes (including town homes and condos), apartments and non-residential accounts and specify the efficient fixtures required during construction.

Table 3 summarizes the voluntary and new development measures evaluated in the DSS Model. New development measures are measure numbers 33-44. All other measures are voluntary.

Table 3
Conservation Measures Evaluated in the DSS Model

Measure Number	Target Customer Category	Measure	Short Description
1	SF	Single Family Water Surveys I	Conventional indoor and outdoor water surveys for existing single-family residential customers. Normally those with high water use are targeted and provided a customized report to the homeowner on how to save water in their home. Assume 500 site surveys per year.
2	SF	Single Family Water Surveys II	Same as no. 1 above, except increase to 1,000 surveys per year.
3	SF	Single Family	Same as no. 1 above, except increase to 2,500 surveys

Measure Number	Target Customer Category	Measure	Short Description
		Water Surveys III	per year.
4	SF	Single Family Water Surveys I with AMS	Same as Measure 1 except that the survey would be enhanced by the availability of hourly consumption data from an Automatic Metering System (AMS) system. The AMS system would, on demand, indicate to the customer and EBMUD where and how their water is used thereby facilitating water use reduction. This would require EBMUD install an AMS system. Assume 500 surveys per year starting in 2018.
5	SF	Single Family Water Surveys II with AMS	Same as no. 4 above, except increase to 1,000 surveys per year.
6	SF	Single Family Water Surveys III with AMS	Same as no. 4 above, except increase to 3,250 surveys per year.
7	CONDO	Condo Surveys	Indoor and outdoor water surveys for existing condo residential customers (less than 5 units). Normally those with high water use are targeted and provided customized report to each resident. Assume 500 site surveys per year starting in 2010.
8	CONDO	Condo Water Surveys with AMS	Same as Measure 7 except that the survey would be enhanced by the availability of hourly consumption data from AMS system indicating to the customer where and how their water is used thereby facilitating water use reduction. This would require EBMUD install an AMS system. Assume 600 site surveys annually starting in the year 2018.
9	MF	Multifamily Surveys	Indoor and outdoor water surveys for existing multifamily residential customers (5 units or more). Normally those with high water use are targeted and provided a customized report to owner. 200 account surveys (or approximately 3,400 units) per year.
10	MF	Multifamily Surveys with AMS	Same as Measure 9 except that the survey would be enhanced by the availability of hourly consumption data from AMS system indicating to the customer where and how their water is used thereby facilitating water use reduction. This would require EBMUD install an AMS system. Assume 250 account surveys (or approximately 4,250 units) annually starting in the year 2018.
11	SYSTEM	Real Water Loss Reduction - I	Measure covers efforts to find and repair leaks in the distribution system to reduce real water loss and take other actions (such as meter replacement) to reduce apparent water losses thereby improving the system water balance. A ten year program to reduce real water loss by approximately 0.6% of average water production is proposed for this measure. 40,000 data loggers would be installed over 10 years. Leak repairs would be handled by existing crews at no extra cost.
12	SYSTEM	Real Water Loss	Measure covers increased efforts (doubled the planned

Measure Number	Target Customer Category	Measure	Short Description
		Reduction – II	level of Measure 11) to find and repair leaks in the distribution system to reduce real water loss and take other actions (such as meter replacement) to reduce apparent water losses thereby improving the system water balance. A ten year program to reduce real water loss by approximately 1.2% of average water production is proposed for this measure. 40,000 data loggers would be installed over 10 years. Leak repairs would be handled by existing crews at extra cost.
13	SYSTEM	Real Water Loss Reduction – III	Measure covers significantly increased efforts (double the efforts of Measure 12) to find and repair leaks in the distribution system to reduce real water loss and take other actions (such as meter replacement) to reduce apparent water losses thereby improving the system water balance. A ten year program to reduce real water loss by approximately 1.8% of average water production is proposed for this measure. 40,000 data loggers would be installed over 10 years. Leak repairs would be handled by existing crews at increased cost.
14	IRR	Irrigation Water Budgets	Irrigators of landscapes with separate irrigation or mixed use accounts would receive a monthly or bi-monthly irrigation water use budget. Assume 100 new budgets per year, or 500 every 5 years (added to the existing program of some 5,000 water budgets). Budgets would be repeated every 5 years to remain current.
15	IRR	Updated Irrigation Water Budgets with AMS on existing accounts	Same as Measure 14 except irrigation water budgets would be enhanced by the availability of hourly consumption data from AMS system indicating to the customer where and how their water is used, possibly irrigation station by station thereby by facilitating water use reduction and adherence to a budget. This would require EBMUD install an AMS system. Assume 40 budgets per year, or 400 every 10 years starting in the year 2018. Budgets would be repeated every 10 years to remain current.
16	COM, INS	Irrigation Water Surveys	All public and private irrigators of landscapes would be eligible for free landscape water surveys upon request. Normally those with high water use would be targeted and provided a customized report. Assume 150 surveys per year.
17	SF, MF, IRR	Smart Irrigation Controller Rebates	Provide a $400 rebate for the purchase of a SMART irrigation controller. Extension of current EBMUD rebate program. Assume 500 rebates per year. Program concludes in the year 2016.
18	SF, CONDO	Washer Rebates	Homeowners would be eligible to receive a rebate on a new water efficient clothes washer. Relative to the year 2040 planning horizon, this measure could have a shorter life cycle as efficiency standards will likely increase to catch up with past and ongoing market transformation. It

Measure Number	Target Customer Category	Measure	Short Description
			is assumed that the rebates would remain consistent with relevant state and federal regulations (Department of Energy, Energy Star) and only offer the best available technology. Assume 5,000 rebates per year concluding in the year 2013.
19	SF, CONDO	Washer Rebates for High Efficiency Machines	Same as above, except that a higher rebate is offered for higher efficiency machines. Assume program starts in 2014 and concludes in the year 2020. Assume 2,500 rebates per year.
20	SF, CONDO	Public Information Program	Public education would be used to raise awareness of other conservation measures available to customers. Programs could include school programs but also include landscape classes for homeowners, poster contests, speakers to community groups, radio and television time, and printed educational material such as bill inserts, etc. Program would continue indefinitely.
21	COM, INS	CII Surveys	High water use accounts would be offered a free water survey that would evaluate ways for the business to save water and money. Assume 300 surveys per year.
22	COM, INS	CII Surveys with AMS	Same as Measure 21 except survey would be enhanced by the availability of hourly consumption data from AMS system indicating to the customer where and how their water is used thereby by facilitating water use reduction. This would require EBMUD install an AMS system. Assume 400 surveys annually starting in the year 2018.
23	SF	Single Family Toilet Ordinance	Homeowners would be required to replace an existing high volume toilet with a 1.6 gpf toilet when the names on the water account changes. Program concludes in the year 2013.
24	MF	Multi family Toilet Ordinance	Apartment managers would be required to replace an existing high volume toilet with a 1.6 gpf toilet the when the name on water account changes. Program concludes in the year 2013.
25	Existing Customers SF, CONDO, MF	High Efficiency Toilet (HET) Rebates	Provide up to a $150 rebate or voucher for the installation of a high efficiency toilet (HET). HET's are defined as any toilet to flush 20% less than an ULFT and include dual flush technology. Rebate amounts would reflect the incremental purchase cost. Assume 8% market saturation. Program will be shorter lived as it is intended to be a market transformation measure and eventually would be stopped as 1.28 gpf units reach saturation. Program finishes in the year 2018.
26	Existing Customers SF, CONDO,MF	High Efficiency Toilet (HET) Rebates Intensive	Provide up to a $200 rebate or voucher for the installation of a high efficiency toilet (HET). HET's are defined as any toilet to flush 20% less than an ULFT and include dual flush technology. Rebate amounts would reflect the incremental purchase cost. Assume 12% market saturation. Program finishes in the year 2018.
27	Existing	CII Rebates to	Provide up to a $1,000 rebate for a standard list of water

Measure Number	Target Customer Category	Measure	Short Description
	Customers CII	Replace Inefficient Equipment	efficient equipment. Included would be x-ray machines, ice makers, air-cooled ice machines, steamers, washers, spray valves, efficient dishwashers, replace once through cooling, and add conductivity meters on cooling towers. Assume 10% market saturation. Program concludes in the year 2023.
28	Existing Customers MF	Multifamily Washer Rebate	Provide up to a $150 rebate (EBMUD provides $75 rebate, $75 grant match) to apartment complexes (5 or more units) for efficient washing machines in buildings over a certain size that has a common laundry room. It is assumed that the rebates would remain consistent with relevant state and federal regulations (Department of Energy, Energy Star) and only offer the best available technology. Assume market saturation of 15%. Program concludes in the year 2018.
29	Existing Customers MF	Multifamily Washer Rebate Intensive	Same as Measure 28 except increased market saturation to 25%. Program concludes in the year 2018.
30	Existing Customers SF, CONDO, MF, CII, IRR	Financial Incentives for Irrigation Upgrades	For SF, CONDO, MF, CII, and IRR customers with landscape, provide for rebates towards the purchase and installation of selected types of irrigation equipment upgrade including low volume sprinkler heads, check valves, and rain sensors. Rebate is up to $450 for residential accounts and up to $650 for mixed use accounts and up to $10,000 for irrigation accounts. Assume average rebate claimed equates to $2,500 for non-Residential accounts.
31	Existing Customers SF, CONDO, MF, CII, IRR	Financial Incentives for Irrigation Upgrades Intensive	Same as Measure 30, rebate is up to $700 for residential accounts and assume average rebate claimed equates to $5,000 for non-Residential accounts.
32	Existing CII	High Efficiency Urinal Rebate (<0.25 gallon)	Provide a rebate of up to $200 for high efficiency urinals to existing high use CII customers (such as restaurants). Eligible replacements would include urinals flushing with no more than 0.25 gpf and best available technology (1 pint). Assume 400 rebates (at 100 accounts) per year concluding in the year 2020.
33	ALL	ND-1 Install AMS	Require that new customers install AMS meters capable of providing hourly consumption data back to EBMUD and purchase means of viewing daily consumption inside their home/business either through the Internet (if available) or separate device. This system would require EBMUD to fully install an AMS system. Assume program begins in 2018.
34	ALL	NDR-2 Require Smart Irrigation Controllers and Rain Sensors	Require developers for all properties of greater than two residential units and all commercial development to provide the latest state of the art SMART irrigation controllers and rain sensors. These SMART controllers have on-site temperature sensors or rely on a signal from

Measure Number	Target Customer Category	Measure	Short Description
			a central weather station that modifies irrigation times at least weekly.
35	ALL	NDR-3 Require High Efficiency Toilets (HET)	Require developers to install a high efficiency toilet (HET). HETs are defined as any toilet to flush 20% less than an ULFT and include dual flush technology.
36	New Single Family	ND4 - Dishwasher Requirement	Require developers to install an efficient dishwasher (meeting certain water efficiency standards, such as gallons/load).
37	New Single Family	NDR5 - Clothes Washing Machine Requirement	Building departments would be requested to ensure that an efficient washer was installed before new home or building occupancy. EBMUD can enforce conditions of water service that may include efficiency standards for washing machines.
38	New Single Family	ND-6 Require Hot Water on Demand	Require developers to equip new homes or buildings with hot water on demand systems. These systems use a pump placed under the sink to recycle water sitting in the hot water pipes to the water heater.
39	ALL	NDR- 7 Require High Efficiency Faucets and Showerheads	Require developers to install lavatory faucets that flow at no more than 1.5 gpm, kitchen faucets and showerheads at no more than 2.0 gpm.
40	ALL	NDR-8 Require Landscape and Irrigation Requirements	Enforce a regulation that specifies that homes or buildings be landscaped according to Xeriscape principals, with appropriate plant selection and irrigation systems. (Combines with Smart Controller listed above).
41	Multi-Family	NDR-9 Require Multi Family Submetering on New Accounts	Require the metering of individual units in new multi-family, condos, townhouses, mobile-home parks and business centers (less than four stories and with water heater in the units). EBMUD administers meter read and bill program.
42	CII	NDR-10 Require 0.5 gal/flush urinals in new buildings	Require that new building be fitted with 0.5 gpf (or one liter) urinals rather than the current standard of 1.0-gal/flush models.
43	New Single Family	ND-11 Require Plumbing for Future Gray Water Use	Require that the drain lines in new single-family homes be plumbed for future installation of graywater systems.
44	CII	NDR -12 Require Plan Review for new CII	Require plan reviews for water use efficiency for all new business customers.
45	MF/Condo	MF Submeter Incentive	Provide a financial incentive (up to $300 per unit) to assist 75 MF building owners retrofit and install submeters on each individual apartment unit each year.
46	Irrigation	Artificial Turf Sports Fields	Provide a rebate ($300 per dwelling unit) to assist 75 MF building owners retrofit and install submeters on each individual apartment unit each year.
47	SF	Artificial Turf SF Residential	Provide a rebate (up to $10,000) for customer to install artificial grass on one sports field per year.
48	SF	Cisterns	Provide a rebate (up to $1,000) to assist 250 single family

Measure Number	Target Customer Category	Measure	Short Description
			homeowners per year with turf removal and installation of artificial turf.
49	SF	Garbage Disposal SF	Provide a rebate ($100) to assist 750 single family homeowners per year with installation of rain barrels.
50	SF	Graywater Retrofit SF	Encourage 500 single family homeowners per year to remove garbage disposals.
51	SF	Graywater New SF	Provide a rebate (up to $1,000) to assist 450 single family homeowners per year to install gray water systems.
52	COM	Dental Vacuum Pump	Provide a $500 rebate to assist builders of 300 single family homes per year with plumbing for future gray water system installation.
53	COM	Water Brooms	Provide a $125 rebate to assist 10 dental offices per year with installation of dry dental vacuum pumps.

Notes: ND = New Development New Regulation
NDR = New Development .Current Regulation SF = Residential Single Family
MF = Residential Multi Family greater than 5 units CONDO = Residential Duplexes and 3 or 4 units
CII = Commercial/Industrial/Institutional IRR = Dedicated irrigation meters

Measure Assumptions, Unit Costs, Market Saturation

Appendix 1 summarizes all the water savings and cost assumptions for each measure. The unit costs vary according to the type of account and implementation method being addressed. For example, a measure might cost a different amount for a residential single family account, than a residential multi family account, and for a rebate versus a direct installation implementation method. EBMUD provided the administration and mark-up percentages. They generally increase where there is increased cost associated with achieving a high market saturation, such as more surveys per year. Table 4 shows the unit costs used in the model calculations of annual costs. The general formula for calculating annual utility costs is:

Annual Utility Cost = Annual market saturation x total accounts, in category x unit cost per account x (1+administration and marketing markup) x (1+ contingency)

Annual Customer Cost = Annual number of participants x unit customer cost

Annual Community Cost = Annual Utility Cost + Annual Customer Cost

Table 4
Unit Costs of Conservation Measures Evaluated in the DSS Model

Conservation Measure		Basis of Costs	Unit Utility Costs, $	Admin & marketing mark-up, %	Contingency, %	Unit Customer Costs, $
1	Single Family Water Surveys I	Per account	150	15	15	15

Conservation Measure		Basis of Costs	Unit Utility Costs, $	Admin & marketing mark-up, %	Contingency, %	Unit Customer Costs, $
2	Single Family Water Surveys II	Per account	150	25	15	15
3	Single Family Water Surveys III	Per account	150	35	15	15
4	Single Family Water Surveys I with AMS	Per account	275	15	15	15
5	Single Family Water Surveys II with AMS	Per account	275	25	15	15
6	Single Family Water Surveys III with AMS	Per account	275	35	15	15
7	Condo Surveys	Per account	175	25	15	50
8	Condo Water Surveys with AMS	Per account	325	25	15	50
9	Multifamily Surveys	Per account	200	25	15	100
10	Multifamily Surveys with AMS	Per account	350	25	15	100
11	Real Water Loss Reduction - I		1.15 million/yr	--	30	--
12	Real Water Loss Reduction – II		2.38 million/yr	--	30	--
13	Real Water Loss Reduction – III		4.85 million/yr	--	30	--
14	Irrigation Water Budgets	Per account	300	15	15	400
15	Updated Irrigation Water Budgets with AMS on existing accounts	Per account	300	10	20	400
16	Irrigation Water Surveys	Per account	400	25	15	1,500
17	Smart Irrigation Controller Rebates	Per account	75	25	20	400
18	Washer Rebates	Per account	150	25	15	200
19	Washer Rebates for High Efficiency Machines	Per account	150	20	20	400
20	Public Information Program	Per account per year	2	0	15	0
21	CII Surveys	Per account	300	25	20	1,000
22	CII Surveys with AMS	Per account	525	25	20	1,000
23	Single Family Toilet Ordinance	Utility = per year; Customer = per toilet	50,000	--	30	125
24	Multi family Toilet Ordinance	Utility = per year;	50,000	--	30	125

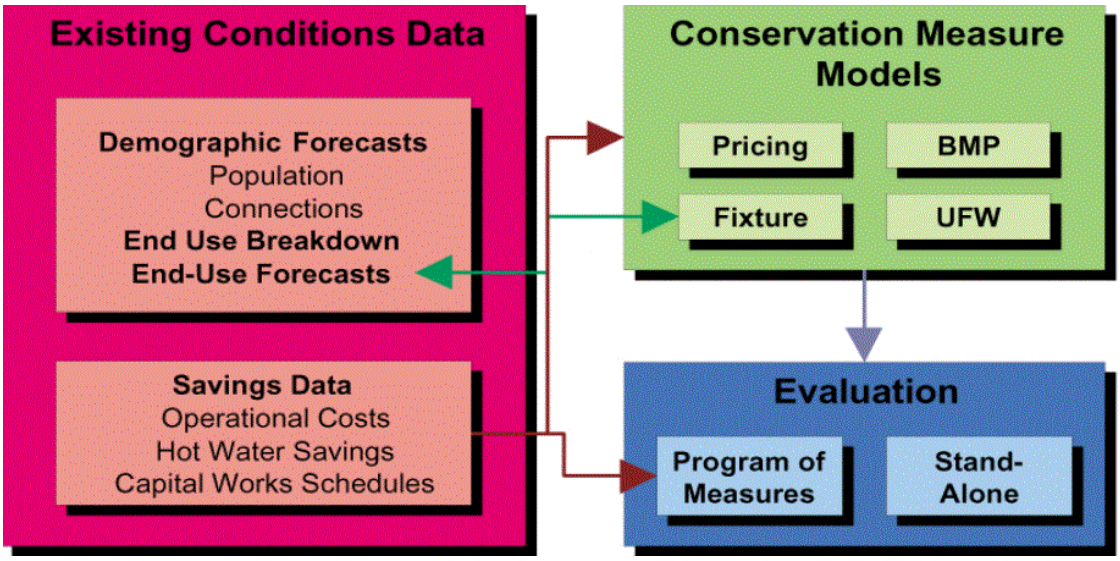
Conservation Measure		Basis of Costs	Unit Utility Costs, $	Admin & marketing mark-up, %	Contingency, %	Unit Customer Costs, $
		Customer = per toilet				
25	High Efficiency Toilet (HET) Rebates	Per toilet	150	25	15	200
26	High Efficiency Toilet (HET) Rebates Intensive	Per account	200	25	15	150
27	CII Rebates to Replace Inefficient Equipment	Per account	1,000	25	30	1,000
28	Multifamily Washer Rebate	Per account	150	25	30	500
29	Multifamily Washer Rebate Intensive	Per account	500	25	30	400
30	Financial Incentives for Irrigation Upgrades	Per account	SF=400; others=2,500	25	15	1,500
31	Financial Incentives for Irrigation Upgrades Intensive	Per account	SF=700; others=5,000	25	15	1,500
32	High Efficiency Urinal Rebate (<0.25 gallon)	Per account	800	25	30	1,600
33	Install AMS	Per account	20	2	30	200
34	Require Smart Irrigation Controllers and Rain Sensors	Per account	20	2	15	300
35	Require High Efficiency Toilets (HET)	Per account	20	2	15	150
36	Require Efficient Dishwashers	Per account	20	25	30	400
37	Require High Efficiency Clothes Washers	Per account	20	2	15	500
38	Require Hot Water on Demand	Per account	20	25	30	700
39	Require High Efficiency Faucets and Showerheads	Per account	20	2	15	50
40	Require Landscape and Irrigation Requirements	Per account	20	2	20	3,000
41	Require Multi Family Submetering on New Accounts	Per account	20	--	30	3,000
42	Require 0.5 gal/flush urinals in new buildings	Per account	20	25	15	800
43	Require Plumbing for	Per account	20	10	30	3,000

Conservation Measure		Basis of Costs	Unit Utility Costs, $	Admin & marketing mark-up, %	Contingency, %	Unit Customer Costs, $
	Future Gray Water Use					
44	Require Plan Review for new CII	Per account	400	25	15	2,500
45	MF Submeter Incentive	Per account	300	15	30	400
46	Artificial Turf Sports Fields	Per account	10,000	5	30	250,000
47	Artificial Turf SF Residential	Per account	1,000	20	30	22,000
48	Cisterns	Per account	100	25	30	500
49	Garbage Disposal SF	Per account	10	25	30	50
50	Graywater Retrofit SF	Per account	1,000	25	30	5,000
51	Graywater New SF	Per account	500	25	30	5,000
52	Dental Vacuum Pump	Per account	125	25	30	25,000
53	Water Brooms	Per account	100	25	30	200

Methodology

For conservation measure evaluation, DSS Model performs economic analysis by using net present value and benefit-to-cost ratio as economic indicators. The benefit cost analysis is performed from various perspectives including the utility and community (utility plus customer). Figure 4 shows the structure of the model.

Figure 4
Structure of the DSS Model



Results of Comparison of Individual Measures

Table 5 presents the results of conservation measure evaluation going forward from 2010. These tables show how much water the measures would save by 2040, how much they would cost and what cost of water saved are *if the measures were run on a stand-alone basis (i.e. without interaction or overlap from other measures that might address the same end use(s).* Only the net or highest water savings for overlapping conservation measures was included in each program.

Economic indicators defined below:

- *Utility costs:* those costs that the utility would spend.
- *Customer Costs:* those costs customers would spend to participate in EBMUD programs and maintaining its effectiveness over the life of the measure.
- *Community costs:* Community costs include utility and customer costs to implement measures.
- *Costs for the utility:* include measure set-up, annual administration, and payment of rebates or purchase of devices or services as specified in the measure design.
- *2040 average day water savings:* This provides the average water savings that build up over 30 years. It is useful in comparing the relative water savings of the various measures.

The column headings in Tables 4 through 6 are defined as follows:

- *2040 Average Water Savings (MGD) = average water savings (MGD) where MGD = million gallons per day*
- *Present Value of Utility, Customer, Community Costs = 30 year present value of the time stream of annual costs*
- *Cost of Savings per Unit Volume ($/AF, by cost category) = NPV of Category Costs divided by 30-year Average Water Savings * 365 where AF = acre feet*

From Table 5 the following observations can be made:

- There is a considerable range in savings from nearly zero to savings of well over 1 MGD.
- The reason that some survey water savings (i.e.,single family surveys) without AMS are zero in 2040 is that they have a measure life and the measure is allowed to expire and be replaced by a new survey in a later year done with the benefit of AMS. These measures do save water in the early years of the planning period but not in 2040.
- Measures 33 to 44 apply to all new development. Some of the measures are part of the current EBMUD regulations cited above and others are expansions of those regulations into new areas.
- Some of the measures have a high utility and customer cost of water saved including 31, 32, 40, 43, 47-51.

Table 5
Conservation Measure Costs and Savings

	Conservation Measure	Year 2040 Water Savings MGD*	Present Value of Water Utility Costs, $	Present Value of Total Customer Costs, $	Present Value of Total Community Costs, $	Utility Cost of Savings per Unit Volume ($/AF)	Customer Cost of Savings per Unit Volume ($/AF)	Community Cost of Savings per Unit Volume ($/AF)
1	Single Family Water Surveys I	0.000	$1,282,450	$96,972	$1,379,422	3,035	3,265	230
2	Single Family Water Surveys II	0.000	$2,787,936	$193,943	$2,981,879	3,299	3,529	230
3	Single Family Water Surveys III	0.000	$7,527,426	$484,858	$8,012,284	3,563	3,793	230
4	Single Family Water Surveys I with AMS	0.166	$4,511,162	$100,109	$4,611,271	3,959	4,047	88
5	Single Family Water Surveys II with AMS	0.332	$7,625,606	$200,218	$7,825,824	3,346	3,434	88
6	Single Family Water Surveys III with AMS	0.913	$18,987,559	$550,599	$19,538,158	3,030	3,118	88
7	Condo Surveys	0.000	$1,626,296	$323,239	$1,949,535	2,705	3,242	538
8	Condo Water Surveys with AMS	0.135	$3,616,294	$387,028	$4,003,322	3,587	3,971	384
9	Multifamily Surveys	0.000	$743,449	$258,591	$1,002,041	470	634	164
10	Multifamily Surveys with AMS	0.379	$1,674,622	$332,844	$2,007,466	591	709	118
11	Real Water Loss Reduction - I	1.488	$30,200,061	$0	$30,200,061	3,676	3,676	0
12	Real Water Loss Reduction – II	2.959	$64,714,417	$0	$64,714,417	3,962	3,962	0
13	Real Water Loss Reduction – III	4.429	$129,428,835	$0	$129,428,835	5,293	5,293	0
14	Irrigation Water Budgets	0.068	$1,088,463	$823,435	$1,911,898	1,509	2,651	1,142
15	Updated Irrigation Water Budgets with AMS on existing accounts	0.109	$224,349	$226,615	$450,963	305	613	308
16	Irrigation Water Surveys	0.026	$887,334	$4,629,570	$5,516,904	3,213	19,976	16,763
17	Smart Irrigation Controller Rebates	0.149	$1,879,165	$1,252,776	$3,131,941	1,232	2,054	822
18	Washer Rebates	0.103	$2,064,080	$3,829,018	$5,893,098	1,533	4,376	2,844
19	Washer Rebates for High Efficiency Machines	0.163	$839,581	$5,697,559	$6,537,140	508	3,958	3,450
20	Public Information Program	0.482	$8,384,454	$0	$8,384,454	1,524	1,524	0
21	CII Surveys	0.132	$3,703,656	$8,230,346	$11,934,002	2,599	8,376	5,777
22	CII Surveys with AMS	0.651	$5,255,721	$6,673,931	$11,929,652	1,183	2,685	1,502

Conservation Measure		Year 2040 Water Savings MGD*	Present Value of Water Utility Costs, $	Present Value of Total Customer Costs, $	Present Value of Total Community Costs, $	Utility Cost of Savings per Unit Volume ($/AF)	Customer Cost of Savings per Unit Volume ($/AF)	Community Cost of Savings per Unit Volume ($/AF)
23	Single Family Toilet Ordinance	0.193	$248,825	$8,430,288	$8,679,114	86	3,013	2,926
24	Multi family Toilet Ordinance	0.218	$248,825	$1,546,784	$1,795,609	73	529	2,926
25	High Efficiency Toilet (HET) Rebates	0.632	$14,021,549	$13,005,494	$27,027,043	1,958	3,774	1,816
26	High Efficiency Toilet (HET) Rebates Intensive	0.949	$28,043,097	$14,631,181	$42,674,279	2,610	3,972	1,362
27	CII Rebates to Replace Inefficient Equipment	0.327	$2,801,956	$1,724,280	$4,526,236	1,119	1,807	688
28	Multifamily Washer Rebate	0.138	$365,800	$1,500,720	$1,866,520	229	1,168	939
29	Multifamily Washer Rebate Intensive	0.230	$2,032,224	$2,000,959	$4,033,184	763	1,514	751
30	Financial Incentives for Irrigation Upgrades	0.213	$11,967,753	$11,810,557	$23,778,309	6,291	12,499	6,208
31	Financial Incentives for Irrigation Upgrades Intensive	0.965	$99,652,152	$56,535,848	$156,187,999	11,577	18,145	6,568
32	High Efficiency Urinal Rebate (<0.25 gallon)	0.056	$1,110,755	$1,367,083	$2,477,838	$550	$1,227	$677
33	Install AMS	0.989	$522,281	$3,938,772	$4,461,053	99	844	746
34	Require Smart Irrigation Controllers and Rain Sensors	0.725	$565,587	$7,232,576	$7,798,164	111	1,529	1,418
35	Require High Efficiency Toilets (HET)	0.255	$592,815	$8,219,843	$8,812,657	242	3,599	3,356
36	Require Efficient Dishwashers	0.198	$1,068,449	$13,150,138	$14,218,587	807	10,735	9,928
37	Require High Efficiency Clothes Washers	0.930	$664,456	$14,161,469	$14,825,925	78	1,741	1,663
38	Require Hot Water on Demand	0.496	$841,184	$18,117,809	$18,958,993	228	5,137	4,909
39	Require High Efficiency Faucets and Showerheads	1.393	$771,256	$4,159,931	$4,931,187	82	527	444
40	Require Landscape and Irrigation Requirements	0.484	$590,178	$72,325,761	$72,915,939	174	21,439	21,265
41	Require Multi Family Submetering on New Accounts	0.962	$1,015,630	$6,438,547	$7,454,177	157	1,155	997

	Conservation Measure	Year 2040 Water Savings MGD*	Present Value of Water Utility Costs, $	Present Value of Total Customer Costs, $	Present Value of Total Community Costs, $	Utility Cost of Savings per Unit Volume ($/AF)	Customer Cost of Savings per Unit Volume ($/AF)	Community Cost of Savings per Unit Volume ($/AF)
42	Require 0.5 gal/flush urinals in new buildings	0.027	$83,725	$1,164,865	$1,248,589	414	6,172	5,758
43	Require Plumbing for Future Gray Water Use	0.024	$653,498	$68,548,753	$69,202,251	3,514	372,123	368,609
44	Require Plan Review for new CII	0.213	$931,704	$4,050,888	$4,982,593	676	3,616	2,940
45	MF Submeter Incentive	0.213	$5,121,693	$4,567,842	$9,689,535	3,347	6,333	2,985
46	Artificial Turf Sports Fields	0.042	$202,214	$3,703,546	$3,905,760	469	9,066	8,597
47	Artificial Turf SF Residential	0.189	$7,992,331	$112,712,365	$120,704,696	4,359	65,834	61,475
48	Cisterns	0.018	$2,509,314	$7,720,965	$10,230,279	13,813	56,316	42,503
49	Garbage Disposal SF	0.010	$167,288	$514,731	$682,019	1,808	7,369	5,562
50	Graywater Retrofit SF	0.228	$15,055,882	$46,325,791	$61,381,673	6,811	27,768	20,957
51	Graywater New SF	0.192	$4,771,617	$29,363,799	$34,135,416	2,662	19,043	16,381
52	Dental Vacuum Pump	0.154	$41,795	$5,143,967	$5,185,761	46	5,762	5,716
53	Water Brooms	0.010	$40,253	$49,542	$89,795	390	870	480

* Note: Water savings are for year 2040 only; measure life and the measure with zero values is allowed to expire and be replaced by a new survey in a later year done with the benefit of AMS. These measures do save water in the early years of the planning period but not in 2040.

4. RESULTS OF CONSERVATION PROGRAM EVALUATION

Selection of Measures for Programs

Table 6 provides a summary of which measures are included each of the five alternative programs. The five packages are designed to illustrate an increasing level of water savings for EBMUD, with the fifth level (E) representing the maximum theoretical level of water savings. The decision of which measures went into each program was made by EBMUD conservation staff.

These programs are not intended to be rigid programs but rather to demonstrate the range in savings that could be generated if selected measures were run together. In this step we account for a percent overlap in water savings (and benefits) and estimate combined savings and benefits from programs or packages of measures.

Program B (current program) contains 25 conservation measures. Program C includes Program B measures plus 15 additional measures. The main enhancement is that Program C uses the Automatic Metering System (AMS) to help identify (to the customer and to EBMUD) leakage and excessive use. This enhances the ability of EBMUD to conduct effective water surveys of residential and business customers. Program D has all 40 measures from Program C and adds a net of three measures. Program C replaces the Real Loss Reduction Measure Level II with Level III. Program E includes four additional measures to Program D, bringing the total number of

conservation measures to 47. Out of the 53 measures available for Program E, four Single Family Survey measures (Listed in Table 6-3 as measures 1, 2, 4 and 5) were not used because they were replaced with other more intensive measures that utilize the AMS system. Two additional measures Real Water Loss Reduction I and II (measures 11 and 12) were not used in Program E because they were replaced by a more effective similar measure Real Water Loss III (measure 13). It is important to note that these programs are not intended to be rigid programs but rather to demonstrate the range in saving that could be generated if selected measures were run together. Table 6-4 summarizes the five conservation programs and their projected 2040 water savings.

Table 6
Conservation Measures Selected for Programs

Measure Number	Measure Name	Program B	Program C	Program D	Program E
1	Single Family Water Surveys I				
2	Single Family Water Surveys II				
3	Single Family Water Surveys III		**X**	**X**	**X**
4	Single Family Water Surveys I with AMS				
5	Single Family Water Surveys II with AMS				
6	Single Family Water Surveys III with AMS		**X**	**X**	**X**
7	Condo Surveys		**X**	**X**	**X**
8	Condo Water Surveys with AMS		**X**	**X**	**X**
9	Multifamily Surveys	**X**	**X**	**X**	**X**
10	Multifamily Surveys with AMS		**X**	**X**	**X**
11	Real Water Loss Reduction - I				
12	Real Water Loss Reduction – II		**X**		
13	Real Water Loss Reduction – III			**X**	**X**
14	Irrigation Water Budgets	**X**	**X**	**X**	**X**
15	Updated Irrigation Water Budgets with AMS on existing accounts		**X**	**X**	**X**

Measure Number	Measure Name	Program B	Program C	Program D	Program E
16	Irrigation Water Surveys		**X**	**X**	**X**
17	Smart Irrigation Controller Rebates	**X**	**X**	**X**	**X**
18	Washer Rebates	**X**	**X**	**X**	**X**
19	Washer Rebates for High Efficiency Machines	**X**	**X**	**X**	**X**
20	Public Information Program	**X**	**X**	**X**	**X**
21	CII Surveys	**X**	**X**	**X**	**X**
22	CII Surveys with AMS		**X**	**X**	**X**
23	Single Family Toilet Ordinance	**X**	**X**	**X**	**X**
24	Multi family Toilet Ordinance	**X**	**X**	**X**	**X**
25	High Efficiency Toilet (HET) Rebates		**X**	**X**	**X**
26	High Efficiency Toilet (HET) Rebates Intensive		**X**	**X**	**X**
27	CII Rebates to Replace Inefficient Equipment		**X**	**X**	**X**
28	Multifamily Washer Rebate	**X**	**X**	**X**	**X**
29	Multifamily Washer Rebate Intensive	**X**	**X**	**X**	**X**
30	Financial Incentives for Irrigation Upgrades			**X**	**X**
31	Financial Incentives for Irrigation Upgrades Intensive				**X**
32	High Efficiency Urinal Rebate (<0.25 gallon)	**X**	**X**	**X**	**X**
33	Install AMS		**X**	**X**	**X**
34	Require Smart Irrigation Controllers and Rain Sensors	**X**	**X**	**X**	**X**
35	Require High Efficiency Toilets (HET)	**X**	**X**	**X**	**X**

Measure Number	Measure Name	Program B	Program C	Program D	Program E
36	Require Efficient Dishwashers	**X**	**X**	**X**	**X**
37	Require High Efficiency Clothes Washers	**X**	**X**	**X**	**X**
38	Require Hot Water on Demand	**X**	**X**	**X**	**X**
39	Require High Efficiency Faucets and Showerheads	**X**	**X**	**X**	**X**
40	Require Landscape and Irrigation Requirements	**X**	**X**	**X**	**X**
41	Require Multi Family Submetering on New Accounts	**X**	**X**	**X**	**X**
42	Require 0.5 gal/flush urinals in new buildings	**X**	**X**	**X**	**X**
43	Require Plumbing for Future Gray Water Use			**X**	**X**
44	Require Plan Review for new CII	**X**	**X**	**X**	**X**
45	MFSubmeter Incentive			**X**	**X**
46	Artificial Turf Sports Fields	**X**	**X**	**X**	**X**
47	Artificial Turf SF Residential		**X**	**X**	**X**
48	Cisterns				**X**
49	Garbage Disposal SF		**X**	**X**	**X**
50	Graywater Retrofit SF				**X**
51	Graywater New SF				**X**
52	Dental Vacuum Pump	**X**	**X**	**X**	**X**
53	Water Brooms	**X**	**X**	**X**	**X**
TOTAL NUMBER OF MEASURES		**25**	**40**	**43**	**47**

. Note Program A includes only the plumbing code and is not listed in Table 6.

Results of Program Evaluation

Table 7 presents key evaluation statistics compiled from the DSS model. Assuming all measures are successfully implemented, projected water savings for 2040 in MGD are shown, as are the costs of achieving this reduction.

The costs are expressed two ways.

1. Total present value over the analysis period,
2. The cost of water saved. Cost of water saved is presented three ways: for the utility; for the customer; and the total community (customer plus utility).

These cost parameters are derived from the annual time stream of utility, customer and community costs.

The water savings are expressed as a percentage of the projected 2040 potable demand. One column indicates the percentage of the new water demand in 2040 for each program could provide. The new water needed by new customers over the next 30 years is the difference between 2010 demand of 216 MGD and 2040 demand of 266 MGD without the plumbing code. The new water needed for EBMUD for potable purposes, net of planned recycled water, by 2040 is 50 MGD. Approximately 75 percent of the new potable water needed by EBMUD to accommodate planned growth could be met through aggressive conservation at Level D and planned recycled water projects.

The water saved shown in Table 7 is net and does not include the 2 MGD the current existing program is projected to save between 2008 and 2010.

The last column in Table 7 shows the incremental cost of moving to more aggressive programs. Figure 5 graphically depicts the five programs. Program A reflects only the plumbing code. The additional measures that create programs B, C, D, and E produce increasing incremental costs for the amount of water savings gained. In other words there are apparent diminishing returns when measures are added to each program beyond Program B.

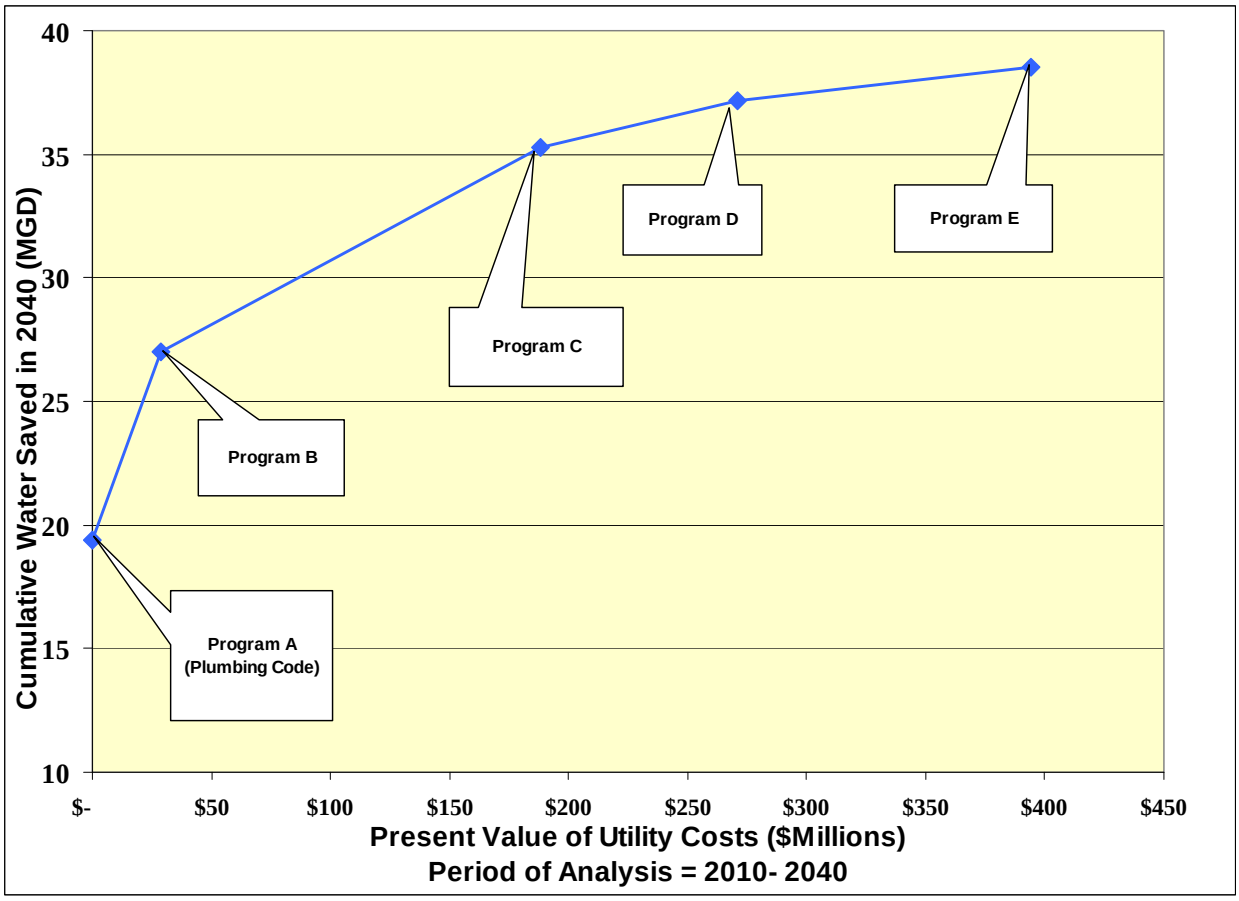
Table 7
Comparison of Long-Term Conservation Programs - Costs and Savings
(Excludes 2 MGD Projected to be saved 2008 and 2009 from Existing EBMUD Programs)

Conservation Program	2040 Water Savings w/code (MGD)	2040 Indoor Water Savings (MGD)	2040 Outdoor Water Savings (MGD)	2040 Real Water Loss Savings (MGD)	Total Water Savings as a % of Total Production in 2040	Present Value of Water Utility Costs ($Millions)	Total Utility Cost for 2010-2040 Non Discounted ($Millions)	Present Value of Community Costs ($Millions)	Present Value of Customer Costs ($Millions)	Utility Cost of Water Saved ($/AF)	Community Cost of Water Saved ($/AF)	Customer Cost of Water Saved ($/AF)	% of New Water Needed from 2009 to 2040	Program Increment	Incremental Savings 2040 (MGD)	Incremental Total Unit Utility Costs 2040 ($/AF)
Program A (Plumbing Code)	19.4	19.4	0.0	0.0	7.9%	NA	NA	NA	NA	NA	NA	0.4	38.7%	NA	NA	NA
Program B + Plumbing Code	27.0	25.3	1.7	0.0	10.93%	$ 29	$ 40	$ 220	$ 191	$ 143	$ 1,378	$ 946	53.8%	**A to B**	7.6	$ 143
Program C + Plumbing Code	35.3	29.6	2.7	3.0	14.29%	$ 188	$ 266	$ 540	$ 352	$ 480	$ 1,971	$ 897	70.4%	**B to C**	8.3	$ 839
Program D + Plumbing Code	37.2	29.8	2.9	4.4	15.06%	$ 271	$ 387	$ 708	$ 437	$ 634	$ 2,544	$ 1,021	74.1%	**C to D**	1.9	$ 2,338
Program E + Plumbing Code	38.6	29.9	4.3	4.4	15.61%	$ 394	$ 543	$ 972	$ 578	$ 845	$ 3,470	$ 1,239	76.9%	**D to E**	1.4	$ 3,161

Notes:

- Excludes 2 MGD in projected water savings for programs B – E from existing program for 2008-2010.
- Present Value is determined using an interest rate of 3%
- Cost of water saved is present value of water utility cost divided by total 30-year water savings.
- * % of water saved refers to the demand with the plumbing code
- Community Cost = Customer Cost plus Utility Cost

Figure 5
Present Value of Utility Costs versus Cumulative Water Saved in 2040



Programs B-E include 2 MGD projected to be saved during 2008 and 2009 from Existing Program

Appendix 1
Assumptions Measures Evaluated in the DSS Model

Measure	1	2	3	4	5	6	7
	Single Family Surveys I	**Single Family Surveys II**	**Single Family Surveys III**	**Single Family Surveys I with AMS**	**Single Family Surveys II with**	**Single Family Surveys III with AMS**	**Condo Surveys**
Applicable Customer Classes	SF	SF	SF	SF	SF	SF	CONDO
Applicable End Uses	Indoor/outdoor	Indoor/outdoor	Indoor/outdoor	Indoor/outdoor	Indoor/outdoor	Indoor/outdoor	Indoor/outdoor
Water Use Reductions For Targeted End Uses	10%	10%	10%	12%	12%	12%	10%
Evaluation Start Year	2010	2010	2010	2018	2018	2018	2010
Evaluation End Year	2025	2025	2025	2040	2040	2040	2025
Planned Annual Interventions Starting in 2010 or 2018 (Accounts)	500	1,000	2,500	500	1,000	3,250	500
Measure Life (years)	5	5	5	10	10	10	5
Utility Unit Cost for SF/CONDO accounts, $/account	$ 150.00	$ 150.00	$ 150.00	$ 275.00	$ 275.00	$ 275.00	$ 175.00
Utility Unit Cost for MF accounts, $/acount							
Customer Unit Cost. $/account	$ 15.00	$ 15.00	$ 15.00	$ 15.00	$ 15.00	$ 15.00	$ 50.00
Annual Utility Admin & Marketing Cost, % of total annual cost	15%	25%	35%	15%	25%	35%	25%
Contingency, % of total annual utility cost	15%	15%	15%	15%	15%	15%	15%
Affected Units	dwelling unit	dwelling unit	dwelling unit	dwelling unit	dwelling unit	dwelling unit	Account
Comments	Saturation with measure life is 2,500 accounts	Saturation with measure life is 5,000 accounts	Saturation with measure life is 12,500 accounts	Saturation with measure life is 5,000 accounts. Includes a $2 million cost for data receivers	Saturation with measure life is 10,000 accounts. Includes a $2 million cost for data receivers	Saturation with measure life is 27,500 accounts. Includes a $2 million cost for data receivers	Saturation with measure life is 2,500 accounts

RSF = Residential Single Family
RMF = Residential Multi Family 5 or more unites
IRR = Dedicated irrigation meters

NRSF = New Single Family Homes
COM / BUS= Commercial
INS = Public, buildings / grounds owned by the Water Utility or City

CONDO = Duplexes and 3 or 4 units
IND = Industrial

Appendix 1
Assumptions Measures Evaluated in the DSS Model

Measure	8	9	10	11	12	13
	Condo Surveys with AMS	**Multifamily Surveys**	**Multifamily Surveys with AMS**	**Supply-side water loss reduction I**	**Supply-side water loss reduction II**	**Supply-side water loss reduction III**
Applicable Customer Classes	CONDO	MF	MF	All	All	All
Applicable End Uses	Indoor/outdoor	Indoor/outdoor	Indoor/outdoor	Non-Revenue	Non-Revenue	Non-Revenue
Water Use Reductions For Targeted End Uses	10%	10%	10%	10% of 6% avg. real loss (0.6% net)	20% of 6% avg. real loss (1.2% net)	30% of 6% avg. real loss (1.8% net)
Evaluation Start Year	2018	2010	2018	2010	2010	2010
Evaluation End Year	2040	2025	2040	2040	2040	2040
Planned Annual Interventions Starting in 2010 or 2018 (Accounts)	600	200	250	NA	NA	NA
Measure Life (years)	7	5	7	20	20	20
Utility Unit Cost for SF/CONDO accounts, $/account	$ 325.00	$ 200.00	$ 350.00			
Utility Unit Cost for MF accounts, $/acount				$45 million or $1.5M per year average capital cost (includes 30% contingency)	$97 million or $3.1M per year average capital cost (includes 30% contingency)	$195 million or $6.3M per year average capital cost (includes 30% contingency)
Customer Unit Cost. $/account	$ 50.00	$ 100.00	$ 100.00	-	-	-
Annual Utility Admin & Marketing Cost, % of total annual cost	25%	25%	25%	NA	NA	NA
Contingency, % of total annual utility cost	15%	15%	15%	30%	30%	30%
Affected Units	Account	Account	Account	NA	NA	NA
Comments	Saturation with measure life is 3,500 accounts	Saturation with measure life is 1,000 accounts	Saturation with measure life is 1,505 accounts	Program to reduce nonrevenue water **0.6%**, then annual maintenance	Program to reduce nonrevenue water **1.2%**, then annual maintenance	Program to reduce nonrevenue water **1.8%**, then annual maintenance

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Appendix 1
Assumptions Measures Evaluated in the DSS Model

Measure	14	15	16	17	18	19	20
	Irrigation Water Budgets	**Updated Irrigation Water Budgets with AMS on existing accounts**	**Irrigation Water Surveys**	**Smart Controller Rebate**	**Washer Rebates**	**Washer Rebates for Highest Efficiency Machines**	**Public Education**
Applicable Customer Classes	IRR	IRR	COM/INS	SF/MF/IRR	SF/Condo	SF/Condo	SF/Condo
Applicable End Uses	Irrigation	Irrigation	Irrigation	Irrigation	Laundry	Laundry	All
Water Use Reductions For Targeted End Uses	5%	10%	7%	15%	25%	45%	0.5%
Evaluation Start Year	2010	2018	2010	2010	2010	2014	2010
Evaluation End Year	2040	2040	2040	2016	2013	2020	2040
Planned Annual Interventions Starting in 2010 (Accounts)	100	40	150	500	5,000	2,500	176,000
Measure Life (years)	5	10	5	Permanent	Permanent	Permanent	2
Utility Unit Cost for SF/CONDO accounts, $/account	-	-	-	$400/account	$ 75.00	$ 150.00	$ 2.00
Utility Unit Cost for MF accounts, $/acount	-	-	-	-	-	-	-
Utility Cost, non-residential, $/account	$400/account	$300/account	$300/account	$400/account	-	-	-
Customer Unit Cost. $/account	$ 400.00	$ 400.00	$ 1,500.00	$ 400.00	$ 200.00	$ 400.00	-
Annual Utility Admin & Marketing Cost, % of total annual cost	15%	10%	25%	25%	25%	20%	0%
Contingency, % of total annual utility cost	15%	20%	15%	20%	15%	20%	15%
Affected Units	Irrigation accounts	Irrigation accounts	Mixed Use Accounts	Account	per dwelling unit	per dwelling unit	per dwelling unit
Comments	Repeat every ten years, 500 accounts will remain current	Redo 400 water budgets using AMS, repeat every 10 years	Complete first round by 2015, repeat every 5 years, goal is 750 accounts current	6 year program for market transformation	BMP 6 complete, but continue to 2013 (20,000 rebates)	Start High Efficiency Rebates in 2014, run to 2020 (17,500 rebates)	On-going measure applies to one-half of SF/Condo accounts each year (a growing number), Cost is $2 per account per year

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Appendix 1
Assumptions Measures Evaluated in the DSS Model

Measure	21	22	23	24	25	26
	CII Surveys	**CII Surveys with AMS**	**Single Family Toilet Ordinance**	**Multifamily Toilet Ordinance**	**High Efficiency Toilet Rebates**	**High Efficiency Toilet Rebates Intensive**
Applicable Customer Classes	COM/INS	COM/INS	SF	MF	SF, CONDO, MF	SF, CONDO, MF
Applicable End Uses	All	All	Toilet	Toilet	Toilet End Use	Toilet End Use
Water Use Reductions For Targeted End Uses	5%	10%	60%	60%	69%	69%
Evaluation Start Year	2010	2018	2010	2010	2010	2010
Evaluation End Year	2040	2040	2013	2013	2018	2018
Planned Annual Interventions Starting in 2010 (Accounts)	300	400	9.6%, 27,978 accounts	11.6%, 1,073 accounts	8% or 23,852 SF, 810 M, 1,341 Condo by end of program	12% or 35,778 SF, 1,214 MF, 2,012 Condo by end of program
Measure Life (years)	5	10	Permanent	Permanent	Permanent	Permanent
Utility Unit Cost for SF/CONDO accounts, $/account	-	-	-	-	$ 150.00	$ 200.00
Utility Unit Cost for MF accounts, $/acount	-	-	-	-	$ 150.00	$ 200.00
Utility Cost, non-residential, $/account	$ 300.00	$ 525.00	-	-		
Customer Unit Cost. $/account or toilet	$ 1,000.00	$ 1,000.00	$ 125.00	$ 125.00	$ 200.00	$ 150.00
Annual Utility Admin & Marketing Cost, % of total annual cost	25%	25%	$50,000 / yr	$50,000 / yr	25%	25%
Contingency, % of total annual utility cost	20%	20%	30%	30%	15%	15%
Affected Units	CII accounts	CII accounts	per toilet	per toilet	dwelling unit	dwelling unit
Comments	Run 300 accounts per year	Run 400 accounts per year	4 Year program, Complete in 2013.	4 year program, Complete in 2013.	9-year program, Complete in 2018.	9-year program, Complete in 2018.

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Appendix 1
Assumptions Measures Evaluated in the DSS Model

Measure	27	28	29	30	31	32
	CII Rebates to Replace Inefficient Equipment	**Multifamily Washer Rebate**	**Multifamily Washer Rebate Intensive**	**Financial Incentives for Irrigation Upgrades**	**Financial Incentives for Irrigation Upgrades, Intensive**	**High Efficiency Urinal Rebate (< 0.25 gpf)**
Applicable Customer Classes	CII Existing	MF (5 or more units)	MF (5 or more units)	SF, CONDO, MF, CII, IRR	SF, New SF,CONDO, MF, CII, IRR	High Use CII Existing
Applicable End Uses	Process End Use	Laundry	Laundry	Irrigation	Irrigation	Urinals
Water Use Reductions For Targeted End Uses	20%	34%	34%	15%	15%	84%
Evaluation Start Year	2010	2010	2010	2010	2010	2010
Evaluation End Year	2023	2018	2018	2023	2023	2020
Planned Annual Interventions Starting in 2010 (Accounts)	10% or 2,082 COM accounts total by end of program.	15%, 1,698 total accounts by end of program, or 3,400 washers (Assume replace average of 2 washers per account)	25%, 2,830 total accounts by end of program, or 5,600 washers (Assume replace average of 2 washers per account)	Total interventions 2% SF or 6,671 accounts, 5% Non-SF or 386 Condo, 745 MF, 1,339 COM, 236 GOV, 120 IRR	Total interventions 10% SF or 33,355accounts, 195 New SF, 30% non-SF or 1,932 Condo, 3,102 MF, 5,578 COM, 985 GOV, 501 IRR	100 accounts per year or 400rebates per year (assumes 4 urinals per account)
Measure Life, years	Permanent	Permanent	Permanent	Permanent	Permanent	Permanent
Utility Unit Cost for SF/CONDO accounts, $/account	$ -	$ -	$ -	$ 450.00	$ 700.00	
Utility Unit Cost for MF accounts, $/acount	$ -	$ 75.00	$ 250.00	$ 2,500.00	$ 5,000.00	-
Utility Cost, non-residential, $/account	$ 1,000.00	$ -	$ -	$ 2,500.00	$ 5,000.00	$ 200.00
Customer Unit Cost. $/account or washer or urinal	$ 1,000.00	$ 500.00	$ 400.00	$ 1,500.00	$ 1,500.00	$ 400.00
Annual Utility Admin & Marketing Cost, % of total annual cost	25%	25%	25%	25%	25%	25%
Contingency, % of total annual utility cost	30%	30%	30%	15%	15%	30%
Affected Units	Account	account	account	account	account	per urinal
Comments						Target high use accounts

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Appendix 1
Assumptions Measures Evaluated in the DSS Model

Measure	33	34	35	36	37	38	39
	ND-1 Install AMS	NDR-2 Require Smart Irrigation Controllers and Rain Sensors	NDR-3 Require High Efficiency Toilets	ND-4 Require Efficient Dishwashers	NDR-5 Require High Efficiency Clothes Washers	ND-6 Require Hot Water on Demand	NDR-7 Require High Efficiency Faucets & Showerheads
Applicable Customer Classes	New SF, New Condo, New MF, New CII	New SF, New Condo, New MF, New CII	New SF, New Condo, New MF, New CII	New SF, New Condo, New MF, New CII	New SF, New Condo, New MF, New CII	New SF, New Condo	New SF, New Condo, New MF, New CII
Applicable End Uses	Indoor / Outdoor Leaks	Irrigation	Toilet end use	Dishwasher end use	Clothes Washer end use	Faucet and shower end use	Faucet and shower end use
Water Use Reductions For Targeted End Uses	35%	15%	20%	34%	50%	14.2 gpd per house	15%
Evaluation Start Year	2018	2010	2010	2010	2010	2010	2010
Evaluation End Year	2040	2040	2040	2040	2040	2040	2040
Planned Annual Interventions Starting in 2010 (Accounts)	75% of new	55% of new	75% of new	75% of new	75% of new	75% of new	75% of new
Measure Life, years	permanent	permanent	permanent	permanent	permanent	permanent	Permanent
Utility Unit Cost for SF/CONDO accounts, $/account	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00
Utility Unit Cost for MF accounts, $/acount	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ -	$ 20.00
Utility Cost, non-residential, $/account	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ 20.00	$ -	$ 20.00
Customer Unit Cost. $/account	$ 200.00	$ 300.00	$ 150.00	$ 400.00	$ 500.00	$ 700.00	$ 50.00
Annual Utility Admin & Marketing Cost, % of total annual cost	2%	2%	2%	25%	2%	25%	2%
Contingency, % of total annual utility cost	30%	15%	15%	30%	15%	30%	15%
Affected Units	account	account	Toilet	account	account	account	account
Comments	New requirement			New requirement		New requirement	

RSF = Residential Single Family
RMF = Residential Multi Family 5 or more unites
IRR = Dedicated irrigation meters

NRSF = New Single Family Homes
COM / BUS= Commercial
INS = Public, buildings / grounds owned by the Water Utility or City

CONDO = Duplexes and 3 or 4 units
IND = Industrial

Appendix 1
Assumptions Measures Evaluated in the DSS Model

Measure	40	41	42	43	44	45	46
	NDR-8 Require Landscape and Irrigation Requirements	**NDR-9 Require Multi Family Submetering on New Accounts**	**NDR-10 Require 0.50 Gal/flush Urinals in Bldgs.**	**ND-11 Require Plumbing for Future Gray Water Use**	**NDR-12 Require Plan Review for New CII**	**MF submeter incentive**	**Artificial turf (Sports fields)**
Applicable Customer Classes	New SF, New Condo, New MF, New CII	New MF (5 or more units)	New CII	New SF	New CII	MF/Condo	Irrig.
Applicable End Uses	Irrigation	Indoor	Com Urinal	Irrigation	Indoor		
Water Use Reductions For Targeted End Uses	10%	15%	50%	0.75%	10%	Indoor/outdoor	Irrigation
Evaluation Start Year	2010	2010	2010	2010	2010	12%	90%
Evaluation End Year	2040	2040	2040	2040	2040	2010	2010
Planned Annual Interventions Starting in 2010 (Accounts)	55% of new	30% of new	75% of new, assume 2 urinals/account	75% of new	75% of new	2040	2040
Measure Life, years	Permanent	Permanent	Permanent	Permanent	Permanent	75	1
Utility Unit Cost for SF/CONDO accounts, $/account	$ 20.00	$ -	$ -	$ 20.00	$ -	25	10
Utility Unit Cost for MF accounts, $/acount	$ 20.00	$ 25.00	$ -	$ -	$ -	$ 300.00	
Utility Cost, non-residential, $/account	$ 20.00	$ -	$ 20.00	$ -	$ 400.00		$ 10,000.00
Customer Unit Cost. $/account	$ 3,000.00	$ 3,000.00	$ 400.00	$ 3,000.00	$ 2,500.00	$ 400.00	$ 250,000.00
Annual Utility Admin & Marketing Cost, % of total annual cost	2%	negligible	25%	10%	25%	15%	5%
Contingency, % of total annual utility cost	20%	30%	15%	30%	15%	30%	30%
Affected Units	account	account	account	account	account	dwelling unit	account
Comments		Utility pays read and bill cost (635/account/year)		New requirement, assume 5% of people save 15%		Saturation with measure life is 1,875 accounts	Saturation with measure life is 7 accounts

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IRR = Dedicated irrigation meters

NRSF = New Single Family Homes
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INS = Public, buildings / grounds owned by the Water Utility or City

CONDO = Duplexes and 3 or 4 units
IND = Industrial

Appendix 1
Assumptions Measures Evaluated in the DSS Model

Measure	47	48	49	50	51	52	53
	Artificial turf (Res Landscape)	Cisterns	Garbage disposal removal	Graywater Retrofit Incentive	Graywater New Construction Incentive	Dental Office Vacuum Pumps	Water Brooms
Applicable Customer Classes	SF	SF	SF	SF	SF	CII	CII
Applicable End Uses	Irrigation	Outdoor	Faucets	Irrigation	Irrigation	Indoor	Washdown
Water Use Reductions For Targeted End Uses	90%	3 gpd or 1,200 gallons per year	2 gpd	15%	15%	50%	5%
Evaluation Start Year	2010	2010	2010	2010	2010	2010	2010
Evaluation End Year	2040	2040	2040	2040	2040	2040	2040
Planned Annual Interventions Starting in 2010 (Accounts)	250	750	500	300	300	10	10
Measure Life (years)	10	7	10	10	10	Permanent	5
Utility Unit Cost for SF/CONDO/MF accounts, $/account	$ 1,000.00	$ 100.00	$ 10.00	$ 1,000.00	$ 500.00		
Utility Cost, non-residential, $/account						$ 125.00	$ 100.00
Customer Unit Cost. $/account	$ 22,000.00	$ 500.00	$ 50.00	$ 5,000.00	$ 5,000.00	$ 25,000.00	$ 200.00
Annual Utility Admin & Marketing Cost, % of total annual cost	20%	25%	25%	25%	25%	25%	25%
Contingency, % of total annual utility cost	30%	30%	30%	30%	30%	30%	30%
Affected Units	account	account	account	account	account	account	account
Comments	Saturation with measure life is 2,490 accounts.	Saturation with measure life is 5,250 accounts.	Saturation with measure life is 5,000 accounts.	Saturation with measure life is 4,500 accounts.	Saturation with measure life is 3,000 accounts.	Saturation with measure life is 310 accounts.	Saturation with measure life is 64 accounts.

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RMF = Residential Multi Family 5 or more unites
IRR = Dedicated irrigation meters

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COM / BUS= Commercial
INS = Public, buildings / grounds owned by the Water Utility or City

CONDO = Duplexes and 3 or 4 units
IND = Industrial

Appendix D TM-6

Water Supply and Economic Modeling Report

East Bay Municipal Utility District
Water Supply Management
Program 2040

Draft Water Supply and Economic Modeling Report

Prepared by:

RMC
Water and Environment

In Association with:

EDAW, Stockholm Environment Institute, M.Cubed, and HydroMetrics.

March 2009

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List of Abbreviations

AF	Acre-feet
AFY	Acre-feet per year
AO	Allocation order
AWWARF	American Water Works Association Research Foundation
BOD	Board of Directors
CCF	100 cubic feet
CCWD	Contra Costa Water District
CEQA	California Environmental Quality Act
CVP	Central Valley Project
DPS	Drought Planning Sequence
DWR	California Department of Water Resources
EBMUD	East Bay Municipal Utility District
EOS	End of September
FLOD	Fixed Level of Development
Freeport, FRWP	Freeport Regional Water Project
GAC	Granular activated carbon
GDP	Gross domestic product
GSP	Gross state product
IS	Indexed sequential
IRCUP	Inter-Regional Conjunctive Use Project
JSA	Joint Settlement Agreement
Kwh/AF	Kilowatt hours per acre-foot
LEAD	Low Energy Application for Desalination
LOD	Level of demand
MF	Multiple family
MGD	Million gallons per day
M&I	Municipal and Industrial
N/A	Not applicable
NFW	Need for Water
NPV	Net present value
O&M	Operations and maintenance
RARE	Richmond Advanced Recycled Expansion

SCVWD	Santa Clara Valley Water District
SEI	Stockholm Environment Institute
SF	Single family
SFPUC	San Francisco Public Utilities Commission
TAF	Thousand acre-feet
TSS	Total system storage (defined as the sum of Pardee Reservoir, Camanche Reservoir and existing terminal reservoir storage)
USL	Upper San Leandro
W-E	WEAP – EBMUDSIM integrated model
WEAP	Water Evaluation And Planning model
WSMP 2040	Water Supply Management Program 2040
WTP	Willingness to pay
WY	Water year
Yr	Year

Chapter 1 Introduction and Purpose of the Model

The East Bay Municipal Utility District (EBMUD) is in the process of developing a Water Supply Management Program which will define water needs and recommend a combination of policy initiatives and water supply projects to meet projected demands through 2040. This combination of policy actions and water projects is referred to as a "water supply portfolio". The Water Supply Management Program 2040 (or WSMP 2040) includes a Preferred Portfolio intended to ensure that, even under reasonably worst-case conditions, the District will be able to meet demands for essential services through the year 2040.

The WSMP 2040 project team developed a process for identifying and screening potential future policies and projects that could be implemented to meet future water supply needs. These policies and projects (called "components" in the WSMP 2040 process) were grouped in different combinations to form portfolios of water supply components. The portfolios were then evaluated to check technical feasibility, develop preliminary portfolio cost estimates, and assess benefits and impacts resulting from each portfolio. To aid in the portfolio evaluation, the project team developed a water supply model that was used to determine the responsiveness of each alternative portfolio to WSMP 2040 planning objectives, assess the sensitivity of EBMUD's water supply system to climate change, and calculate portfolio costs. This memorandum documents the use of modeling in supporting the WSMP 2040 portfolio development and evaluation.

Chapter 2 WEAP- EBMUDSIM Model

The model selected for use in the WSMP 2040 development is comprised of two separate computer models linked together to work in concert. The Water Evaluate and Planning (WEAP) model was combined with EBMUDSIM to create a composite model termed the W-E Model. WEAP is a planning model developed by the Stockholm Environment Institute (SEI). This model uses an integrated approach to simulating water systems as a way to aid water supply planning. The American Water Works Association Research Foundation (AWWARF) supported further development of WEAP for use by water management agencies. The Metropolitan Water District of Southern California, the El Dorado Irrigation District in Placerville, and the US Bureau of Reclamation have used WEAP on projects similar to the WSMP 2040.

EBMUDSIM is EBMUD's current reservoir operations planning model. The model simulates the complex operation of the District's raw water system, including Pardee Reservoir, Camanche Reservoir, the terminal reservoirs located in the East Bay, and the Mokelumne Aqueducts. EBMUDSIM has proven to be a reliable and effective model of the District's Mokelumne system and has been the basis for past water supply analyses.

Although modeling of the existing EBMUD water supply system is within the capabilities of WEAP, project staff chose not to recreate the functionality of EBMUDSIM using WEAP. Instead, the two models were coupled to take advantage of EBMUDSIM's proven simulation capabilities, thereby saving time in model development and maintaining compatibility with earlier EBMUD modeling. In the combined model, EBMUDSIM was used to simulate operation of the EBMUD's current water supply facilities while WEAP was used for balancing available supplies with future demands by incorporating information from EBMUDSIM, simulating District service area distribution, and incorporating potential new water supply projects. The resulting W-E model links EBMUDSIM and WEAP, exchanging information between the models on an annual calendar-year basis.

2.1 WEAP Model

WEAP is a proprietary planning model developed by the Stockholm Environment Institute. The model is a computerized decision support system tool that allows planners to effectively evaluate long-term options for managing and developing reliable, adequate, and sustainable water supplies.

2.1.1 Background

Historically, WEAP has been used primarily to assess the reliability of water deliveries and the sustainability of surface water and groundwater supplies under future development scenarios. WEAP applications generally include several steps:

1. The time frame, spatial boundary, system components and configuration of the problem is first established.
2. A snapshot of current water demands and supplies for the system, called the "Current Account" is then developed.
3. The model is then run to create a "reference" or "business-as-usual" scenario projection based on a variety of economic, demographic, hydrological, and technological trends. This scenario is called the "Baseline Scenario" in the WSMP 2040 process.
4. Alternative sets of future assumptions are then established based on policies, costs, technological development and other factors that affect supply and demand. Scenarios are constructed consisting of alternative sets of assumptions or policies. The scenarios can address a broad range of "what if" questions such as: What if demand changes? What if additional supplies are made available? What if additional water conservation is introduced?

5. Finally, the model is run for each alternative scenario and the results are evaluated with regard to water sufficiency, costs and benefits, compatibility with environmental values, and sensitivity to uncertainty in key variables.

2.1.2 Logic and Organization

The WEAP model uses a cascading data structure organized in terms of supply sources (e.g., rivers, creeks, groundwater, and reservoirs); withdrawal and transmission facilities; and water demands. The model operates on the basic principle of water balance accounting, balancing regional inflows with outflows. Within the region, demands can be assigned priorities and supplies can be assigned preferences. Water is then allocated based on a linear programming objective function and equity class allocation. Water is supplied to first-priority users first, then to second- and third-priority users, etc. If two demand sites have the same priority and supply is insufficient to meet both demands, supplies at each site will be decreased by the same percent.

WEAP determines the "allocation order" (AO) from the demand priorities and supply preferences. The AO is the actual calculation order the model follows for assigning supplies to demands to ensure that supplies are not over-allocated. WEAP then iterates through each AO, using the objective function to maximize the volume of supplies allocated to each demand in that AO such that all coverages (supplies allocated to demands) are within the sum of the supplies available. This is the "equity constraint." If some demands are constrained but others are not (i.e., demands downstream of a tributary inflow could have more supply available to them than those upstream), the constrained demands are fixed at their maximum and then removed from the objective function.

The linear program is solved iteratively for all demands in an AO, until all demands are either fully satisfied or constrained below 100%. Then the next AO is allocated. The objective function does not consider distribution or supply costs; rather coverage is maximized (that is, maximize the amount of water allocated to each demand), subject to the constraints specified by the user (e.g., maximum transmission capacity, maximum aquifer withdrawal), as well as mass balance and equity constraints. More information on WEAP can be found in Yates et al. (2005).

2.2 EBMUDSIM

EBMUDSIM is EBMUD's proprietary reservoir operations model that simulates the operation of the District's current Mokelumne River water supply system consistent with the constraints under which the District must operate. The model has been used to evaluate the impact of various planning scenarios, including the effect of the Freeport Regional Water Project on the District's water supply. The primary purpose of EBMUDSIM is to determine the ability of EBMUD's water supply system to meet customer demands.

2.2.1 Logic and Organization

EBMUDSIM is basically a water balance model which accounts for inflows to EBMUD's Mokelumne River water supply system, balances reservoir operations, and determines direct diversions from Pardee Reservoir into the Mokelumne Aqueducts and downstream releases from Camanche Reservoir into the lower Mokelumne River. EBMUDSIM uses a monthly time step as the basis for its simulations. Figure 2-1 is a simplified schematic of the system modeled by EBMUDSIM. While not representative of the full model capabilities, the schematic reflects the application of EBMUDSIM for the WSMP 2040 project. Inputs to EBMUDSIM for the WSMP 2040 include hydrologic variables necessary for the water balance, such as regulated inflow to Pardee Reservoir and net precipitation derived from historical records, in addition to a fixed level of demand. For simulations of future conditions, inflow to Pardee Reservoir is adjusted to reflect expected changes in upstream diversions.

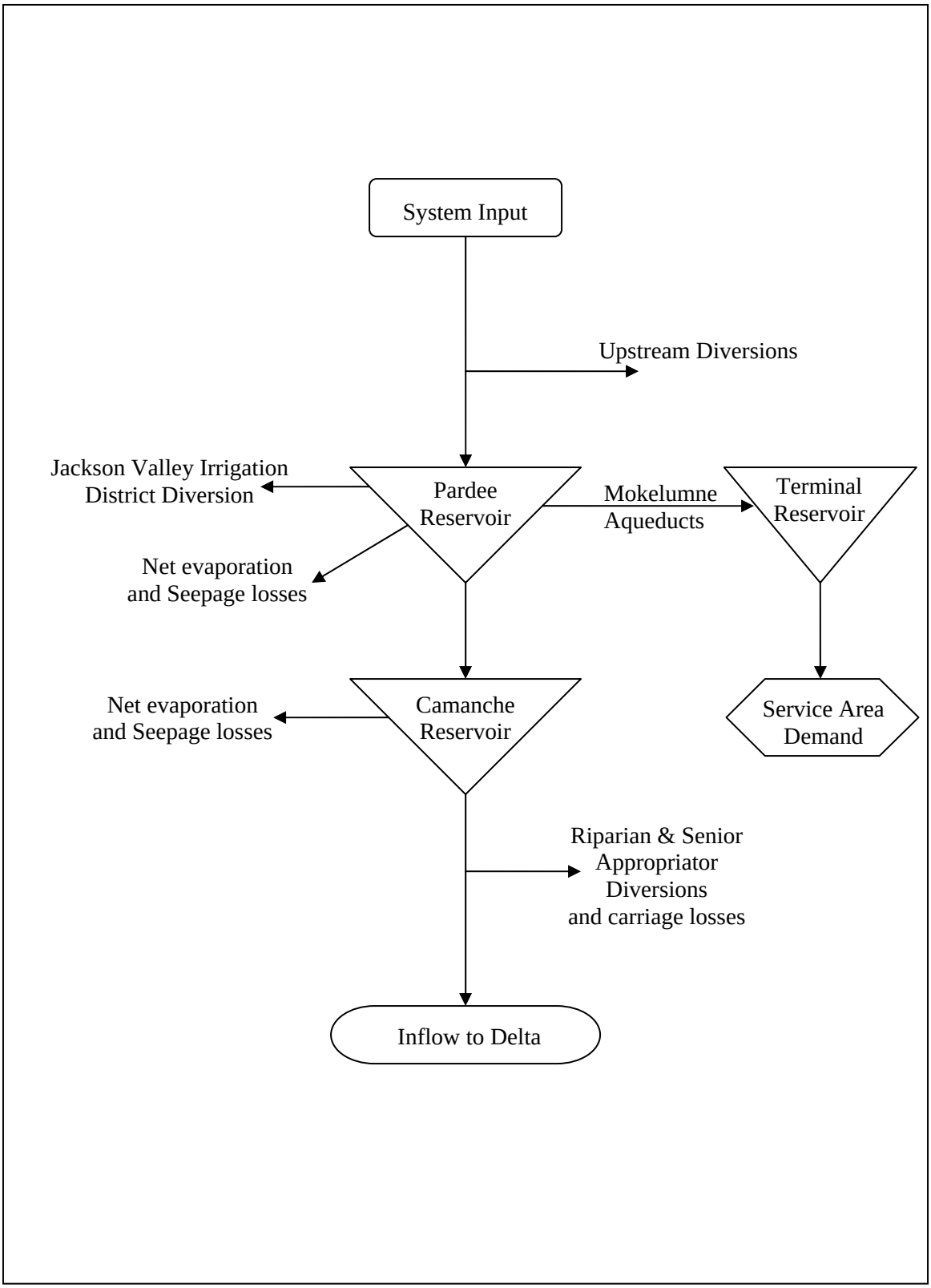


Figure 2-1: Schematic of EBMUDSIM

EBMUDSIM calculates monthly draft to the Mokelumne Aqueducts in response to a fixed level of customer demand and required releases to the lower Mokelumne River. Releases from Camanche Reservoir to downstream users reflect the current water rights of, and agreements with, downstream water users, as well as fishery flow requirements. Channel losses are accounted for as a function of Camanche Reservoir releases to ensure that downstream streamflow targets are met. The empirical relationship that relates downstream channel losses as a function of Camanche release is based on historical monitoring data. The model ensures that water is released from Pardee Reservoir to supply Camanche Reservoir with sufficient water to make the required releases to downstream users. Remaining water is available for storage or delivery to District customers. EBMUDSIM also accounts for flood control operations.

For more information about EBMUDSIM, refer to Volume 3 of the *Freeport Regional Water Project Draft Environmental Impact Report/Environmental Impact Statement* (EBMUD, 2003) and Exhibit 4 of the Bay-Delta Water Rights Hearings before the State Water Resources Control Board (EBMUD, 1998).

2.3 The WEAP-EBMUDSIM Integrated Model

For the purposes of the WSMP 2040, the WEAP and EBMUDSIM models have been dynamically linked, allowing for two-way transfer of data between the models. Together, the models are referred to as the WEAP-EBMUDSIM model (W-E Model). In this application the WEAP model is used to link various water supply sources with service area demands on an annual basis, while EBMUDSIM balances the inter-annual operation of the District's existing system (shown schematically in Figure 2-1). When run, the WEAP model initiates multiple calls to a compiled EBMUDSIM subroutine in order to route supplies to demands within an annual time step. For each annual time step, essentially three categories of information are evaluated and stored in the W-E model:

1. **Data stored and calculated in WEAP**
    - District demands
    - Conservation
    - Rationing
    - Supply from new recycled water projects
    - Supply from existing supplemental supply projects
    - Supply from new supplemental supply projects.
    - Annual unmet District demand for each demand class within each pressure zone area
2. **Data calculated in EBMUDSIM and passed to WEAP**
    - January and February flood control release volume for current calendar year
    - October to December flood control release volume for current calendar year
    - End-of-September total system storage[1]
    - Annual diversion through the Mokelumne Aqueducts to the terminal reservoirs
3. **Data calculated in EBMUDSIM and stored in an output file**
    - Annual Lower Mokelumne River shortages
    - Monthly Mokelumne Aqueduct diversions from the District's reservoirs

[1] Total system storage is defined as existing Pardee, Camanche and Terminal Reservoir storages unless otherwise noted.

- End-of-December Pardee, Camanche, and terminal reservoir storages
- Joint Settlement Agreement (JSA) fish release classifications
- Annual total Camanche Release volume
- Annual total volume flowing into the Delta

A schematic representation of the W-E model simulation logic for each calendar year time step is shown in Figure 2-2. The logic pattern is repeated for each year of the model sequence, as denoted by the demands and historical hydrology input into the model.

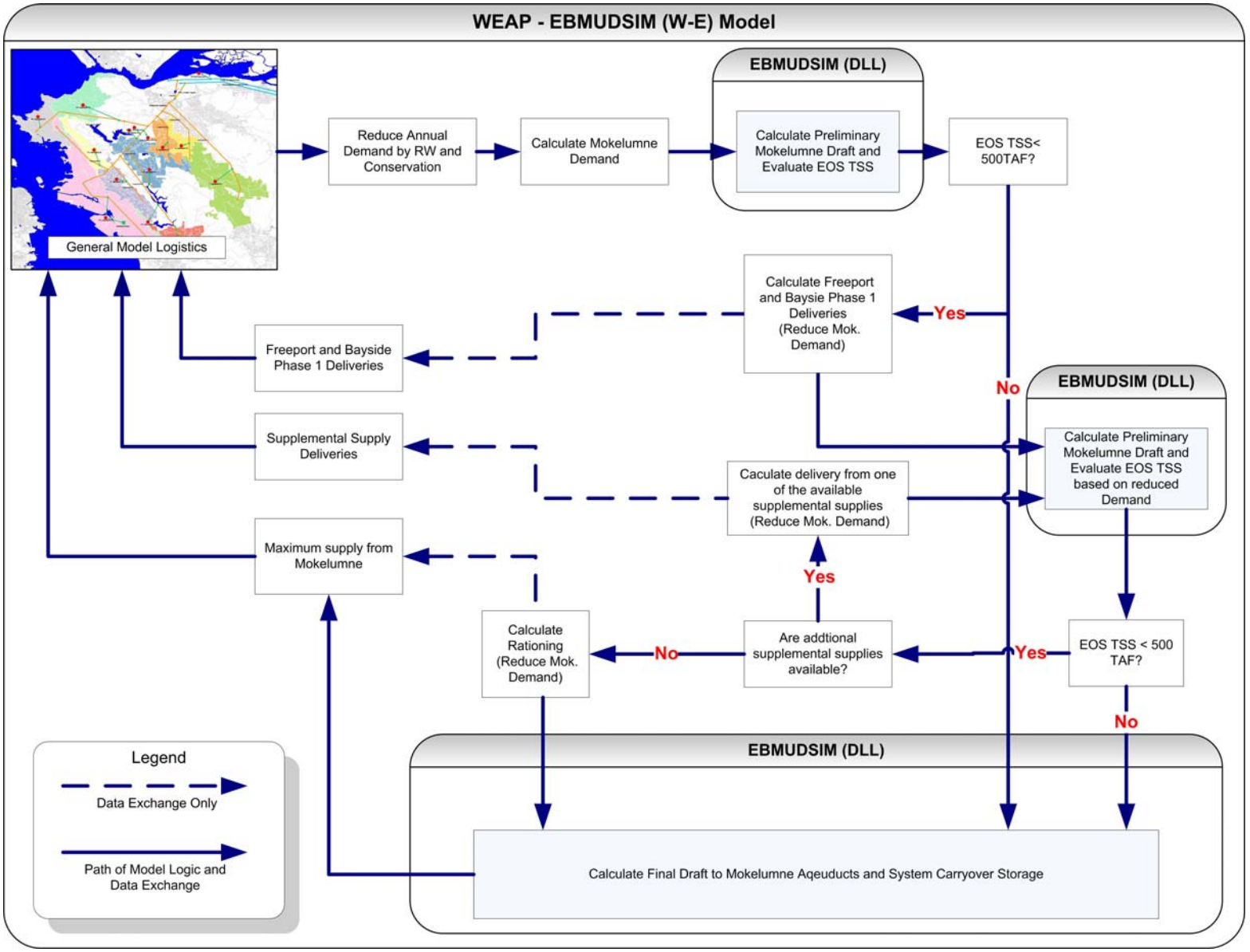


Figure 2-2: Schematic of W-E Model Logic

Using the W-E model, two types (or modes) of portfolio modeling were conducted: Fixed-Level-of-Development (FLOD) modeling was used in the primary portfolio screening process while Indexed-Sequential Modeling (IS) was used in the secondary portfolio screening process.

2.3.1 Fixed-Level-of-Development Modeling

A model running in a Fixed Level of Development (FLOD) mode is one that simulates a snapshot of the water supply system at a single point in time to evaluate how the system will perform under a specific hydrologic sequence. In this type of modeling, water demands and supply sources are held constant at a level corresponding to a single year (for example the year 2040) while simulating the specified (typically historic) hydrologic sequence. This is in contrast to real-time or stochastic modeling in which both hydrology and level of development may be temporally distributed. The FLOD modeling methodology was used by the California Department of Water Resources (DWR) and the U.S. Bureau of Reclamation in their CALSIM model, an operations and planning model for the State Water Project and Central Valley Project. For EBMUD's WSMP 2040, FLOD modeling was an efficient way to assess the ability of a potential water supply portfolio to meet customer demands at the 2040 level of development. In the FLOD modeling mode, each portfolio was simulated assuming 83 years of the historical hydrological sequence (from 1921 through 2003) at a 2040 level of development.

As with all models, the FLOD modeling has limitations. Because this type of modeling is based on a single hydrologic sequence, it does not capture a wider range of possible hydrologic variability. Additionally, the sequencing of projects coming online over the course of the planning period cannot be simulated nor can the net present value of a portfolio be calculated because FLOD modeling fixes demand and water supplies at a specified level. Therefore, indexed-sequential modeling (described below) was used for conducting economic and risk calculations for water supply portfolios that met performance criteria in the initial evaluation using FLOD modeling. IS modeling was also used to evaluate portfolio performance when the drought planning sequence occurs at different times within the planning period.

In summary, for the WSMP 2040, FLOD modeling was used to screen the initial set of portfolios, to identify a subset of portfolios that were then evaluated using IS modeling.

2.3.2 Indexed-Sequential Modeling

The W-E model running in an Indexed-sequential (IS) modeling mode simulated a portfolio by taking into account the growth of demands and the introduction of new water supplies over time. This method also tested a portfolio against a wider range of possible hydrologic sequences within the planning horizon by simulating different portions of the historic hydrologic sequence in an iterative fashion. Application of this modeling method was necessary to develop a range of operating costs, rationing costs, and shortage risks resulting from possible variations of historic hydrology, and was successfully used by Santa Clara Valley Water District in their Extend Simulation modeling conducted for their Integrated Water Resources Planning Study.

For the IS modeling, a Visual Basic script was developed to streamline the process of executing the W-E model under various 31-year sequences of historical hydrology. The script set the start and end years for a given hydrologic sequence and executed the W-E model. After each 31-year sequence, the script wrote pertinent model results to an EXCEL spreadsheet and the model output was then combined with operations and maintenance cost calculations in a post-processing step. This process was repeated for 83 possible sequences of historical hydrology and the results compiled to describe the possible range of costs for each portfolio simulated. See Section 3.2.2 for more information about how hydrologic data were controlled in the IS modeling.

Chapter 3 Model Inputs

3.1 Demands

Water demands were input into the W-E model via WEAP demand nodes. Each node represented a portion of District water use, based on a spatial disaggregation of overall demand across the District's service boundaries. Within each node, demands were further broken-up by customer class (i.e. single family residence, multi-family residence). Demand projections, spatial disaggregation, and customer classifications are discussed in the following sections.

3.1.1 Demand Projections

As part of the WSMP 2040, projected future District water demands were prepared using a combination of land-use and population projections. The District-wide demand projections represent system input, the quantity of water that enters the distribution system. System input includes treated water delivered from the District's treatment plants, groundwater inflow to the Claremont Tunnel, and adjustments for changes in distribution storage. The demand projections were then adjusted to reflect water savings from current conservation efforts and recycled water projects. Current conservation efforts include all programs in place through 2008. Recycled water projects incorporated in the base demand projections include all projects that will be in service by 2010. Additional future conservation programs and recycled water projects were modeled separately as components in each WSMP 2040 portfolio.

Total District-wide demand, unadjusted for current conservation and recycled water projects, was estimated to be 306 MGD, resulting in an adjusted District-wide demand of 274 MGD. This projection was used in modeling the portfolios evaluated as part of the WSMP process in order to identify the preferred portfolio. However, subsequent to the modeling, an error was identified in the demand projection resulting from the application of a new method for non-potable water projection. The error was corrected and a revised demand projection prepared. This revised unadjusted demand projection was estimated to be 312 MGD, resulting in an adjusted Demand-wide demand of 280 MGD. The Preferred Portfolio, Baseline and CEQA No-Action scenarios were then re-simulated using the revised demand projection in order to confirm prior modeling results.

Table 3-1 shows both the original and revised the baseline 2040 demands used in the W-E modeling.

Table 3-1: 2040 District-Wide Demands

Description	Original Demands and Adjustments (MGD)	Revised Demands and Adjustments (MGD)
District–Wide Demand (Unadjusted)	306	312
Conservation through 2008	-22.5	- 22.5
Recycled Water through 2010	-9.3	- 9.3
District-Wide Demand (Adjusted)	**274**	**280**

For the IS modeling, a temporal distribution of demands was determined for the years shown in Table 3-2. The model linearly interpolated between these years to form a smooth escalation of demands over the planning period (2010 – 2040) with the adjusted demand values used as model inputs.

Table 3-2: Distribution of Demands over the Planning Period (MGD)

Year	2010	2015	2020	2025	2030	2040
Unadjusted Demand	251	266	280	291	304	312
Conservation through 2008	-22.5	-22.5	-22.5	-22.5	-22.5	-22.5
Recycled Water through 2010	-9.3	-9.3	-9.3	-9.3	-9.3	-9.3
Adjusted Demand	**219**	**234**	**249**	**259**	**272**	**280**

3.1.2 Demand Distribution

For modeling purposes, the District's service area was divided into 11 pressure zone regions shown in Figure 3-1. Each WEAP node represents a unique pressure zone region. Groupings of these regions correspond with typical water treatment plant service areas during the summer and times of drought, as follows:

- Orinda Filter Plant: pressure zone regions AS, B, and GC.
- Lafayette Filter Plant: pressure zone regions D and E.
- Walnut Creek Filter Plant: pressure zone regions F and H.
- Sobrante Water Treatment Plant: pressure zone regions AN and GN.
- Upper San Leandro (USL) Water Treatment Plant: pressure zone regions C and GS.

Treatment plant capacities are not explicitly considered in W-E Model. It is assumed that the terminal system will provide adequate capacities for conveyance, treatment, and storage to accommodate WSMP 2040 water supply portfolios. The seasonal "demand peaking" is assumed not to exceed system capacity. These assumptions were verified by analysis of modeling results.

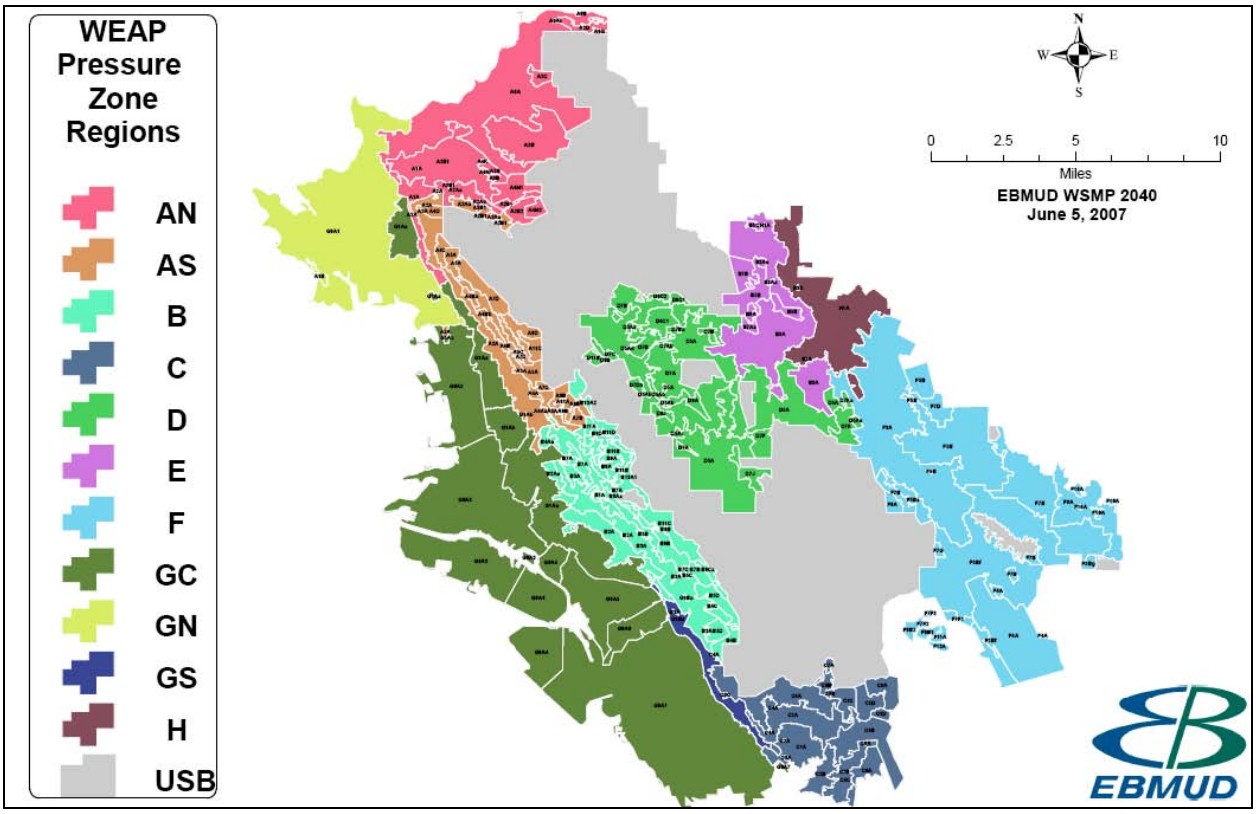


Figure 3-1: Pressure Zone Regions Used in the WSMP 2040 Modeling

3.1.3 Demand Customer Classifications

System demands within each pressure zone region were further divided into water user categories based on groupings of the 22 land-use categories used to develop the District-wide demand projection. The 22 land-use categories were aggregated into 16 water user categories for use in the W-E model. These 16 categories are listed in Table 3-3 and correspond roughly to the categories used for conservation program planning.

Table 3-3: WEAP Water User Categories

Residential - Single Family, Low Density	Commercial/Industrial - Medium Density
Residential - Single Family, Medium Density	Commercial - High Density Office
Residential - Multi-Family, High Rise	Public
Residential - Multi-Family, Low Rise	Schools
Mixed Uses - Medium Density	Irrigation
Mixed Uses - Low Rise	High Water Users
Mixed Uses - High Rise	Recycled Water[1]
Commercial/Industrial - Low Density	Miscellaneous

[1] The "recycled water" classification includes existing recycled water customers.

3.1.4 Other Water Usage Assumptions

Other W-E model assumptions regarding water usage and loss include:

- Losses between Pardee Reservoir and the distribution system (including leakage along the Mokelumne and Lafayette Aqueducts, evaporation from the terminal reservoirs, and deliveries of untreated water) are not accounted for in the demand projections.
- Leakage along the Mokelumne and Lafayette Aqueducts is considered negligible.
- Evaporative losses in Pardee and Camanche Reservoir are accounted for in EBMUDSIM.
- Evaporative losses in the terminal reservoirs offset local runoff (especially true in dry years) and therefore not included in the modeling.
- Deliveries to Jackson Valley Irrigation District and other Mokelumne River water users are accounted for in EBMUDSIM.
- Raw water deliveries, expressed as average annual demand, are assumed as follows based on the District's 2005 Urban Water Management Plan:
    1. Lake Chabot Golf Course 0.13 MGD
    2. Willow Park Golf Course 0.08 MGD
    3. Sunset View Cemetery 0.07 MGD

3.2 Hydrology

The W-E model uses an 83-year hydrologic record for the Mokelumne River, extending from 1921 to 2003. One modification made to this hydrologic record was to create the District's drought planning sequence (DPS), which assumes an artificially dry year in Water Year (WY) 1978. For the hydrologic record used in the WSMP 2040 modeling, Mokelumne River hydrologic inputs in WY 1978 have been replaced with a dry-year amount equal to the average annual runoff that occurred in WY 1976 and WY 1977. The three-year DPS (1976, 1977, and modified 1978) is used by the District to assess the adequacy of its water supply system.

The current EBMUDSIM hydrologic database goes through December of 2003. The current database was considered sufficient for the purposes of this planning study especially since precipitation in the years 2004 to 2006 was normal or above normal with 2006 being an especially wet year. Therefore, extending the database to include those years would yield little benefit to the WSMP 2040 effort, whose focus is on water supply reliability during droughts.

3.2.1 Fixed-Level-of-Development Modeling Hydrology

FLOD modeling with the W-E model used the historic Mokelumne River hydrologic sequence with the DPS to test the ability of the District's water supply system to meet demands at a specified level of development. Using this approach, a typical FLOD modeling simulation began with 1921 hydrology and ended with the 2003 hydrology – requiring the model to simulate a total of 83 years of hydrologic record. The FLOD modeling simulations thus approximated 'snapshots' of what the water supply situation could look like given 83 different hydrologic years sequenced as occurred historically.

3.2.2 Indexed-Sequential Modeling Hydrology

In the IS modeling conducted for the WSMP 2040, a portfolio is run through 83 different 31-year subsets of the historical hydrologic sequence with the DPS. The model first simulates the 2010 to 2040 planning period using the demands described in Section 3.1.1 and 31 years of historical hydrologic data starting with 1921 (i.e. hydrologic data recorded between 1921 and 1951). The model then reruns the 2010 to 2040 planning period using the 31 years of hydrologic data starting with 1922 (i.e. hydrologic data recorded between 1922 and 1952). This process continues until the last year of the hydrologic record (2003) becomes the first year in the simulation period with the W-E model programmed to "loop around"

back to the beginning of the hydrologic sequence such that 1921 would follow year 2003 in the hydrologic sequence. Therefore, for the data set beginning in 2003, the sequence of hydrology modeled is 2003, 1921, 1922, et cetera. This method provides 83 different sequences or "draws" of historic hydrologic data with the DPS, each processed through 31 years of increasing demand. This methodology allows simulation of hydrologic sequences where the DPS occurs at the beginning, middle, and end of the planning period to determine when additional water supplies will be necessary (i.e. when new projects should come online) and to calculate the range of present worth for annual costs.

3.3 Rationing

EBMUD's current rationing policy limits customer rationing during a drought to a District-wide average of 25 percent. The Drought Management Program Guidelines (shown in Table 3-4) delineate how varying levels of rationing will be implemented based on projections made in spring of total system storage at the end of the following September.

Table 3-4: EBMUD Drought Management Program Guidelines

Drought Stage	Projected End-of September Total System Storage (TAF)	District-Wide Rationing Goal (%)
None	> 500	None
Moderate	450 – 500	0 to 15
Severe	450 – 300	15 to 25
Critical	< 300	25

Guidelines similar to those shown in Table 3-4 were developed to allow modeling of alternative rationing caps. Figure 3-2 displays how rationing rules for 10%, 15% 20%, and 25% maximum rationing scenarios were implemented in the WSMP 2040 modeling.

During the first year of drought, a rationing response is not typically implemented until April at the earliest and possibly as late as June (when the first and second projections of end-of-September (EOS) total system storage are made). Total system storage (or TSS) is defined as the sum of Pardee Reservoir, Camanche Reservoir and existing terminal reservoir storage. To account for this late response in the first year of a drought and the time required for customers to transition to rationing, the modeled annual rationing goal is reduced by half in the first year that carryover storage is projected to fall below 500 TAF.

The only exception to the rationing rules as described above was for Portfolio D2 – the IS modeling scenario involving the Enlarge Pardee Reservoir component. In this portfolio, the initial threshold for implementing rationing was increased from 500 TAF to 670 TAF to account for the amount of additional storage created by the enlargement of Pardee Reservoir. A new rule curve, shown in Figure 3-3, was developed for this portfolio for a 15% maximum rationing scenario.

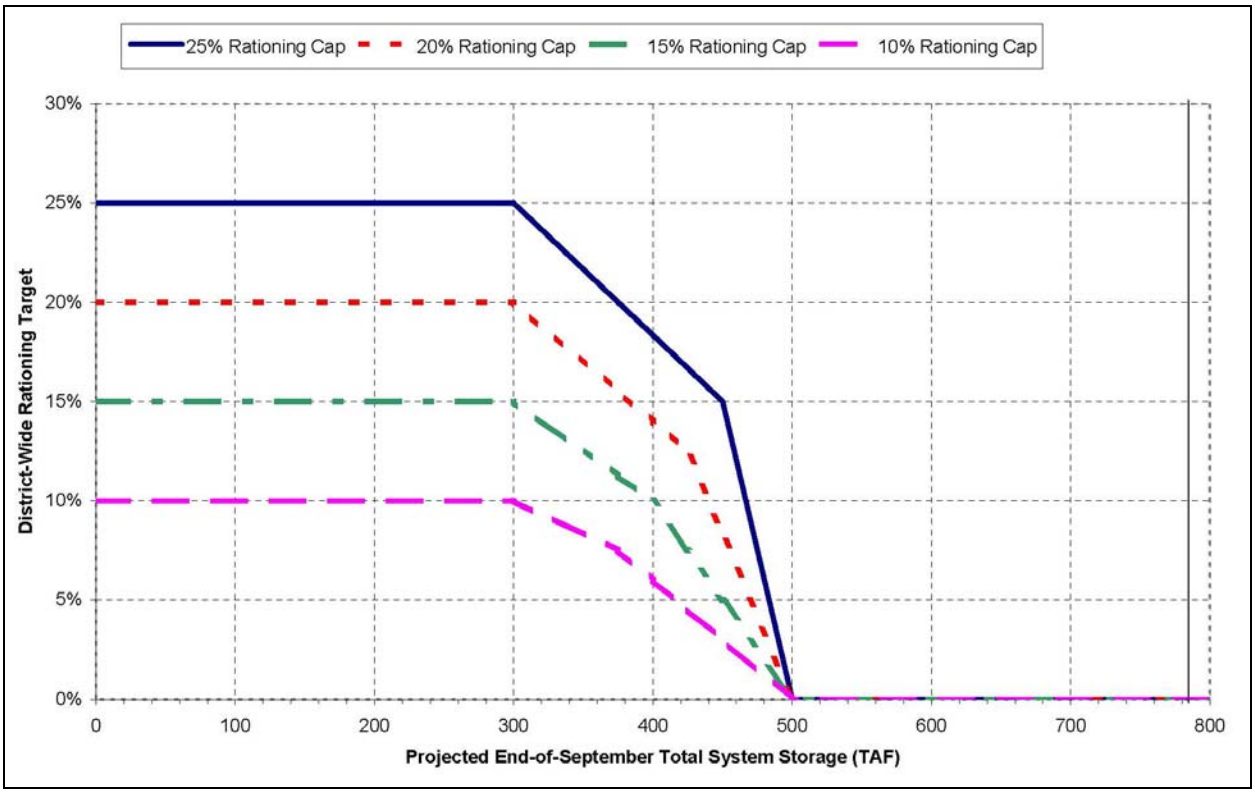


Figure 3-2: Rationing Rule Curves for Alternative Rationing Caps

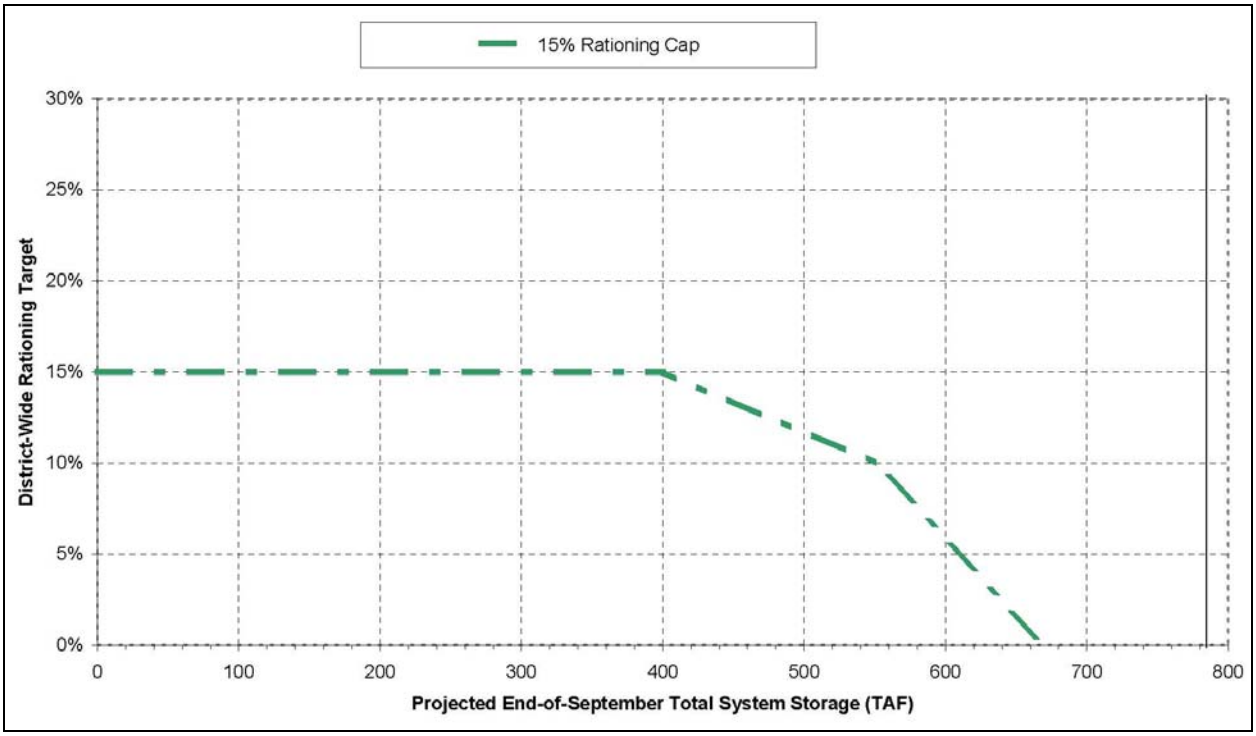


Figure 3-3: Rationing Rule Curve for Portfolio D2

Although not explicitly tracked in the W-E model, the WSMP 2040 process disaggregated rationing among six customer classes for each maximum rationing scenario, as described in Table 3-5. This information was necessary for shortage cost calculations which were part of the post-processed economic analysis. In years when the W-E model determined that maximum rationing was not necessary, individual user class rationing was adjusted proportionately.

Table 3-5: Rationing by Customer Class for Various District-Wide Rationing Scenarios

Customer Class	WEAP Water User Category	25% Maximum Rationing Scenario	20% Maximum Rationing Scenario	15% Maximum Rationing Scenario	10% Maximum Rationing Scenario
Single Family	Low Density Residential	30%	24%	18%	12%
	Medium Density Residential				
Multi-Family	High Density Residential	19%	15%	11%	7%
	Very High Density Residential				
	Special High Density Residential				
	Mixed Use				
Irrigation	Irrigated	48%	39%	29%	19%
Institutional	Public	16%	13%	9%	6%
	School				
Commercial	Gen Commercial/ Industrial	20%	16%	12%	8%
	Office/ Industrial				
	High Density Office				
Industrial	High Water User	9%	7%	5%	3%
	Industrial/ Low Water Use				
	Refinery				

3.4 Supply Components

Supply components include “base” and “supplemental” water supplies. Base supplies provide water every year (contingent on operational constraints and water availability), while supplemental supplies typically deliver water only in dry hydrologic years when Mokelumne supplies are limited. Supplemental supplies are projects that can deliver water when needed and then sit idle when deliveries from the Mokelumne River are adequate.

Base water supply projects include:

- Recycled water projects
- Conservation projects
- Enlarge Pardee Reservoir
- Low Energy Desalination at C&H Sugar
- Enlarge Lower Bear Reservoir

Supplemental water supply projects include:

- Freeport Regional Water Project
- Sacramento Groundwater Banking/Exchange
- Northern California Water Transfers
- Bayside Phase 1 Groundwater Project
- Bayside Phase 2 Groundwater Project
- Buckhorn Canyon Reservoir
- Regional Desalination
- Inter-Regional Conjunctive Use Project (IRCUP)/San Joaquin Groundwater Banking

Future conservation and recycled water projects are modeled as base supplies because they offset potable water demand every year once implemented. Existing recycled water and conservation programs are not explicitly modeled (that is, they are not considered supplies), but are accounted for through a reduction in potable water demands (see Section 3.1.1).

3.4.1 Recycled Water

In the WSMP 2040 modeling, recycled water projects are included as "levels" of deliveries with each level consisting of an aggregate of several individual projects. Each recycling level offsets a specific amount of potable demand. There are three levels of recycled water projects considered in the WSMP 2040:

- Level 1: no additional recycled water over that which is already planned and/or implemented;
- Level 2: additional 5 MGD of recycled water beyond that which is already planned or implemented; and
- Level 3: additional 11 MGD of recycled water beyond that which is already planned or implemented.

Within each level, future recycled water deliveries are modeled as groups of recycled water projects that deliver to the same pressure zone region. Implementation of each recycled water level was based on the expected online dates for individual projects The implementation of recycled water projects used in the IS modeling are shown in Table 3-6 and Table 3-7 for the Level 2 and Level 3 components, respectively. Implementation of these levels is shown in Figures 3-4 and 3-5 for the Level 2 and Level 3 components, respectively.

The EBMUD Board of Directors selected Level 3 of recycled water projects (11 MGD) for the Preferred Portfolio (discussed in Section 4.2 of this TM). However, in the modeling of the Preferred Portfolio, the implementation timing for the 11 MGD was modified as shown in Figure 3-6; no changes were made to the projects themselves or their yields.

Table 3-6: Recycled Water Level 2 Projects

Recycled Water Project	Yield (MGD)	Pressure Zone	User Class
San Ramon Valley Recycled Water Program - Phase 2 Bishop Ranch	0.75	F	Irrigated
Richmond Advanced Recycled Expansion (RARE) Water Project - Phase 2 Additional 0.5 MGD	0.5	GN	Refinery
Richmond Advanced Recycled Expansion (RARE) Water Project - Future Expansion	1	GN	Refinery
Conoco Phillips Recycled Water Project, Phase 1	2.8	AN	Refinery
Level 2 Total	**5.05**		

Table 3-7: Recycled Water Level 3 Projects

Recycled Water Project Name	Yield (MGD)	Pressure Zone	User Class
San Ramon Valley Recycled Water Program - Phase 2 Bishop Ranch	0.75	F	Irrigated
Richmond Advanced Recycled Expansion (RARE) Water Project - Phase 2 Additional 0.5 MGD	0.5	GN	Refinery
Richmond Advanced Recycled Expansion (RARE) Water Project - Future Expansion	1	GN	Refinery
ConocoPhillips Recycled Water Project, Phase 1	2.8	AN	Refinery
San Ramon Valley Recycled Water Program - Phase 3 Danville East	0.58	F	Irrigated
San Ramon Valley Recycled Water Program - Phase 4 Blackhawk East	0.37	F	Irrigated
East Bayshore Recycled Water Project - Phase 1B Alameda	1.2	GC	Irrigated
East Bayshore Recycled Water Project - Phase 2 Future Expansion (Oakland Redevelopment)	0.6	GC	Irrigated
ConocoPhillips Recycled Water Project, Phase 2	0.9	AN	Refinery
San Ramon Valley Recycled Water Program - Phase 5 Blackhawk West	0.3	F	Irrigated
San Ramon Valley Recycled Water Program - Phase 6 Danville West	0.2	F	Irrigated
San Leandro Water Reclamation Facility Expansion Project - Phase 3 Oakland/Alameda	0.56	GC	Irrigated
Lake Chabot Raw Water Expansion Project	0.36	C	Irrigated
Reliez Valley Recycled Water Project	0.19	E	Irrigated
Satellite Recycled Water Treatment Plant Project (Retrofits)	0.45	D	Irrigated
Satellite Recycled Water Treatment Plant Project (Retrofits)	0.14	GC	Irrigated
Satellite Recycled Water Treatment Plant Project (Retrofits)	0.11	GN	Irrigated
Level 3 Total	**11.01**		

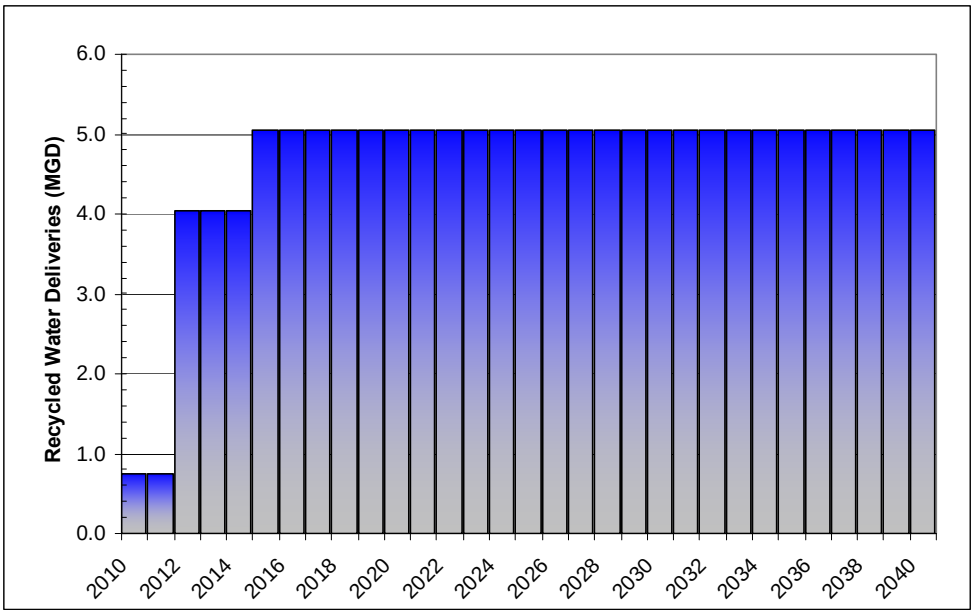


Figure 3-4: Implementation of Level 2 (5 MGD) Recycled Water

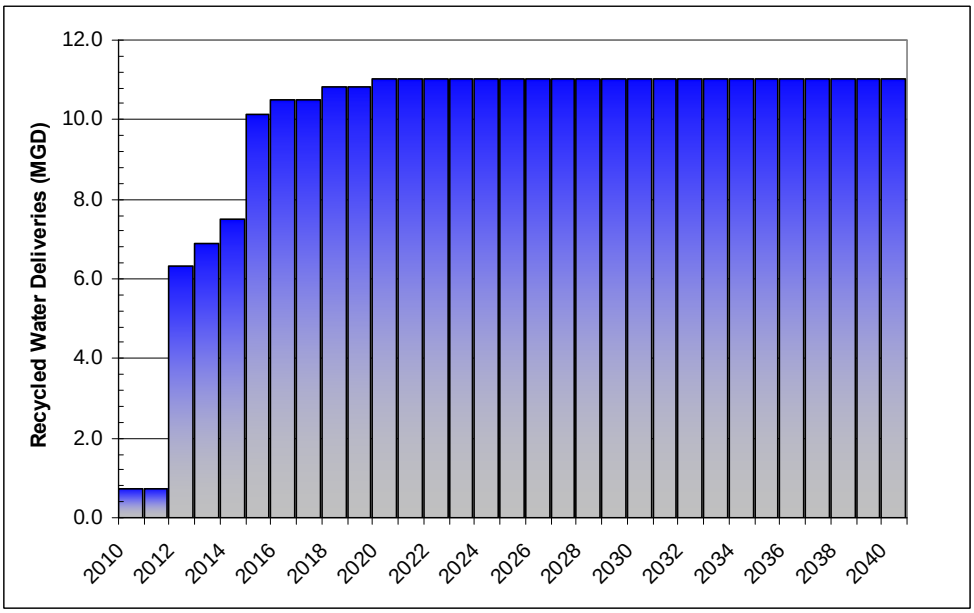


Figure 3-5: Implementation of Level 3 (11 MGD) Recycled Water in all Portfolios (Except for the Preferred Portfolio)

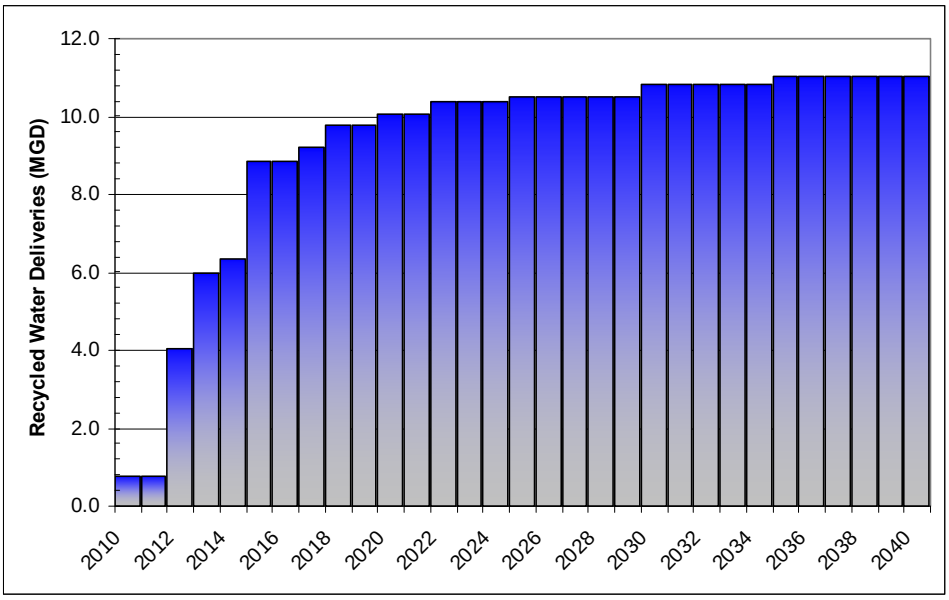


Figure 3-6: Implementation of Level 3 (11 MGD) Recycled Water in the Preferred Portfolio

3.4.2 Conservation

Similar to recycled water projects, conservation programs are grouped into "levels". Each level is a compilation of several individual conservation programs offsetting a specific amount of potable demand. Conservation levels are defined as follows:

- Conservation Level A (19 MGD)
- Conservation Level B (29 MGD)
- Conservation Level C (37 MGD)
- Conservation Level D (39 MGD)
- Conservation Level E (41 MGD)

Although several levels of conservation were initially developed, only Levels C and D were included in the final portfolios. These two levels are described in more detail in Table 3-8 and Table 3-9. Linear growth of conservation over time was assumed in the IS modeling until the targeted conservation threshold was reached.

Table 3-8: Conservation Level C (savings in MGD)

WEAP Customer Classification	2010	2015	2020	2025	2030	2040
Residential, SF, Low Density	0.28	0.99	1.70	2.40	3.11	4.52
Residential, SF, Medium Density	1.04	3.63	6.23	8.82	11.41	16.60
Residential, MF, High Rise	0.51	1.80	3.08	4.36	5.64	8.21
Residential, MF, Low Rise	0.08	0.29	0.50	0.71	0.91	1.33
Mixed Uses, Medium Density	0.00	0.00	0.00	0.00	0.01	0.01
Mixed Uses, Low Rise	0.02	0.06	0.10	0.14	0.18	0.26
Mixed Uses, High Rise	0.12	0.42	0.72	1.01	1.31	1.91
Commercial/Industrial, Low Density	0.04	0.15	0.26	0.37	0.48	0.70
Commercial/Industrial, Medium Density	0.12	0.42	0.72	1.01	1.31	1.91
Commercial, High Density Office	0.03	0.10	0.17	0.24	0.31	0.45
Public	0.04	0.13	0.21	0.30	0.39	0.57
Schools	0.03	0.10	0.17	0.24	0.31	0.45
Irrigation	0.02	0.07	0.13	0.18	0.23	0.34
High Water Users	0.00	0.00	0.00	0.00	0.00	0.00
Industrial Low Water Use	0.00	0.00	0.00	0.00	0.00	0.00
Petroleum Refinery	0.00	0.00	0.00	0.00	0.00	0.00
Combined Conservation:	2.33	8.16	13.99	19.78	25.6	37.26

SF – Single Family
MF – Multi-family

Table 3-9: Conservation Level D (savings in MGD)

WEAP Customer Classification	2010	2015	2020	2025	2030	2040
Residential, SF, Low Density	0.29	1.02	1.75	2.49	3.22	4.68
Residential, SF, Medium Density	1.08	3.77	6.46	9.15	11.85	17.23
Residential, MF, High Rise	0.52	1.83	3.14	4.45	5.75	8.37
Residential, MF, Low Rise	0.08	0.30	0.51	0.72	0.93	1.36
Mixed Uses, Medium Density	0.00	0.00	0.00	0.01	0.01	0.01
Mixed Uses, Low Rise	0.02	0.06	0.10	0.15	0.19	0.28
Mixed Uses, High Rise	0.13	0.45	0.77	1.08	1.40	2.04
Commercial/Industrial, Low Density	0.05	0.16	0.28	0.39	0.51	0.74
Commercial/Industrial, Medium Density	0.13	0.44	0.76	1.07	1.39	2.02
Commercial, High Density Office	0.03	0.10	0.18	0.25	0.32	0.47
Public	0.05	0.18	0.30	0.43	0.55	0.80
Schools	0.04	0.14	0.24	0.34	0.44	0.63
Irrigation	0.05	0.17	0.29	0.41	0.53	0.78
High Water Users	0.00	0.00	0.00	0.00	0.00	0.00
Industrial Low Water Use	0.00	0.00	0.00	0.00	0.00	0.00
Existing Recycled Water Use	0.00	0.00	0.00	0.00	0.00	0.00
Petroleum Refinery	0.00	0.00	0.00	0.00	0.00	0.00
Combined Conservation:	2.47	8.62	14.78	20.94	27.09	39.41

3.4.3 Supplemental Supply Projects

Two categories of supplemental water supply projects were modeled in the WSMP 2040: those that the District has already implemented (the Freeport Regional Water Project (Freeport) and Phase 1 of the Bayside Groundwater Project) and new projects. The W-E model applied operational rules specific to each project as part of the portfolio simulations. These rules were based on actual or anticipated physical, environmental, and contractual constraints.

Figure 2-2 illustrates how supplemental supplies were incorporated in the W-E logic. At the beginning of each time step, the model reduced demand by the amount of available base supplies (supplies that deliver the same amount of water in dry or wet years). This reduced demand became the preliminary demand on the District's Mokelumne water system and was passed to the EBMUDSIM portion of the model to calculate what the end-of-September total system storage (EOS TSS) would be if the District were to meet this demand with Mokelumne River supplies only. If the resulting EOS TSS was less than 500 TAF[2], then the W-E model implemented existing dry-year supplemental supplies (Freeport and Bayside Phase 1), or if those have already been implemented, the model used an available supplemental supply with the lowest dry-year unit cost (Appendix A). The W-E model then calculated available water volume from this supplemental supply and reduced demand on the Mokelumne supply by an equivalent amount.

[2] An exception to this rule is in Portfolio D2 which involved a change to the District's supplemental supply trigger. In this portfolio, supplemental supplies (and rationing, if needed) were activated if EOS TSS fell below 670 TAF.

This reduced demand was then passed back to EBMUDSIM and a new EOS TSS value, in return, passed back to WEAP. If EOS TSS was still less than 500 TAF, the amount of available water from the second lowest dry-year supplemental supply project was calculated, demand on the Mokelumne supply reduced accordingly, and the EOS TSS reassessed. If all base supplies and available supplemental supplies within a given portfolio were utilized and EOS TSS still fell below 500 TAF, then rationing was imposed. Once demand on the Mokelumne supply had been reduced to such a level that EOS TSS was projected to be above 500 TAF (or if all supplemental supplies and rationing had been implemented), EBMUDSIM then passed the Pardee draft (water supplied) to the Mokelumne Aqueducts to WEAP and final carryover storage levels [3] were carried forth to the next time step.

Table 3-12 shows project preferences based on dry-year unit cost and infrastructure requirements. Infrastructure requirements have important implications for operation of the EBMUD system and O&M costs. Assumptions used by the W-E model to determine yield from each supplemental water supply project (along with associated O&M cost assumptions) are summarized in Table 3-13 and in the *Component Cost Estimation Technical Memorandum* (RMC/EDAW, 2008), included in Appendix A.

3.4.4 Freeport Regional Water Project

Contractual and physical limitations control how much Sacramento River water EBMUD can use in a given year. This section describes how the Freeport Project is modeled in WEAP. Table 3-11 summarizes EBMUD's expected diversions of Sacramento River water at Freeport as modeled in WEAP.

Contractual Limitations [1]

Freeport deliveries to the District are limited by the following contractual stipulations:

- Central Valley Project (CVP) deliveries to EBMUD cannot exceed 133 TAF in any contract year[4] (March – February);
- CVP deliveries to EBMUD cannot exceed 165 TAF in any three consecutive contract years when EOS TSS forecasts remain below 500 TAF. This rolling three-year sum is reset in wet years when the EOS TSS rises above 500 TAF.[5] Theoretically, EBMUD may take water at Freeport for an unlimited number of dry years in a row, as long as each consecutive three-year sequence does not exceed 165 TAF.
- CVP allocations may be reduced in any year based on CVP North-of-Delta municipal and industrial (M&I) cutbacks. The WEAP model uses the CVP M&I water allocations determined for each year in the 2020 level-of-development CALSIM II modeling study prepared for the *Freeport Regional Water Project Draft EIR/EIS*. During the drought planning sequence, WEAP assumes cutbacks in 1978 to be equivalent to 1977 cutbacks.

Physical Limitations

The capacity of Freeport Project delivery system to EBMUD's aqueducts is 100 MGD. This allows a maximum annual delivery of 112 TAF if water is delivered at the full rate for all twelve months of the year. Freeport deliveries are assumed to begin on March 1st of the first year that EOS TSS without Freeport Project is below 500 TAF.[6] Delivering Freeport water above a rate of 92 MGD, however, requires additional pumping at the Walnut Creek Pump Station.

Under terms of an agreement with Contra Costa Water District (CCWD), EBMUD reserves the capacity to wheel 3.2 TAF of water to CCWD every year through the Freeport Project facilities and the

[3] Final carry-over storage levels refer to the end-of-December TSS.
[4] *Freeport Regional Water Project Draft EIR/EIS*, Modeling Technical Appendix (July 2003, page 3-48).
[5] US Bureau of Reclamation Contract with EBMUD, Contract No. 14-06-200-5183A-LTR1, page 13.
[6] Portfolios that modify the rationing trigger of 500 TAF are an exception to this rule.

Mokelumne Aqueducts. This reduces the capacity of these facilities to deliver water to the EBMUD service area in any year that the modeled Freeport supplemental supply is expected to deliver more than 108.8 TAF (112 TAF – 3.2 TAF). The quantity of wheeled water does not affect EBMUD's contract entitlement; therefore, in years in which there is not spare capacity to wheel 3.2 TAF to CCWD, EBMUD's maximum use of its CVP supply is reduced from 112,055 acre-feet (AF) to 108,855 AF.

In accordance with another agreement, Santa Clara Valley Water District (SCVWD) is entitled to 6.5 TAF of EBMUD's CVP contract allocation in the first year the Freeport supplemental supply is invoked. Due to capacity constraints, no more than 93,942 AF can be transported to EBMUD via the Freeport Project from March to December in the first year. When CVP North-of-Delta M&I cutbacks in the first year of a drought reduce EBMUD's CVP allocation to 100,442 AF (93,942 AF + 6,500 AF) or less, EBMUD's CVP calendar-year delivery, as modeled in WEAP, is affected. Therefore, deliveries to the District's service area in the first year of drought are subject to the following rule:

> *If EBMUD's CVP allocation is less than 100,442 AF in the first year of a drought, then the Freeport supply delivered to the District in the first calendar year of a drought will equal EBMUD's CVP allocation minus 6,500 AF.*

SCVWD will return the water in the second year or later assuming the drought continues. When returned, the 6.5 TAF does not count toward EBMUD's three-year contractual limitation of 165 TAF. If the drought does not continue (i.e. EBMUD EOS TSS exceeds 500 TAF), SCVWD will compensate EBMUD for the 6.5 TAF of EBMUD's CVP water taken in the first drought year.

3.4.5 Initial Storage Conditions

Initial conditions for Pardee Reservoir, Camanche Reservoir, and the terminal reservoirs are set in EBMUDSIM, including for portfolios that contain the Enlarge Pardee Reservoir component. A default initial condition is applied in the first year of each hydrologic sequence in the IS modeling using default conditions consistent with prior water supply planning studies conducted using EBMUDSIM. For reservoir and groundwater projects modeled in WEAP, initial storage conditions for each hydrologic sequence are set based on the volume of water the project would be expected to yield over the three-year DPS, shown in Table 3-10. Reservoir volumes for the Enlarged Lower Bear Reservoir component were not modeled. Based on information published by Amador Water Agency, EBMUD's portion of the expected safe yield during dry years would be approximately 2,500 acre-feet per year (AFY); this volume of water is assumed to be available when EBMUD's end-of-September total system storage falls below 500 TAF.

Buckhorn Reservoir was modeled with a maximum allowable storage of 140 TAF. The Enlarged Pardee Reservoir component was modeled using a maximum storage of approximately 370 TAF along with relevant flood control rule-curves, dead storage, and operating rules in EBMUDSIM. Maximum storage volumes for groundwater banking projects were not modeled, however, a 10% per year aquifer loss was assumed for stored water.

Table 3-10: Initial Storage Values for Each Hydrologic Sequence

Reservoir/Groundwater	Initial Storage
Bayside Phase 1	5.0 TAF
Bayside Phase 2	30.3 TAF
IRCUP/SJ Groundwater Banking	58.5 TAF
SAC Groundwater Banking	14.1 TAF
Buckhorn Reservoir	140 TAF
Enlarged Pardee Reservoir	370 TAF
Enlarged Lower Bear Reservoir	Storage not modeled – 2.5 TAF assumed available when EOS TSS < 500 TAF

3.4.6 Supplemental Supply Project Implementation Dates

Implementation dates were initially developed for each project based on available information and engineering judgment. These implementation dates were then modified on a portfolio-by-portfolio basis during modeling. To develop the project implementation dates, the IS modeling was first performed with only recycled water projects and conservation programs in place, in addition to baseline supplemental supplies (e.g. Freeport and Bayside Phase 1). The first year that an unmet demand occurred indicated the year that the first additional supply project would need to come online. It was assumed that the lowest-dry-year-cost project in each portfolio would be implemented first, contingent upon the earliest date the project could physically come online. If a project could not be constructed by the year it was needed, the next least-expensive project was brought online. The IS modeling was then performed again with the additional supply in place to determine when the next supplemental supply project would be needed. This process was repeated until all available projects in the portfolio were implemented, as needed, to meet demands. The selection of supplemental supply project implementation dates was therefore the result of the IS modeling effort.

Table 3-11: Summary of EBMUD's Freeport Regional Water Project Take Sequence as Modeled in WEAP

Drought Year[1]	Delivery Rate	Number of days	EBMUD's take of Freeport Water	Average Supply over Calendar Year
1st year of drought[2]	100 MGD	306 days	93,942 AF	83.802 MGD
			If EBMUD's CVP allocation < 100,442 AF in the first year of a drought, then Freeport supply during the first calendar year of a drought = EBMUD's CVP allocation – 6,500 AF (to SCVWD)	Variable, maximum 83.802 MGD
2nd year of drought	100 MGD	365 days	The remaining amount EBMUD can take in a two year period (which is limited to a total of 165 TAF), but not more than 108,855 AF, or EBMUD's CVP allocation for the year, whichever is less.	Variable, maximum 97.10 MGD
3rd year of drought	100 MGD	365 days	The remaining amount EBMUD can take in a three-year period (which is limited to a total of 165 TAF), but not more than 108,855 AF, or EBMUD's CVP allocation for the year, whichever is less.	Variable, maximum 97.10 MGD
Carryover Jan – Feb	100 MGD	59 Days	18,113 AF as carryover from contract year to calendar year in first year Freeport is "turned-off"	16.158 MGD

[1] A drought year is defined in this assumption as a contract year where the October 1st projected TSS would be less than 500 TAF if the Freeport supplemental supply was not evoked.

[2] In the first year, Freeport deliveries would not start until March 1st, the beginning of the contract year.

Table 3-12: Recycled Water, Conservation, and Supplemental Supply Project Preference and Infrastructure Requirements

Component Name	Project Type		Infrastructure Requirements		
		Supply Preference[7]	Mokelumne Aqueducts	Freeport Pipeline	Treatment Plant(s)
Enlarge Pardee Reservoir	Upcountry Surface Storage	Base Supply	Yes - for delivery of raw water to the District	No	Water supply can be treated at any treatment plant
Enlarge Lower Bear Reservoir	Upcountry Surface Storage	Base Supply	Yes - for delivery of raw water to the District	No	Water supply can be treated at any treatment plant
Inter-Regional Conjunctive Use Project (IRCUP)/San Joaquin Basin	Central Valley Conjunctive Use	4	Yes - for delivery of raw water to the District and for delivery of recharge water in wet years to the San Joaquin Basin	No	Water supply can be treated at any treatment plant
Groundwater Banking/Exchange (Sacramento Basin)	Central Valley Conjunctive Use	6	Yes - water will be extracted from the Sacramento Basin and transported to the Mokelumne Aqueducts via the Freeport Pipeline.	Yes - for delivery of recharge water to the Sacramento Basin in wet years and for the extraction or stored water in dry years.	Water supply must be treated at conventional treatment plants or with a combination of upcountry pretreatment and in-line filtration.
Buckhorn Canyon Reservoir	Terminal System Surface Storage	1	Yes - the Mokelumne Aqueducts are required to transport refill water to the reservoir	No	Water supply must be treated at conventional treatment plants, most likely at Sobrante or USL Water Treatment Plants
Freeport Regional Water Project	Terminal System Conjunctive Use	Existing Supplemental Supply	Yes - for delivery of raw water to the District	Yes	Water supply must be treated at conventional treatment plants or with a combination of upcountry pretreatment and in-line filtration.
Bayside Groundwater Project - Phase 1	Terminal System Conjunctive Use	Existing Supplemental Supply	Yes - for delivery of recharge water	No	Treated water will be injected into the ground and then re-treated upon extraction. Re-treatment will be conducted on-site at a new treatment facility
Bayside Groundwater Project - Phase 2	Terminal System Conjunctive Use	3	Yes - for delivery of recharge water	No	Treated water will be injected into the ground and then re-treated upon extraction. Re-treatment will be conducted on-site at a new treatment facility
Bay Area Regional Desalination Project	Regional Desalination	5	Yes - for delivery of desalinated water to the District. A new pipeline will tie into the Mokelumne Aqueducts between the Delta and the Walnut Creek Pump Station	No	Desalinated water can be treated at any Water Treatment Plant
AG-Urban Water Transfers	Water Transfer	2	Yes - raw water will be diverted from the Sacramento River and transported to the District via Freeport and the Mokelumne Aqueducts	Yes - raw water will be diverted from the Sacramento River and transported to the District via Freeport and the Mokelumne Aqueducts	Water supply must be treated at conventional treatment plants or with a combination of upcountry pretreatment and in-line filtration.
Low Energy Application for Desalination (LEAD) at C&H Sugar	Low energy desalination for industrial use	Base Supply	No	No	No
Recycled Water - 5 MGD	Recycled Water	Base Supply	No	No	No
Recycled Water - 11 MGD	Recycled Water	Base Supply	No	No	No
Conservation Level C - 37 MGD	Conservation	Base Supply	N/A (potable water offsets)	N/A (potable water offsets)	N/A (potable water offsets)
Conservation Level C - 39 MGD	Conservation	Base Supply	N/A (potable water offsets)	N/A (potable water offsets)	N/A (potable water offsets)

[7] Supply preference is defined as the priority given to each component within a given portfolio. Projects are ranked according to their dry year cost and their ability to be turned on and off (see Appendix A, – *Preliminary WSMP 2040 Component Cost Estimation* Evaluations). Components that must operated every year (such as Raise Pardee) are given a high priority, regardless of their $/AF cost. These components will be utilized first in a given portfolio and, depending on drought severity, are followed by other components that can be adjusted in terms of supplies delivered.

Table 3-13: Supplemental Supply Project Yield, Operation, O&M Cost Assumptions

Name	WET YEAR O&M Costs – *EBMUD-Only Share for Partner Projects*						DRY YEAR O&M Costs – *EBMUD-Only Share for Partner Projects*						IDLE YEAR – O&M Costs in	
	WET YEAR[8] Operating Rules, Capacities, and Constraints	WET YEAR Annual Water Deliveries[9] (TAF/YR)	Energy (KWh/ AF)	Energy (KWh/ YR)	Variable O&M ($/AF)	Fixed O&M ($/YR)	DRY YEAR[8] Operating Rules, Capacities, and Constraints	DRY YEAR Annual Water Deliveries (TAF/YR)	Energy (KWh/ AF)	Energy (KWh/ YR)	Variable O&M ($/ AF)	Fixed O&M ($/ YR)	IDLE YEAR Operating Rules, Capacities, and Constraints	Fixed O&M ($/YR)
Enlarge Pardee Reservoir	Technically this project operates in wet years, but there is no yield in wet years.	0.0	0	19,000,000	$0	$0	The project will provide approximately 57 TAF in dry years, but no more than the amount of additional storage provided by the project over the course of a sustained drought. Actual water availability is determined by the EBMUDSIM operations model.	57.0	0	19,000,000	$0	$0	No idle years.	0
			Will increase average Pardee energy production from 83 GWh/yr to 102 GWh/yr.						Project will increase Pardee Powerhouse average annual energy production from 83 GWh/yr to 102 GWh/yr -- assume $87/MWH wholesale price.					
Enlarge Lower Bear Reservoir	This project will not supply water in wet or normal years.	0.0	0	0	$0	$55,000	This project will augment the District's Mokelumne water supply by providing 2,500 AF (2.2 MGD) in dry years. This project is triggered when EOS TSS falls below 500 TAF without any supplemental supplies.	2.5	0	0	$0	$55,000	No idle years.	0
					EBMUD's Portion of General O&M						EBMUD's Portion of General O&M			
Inter-Regional Conjunctive Use Project (IRCUP)/San Joaquin Basin	It is assumed that as much as 8.3 TAF of Mokelumne water will be recharged in wet and normal years (a total of 25 TAF will be recharged, but only 1/3 will belong to EBMUD). Recharge water will not come from EBMUD's Mokelumne water right, but instead from the rights of upcountry participants. Therefore, recharge water is not drafted from Pardee and not accounted for in EBMUDSIM. As a way to define "wet" years, recharge water is assumed available when EBMUD's EOS TSS without supplemental supplies is above 575 TAF.	-8.3	0	0	$8	$437,000	As much as 19,500 AFY will be extracted for EBMUD's use in dry years, depending on stored water availability. Water is extracted when EOS TSS with higher priority supplemental supplies is below 500 TAF	19.5	1,446	0	$9	$679,100	The project will be idle when water is neither being extracted or injected	361,700
			Recharge occurs via recharge ponds so energy is negligible		Recharge pond O&M General O&M of infrastructure + well replacement at 30 yrs				Energy to pump EBMUD's portion of the water and transport to the Mokelumne Aqueducts. Aqueducts		For granular activated carbon (GAC) treatment General O&M of infrastructure (more O&M in extraction years)			For idle years, assume continuation of the annual monitoring program and 10% of all other O&M costs

[8] The definition of "Wet", "Dry" and "Idle" year classifications are generic terms used here to differentiate project operations under various hydrologic conditions. The criteria used to define these conditions may be different for each component and do not necessarily correspond to the Mokelumne Joint Service Agreement (JSA) year-type classifications.
[9] A negative water delivery means that water is captured or stored (e.g. for conjunctive use) but no water is delivered to customers. For components that have "wet year" variable O&M or energy costs, the variable cost is multiplied by the negative water delivery.

Name	WET YEAR O&M Costs – *EBMUD-Only Share for Partner Projects*						DRY YEAR O&M Costs – *EBMUD-Only Share for Partner Projects*						IDLE YEAR – O&M Costs in	
	WET YEAR[8] Operating Rules, Capacities, and Constraints	WET YEAR Annual Water Deliveries[9] (TAF/YR)	Energy (KWh/ AF)	Energy (KWh/ YR)	Variable O&M ($/AF)	Fixed O&M ($/YR)	DRY YEAR[8] Operating Rules, Capacities, and Constraints	DRY YEAR Annual Water Deliveries (TAF/YR)	Energy (KWh/ AF)	Energy (KWh/ YR)	Variable O&M ($/ AF)	Fixed O&M ($/ YR)	IDLE YEAR Operating Rules, Capacities, and Constraints	Fixed O&M ($/YR)
Groundwater Banking/Exchange (Sacramento Basin)	As much as 3.5 TAF of water is recharged during "wet" years and "above normal" years (a total of 7.0 TAF will be recharged, but only 1/2 will belong to EBMUD). Wet and Normal years are defined as those years when CVP contracts are allowed their full entitlements. The project will not operate in "below normal years".	-3.5	355	0	$20	$187,625	The District will receive up to 4,667 AF of water during dry years, depending on stored water availability. Water is extracted when EOS TSS with higher priority supplemental supplies is below 500 TAF	4.7	1,800	0	$9	$285,625	The project will be idle when water is neither being extracted or injected	141,063
			Energy Required to divert water at Freeport and transport to recharge ponds		Recharge pond O&M and diversion costs. General O&M of infrastructure + well replacement at 30 yrs				Energy to pump EBMUD's portion of the water and transport to the Freeport		For GAC treatment General O&M of infrastructure (more O&M in extraction years) + well replacement at 30 yrs			For idle years, assume continuation of the annual monitoring program and 10% of all other O&M costs
Buckhorn Canyon Reservoir	The project will not supply customer demands in wet or normal years, but will be refilled in these years depending on Mokelumne water availability. In the W-E model, refill water is assumed available when EOS TSS is above 550 TAF without utilizing any supplemental supplies. Once the reservoir reaches it maximum capacity of 143 TAF, refilling stops. All refill water is "drafted" from Pardee and accounted for in EBMUDSIM's TSS calculations.	-20.4	205		$2	$312,500	The project will provide 47 TAF in each dry year until available storage is depleted (143 TAF). Water is extracted when EOS TSS with higher priority supplemental supplies is below 500 TAF.	47.0	0	0	$0	$312,500	Except under emergency circumstances (such as a failure of the Mokelumne Aqueducts) or for improved operation of the EBMUD system, the Project will be idle in wet and normal years or when the reservoir has been filled to its maximum capacity.	312,500
			Energy is required to refill the reservoir. In refill years, water will be pumped from the Moraga Aqueduct through a new pump station and pipeline to the reservoir.		Dechlorination costs /AF of replenishment water General O&M of the dam facilities				There is negligible energy and small O&M costs required to take water from the reservoir in dry years. During dry years, water would flow via gravity back to the Lafayette Aqueducts and treated at Sobrante Water Treatment Plant or would flow via gravity to the USL Water Treatment Plant.		General O&M of the dam facilities			General O&M of the dam facilities
Freeport Regional Water Project	The project will not supply customer demands in wet or normal years.	0.0	0	0	$0	$0	Freeport deliveries are contingent upon EBMUD's CVP contract.	Variable	710	0	$109	$0	Idle year operations are equivalent to "wet" year operations.	0
											Includes labor and CVP purchase costs Because this is an existing supplemental supply, only variable costs are accounted for.			Because this is an existing supplemental supply, only variable costs are accounted for.
Bayside	It is assumed that as	-1.1	0	0	$8	$0	Up to 1,120 AFY will be	1.1	498	0	$44	$0	The project will	0

Name	WET YEAR O&M Costs – *EBMUD-Only Share for Partner Projects*						DRY YEAR O&M Costs – *EBMUD-Only Share for Partner Projects*						IDLE YEAR – O&M Costs in	
	WET YEAR[8] Operating Rules, Capacities, and Constraints	WET YEAR Annual Water Deliveries[9] (TAF/YR)	Energy (KWh/ AF)	Energy (KWh/ YR)	Variable O&M ($/AF)	Fixed O&M ($/YR)	DRY YEAR[8] Operating Rules, Capacities, and Constraints	DRY YEAR Annual Water Deliveries (TAF/YR)	Energy (KWh/ AF)	Energy (KWh/ YR)	Variable O&M ($/ AF)	Fixed O&M ($/ YR)	IDLE YEAR Operating Rules, Capacities, and Constraints	Fixed O&M ($/YR)
Groundwater Project - Phase 1	much as 1,120AFY of Mokelumne water will be injected in wet years. As a way to define "wet" years, recharge water is assumed available when there are flood releases from Camanche. Refill water is not drafted from Pardee and is not accounted for in EBMUDSIM				Includes recharge well Maintenance Because this is an existing supply, only variable costs are accounted for.		extracted in dry years, depending on stored water availability. Water is extracted when EOS TSS with higher priority supplemental supplies is below 500 TAF		Extraction and treatment energy		Includes recharge well maintenance (more intensive in extraction years) & chemical and disposal costs Because this is an existing supplemental supply, only variable costs are accounted for.		be idle when water is neither being extracted or injected	Because this is an existing supplemental supply, only variable costs are accounted for.
Bayside Groundwater Project - Phase 2	It is assumed that as much as 7,560 AFY of Mokelumne water will be injected in wet years. As a way to define "wet" years, recharge water is assumed available when EOS TSS without supplemental supplies is above 575 TAF. Refill water is drafted from Pardee and is accounted for in EBMUDSIM when available.	-7.6	0	0	$8	$571,100	Up to 10,080 AFY will be extracted in dry years, depending on stored water availability. Water is extracted when EOS TSS with higher priority supplemental supplies is below 500 TAF	10.1	498	0	$44	$1,039,116	The project will be idle when water is neither being extracted or injected	571,100
					Includes recharge well Maintenance General O&M of infrastructure pipelines and recharge wells + well replacement at 30 yrs				Extraction and treatment energy		Includes recharge well maintenance (more intensive in extraction years) & chemical and disposal costs Includes pipeline, pump station O&M and operation of the treatment facility + well replacement at 30 yrs			General O&M of infrastructure pipelines and recharge wells + well replacement at 30 yrs
Bay Area Regional Desalination Project	The project will not produce significant water for EBMUD in non-dry years; however, some production is necessary to ensure the integrity of the RO membranes. Wet and normal year water production was ignored in the W-E model.	4.5	2,443	0	$318	$496,000	EBMUD's share of the project will allow it to produce up to 20 MGD in dry years. The project is triggered when EOS TSS with higher priority supplemental supplies is below 500 TAF	22.4	2,443	0	$318	$1,555,800	No idle years. The project must produce a minor amount of water even in wet and normal years.	0
			Treatment Energy for minimum flow: required to maintain the integrity of the RO membranes assumed to be 20 percent of dry year operation.		Membrane replacement & other O&M that fluctuates with product water volume Includes fixed labor and O&M costs				Treatment Energy		Membrane replacement & other O&M that fluctuates with product water volume Includes fixed labor and O&M costs plus contract labor to maintain/run the facility in dry years			
AG-Urban Water Transfers	No transfers in wet years.	0.0	0	0	$0	$0	EBMUD can transfer up to 50 TAF in a given dry year. The project is triggered when EOS TSS with higher priority supplemental supplies is below 500 TAF	50.0	0	0	$0	$0	There are no O&M costs when the project is idle.	0
									Shares Freeport facilities - Freeport variable costs		Shares Freeport facilities - Freeport variable costs Shares Freeport facilities - Freeport variable costs			
Low Energy Application for Desalination (LEAD) at C&H Sugar	This project will be a baseload supply and will offset demand in all years. The plant will produce and supply an average annual production in all (wet, normal, and dry) years of 1.2 TAF.	1.2	0	0	$134	$312,000	This project will be baseload supply and will offset demand in all years. The plant will produce and supply an average annual production in all (wet, normal, and dry) years of 1.2 TAF.	1.2	0	0	$134	$312,000	The plant will operate at roughly the same amount in all years (no "turndown"). Therefore, O&M is essentially fixed.	0
			Driven by C&H turbine waste heat		Chemical treatment costs Fixed O&M for infrastructure and membranes				Driven by C&H turbine waste heat		Chemical treatment costs Fixed O&M for infrastructure and membranes			

Table 3-14: Recycled Water and Conservation Project Yield, Operation, O&M Cost Assumptions

Project Name	WET YEAR O&M Costs – *EBMUD Only Share for Partner Projects*						DRY YEAR O&M Costs – *EBMUD Only Share for Partner Projects*						IDLE YEAR – O&M Costs in	
	WET YEAR[10] Operating Rules, Capacities, and Constraints	WET YEAR Annual Water Deliveries[11] (TAF/YR)	Energy (KWh/ AF)	Energy (KWh/ YR)	Variable O&M ($/AF)	Fixed O&M ($/YR)	DRY YEAR[8] Operating Rules, Capacities, and Constraints	DRY YEAR Annual Water Deliveries (TAF/YR)	Energy (KWh/ AF)	Energy (KWh/ YR)	Variable O&M ($/ AF)	Fixed O&M ($/ YR)	IDLE YEAR Operating Rules, Capacities, and Constraints	Fixed O&M ($/YR)
Recycled Water - 5 MGD[12]	Operates every year		1,427	0	$441	$0	Operates every year		1,427	0	$441	$0	No idle years.	0
Recycled Water - 11 MGD[12]	Operates every year		1,194	0	$602	$20,000	Operates every year		1,194	0	$602	$20,000	No idle years.	0
Conservation Level C - 37 MGD	Operates every year		0	0	$0	$0	Operates every year		0	0	$0	$0	No idle years.	0
Conservation Level C - 39 MGD	Operates every year		0	0	$0	$0	Operates every year		0	0	$0	$0	No idle years.	0

[10] The definition of "Wet", "Dry" and "Idle" year classifications are generic terms used here to differentiate project operations under various hydrologic conditions. The criteria used to define these conditions may be different for each project and do not necessarily correspond to the Mokelumne Joint Service Agreement (JSA) year-type classifications.
[11] A negative water delivery means that water is captured or stored (e.g. for conjunctive use) but no water is delivered to customers. For projects that have "wet year" variable O&M or energy costs, the variable cost is multiplied by the negative water delivery.
[12] Recycled water O&M costs were developed for each group based on a delivery-weighted average O&M of individual projects that comprised the group. Energy consumption was determined similarly. Although not shown in this table, capital costs for each recycled water delivery level was calculated as the sum of individual project components. See Section 3.4.1 for a list of individual projects contained in each recycled water grouping.

Chapter 4 W-E Model Scenarios

As described in earlier sections, the WSMP 2040 modeling process was iterative with several rounds of modeling conducted using both the Fixed-Level-of-Development (FLOD) modeling and Indexed-Sequential (IS) modeling methods. The modeling results were used in both the portfolio economic analyses and in evaluations of operational impacts on the District's raw water supply system.

4.1 Fixed-Level-of-Development Modeling Scenarios

Prior to the FLOD modeling, individual WSMP 2040 components were identified, documented, screened, and assembled in different combinations to form portfolios intended to meet the District's future demands and Mokelumne River obligations. FLOD modeling was then conducted on the fourteen preliminary portfolios using an adjusted demand projection of 274 MGD to provide input into the portfolio screening process. This screening process yielded a manageable set of portfolios for subsequent IS modeling and more detailed evaluations. FLOD modeling was also used for the District's "Need-for-Water" Analysis, referred to herein as the Baseline Scenario, and the California Environmental Quality Act (CEQA) No-Action Scenario.

4.1.1 Water Supply Portfolios

Table 4-1 summarizes the fourteen portfolios evaluated with FLOD modeling. General overall costs were calculated for each of the preliminary portfolios following completion of the FLOD modeling. The portfolios were then screened against qualitative criteria regarding environmental impacts, operations, institutional and legal issues, public health and community impacts, and carbon footprint, and the screening results evaluated in conjunction with the portfolios' cost and performance as determined from modeling results.

Of the fourteen preliminary portfolios, five portfolios (numbers 4, 5, 6, 10 and 12) were carried forward for further consideration and IS modeling. During the portfolio screening process, one supplemental supply project, one recycled water level and three conservation levels were removed from the list of components for further consideration. These components were the Low Energy Application for Desalination at C&H Sugar (LEAD) project, Level 1 (0 MGD) of recycled water projects, Level A Conservation (natural savings of 19 MGD), Level B Conservation (natural savings plus 10 MGD or 29 MGD total), and Level E Conservation (the maximum voluntary program saving 41 MGD).

4.1.2 Baseline and CEQA No-Action Alternative Scenarios

The Baseline scenario was developed and simulated via FLOD modeling for both environmental analysis and determination of the District's "Need for Water". This scenario assumed no additional supplemental water supplies, or conservation and recycled water projects beyond committed programs as accounted for in the demand estimates (see Section 3.1). Specifically, the Baseline Scenario assumes:

- Current water supplies and those expected to be operational by 2010. This includes the Mokelumne River, CVP water from the Sacramento River via the Freeport Regional Water Project, and the Bayside Phase 1 Groundwater Banking Project.
- Recycled water projects in service by 2010 (9.3 MGD).
- Conservation achieved by 2008 (22.5 MGD).

Table 4-1: Final Fixed-Level-of-Development Modeling Portfolios[13]

Portfolio Number	Portfolio Themes	Portfolio Description	Rationing					Conservation				Recycling			Supplemental Supply								
			0%	10%	15%	20%	25%	Natural Savings + 10 (B)	Current Program Equivalent (C)	Current Program Equivalent + 2 (D)	Maximum Voluntary Program (E)[3]	Recycling Level 1	Recycling Level 2	Recycling Level 3	GW Banking/Exchange (Sacramento Basin)[2]	Water Transfers (MGD)	Bayside Phase 2 Groundwater Project	Buckhorn Canyon Reservoir	LEAD at C&H Sugar	Regional Desalination	IRCUP/San Joaquin Banking[4]	Enlarge Lower Bear Reservoir	Enlarge Pardee Reservoir
1	Low Customer Impact	Balance of low rationing, low cost, high water quality.	●					29					5			20						●	●
2	Flexibility for Future Extended Drought or Climate Change	Keep rationing, conservation & transfers available as short-term response.	●					29					5							●		●	●
3	Upcountry Surface Storage Emphasis	Same as Portfolio 2 with increased rationing & conservation but no recycling or desalination		●					37			0											●
4	Groundwater Storage	Same as Portfolio 3 but replace surface water storage with groundwater and increase conservation, recycled water and water transfers.		●						39			5		●	15	●				●		
5	Regional Partnerships	All partnership projects and conservation.		●					37				5		●	4.5				●	●	●	
6	Emergency Reliability - A	West of Delta surface storage.			●				37				5					●					
7	Emergency Reliability - B	West of Delta production (desalination) with recycled water and conservation.			●					39				11			●			●			
8	Diversified	Balanced levels of conservation and recycling with non-Mokelumne water transfers, desalination, Bayside Phase 2.			●				37				5			10	●			●			
9	Conservation & Recycling Emphasis	High conservation and recycling with LEAD, water transfers, and Bayside Phase 2.			●						41			11		15	●		●				

[13] Conservation, Recycled Water, and Supplemental Supply shown in Million Gallons Per Day.

Portfolio Number	Portfolio Themes	Portfolio Description	Rationing					Conservation				Recycling			Supplemental Supply								
			0%	10%	15%	20%	25%	Natural Savings + 10 (B)	Current Program Equivalent (C)	Current Program Equivalent + 2 (D)	Maximum Voluntary Program (E)[3]	Recycling Level 1	Recycling Level 2	Recycling Level 3	GW Banking/Exchange (Sacramento Basin)[2]	Water Transfers (MGD)	Bayside Phase 2 Groundwater Project	Buckhorn Canyon Reservoir	LEAD at C&H Sugar	Regional Desalination	IRCUP/San Joaquin Banking[4]	Enlarge Lower Bear Reservoir	Enlarge Pardee Reservoir
10	Low Carbon Footprint	Enlarging Pardee plus conservation.			●				37				5										●
11	Low Capital Cost / Low Structural	25% rationing with conservation and water transfers.					●	29				0				30							
12	Coleman Alternative 1	Portfolio proposed by BOD Member Coleman		●					37					11	●	27	●		●				
13	Katz Alternative 1	Portfolio proposed by BOD Member Katz				●				39				11		8	●						
14	Katz Alternative 2	Portfolio proposed by BOD Member Katz					●		37					11			●						

The California Environmental Quality Act (CEQA) No-Action Alternative scenario simulated the District's water supply system that would be in place if the WSMP 2020 preferred project was implemented. This scenario assumed the following:

- Current water supplies as in the Baseline Scenario plus an additional 5 MGD of supply from a project yet-to-be-determined.
- Recycled water projects in service by 2020 (14 MGD).
- Conservation achieved by 2020 (35 MGD = 22.5 MGD by 2008 + 7.5 MGD of additional "natural" savings + 5 MGD of additional District-funded projects).

Both the Baseline and CEQA No-Action Scenarios were modeled using the original unadjusted demand projection of 306 MGD and the revised unadjusted demand projection of 312 MGD. Table 4-2 shows the implementation of recycled water and conservation programs over the planning period for both the Baseline and CEQA scenarios assuming the revised unadjusted demand projection of 312 MGD.

Table 4-2: CEQA No-Action and Baseline Scenario Recycled Water and Conservation Programs

Baseline (NFW Scenario)	2010	2015	2020	2025	2030	2040
Unadjusted Demand (MGD)	251	266	280	291	304	312
Conservation	-22.5	-22.5	-22.5	-22.5	-22.5	-22.5
Recycled Water	-9.3	-9.3	-9.3	-9.3	-9.3	-9.3
Baseline Potable Water Demands (MGD)	**219**	**234**	**249**	**259**	**272**	**280**
CEQA (No-Action Scenario)	**2010**	**2015**	**2020**	**2025**	**2030**	**2040**
Unadjusted Demand (MGD)	251	266	280	291	304	312
Conservation	-25	-32	-35	-35	-35	-35
Recycled Water	-9.3	-14	-14	-14	-14	-14
CEQA Potable Water Demands (MGD)	**217**	**220**	**231**	**242**	**255**	**263**

NFW – Need for Water

4.2 Indexed-Sequential Modeling Scenarios

IS modeling was applied for the five preliminary portfolios carried forward (Portfolios 4, 5, 6, 10 and 12, relabeled as Portfolios A through E, respectively) to determine the phasing of supplemental supply components and to generate data required for detailed economic analyses assuming an unadjusted District-wide demand projection of 306 MGD. Additional variants of the five portfolios were also modeled to examine the economic and operational impacts of varying levels of rationing within a portfolio. Under different rationing conditions, not all supplemental supply components in a portfolio were required. Therefore, the components in the portfolio variants (shown in Table 4-3) were adjusted to meet demands at varying levels of rationing.

As with the preliminary portfolio evaluation, the five secondary portfolios (plus variants) that were carried forward were screened against qualitative criteria regarding environmental impacts, operations, institutional and legal issues, public health and community impacts, and carbon footprint. In addition, 5- and 10-year 'snapshots' of IS modeling results were collected and analyzed along with detailed economic analyses prepared for each portfolio. These results were then presented to the EBMUD Board of Directors for use in selecting a preferred portfolio.

The Board of Directors identified a "Preferred Portfolio" during their June 24, 2008 WSMP 2040 workshop. The Preferred Portfolio included a 10% maximum rationing level, an additional 11 MGD of recycled water projects (Level 3 recycled water) and an additional 39 MGD of conservation projects (Level D conservation). Seven supplemental water supply components were also included in the Preferred

Portfolio: the Sacramento Groundwater Banking project, the IRCUP/San Joaquin Groundwater Banking project, the Bayside Phase 2 Groundwater Project, water transfers, the Regional Desalination project, an Enlarged Pardee Reservoir and an Enlarged Lower Bear Reservoir. While the combined yield of these supplemental supply projects is greater than that required to meet the 2040 need for water, these components were included in the Preferred Portfolio to provide the District with flexibility in addressing climate change, institutional, legal and technical issues as they arise over the planning period. For the purposes of modeling the Preferred Portfolio, four supplemental supply components (the Sacramento Groundwater Banking project, the Bayside Phase 2 Groundwater Project, water transfers and the Regional Desalination project) were assumed to be available. The resulting portfolio is considered representative of the Preferred Portfolio for generation of a cost estimate and to support the environmental documentation.

As with the Baseline and CEQA No-Action scenarios, the Preferred Portfolio was originally modeled using the unadjusted District-wide demand of 306 MGD. After the 2040 demand project was revised, the Preferred Portfolio was again modeled using the revised unadjusted District-wide demand of 312 MGD. While much of the modeling results were similar between the two cases, there were a few distinct differences. The revised demand projection created a larger demand early in the simulation period and correspondingly a larger shortfall earlier in the simulation period. As a result, a larger volume of water transfers was required earlier in the modeling period to prevent unmet demand. (Water transfers are the only supplemental supply project considered that can be online by 2010, the start of the simulation period.) In both cases (the Preferred Portfolio with the original and revised demand projections), once a level of water transfers was set, this level was sustained until all other supplemental supply projects were required to meet demand and brought on line. This assumption was made because water transfers represented the least expensive unit water cost and would require a pre-set “term’ for the contract. Once the more-expensive supplemental supplies were fully ‘developed’, it was assumed that transfers would be scaled back so as to optimize the cost-benefit ratio for the more expensive projects. Therefore, for the Preferred Portfolio simulation using revised demand estimate, this meant that both the Sacramento Groundwater Banking project and the Regional Desalination projects were brought online later in the simulation period than under the simulation using the original demand projection.

Table 4-3: Final Indexed-Sequential Modeling Portfolios

Portfolio Number	Rationing					Conservation				Recycling			Supplemental Supply							
	0%	10%	15%	20%	25%	Natural Savings + 10 (B)	Current Program Equivalent (C)	Current Program Equivalent + 2 (D)	Maximum Voluntary Program (E)[3]	Recycling Level 1	Recycling Level 2	Recycling Level 3	Groundwater Banking/Exchange (Sacramento Basin)[2]	Northern California Water Transfers	Bayside Phase 2 Groundwater Project	Buckhorn Canyon Reservoir	LEAD at C&H Sugar	Regional Desalination	IRCUP/San Joaquin Banking[4]	Enlarge Lower Bear Reservoir	Enlarge Pardee Reservoir
A		●						39			5		●	15	●				●		
A2			●					39			5			10	●				●		
A3				●				39			5			10	●						
B		●					37				5		●	4.5				●	●	●	
B2			●				37				5			4.5				●	●		
B3				●			37				5							●			
C			●				37				5					●					
D			●				37				5				●						●
D2			●				37				5				●						●
E		●					37					11	●	27	●						
E2			●				37					11	●	14	●						
E3				●			37					11		6	●						
Preferred		●						39				11	●	2 to 8[14]	●			●			

[14] Portfolio assumes 8 MGD of Northern CA water transfers until 2026 when the Regional Desalination project is implemented at which point only 2 MGD of water transfers are utilized for the rest of the planning period.

Chapter 5 Cost Accounting

5.1 General Approach

In general, an incremental accounting approach was used to compare additional capital and operation and maintenance (O&M) costs incurred by each water supply portfolio. This is in contrast to an enterprise accounting approach which would require capturing EBMUD's entire baseline revenue and cost structure. Therefore, in supporting the economic analysis of the portfolios evaluated, the W-E modeling effort captured only the variable costs that could change under different supply portfolios.

Typically, WEAP tracks all O&M costs and capital investments for components within the model, but because of the unique integration of EBMUDSIM with WEAP, WSMP 2040 capital and O&M cost calculations were handled outside of the W-E model structure (that is, portfolio costs were calculated during post-modeling processing). In the FLOD modeling runs, W-E results were manually output to spreadsheets where average annual costs (including both annualized capital and O&M costs) were calculated. These output spreadsheets were then linked to cost spreadsheets which were updated based on W-E model results for each portfolio. For the IS modeling runs, a programming script was developed to streamline the post-modeling process and to manage the results from the multiple 31-year hydrologic sequences run for each portfolio. This allowed the modeling results to automatically update IS modeling output spreadsheets.

Appendix A discusses the approach and the basis for cost estimates for conservation, recycled water and supplemental water supplies, and provides detailed information regarding assumptions used. Throughout the economic analyses, costs are reported in 2007 dollars.

5.2 Capital Costs

Capital costs were developed for each component used in the portfolios using available studies, published literature and engineering experience. Capital costs included planning and design costs, environmental documentation, construction costs and property acquisitions. While these data were not included directly in the W-E model, capital costs were incorporated into the overall portfolio costs as part of the economic post-processing conducted after each model run. These capital costs are summarized in the WSMP 2040 Component Cost Estimation Evaluation TM included in Appendix A.

5.3 Operation and Maintenance Costs

Only 'hard' operation and maintenance (O&M) costs were tracked in the W-E model; these are direct costs to the District related to infrastructure operation and maintenance. 'Soft' costs associated with conservation programs and shortage costs were not included in the modeling; these costs were incorporated with the capital costs in the economic post-processing conducted for each portfolio.

Variable costs for operating and maintaining the District's water supply system can be broken up into several components:

1. Supplemental supply projects
2. Recycled water projects
3. Mokelumne and Freeport raw water supplies
4. Treatment
5. Distribution pumping

Each of these components is described in the following sections.

Energy rates used in O&M cost calculations are shown in Table 5-1. These energy rates are based on current electricity rates for Pacific Gas and Electric Company, projected into the future based on California Energy Commission rate forecasts for its *2007 Integrated Energy Policy Report*.

Table 5-1: Energy Rates

Energy Use	Rate
Conveyance Pumping and Treatment	$0.115 /kWh
Distribution Pumping	$0.153 /kWh
Recycled Water Projects	$0.140 /kWh
Supplemental Supply Projects	$0.115 /kWh

5.3.1 Supplemental Supply Project O&M Costs

O&M costs and energy requirements for supplemental supply projects were tracked on a per-component (project) basis every year in the model. These costs depend on the operation of the project as a function of annual hydrologic conditions and reservoir levels. These assumptions are outlined in more detail in Table Table 3-123 and include both fixed annual O&M costs and variable O&M costs (dependent on the volume of supply produced), in addition to wet-, dry- and idle-year cost variations.

5.3.2 Recycled Water Project O&M Costs

Recycled water project costs and energy requirements include treatment and conveyance. O&M costs and energy have been accounted for on a per-component (project) basis and then assembled into two different levels of water recycling: Level 2 (5 MGD) and Level 3 (11 MGD). See Table 5-2 for more detailed information.

Table 5-2: Treatment and Conveyance Costs and Energy Requirements[15]

Component	Energy	Variable Costs (non energy)	Annual Fixed Costs
Level 2 (5 MGD) Recycled Production	1,427 kWh/AF	$441 /AF	$0
Level 3 (11 MGD) Recycled Production	1,194 kWh/AF	$603 /AF	$20,000

5.3.3 Freeport Raw Water O&M Costs

Raw water pumping at the Freeport Regional Water Project (FRWP) is required to move water from the Sacramento Diversion Facility, through the Freeport pipeline and the Folsom South Canal Connection, and into the Mokelumne Aqueducts. These costs are shown in Table 5-3.

[15] As part of the WSMP 2040 development process, these costs have been assembled based on individual project costs from several sources for each recycled water delivery goal, i.e. 5 MGD and 11 MGD.

Table 5-3: Freeport Raw Water Supply Variable Costs[16]

Component	Energy	Chemical	Disposal	Labor	Other
Freeport Project raw water pumping[17]	710 kWh/AF	-	-	$15/AF	$94/AF[18]

5.3.4 Mokelumne System Raw Water O&M Costs

Pumping is required under some conditions to move raw water through the Mokelumne Aqueducts to the terminal reservoir system. For the W-E cost analysis, two raw pumping costs and energy requirements were included[19]:

- Pumping at the Walnut Creek Pumping Plants.
- Pumping at the Moraga Pumping Plant.

For the purposes of the W-E model cost analysis, the cost of Mokelumne Aqueduct pumping at the Walnut Creek pumping plants was based on two factors:

- The volume of water that can be conveyed through the Mokelumne Aqueducts via gravity depends on the storage in and, more specifically, the water surface elevation at, Pardee Reservoir. As Pardee storage increases, the water surface elevation rises and subsequently, gravity flow also increases. The relationship between Pardee Reservoir storage and gravity flow in the Mokelumne Aqueducts assumed in the W-E model is shown in Table 5-4.
- For portfolios that include the Enlarged Pardee Reservoir component, it was assumed that higher than current water surface elevations in Pardee Reservoir will not result in a larger volume of water conveyed in the aqueducts via gravity. That is, pressure limitations in the Mokelumne Aqueducts control the volume of water that can move through the system.

The average annual volume of water being drafted though the Mokelumne Aqueducts affects the efficiency of pumping. For this analysis, 720 kilowatt hours per acre-foot (kWh/AF) of water pumped through the aqueducts was assumed based on the expected average annual demand on the Mokelumne system over the 2010 to 2040 planning horizon.

Moraga Aqueduct pumping was also included in the W-E model cost analysis. Pumping into the Moraga Aqueduct is required to refill the Upper San Leandro (USL) reservoir which feeds the USL conventional water treatment plant. Under Freeport Project operating conditions, 50% of Freeport water was assumed to be treated at the Sobrante Water Treatment Plant with the other 50% being treated at the USL Water Treatment Plant[20].

[16] Based on information provided by EBMUD operations staff.
[17] Freeport variable energy costs will be based on a three-year drought sequence over which 165 TAF of water is delivered.
[18] CVP purchase costs.
[19] The cost of pumping to Briones Reservoir has been neglected in this analysis. This cost is considered insignificant especially as demands in the East Bay grow to the point that the aqueducts are near or above gravity capacity all year round. This assumption is consistent among all portfolios, thus the small discrepancy that this assumption may create will not benefit a single portfolio.
[20] This operational assumption may change if upcountry treatment is provided.

Table 5-4: Portion of Annual Demand that can be conveyed via Gravity in the Mokelumne Aqueducts

Portion of Annual Demand that can be Conveyed via Gravity	Storage[1] in Pardee Reservoir (values are in TAF)
200 MGD	Pardee>171
195 MGD	Pardee>171
190 MGD	171> Pardee >=122
150 MGD	122> Pardee >=56
100 MGD	Pardee <56

1. The annual volume of water that can be delivered via gravity is based on end-of-September (EOS) storage in Pardee Reservoir.

5.3.5 Treatment Costs

Treatment costs assessed for the portfolios include in-line treatment, conventional treatment, and upcountry (Mokelumne River watershed) pre-treatment. A per-acre-foot cost and energy requirement was applied to all treated water.

The following assumptions were made about where water is treated:

- All water supply portfolios except Portfolio C (with Buckhorn Reservoir) require an upcountry pre-treatment plant. The upcountry plant is needed to mitigate Mokelumne Aqueduct operational constraints and limited conventional treatment capacity in dry-years. In portfolios that assume an upcountry plant, O&M costs associated with pre-treatment were included as well as those for in-line filtration once the water enters the terminal system.
- All water originating from the Mokelumne River, desalinated water, and water pre-treated at the up-country plant is clean enough to require in-line treatment only[21].
- Water supplies originating from locations other than the Mokelumne River watershed or that have been extracted from the ground, and that have not been pre-treated must be routed to one of the conventional treatment plants. The only exception to this is water from the Bayside Groundwater Project.
- Service-area groundwater projects (Bayside Phase 1 and 2) require wellhead treatment upon extraction and distribution. (Portfolios with these components include the associated capital and O&M costs associated with on-site water treatment systems.) Injection water is treated at in-line plants prior to storage.

Table 5-5 provides summarizes treatment cost assumptions for the three levels simulated in WSMP 2040 modeling.

[21] It is important to note that even if all supplemental water sources are clean enough to be treated at in-line plants, capacity constraints will require that some raw water will need to be treated at conventional plants. This assumption is consistent among all portfolios, and thus the small discrepancy that this assumption may create will not benefit a single portfolio.

Table 5-5: Treatment Costs[22]

Treatment Level	Energy	Chemical	Disposal	Labor	Fixed
In-line treatment	25 kWh/AF	$9/AF	$1/AF	Not Included	-
Conventional treatment	116 kWh/AF	$26/AF	$17/AF	Not Included	-
Upcountry Treatment	116 kWh/AF		$38/AF	Not Included	$470,000/YR

5.3.6 Distribution Energy Requirements

Distribution energy requirements are applied to the volume of water treated at the District's in-line and conventional water treatment plants and distributed to customers. The assumed distribution energy requirement was 265 kWh/AF[23].

[22] Based on information provided by EBMUD operations staff.
[23] Based on information provided by EBMUD's operation staff.

Chapter 6 Incorporating Investment Costs and Treatment of Uncertainty

Two important aspects of resource planning are addressed in the analysis presented in the WSMP 2040. The first answers how the sequence of resource investment (i.e., when conservation measures, recycling projects and supplemental sources are added) affects total portfolio cost. Because the District borrows funds to pay for these projects and we assume that a dollar spent in the future is not as valuable as a dollar spent today, the time at which the investments for each component are made affects the total present value of the portfolio (i.e., the relative value expressed in today's dollars as though all expenditures were made today). A portfolio with the lowest present value is likely to result in the lowest rates over time.

The second aspect is the impact of the potential range of costs resulting from variations in hydrology. The actual yield from EBMUD's Mokelumne River water supply depends on hydrological conditions. This analysis examines the range of potential present values over the 31-year planning horizon based on applying the historic sequence of past conditions. In this way, decision makers may be better informed about not only what appears to be the lowest-cost set of resources, but also what may be a more "robust" set of resources that exhibit a lower level of economic risk to the District.

The economic analysis of the District's portfolio costs incorporates the component and system cost analysis discussed in Chapter 5. These costs are summed to reflect the variations in operations resulting from the W-E model runs.

6.1 Modeling the Sequence of Resource Investment and Hydrologic Uncertainty

The IS modeling approach was the end-product of the WSMP 2040 modeling process – the goal being to develop a range of operating scenarios based on various hydrologic sequences. As noted previously in Section 3.4.6, project implementation dates were developed for each component in a portfolio during the IS modeling. The resulting implementation dates are shown Table 6-1.

Table 6-1: Project Implementation Dates

Portfolio Number	Supplemental Supply							
	GW Banking/Exchange (Sacramento Basin)[2]	Water Transfers	Bayside Phase 2 Groundwater Project	Buckhorn Canyon Reservoir	Regional Desalination	IRCUP/San Joaquin Banking[4]	Enlarge Lower Bear Reservoir	Enlarge Pardee Reservoir
A	2027	2010	2013	-	-	2022	-	-
A2	-	2013	2019	-	-	2029	-	-
A3	-	2019	2031	-	-	-	-	-
B	2029	2010	-	-	2012	2022	2027	-
B2	-	2010	-	-	2017	2012	-	-
B3	-	-	-	-	2020	-	-	-
C	-	-	-	2020	-	-	-	-
D	-	-	2014	-	-	-	-	2020
D2	-	-	2014	-	-	-	-	2020
E	2035	-	2030	2010	-	-	-	-
E2	2037	-	2028	2017	-	-	-	-
E3	-	-	2031	2026	-	-	-	-
Preferred	2026	2010[24]	2015	-	2030	-	-	-

The IS modeling results were used to evaluate possible operational impacts to the District's raw water supply system and to calculate the net present value (NPV) of each portfolio. To determine this value, the NPV of each portfolio's recycled water and supplemental supply components was calculated using output from the W-E model for each of the 31-year model runs. This NPV was then added to the portfolio's NPV for conservation costs (calculated externally from the W-E model) to create an overall portfolio-specific NPV representing the portfolio's range of costs to the District. For each hydrologic sequence, annual District costs were converted to present value and summed to determine the total present value of District costs over the planning period for that sequence. This resulted in 83 total present value District cost estimates for each portfolio evaluated with IS modeling. Frequency statistics were generated to determine the central tendency and distribution of total present value costs over the planning period. Cost summary statistics included minimum present value portfolio cost, maximum present value portfolio cost, and mean and median present value portfolio costs. District portfolio costs then were added to the portfolio's customer conservation and shortage costs (discussed in Chapter 7) to create overall portfolio-specific costs. Finally, the portfolio costs were compared to provide additional input to the portfolio evaluation process. Table 6-2 summaries the IS portfolio cost statistics; these results are discussed further in Chapter 9.

[24] Thirteen million gallons per day (13 MGD) of Northern California water transfers are implemented in 2010. These transfers are retained through 2026 and then dropped to 8 MGD for the rest of the planning period.

Table 6-2: Portfolio Cost Statistics

Portfolio Numbers	Minimum Present Value Cost	Maximum Present Value Cost	Mean Present Value Cost	Median Present Value Cost
A	$1,069	$1,854	$1,326	$1,212
A2	$1,007	$2,179	$1,398	$1,232
A3	$983	$2,809	$1,600	$1,326
B	$911	$1,745	$1,188	$1,068
B2	$856	$2,108	$1,290	$1,124
B3	$723	$2,552	$1,394	$1,126
C	$737	$3,014	$1,323	$1,120
D	$909	$2,347	$1,307	$1,145
D2	$1,010	$2,544	$1,460	$1,267
E	$957	$1,671	$1,203	$1,107
E2	$899	$2,059	$1,286	$1,125
E3	$746	$2,536	$1,355	$1,082
Preferred at 306 MGD	$1,026	$1,895	$1,356	$1,263
Preferred at 312 MGD	$900	$1,761	$1,211	$1,116

Chapter 7 Economic Analysis: Inclusion of Customer Costs

The economic analysis conducted for WSMP 2040 considers costs that customers incur to provide "supplies" to the District. For example, when water is rationed, supplies are being 'provided' to the District at customer expense. While these costs do not show up on the District's books, customers pay these other costs indirectly through means other than rates. The two types of resources for which these costs are incurred are conservation and rationing.

7.1 Conservation Cost Estimation

As part of the WSMP 2040, a conservation evaluation was performed in which combinations of different conservation measures were analyzed and combined into programs for achieving varying levels of conservation savings. The multiple-tiered measures analyzed ranged from moderate to extensive market saturation levels covering both retrofits and new development. The analysis included quantifiable measures corresponding to the California Urban Water Conservation Best Management Practices (CUWCC BMPs) and new development measures to make new residential and business customers more water efficient, a process already started by the District.

The conservation evaluation process employed for this analysis consisted of seven steps. The analysis process was completed by using the Least Cost Planning Water Demand Management Decision Support System (DSS model), proprietary software developed by Maddaus Water Management. These steps were:

1. Use the demand study results developed for the WSMP 2040 to represent water use projections without the national plumbing code, net of existing conservation and existing and planned recycled water projects.
2. Identify possible water conservation measures and screen the measures qualitatively to identify those that are applicable to the service area.
3. Estimate the affected customers (or number of accounts) for each conservation measure by dividing the measure's projected customers (or accounts) that would implement the measure by the total service area customers (accounts). This factor is called the market saturation or installation rate.
4. Estimate the total annual average, seasonal and peak day water savings.
5. Determine the initial and annual costs to implement the measures based upon pilot projects, local experience, and the costs of goods, services, and labor in the community.
6. Compare the cost of the measures by computing the present value of costs and costs of water saved over the planning period.
7. Compile conservation packages containing various new measures.

Each of these individual steps is discussed below in more detail.

7.1.1 Demand Projections

Using the District-wide demand projections prepared for the WSMP 2040 as a starting point, demand projections were adjusted to reflect water savings from current conservation efforts and recycled water projects. Current conservation efforts include all programs in place through 2008 while current recycled water projects incorporate all projects that will be in service by 2010. The resulting "adjusted demand" was 280 MGD by the year 2040.

In order to avoid double counting between future conservation and future recycled water projects, further adjustments were made to the demands for the conservation analysis. Recycled water projects that were planned in the WSMP were accounted for by subtracting their projected potable water use offset. The

adjustment started with 4.5 MGD in 2010 and grew to 14.5 MGD in 2040. This resulted in a final adjusted projected demand of 266 MGD in 2040. Accounting for future recycled water resulted in a lower overall conservation potential; however, the adjustment was a necessary step because conservation projects could have lowered water use on the sites that would otherwise use recycled water and the adjustment ensured that the double counting of savings was avoided.

Following the preparation of the revised demand forecasts to reflect future recycled water projects, a demand projection "with the plumbing code" was developed to determine the existing and future level of efficient products within the service area. This ensured that the effects of the plumbing code were properly analyzed in the conservation evaluation. Figure 7-1 shows the potable water demand projection at five-year increments both with and without the plumbing code through 2040.

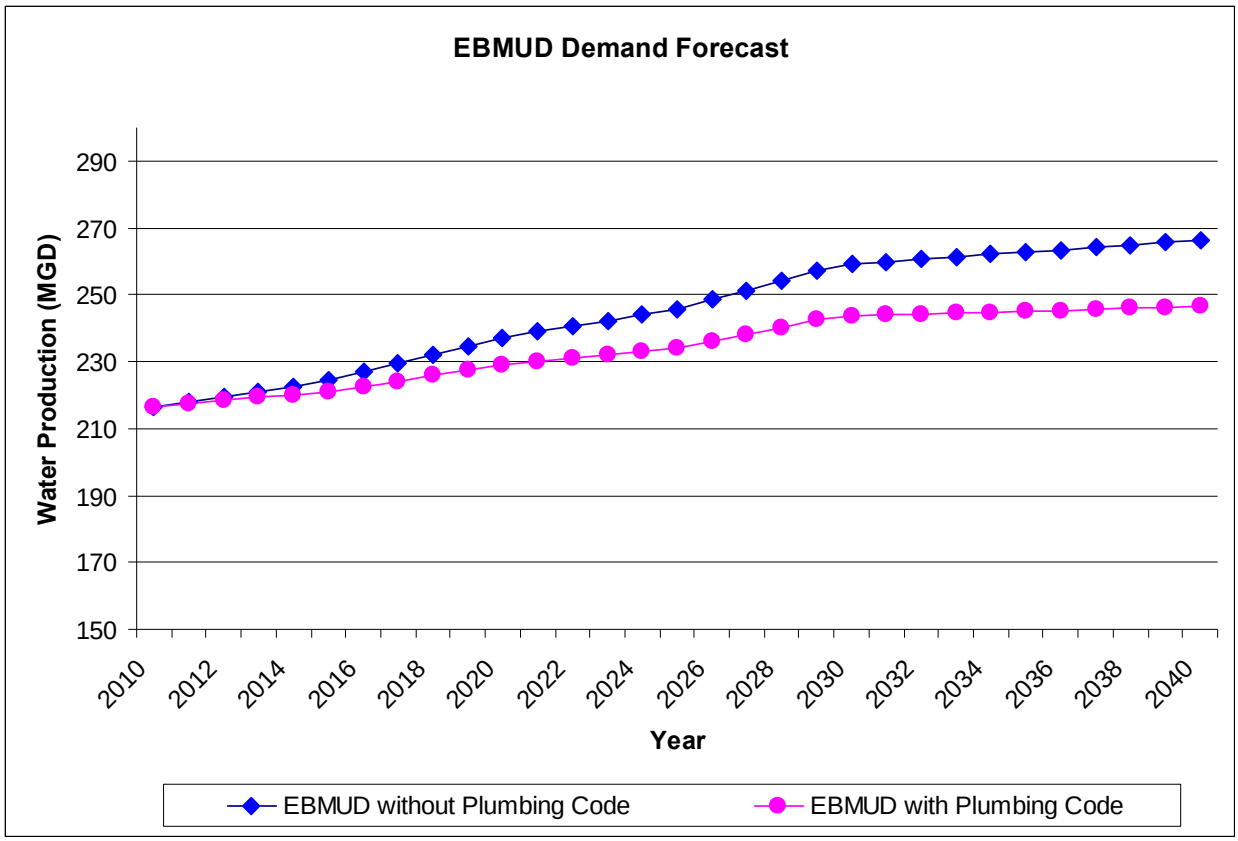


Figure 7-1: Baseline Average Day Potable Water Use Projections for EBMUD Potable System (Net of Existing and Future Recycled Water)

Table 7-1 presents the water demands projection based on the WSMP 2040 demand study both with and without the plumbing codes. This analysis indicated that the plumbing codes and appliance standards will reduce 2040 demands by 19.4 MGD or 7.9 percent. Further reductions in demand due to conservation measures were calculated from an end-use version of the demands "with plumbing code".

Table 7-1: Baseline Average Day Potable Water Use Projections for EBMUD Potable System (Net of Existing and Future Recycled Water)

Data Source for Projection		Water Projection, Average Day (MGD)*						
Residential & Non-Residential	Plumbing Code	2010	2015	2020	2025	2030	2035	2040
2040 WSMP Demand Estimate	Not Included	216	224	237	246	259	263	266
2040 WSMP Demand Estimate	Included	216	221	229	234	244	245	247

*Total water use is potable only. Demand without plumbing code; closely match demands in WSMP Demand Projection, net of existing and planned use of recycled water

7.1.2 Conservation Measure Compilation and Evaluation

A list of about 100 potential conservation measures considered potentially appropriate for the EBMUD service area was developed from known technology that included devices or programs (e.g., such as a new high-efficiency toilet) that would save water if installed by the District, contractor, or customer A description of each potential conservation measure was developed that addressed the methods through which the device or program will be implemented, including the distribution method, or mechanism, that would be used to activate the device or program. A screening process was then undertaken to reduce the number of measures to eliminate those measures that are not as well suited to the Alameda and Contra Costa County area. Each potential measure was screened based on four qualitative criteria scored on a scale of 1 to 5, with 5 being the most acceptable and 20 being the maximum possible number of points for all criteria. The criteria used to evaluate the conservation measures were:

- Technology/Market Maturity
- Service Area Match
- Customer Acceptance/Equity
- Relative Effectiveness of Measure Available

This screening process resulted in all but 53 of the conservation measures being set aside from further consideration. The 53 conservation measures carried forward in this analysis are described in Appendix B.

Following preparation of detailed measure descriptions, unit costs were determined for each of the 53 measures carried forward based on industry knowledge, past experience and data provided by the District. These costs included incentive costs, usually determined on a per-participant basis; fixed costs, such as marketing; variable costs, such as the costs to staff the measures and to obtain and maintain equipment; and a one-time set-up cost. The set-up cost is for measure design by staff or consultants, any required pilot testing, and preparation of materials that will be used in marketing the measure. Costs were estimated for each measure for each year of the implementation period. Lost revenue due to reduced water sales was not included as a cost because the conservation measures evaluated herein generally take effect over a span of time that is sufficient to enable timely rate adjustments, if necessary, to meet fixed cost obligations.

Data necessary to forecast the water savings of measures included specific data on water use, demographics, market saturation, and unit water savings. Savings normally developed at a measured and predetermined pace, reaching full maturity after the target market saturation was achieved. This was assumed to occur three to ten years after the start of implementation, depending upon the implementation schedule.

Data necessary to forecast the water savings of measures included specific data on water use, demographics, market penetration, and unit water savings. Savings normally develop at a measured and predetermined pace, reaching full maturity after the target market penetration is achieved. This was assumed to occur three to ten years after the start of implementation, depending upon the implementation schedule.

Upon inspection of the overall list of 53 conservation measures, it became apparent that the measures fell into two categories as follows:

- Measures that were voluntary and incentive based
- Measures that were regulatory and/or applied to new development

Voluntary measures target selected types of customers and offer a range of incentives to enhance participation. New development measures target single family homes (including town homes and condos), apartments and non-residential accounts and specify the efficient fixtures required during construction.

Unit cost and savings data were input into the DSS model to determine the net present value and cost of water saved for each conservation measure. The cost analysis was performed from various perspectives, including the utility and community (utility plus customer). The savings analysis showed that there was a considerable range in 2040 water savings, from nearly zero to savings of well over 1 MGD.

7.1.3 Conservation Program Formulation and Evaluation

Using the results of the previous analyses, five conservation programs (labeled Levels A through E) were formulated, representing increasing levels of water savings, with the fifth level (E) representing the maximum theoretical level of water savings. Each program built on the prior program. Table 7-2 summarizes the five conservation programs.

Table 7-2: Conservation Program Description and Future Water Savings, 2008-2040

Conservation Program	Description	Additional 2008-2040 Water Savings, MGD
A	No Conservation beyond Plumbing Code	19
B	Similar to Current EBMUD Program - 25 Measures	29
C	Add 15 Measures to Current Program	37
D	Add 2 Measures to Program C	39
E	Add 4 Measures to Program D	41

Note: Includes 2 MGD projected to be saved 2008 to 2010 from existing program.

Program A represents the conservation savings that would be achieved if only the plumbing code were implemented. Program B (the current program) builds on Program A and contains 25 conservation measures. Program C includes Program B measures plus 15 additional measures. The main enhancement of Program C is that it uses the Automatic Metering System (AMS) to help identify, to both the customer and to District, leakage and excessive use. This enhances the ability of EBMUD to conduct effective water surveys of residential and business customers. Program D has all 40 measures from Program C and adds a net of three measures. Program D replaces the Real Loss Reduction Measure Level II with Level III. Program E adds four additional measures to Program D, bringing the total number of conservation measures to 47. Out of the 53 measures available for Program E, four measures were not used because they were replaced with other more intensive measures that utilize the AMS. Two additional measures (Measures 11 and 12 - Real Water Loss Reduction I and II) were not used in Program E because they

were replaced by a more effective similar measure, Real Water Loss III (Measure 13). It is important to note that these programs are not intended to be rigid programs but rather to demonstrate the range in saving that could be generated if selected measures were run together.

Table 7-3 summarizes the relative water savings (in MGD) and costs of the alternate programs. The plumbing code is included as passive baseline savings in addition to the long-term conservation programs in Programs B through E.

Most of the program water savings shown in Table 7-3 are from indoor water use as the conservation programs include plumbing code impacts. Real water loss savings are due to reduction of leakage and other unbilled water. Costs are expressed two ways: as the total present value over the analysis period, and as the cost of water saved for the utility, for the customer, and for the total community (customer plus utility). These cost parameters are derived from the annual time-stream of utility, customer and community costs. In general, these results show that more than 75 percent of the new potable water needed by the District to accommodate planned growth could be met through aggressive conservation and planned recycled water projects.

Table 7-3: Economic Analysis of Alternative Programs, 2010 - 2040

Conservation Program	2040 Water Savings with Code (MGD)	2040 Indoor Water Savings (MGD)	2040 Outdoor Water Savings (MGD)	Present Value of Water Utility Costs ($Million)	Present Value of Community Costs ($Million)	Present Value of Customer Costs ($Million)	Utility Cost of Water Saved ($/AF)	Community Cost of Water Saved ($/AF)	Portion of New Water Needed from 2010 to 2040
Program A (Plumbing Code)	19.4	19.4	0.0	NA	NA	NA	NA	NA	38.7%
Program B + Plumbing Code	27.0	25.3	1.7	$ 29	$ 220	$ 191	$ 143	$ 1,378	53.8%
Program C + Plumbing Code	35.3	32.6	2.7	$ 188	$ 540	$ 352	$ 480	$ 1,971	70.4%
Program D + Plumbing Code	37.2	34.2	2.9	$ 271	$ 708	$ 437	$ 634	$ 2,544	74.1%
Program E + Plumbing Code	38.6	34.3	4.3	$ 394	$ 972	$ 578	$ 845	$ 3,470	76.9%

Notes:
1. Excludes 2 MGD in projected water savings for Programs B through E from existing program during 2008and 2009.
2. Indoor water savings include plumbing code (Program A) and Real Water Loss Savings.
3. Portion of new water needed refer to growth in demand without plumbing code.

7.2 Rationing or "Shortage" Cost Estimation

The purpose of customer rationing is to conserve water during projected and/or experienced water shortages. Water rationing imposes direct economic impacts to the District's customers. Rationing represents another resource available to the District to extend its water resources in a manner akin to conservation - through demand management. However, rationing is not costless to customers, who must take certain actions or forgo certain activities when they curtail their water demand. It is the expected frequency and cost of these impacts that are quantified as part of the shortage cost estimation.

People and businesses incur economic losses when they reduce water use in response to rationing policies (Griffin 2006). Willingness-to-pay (WTP), defined as the maximum dollar amount individuals or businesses would be willing to pay to avoid the water shortage, is the standard approach to valuing water shortage costs (Dixon, et al. 1996) and is applicable to all sectors of water demand (Griffin 2006). Losses to businesses and industries can also be valued in terms of changes in output, value added, payroll, or employment (Brozovic, et al. 2007; MHB Consultants 1994).

Following Brozovic, et al. (2007), shortage costs for residential, institutional, and irrigation customer classes were estimated in terms of WTP to avoid rationing while shortage costs to commercial and industrial customer classes were estimated in terms of losses in regional value added and employment resulting from water rationing. Value added is defined as the sum of regional labor, proprietor, and other income plus indirect business taxes and is the basis for the familiar gross domestic product (GDP) and gross state product (GSP) often reported in the press as a measure of national and state economic growth.

7.2.1 The Calculation of Customer WTP to Avoid Rationing

The *demand curve integration* method was used to estimate WTP to avoid water rationing for the residential, institutional, and irrigation customer classes.[25] WTP is interpreted economically as the difference in value that consumers place on water at an initial amount of demand, and at the constrained or "rationed" amount. Economists typically assume (supported by empirical data) that consumers place a diminishing value on each additional unit, which produces the "downward sloping" demand curve when value is plotted against quantity demanded. So consumers presumably place a higher per unit value on water when its availability is constrained, and this difference represents an economic loss to consumers. Figure 7-2 illustrates this concept. The shortage-cost method estimates the cost of a rationing policy requiring a reduction in water use from point Q0 to Q1 as the area under the customer class's water demand curve bounded by the unconstrained and rationed levels of consumption.

[25] A review of alternative methods for estimating WTP to avoid water rationing and the reasons for selecting the *demand curve integration* method for WSMP 2040 are presented in Attachment 1 of the Customer Shortage Cost TM in Appendix B. The Customer Shortage Cost TM provides a detailed description of both WTP specifications and example shortage cost functions.

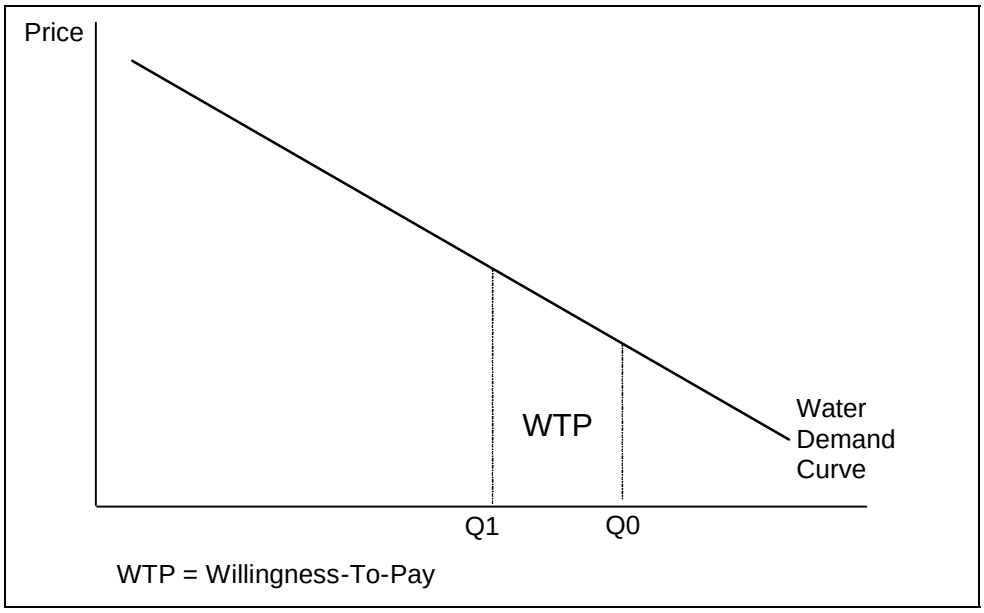


Figure 7-2: WTP to Avoid Rationing

Information on customer class baseline water use, baseline water rates, rationing level, and class demand elasticity was required to estimate WTP. The sources for these assumptions were as follows:

- *Baseline Class Water Use:* The WSMP 2040 demand forecast and portfolio conservation level were used to construct the schedule of annual net demands over the planning period for each customer sector and pressure zone. This information was generated by the W-E model during the IS modeling runs.
- *Class Rationing Level:* Output from the W-E model IS runs was used to calculate deviations from baseline water use during shortages. System shortages were distributed to customer classes according to the class rationing weights shown in Table 7-1. These weights were developed by EBMUD. The rationing level for each customer class was determined by multiplying the system-level shortage by the class's rationing weight. For example, if the system-level shortage were 10%, the rationing level for the single-family customer class would be 12.1% (10% x 1.209).
- *Baseline Class Water Rate:* Baseline water rates for calculating WSMP 2040 shortage costs, shown in Table 7-1, were provided by EBMUD.
- *Class Elasticity of Demand:* Short-run water demand elasticity estimates were drawn from the literature on urban water demand.[26] Elasticity assumptions, by customer class, used for estimating WTP are shown in Table 7-4.

[26] Demand elasticity measures the percentage change in demand given a percentage change in price. Espey et al. (1997), Renzetti (2002), Jenks et al. (2003), and Griffin (2006) provide good reviews of the urban water demand literature and empirical estimates of demand elasticity.

Table 7-4: Parameter Values for Residential, Institutional, and Irrigation Class WTP Functions

Rationing Class	W-E Model User Class	Rationing Weight	Water Rate ($/CCF)	Price Elasticity
Single Family		1.209	$2.06	-0.15
	Low Density Residential			
	Medium Density Residential			
Multi-Family		0.746	$1.99	-0.10
	High Density Residential			
	Very High Density Residential			
	Special High Density Residential			
	Mixed Use			
Irrigation		1.932	$2.20	-0.20
	Irrigated			
Institutional		0.631	$2.20	-0.20
	Public			
	School			

ccf = 100 cubic feet

7.2.2 Calculation of Commercial/Industrial Value Added and Employment Impacts

Shortage costs for commercial and industrial customer classes were expressed in terms of reductions in regional value added and employment. The approach followed that of San Francisco Public Utilities Commission (SFPUC, 2007) and MHB Consultants (1994).[27]

MHB Consultants (1994) estimated the percentage change in commercial and industrial output and payroll for a one percent increase in rationing level using results of surveys of SFPUC commercial and industrial customers conducted during the 1987-1992 drought. These elasticity estimates were used by the SFPUC (2007) to estimate commercial and industrial costs of drought-induced water shortages within the SFPUC service area.

Table 7-5 shows the marginal output and payroll impact elasticities used in WSMP 2040. These elasticities estimate the percentage change in output and payroll given a percentage change in water use. For rationing exceeding 15%, the impact elasticity is calculated as shown in the following equation:

$$I = 0.15I_1 + (R - 0.15)I_2,$$

where I_1 is the marginal impact elasticity for shortages between 0% and 15% and I_2 is the marginal impact elasticity for shortages between 15% and 30%.

[27] A review of previous commercial and industrial water shortage impact studies and their applicability to WSMP 2040 is presented in the Shortage Cost TM.

Table 7-5: Marginal Output and Payroll Impact Elasticities

Output/Value Added Elasticities		
	Shortage Level	
Customer Class	0-15%	15-30%
Industrial	0.114	0.483
Commercial	0.035	0.386
Payroll/Employment Elasticities		
	Shortage Level	
Customer Class	0-15%	15-30%
Industrial	0.104	0.411
Commercial	0.009	0.251

Impacts to value added and employment were calculated as the product of the system shortage level, the customer class rationing weight, the impact elasticity (per Table 7-2), and the baseline value added or employment level.

Table 7-6 shows the class rationing weights and baseline employment and value added levels used to estimate commercial and industrial employment and value added shortage costs for WSMP 2040. Baseline employment was estimated as part of the WSMP 2040 demand analysis. Baseline value added was derived from baseline employment and 2006 IMPLAN[28] data for Alameda and Contra Costa counties.

Table 7-6: Parameter Values for Commercial and Industrial Shortage Loss Functions

Rationing Class	Rationing Weight	Baseline Employment (Thousands)	Baseline Value Added (Million $)
Commercial	0.782		
2010		321	24,551
2020		363	27,751
2030		411	31,414
2040		456	34,879
Industrial	0.341		
2010		110	12,297
2020		118	13,201
2030		128	14,241
2040		134	14,974

7.2.3 FLOD and IS Modeling Shortage Cost Calculations

Customer shortage costs were calculated for each of the fourteen preliminary portfolios evaluated with FLOD modeling. The modeling results were used to analyze the distribution and central tendency of potential annual shortage costs for each portfolio given year 2040 baseline water demands and economic activity. Shortage cost summary statistics generated from the FLOD modeling results included minimum annual shortage cost, maximum annual shortage cost, mean and median annual shortage costs, and variance of annual shortage cost. Additionally, model results were used to generate shortage cost

[28] IMPLAN is a regional economic impact software program. IMPLAN data files provide estimated employment, payroll, other income, and output for over 500 commercial and industrial sectors. The data is provided by county. 2006 is most current IMPLAN data year.

exceedance probability curves for each portfolio, which were then used to assess the risk that shortage costs would exceed various threshold levels.

Using IS modeling results, annual shortage costs were calculated for each of the 31 planning years in a hydrologic sequence for the 13 portfolios advanced to this stage. This was repeated for each of the 83 hydrologic sequences included in the IS modeling, resulting in the calculation of 2,573 annual shortage costs per portfolio. For each hydrologic sequence, annual shortage costs were converted to present value and summed to determine the total present value of shortage costs over the planning period for that hydrologic sequence. This resulted in 83 total present value shortage cost estimates for each portfolio evaluated with IS modeling. Frequency statistics were generated to determine the central tendency and distribution of total present value shortage costs over the planning period. Shortage cost summary statistics generated from the IS modeling results included minimum present value shortage cost, maximum present value shortage cost, mean and median present value shortage cost, and variance of present value shortage cost. Additionally, model results were used to generate shortage cost exceedance probability curves for each portfolio, which were used to assess the risk that the present value of total shortage costs would exceed various threshold levels.

Chapter 8 Model Results

8.1 Fixed-Level-of-Development Modeling Results

FLOD modeling was used in the early stages of portfolio selection process to narrow the range of possible water supply portfolios. This type of modeling was also used to assess the CEQA No-Action scenario and Baseline scenario. Table 8-1 summarizes model output and findings from the FLOD modeling studies assuming the original unadjusted District-wide demand of 306 MGD. The CEQA No-Action results are shown graphically in Section 8.3.

8.2 Indexed-Sequential Modeling Results

IS modeling was the end-product of the modeling process – the goal being to develop a range of operating scenarios based on various hydrologic sequences. From these operational scenarios, economic risks and the net present value of each portfolio could be assessed. As previously noted, each portfolio is run sequentially through every possible set of hydrologic data available in 31-year data sets (2010–2040 demand years) in the IS modeling. This means that for the year 2010, for example, there are 83 possible hydrologic scenarios, and as a result, 83 different operating scenarios. The following sections graphically summarize average annual water operating scenarios for each year in the planning period (2010 to 2040) for each portfolio assuming an unadjusted District-wide 2040 demand projection of 306 MGD. The implementation dates for the supplemental supply components in each portfolio are also shown. See Section 3.4.6 for a discussion of how these dates were determined.

Table 8-1: FLOD Modeling Results for Preliminary Portfolios

Portfolio Number[1]	Water Supply Results: Average Annual Volume of Water (MGD) Over 3-Year Drought Planning Sequence: Rationing	Conservation	Recycled	Supplemental Supply	Total Supply	Rationing Frequency (No. of Years in model period)	Cost[1] (All Costs in $M/Yr): Average Annual Cost of Water Shortage (Cost to Customer)[2]	Cost Incurred by Re-operation of Existing Facilities: Δ Cost of Existing Facilities	Δ Conveyance & Treatment Costs[4]	Cost Incurred by Proposed WSMP 2040 Components: New Conservation	New Recycled	New Supplemental Supply Project Costs	Total New Costs	Total Portfolio Cost (Cost to District) $M/Yr	Grand Total (Cost of Rationing + Cost to District) $M/Yr
1	0.0	29.3	5.0	61.5	95.9	0.0	0.0	0.3	-1.4	1.3	2.8	14.0	18.0	16.9	16.9
2	0.0	29.3	5.0	61.5	95.9	0.0	0.0	0.3	-1.9	1.3	2.8	14.3	18.4	16.8	16.8
3	13.7	37.3	0.0	47.2	98.1	12.0	15.3	0.2	-2.8	9.6	0.0	10.8	20.3	17.7	33.0
4	19.5	39.4	5.0	45.6	109.6	15.0	15.2	1.1	-0.8	13.2	2.8	10.6	26.6	26.9	42.1
5	19.5	37.3	5.0	48.0	109.8	15.0	15.2	1.1	-1.0	9.6	2.8	11.5	23.8	23.9	39.1
6	29.4	37.3	5.0	42.0	113.7	16.0	28.0	1.1	-5.4	9.6	2.8	7.8	20.2	15.9	43.9
7	29.6	39.4	11.0	29.0	109.0	15.0	24.0	1.0	-2.9	13.2	4.0	5.0	22.2	20.3	44.3
8	29.5	37.3	5.0	39.0	110.9	15.0	24.7	1.0	-2.8	9.6	2.8	5.4	17.7	16.0	40.7
9	29.6	40.9	11.0	25.5	107.1	15.0	24.3	1.0	-2.8	18.0	4.0	5.0	27.0	25.2	49.5
10	20.5	37.3	5.0	36.1	98.9	12.0	22.2	0.2	-4.0	9.6	2.8	10.8	23.1	19.3	41.5
11	52.0	29.3	0.0	28.6	109.9	17.0	78.9	1.1	1.0	1.3	0.0	3.7	5.0	7.2	86.1
12	19.5	37.3	11.0	41.3	109.1	15.0	14.8	1.0	-2.8	9.6	4.0	8.5	22.0	20.1	34.9
13	41.1	39.4	11.0	17.1	108.6	15.0	41.2	1.0	-2.8	13.2	4.0	2.7	19.9	18.1	59.3
14	52.0	37.3	11.0	9.0	109.3	17.0	73.1	1.0	-2.9	9.6	4.0	1.6	15.1	13.2	86.3

8.2.1 Portfolio A

Portfolio A consists of 10% rationing, Level D conservation (39 MGD), Level 2 recycling (5 MGD) and the Sacramento Groundwater Banking project, water transfers, Bayside Phase 2 Groundwater Project and the IRCUP/San Joaquin Groundwater Banking project.

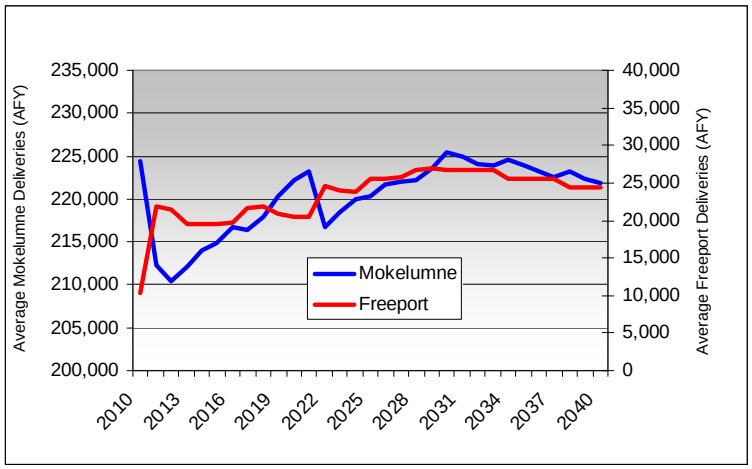


Figure 8-1: Average Annual Mokelumne and Freeport Deliveries, Portfolio A

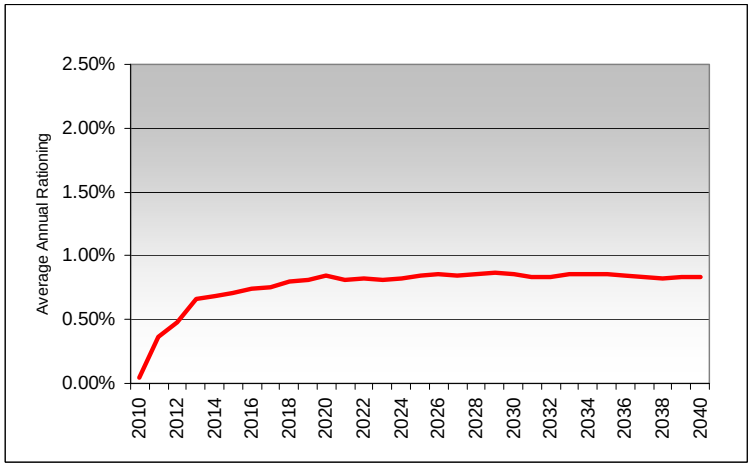


Figure 8-2: Average Annual Rationing, Portfolio A

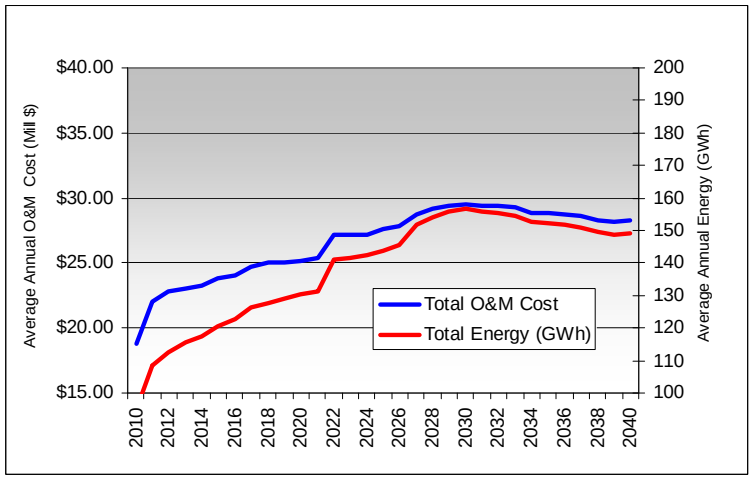


Figure 8-3: Average Annual O&M and Energy, Portfolio A

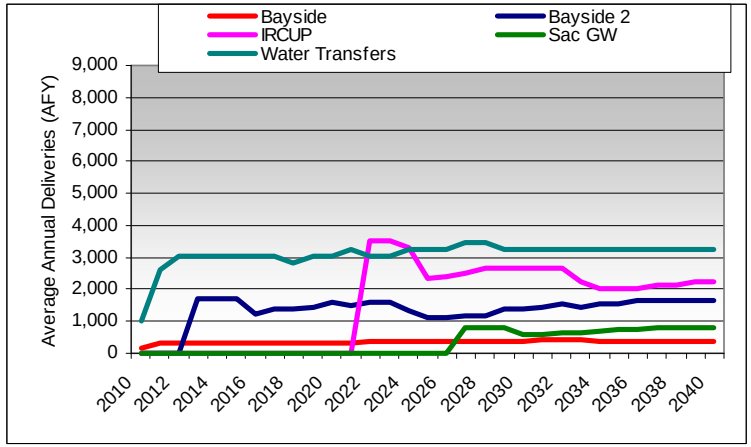


Figure 8-4: Average Annual Supplemental Supply Deliveries, Portfolio A

8.2.2 Portfolio A2

Portfolio A2 consists of 15% rationing, Level D conservation (39 MGD), Level 2 recycling (5 MGD) and water transfers, Bayside Phase 2 and the IRCUP/San Joaquin Groundwater Banking project.

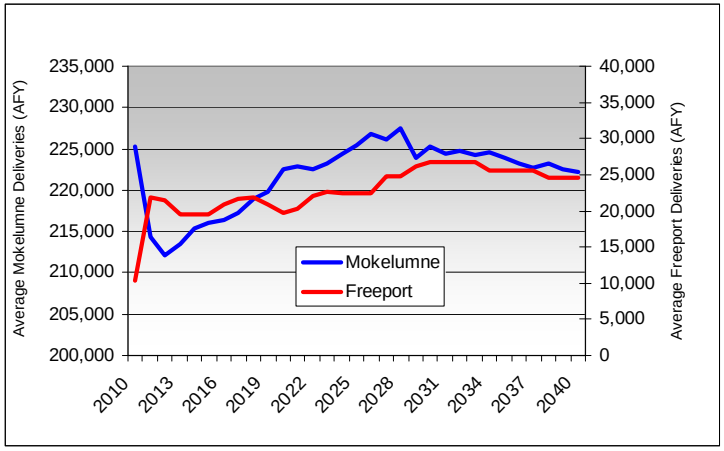


Figure 8-5: Average Annual Mokelumne and Freeport Deliveries, Portfolio A2

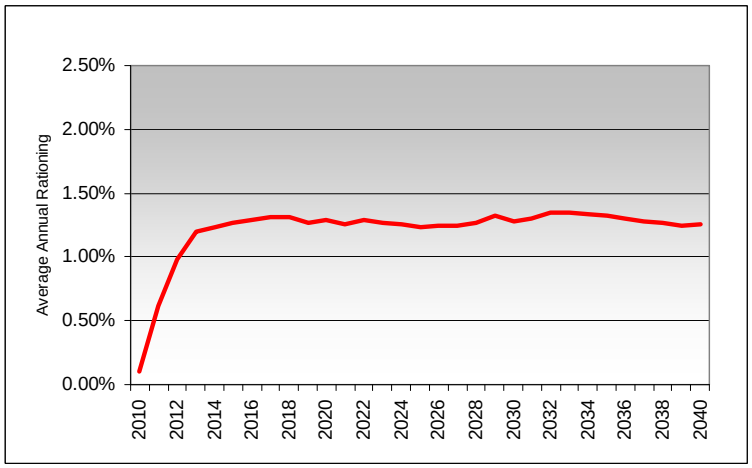


Figure 8-6: Average Annual Rationing, Portfolio A2

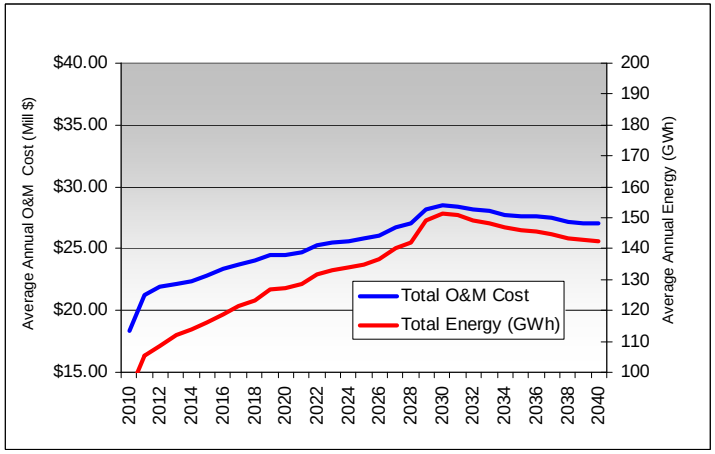


Figure 8-7: Average Annual O&M and Energy, Portfolio A2

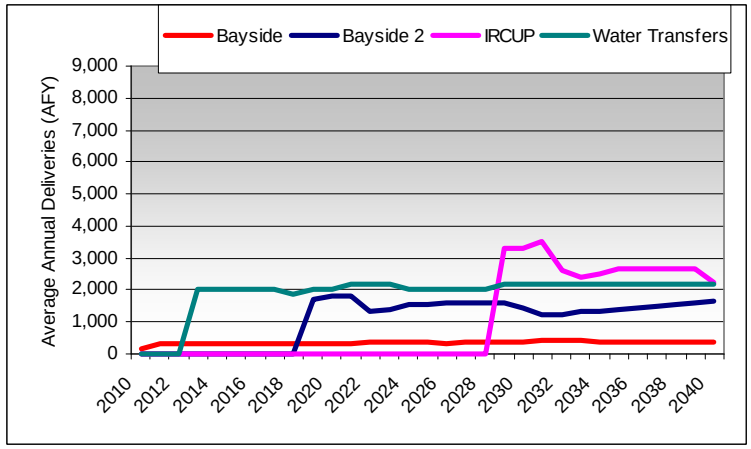


Figure 8-8: Average Annual Supplemental Supply Deliveries, Portfolio A2

8.2.3 Portfolio A3

Portfolio A3 consists of 20% rationing, Level D conservation (39 MGD), Level 2 recycling (5 MGD), water transfers, and the Bayside Phase 2 project.

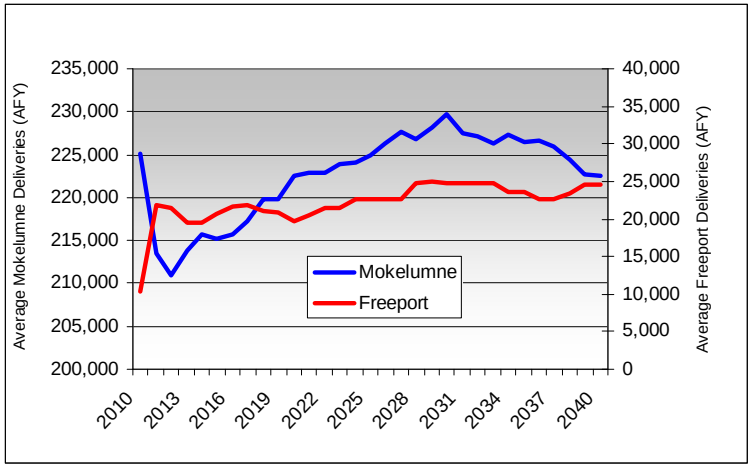


Figure 8-9: Average Annual Mokelumne and Freeport Deliveries, Portfolio A3

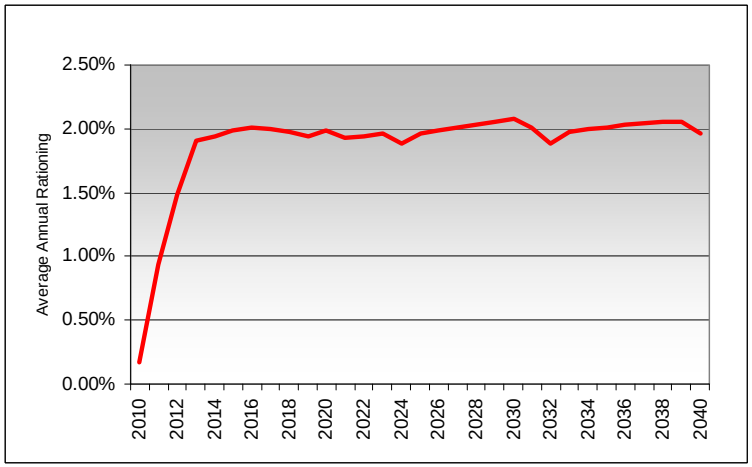


Figure 8-10: Average Annual Rationing, Portfolio A3

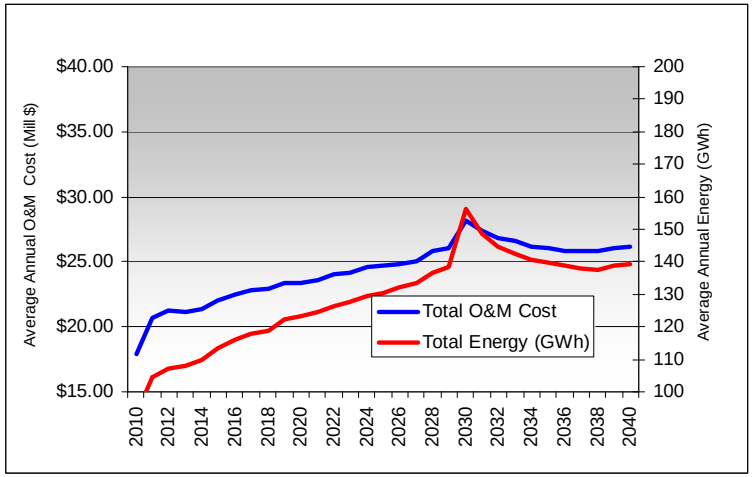


Figure 8-11: Average Annual O&M and Energy, Portfolio A3

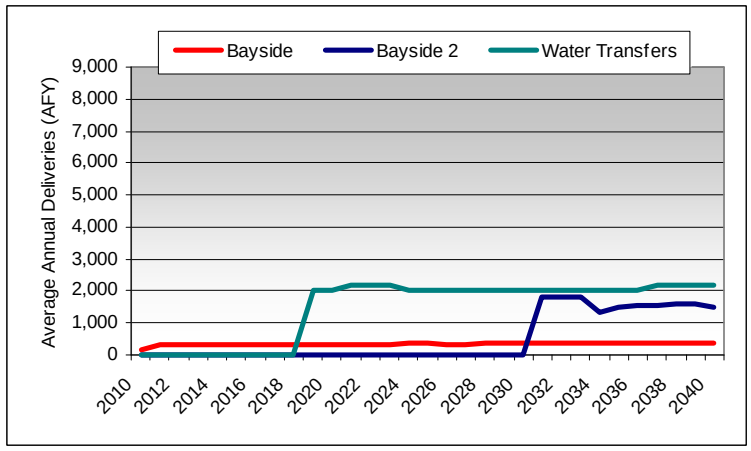


Figure 8-12: Average Annual Supplemental Supply Deliveries, Portfolio A3

8.2.4 Portfolio B

Portfolio B consists of 10% rationing, Level C conservation (37 MGD), Level 2 recycling (5 MGD) and the Sacramento Groundwater Banking project, water transfers, Regional Desalination project, IRCUP/San Joaquin Groundwater Banking project, and the Enlarged Lower Bear Reservoir project.

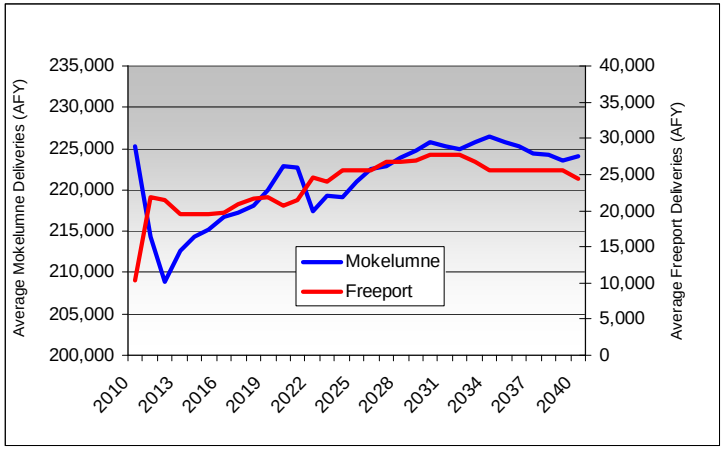


Figure 8-13: Average Annual Mokelumne and Freeport Deliveries, Portfolio B

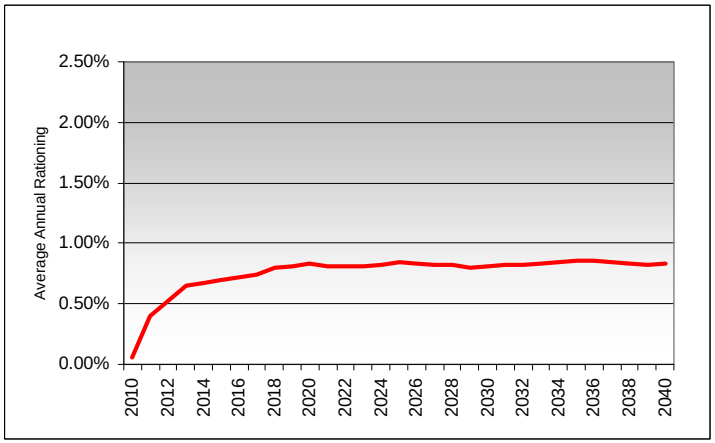


Figure 8-14: Average Annual Rationing, Portfolio B

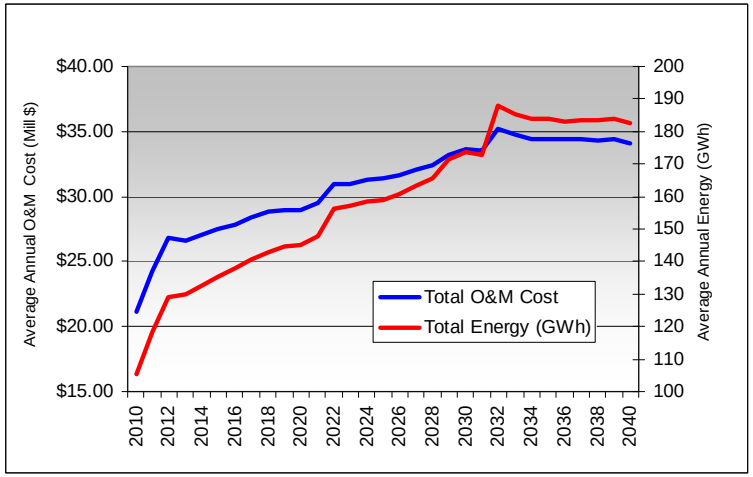


Figure 8-15: Average Annual O&M and Energy, Portfolio B

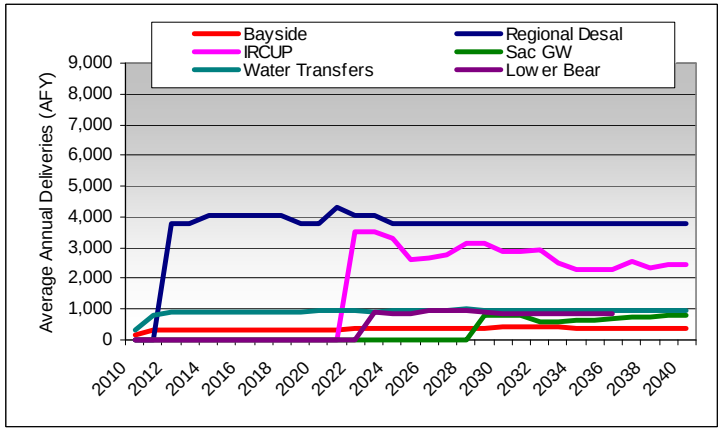


Figure 8-16: Average Annual Supplemental Supply Deliveries, Portfolio B

8.2.5 Portfolio B2

Portfolio B2 consists of 15% rationing, Level C conservation (37 MGD), Level 2 recycling (5 MGD), water transfers, the Regional Desalination project, and the IRCUP/San Joaquin Groundwater Banking project.

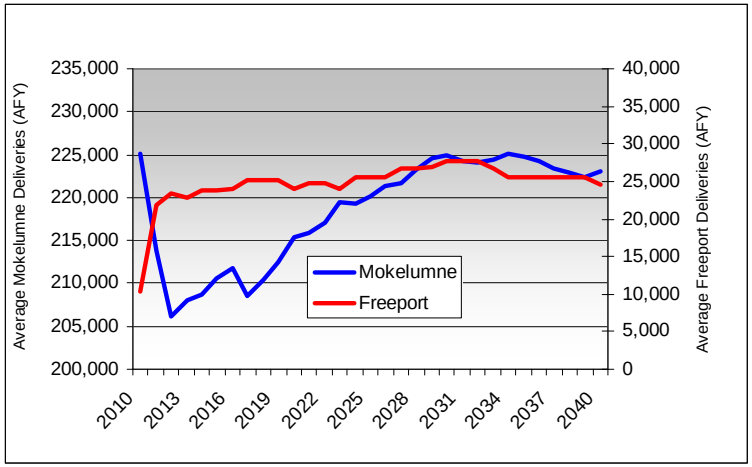


Figure 8-17: Average Annual Mokelumne and Freeport Deliveries, Portfolio B2

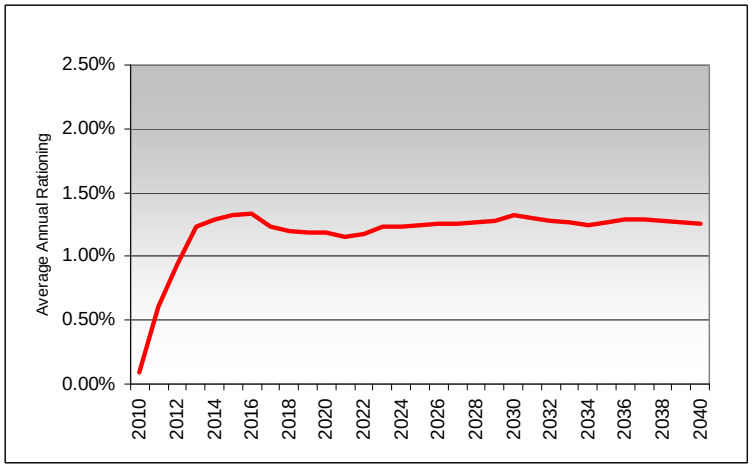


Figure 8-18: Average Annual Rationing, Portfolio B2

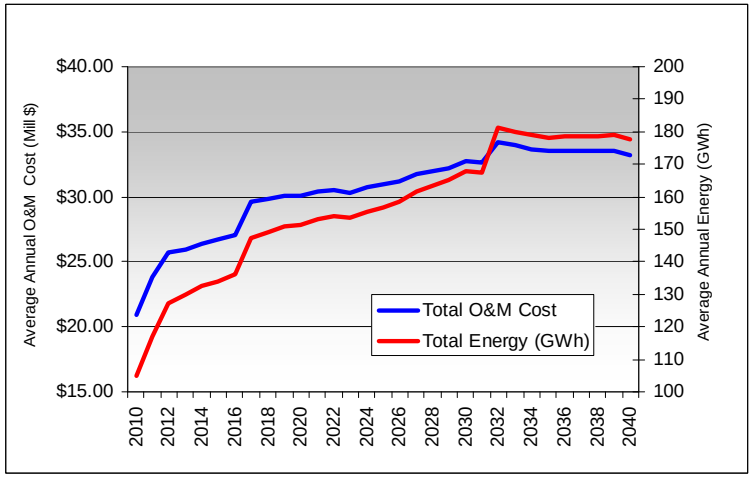


Figure 8-19: Average Annual O&M and Energy, Portfolio B2

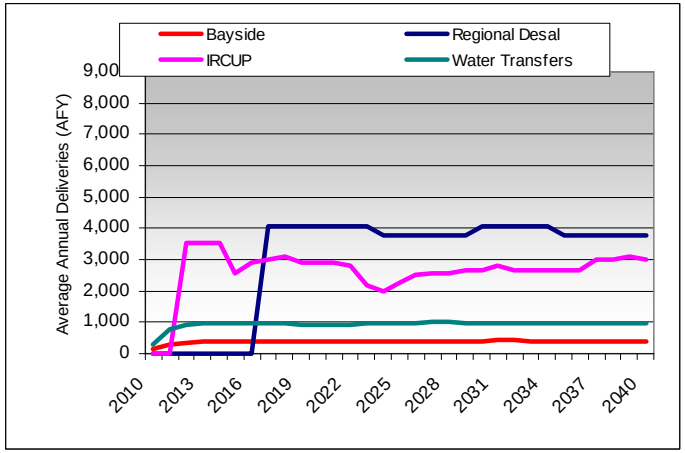


Figure 8-20: Average Annual Supplemental Supply Deliveries, Portfolio B2

8.2.6 Portfolio B3

Portfolio B3 consists of 20% rationing, Level C conservation (37 MGD), Level 2 recycling (5 MGD), and the Regional Desalination project.

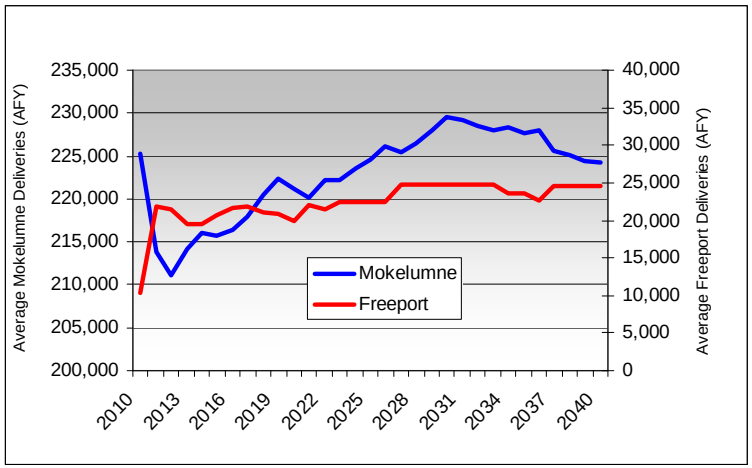


Figure 8-21: Average Annual Mokelumne and Freeport Deliveries, Portfolio B3

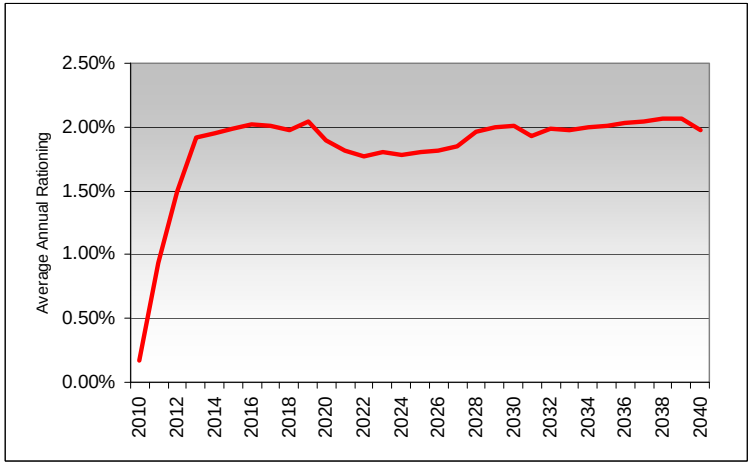


Figure 8-22: Average Annual Rationing, Portfolio B3

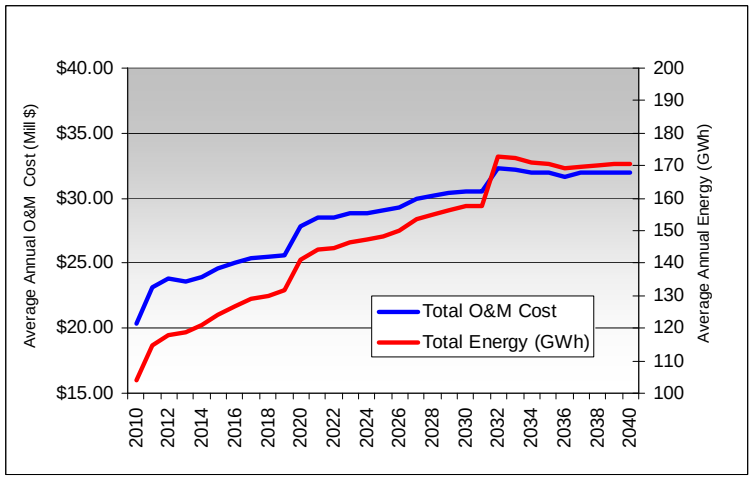


Figure 8-23: Average Annual O&M and Energy, Portfolio B3

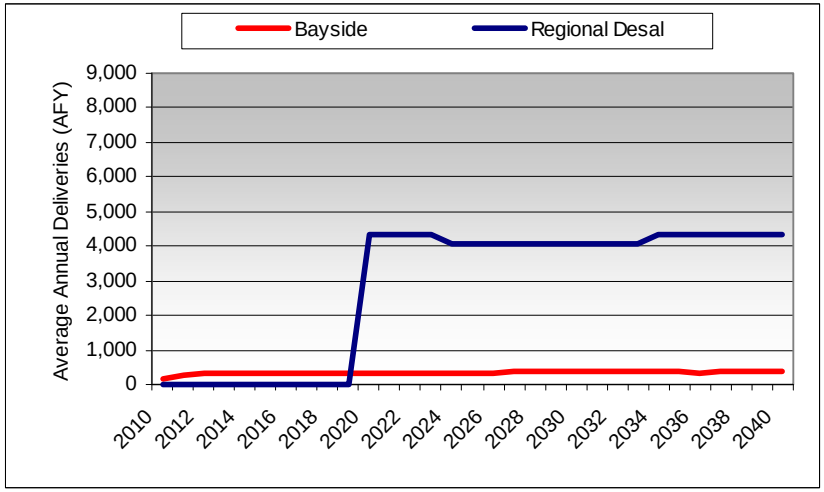


Figure 8-24: Average Annual Supplemental Supply Deliveries, Portfolio B3

8.2.7 Portfolio C

Portfolio C consists of 15% rationing, Level C conservation (37 MGD), Level 2 recycling (5 MGD) and the Buckhorn Reservoir project.

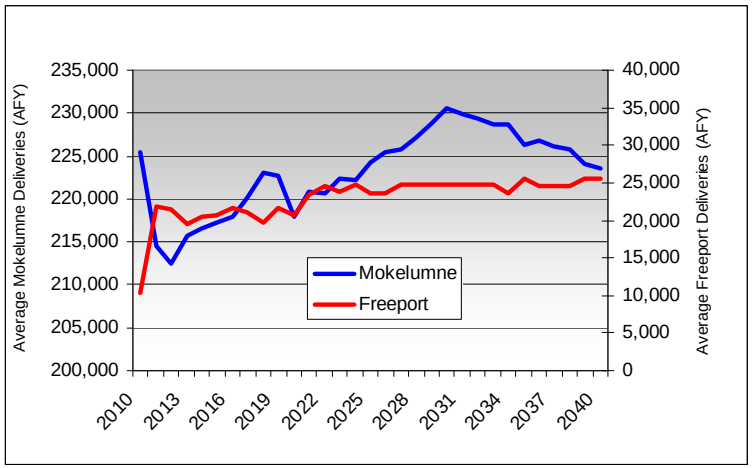


Figure 8-25: Average Annual Mokelumne and Freeport Deliveries, Portfolio C

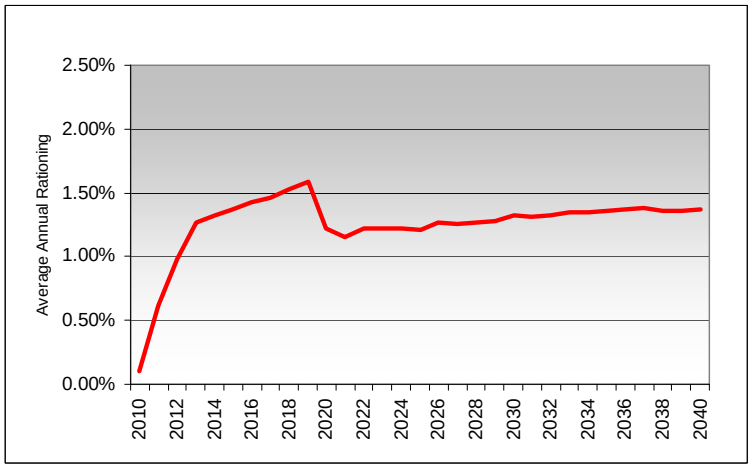


Figure 8-26: Average Annual Rationing, Portfolio C

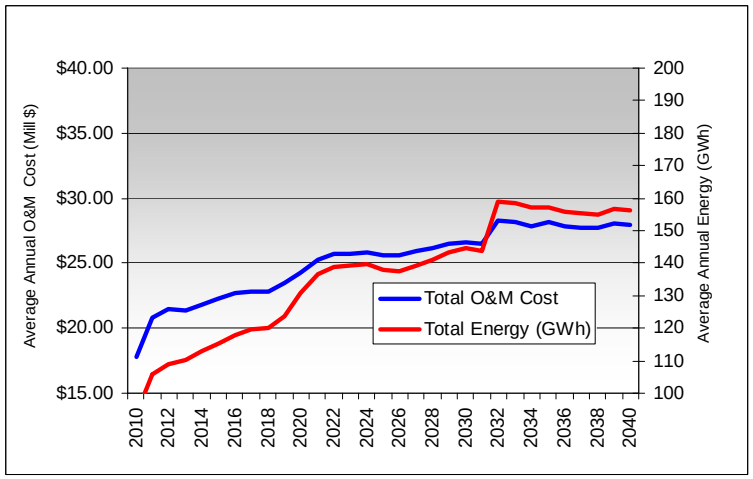


Figure 8-27: Average Annual O&M and Energy, Portfolio C

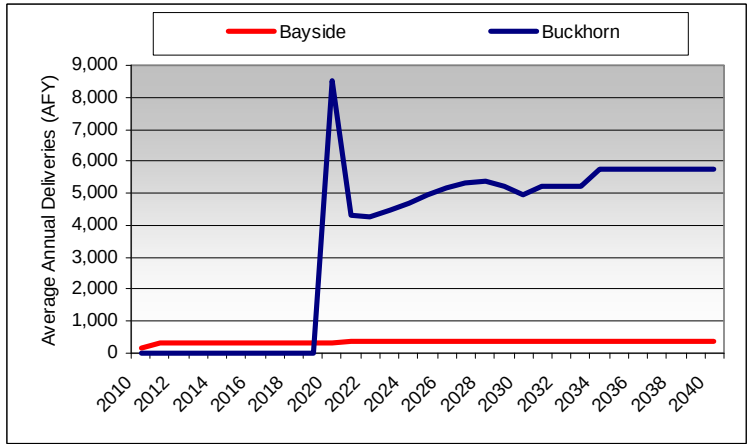


Figure 8-28: Average Annual Supplemental Supply Deliveries, Portfolio C

8.2.8 Portfolio D

Portfolio D consists of 15% rationing, Level C conservation (37 MGD), Level 2 recycling (5 MGD), Bayside Phase 2 and the Enlarged Pardee Reservoir project.

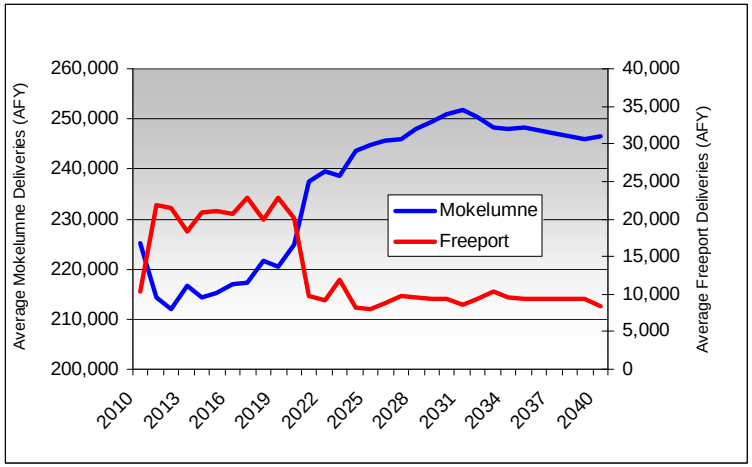


Figure 8-29: Average Annual Mokelumne and Freeport Deliveries, Portfolio D

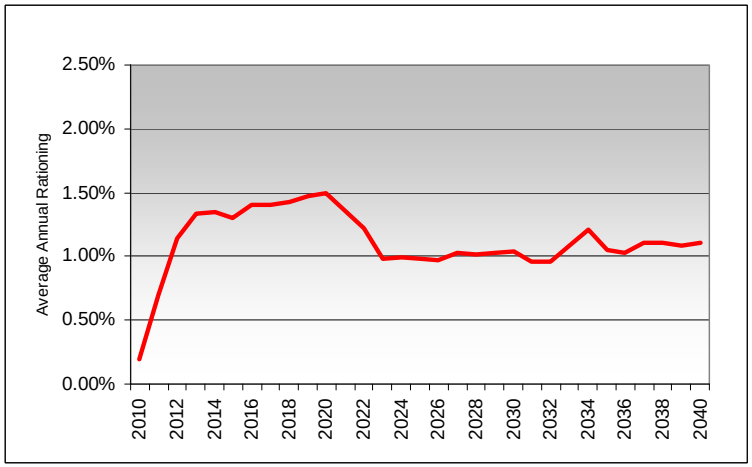


Figure 8-30: Average Annual Rationing, Portfolio D

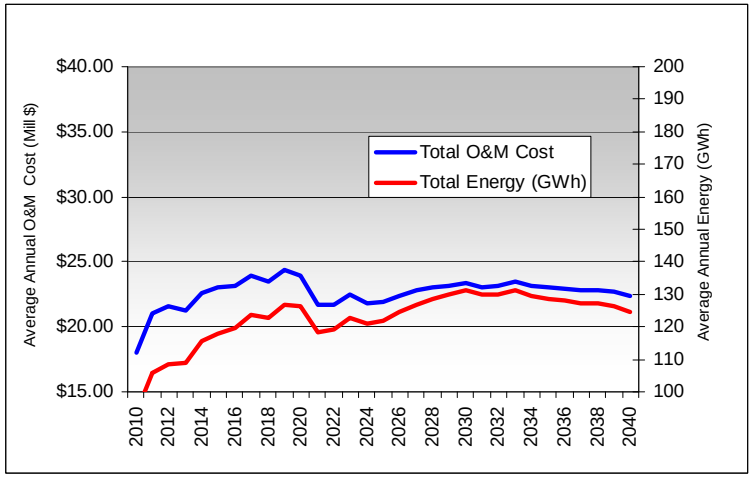


Figure 8-31: Average Annual O&M and Energy, Portfolio D

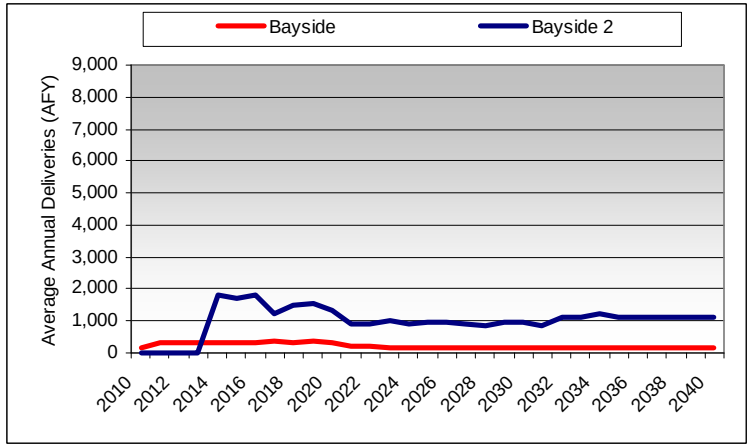


Figure 8-32: Average Annual Supplemental Supply Deliveries, Portfolio D

8.2.9 Portfolio D2

Portfolio D2 consists of 15% rationing, Level C conservation (37 MGD), Level 2 recycling (5 MGD), Bayside Phase 2 and the Enlarged Pardee Reservoir project, similar to Portfolio D, except under this portfolio, the trigger implementing supplemental supplies changes from 500 TAF to 670 TAF.

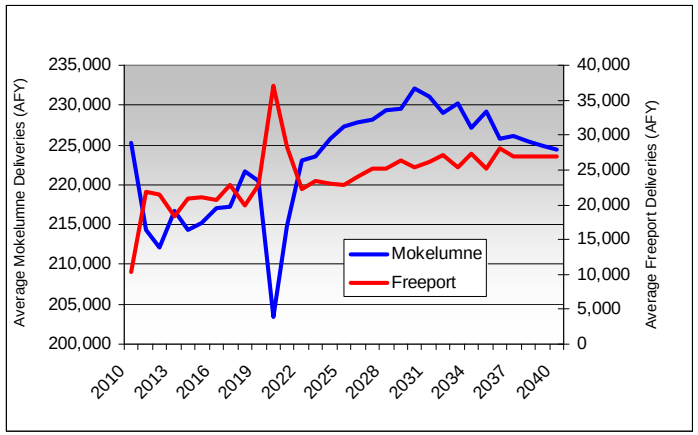


Figure 8-33: Average Annual Mokelumne and Freeport Deliveries, Portfolio D2

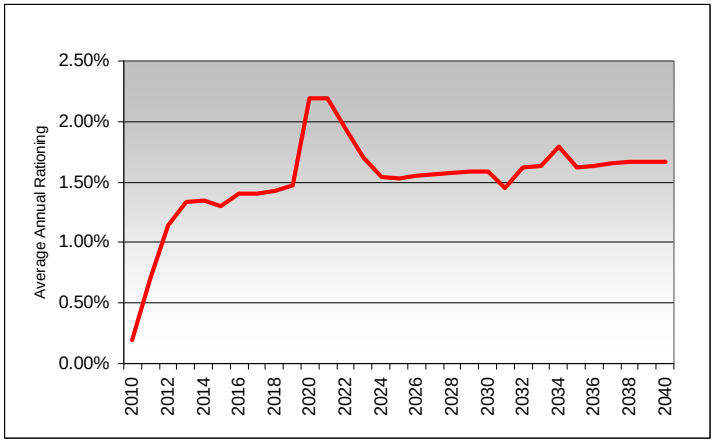


Figure 8-34: Average Annual Rationing, Portfolio D2

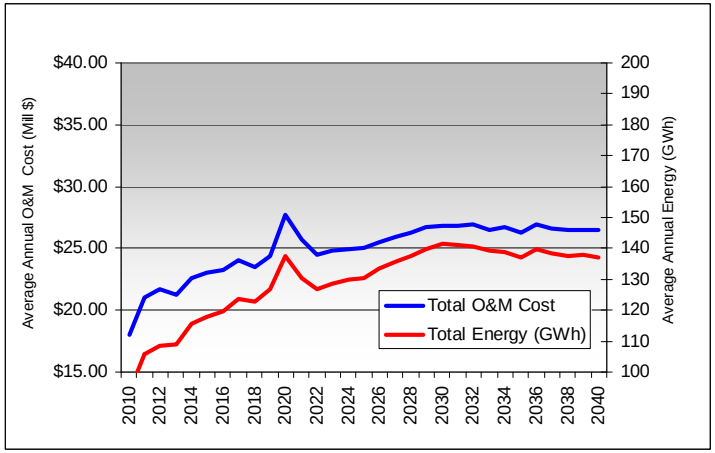


Figure 8-35: Average Annual O&M and Energy, Portfolio D2

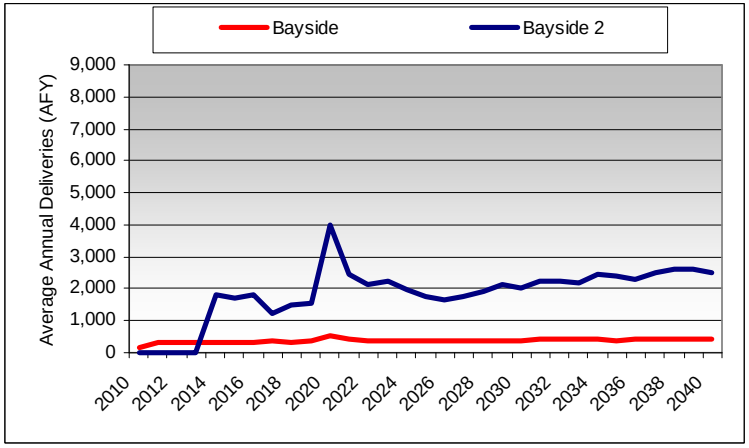


Figure 8-36: Average Annual Supplemental Supply Deliveries, Portfolio D2

8.2.10 Portfolio E

Portfolio E consists of 10% rationing, Level C conservation (37 MGD), Level 3 recycling (11 MGD) and the Sacramento Groundwater Banking project, water transfers, and the Bayside Phase 2 project.

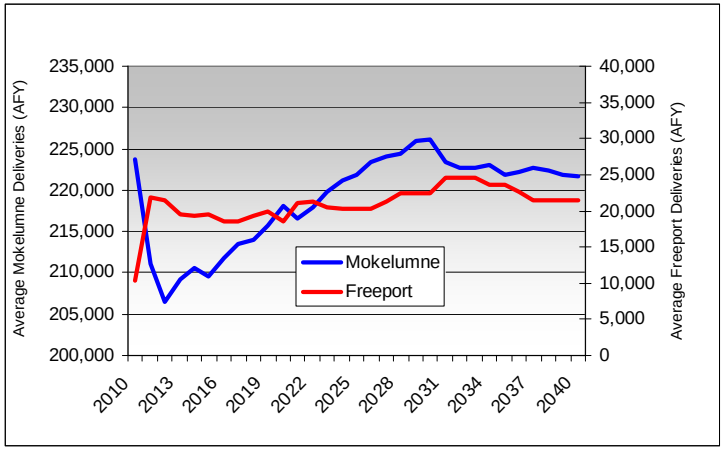


Figure 8-37: Average Annual Mokelumne and Freeport Deliveries, Portfolio E

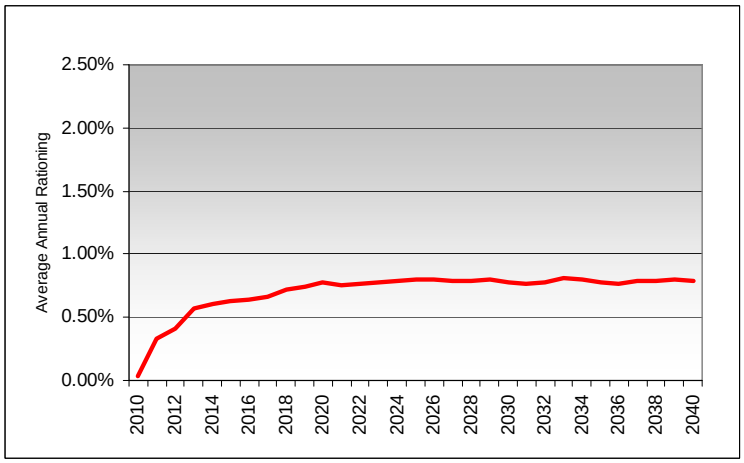


Figure 8-38: Average Annual Rationing, Portfolio E

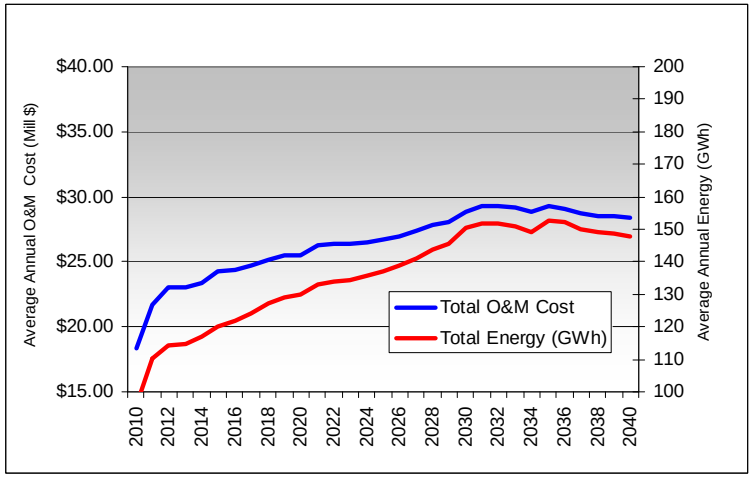


Figure 8-39: Average Annual O&M and Energy, Portfolio E

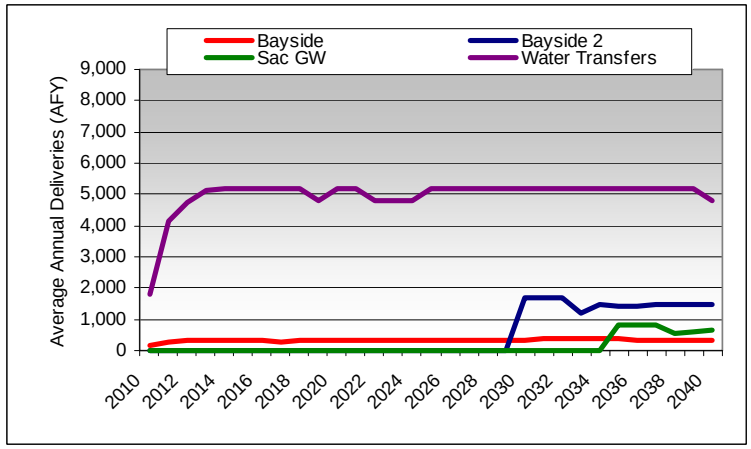


Figure 8-40: Average Annual Supplemental Supply Deliveries, Portfolio E

8.2.11 Portfolio E2

Portfolio E2 consists of 15% rationing, Level C conservation (37 MGD), Level 3 recycling (11 MGD) and the Sacramento Groundwater Banking project, water transfers, and the Bayside Phase 2 project.

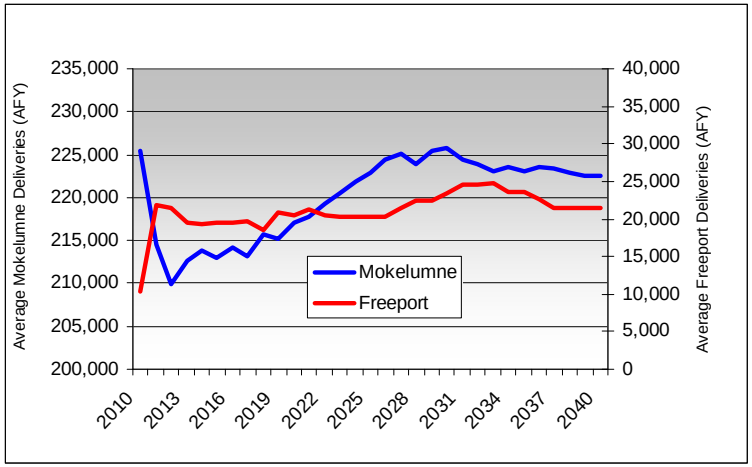


Figure 8-41: Average Annual Mokelumne and Freeport Deliveries, Portfolio E2

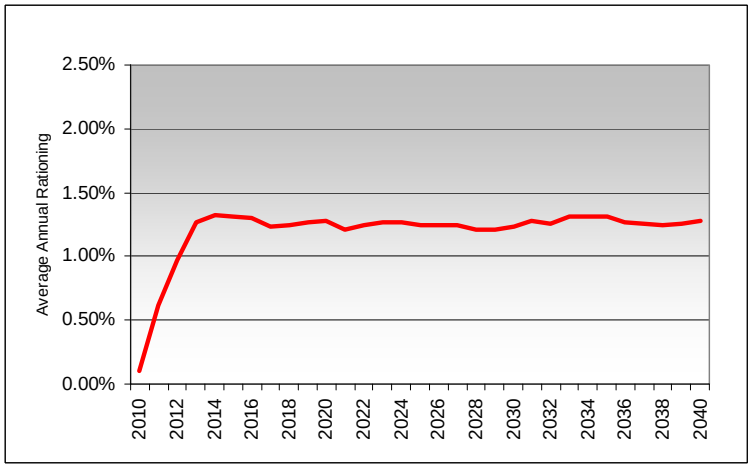


Figure 8-42: Average Annual Rationing, Portfolio E2

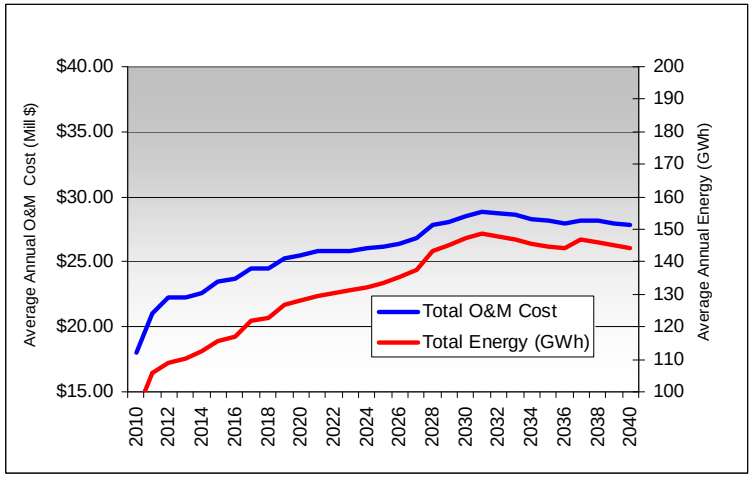


Figure 8-43: Average Annual O&M and Energy, Portfolio E2

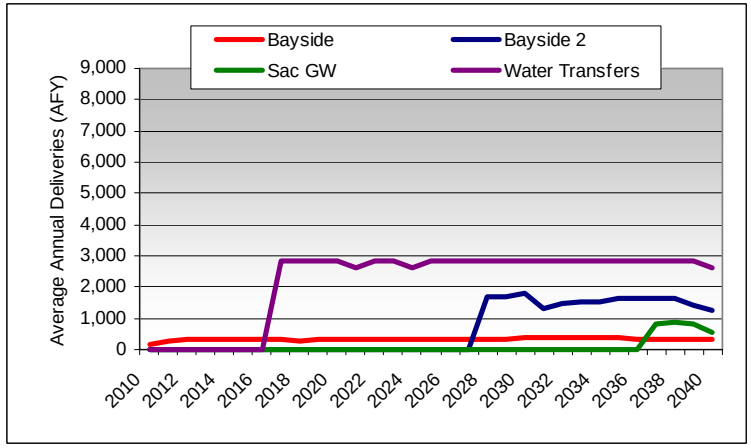


Figure 8-44: Average Annual Supplemental Supply Deliveries, Portfolio E2

8.2.12 Portfolio E3

Portfolio E3 consists of 20% rationing, Level C conservation (37 MGD), Level 3 recycling (11 MGD), water transfers, and the Bayside Phase 2 project.

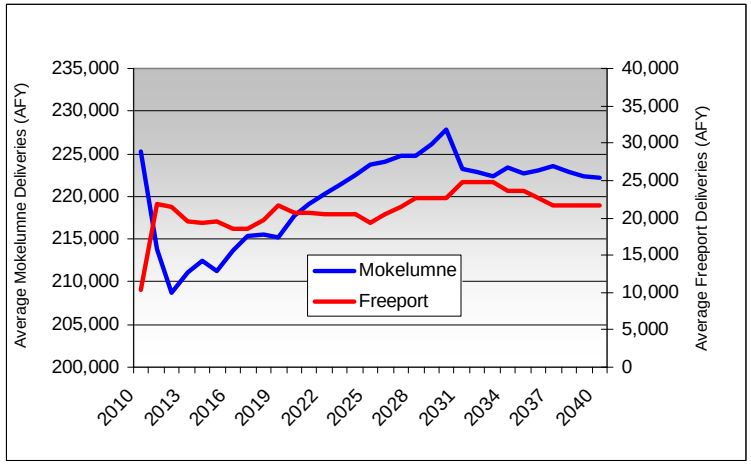


Figure 8-45: Average Annual Mokelumne and Freeport Deliveries, Portfolio E3

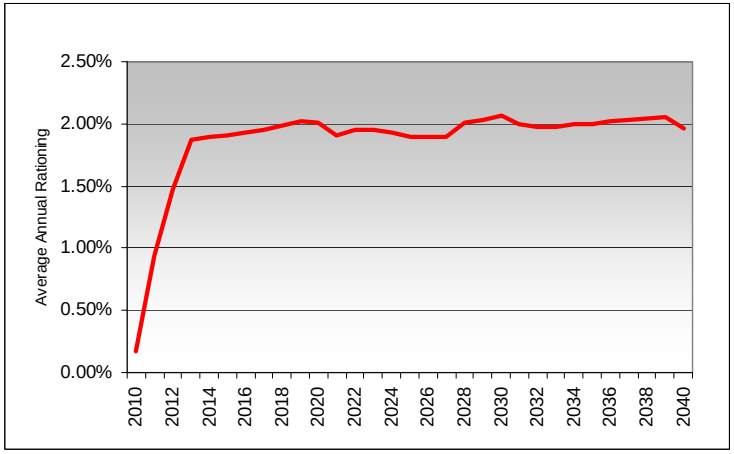


Figure 8-46: Average Annual Rationing, Portfolio E3

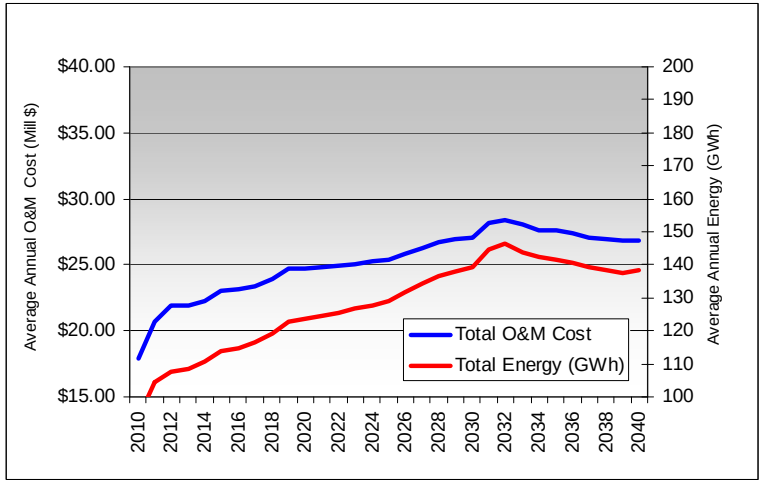


Figure 8-47: Average Annual O&M and Energy, Portfolio E3

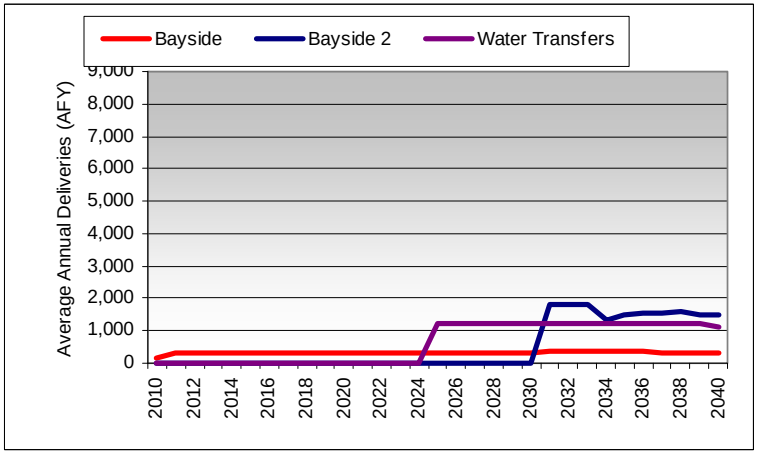


Figure 8-48: Average Annual Supplemental Supply Deliveries, Portfolio E3

8.2.13 Preferred Portfolio

The Preferred Portfolio, as modeled, consists of 10% rationing, Level D conservation (39 MGD), Level 3 recycling (11 MGD) and the Sacramento Groundwater Banking project, water transfers, Bayside Phase 2 and Regional Desalination project. The results presented here assume the revised unadjusted District-wide 2040 demand projection of 312 MGD.

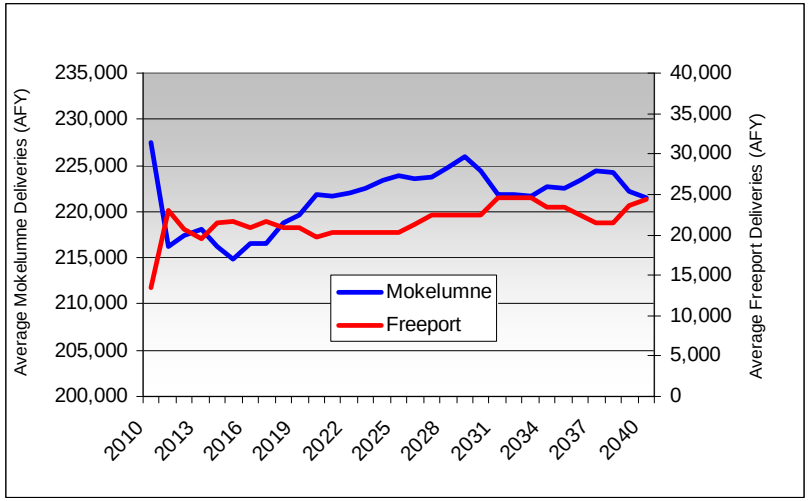


Figure 8-49: Average Annual Mokelumne and Freeport Deliveries, Preferred Portfolio

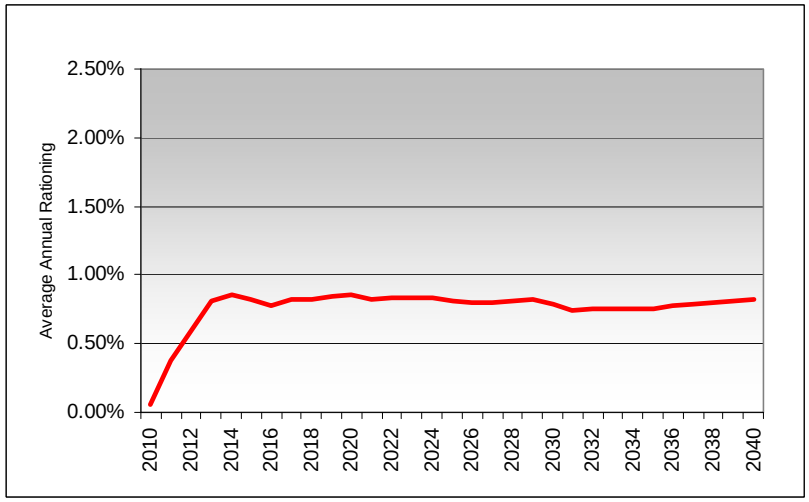


Figure 8-50: Average Annual Rationing, Preferred Portfolio

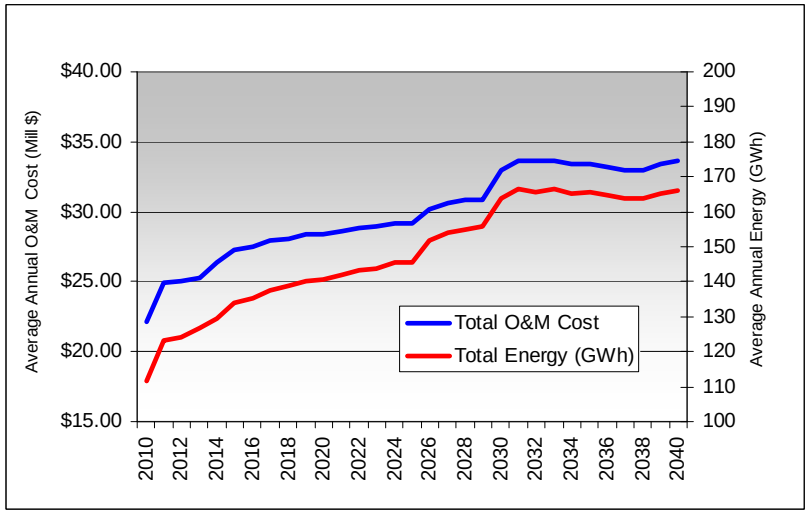


Figure 8-51: Average Annual O&M and Energy, Preferred Portfolio

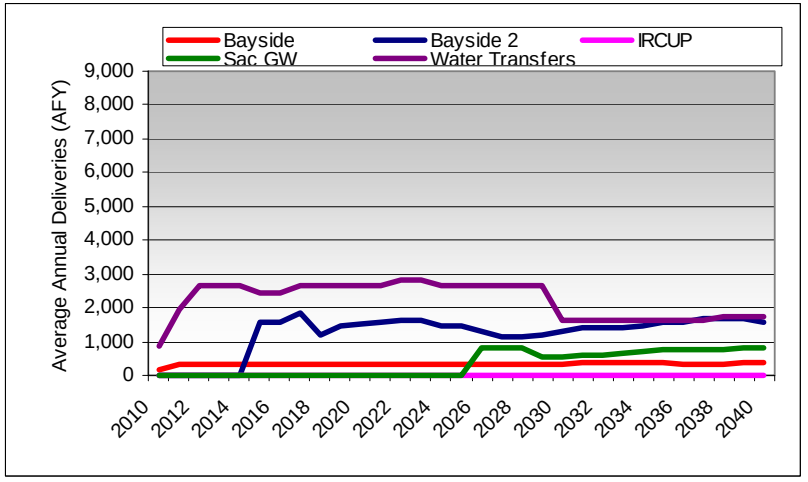


Figure 8-52: Average Annual Supplemental Supply Deliveries, Preferred Portfolio

8.3 Modeling to Support Environmental Analysis

8.3.1 Preferred Portfolio Environmental Results

Additional modeling was performed on the Preferred Portfolio in order to better assess the portfolio's environmental impacts on Mokelumne River flows downstream of Camanche Reservoir. The W-E model calculates monthly flows to the Delta, JSA fish flow classifications for two periods each year, and releases from Camanche Reservoir. This information is calculated within EBMUDSIM and written to an output file outside the WEAP platform. In order to capture this information for the portfolio environmental analysis, the Preferred Portfolio was simulated using FLOD modeling at the 2010, 2015, 2020, 2025, 2030, and 2040 levels of development (LOD) for the revised unadjusted District-wide 2040 demand of 312 MGD. Each LOD represented a snapshot of how the portfolio might affect downstream Mokelumne River flows given historic hydrology. Figures 8-53 through 8-64 graphically summarizes the results.

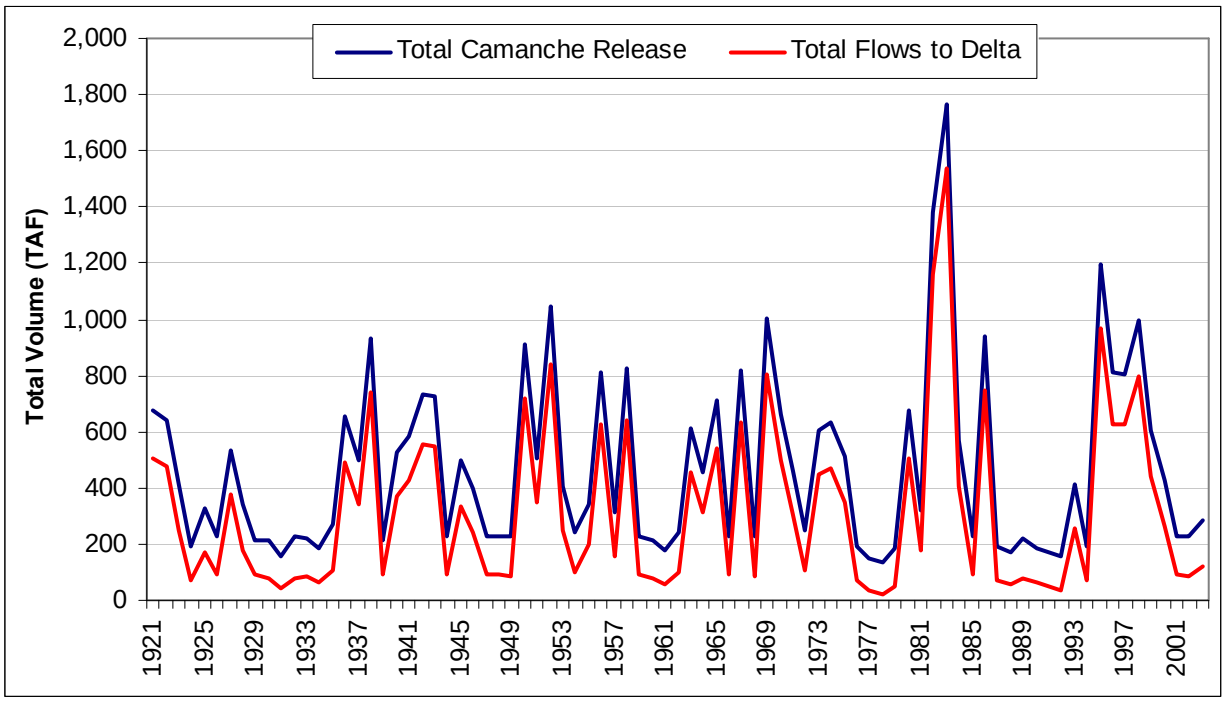


Figure 8-53: Lower Mokelumne Flows - 2010 Snapshot

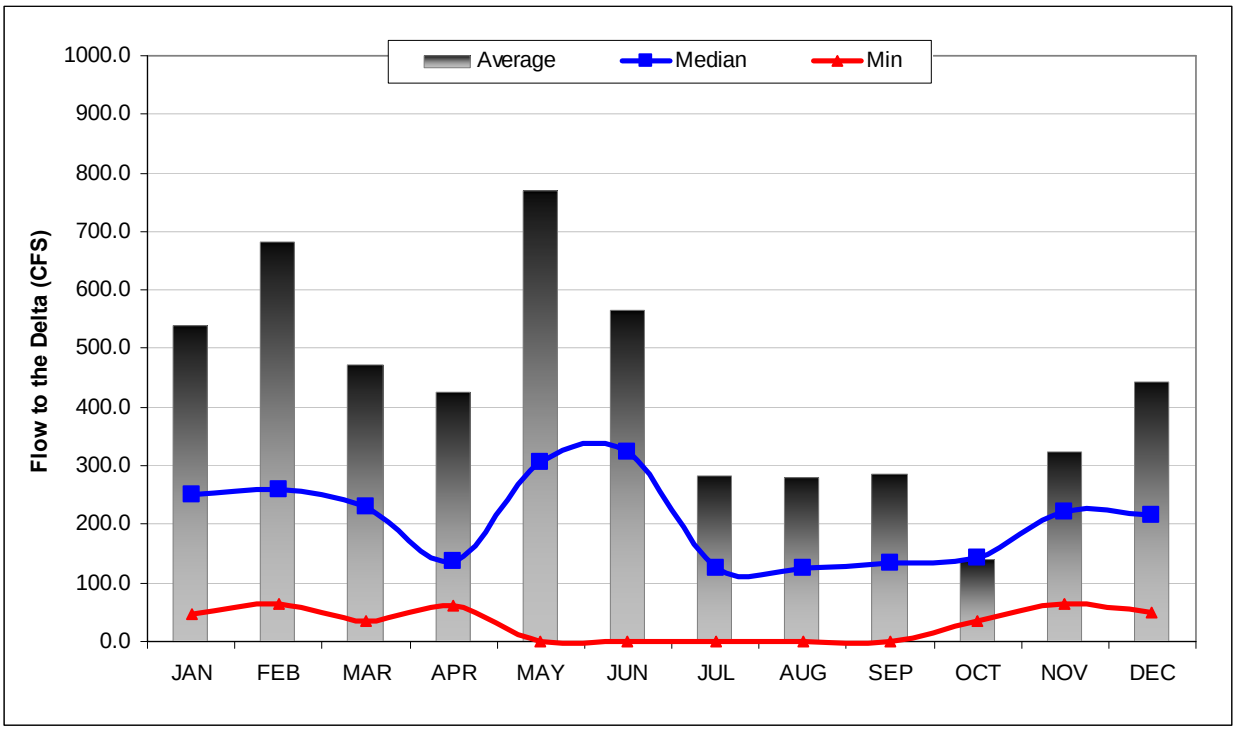


Figure 8-54: Flows to Delta - 2010 Snapshot

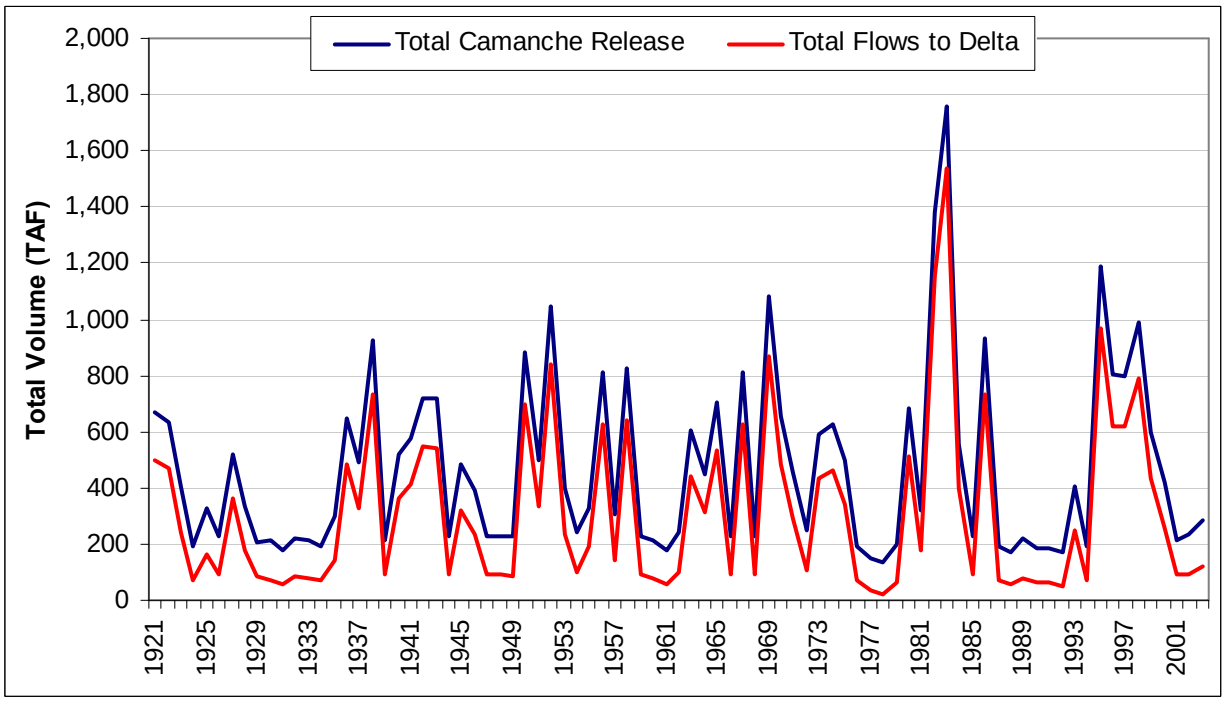


Figure 8-55: Lower Mokelumne Flows - 2015 Snapshot

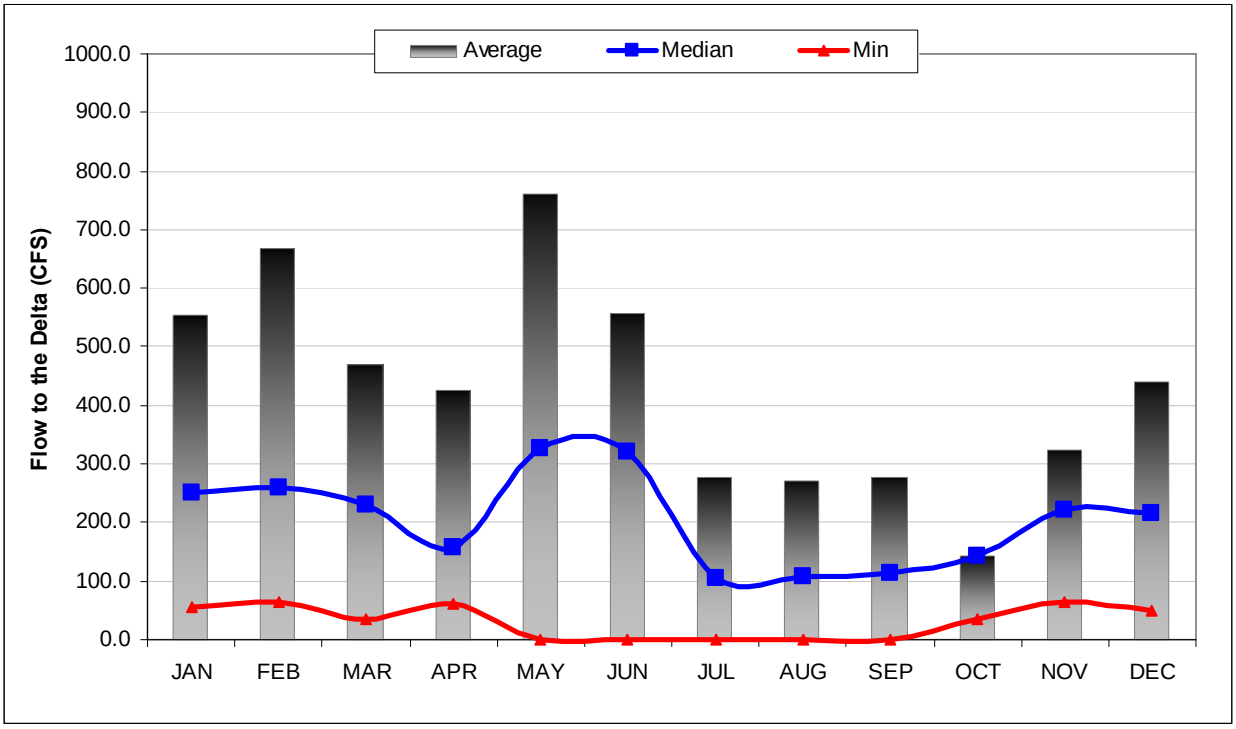


Figure 8-56: Flows to Delta - 2015 Snapshot

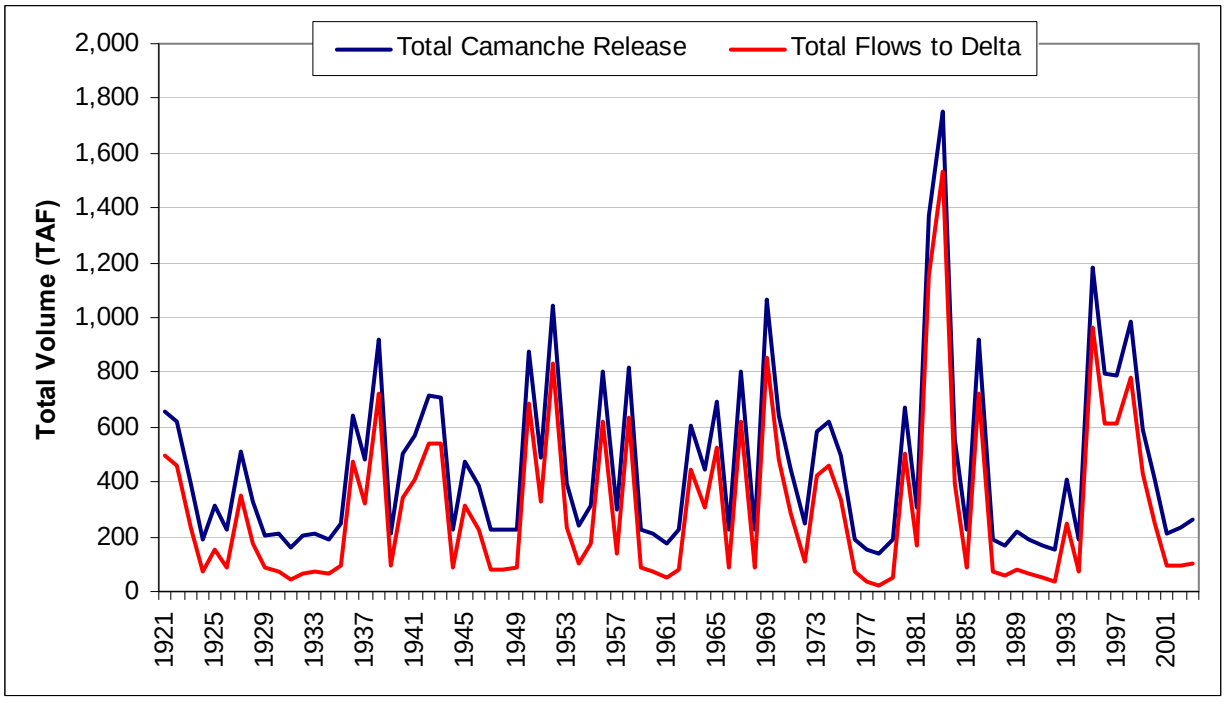


Figure 8-57: Lower Mokelumne Flows - 2020 Snapshot

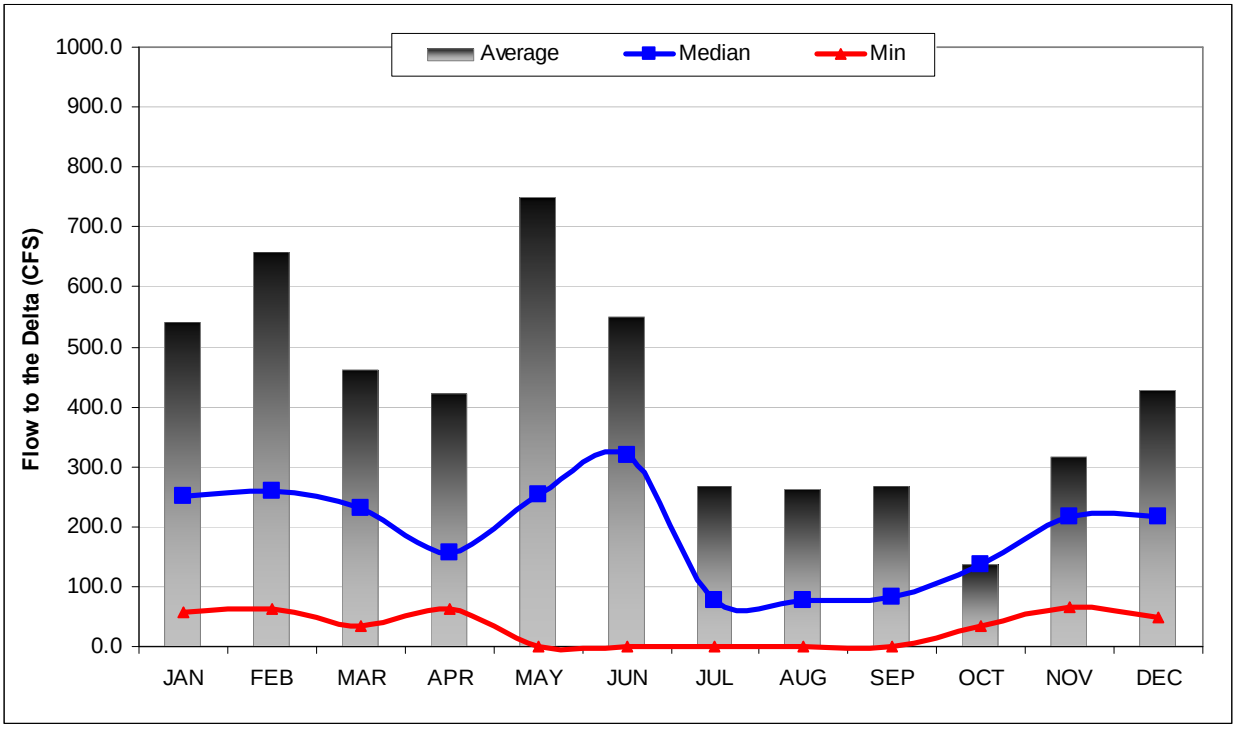


Figure 8-58: Flows to Delta - 2020 Snapshot

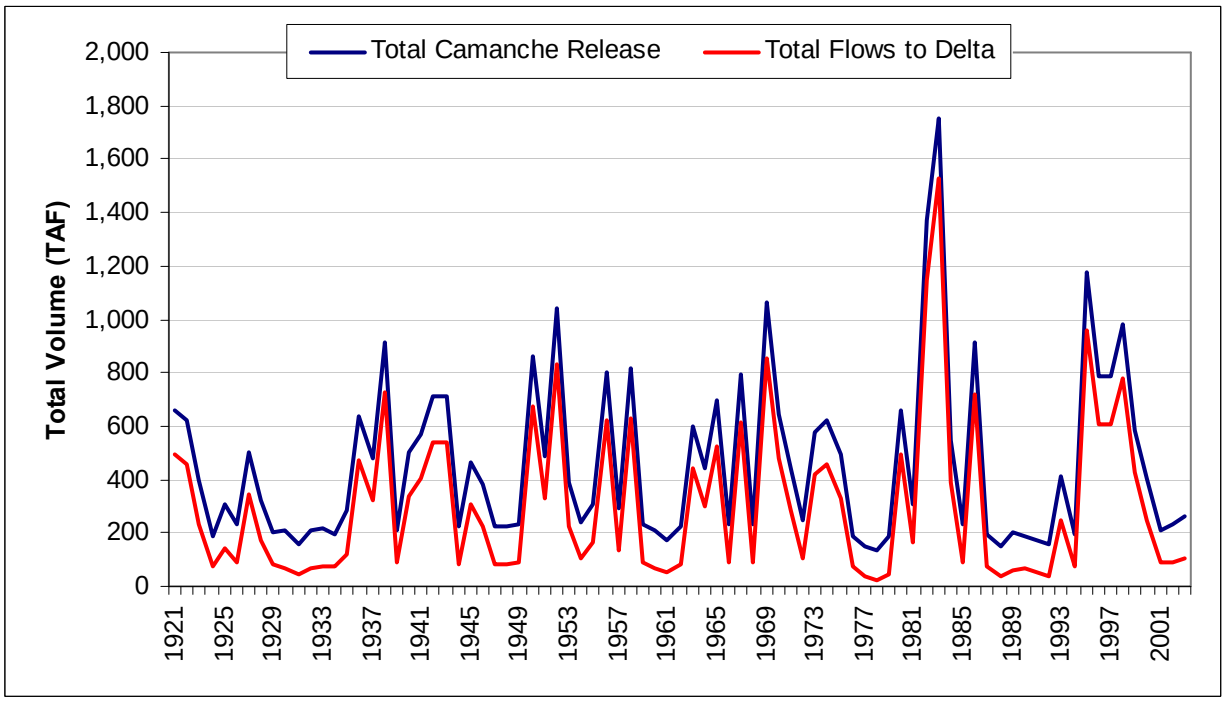


Figure 8-59: Lower Mokelumne Flows - 2025 Snapshot

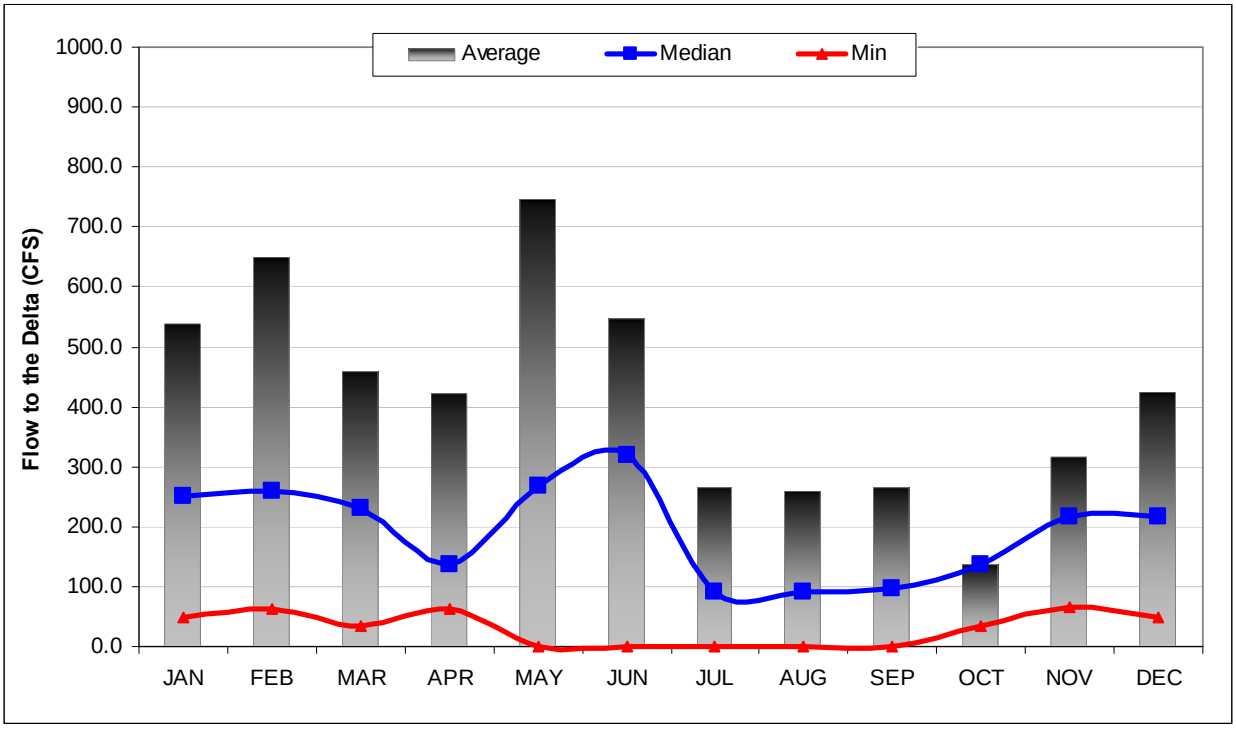


Figure 8-60: Flows to Delta - 2025 Snapshot

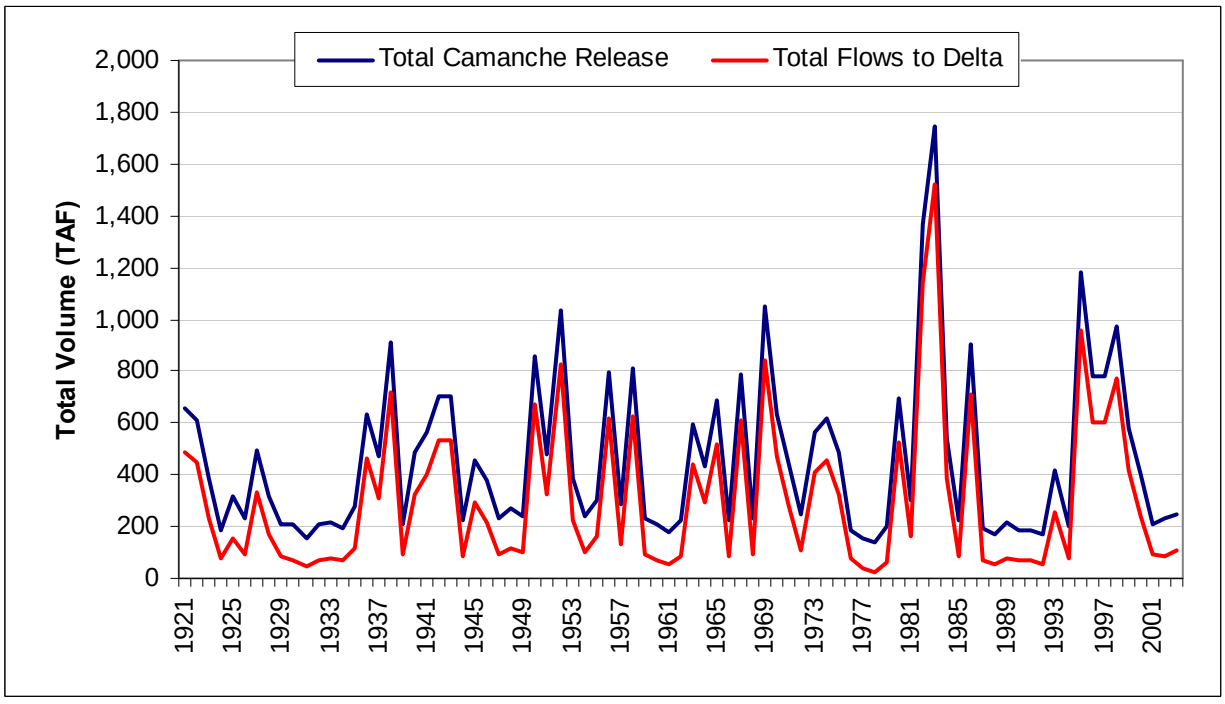


Figure 8-61: Lower Mokelumne Flows - 2030 Snapshot

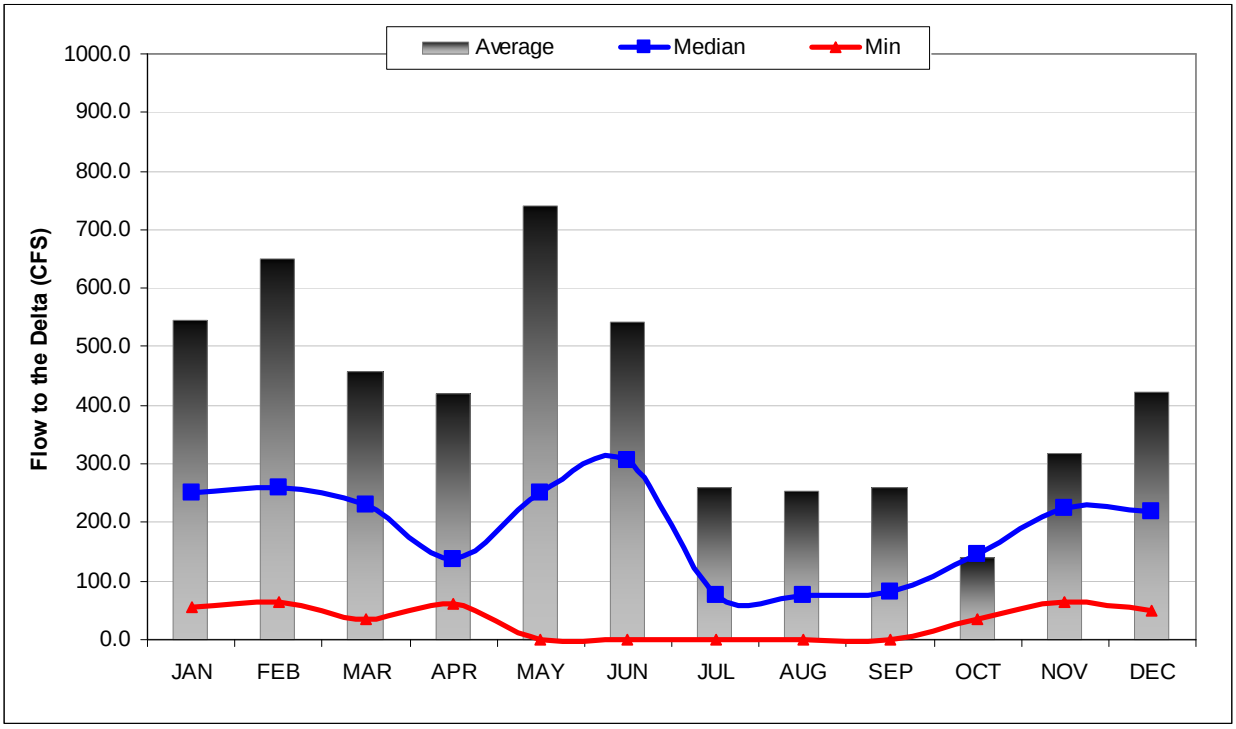


Figure 8-62: Flows to Delta - 2030 Snapshot

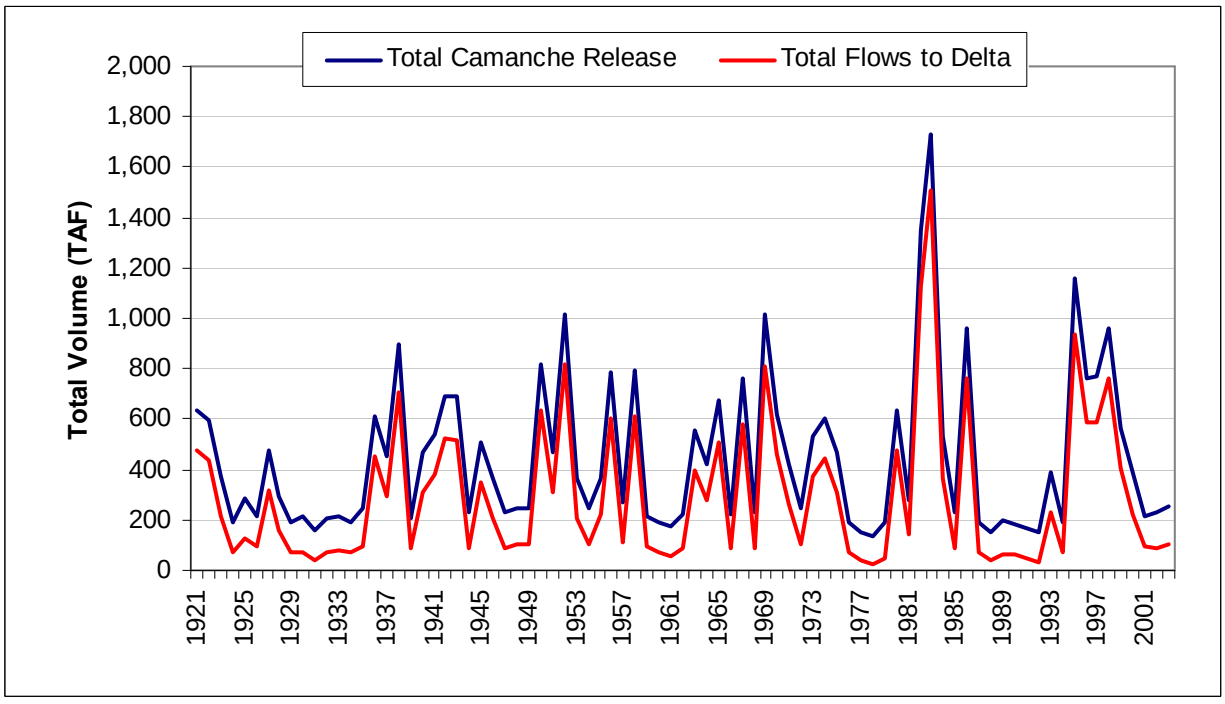


Figure 8-63: Lower Mokelumne Flows - 2040 Snapshot

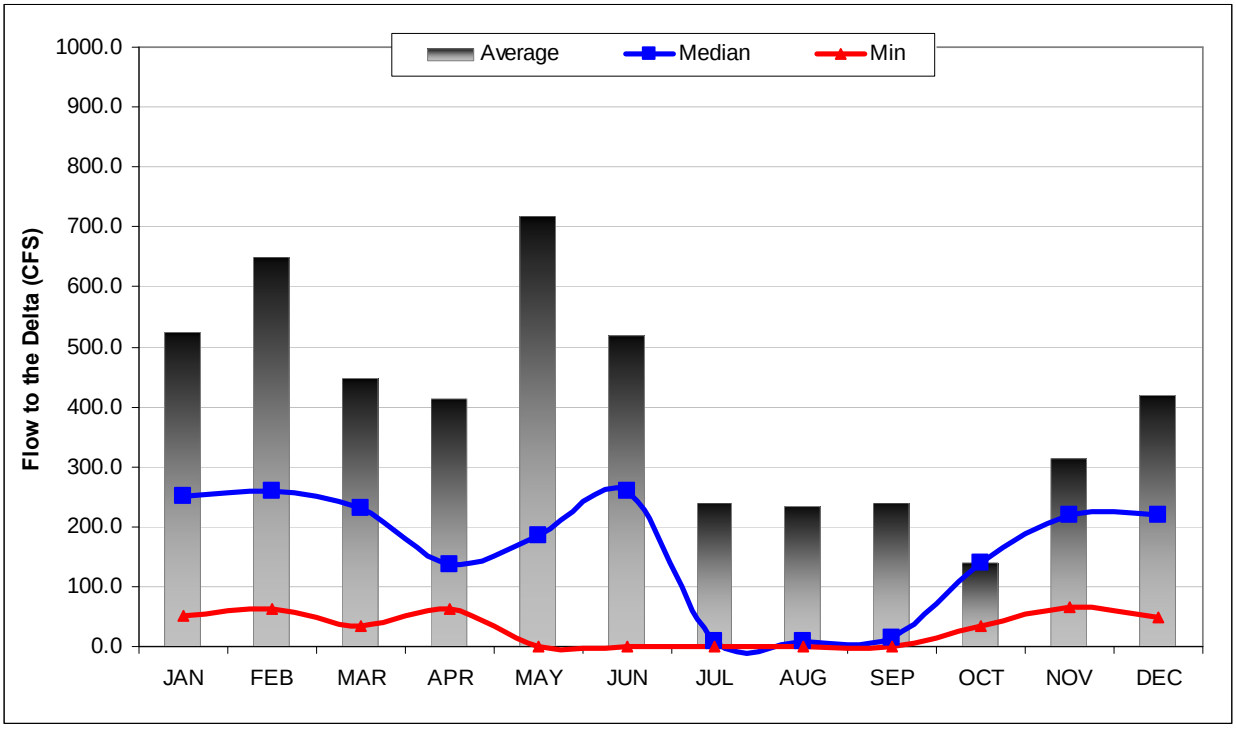


Figure 8-64: Flows to Delta - 2040 Snapshot

8.3.2 CEQA No-Action Portfolio Environmental Results

For comparison purposes, the CEQA No-Action Scenario was also simulated using FLOD modeling in a manner similar to that used for the Preferred Portfolio, as described above (including use of the revised demand projection of 312 MGD). However, the CEQA No-Action Scenario was only run at the 2040 level of development. The results are summarized graphically below.

In general, the results of the CEQA No-Action Scenario at the 2040 level of development are similar in pattern to those for the Preferred Portfolio at the 2040 level of development; however under the CEQA No-Action Scenario, less water flows to the Delta during the late spring and late fall/early winter months, and for approximately half the period simulated at the 2040 level of development, no water would be flowing to the Delta in summer months.

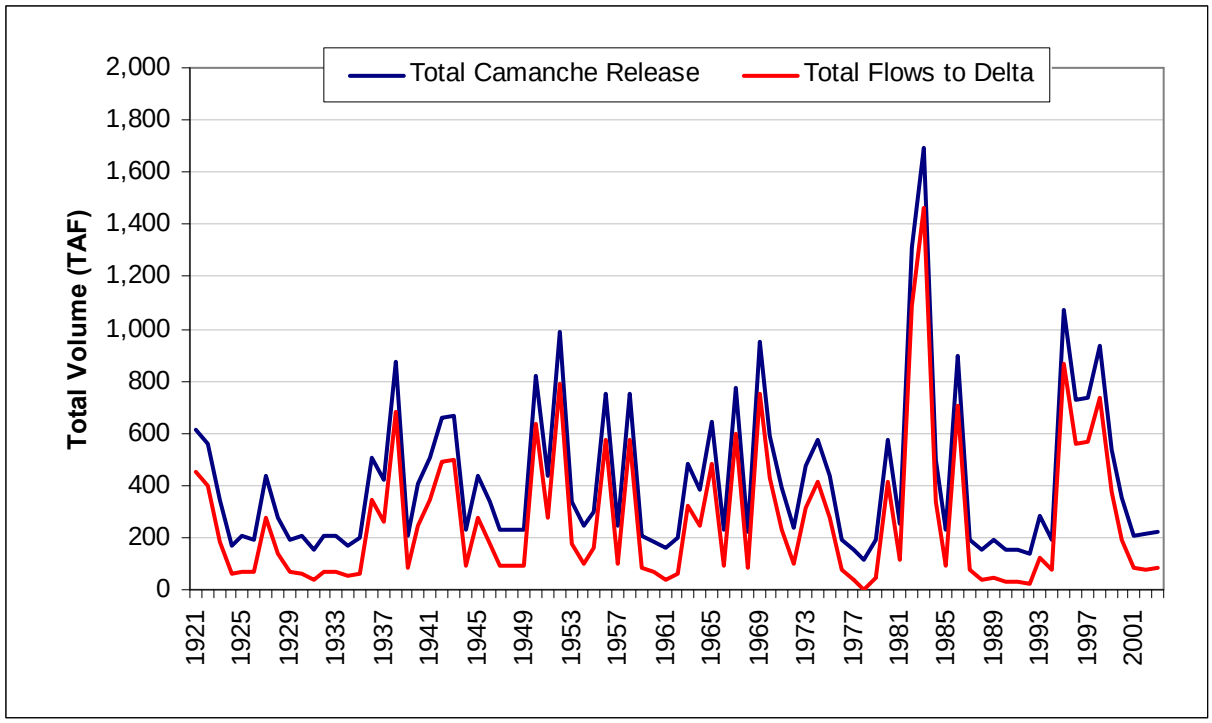


Figure 8-65: Lower Mokelumne Flows - CEQA No-Action Scenario

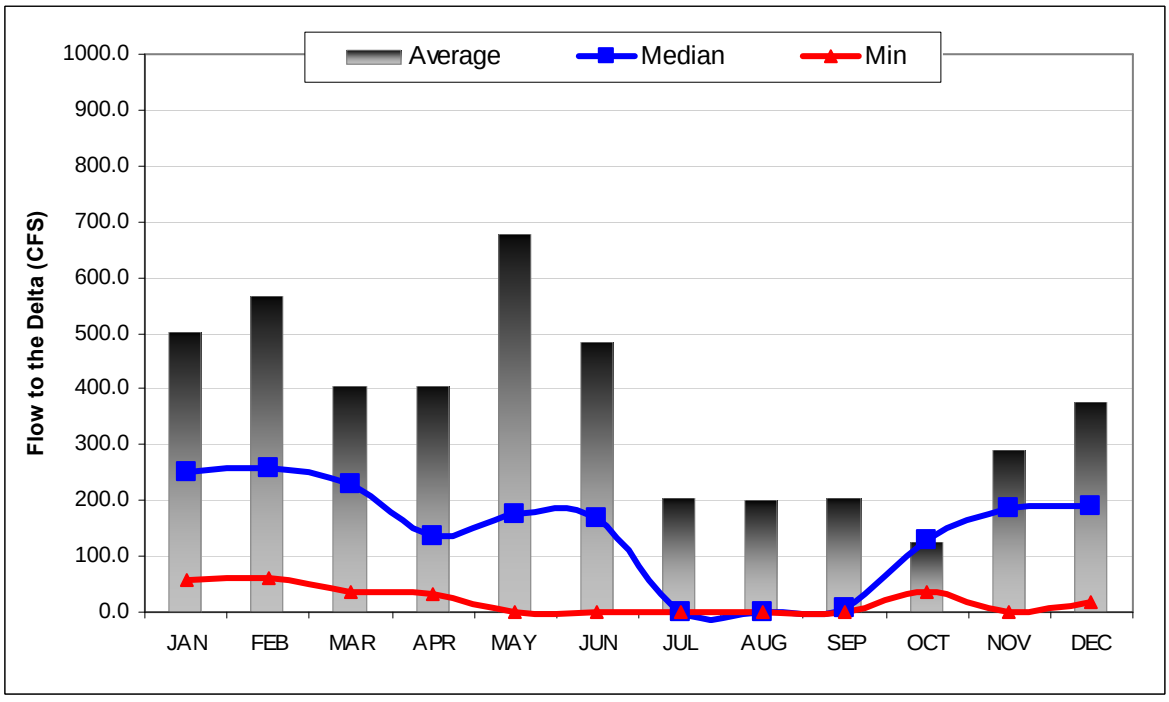


Figure 8-66: Flows to Delta - CEQA No-Action Scenario

Chapter 9 Economic Results

The economic analysis conducted as part of the WSMP 2040 combines the utility system costs discussed in Chapter 5 based on the project implementation schedule outlined in Chapter 6 with the customer costs listed in Chapter 7, and applied those costs to the hydrologic water supply model described in Chapter 8. The economic analysis then assessed the potential costs for the 2010 to 2040 period over a range of historic water conditions as simulated in the indexed sequential modeling. The net present value of the costs for each 31-year sequence summarized the total cost to EBMUD ratepayers for each of the 83 sequences.[29] These results were then used to describe a minimum, maximum and mid-range net cost for each portfolio under review.

In addition to economic costs, the greenhouse gas (GHG) emissions resulting from each portfolio were forecasted. This analysis incorporated the GHG emissions associated with material production (i.e. concrete) in addition to operational-related releases.

9.1 Shortage Cost IS Model Results

Customer shortage costs are incurred when customers are required to reduce demand in order to balance supply and demand. The frequency and extent of rationing is a function of the component selections and on-line dates for each portfolio. IS modeling was used to evaluate these costs for each portfolio, as described in Section 7.2. This section presents the quantitative shortage cost results for each portfolio from the IS modeling runs.

9.1.1 Portfolios A, A2, and A3

System rationing levels for portfolios A, A2, and A3 were set to 10%, 15%, and 20%, respectively. Portfolio water supply components are as shown in Table 4-1. Online dates are as shown in Table 6-1. Shortage cost frequency statistics for the period 2010 to 2040 are shown in Table 9-1. Histograms of the present value of shortage costs over the analysis period are shown in Figures 9-1, 9-2, and 9-3.

Table 9-1: Portfolios A, A2, and A3: Present Value of Shortage Costs for the Period 2010 to 2040 (million dollars)

Portfolio	Rationing	Mean	Median	Max	Min	St. Dev.
A	10%	220	109	698	9	226
A2	15%	365	200	1,105	21	359
A3	20%	625	348	1,804	46	577

[29] Net present value is the sum of the discounted future values over a period. Each annual value is discounted by a discount rate that represents the diminished value arising from a delay in realizing that value rather than realizing it today.

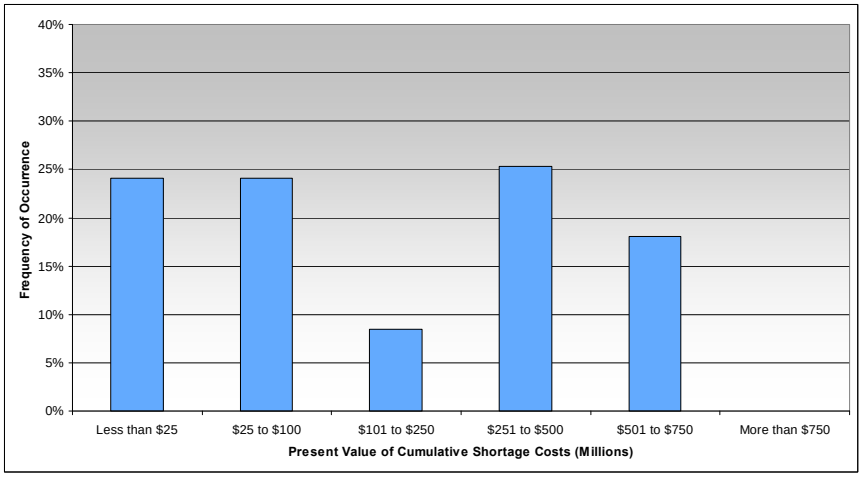


Figure 9-1: Frequency of Total Shortage Costs – Portfolio A

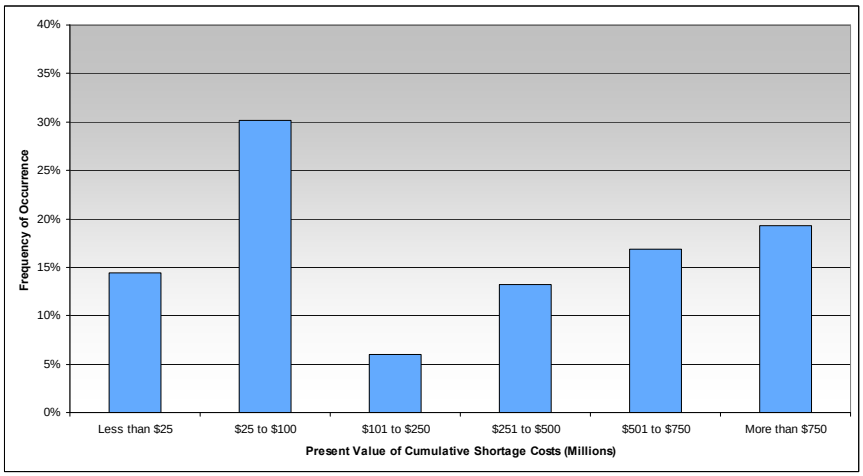


Figure 9-2: Frequency of Total Shortage Costs – Portfolio A2

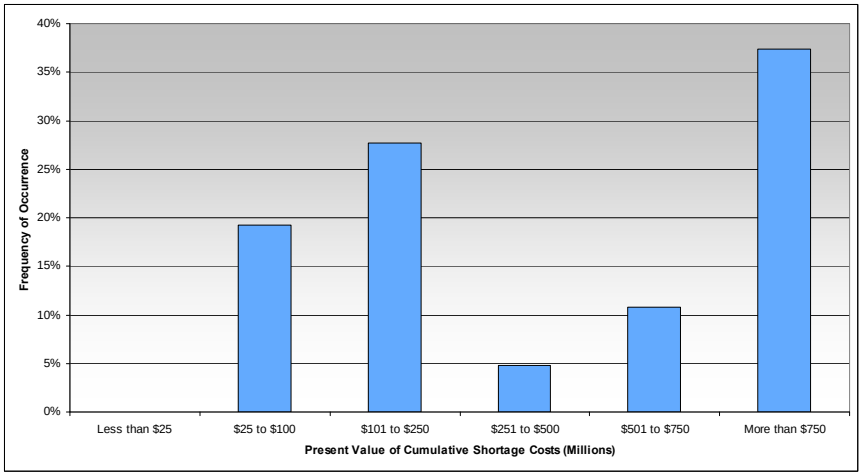


Figure 9-3: Frequency of Total Shortage Costs – Portfolio A3

9.1.2 Portfolios B, B2, and B3

System rationing levels for portfolios B, B2, and B3 were set to 10%, 15%, and 20%, respectively. Portfolio water supply components are as shown in Table 4-1. Online dates are as shown in Table 6-1. Shortage cost frequency statistics for the period 2010 to 2040 are shown in Table 9-2. Histograms of the present value of shortage costs over the analysis period are shown in Figures 9-4, 9-5, and 9-6.

Table 9-2: Portfolios B, B2, and B3: Present Value of Shortage Costs for the Period 2010 to 2040 (million dollars)

Portfolio	Rationing	Mean	Median	Max	Min	St. Dev.
B	10%	218	110	688	9	222
B2	15%	358	197	1,099	15	359
B3	20%	613	345	1,718	40	572

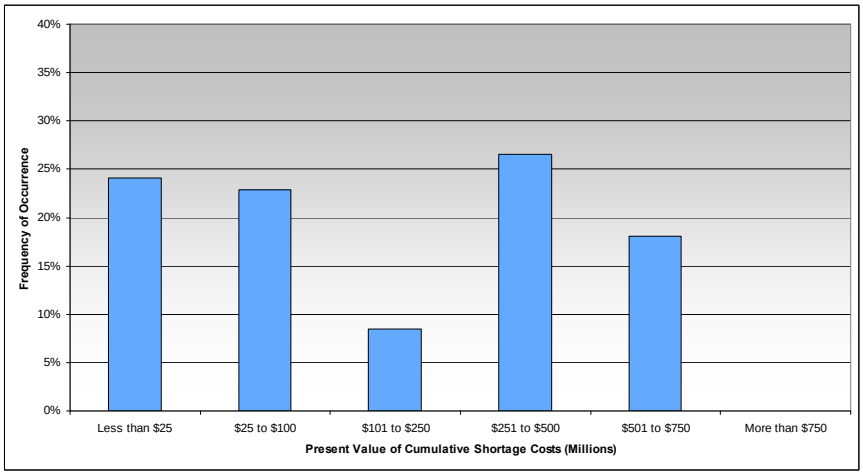


Figure 9-4: Frequency of Total Shortage Costs – Portfolio B

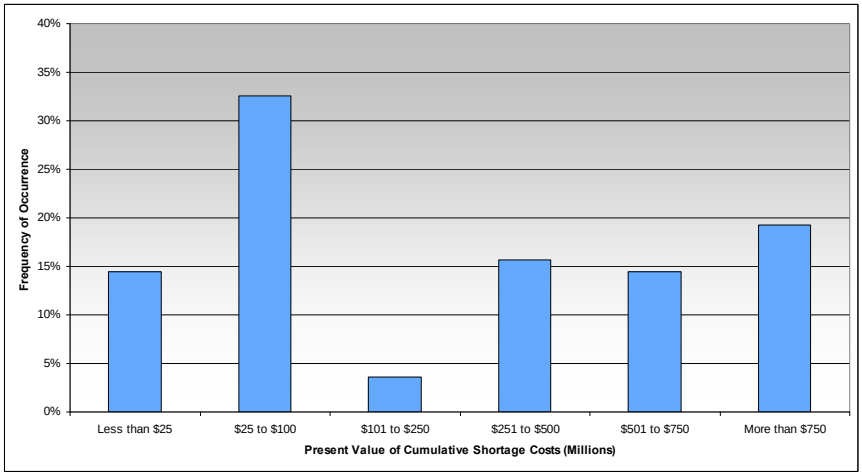


Figure 9-5: Frequency of Total Shortage Costs – Portfolio B2

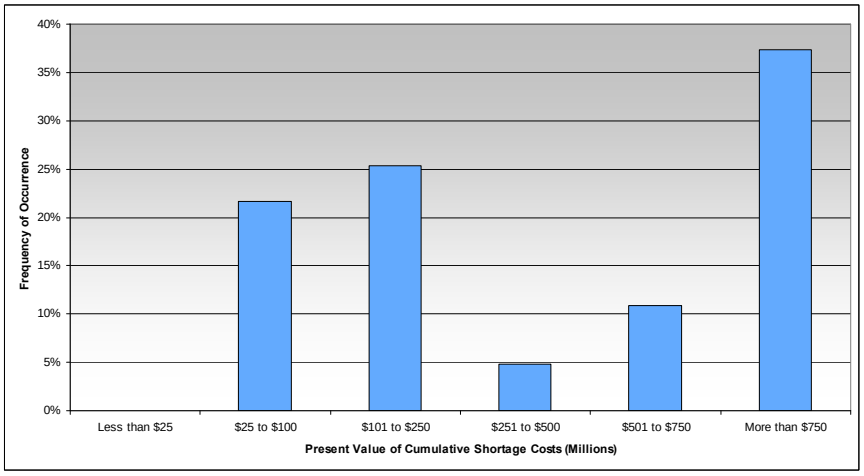


Figure 9-6: Frequency of Total Shortage Costs – Portfolio B3

9.1.3 Portfolios C, D, and D2

System rationing was set to 15% for portfolios C, D, and D2. Portfolio water supply components are as shown in Table 4-1. Online dates are as shown in Table 6-1. Shortage cost frequency statistics for Portfolios C, D, and D2 for the period 2010 to 2040 are shown in Table 9-3. Histograms of the present value of shortage costs over the analysis period are shown in Figures 9-7, 9-8, and 9-9.

Table 9-3: Portfolios C, D, and D2: Present Value of Shortage Costs for the Period 2010 to 2040 (million dollars)

Portfolio	Rationing	Mean	Median	Max	Min	St. Dev.
C	15%	559	354	2,221	9	656
D	15%	355	194	1,362	0	375
D2	15%	469	274	1,524	57	422

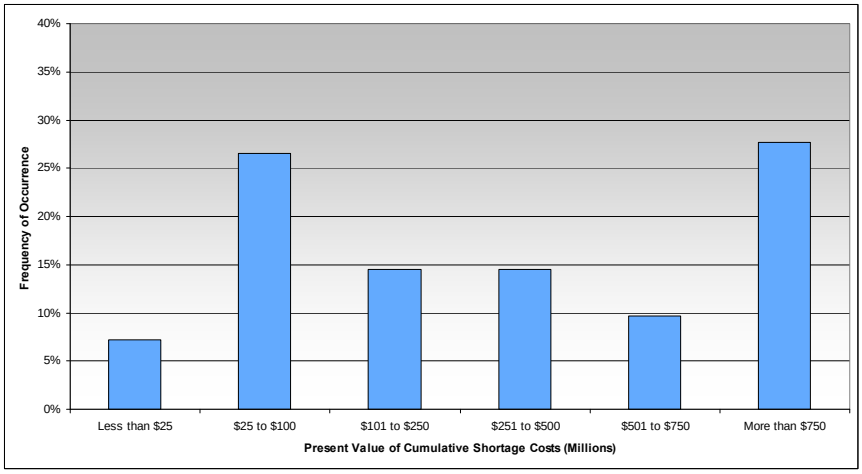


Figure 9-7: Frequency of Total Shortage Costs – Portfolio C

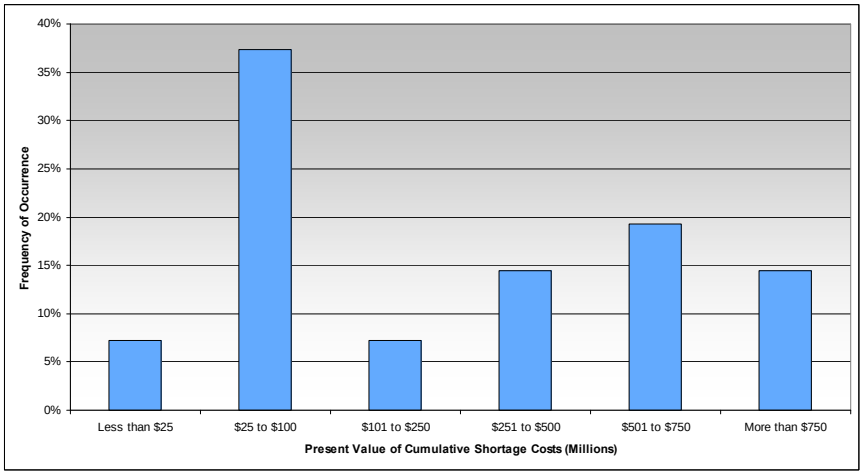


Figure 9-8: Frequency of Total Shortage Costs – Portfolio D

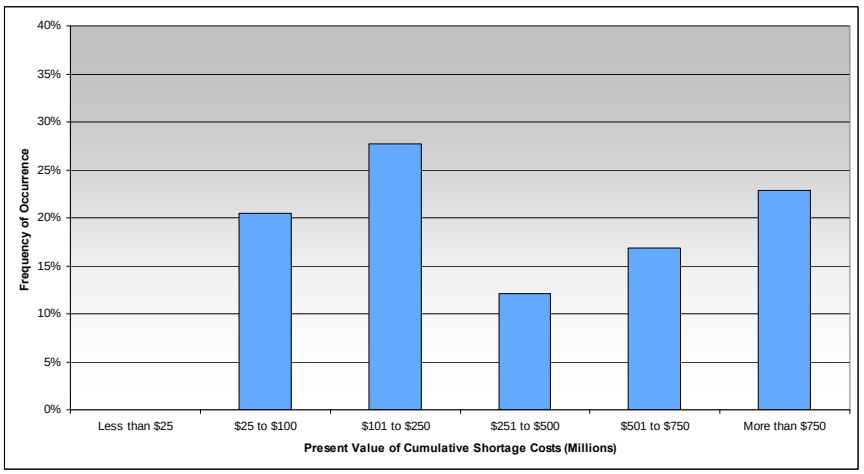


Figure 9-9: Frequency of Total Shortage Costs – Portfolio D2

9.1.4 Portfolios E, E2, and E3

System rationing levels for portfolios E, E2, and E3 were set to 10%, 15%, and 20%, respectively. Portfolio water supply components are as shown in Table 4-1. Online dates are as shown in Table 6-1. Shortage cost frequency statistics for the period 2010 to 2040 are shown in Table 9-4. Histograms of the present value of shortage costs over the analysis period are shown in Figures 9-10, 9-11, and 9-12.

Table 9-4: Portfolios E, E2, E3: Present Value of Shortage Costs for the Period 2010 to 2040 (million dollars)

Portfolio	Rationing	Mean	Median	Max	Min	St. Dev.
E	10%	201	107	616	6	207
E2	15%	361	201	1,096	19	351
E3	20%	620	344	1,777	45	578

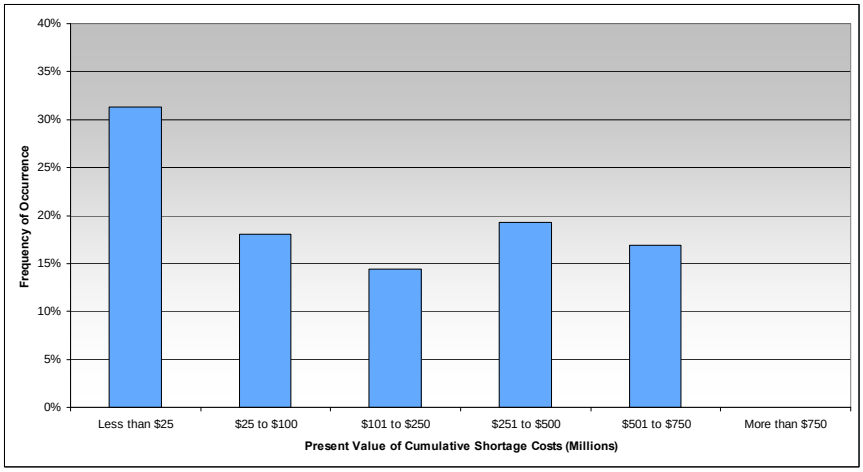


Figure 9-10: Frequency of Total Shortage Costs – Portfolio E

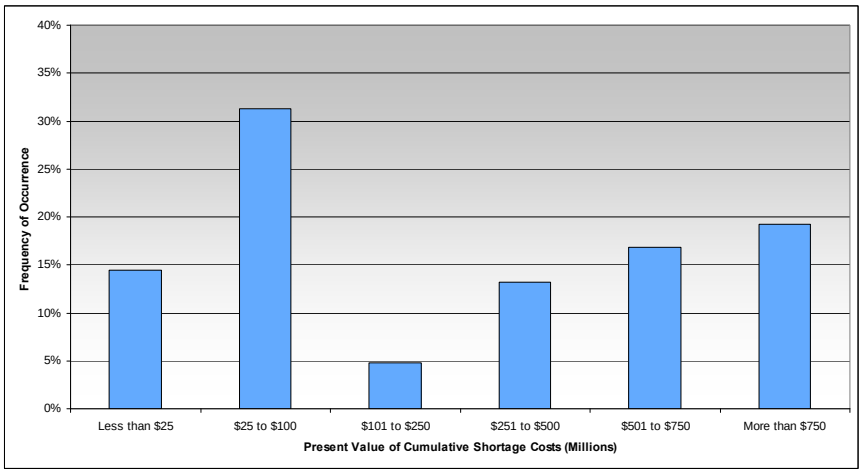


Figure 9-11: Frequency of Total Shortage Costs – Portfolio E2

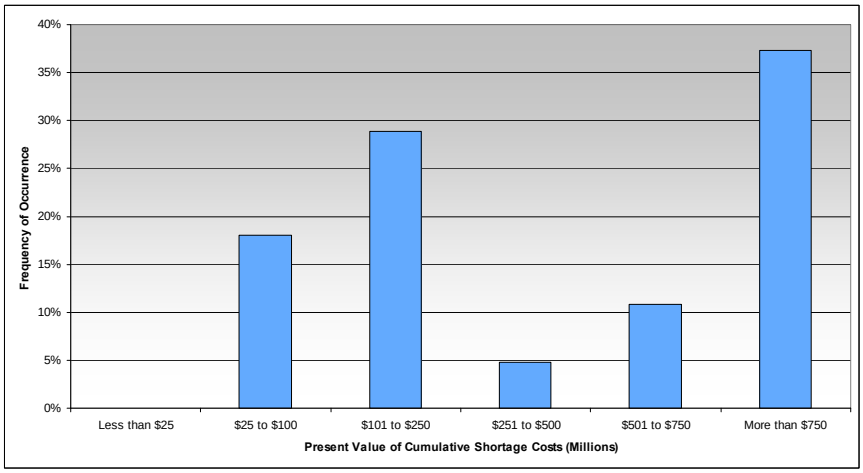


Figure 9-12: Frequency of Total Shortage Costs – Portfolio E3

9.1.5 Preferred Portfolio

System rationing level for the Preferred Portfolio was 10%. Preferred Portfolio water supply components are as shown in Table 4-1. Online dates are as shown in Table 6-1. Shortage cost frequency statistics for the period 2010 to 2040 are shown in Table 9-5. A histogram of the present value of shortage costs over the analysis period is shown in Figures 9-13.

Table 9-5: Preferred Portfolio: Present Value Shortage Costs for the Period 2010 to 2040 (million dollars)

Portfolio	Mean	Median	Max	Min	St. Dev.
Preferred Portfolio	221	126	688	8	220

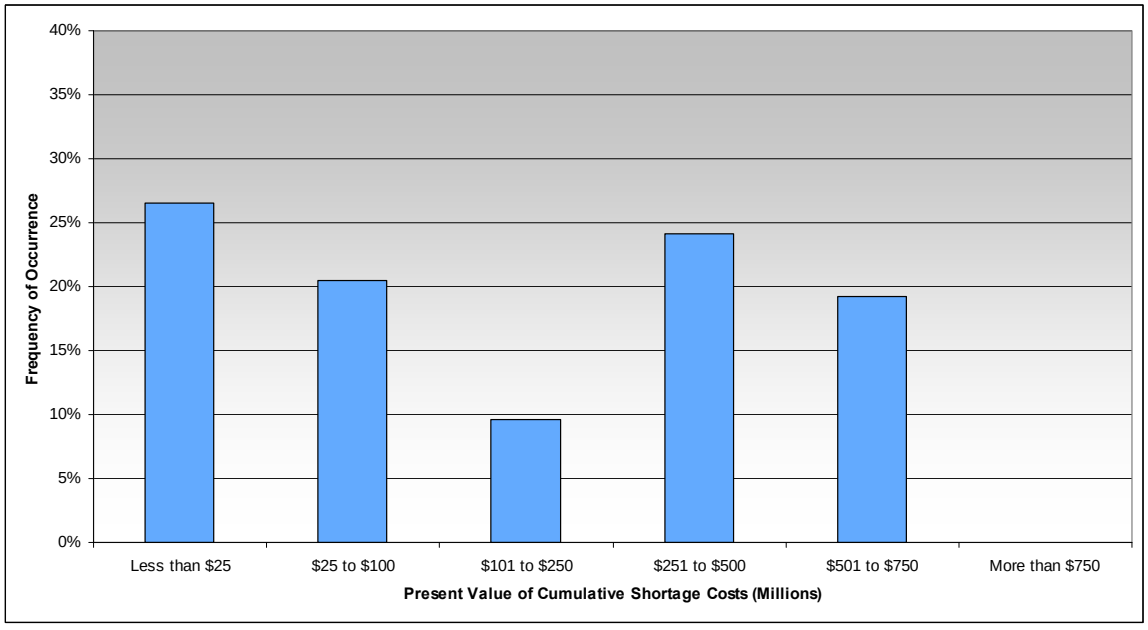
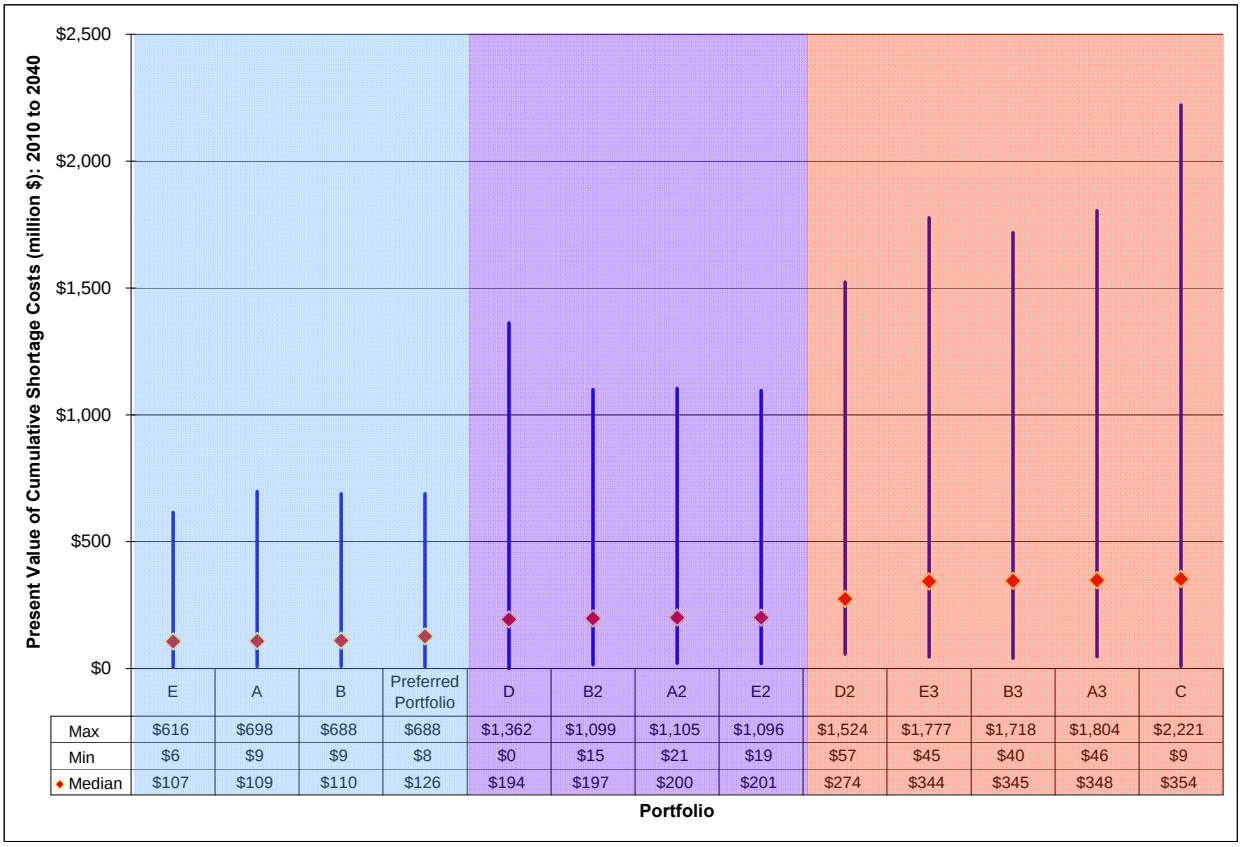


Figure 9-13: Frequency of Total Shortage Costs – Preferred Portfolio

9.1.6 Summary IS Model Shortage Cost Results

Shortage cost modeling results are summarized in Figure 9-14. For each portfolio, the figure shows the median cumulative shortage cost as well as the range between the minimum and maximum cumulative shortage cost. Results have been grouped into three categories. Portfolios in the first category, denoted by the blue rectangle in Figure 9-14, have median cumulative shortage costs on the order of $100 million and maximum potential cumulative costs on the order of $700 million. The Preferred Portfolio is part of this first category, as are portfolios A, B, and E. Portfolios in the second category, denoted by the purple rectangle in Figure 9-14, have median shortage costs on the order of $200 million and maximum potential cumulative costs on the order of $1.1 billion. This category includes portfolios A2, B2, D, and E2. Portfolios in the third category, denoted by the orange rectangle in Figure 9-14, have median shortage costs on the order of $300 to $350 million and maximum potential cumulative shortage costs on the order of $1.5 to $2.0 billion. Portfolios A3, B3, C, D2, and E3 are in this last category.



	E	A	B	Preferred Portfolio	D	B2	A2	E2	D2	E3	B3	A3	C
Max	$616	$698	$688	$688	$1,362	$1,099	$1,105	$1,096	$1,524	$1,777	$1,718	$1,804	$2,221
Min	$6	$9	$9	$8	$0	$15	$21	$19	$57	$45	$40	$46	$9
◆ Median	$107	$109	$110	$126	$194	$197	$200	$201	$274	$344	$345	$348	$354

Figure 9-14: Summary of Cumulative Shortage Costs by Portfolio

9.2 Total Portfolio Cost IS Model Results

Each of the five secondary portfolios (Portfolios A through E) was evaluated as detailed in Table 4-1 with respect to the associated variations in rationing targets. (The exception to this was for Portfolio D in which the target storage level for Pardee Reservoir was changed between the two cases.) Varying the rationing targets was found to have two effects. First, increased rationing was found to lead to higher shortage costs. This increased the costs incurred by customers outside of the rates paid to EBMUD. The second effect was an offsetting effect that lowered the utility costs, and thus rates, by reducing the water acquired and deferring investment in projects and programs.

Results for the Preferred Portfolio were not fully comparable to results for the other portfolios because the demand forecast was revised between the initial modeling and the final analysis. The Preferred Portfolio is based on a forecasted demand of 280 MGD whereas the other five portfolios were based on a forecasted demand of 274 MGD. Nevertheless some useful conclusions can be drawn from the range of results.

9.2.1 Costs for Conservation

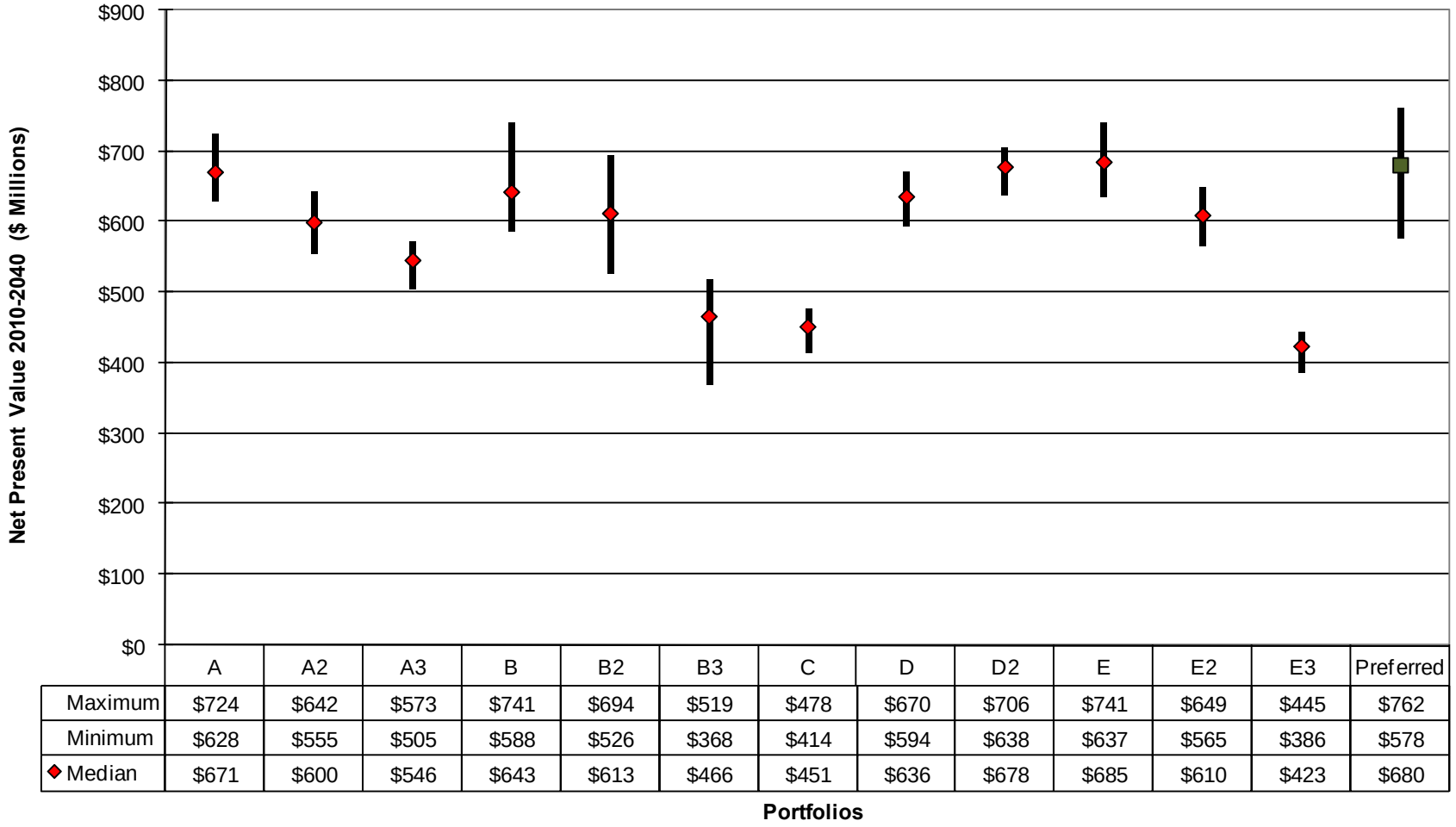
Table 9-6 summarizes the net present value of the conservation cost estimates for the Preferred Portfolio investment levels. These cost estimates include both direct utility and associated customer expenditures on best management practices. Savings in wastewater treatment from reduced effluent and associated energy savings to customers were netted from the costs.

Table 9-6: Conservation Program Investment and Savings, 2010-2040

Conservation Program	NPV
LEVEL D	
Total Utility Costs/Annual Costs	$258,313,535
Avoided EBMUD WW Treatment Cost	($8,460,687)
Total Customer Costs/Annual Costs	$421,151,575
Customer Energy Benefits	($136,152,127)
	$284,999,449

9.2.2 Direct Incremental Utility Costs

Direct incremental utility costs include the investment in new infrastructure and programs, and the incremental operational costs incurred to deliver the new water supplies and/or savings created through load management programs. Figure 9-15 summarizes direct incremental utility costs for the five secondary portfolios (including variants) plus the final Preferred Portfolio. As expected, utility costs fell as rationing targets increased. Portfolio C shows the lowest cost with the narrowest range of potential costs over the 83 hydrologic sequences. Portfolio B shows lower costs than Portfolios A and E at comparable rationing targets, but with much wider ranges. A wider range can be interpreted has having a greater risk, but also greater opportunity for cost savings. Portfolio D has higher costs, but in a narrower range. The Preferred Portfolio has a higher cost, at least in part due to the higher demand forecast, and it has a larger range, comparable to that of Portfolio B.



	A	A2	A3	B	B2	B3	C	D	D2	E	E2	E3	Preferred
Maximum	$724	$642	$573	$741	$694	$519	$478	$670	$706	$741	$649	$445	$762
Minimum	$628	$555	$505	$588	$526	$368	$414	$594	$638	$637	$565	$386	$578
◆ Median	$671	$600	$546	$643	$613	$466	$451	$636	$678	$685	$610	$423	$680

Figure 9-15: Direct Incremental Utility Cost Ranges for WSMP Portfolios: NPV 2010-2040

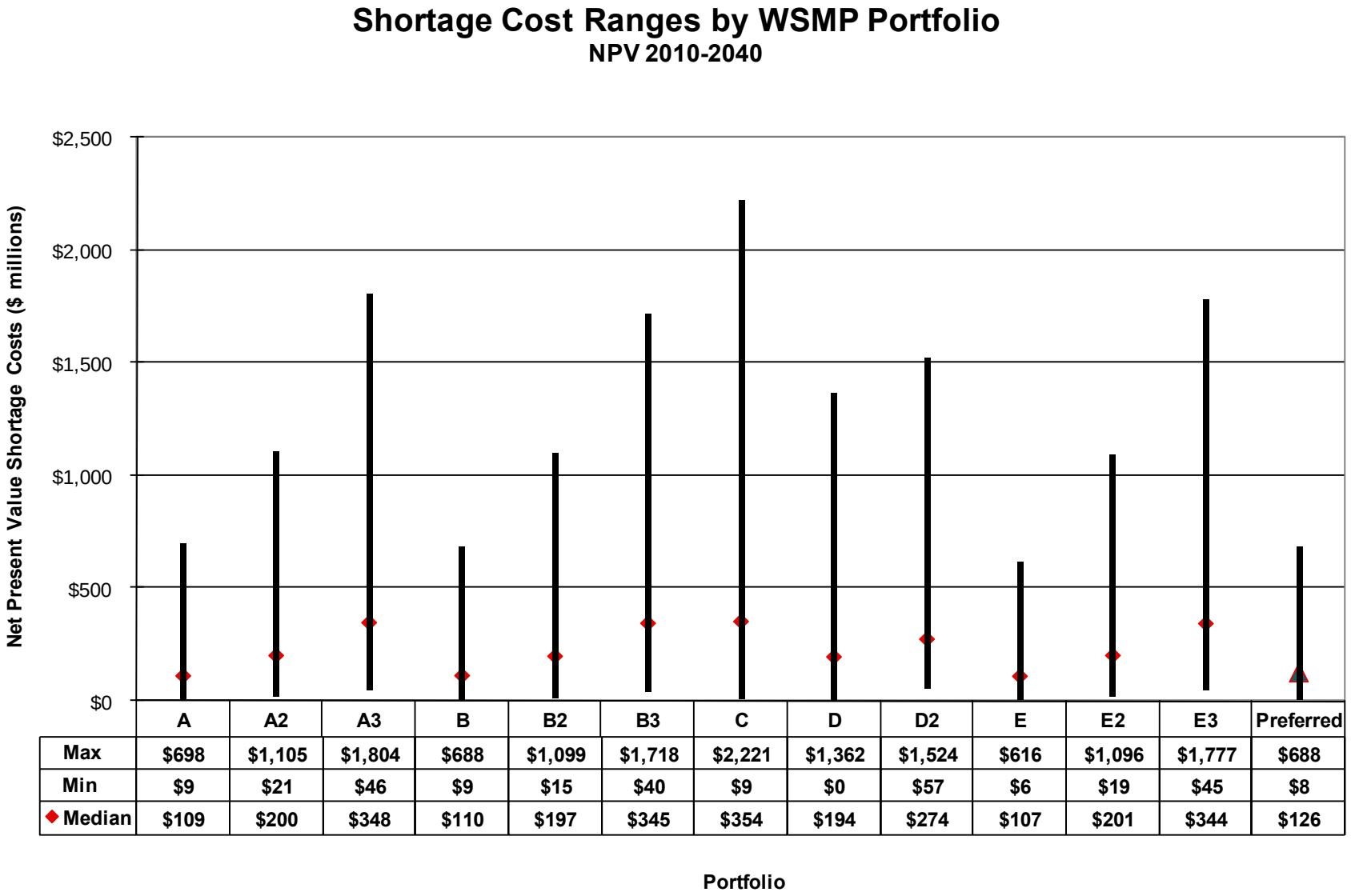
9.2.3 Customer Costs Incurred from Shortages

Shortage cost modeling results are summarized in Figure 9-16. For each portfolio, the figure shows the median cumulative shortage cost as well as the range between the minimum and maximum cumulative shortage cost. The set of Portfolios A-A3, B-B3 and E-E3 show similar magnitudes and ranges, with the median and the extremes rising with higher rationing targets. Portfolio C shows the highest median and by far the largest potential range of costs. The higher storage target at Pardee increases the shortage costs in Portfolio D2 compared to D. The Preferred Portfolio reflects similar characteristics to the other portfolios with a 10 percent rationing level (Portfolios A, B and E). Median cumulative shortage costs are on the order of $100 million for these portfolios and maximum cumulative costs are on the order of $700 million.

Portfolios with 15 percent rationing have median cumulative shortage costs on the order of $200 million and maximum cumulative shortage costs on the order of $1.1 billion. Portfolios in this grouping include A2, B2, D, and E2. Portfolios with 20 percent rationing have median cumulative shortage costs on the order of $300 to $350 million and maximum cumulative shortage costs on the order of $1.5 to $2.0 billion; these include Portfolios A3, B3, C, D2 and E3. A more detailed breakdown of customer shortage cost results is provided in Appendix C.

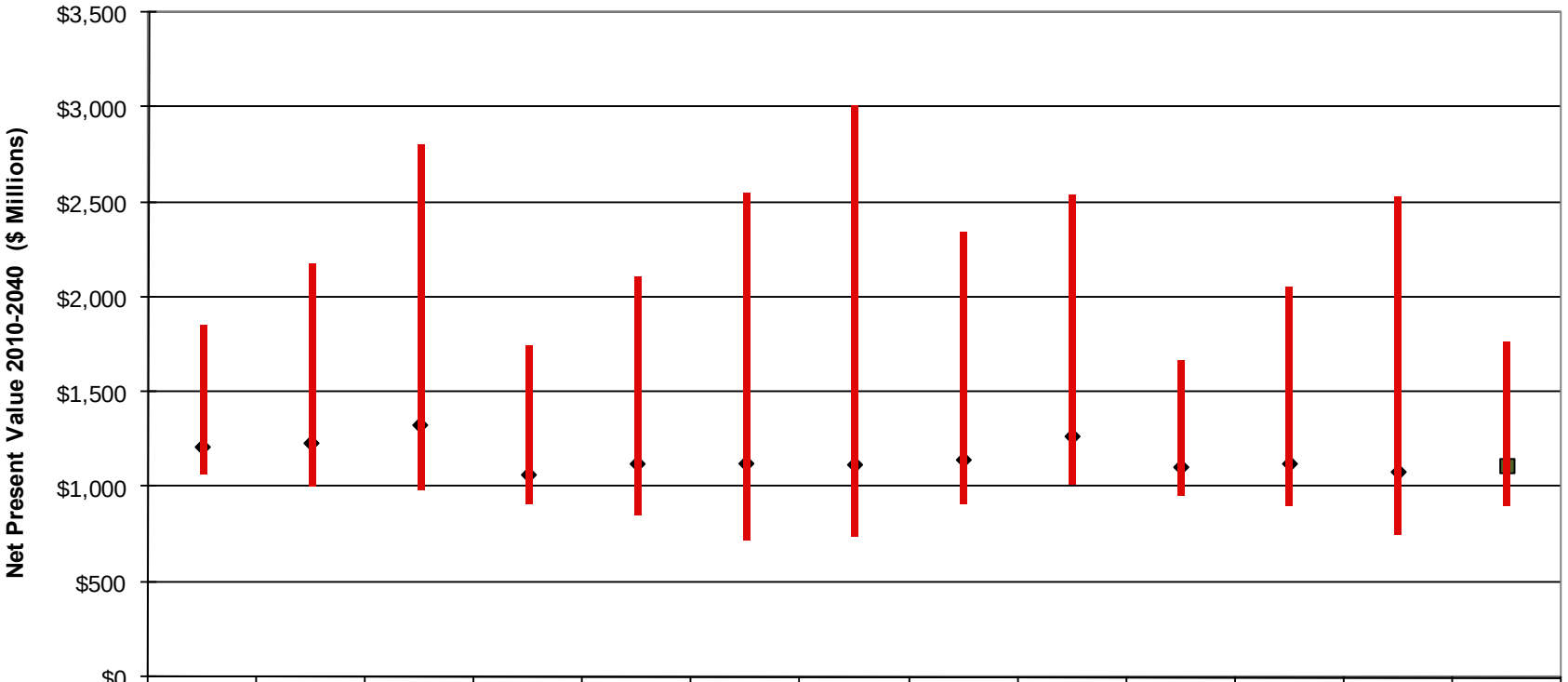
9.2.4 Total Portfolio Costs for Both EBMUD and Its Customers

The total cost for each portfolio is the sum of direct incremental utility costs, customer shortage costs, and customer conservation costs, as shown in Figure 9-17. The question is to what degree do increased shortage and conservation costs incurred by customers offset reduced utility costs for each portfolio. The range of costs clearly increase with higher rationing targets. Portfolio A tends to have higher costs, and Portfolio E lower costs, but the range of median incremental costs among the portfolios is only 20 percent, and that when melded into rates, this range would be substantially diminished. The Preferred Portfolio has comparable median costs of $1.2 billion despite serving a higher demand, and a narrower range (from $900 to $1,760 million) representing less risk than the other portfolios.



	A	A2	A3	B	B2	B3	C	D	D2	E	E2	E3	Preferred
Max	$698	$1,105	$1,804	$688	$1,099	$1,718	$2,221	$1,362	$1,524	$616	$1,096	$1,777	$688
Min	$9	$21	$46	$9	$15	$40	$9	$0	$57	$6	$19	$45	$8
◆ Median	$109	$200	$348	$110	$197	$345	$354	$194	$274	$107	$201	$344	$126

Figure 9-16: Customer Shortage Cost Ranges for WSMP Portfolios: NPV 2010-2040



	A	A2	A3	B	B2	B3	C	D	D2	E	E2	E3	Preferred
Maximum	$1,854	$2,179	$2,809	$1,745	$2,108	$2,552	$3,014	$2,347	$2,544	$1,671	$2,059	$2,536	$1,761
Minimum	$1,069	$1,007	$983	$911	$856	$723	$737	$909	$1,010	$957	$899	$746	$900
Median	$1,212	$1,232	$1,326	$1,068	$1,124	$1,126	$1,120	$1,145	$1,267	$1,107	$1,125	$1,082	$1,116

Portfolios

Figure 9-17: Total Customer and Utility Cost Ranges for WSMP Portfolios: NPV 2010-2040

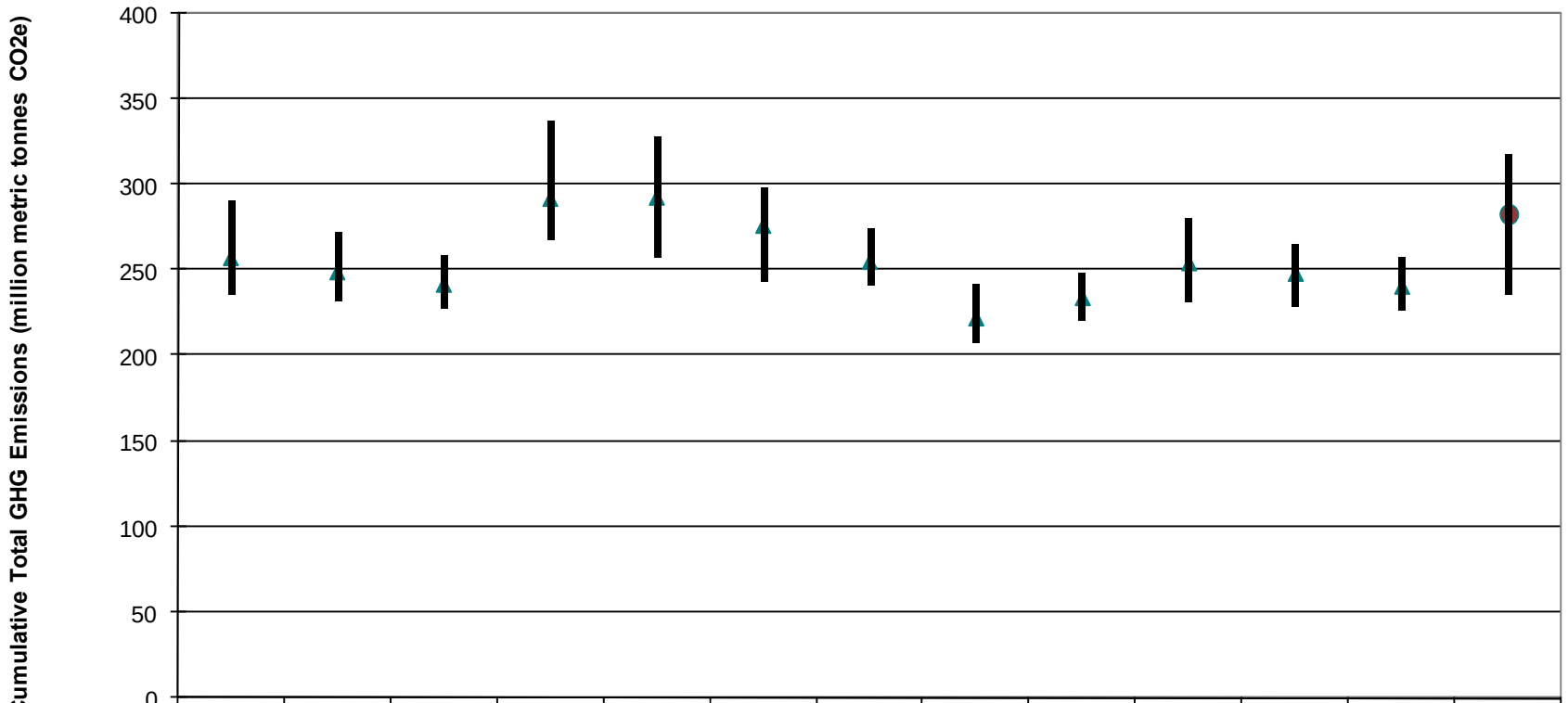
9.3 Expected Greenhouse Gas Emissions

With the passage of Assembly Bill 32 in 2006, the State of California has set a goal to reduce statewide greenhouse gas emissions (GHG) to 1990 levels by 2020. The Governor issued an Executive Order setting a further reduction goal by 2050. The California Air Resources Board has recently adopted a Scoping Plan that sets a roadmap for adopting regulations to limit GHG emissions in different sectors.

An analysis of the potential GHG sources associated with the proposed portfolio components revealed that the vast majority of GHG sources would be derived from electricity used to pump water. For example, producing concrete is a significant source of GHGs, and expanding Pardee Dam would require about 1.5 million cubic yards. Yet, this would produce a one-time release of only 480,000 tons of CO_2, while electricity consumption can emit from 5 to 14 million tons in any given single year.

The GHG emissions were calculated from the pumping loads forecasted for each index sequential modeling run, multiplied by the average emission rate for 2020 derived from Scenario 1B of the California Energy Commission's *2007 Integrated Energy Planning Report* "Scenarios Analysis." The forecasted emission rate is 134 pounds of CO_2 per kilowatt-hour.

Figure 9-18 shows the range of cumulative GHG emissions for each portfolio over the 2010 to 2040 period. The amount and range of emissions tend to diminish with increased rationing as pumping loads fall. Increased reliance on groundwater pumping in Portfolio A relative to the water storage and transfers in Portfolios C and D leads to higher GHG emissions. The Preferred Portfolio adds both groundwater and recycled water supplies and diminishes reliance on storage. This leads to a higher relative GHG emission level and a greater range of these emissions.



	A	A2	A3	B	B2	B3	C	D	D2	E	E2	E3	Preferred
Maximum	290	272	258	338	328	299	274	242	248	281	265	258	318
Minimum	236	232	228	268	257	244	241	207	221	231	229	226	236
▲ Median	257	249	241	291	292	276	255	222	234	254	248	240	282

Figure 9-18: Greenhouse Gas Emission Ranges for WSMP Portfolios: 2010-2040

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Appendix A – Preliminary WSMP 2040 Component Cost Estimation Evaluations

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T 415.955.2800 F 415.788.4875 www.edaw.com

Memorandum

Date:	September 30, 2008
To:	EBMUD (Mike Tognolini, Tom Francis)
From:	EDAW Team
Subject:	TECHNICAL MEMORANDUM: WSMP 2040 Component Cost Estimation Evaluations

I. Purpose of Cost Evaluation

Cost is one of several criteria WSMP 2040 is using for screening and evaluating water supply components and portfolios. This memorandum discusses how the cost data was compiled and evaluated to make preliminary cost estimates on a dry year basis for component screening and for constructing portfolios for further evaluation. The cost estimates presented herein are for initial planning purposes only and likely will change in the final evaluation as resources interact within a given portfolio as modeled by the WEAP-EBMUDSIM (W-E) water supply program.

WSMP 2040 will be using the W-E model to assess the relative costs of alternative water supply portfolios. Each portfolio undergoing evaluation is likely to include water supply projects from most or all of the component categories (e.g. conservation, recycled water, and supplemental supply which includes desalination, groundwater banking, surface storage, and transfers), though the weighting or emphasis given to a particular category will vary by portfolio[1]. Using the W-E model to evaluate relative costs of portfolios requires specification of the upfront capital costs, the annual operating, and maintenance costs, the annual water supply yield, and the operating rules and constraints associated with each project included in a portfolio. In order to consistently evaluate components, common costing assumptions and methods were utilized across all supply components.

[1] In WSMP 2040, projects are termed "components", the building blocks of water supply solution portfolios. Additionally, for the purposes of portfolio construction, component classes are conservation, recycled water, supplemental supply, and rationing.

II. Approach to Cost Estimation

The District has, over the years, attempted to compare the estimated costs associated with the various projects and programs being proposed as water supply portfolio options. Through the performance of those earlier efforts, District staff has identified key issues that must be addressed or considered in order to avoid biased or inconsistent cost comparisons. Table 1 details District guidance as given to the project team:

Table 1
District Cost Comparison Guidance

1. Some EBMUD water supply projects and demand management programs only operate during dry years / drought periods. Others operate year-round, independent of hydrologic conditions. Cost estimates prepared to compare projects and programs must take the period of operation into consideration.
   a. Wet year benefits may or may not be an appropriate cost consideration depending on the particular project or program. A sound methodology is needed to illustrate how such a determination is made, and such a methodology must be followed consistently across the range of solutions reviewed.
   b. Customer rationing can occur in times of drought depending on water availability and system storage. Cost estimates prepared must take into account how rationing may be used to limit water use and how system storage may dictate when a particular project or program is put on-line/implemented to augment water supplies.
   c. Some programs aimed to conserve water are more viable during wet years than dry years, depending on the particulars of the water use and the nature of the particular program.
2. Proposed projects or programs that are expected to operate year-round, adding to the baseload supply as needed to meet customer demands, could also result in an offsetting impact on the use of existing Mokelumne River facilities (as would be sourced were there no proposed project or program in place). The financial impact(s) of the offset (i.e. loss of revenue from reduced potable water sales) should be considered.
3. There is a need to evaluate the degree that existing District supplemental supply projects or drought management programs, such as the Freeport Regional Water Project (FRWP), are operationally impacted when and if a future project or program is implemented. Does that operational impact have a cost impact? For example, would a demand reduction program impact the frequency of use of the FRWP, and if so would the fact that the FRWP was used to a lesser degree have an associated cost?

4. Energy costs can be a significant share of the operational expense for several project types. Power cost can escalate at a rate greater than that predicted for inflation or be relatively flat, based on the power demand and supply situation present at that particular time, on political considerations, and a host of other factors. Since it is more problematic to predict, the factor selected for power cost (and power cost escalation over time) is open to argument. If those costs prove to be a deciding factor in cost comparison based decisions, such a fact must be made clear.
5. Some projects and programs have different lifetimes. Cost evaluations must allow such projects and programs to be compared. Further, the District has developed various procedures that are followed internally for estimating lifecycle costs.
6. The District has developed factors that are used internally for estimating the following:
   a. Depreciation rates;
   b. Life Cycle Considerations; and
   c. Equipment / System Life Expectancy.
7. The District has developed contingency factors that are used to adjust the cost estimates as prepared for projects as based on whether they are in the planning stage, the design stage or the construction stage. Consideration must be given to applying the appropriate factor to a particular project or program as based on the development stage that a particular project or program is at (and making sure that that factor is consistently applied regardless of project or program type).

Regarding EBMUD guidance as noted in point numbers 1 through 3 (of Table 1, above), the project team considered this as part of the development of the approach that will be used to compare costs (as detailed in the sections that follow). Further, the cost analysis takes into consideration existing EBMUD practices as detailed in points 4 through 7 when estimating project and program costs.

A. Data Collection, Compilation and Evaluation

WSMP 2040 used the following procedure to compile the project information needed for cost estimation and W-E modeling.

Step 1 – Initial Project Screening: In the first step, the consulting team, working with EBMUD staff, used exclusion and evaluation criteria to screen the initial list of water projects. Any project not meeting one or more exclusion criterion was shelved and removed from the set of projects that will be considered when constructing the portfolios. The remaining projects advanced to the next step.

Step 2 – Compile Project Cost Information: EBMUD staff, working with the consulting team, compiled available information on project costs, yields, and operating rules for the set of projects remaining after Step 1. A guidance memo and data collection form for compiling cost information was developed to assist EBMUD staff and the consulting team in this effort.

Step 3 – Quality Assurance Review: The consulting team iteratively reviewed with EBMUD staff the compiled cost information to ensure that resulting cost estimates were based on consistent costing assumptions and methods. Most projects involved multiple reviews and refinements before they were finalized.

Step 4 – Draft Project Cost Estimates: Once the consulting team had reviewed and reconciled project cost data compiled by EBMUD and consultant staff, draft project cost estimates were prepared. These estimates were provided to appropriate EBMUD staff for their review and comment.

Step 5 – Final Project Cost Estimates: Following review of the draft project cost estimates, the EDAW team incorporated comments and revised project cost estimates as appropriate. Once reviewed by EBMUD staff and finalized, the cost estimates for the components that move forward into the portfolio assembly stage will be imported into the W-E model.

B. Collecting Cost Data

The following information was collected in a manner so as to be as consistent as possible across projects.

On-line Dates: The data represents a realistic estimate of the earliest year in which a project could, taking into account planning, permitting, and construction requirements, become operational.

Project Capacity and Operating Rules: The minimum, maximum, and expected operational capacities for each project (or project phase) were estimated. Information on the expected operation of the project (e.g. baseload or dry-year supply operation), operating rules and system constraints was collected for each project.

Project Capital Costs: Capital cost estimates were developed for each project. Capital costs estimates account for expected expenditures for planning, design, property acquisition, and construction plus contingency. The amount of contingency was a function of the stage of project planning and design and followed existing EBMUD engineering standard practices (ESP) guidelines.

Useful Life of Equipment/Facilities: Useful lives of equipment/facilities were estimated for each project. In cases where useful lives varied significantly by type of structure or equipment, separate useful lives were estimated. EBMUD ESP guidance was used for establishing the useful lives of major equipment and facilities.

Sunk Capital Costs: Only the going-forward costs are relevant to the economic evaluation of alternative portfolios. Therefore, information on any already sunk capital costs was collected for each project and deducted from the capital cost estimate.

Cost Escalation: Project costs were converted to 2007 constant dollars using the ENR construction cost index to ensure consistent dollar cost comparisons across projects.

Project O&M Costs: Annual operating and maintenance (O&M) costs were compiled for each project. O&M costs were differentiated between fixed, variable (excluding energy), and energy O&M. Included in these assessments were costs for labor, chemicals, disposal, and other (i.e. replacement membranes and parts). Variable and energy O&M were expressed in $/million gallons (MG), while fixed O&M was expressed in $/Yr.

Cost Sharing: Project cost sharing information was collected for each project to determine the share of project capital and O&M costs to be paid by EBMUD that would impact water rates.

Yield Sharing: Project yield sharing information was collected for each project to determine EBMUD's share of project yield.

Conservation levels were evaluated as groupings or combinations of conservation measures. Level A consists of natural savings that would occur due to plumbing codes, etc. and consists of 11 different conservation measures. Level B consists of natural savings plus an additional 10 million gallons per day (MGD) of conservation, and consists of 39 conservation measures. Level C is equivalent to the District's current conservation program and consists of 51 different conservation measures; while Level D consists of the District's current program plus an additional 2 MGD of conservation, and consists of 53 conservation measures. Level E is the maximum voluntary program and consists of 58 conservation measures. Technology and implementation barriers, such as customer acceptance, market saturation, and cost, were used in the analysis of the different conservation levels.

C. Calculating Estimated Costs

EDAW team member M.Cubed prepared a prior Technical Memorandum that specified how costs are to be estimated consistently on a unit basis (see *Cost Criteria for EBMUD WSMP 2040 Solutions Component Projects and Programs*, July 25, 2007). This method was applied to the cost estimation process.

The basis for the *preliminary* cost estimates presented here is on a **per dry-year yield basis**. That is, the total present value of the costs are computed over the life of the project and then spread over the expected yields in dry years only. This implies that any water supply benefits that accrue in other water year types (e.g., wet or normal) are valued at zero but the costs are debited against dry-year yields. This is used only here in the preliminary estimates—the W-E modeling will allow for comparisons between portfolios where multi-year benefits may accrue. The inability to capture these types of benefits in this preliminary estimate illustrates the benefits of using a portfolio planning model such as the W-E model.

The project capital costs were amortized over the economic life of the projects, typically 50 to 100 years[2]. The fixed annual O&M costs were added to these costs, which were then were scaled up by the ratio of expected dry years over the planning sequence. For the preliminary costing analysis, the common assumption of 3 dry years in 10 (reflecting the District's Drought Planning Sequence) was used for most projects, including conservation levels (other dry year occurrences were assumed where appropriate based on available information). Variable O&M and energy costs that would be incurred only in dry years were then added to the annualized fixed costs to compute a total cost per acre-foot of dry-year yield. For projects that operate in all years (i.e. the Regional Desalination project at a lower output level), variable O&M and energy costs for non-dry years were also included in the total cost estimate and then spread over the dry years.

Several key common assumptions were used for all projects:

1. Costs were computed on a constant 2007 dollar basis.
2. A constant discount rate (net of inflation) of 3% was used. This was derived from EBMUD's typical cost of debt.
3. Electricity costs were based on PG&E's current utility rate schedules for industrial (large loads) and commercial (small loads) customers. The most recent California Energy Commission forecast for the *2007 Integrated Energy Policy Report* shows that these rates are expected to remain flat in constant dollar terms through 2012.[3]
4. Where project yield is delivered to the Freeport Regional Water Project, conveyance costs to the Mokelumne Aqueduct were included.
5. Conveyance costs through the Aqueduct were ignored for this step of the cost evaluation because they are dependent on system-wide operations, but will be captured in the W-E analysis.

[2] Review of the detailed cost sheets indicated that capital costs were actually amortized over 30 years.
[3] These rates will be varied to include greenhouse gas (GHG) emission costs incurred under AB 32 requirements in the forthcoming "climate change" scenarios.

Preliminary Results of Planning Cost Estimates

Tables 2, 3 and 4, presented below, summarize the dry-year yields and per unit costs for the supplemental supply projects, recycled water projects, and conservation levels, respectively. The results for each of the three component classes are also summarized in the following section.

Supplemental Supply Project Preliminary Dry-Year Unit Costs

The supplemental supply projects generate yields from 1.5 MGD for the Low Energy Application for Desalination (LEAD) desalination project to 51.2 MGD for Enlarging Pardee Reservoir. The cumulative available yield is about 188 MGD, although not all of this is available due to competition for conveyance capacity through Freeport and Mokelumne. The energy use per million gallons (MG) ranges from none for the LEAD project because it relies on waste steam for energy generation, to consumption of 11,000 kilowatt-hours (kWh) in the Regional Desalination project. Ranked on a cost basis, a Northern California Water Transfer is the least expensive at $630 per acre-foot (AF), with five additional projects less than $1,000 per AF. The four other projects cost in excess of $1,200 per AF, with the LEAD Desalination Project being the most expensive at $2,630.

EBMUD may also seek supplemental supply through spot transfer markets in the future to fill temporary supply shortfalls or respond to unanticipated supply emergencies. Due to the supply uncertainty and likely cost volatility of this option, it is not included as a supplemental supply project in Table 2. Information on spot market water transactions occurring between 2000-01 and 2004-05 is included as an attachment to this TM. Planning assumptions for costs of spot market water utilized by two Bay Area water agencies is also reviewed. Because spot water markets in California historically have been thin and because competition for available spot market water is expected to markedly increase over the next several decades, the prices summarized in the attachment should not be viewed as predictive or representative of likely future market conditions.

Recycled Water Project Preliminary Dry-Year Unit Costs

The recycled water projects produce dry-year yields ranging from 0.2 MGD to 2.8 MGD. Energy use per MG ranges from 1,051 KWh to 5,607 KWh. Preliminary dry year unit costs range from $400 per acre-foot to $6,100 per acre-foot. Three projects have preliminary dry year unit costs under $1,500 per acre-foot (COP Phase 2, RARE Phase 2 and RARE Future Expansion). Five projects have preliminary dry year unit costs between $1,500 and $2,000 per acre-foot (SRVRWP Phases 2 through 4, COP Phase 1, and Lake Chabot Raw Water Expansion Project). Five projects have preliminary unit costs between $2,000 and $3,000 per acre-foot (Franklin Canyon, SRVRWP Phases 5 and 6, North Richmond Plant Expansion, and East Bayshore Phase 2). Four projects have preliminary unit costs in excess of $3,000 per acre-foot (East Bayshore Phase 1B, Reliez Valley Recycled Water Project, San Leandro Phase 3, and the Satellite RWTPs).

Dry year unit costs for the four refinery partnerships may ultimately be lower than shown in Table 3 depending on final cost sharing arrangements. The preliminary unit costs are based on existing Memoranda of Understanding (MOUs) between the refineries and EBMUD and assume the following:

- For COP Phase 1, it is assumed that COP will contribute $7 million toward capital costs, operate and maintain the project, and pay the annual O&M costs.
- For COP Phase 2, it is assumed COP will contribute $2.2 million toward capital costs, operate and maintain the project, and pay the annual O&M costs.
- For RARE Phase 2, it is assumed Chevron will pay all capital costs upfront and that EBMUD will operate and maintain the project and pay annual O&M costs. Additionally it was assumed that EBMUD will receive reimbursement for O&M costs incurred from Chevron.
- For RARE Future Expansion, it is assumed Chevron will pay all capital costs upfront and that EBMUD will operate and maintain the project and pay annual O&M costs. Additionally it was assumed that EBMUD will receive reimbursement for O&M costs incurred from Chevron.

The District's Office of Water Recycling has indicated that final arrangements for these projects may result in EBMUD fully recovering capital and O&M costs from the refineries through upfront capital contributions, annual debt service payments, and annual or monthly payments for O&M. However, because such terms have not been finalized for these projects, the more conservative cost assumptions listed above have been used to prepare the preliminary unit cost estimates.

One key assumption used in evaluating the costs associated with recycled water projects is that all recycled water projects are designed to operate as baseload, rather than dry-year supply. Operating the projects as baseload will reduce the project unit costs from what is shown in Table 3 by about 40 to 60 percent, and would also potentially displace use of Mokelumne River water. The extent of this potential displacement will be investigated using the W-E model.

Conservation Preliminary Dry-Year Unit Costs

The proposed conservation levels generate yields ranging from 9.7 MGD for Level B to 20.8 MGD for Level E. Ranked on a cost basis, Level B is the least expensive at $800 per acre-foot (AF) for dry-year yield, with Levels C, D and E costing $3,200/AF, $4,000/AF and $5,100/AF, respectively. Level A was not evaluated as it represents natural savings and therefore will not incur a cost.

The unit costs for conservation in Table 4 differ from previous estimates prepared by the EDAW team in conjunction with the District in two important respects. First, the unit costs originally prepared were computed by dividing the present value of each conservation level's implementation costs by the sum of water savings over the forecast

period. The unit costs in Table 4, as well as in Tables 2 and 3, were computed by dividing the present value of implementation costs by the discounted sum of water savings over the forecast period. The latter method results in a unit cost that fully recovers capital and O&M costs over the planning period, whereas the former approach understates the true unit costs. Second, the unit costs in Table 4 are the average unit cost per AF of water savings for each conservation level, whereas the original estimates show the unit cost of incremental savings achieved by moving from one implementation level to the next. The unit costs in Table 4 do not credit avoided water delivery and wastewater treatment costs against each conservation level's implementation costs. They are therefore gross, rather than net, unit costs.

The conservation levels in Table 4 are designed to operate as baseload, rather than dry-year supply. Operating the projects as baseload will reduce their unit costs from what is shown in Table 4 by about 60 percent, and may also potentially displace use of Mokelumne River water. The extent of this potential displacement will be investigated using the W-E model.

Table 2 - Supplemental Supply Projects Preliminary Dry Year Yield Unit Cost Estimates[a]

Project ID	Project Name	Online Yr	Operation	Dry Year Yield (MGD)	EBMUD Capital Cost (Mil. $)	EBMUD O&M ($/MG)[c]	Total Energy Use KWh/MG[d]	EBMUD Unit Cost ($/AF, Dry Yield)[e]
SUP-25	Northern California Permanent Water Transfer[b]	2010	Permanent	4.5-44.6	$20.0-$200.0	$649	5,217	**$630**
SUP-21	Inter-Regional Conjunctive Use Project (IR-CUP)/San Joaquin (SJ) Groundwater Banking[f]	2014	Conjunctive Use	17.4	$40.4	$1,051	7,919	**$670**
SUP-11	Buckhorn Canyon Reservoir	2015	Storage	42.0	$243.9	$451	3,667	**$710**
SUP-24	Enlarged Pardee Reservoir	2020	Storage	51.2	$340.3	$324	2,021	**$730**
SUP-22	Enlarge Lower Bear Reservoir	2015	Storage	2.2	$12.1	$418	3,038	**$840**
SUP-09	Bayside Phase 2 Groundwater Project	2013	Conjunctive Use	9.0	$35.4	$853	4,719	**$890**
SUP-07	Groundwater Banking/Exchange (Sacramento Basin)[f]	2014	Conjunctive Use	4.2	$25.0	$1,326	8,895	**$1,250**
SUP-18	Regional Desalination Project	2012	Dry Year	20.0	$79.3	$3,912	11,000	**$1,970**
SUP-16	LEAD at C&H Sugar	2012	Baseload	1.5	$23.4	$1,945	0	**$2,630**

Notes:
a. Final dry-year yield unit costs will be derived from WEAP modeling. These values will be different than those shown here for comparative purposes.
b. Northern California Permanent Water Transfer costs were based on recent transfers occurring in the State of California. Note that past water prices are no guarantee of how prices may change in the future.
c. O&M costs for adjusted for dry year and recharge year operations depending on the project. O&M costs for idle years are assumed to be 10% of operating year O&M costs.
d. Approximate costs of pumping water through Freeport intake and Mokelumne aqueducts are incorporated into this table for comparative purposes. The expected actual costs will be estimated by the WEAP model.
e. Rounded to nearest $10/AF
f. For groundwater banking projects (IR-CUP/SJ Groundwater Banking, Groundwater Banking/Exchange in Sacramento Basin and the Bayside Phase 2 Groundwater Project), it is estimated that approximately 10% of the water will be lost to migration and delivery system losses. These losses are reflected in this table.

Table 3 – Recycled Water Projects Preliminary Dry Year Yield Unit Cost Estimates

Project ID	Project Name	Online Year	Expected Operation	Dry Year Yield (MGD)	EBMUD Capital Cost (Mil. $)	EBMUD Variable O&M (d) ($/MG)	Variable Energy Use (KWh/MG)	EBMUD Dry Year Unit Cost (e) ($/AF)
REC-01A	ConocoPhillips RWP Phase 2 (a)	2015	Baseload	0.90	$2.9	$-	3,751	$400
REC-07	RARE Future Expansion (b)	2015	Baseload	1.00	$-	$1,221	5,606	$1,300
REC-06	RARE Phase 2	2012	Baseload	0.50	$-	$1,276	5,606	$1,400
REC-10	SRVRWP Phase 2	2010	Baseload	0.75	$5.0	$849	4,265	$1,600
REC-12	SRVRWP Phase 4	2016	Baseload	0.37	$2.5	$849	4,265	$1,600
REC-01	ConocoPhillips RWP Phase 1	2012	Baseload	2.80	$39.8	$-	3,751	$1,700
REC-16	Lake Chabot Raw Water Expansion Project	2010	Baseload	0.36	$4.7	$468	1,051	$1,800
REC-11	SRVRWP Phase 3	2013	Baseload	0.58	$5.5	$849	4,265	$1,900
REC-04	Franklin Canyon Recycled Water Project	2023	Baseload	0.30	$4.0	$712	4,265	$2,100
REC-05	North Richmond Water Reclamation Plant Expansion	2018	Baseload	1.70	$15.4	$1,186	5,607	$2,200
REC-03	East Bayshore Phase 2 (c)	2014	Baseload	0.60	$9.4	$987	2,679	$2,600
REC-13	SRVRWP Phase 5	2018	Baseload	0.30	$5.4	$849	4,265	$2,700
REC-14	SRVRWP Phase 6	2020	Baseload	0.20	$4.0	$849	4,265	$2,900
REC-02	East Bayshore Phase 1B	2012	Baseload	1.20	$28.0	$987	2,679	$3,400
REC-08	Reliez Valley Recycled Water Project	2015	Baseload	0.19	$3.1	$2,807	4,639	$4,700
REC-09	San Leandro Water Reclamation Facility Expansion Project: Phase 3	2015	Baseload	0.56	$16.3	$1,474	2,509	$5,300
REC-15	Satellite Recycled Water Treatment Plant Projects (Retrofits)	2014	Baseload	0.72	$42.5	$574	1,724	$6,100

Notes:
a. Conditional on implementation of COP Phase 1
b. Conditional on implementation of RARE Phase 2.
c. Conditional on implementation of East Bayshore Phase 1B.
d. Gross variable O&M costs. No credit for avoided costs of water delivery in non-dry years.
e. Rounded to nearest $100.
f. EBMUD will operate and maintain the RARE projects, incurring O&M costs. However, Chevron will reimburse the District for the O&M costs incurred via monthly revenue payments.

Table 4 - Conservation Levels Preliminary Dry Year Yield Unit Cost Estimates

Project ID	Project Name	Online Year	Expected Operation	Dry Year Yield [a] (MGD)	EBMUD Capital Cost ([b] (Mil. $)	EBMUD Variable O&M [c] ($/MG)	EBMUD Dry Year Unit Cost [d] ($/AF)
CON-02	Level B	Spans planning period	Baseload	9.7	$31.4	92	$800
CON-03	Level C	Spans planning period	Baseload	17.3	$225.4	432	$3,200
CON-04	Level D	Spans planning period	Baseload	19.4	$319.4	474	$4,000
CON-05	Level E	Spans planning period	Baseload	20.8	$426.0	693	$5,100

Notes:
a. Dry-year yield by 2040. Yields ramp up over the planning period and do not include yield from Level A (plumbing code). Additionally, the yield of Level E is approximately 1 MGD less than the actual goal; however, any differences in cost due to this disparity are covered in contingencies built into the estimate and are within the rounding of the cost estimate.
b. 2010 present value capital cost
c. Gross variable O&M costs. No credit for avoided wastewater treatment costs or avoided costs of water delivery in non-dry years.
d. Rounded to nearest $100.

Attachment 1 – Information on Recent Spot Water Market Transactions

Attachment 1: Information on Recent Spot Water Market Transactions

Spot and Short-term Option Water Transfers

A spot transaction is defined as a transaction in which water is bought and sold for cash and delivered more or less immediately or within a short period of time. With an option contract, the buyer pays for the right to purchase at a later date a specified quantity of water at a specified price within a specified period of time. Short-term options typically specify a purchase period of less than one year. The buyer of an option pays an upfront cost to acquire the option and pays a second price if they decide to exercise the option. If they decide not to exercise the option, they forgo the payment for the option.

Cost Components of Spot and Short-term Option Water Transfers

In addition to the seller's price for water, which includes the price of the option in the case of option contracts, the buyer incurs several other costs to negotiate the transaction and deliver the purchased water to its service area. These other costs along with the seller price determine the buyer's price for the water. Other costs fall into three main categories, as follows:

- Conveyance/Pumping Costs – these are the costs the buyer must incur to physically transport the water to its service area.
- Carriage Losses – these are the water losses that occur during transport of the water from its area of origin to its final destination. They may consist of physical losses dues to leakage and evaporation, as well as regulatory losses for meeting flow requirements. Carriage losses reduce the amount of water delivered and thus raise the unit price of the water to the buyer.
- Administration and Legal Costs – these are the costs the buyer must incur to negotiate, contract, and manage the transaction. Administrative and legal costs can vary substantially by deal and are infrequently tracked and accounted for. Nonetheless, they can be a significant component cost of any water transaction.

To summarize, the following equation defines the buyer's price for spot and short-term option water:

$$\text{Buyer's Price} = \frac{\text{Purchase Cost} + \text{Conveyance/Pumping Cost} + \text{Admin/Legal Cost}}{\text{Purchase Quantity} - \text{Carriage Losses}}$$

Example Spot and Short-term Water Transfers

EWA Seller Prices

In recent years, the Environmental Water Account (EWA) has been the largest buyer of spot water in California. DWR has published data on EWA purchases for FY 2000-01 through FY 2004-05.[4] This data is summarized in Table A1. The unit prices reported in Table A1 should be viewed as the Seller's price, not the buyer's. The quantities reported by DWR do not include losses, including carriage losses across the Delta. The costs only account for payments to sellers and exclude conveyance/pumping and administrative/legal costs. Thus, the prices shown in Table A1 are indicative of what the EWA has had to pay sellers in recent years to acquire water. Over the five years of reported transactions, seller prices upstream of the Delta have averaged about $80/AF with a standard deviation of about $19/AF. South of Delta seller prices have been considerably higher, averaging about $177/AF with a standard deviation of about $41/AF. Upstream of Delta seller prices were close to one standard deviation higher than the average in 2000-01, a dry year on the Sacramento and San Joaquin Rivers; South of Delta seller prices were close to 1.5 standard deviations higher than the average in 2000-01.

Table A1. EWA Seller Prices

Upstream of Delta				
Fiscal Year	**Water Purchased (AF)**	**Costs**	**Nominal $/AF**	**2005 $ $/AF**
2000-01	105,000	$9,125,000	$86.90	$95.39
2001-02	142,143	$10,660,725	$75.00	$80.77
2002-03	69,914	$5,893,550	$84.30	$88.90
2003-04	120,000	$10,460,000	$87.17	$89.83
2004-05	4,600	$200,000	$43.48	$43.48
			Avg.	$79.67
			St. Dev.	$18.69
South of Delta				
Fiscal Year	**Water Purchased (AF)**	**Costs**	**Nominal $/AF**	**2005 $ $/AF**
2000-01	231,034	$51,048,008	$220.95	$242.54
2001-02	97,400	$17,672,730	$181.44	$195.39
2002-03	145,000	$24,490,000	$168.90	$178.12
2003-04	155,000	$17,110,000	$110.39	$113.76
2004-05	98,516	$17,465,360	$177.28	$177.28
			Avg.	$181.42
			St. Dev.	$41.32

[4] http://www.watertransfers.water.ca.gov/water_trans/water_trans_index.cfm

Upstream of Delta, Yuba County Water Agency accounted for 80% of EWA sales reported in Table A1. Placer County Water Agency accounted for 9% of sales. South of Delta, Kern County Water Agency accounted for 60% of EWA sales, CVP water purchases accounted for 12%, and Santa Clara Valley Water District accounted for 10%.

MWD Sacramento Valley Short-term Options

The Metropolitan Water District of Southern California (MWD) negotiated short-term option contracts in 2003 and 2005 with numerous Sacramento Valley water districts. In 2003, MWD negotiated option agreements with 11 districts for a total of 146,230 AF of water. In 2005, it negotiated with three districts purchase options totaling 125,000 AF. Terms of sale were the same in both years, as follows:

> Option Price - $10/AF
>
> Call Price - $90/AF (paid only if option exercised)
>
> Third Party Impact Fee - $5/AF (paid only if option exercised)
>
> Critical Year Premium - $25/AF (paid only if option exercised in critically dry year)
>
> Total Seller Price - $105/AF (non-critically dry year); $130/AF (critically dry year).

Administrative and legal costs were not explicitly accounted by MWD. We estimate they were on the order of $2.50 per acre-foot of optioned water[5]. MWD plans for carriage losses of 20% to move the water through the Delta[6]. Thus, MWD's buyer price, net of conveyance/pumping costs, for these transactions would be about $131/AF for a non-critically dry year transfer and about $163/AF for a critically dry year transfer.

Future MWD Purchases

MWD, in conjunction with the State Water Project Contractors Authority, announced its intention to pursue up to 200,000 acre-feet of water for 2008 from the Central Valley through one-year option transfer agreements.[7] MWD staff reports cited an expected seller price of about $120/AF, consistent with its 2003 and 2005 agreements.

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[5] This estimate is based on a personal communication with Steve Hirsch of MWD, 1/9/2008. Mr. Hirsch estimated that negotiating and contracting required 2.5 to 3 full time employee (FTE) positions over six months. Conveyance and payment processing if the options were called would require an additional 0.5 to 1 FTE over six months. Assuming a fully loaded labor cost of $150,000/Yr/FTE

[6] Email correspondence with Steve Hirsch of MWD, 1/9/2008.

[7] http://www.appeal-democrat.com/common/printer/view.php?db=marysville&id=56936

CCWD Water Transfers Analysis

A 2005 water transfer assessment report prepared for CCWD developed three planning cost estimates for spot market water over the next 25 years: (1) a base estimate; (2) a conservative or pessimistic estimate, and (3) an optimistic estimate.[8]

Base Estimate	-	$306/AF delivered
Conservative Estimate	-	$862/AF delivered
Optimistic Estimate	-	$132/AF delivered

Though not entirely clear from the report, these appear to be buyer, not seller, prices, inclusive of conveyance/pumping, carriage, and administrative costs. The base and conservative estimates reflect assumptions about increasing competition for fresh water supply in California over the next several decades.

This report concluded that spot transactions were a fatally flawed long-term supply option, stating that

> *SB 221 and SB 610 require a 20-year water supply be in place for future real estate development projects. For the purposes of long-term planning and reliability, a Spot Market supply will likely not stand up to any litigation that opposes a project based on SB 221 and SB 610.*[9]

SCVWD 2003 IWRP

The 2003 Integrated Water Resources Plan assumed Santa Clara Valley Water District could purchase up to 60,000 AF of water through spot markets at a price of $225/AF[10]. It is unclear from the report whether this is a seller or buyer price. It also assumed it could secure up to 100,000 AF of water through option agreements at a cost of $200/AF. Again it is unclear if this is a seller or buyer price.

Summary of Recent Sales Data and Planning Estimates

Table A2 summarizes spot and short-term option prices from recent transactions and planning studies.

[8] WDS (2005). "Water Transfer Alternatives Analysis: Project Number 105245." Prepared to Contra Costa Water District, September 2005.

[9] Ibid. Page 7.

[10] Santa Clara Valley Water District (2003). "Integrated Water Resource Planning Study 2003." Appendix 4, Table A4-7.

Table A2.
Summary of Recent Spot/Short-term Option Sales and Planning Estimates

Buyer	Year	Area of Origin	Actual/ Estimate	Price $/AF	Seller or Buyer Price?
EWA	2000/01-2004/05	Upstream of Delta	Actual	$43 - $95	Seller
EWA	2000/01-2004/05	South of Delta	Actual	$114 - $243	Seller
MWD	2003 & 2005	Upstream of Delta	Actual	$105 - $130	Seller
CCWD	2005 – 2030	Upstream of Delta	Estimate	Base: $306 Conservative: $862 Optimistic: $132	Buyer
SCVWD	Next 10 years	Central Valley	Estimate	$200 - $225	Unknown

Potential Upstream of Delta Sellers

Based on recent transactions, possible sellers of spot and short-term option water upstream of the Delta include:

- Yuba County Water Agency
- Placer County Water Agency
- Glenn-Colusa I. D.
- Western Canal W.D.
- Richvale I.D.
- Sacramento Valley Settlement Contractors
- Sacramento Groundwater Authority

Attachment 2 - WSMP 2040 Component Cost Summary

WSMP 2040
Summary of Project Cost Estimate
Supplemental Supply Projects

Project Name	Project Type	Partners	Infrastructure Requirements			Capital Costs (2007 $) - *EBMUD Only Share for Partner Projects*	
			Mokelumne Aqueducts	Freeport Pipeline	Treatment Plant(s)	Category	Cost
Enlarge Pardee Reservoir	Upcountry Surface Storage	None	Used for delivery of raw water to the District	No	Water supply can be treated at any treatment plant		
						Planning	$ 24,400,000
						Engineering/Design	$ 24,400,000
						Property	$ 4,090,000
						Construction	$ 239,500,000
						Construction Contingency	$ 47,900,000
						Subtotal - Capital Costs	**$ 340,290,000**
Enlarge Lower Bear	Upcountry Surface Storage	Amador Water Agency (AWA) Calaveras County Water District (CCWD) San Joaquin County (SJC)	Used for delivery of raw water to the District	No	Water supply can be treated at any treatment plant		
						Planning	$ 1,010,000
						Engineering/Design	$ 1,010,000
						Property	$ -
						Construction	$ 7,780,000
						Construction Contingency	$ 2,334,000
						Subtotal - Capital Costs	**$ 12,134,000**
Inter-Regional Conjunctive Use Project (IRCUP)/San Joaquin Basin	Central Valley Conjunctive Use	Eastern San Joaquin Groundwater Basin Amador Water Agency (AWA) Calaveras County Water District (CCWD)	Used for delivery of raw water to the District and for delivery of recharge water in wet years to the San Joaquin Basin	No	Water supply can be treated at any treatment plant		
						Planning	$ 4,200,000
						Engineering/Design	$ 4,408,000
						Property	$ 250,000
						Construction	$ 24,237,000
						Construction Contingency	$ 7,271,000
						Subtotal - Capital Costs	**$ 40,366,000**
Groundwater Banking/Exchange (Sacramento Basin)	Central Valley Conjunctive Use	Sacramento County Water Agency (SCWA) Sacramento Groundwater Authority (SGA)	Water will be extracted from the Sacramento Basin and transported to the Mok. Aqueduct via the Freeport Pipeline.	Yes - for delivery of recharge water to the Sacramento Basin in wet years and for the extraction or stored water in dry years.	Water supply must be treated at conventional treatment plants		
						Planning	$ 1,887,000
						Engineering/Design	$ 2,830,000
						Property	$ 375,000
						Construction	$ 15,345,000
						Construction Contingency	$ 4,604,000
						Subtotal - Capital Costs	**$ 25,041,000**
Buckhorn Canyon Reservoir	Terminal System Surface Storage	None	The Mokelumne Aqueducts are required to transport refill water to the reservoir	Not Used	Water supply must be treated at conventional treatment plants, most likely at Sobrante or USL WTP		
						Planning	$ 10,400,000
						Engineering/Design	$ 15,590,000
						Property	$ -
						Construction	$ 189,520,000
						Construction Contingency	$ 28,428,000
						Subtotal - Capital Costs	**$ 243,938,000**
Bayside Groundwater Project - Phase 2	Terminal System Conjunctive Use	None	Used for delivery of recharge water	Not Used	Treated water will be injected into the ground and then re-treated upon extraction. Re-treatment will be conducted on-site at a new treatment facility		
						Planning	$ 2,856,000
						Engineering/Design	$ 4,284,000
						Property	$ 1,500,000
						Construction	$ 22,300,000
						Construction Contingency	$ 4,460,000
						Subtotal - Capital Costs	**$ 35,400,000**

WSMP 2040
Summary of Project Cost Estimate
Supplemental Supply Projects

Project Name	Project Type	Partners	Infrastructure Requirements		
			Mokelumne Aqueducts	Freeport Pipeline	Treatment Plant(s)
Bay Area Regional Desalination Project	Regional Desalination	Contra Costa Water District (CCWD) San Francisco Public Utility Commission Santa Clara Valley Water District (SCVWD)	Used for delivery of desalinated water to the District. A new pipeline will tie into the Mok. Aqueducts between the Delta and the Walnut Creek Pump Station	Not Used	Desalinated water can be treated at any WTP
AG-Urban Water Transfers	Water Transfer		Raw water will be diverted from the Sacramento River and transported to the District via the Freeport and Mokelumne Aqueducts	Yes - raw water will be diverted from the Sacramento River and transported to the District via the Freeport and Mokelumne Aqueducts	Water supply must be treated at conventional treatment plants
Low Energy Application for Desalination (LEAD) at C&H Sugar	Low energy desalination for industrial use	C&H Sugar	N/A (potable water offsets)	N/A (potable water offsets)	N/A (potable water offsets)

Capital Costs (2007 $) - *EBMUD Only Share for Partner Projects*		
Category		**Cost**
Planning	$	4,170,000
Engineering/Design	$	4,170,000
Property	$	340,000
Construction	$	56,540,000
Construction Contingency	$	14,135,000
Subtotal - Capital Costs	**$**	**79,355,000**
Planning		
Engineering/Design		
Site Preparation		
Construction		
Construction Contingency		
Subtotal - Capital Costs	**$**	**-**
Planning	$	1,490,000
Engineering/Design	$	2,980,000
Site Preparation		
Construction	$	15,990,000
Construction Contingency	$	2,974,000
Subtotal - Capital Costs	**$**	**23,434,000**

Notes:
1. A negative operational cost means the project will produce incremental income for the District (such as that created by increased hydroelectric generation) .
2. The definition of "Wet", "Dry" and "Idle" year classifications are generic terms used here to differentiate project operations under various hydrologic conditions. The criteria used to define these conditions may be different for each project and do not necessarily
3. A negative water delivery means that water is captured or stored (e.g. for conjunctive use) but no water is delivered to customers. For projects that have "wet year" variable O&M or energy costs, the variable cost is multiplied by the negative water delivery.
4. Relative Priority is the priority given to each project within a given portfolio. Projects are ranked according to their dry year cost and their ability to be turned on and off. Projects that must operated every year (such as Raise Pardee) are given a high priority, regardless of their $/AF cost. These projects will be utilized first in a given portfolio and, depending on drought severity, are followed by other projects that can be toggled.

WSMP 2040
Summary of Project Cost Estimate
Supplemental Supply Projects

Project Name	WET YEAR O&M Costs[1] in 2007 $- *EBMUD Only Share for Partner Projects*					
	WET YEAR[2] Operating Rules, Capacities, and Constraints	WET YEAR Annual Water Deliveries[3] (TAF/YR)	Energy (KWh/AF)	Energy (KWh/YR)	Variable O&M ($/AF)	Fixed O&M ($/YR)
Enlarge Pardee Reservoir	Technically this project operates in wet years, but there is no yield in wet years.	0.0	0	-19,000,000	$ -	$ -
				Project will increase Pardee Powerhouse average annual energy production from 83 GWh/yr to 102 GWh/yr.		
Enlarge Lower Bear	This project will not supply water in wet or normal years.	0.0	0	0	$ -	$ 55,000.00
						EBMUD's Portion of General O&M
Inter-Regional Conjunctive Use Project (IRCUP)/San Joaquin Basin	It is assumed that as much as 8.3 TAF of Mokelumne water will be recharged in wet and normal years (a total of 25 TAF will be recharged, but only 1/3 will belong to EBMUD). Recharge water will not come from EBMUD's Mokelumne water right, but instead from the rights of upcountry participants. Therefore, recharge water is not drafted from Pardee and not accounted for in EBMUDSIM. As a way to define "wet" years, recharge water is assumed available when EBMUD's EOS TSS without supplemental supplies is above 575 TAF.	-8.3	0	0	$8.33	$437,000
			Recharge occurs via recharge ponds so energy is negligible		Recharge pond O&M	General O&M of infrastructure + well replacement at 30 yrs
Groundwater Banking/Exchange (Sacramento Basin)	As much as 3.5 TAF of water is recharged during "wet" years and "above normal" years (a total of 7.0 TAF will be recharged, but only 1/2 will belong to EBMUD). Wet and Normal years are defined as those years when CVP contracts are allowed their full entitlements. The project will not operate in "below normal years".	-3.5	355	0	$ 20.00	$187,625.00
			Energy Required to diver water at Freeport and transport to recharge ponds		Recharge pond O&M and diversion costs.	General O&M of infrastructure + well replacement at 30 yrs
Buckhorn Canyon Reservoir	The project will not supply customer demands in wet or normal years, but will be refilled in these years depending on Mokelumne water availability. In the W-E model, refill water is assumed available when EOS TSS is above 550 TAF without utilizing any supplemental supplies. Once the reservoir reaches it maximum capacity of 143 TAF, refilling stops. All refill water is "drafted" from Pardee and accounted for in EBMUDSIM's TSS calculations.	-20.4	205		$ 2.28	$ 312,500.00
			Energy required to refill the reservoir		Dechlorination costs /AF of replenishment water	General O&M of the dam facilities
Bayside Groundwater Project - Phase 2	It is assumed that as much as 7,560 AFY of Mokelumne water will be injected in wet years. As a way to define "wet" years, recharge water is assumed available when EOS TSS without supplemental supplies is above 575 TAF. Refill water is not drafted from Pardee and is not accounted for in EBMUDSIM	-7.6	0	0	$ 8.40	$ 571,100.00
					Includes ASR well Maintenance	General O&M of infrastructure pipelines and ASR wells + well replacement at 30 yrs

WSMP 2040
Summary of Project Cost Estimate
Supplemental Supply Projects

Project Name	WET YEAR O&M Costs[1] in 2007 $- *EBMUD Only Share for Partner Projects*					
	WET YEAR[2] Operating Rules, Capacities, and Constraints	WET YEAR Annual Water Deliveries[3] (TAF/YR)	Energy (KWh/AF)	Energy (KWh/YR)	Variable O&M ($/AF)	Fixed O&M ($/YR)
Bay Area Regional Desalination Project	The project will not produce significant water for EBMUD in non-dry years, however, some production is necessary to ensure the integrity of the RO membranes. Wet and normal year water production was ignored in the W-E model.	4.5	2,443 Treatment Energy for minimum flow	0	$ 318 Includes membrane replacement & other O&M that fluctuates with product water volume	$ 496,000.00 Includes fixed labor and O&M costs
AG-Urban Water Transfers	No transfers in wet years.	0.0	0	0	$ -	$ -
Low Energy Application for Desalination (LEAD) at C&H Sugar	This project will be a baseload supply and will offset demand in all years. The plant will produce and supply an average annual production in all (wet, normal, and dry) years of 1.2 TAF.	1.2	0 Driven by C&H turbine waste heat	0	$ 134 Chemical treatment costs	$ 312,000.00 Fixed O&M for infrastructure and membranes

WSMP 2040
Summary of Project Cost Estimate
Supplemental Supply Projects

Project Name	DRY YEAR O&M Costs[1] in 2007 $ -- *EBMUD Only Share for Partner Projects*					
	DRY YEAR[2] Operating Rules, Capacities, and Constraints	DRY YEAR Annual Water Deliveries (TAF/YR)	Energy (KWh/AF)	Energy (KWh/YR)	Variable O&M ($/AF)	Fixed O&M ($/YR)
Enlarge Pardee Reservoir	The project will provide approximately 57 TAF in dry years, but no more than the amount of additional storage provided by the project over the course of a sustained drought. Actual water availability is determined by the EBMUDSIM operations model.	57.0	0	-19,000,000	$ -	$ -
				Project will increase Pardee Powerhouse average annual energy production from 83 GWh/yr to 102 GWh/yr -- assume $87/MWH wholesale price.		
Enlarge Lower Bear	This project will augment the District's Mokelumne water supply by providing 2,500 AF (2.2 MGD) in dry years. This project is triggered when EOS TSS falls below 500 TAF without any supplemental supplies.	2.5	0	0	$ -	$ 55,000.00
						EBMUD's Portion of General O&M
Inter-Regional Conjunctive Use Project (IRCUP)/San Joaquin Basin	As much as 19,500 AFY will be extracted for EBMUD's use in dry years, depending on stored water availability. Water is extracted when EOS TSS with higher priority supplemental supplies is below 500 TAF	19.5	1,446	0	$ 9.00	$679,100.00
			Energy to pump EBMUD's portion of the water and transport to the Mok. Aqueducts		For GAC treatment	General O&M of infrastructure (more O&M in extraction years)
Groundwater Banking/Exchange (Sacramento Basin)	The District will receive up to 4,667 AF of water during dry years, depending on stored water availability. Water is extracted when EOS TSS with higher priority supplemental supplies is below 500 TAF	4.7	1,800	0	$ 9.00	$285,625.00
			Energy to pump EBMUD's portion of the water and transport to the FRWP		For GAC treatment	General O&M of infrastructure (more O&M in extraction years) + well replacement at 30 yrs
Buckhorn Canyon Reservoir	The project will provide 47 TAF in each dry year until available storage is depleted (143 TAF). Water is extracted when EOS TSS with higher priority supplemental supplies is below 500 TAF.	47.0	0	0	$ -	$ 312,500.00
						General O&M of the dam facilities
Bayside Groundwater Project - Phase 2	Up to 10,080 AFY will be extracted in dry years, depending on stored water availability. Water is extracted when EOS TSS with higher priority supplemental supplies is below 500 TAF	10.1	498	0	$ 44.00	$ 1,039,116.00
			Extraction and treatment energy		Includes ASR well maintenance (more intensive in extraction years) & chemical and disposal costs	Includes pipeline, pump station O&M and operation of the treatment facility + well replacement at 30 yrs

WSMP 2040
Summary of Project Cost Estimate
Supplemental Supply Projects

Project Name	DRY YEAR O&M Costs[1] in 2007 $ -- *EBMUD Only Share for Partner Projects*					
	DRY YEAR[2] Operating Rules, Capacities, and Constraints	DRY YEAR Annual Water Deliveries (TAF/YR)	Energy (KWh/AF)	Energy (KWh/YR)	Variable O&M ($/AF)	Fixed O&M ($/YR)
Bay Area Regional Desalination Project	EBMUD's share of the project will allow it to produce up to 20 MGD in dry years. The project is triggered when EOS TSS with higher priority supplemental supplies is below 500 TAF	22.4	2,443 Treatment Energy	0	$ 318 Includes membrane replacement & other O&M that fluctuates with product water volume	$ 1,555,800.00 Includes fixed labor and O&M costs plus contract labor to maintain/run the facility in dry years
AG-Urban Water Transfers	EBMUD can transfer up to 50 TAF in a given dry year. The project is triggered when EOS TSS with higher priority supplemental supplies is below 500 TAF	50.0	0 Water will be pulled out of the Sacramento River via Freeport - include FRWP Energy	0	$ - Water will be pulled out of the Sacramento River via Freeport - includes FRWP variable costs	$ - Water will be pulled out of the Sacramento River via Freeport - include FRWP fixed costs
Low Energy Application for Desalination (LEAD) at C&H Sugar	This project will be baseload supply and will offset demand in all years. The plant will produce and supply an average annual production in all (wet, normal, and dry) years of 1.2 TAF.	1.2	0 Driven by C&H turbine waste heat	0	$ 134 Chemical treatment costs	$ 312,000.00 Fixed O&M for infrastructure and membranes

WSMP 2040
Summary of Project Cost Estimate
Supplemental Supply Projects

Project Name	IDLE YEAR[2] O&M Costs in 2007 $- *EBMUD Only Share for Partner Projects*		Key Modeling Assumptions
	IDLE YEAR Operating Rules, Capacities, and Constraints	**Fixed O&M ($/YR)**	
Enlarge Pardee Reservoir	No idle years.		All calculations regarding the Enlarge Pardee Reservoir Project are conducted in EBMUDSIM and passed to WEAP.
Enlarge Lower Bear	No idle years.		
Inter-Regional Conjunctive Use Project (IRCUP)/San Joaquin Basin	The project will be idle when water is neither being extracted or injected	$361,700 For idle years, assume continuation of the annual monitoring program and 10% of all other O&M costs	In future model runs, a 10% aquifer loss will be assumed
Groundwater Banking/Exchange (Sacramento Basin)	The project will be idle when water is neither being extracted or injected	$141,063 For idle years, assume continuation of the annual monitoring program and 10% of all other O&M costs	In future model runs, a 10% aquifer loss will be assumed
Buckhorn Canyon Reservoir	Except under emergency circumstances (such as a failure of the Mokelumne Aqueducts) or for improved operation of the EBMUD system, the Project will be idle in wet and normal years (when EOS TSS is between 500 and 550 TAF) or when the reservoir has been filled to its maximum capacity.	$ 312,500.00 General O&M of the dam facilities	
Bayside Groundwater Project - Phase 2	The project will be idle when water is neither being extracted or injected	$ 571,100.00 General O&M of infrastructure pipelines and ASR wells + well replacement at 30 yrs	In future model runs, a 10% aquifer loss will be assumed

WSMP 2040
Summary of Project Cost Estimate
Supplemental Supply Projects

Project Name	IDLE YEAR[2] O&M Costs in 2007 $- *EBMUD Only Share for Partner Projects*		Key Modeling Assumptions
	IDLE YEAR Operating Rules, Capacities, and Constraints	**Fixed O&M ($/YR)**	
Bay Area Regional Desalination Project	No idle years. The project must produce a minor amount of water even in wet and normal years.		
AG-Urban Water Transfers	There are no O&M costs when the project is idle.		
Low Energy Application for Desalination (LEAD) at C&H Sugar	No idle years.		

WSMP 2040
Summary of Project Cost Estimate
Recycled Water Projects

Project Name	Project Type	Partners	Capital Costs (2007 $) - *EBMUD Only Share for Partner Projects*		
			Category		**Cost**
San Ramon Valley Recycled Water Program - Phase 2 Bishop Ranch	Recycling (irrigation only)	Dublin San Ramon Services District (DSRSD)			
			Planning	$	207,000
			Engineering/Design	$	305,000
			Property	$	-
			Construction	$	4,479,000
			Construction Contingency (0%)	$	-
			Subtotal - Capital Costs	**$**	**4,991,000**
San Ramon Valley Recycled Water Program - Phase 3 Danville East	Recycling (irrigation only)	Dublin San Ramon Services District (DSRSD)			
			Planning	$	152,000
			Engineering/Design	$	461,000
			Property	$	-
			Construction	$	4,841,000
			Construction Contingency (0%)	$	-
			Subtotal - Capital Costs	**$**	**5,454,000**
San Ramon Valley Recycled Water Program - Phase 4 Blackhawk East	Recycling (irrigation only)	Dublin San Ramon Services District (DSRSD)			
			Planning	$	118,000
			Engineering/Design	$	211,000
			Property	$	76,000
			Construction	$	2,120,000
			Construction Contingency (0%)	$	-
			Subtotal - Capital Costs	**$**	**2,525,000**
San Ramon Valley Recycled Water Program - Phase 5 Blackhawk West	Recycling (irrigation only)	Dublin San Ramon Services District (DSRSD)			
			Planning	$	178,000
			Engineering/Design	$	444,000
			Property	$	200,000
			Construction	$	3,550,000
			Construction Contingency (30%)	$	1,065,000
			Subtotal - Capital Costs	**$**	**5,437,000**
San Ramon Valley Recycled Water Program - Phase 6 Danville West	Recycling (irrigation only)	Dublin San Ramon Services District (DSRSD)			
			Planning	$	130,000
			Engineering/Design	$	324,000
			Property	$	200,000
			Construction	$	2,591,000
			Construction Contingency (30%)	$	777,000
			Subtotal - Capital Costs	**$**	**4,022,000**
East Bayshore Recycled Water Project - Phase 1B Alameda	Recycling (irrigation only)				
			Planning	$	518,000
			Engineering/Design	$	3,111,000
			Property	$	-
			Construction	$	20,739,000
			Construction Contingency (20%)	$	4,147,800
			Subtotal - Capital Costs	**$**	**27,997,800**

WSMP 2040
Summary of Project Cost Estimate
Recycled Water Projects

Project Name	Project Type	Partners	Capital Costs (2007 $) - *EBMUD Only Share for Partner Projects*	
			Category	**Cost**
East Bayshore Recycled Water Project - Phase 2 Future Expansion	Recycling (irrigation and commercial)			
			Planning	$ 171,000
			Engineering/Design	$ 1,023,000
			Property	$ 205,000
			Construction	$ 6,822,000
			Construction Contingency (20%)	$ 1,364,400
			Subtotal - Capital Costs	**$ 9,414,400**
San Leandro Water Reclamation Facility Expansion Project - Phase 3 Oakland/Alameda	Recycling (irrigation)			
			Planning	$ 787,000
			Engineering/Design	$ 787,000
			Property	$ 315,000
			Construction	$ 11,500,000
			Construction Contingency (25%)	$ 2,875,000
			Subtotal - Capital Costs	**$ 16,264,000**
Richmond Advanced Recycled Expansion (RARE) Water Project - Phase 2 Additional 0.5 mgd	Recycling (industrial use)	ChevronTexaco Richmond Refinery		
			Planning	$ -
			Engineering/Design	$ -
			Property	$ -
			Construction	$ -
			Construction Contingency (20%)	$ -
			Subtotal - Capital Costs	**$ -**
Richmond Advanced Recycled Expansion (RARE) Water Project - Future Expansion (Expansion from 4.0 to 5.0 mgd)	Recycling (industrial use)	ChevronTexaco Richmond Refinery		
			Planning	$ -
			Engineering/Design	$ -
			Property	$ -
			Construction	$ -
			Construction Contingency (30%)	$ -
			Subtotal - Capital Costs	**$ -**
North Richmond Water Reclamation Plant Expansion Project - Surrounding Area	Potable Water Offset	ChevronTexaco Richmond Refinery		
			Planning	$ 500,000
			Engineering/Design	$ 1,537,000
			Property	$ -
			Construction	$ 10,246,000
			Construction Contingency (30%)	$ 3,073,800
			Subtotal - Capital Costs	**$ 15,356,800**
ConocoPhillips Recycled Water Project, Phase 1	Recycling (industrial use)	ConocoPhillips Refinery (COP)		
			Planning	$ 500,000
			Engineering/Design	$ 2,747,000
			Property	$ -
			Construction	$ 36,622,000
			Construction Contingency (20%)	$ 7,324,400
			Subtotal - Capital Costs	**$ 40,058,400**

WSMP 2040
Summary of Project Cost Estimate
Recycled Water Projects

Project Name	Project Type	Partners	Capital Costs (2007 $) - *EBMUD Only Share for Partner Projects*		
			Category		**Cost**
ConocoPhillips Recycled Water Project, Phase 2	Recycling (industrial use)	ConocoPhillips Refinery (COP)			
			Planning	$	177,000
			Engineering/Design	$	353,000
			Property	$	-
			Construction	$	3,531,000
			Construction Contingency (30%)	$	1,059,300
			Subtotal - Capital Costs	**$**	**2,920,300**
Franklin Canyon Recycled Water Project	Recycling (irrigation and industrial use)	ConocoPhillips Refinery (COP)			
			Planning	$	98,000
			Engineering/Design	$	314,000
			Property	$	-
			Construction	$	2,765,000
			Construction Contingency (30%)	$	829,500
			Subtotal - Capital Costs	**$**	**4,006,500**
Reliez Valley Recycled Water Project	Potable Water Offset (irrigation)	Central Contra Costa Sanitation District (CCCSD)			
			Planning	$	106,000
			Engineering/Design	$	266,000
			Property	$	-
			Construction	$	2,126,000
			Construction Contingency (30%)	$	637,800
			Subtotal - Capital Costs	**$**	**3,135,800**
Satellite Recycled Water Projects (Retrofits)	Potable Water Offset				
			Planning	$	820,000
			Engineering/Design	$	1,920,000
			Property	$	3,750,000
			Construction	$	25,740,000
			Construction Contingency (40%)	$	10,296,000
			Subtotal - Capital Costs	**$**	**42,526,000**
Lake Chabot Raw Water Expansion Project	Potable Water Offset				
			Planning	$	200,000
			Engineering/Design	$	200,000
			Property	$	-
			Construction	$	3,331,000
			Construction Contingency (30%)	$	999,300
			Subtotal - Capital Costs	**$**	**4,730,300**

Notes:
1. Variable O&M costs are exclusive of energy costs.

WSMP 2040
Summary of Project Cost Estimate
Recycled Water Projects

Project Name	WET YEAR O&M Costs in 2007 $- *EBMUD Only Share for Partner Projects*					
	WET YEAR Operating Rules, Capacities, and Constraints	WET YEAR Annual Water Deliveries (TAF/YR)	Energy (KWh/AF)	Energy (KWh/YR)	Variable O&M ($/AF)[1]	Fixed O&M ($/YR)
San Ramon Valley Recycled Water Program - Phase 2 Bishop Ranch	N/A - Baseload Supply	0.84	1,390	0	$92.00	$0
San Ramon Valley Recycled Water Program - Phase 3 Danville East	N/A - Baseload Supply	0.65	1,390	0	$92.00	$0
San Ramon Valley Recycled Water Program - Phase 4 Blackhawk East	N/A - Baseload Supply	0.41	1,390	0	$92.00	$0
San Ramon Valley Recycled Water Program - Phase 5 Blackhawk West	N/A - Baseload Supply	0.34	1,390	0	$92.00	$0
San Ramon Valley Recycled Water Program - Phase 6 Danville West	N/A - Baseload Supply	0.22	1,390	0	$92.00	$0
East Bayshore Recycled Water Project - Phase 1B Alameda	N/A - Baseload Supply	1.34	870	0	$188.20	$0

WSMP 2040
Summary of Project Cost Estimate
Recycled Water Projects

Project Name	WET YEAR O&M Costs in 2007 $- *EBMUD Only Share for Partner Projects*					
	WET YEAR Operating Rules, Capacities, and Constraints	WET YEAR Annual Water Deliveries (TAF/YR)	Energy (KWh/AF)	Energy (KWh/YR)	Variable O&M ($/AF)[1]	Fixed O&M ($/YR)
East Bayshore Recycled Water Project - Phase 2 Future Expansion	N/A - Baseload Supply	0.67	870	0	$188.20	$0
San Leandro Water Reclamation Facility Expansion Project - Phase 3 Oakland/Alameda	N/A - Baseload Supply	0.63	820	0	$355.30	$0
Richmond Advanced Recycled Expansion (RARE) Water Project - Phase 2 Additional 0.5 mgd	N/A - Baseload Supply	0.56	1,830	0	$205.70	$0
Richmond Advanced Recycled Expansion (RARE) Water Project - Future Expansion (Expansion from 4.0 to 5.0 mgd)	N/A - Baseload Supply	1.12	1,830	0	$187.90	$0
North Richmond Water Reclamation Plant Expansion Project - Surrounding Area	N/A - Baseload Supply	1.90	1,830	0	$176.30	$0
ConocoPhillips Recycled Water Project, Phase 1	N/A - Baseload Supply	3.14	1,220	0	$0.00	$0

WSMP 2040
Summary of Project Cost Estimate
Recycled Water Projects

Project Name	WET YEAR O&M Costs in 2007 $- *EBMUD Only Share for Partner Projects*					
	WET YEAR Operating Rules, Capacities, and Constraints	WET YEAR Annual Water Deliveries (TAF/YR)	Energy (KWh/AF)	Energy (KWh/YR)	Variable O&M ($/AF)[1]	Fixed O&M ($/YR)
ConocoPhillips Recycled Water Project, Phase 2	N/A - Baseload Supply	1.01	1,220	0	$0.00	$0
Franklin Canyon Recycled Water Project	N/A - Baseload Supply	0.34	1,390	0	$47.60	$0
Reliez Valley Recycled Water Project	N/A - Baseload Supply	0.21	1,510	0	$683.40	$0
Satellite Recycled Water Projects (Retrofits)	N/A - Baseload Supply	0.80 - mid-point of yield range, assuming **five** satellite projects are constructed.	560	0	$101.50	$20,000
Lake Chabot Raw Water Expansion Project	N/A - Baseload Supply	0.40	340	0	$100.00	$0

Notes:
1. Variable O&M costs are exclusive of energy costs.

WSMP 2040
Summary of Project Cost Estimate
Recycled Water Projects

Project Name	DRY YEAR O&M Costs in 2007 $ -- *EBMUD Only Share for Partner Projects*						Key O&M Assumptions
	DRY YEAR Operating Rules, Capacities, and Constraints	DRY YEAR Annual Water Deliveries (TAF/YR)	Energy (KWh/AF)	Energy (KWh/YR)	Variable O&M ($/AF)[1]	Fixed O&M ($/YR)	
San Ramon Valley Recycled Water Program - Phase 2 Bishop Ranch	N/A	0.84	1,390	0	$92.00	$0	Estimated O&M costs based on actual O&M costs from the San Ramon Valley Reycled Water Program - Phase 1 (2006-2007 data). Annual O&M costs are split with DSRSD and are based on the volume of RW delivered to each agency; this percentage varies. No new labor is required.
San Ramon Valley Recycled Water Program - Phase 3 Danville East	N/A	0.65	1,390	0	$92.00	$0	Estimated O&M costs based on actual O&M costs from the San Ramon Valley Reycled Water Program - Phase 1 (2006-2007 data). Annual O&M costs are split with DSRSD and are based on the volume of RW delivered to each agency; this percentage varies. No new labor is required.
San Ramon Valley Recycled Water Program - Phase 4 Blackhawk East	N/A	0.41	1,390	0	$92.00	$0	Estimated O&M costs based on actual O&M costs from the San Ramon Valley Reycled Water Program - Phase 1 (2006-2007 data). Annual O&M costs are split with DSRSD and are based on the volume of RW delivered to each agency; this percentage varies. No new labor is required.
San Ramon Valley Recycled Water Program - Phase 5 Blackhawk West	N/A	0.34	1,390	0	$92.00	$0	EBMUD will pay 100% of O&M costs. Estimated O&M costs were based on actual O&M costs from San Ramon Valley Recycled Water Program - Phase 1 (2006-2007 data). No new labor is required.
San Ramon Valley Recycled Water Program - Phase 6 Danville West	N/A	0.22	1,390	0	$92.00	$0	EBMUD will pay 100% of O&M costs. Estimated O&M costs were based on actual O&M costs from San Ramon Valley Recycled Water Program - Phase 1 (2006-2007 data). No new labor is required.
East Bayshore Recycled Water Project - Phase 1B Alameda	N/A	1.34	870	0	$188.20	$0	EBMUD will pay 100% of O&M costs. Average annual production takes into account max/min usage for irrigation users (high in summer/low in winter). Industrial users have steady usage year-round.

WSMP 2040
Summary of Project Cost Estimate
Recycled Water Projects

Project Name	DRY YEAR O&M Costs in 2007 $ -- *EBMUD Only Share for Partner Projects*						Key O&M Assumptions
	DRY YEAR Operating Rules, Capacities, and Constraints	DRY YEAR Annual Water Deliveries (TAF/YR)	Energy (KWh/AF)	Energy (KWh/YR)	Variable O&M ($/AF)[1]	Fixed O&M ($/YR)	
East Bayshore Recycled Water Project - Phase 2 Future Expansion	N/A	0.67	870	0	$188.20	$0	EBMUD will pay 100% of O&M costs. Average annual production takes into account max/min usage for irrigation users (high in summer/low in winter). Industrial users have steady usage year-round.
San Leandro Water Reclamation Facility Expansion Project - Phase 3 Oakland/Alameda	N/A	0.63	820	0	$355.30	$0	Only 498 AFY (54%) of the total 962 AFY demand to areas North of the SLWPCP will be new deliveries. Therefore, capital and O&M costs associated with providing tertiary treated water to existing customers is not included, and where appropriate, costs have been reduced by 46% to estimate costs associated with new potable water offsets.
Richmond Advanced Recycled Expansion (RARE) Water Project - Phase 2 Additional 0.5 mgd	N/A	0.56	1,830	0	$205.70	$0	Construction cost estimate (capital cost) includes $250,000 for increase in WCWD sewer connection fee. Cost of high purity recycled water for Chevron will be set to recover 100% of EBMUD's capital cost (debt service or 100% Chevron funding). EBMUD will pay for O&M costs; Chevron will reimburse O&M expenses.
Richmond Advanced Recycled Expansion (RARE) Water Project - Future Expansion (Expansion from 4.0 to 5.0 mgd)	N/A	1.12	1,830	0	$187.90	$0	Construction cost estimate (capital cost) includes $250,000 for increase in WCWD sewer connection fee. Cost of high purity recycled water for Chevron will be set to recover 100% of EBMUD's capital cost (debt service or 100% Chevron funding). EBMUD will pay for O&M costs; Chevron will reimburse O&M expenses.
North Richmond Water Reclamation Plant Expansion Project - Surrounding Area	N/A	1.90	1,830	0	$176.30	$0	EBMUD will pay 100% of capital and O&M costs. Assumes pumping from plant will not be required.
ConocoPhillips Recycled Water Project, Phase 1	N/A	3.14	1,220	0	$0.00	$0	ConocoPhillips will pay $7 million toward capital costs. $135,000 of capital costs has been expended. (The sunk costs and COP contribution have already been deducted from the capital cost subtotal). ConocoPhillips will pay 100% of O&M costs; EBMUD will reimburse O&M expenses.

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Recycled Water Projects

Project Name	DRY YEAR O&M Costs in 2007 $ -- *EBMUD Only Share for Partner Projects*						Key O&M Assumptions
	DRY YEAR Operating Rules, Capacities, and Constraints	DRY YEAR Annual Water Deliveries (TAF/YR)	Energy (KWh/AF)	Energy (KWh/YR)	Variable O&M ($/AF)[1]	Fixed O&M ($/YR)	
ConocoPhillips Recycled Water Project, Phase 2	N/A	1.01	1,220	0	$0.00	$0	ConocoPhillips will pay $2.2 million toward capital costs (this value has already been deducted from the capital cost subtotal). ConocoPhillips will pay 100% of capital and O&M costs; EBMUD will reimburse O&M expenses.
Franklin Canyon Recycled Water Project	N/A	0.34	1,390	0	$47.60	$0	EBMUD will cover 50% of capital costs and 100% of O&M costs. One day per week of labor required (one full-time employee costs $80,000/year, 5 days a week, 50 weeks/year; therefore 1 day/week will cost $16,000/year.
Reliez Valley Recycled Water Project	N/A	0.21	1,510	0	$683.40	$0	EBMUD will pay 100% of O&M costs. Annual energy costs based on 15.3 cents/kwh, pumping 10 hours per day. Other O&M costs based on 3% of construction subtotal plus the purchase of RW from CCCSD at $130/AF.
Satellite Recycled Water Projects (Retrofits)	N/A	0.80 - mid-point of yield range, assuming five satellite projects are constructed.	560	0	$101.50	$20,000	EBMUD will pay 100% of O&M costs. Ultraviolet (UV) disinfection with residual chlorination used. Sludge is returned to wastewater flows for processing at main plant. Membranes replaced every 10 years. Annual fixed O&M set to 1/10 of membrane replacement cost. Labor costs absorbed by existing staff. Other O&M costs include materials, supplies, UV bulb replacement.
Lake Chabot Raw Water Expansion Project	N/A	0.40	340	0	$100.00	$0	EBMUD will pay 100% of O&M costs. O&M and energy estimates are incremental (i.e. they are in addition to and do not include existing costs.) Labor costs estimated from San Leandro Recycled Water Expansion by EBMUD - assumes labor is ~$400/AF of RW produced and delivered.

Notes:
1. Variable O&M costs are exclusive of energy costs.

Attachment 3 - WSMP 2040 Component Descriptions

Project: Bay Area Regional Desalination Project

District Contact: Hasan Abdullah

Status: Conceptual/Planning

First Year of Operation: 2012 (if approved)

Type of Project: Desalination

Project Overview

The Bay Area's four largest water agencies, EBMUD, CCWD, SFPUC and SCVWD, are jointly exploring the development of regional desalination facilities that would benefit over 5.4 million Bay Area residents and businesses served by these agencies. The Bay Area Regional Desalination Project could consist of one or more desalination facilities, with an ultimate total capacity of up to 71 million gallons per day (MGD). An interagency agreement will be approved by the regional partners prior to the initiation of pilot testing work or future phases of the project.

A feasibility study completed in June of 2007 identified the East Contra Costa site as the most ideal and conceivable project location. A desalination plant constructed at this site would be near the EBMUD Mokelumne Aqueducts, the CCWD Contra Costa Canal, and CCWD's Multipurpose Pipeline (MPP). At the East Contra Costa site, water would be desalinated using one-pass or two-pass reverse osmosis (RO).The desalinated water would be transported to the Mokelumne Aqueducts via a pump station and a 3-mile-long, 4-foot-diameter pipeline. Water distributed through the Mokelumne Aqueducts would undergo downstream treatment.

Capacity Information

Dry Year Production:	71 MGD (20 MGD to EBMUD). EBMUD will get about 28% of production yield in dry years.
Wet/Normal Year Production:	4 MGD. An offline desalination plant must sustain a reduced flow to maintain the integrity of the RO membranes. For that reason, the wet year production was estimated to be 20 percent of dry year operations[1].
Production depends on (Water Source):	San Francisco Bay
Project will be operated:	Intermittently as a dry-year supplemental supply, when the District's total reservoir storage falls below 65%. In these years the District will get 20 MGD. The W-E model will be used to determine when and how often that happens.

[1] Bay Area Regional Desalination Feasibility Study. June, 2007.

Opportunities and Challenges Summary

Opportunities

- Regional desalination would meet EBMUD's dry year water supply needs. It would also provide an alternative source of water to EBMUD's existing Pardee Reservoir supplies.
- This project could also be used during emergencies and to allow for maintenance or repairs of other major facilities.
- By reducing dependence on water from Pardee Reservoir, delivered to the District through the San-Francisco Bay Delta via the Mokelumne Aqueducts, this project will also help mitigate EBMUD's susceptibility to seismic and flood risks in the Delta.

Challenges

- Construction and operation of a water intake structure in the Bay could result in some potential effects. Juvenile salmonids use the Bay as a migratory pathway to the ocean during early life stages. Other sensitive species may also be potentially affected by the intake facility.
- Regional desalination would require obtaining numerous permits and approvals for construction and operation. Major permits/approvals include potentially amending EBMUD's Central Valley Project water service contract (depending on the location of the alternative), state and federal Endangered Species Act compliance, Section 404 of the Clean Water Act, Section 106 of the National Historic Preservation Act, and NPDES permit from the Regional Water Quality Control Board (RWQCB) for the discharge of the brine.
- Uncertainty exists in terms of the potential impacts of discharging the brine and may depend on the availability of sufficient amounts of water to dilute the brine before discharge. The ability to obtain discharge permits may be problematic.
- While desalination is a continually improving technology that is used in the Middle East, there has been little experience with it in North America on such a large scale. The facility required by EBMUD would be one of the largest facilities in the world.

Desalination is an energy intensive use. Estimated annual operation and maintenance costs associated with this alternative are approximately 300% greater than those of other alternatives studied for the Freeport Environmental Impact Report (EIR).

Project: Bayside Groundwater – Phase 2

District Contact: Ken Minn, Mike Tognolini
Status: Planning
Reference Used: Bayside Groundwater Project Phase 1 Draft EIR and Final EIR
First Year of Operation: 2013 years
Type of Project: Groundwater

Project Overview

This alternative would involve developing Phase 2 of a conjunctive use project (Aquifer Storage and Recovery Project) within the South East Bay Plain (SEBP) Groundwater Basin by utilizing existing Phase 1 facilities and constructing new Phase 2 facilities to store treated water in an East Bay aquifer during years when surplus water is available for later use during a drought. Phase 2 will add 9 MGD (extraction rate) to the existing 1 MGD phase 1 project (for a total project capacity of 10 MGD). Hence for the purpose of the WSMP 2040, only 9 MGD of additional supply will be considered in yield estimate.

In this project, potable (treated) water from EBMUD's distribution system will be injected into the basin for storage and extracted later for dry year use. Storage would be accomplished via direct injection at three ASR sites. One ASR site is currently in existence and is known as the District-owned "McMillan Site". Two new sites (currently not located) are assumed for the purpose of this estimate.

For the development of the McMillan Site, and for project-costing purposes, it is assumed that an existing ASR well located on leased property owned by the Oro Loma Sanitation District (OLSD) will be replaced with a new well on the McMillian property. In addition, a second (new) well will be installed on the same site and use the Phase 1 facilities. A treatment plant, as will be constructed on the McMillan site during Phase 1 efforts, will also serve Phase 2 needs for that well field (location) without requiring significant modifications and hence will not be a cost factor for Phase 2. It is assumed that the other two Phase 2 well sites will in turn each require a treatment plant (i.e., at each location / site). Since the water injected is "treated" water, the treatment plants are designed under these assumptions to assume that water extracted will only need "partial" re-treatment, such that water supplied to the distribution system meets DPH requirements (that is, there are no pre-treatment costs associated with the injected water). In summary, each of the three ASR sites will contain a total of 2 ASR wells (for a total of 6 project wells, all of which are "new") and one treatment plant (for a total of 3 treatment plants, two of which are "new" and one of which is "existing and therefore does not require capital construction costs").

Total of Phase 1 and Phase 2 project injection capacity is 10 MGD (i.e., 11,200 AFY). Hence each well will be capable of extracting at a calculated rate of 10 MGD / 6 wells or 1.67 MGD per well. Existing distribution system pressure will be used to accomplish injection (i.e., there will be no power costs / pumping costs associated with injection). The wells would extract the total volume injected (i.e. no losses during storage). Hence, the extraction capability of each well = 33,600 AF / 3 yrs / 6 wells = 1,867 AFY/well = 1.67 MGD / well. Pumping / Power costs will occur during the extraction process.

Based on historic hydrology, injection would occur 4 out of every 10 years, on average, and extraction would occur in 3 out of 10 years. In reality, there is no sequential order for injection and extraction phases. Given hydrologic conditions will dictate the sequence.

Over a long period of time, the amount of injection will exceed that of extraction. However, for the purpose of this analysis, injection volume is assumed equal to extraction volume over a 10 year period, and within that 10 year period there are 3 dry years, 4 wet years, and 3 "other" years (when neither injection nor extraction occurs).

The following project assumptions are included in the Phase 2 evaluation (some of which are also detailed above):

- 2 new ARS well sites (+ 1 existing District-owned site)
- 2 new treatment plants (+ 1 existing plant for which no construction $ is required)
- 6 new ASR wells (includes the replacement of the Phase 1 well)
- Each well site is adjacent to a transmission/distribution line, therefore each site would only require an intertie (=3 interties) *(since the Phase 1 well is assumed to be replaced with a new well on the "McMillan Site", it is assumed a new intertie is also required at the McMillan Site)*
- Expanded monitoring will be required at two of the well sites. (The McMillan site has existing monitoring that meets the Phase 2 needs and will continue to be implemented at that site.)
- A new pipeline or upgrade of the existing pipeline will be needed along Grant Avenue to provide a higher capacity (for injection and extraction operations) at the McMillan Site / Phase 1 facilities.

Operational Information

Wet and Normal Year Operation:	Assuming injection occurs every 4 out of 10 years at a rate of 6.75 MGD = 7,560 AFY.
Dry Year Operation:	Assuming extraction occurs every 3 out of 10 years at a rate of 9 MGD = 10,080 AFY.

Capacity Information (Does not include the 1 MGD yield of Phase 1)

Average Dry Year Production:	The project will provide **10,080 AF/yr** during a three year drought. However, the project has the capacity to operate up to 11,200 AF/yr (10 MGD).
Average Wet Year Production:	0 AF/yr (injection only in wet years)
Production depends on (water source):	Availability of 'surplus' potable water in 'wet' years.

Opportunities and Challenges Summary

Opportunities

- Further development of the South East Bay Plain (SEBP) Groundwater Basin would involve constructing additional facilities to store water in the East Bay aquifers during years in which surplus water is available for later use during dry years when supplemental supplies are needed.

- In general, water would be injected via wells during surplus years to store that surplus, treated water as sourced from EBMUD's distribution system. During dry years, water would be extracted, re-treated, and distributed. Phase 2 of this project would deliver the 30,240 AFY stored (in addition to the 3,360 stored as part of Phase 1 facilities integrated into Phase 2).
- Would require two additional well sites, interties to distribution pipeline(s), an expanded monitoring system, and two new treatment plants adjacent to the new well sites (there is a possibility that one centralized treatment system could be constructed, although to conservatively estimate cost that was not assumed).

Challenges / Considerations

- A Final EIR was certified in November 2005 for Phase 1 along with the Programmatic EIR for Phase 2. Comments included safety of radon in groundwater, potential subsidence issues related to pumping, water quality, and potential effect of the project on the Niles Cone Groundwater Basin. Phase 1 operation may verify that impacts can be avoided.
- Future expansion of the project (Phase 2 = 9 MGD in addition to the 1 MGD Phase 1) would require a new EIR, developed based on the Programmatic EIR. A new EIR will include a full public disclosure process and outreach efforts.
- Water quality/health/environmental justice concerns from local residents (e.g., Heron Bay Task Force) have been addressed as part of Phase 1 development. However, they also could continue to be areas of concern as Phase 2 proceeds.

Other considerations:

- Flexibility (Concept #1) - This project could exist at other locations within the SEBP.
- Flexibility (Concept # 2) - The project can be phased (perhaps a 5 MGD interim step for example). A larger project is also possible.
- Option to Utilize Existing Staff - Staffing is required for the operation and maintenance of the project, although there is the possibility that existing staff assignments can be re-assigned to accommodate require O&M work / tasks.
- Baseload Supply Option - Since the operation can be considered a pump (from basin) then treat / supply to distraction system and customers, the project can be considered as a facility that could contribute to the baseload supply (running 24/7)
- No "Electric" cost associated with injection operation – Distribution system pressure is sufficient for injection operations
- Local Storage – Since the project is located within the EBMUD service area, it offers a local source of stored water for use during times of need / emergency
- No 10% loss need be applied - Since this is an already "full" basin with associated boundary conditions, there is no need to assume a loss factor (i.e., similar factors as would be applied to other groundwater projects – the 10% factor for stored water lost due to migration – need not be applied)

- Limited Treatment Costs - Extracted water needs only partial treatment (referred to as “re-treatment” in this text) due to the fact that water injected is treated water as supplied via the existing EBMUD distribution system.
- Reliability - Since this project will use surplus water and underground storage, it is reliable and resistant to natural disasters, emergency situations and surface water supply outages as may result from a variety of reasons.

Project: Buckhorn Canyon Reservoir

District Contact: Bob Lau, Mike Goldberg

Status: Planning

First Year of Operation: Net yet in operation/unknown.

Type of Project: Surface Storage

Project Overview

This component would involve constructing a dam for a terminal reservoir at Buckhorn Canyon, north of Castro Valley, about one-eighth mile up the eastern arm of EBMUD's Upper San Leandro (USL) Reservoir. The reservoir will provide a maximum capacity of 143 thousand acre-feet (TAF) of useable storage. Of this total, 114 TAF could be diverted to the Lafayette Aqueducts.

The project would increase water supply reliability in dry years through additional storage. In addition to drought reliability, this project will significantly improve emergency standby storage by adding additional storage in the District's terminal system.

Project components include:

- Earth fill dam with spillway crest at 745-feet;
- A new 5,100 HP pumping plant would take water from the Moraga aqueduct to the Buckhorn reservoir;
- Inlet and outlet would be via a new 6,200 foot tunnel and 23,000 foot pipeline.

When available, water will be pumped via a new pumping plant from the Moraga Aqueduct to fill the reservoir. During dry years, water would flow via gravity back to the Lafayette Aqueducts and be treated at any of the District's WTP or would flow via gravity to the USL WTP.

Capacity Information

Dry Year Production:	This project will create 143 thousand acre-feet (TAF) of useable storage. It is assumed that a volume of water equivalent to the increase in storage will be available for customer deliveries over a three year drought sequence. In other words, the project will provide 43 MGD in each dry year up to three dry years in a row (water availability could be sustained for longer droughts if less than 43 MGD was taken in the initial drought years).
Wet/Normal Year Production:	0 MGD

Production depends on (Water Source):	Varies
Project will be operated:	Continuously (year round) as base supply in all years.

Opportunities and Challenges Summary

Opportunities

- The entire inundation area is owned by EBMUD.
- An existing terminal reservoir is located nearby; spills from the Buckhorn reservoir would be captured in USL reservoir.
- Good location relative to water treatment plants.
- Will increase emergency terminal reservoir storage and provide local water supply if the Mokelumne Aqueducts were to fail.

Challenges

- Inundation of known habitat for Alameda whipsnake, sensitive fish species, and 40 acres of waters of the United States.
- For the larger options, it was determined in the Freeport EIR that a large Buckhorn Reservoir would have construction impacts worse than other reservoir alternatives considered.
- Significant local opposition could cause project delays.

Project: Enlarge Lower Bear River Reservoir

District Contact: Leslie Dumas (RMC) & Tom Francis

Status: Conceptual per Amador Water Agency (AWA); they are forming a partnership between Calaveras County Water District (CCWD), EBMUD and, more recently, San Joaquin County (SJC) to conduct the feasibility study to raise Lower Bear Dam. The study will be completed by early 2008.

First Year of Operation: 2015

Type of Project: Surface Storage

Project Overview

The reservoir is located 35 miles northeast of Jackson. Land surrounding Upper and Lower Bear River Reservoir is owned by the U.S. Forest Service and PG&E/Stewardship Council. The Bear River Reservoirs (Upper and Lower) provide water to five counties as well as many agencies and other users, including: Alameda, Contra Costa, San Joaquin, Amador, and Calaveras Counties, Jackson Valley Irrigation District (JVID), Amador Water Agency (AWA), North San Joaquin Water Conservation District, Woodbridge Irrigation District (WID), EBMUD, and senior appropriators [Mokelumne, Amador, and Calaveras IRWMP, October 2006].

Raising the existing Lower Bear dam by 32 feet is a likely alternative identified as a means to increase surface water storage capacity in the upper Mokelumne watershed. The water will be diverted to AWA, CCWD, SJC and EBMUD service areas to serve future customer demands. In the short term, the water could be directed for other temporary uses downstream until Amador and Calaveras need the water to supply development. Coordination is desired to minimize and/or mitigate negative impacts on the River system as well as maximize potential benefits to stakeholders, upstream and downstream within both regions.

A report prepared for AWA and CCWD, “Water Supply Alternatives” (1991, revised 2005) reviewed the operation studies prepared by PG&E in their application to FERC as provided to the consultant by the Agency and District. The information indicated that an increase in 26,000 AF of storage provides an average increase in water yield of about 18,300 AF. The Report also tabulated the monthly releases from the reservoir for a dry period beginning in June 1928, when the dam spilled, to June 1936 when the dam spilled once again. For water supply, the safe yield of a reservoir is defined as the amount of water that can be safely drafted annually without deficiencies during a critical dry period. For the dry period as tabulated, the safe yield is about 10,000 AF. EBMUD’s share in increased yield is expected to be 25%. Based on 1991 report [revised in 2005], this project would therefore be expected to supply 4,500 AF in wet years and 2,500 AF in dry years.

Capacity Information

Dry Year Production:	2,500 AF (2.2 MGD)
Wet/Normal Year Production:	4,500 AF (4.0MGD)
Production depends on (Water Source):	Hydrologic conditions on the Mokelumne River
Project will be operated:	Continuously (year round) as base supply and it will increase supply reliability in dry years.

Opportunities and Challenges Summary

Opportunities

- As identified in the Freeport EIR, raising Lower Bear River Reservoir would provide 26,000 AF of additional storage.
- Benefits listed in the Mokelumne, Amador, and Calaveras IRWMP (October 2006) indicate that this project will provide additional water supply and reduce flood risk.

Challenges

- Would cause the inundation of recreation facilities (private camps, resort, RV area, campgrounds, marina, day use areas, trails, snowmobile trail).
- Would inundate habitat for several special status species including the Federal candidate mountain yellow-legged frog, and various bird species including willow flycatcher, bald eagle, and California spotted owl.
- Potential to damage up to six prehistoric sites known to exist near Lower Bear River Reservoir.
- Area includes both U.S. Forest Service and PG&E/Stewardship Council lands.
- This project was eliminated from the Freeport study due to the small size.
- Water quality considerations relating to potential copper contamination of Lower Bear River Reservoir.

Project: Enlarge Pardee Reservoir

District Contact: Bob Lau
Status: Planning
First Year of Operation: 2020
Type of Project: Surface Storage

Project Overview

Pardee Reservoir has a total storage capacity of approximately 198,000 AF. The reservoir is impounded by a 350 foot-high concrete curved gravity dam on the Mokelumne River. A separate uncontrolled spillway structure is located south of the dam.

The enlarged reservoir would have a maximum water supply elevation of 601 feet, 33 feet higher than the present maximum reservoir level. During winter and spring, the maximum reservoir water level would reach an elevation of 614 feet during periods of high river flows. Maximum reservoir storage would be increased by approximately 172 thousand acre-feet (TAF), making more water available during drought years.

This alternative would involve enlarging EBMUD's existing Pardee Reservoir by:

- Constructing a replacement dam about 0.75 mile downstream of the existing dam;
- Constructing saddle dams;
- Refurbishing the existing intake structure and intake tunnel;
- Replacing the Pardee powerhouse and transmission lines;
- Relocating Pardee Dam and Stoney Creek Roads, replacing the Highway 49 bridge crossing of the Mokelumne River, and removing the existing Middle Bar Road bridge, which is currently closed to traffic because of its poor condition; and
- Relocating recreation facilities above the new shoreline.

Capacity Information

Dry Year Production:	This project will create 172 TAF of additional storage. It is assumed that a volume of water equivalent to the increase in storage will be available for customer deliveries over a three year drought sequence. In other words, the project will provide 51 MGD in each dry year up to three dry years in a row (water availability could be sustained for longer droughts if less than 51 MGD was taken in the initial drought years)
Wet/Normal Year Production:	0 MGD
Production depends on (water source):	Hydrologic conditions on the Mokelumne River
Project will be operated:	Continuously (year round) as base supply and it will increase supply reliability in dry years.

Opportunities and Challenges Summary

Opportunities

- Provides a high quality supplemental water source.
- Enlarging the reservoir could provide environmental benefits to the Mokelumne River downstream of Camanche Reservoir by potentially providing increased flows and additional cold water storage for releases to the river.
- Enlarging the reservoir could provide additional water supply to meet EBMUD's dry year needs.
- Would replace or refurbish some of the older portions of EBMUD's water supply system, including Pardee Dam, the intake structure, and the intake tunnel.
- The Project will increase Pardee Powerhouse average annual energy production from 83 GWh/yr to 102 GWh/yr, resulting in additional revenue.
- Higher reservoir levels and control of water pressure at the upstream end of the Mokelumne Aqueducts will boost gravity flow rates and thereby reduce energy used periodically at Walnut Creek Pumping Station for water delivery
- It is assumed that O&M will remain relatively the same as the current dam and powerhouse. Also, because old equipment will be replaced by newer, more reliable equipment, repairs and maintenance may actually decline after the equipment is broken in. Therefore, no additional significant O&M is assumed for this project.

Challenges

- Uncertainty exists regarding environmental, biological, and cultural impacts. Although it does not appear that the affected area supports unique or rare resources, the magnitude of the impact to biological resources is large (the enlarged reservoir would cover an additional 1,200 acres at its maximum elevation).
- Raising Pardee would require obtaining numerous permits and approvals for construction and operation. Major authorizations relate to compliance with state and federal Endangered Species Acts, Section 404 of the Clean Water Act, and Section 106 of the National Historic Preservation Act.
- This project would require relocating Pardee Dam and Stoney Creek Roads, replacing the Highway 49 bridge crossing of the Mokelumne River, and removing the existing Middle Bar Road Bridge.
- Recreation facilities would need to be relocated above the new shoreline. Inundation of approximately 1–1.5 miles of the upstream Mokelumne River channel may affect whitewater boating opportunities on the Electra Whitewater run. However, the reservoir operation plan would minimize these effects by lowering the reservoir elevation during summer months to preserve the whitewater run.
- Additional or revised water rights would have to be obtained from the SWRCB and FERC would be the federal lead agency to review an application for amendment of the existing FERC license.
- The project would not provide an alternative source of water to protect against a major incident on the Mokelumne River, nor would it protect against possible

outages associated with a major earthquake that could disrupt the Mokelumne Aqueducts across the Delta.

Project: Groundwater Banking/Exchange (Sacramento Basin)

Contact: Tom Francis
Status: Pre-planning
References Used: Freeport EIR Vol II, p. 7-18; Freeport EIR Vol II, p. 6-5
First Year of Operation: 2014
Type of Project: Groundwater banking/exchange

Project Overview

EBMUD would participate in the construction of facilities to provide in-lieu or artificial groundwater recharge and recovery in the Sacramento County area. The primary goal of this program would be to provide additional dry year supplies. While there are multiple options for obtaining water for basin recharge, three possible alternatives are described below. In general, EBMUD would provide financial support in developing, and in some cases operating, the facilities to recharge the groundwater basin. In exchange, the District would receive either groundwater extracted from the basin or surface water in exchange for local groundwater use.

Under Option 1, described and costed herein, the project would involve operating a groundwater storage and recovery program in Sacramento County's Central County Basin. It would enhance further the level of in-lieu groundwater recharge that would occur under the other alternatives and would artificially recharge the basin. In this option, groundwater recharge facilities and additional withdrawal facilities would be constructed. Specifically, water would be diverted from the Sacramento River at FRWP under a new filing by SCWA, transported to the recharge facilities using FRWP facilities, and stored in the groundwater basin. Surface water would be purposefully introduced to the groundwater basin via 39 acres of recharge ponds percolating water continuously over an average of 4 out of 10 years (wet water years). Approximately 7,000 acre-feet (AF) of water would be recharged each of the four years. EBMUD would partner in the cost of the operations and would be entitled to ½ of the volume of water stored.

Under Option 2, water districts in the area north of the Lower American River, which compose the Sacramento Groundwater Authority (a joint powers authority formed in 1998), would operate groundwater facilities to provide in-lieu surface water supplies. In wet years, additional surface water available under SCWA's water entitlements would be provided to these districts. In dry years, these districts would forgo some or all of their typical diversions from the Lower American River and would rely more heavily on groundwater, allowing their surface entitlements to flow downstream to SCWA's point of diversion. The capacity of the basin to provide for the water exchange is not clear, and surface water diversion facilities would be required under this alternative.

Finally, in Option 3, EBMUD would provide financial support to the Sacramento Regional County Sanitation District (SRCSD) to develop recycled water production capabilities in the Central County Basin. This recycled water would be provided to local agricultural irrigators currently using groundwater as their source of water. The 'unused' groundwater would subsequently be banked via the in-lieu exchange for dry year use by both Sacramento water agencies and EBMUD.

In all three options described above, water diversions from the Sacramento River would be reduced in dry years and groundwater would be extracted and used by SCWA to meet some or all if its Zone 40 service area demands. Groundwater would be extracted

over an average of three (dry) years out of 10 using seven extraction wells. It is estimated that 28,000 AF would be extracted over the three dry-year period with half the water belonging to Sacramento County and the remaining half provided to EBMUD.

The capacity of the basin to operate a groundwater recharge and extraction program has not been proven; however, for purposes of this analysis, it is assumed adequate for storing and extracting necessary groundwater. The extracted stored groundwater would be conveyed to the Mokelumne Aqueducts via the Freeport facilities for distribution to the District's existing WTPs for treatment; only GAC treatment will be conducted prior to distribution to the aqueducts. Additionally, it is assumed that this project can only operate when the FRWP is operating in order to meet the minimum flow requirements for the FRWP pipeline.

For this project, the following facilities are assumed to be constructed for project operation:

- 39 acres of recharge ponds
- 3 extraction wells (including 1 back-up well), each capable of pumping at 2,000 gpm for 24 hours per day for a period of 12 months
- Five miles of pipeline from the Freeport Regional Water Project (FRWP) pipeline to the well field/recharge area
- Intertie at the FRWP pipeline
- Pump station for the new pipeline
- Granular activated carbon (GAC) treatment system either at the well field or at the intertie with the FRWP pipeline.

Additional costs will be incurred under this project for monitoring (groundwater elevation and quality monitoring), right-of-way acquisitions, and valve fittings and appurtances.

Operational Information

Dry Year Operation:	The District will receive 4,667 AF of water during dry, extraction years, estimated to occur 3 out of every 10 years.
Wet Year Operation:	7,000 AF of water would be recharged during wet years on the Sacramento River, estimated to occur 4 out of every 10 years.
Normal Year Operation:	No operation in "normal" years.

Other Assumptions:

- Half of volume recharged belongs to project partners and is not considered in estimate of volume produced for EBMUD

Capacity Information

Dry Year Production:	4,667 AFY (or 4.167 MGD)
Wet/Normal Year Production:	0 AFY
Production depends on (water source):	Sacramento or American River

Opportunities and Challenges Summary

Opportunities

- Through an as yet to be identified partnership with either Sacramento regional water agencies / water districts, a CVP contractor, a northern California agency, and/or another agencies that may wish to enter into a deal with EBMUD for unassigned FRWP capacity, EBMUD would receive a certain quantity of water during wet years that in turn would be stored in the groundwater basin, and also EBMUD would "mutually" operate the groundwater banking project with SCWA (and share in banked water).
- In wet years, surface water made available to EBMUD would be stored. In dry years, EBMUD would access that water.
- The project may be operated in multiple ways using various sources of water for basin augmentation, including recycled water or wet-year surface water.
- Proposed Project: Operate an aquifer storage and recovery program (ASR) in Sacramento County's Central County Basin. Water would be diverted from the Sacramento River and stored in the groundwater basin. During dry years, water would be extracted and used by EBMUD. Groundwater injection facilities and additional withdrawal facilities would be constructed.

Challenges

- EBMUD may be limited by Water Code Section 1220, which prohibits the export of groundwater from a basin unless a voter-approved AB 3030 plan is in place that specifically allows for the export of groundwater.
- The potential environmental effects of such a program have not been studied.
- Limited information is available to accurately determine how stored groundwater would interact with native groundwater and whether stored groundwater would be available when it is needed for withdrawal.
- Active operation of the groundwater basin could result in environmental effects such as saturation of near-surface soils, which could lead to impacts to structures due to increased settling.
- Operation of the groundwater basin may result in substantial fluctuations of groundwater levels, possibly affecting existing groundwater users, particularly if groundwater levels are further reduced as a result of significant withdrawals during dry years.

- Diversions from the Sacramento River also have the potential to result in minor impacts species listed as threatened or endangered under the federal Endangered Species Act.
- The feasibility of obtaining the necessary agreements and approvals to operate the groundwater basin as an active recharge and recovery area is highly uncertain.
- Due to the project size, the project must operate when FRWP is operating in order to meet minimum pipeline flows.
- If EBMUD's Mokelumne Water Rights are utilized in a storage scheme, the project may require reopening the 1958 agreement with the foothill agencies (in which Mokelumne River water storage is limited only to Pardee and Camanche reservoirs).
- Assume approximately 10% of stored water is lost due to migration (Note: this loss is not reflected in volumes shown above, but will be estimated in the WEAP modeling).

Project: Low Energy Application for Desalination (LEAD) at C&H Sugar

District Contacts: Hasan Abdullah, Tom Francis and Mike Tognolini

Status: Planning

First Year of Operation: 2012

Type of Project: Desalination

Project Overview

The LEAD project would draw from a portion of the 23 MGD of Carquinez Strait water that C&H uses, following its use in plant operations, to produce up to1.5 MGD of potable-quality water for use by C&H in place of potable water from the EBMUD water distribution System. The LEAD project is unique in that it would use recovered steam to provide the power needed to operate the desalination facility. The steam energy would be recovered by replacing existing steam pressure-reducing equipment with a modern power generating unit. The objectives for this project are to:

- Produce up to 1.5 MGD of industrial water to reduce C&H's current demand for potable water by up to 70 percent;
- Improve EBMUD's water supply reliability during droughts;
- Use recovered steam energy that is currently being lost to provide all of the power needed for the desalination facility, with no increased demands on fossil fuels; and
- Allow EBMUD to share information with other water agencies on using recovered steam to power desalination facilities.

Capacity Information

Average Annual Production:	When the plant is operating, it will operate at 1.5 MGD; It may not operate everyday, therefore average annual production will be approximately 1.1MGD
Max Capacity:	1.5 MGD
Production depends on (Water Source):	San Francisco Bay and operation of the C&H Plant.
Project will be operated:	Continuously (year round) as base supply in all years.

Opportunities and Challenges Summary

<u>Opportunities</u>

- Producing potable quality water from the Carquinez Strait to partially offset EBMUD's second largest potable water user. A next phase larger capacity project (6.5 MGD) is possible at this site for supplying potable water to other EBMUD customers
- Create a local water supply west of the Delta that would be of critical value during emergencies such as earthquakes, levee failure or other natural disasters.

- Produce potable quality water from desalination using energy recovered from an alternative energy source (steam) that is currently being lost through pressure reducing stations. The project can therefore be operated with no increased demand on the power grid and no increased use of non-renewable energy sources.
- Bolster public faith and resource agency confidence in desalination as being a practical solution to California's water issues.
- The impact of thermal discharges on Carquinez Strait will be reduced as the concentrate from the desalination plant will have a lower temperature and when mixed with the cooling water return flows would result in overall cooling of the combined return flows.
- No new facilities would need to be constructed in the environmentally sensitive areas/habitats such as the river bed or surface water bodies. The facilities to divert the feedwater from the Carquinez Strait are already in-place and used routinely.
- The desalination plant meets EBMUD's service flexibility requirements. In the event that the food production plant shuts down or changes its demand for water, the study illustrated that EBMUD's customers in the City of Crockett and areas immediately nearby (e.g., within locations less than 2 miles from the proposed desalination facility) have existing water demands in excess of the rate produced.
- Potable water off-set by this project will be stored in EBMUD's reservoirs, resulting in increased releases to the Mokelumne River in wet and normal years, and reduced customer rationing in drought years.
- If implemented, per the 1998 FERC agreement, EBMUD will dedicate up to 20% of the project yield (245 AF) to fishery resources.
- This project will be located within the industrial footprint of already existing facilities (replacing abandoned or unused equipment). Environmental justice is not expected to be an issue.
- Growth-inducement is not expected to be an issue for this project.
- This project may have a potentially beneficial cumulative effect on the environment and fisheries resources/habitats.

<u>Challenges</u>

- A potentially adverse impact may arise from the slight salinity increase (7%) of the discharge water; however, the increase is very minor compared to the natural variations experienced at this location.
- Other adverse environmental impacts are not expected from the project.
- New permits or modifications of existing permits will be required for implementing this project (potential permitting agencies include Regional Water Quality Control Board (RWQCB), State Water Resources Control Board (SWRCB), California Department of Fish and Game (CDFG), Bay Conservation and Development Commission (BCDC), NOAA Fisheries, and United States Fish and Wildlife Service (USFWS).
- Labor compliance requirements associated with Proposition 50 funding. (May not be a "challenge")
- The potential impacts of the blended cooling water discharge on fish/biological resources are very important. Bioassays and toxicity tests will be performed on both the return flows and the blended return flows with the concentrate from the desalting facility. Due to the relatively minor increase in salinity, bioassay/toxicity tests may not be required by the agencies.

- Since this project will be one of the first sea/bay water desalination full-scale projects in the Bay Area, some opposition may develop, not necessarily specifically against the project but perhaps against desalination as a water supply option. However, major opposition is not expected.

Project: Mokelumne Inter-Regional Conjunctive Use Project (IRCUP)/San Joaquin (SJ) Groundwater Banking

District Contact: Tom Francis
Status: Planning
References Used: Mokelumne IR-CUP Draft Concept Proposal p. 2, 5, and 7-9
First Year of Operation: 2012 (if implemented)
Type of Project: Surface Storage, Groundwater Storage, Water Transfer

Project Overview

The IRCUP/SJ Groundwater Banking project is a conceptual project to conjunctively manage a portion of the Mokelumne River water supplies by storing it in the Eastern San Joaquin Groundwater Basin for subsequent regional use to meet diverse needs of project partners. The project is based on the premise of a two- or three-way groundwater banking, exchange and transfer between project partners to provide water supply sustainability and reliability benefits to Amador and Calaveras Counties (in the case of a three-way partnership), and San Joaquin Counties and the East Bay Municipal Utility District (EBMUD) service area (under either partnership alternative). The project will also demonstrate the benefits of improved conjunctive management as part of the overall Integrated Conjunctive Use Program for the Eastern San Joaquin Groundwater Basin. The concept of an inter-regional conjunctive use project is flexible and expandable and could take many forms or be split into several different projects.

The project has been conceived to utilize existing conditions and opportunities to the advantage of all stakeholders. As a result, the representative project elements, briefly summarized below, assume a three-way partnership between EBMUD, San Joaquin County and the up-country Amador and Calaveras County entities.

Surface Water Supply. Amador County and Calaveras County water purveyors would secure additional surface water rights through a "partial assignment" under the 1927 State Filings, which pre-committed a major portion of the Mokelumne River's flow for their future use. The new *Mokelumne River Forum* assignment would allow diversions from the River to be used within Amador and Calaveras Counties, and other water diversions could be banked in the Eastern San Joaquin Groundwater Basin for later use in Amador, Calaveras, and San Joaquin Counties and in EBMUD service area.

Wheeling Facilities. Through multi-lateral agreements among the parties, EBMUD facilities would be used to convey water to San Joaquin County. The project partners could initially rely on EBMUD's existing facilities to exchange the banked water to Amador and Calaveras Counties; however, the following new facilities would be required for the project:

- Five miles of pipeline from the Mokelumne Aqueducts to the well field & recharge ponds
- New Intertie with the Mokelumne Aqueduct
- New pump station for diverting and transporting water to/from the Mokelumne Aqueducts to the well field/recharge site

Groundwater Recharge & Storage. A portion of the Mokelumne River supply would be conveyed through the facilities described above for storage and regional use in the Eastern San Joaquin Groundwater Basin (Basin). Various in-lieu and direct recharge

projects located in North San Joaquin Water Conservation District, Stockton East Water District, Central San Joaquin Water Conservation District and/or Woodbridge Irrigation District could be used to recharge water in wet years for use in dry years. For the purposes of this project, it is assumed that groundwater recharge would occur via 137 acres of recharge basin. Recharge is expected to occur in 7 years out of on average 10 year period. Also, it is assumed that no pretreatment of Mokelumne River water is required prior to recharge.

Regional use facilities would be operated as part of the overall ICU Program in a way that is consistent with objectives adopted under the GBA's Groundwater Management Plan to contribute toward the goal of solving the groundwater overdraft in the critical areas within San Joaquin County. If the project proves to be feasible in helping to reverse the overdraft condition in the groundwater basin, some or all of the partners could pursue additional phases to expand the conjunctive use projects.

Groundwater Extraction. Water stored in the Eastern San Joaquin Groundwater Basin will be extracted for use in dry years. For the purposes of this project, it is assumed that groundwater extraction would occur via 13 wells (plus 2 back-up extraction wells). Dry year extractions would occur during 3 of an average 10-year period, and pumping would occur over 24 hours per day, 12 months of the drought year. It is also assumed that each well is capable of pumping at a rate of 2,000 gallons per minute, and that a total of 58,625 AF of water would be extracted over the 3 year period. This water would be shared with 1/3rd remaining in the Eastern San Joaquin Groundwater Basin, 1/3rd would be extracted and used by the foothill agencies in Amador and Calaveras Counties (most likely through in-lieu exchanges), and the remaining 1/3rd (19,500 AFY for each of the three years) would be extracted, treated with granular activate carbon (GAC) onsite or at the intertie location, and transported to the District's service via the Mokelumne Aqueduct. While GAC treatment will remove most organic constituents, it is assumed that the blending that would occur in the aqueducts will reduce the concentration of metals and salts to concentrations capable of being treated at the District's existing water treatment plants.

Additional Assumptions. In addition to the above assumptions, it is assumed that miscellaneous monitoring will be required for this project. Specifically, monitoring will be required for groundwater elevations and quality and land subsidence.

Operational Information

Wet/Normal Year Operation:	It is assumed that 25,000 AFY will be recharged in 7 of an average 10-year period (during non-dry years) for a total recharge volume of 175,000 AF over the 7 year period.
Dry Year Operation:	It is assumed that 19,500 AFY will be extracted in 3 of an average 10-year period (in dry years) for a total extraction volume of 58,500 AF over a 3 year drought

Capacity Information

Average Annual Production:	19,543 AF each year for a 3 year period.

Production depends on (water source): Water availability in the Mokelumne River

Assumes: EBMUD gets 1/3 yield for 1/3 of cost and approximately 10% of stored water is lost due to migration (Note: this loss is not reflected in volumes shown above).

Opportunities and Challenges Summary

Opportunities

- The Mokelumne Inter-Regional Conjunctive Use Project (IRCUP) is based on the premise of a three-way groundwater banking, exchange and transfer between project partners to provide water supply sustainability and reliability benefits to Amador, Calaveras, and San Joaquin Counties and the EBMUD service area.
    1. San Joaquin County benefits by higher groundwater levels for all beneficial uses from increased surface water supply, regional assistance in building groundwater recharge facilities, and prevention of further saline intrusion.
    2. Amador and Calaveras Counties benefit through more reliable supplies in normal and dry years and avoid costs of developing major new water supply and storage infrastructure.
    3. EBMUD benefits by meeting a portion of its dry year needs from reliable groundwater storage.
    4. The regions benefit through development of greater supply reliability and flexibility through improved integrated regional water management.
- An IRCUP project concept of this nature (preliminary phase using existing facilities) may provide a range of average annual yields from 10,000 to possibly 50,000 AF for conjunctive use and groundwater banking.
- The concept of an inter-regional conjunctive use project is flexible and expandable and could take many forms or be split into several different projects.
- Help to alleviate longstanding stakeholders water conflicts along the Mokelumne River.
- EBMUD also desires to work collaboratively with other Mokelumne River stakeholders to resolve conflicts and overcome institutional barriers that have limited progress towards lasting solutions that solve the water and natural resources management problems in the region.

Challenges

- Each participating agency will need to negotiate institutional arrangements.
- Likely requires renegotiation of 1958 agreement between EBMUD and Foothill agencies.
- The historically competing interests, different water needs, and different values among Forum members.
- To enhance the capacity of flow capture and utilization for the project partners, additional on-stream or off-stream storage and regulating facilities may be needed.
- Existing San Joaquin County groundwater ordinance may be barrier to out-of-county.

Project: Permanent Agricultural-Urban Water Transfer

District Contact:
Status:
Reference Used:
First Year of Operation: 2009
Type of Project: Permanent Water Right Transfer

Project Overview

EBMUD could purchase a permanent water right from an agricultural entity located either in the Sacramento River Valley or a State Water Project contractor. The water would be available in every year. However, the Table A SWP water rights are likely to have a lower reliability associated with them as the SWP deliveries are curtailed in droughts, just when EBMUD would use these to supplement district supplies. The Sacramento water rights, on the other hand, tend to be senior to other rights and thus are not curtailed in drought years.

Recently agricultural water agencies have been making long-term and permanent transfers of water rights to urban water utilities. These transfers have been most notable in the Sacramento region and among State Water Project contractors. Table 1 below lists a selection of these transfers with terms and prices.[2] These transfers range from 5,000 to 16,000 acre-feet.

Ag-Urban Transfer		Year	AF	$/AF	period
GSWC-Folsom	lease	1994	5,000	$240	per year
NatomasCMWC-ASUS	permanent	2004	5,000	$2,500	perpetuity
Berenda Mesa WD-Coachella VWD	permanent	2005	16,000	$3,000	perpetuity
NatomasCMWC-GSWC	permanent	2006	5,000	$2,100	10 years
NatomasCMWC-Folsom	permanent	2007	8,000	$4,000	perpetuity
TLBWSD-Coachella VWD	permanent	2007	5,250	NA	perpetuity

The cost has been escalating, at least in the Sacramento region, from $2,500 per acre-foot to $4,000 in 2007. Also, the NCMWC-GSWC 10-year lease agreement equals $4,000 per acre-foot in perpetuity at a 7.7% discount rate, which is consistent with the weighted average cost of capital for these water utilities. For this reason, it appears reasonable to assume that a water transfer from an entity in the Sacramento region will cost $4,000 per acre-foot in a one-time payment.

Annual conveyance costs from the Freeport Regional Water Project would be in addition to these costs. Those costs are presumed to be the same as reported for the Sacramento County Groundwater Banking and Exchange Project.

Capacity Information

The amount of the transfer would depend on the available transmission capacity through the FRWP in the years in which the transfer is most likely to occur. This would depend on whether other resources, such as the Sacramento County Groundwater Banking and

[2] The Environmental Impact Report on the Monterey Amendment prepared by the Department of Water Resources lists 14 Table A transfers. Not all are listed because price information is not readily available and they occurred prior to 2004.

Exchange Project, are already scheduled to use the FRWP. Thus, the size of the transfer will be calculated based on the results from the WEAP model runs.

Opportunities and Challenges Summary

Opportunities

- Agricultural water agencies, particularly mutual water companies or districts with land-owner based voting rules, have been more willing to participate in water transfers in the Sacramento Valley. The economic value of water applied to agricultural land has been relatively stagnant compared to the value of the water itself. For example, the recent transfers at $4,000 per acre-foot imply that agricultural land values would have to exceed $10,000 per acre to be competitive. The only crop for which the value exceeded this amount is vineyards; the rest ranged from $2,500 to $8,000 per acre.
- Agriculture uses approximately 70% of the applied water in California, yet delivers less than 5% of the state's economic product. Transferring a relatively small proportion of the agricultural water allotment would greatly increase the amount available to urban water agencies on a proportionate basis. The differential in economic value per acre-foot used is substantial, so significant opportunities for gains from trade exist.
- Water transfers between economic uses have relatively less significant environmental impacts compared to fixed infrastructure projects because adverse impacts can be netted against gains from reduced applications. However, these types of transfers still require EIRs.

Challenges / Considerations

- EBMUD is unlikely to need this water supply every year, unlike as is the case with the water transfers listed above. If the EBMUD takes this water three years out of ten, then the cost at FRWP rises from $204 to $680 per acre-foot.
- The SWRCB must review and approve any long-term transfers. This review focuses on environmental impacts evaluated under CEQA.
- Many such transfers have raised concerns about third-party impacts on individuals and firms that supply the local agricultural industry. As a result many transfers have included requirements for urban water agencies to pay compensation to other parties in the agricultural district.

Project: ConocoPhillips Recycled Water Project, Phase 1

District Contact: Linda Hu; Florence Wedington; Alice Towey

Status: Planning

First Year of Operation: 2012

Type of Project: Recycling (industrial use)

Project Overview

EBMUD is currently investigating the potential for a recycled water project at the ConocoPhillips (COP) Refinery in Rodeo. EBMUD and COP entered into a Memorandum of Understanding (MOU) to evaluate the feasibility of developing the ConocoPhillips Recycled Water Project (COPRWP). The total project, as proposed, would deliver up to 3,875 AFY (3.46 MGD) of high-purity recycled water to replace potable water use at the COP Refinery in three phases:

- Phase 1A – up to 1,934 AFY (1.73 MGD) to feedwater system for boilers
- Phase 1B - up to 963 AFY (0.86 MGD) to half of the cooling towers
- Phase 2 – up to 963 AFY (0.86 MGD) to the remaining half of the cooling towers.

This project is the implementation of Phases 1A and 1B, jointly referred to as Phase 1 and have a total capacity of 2.8 MGD.

Several potential supply sources for the COPRWP include the Pinole-Hercules WWTP, the Rodeo WWTP, and/or the COP WWTP (the last option was not evaluated further). EBMUD and COP have completed the first and second phases of the technical study, with results indicating that the project is feasible. The parties, in cooperation with the wastewater agencies, are now proceeding with additional studies and negotiations.

The proposed COPRWP would use all available dry weather wastewater flows from the supply treatment plants, and the project may therefore not be implemented concurrently with the Franklin Canyon Recycled Water Project. The project components include:

- High-purity recycled water treatment facility located on COP Refinery property in Rodeo (including MF and RO units and other associated equipment)
- Conveyance facilities, including:
    - Pump station improvements/upgrades to convey design flows
    - Construction of new pipeline from Pinole-Hercules to Rodeo (called the Phase 1 High Cost option) or slip-lining of existing pipeline (called the Phase 2 Low Cost option)

It is important to note that, while the two options as described above (new pipeline versus slip-lining) create essentially the same project, a key difference between the two options may be the speed by which the project is implemented.

Capacity Information

Average Annual Production:	3,136 AFY
Max Capacity:	TBD
Minimum Capacity:	TBD
Production depends on (water source):	Supply
Project will be operated:	Continuously as baseload supply in all years (year round) (seasonally - for use in dry years and recharge in wet years)

Opportunities and Challenges Summary

Opportunities

- Planning studies indicate project feasibility
- COP is cooperative project partner

Challenges

- Supply availability

Assumptions

- EBMUD will pay capital costs minus a $7 million contribution from COP. COP will operate and maintain the plant following construction in addition to paying debt servicing on capital costs.

Project: ConocoPhillips Recycled Water Project, Phase 2

District Contact: Linda Hu; Florence Wedington; Alice Towey
Status: Planning
First Year of Operation: 2015
Type of Project: Recycling (industrial use)

Project Overview

EBMUD is currently investigating the potential for a recycled water project at the ConocoPhillips (COP) Refinery in Rodeo. EBMUD and COP entered into a Memorandum of Understanding (MOU) to evaluate the feasibility of developing the ConocoPhillips Recycled Water Project (COPRWP). The total project, as proposed, would deliver up to 3,875 AFY (3.46 MGD) of high-purity recycled water to replace potable water use at the COP Refinery in three phases:

- Phase 1A – up to 1,934 AFY (1.73 MGD) to feedwater system for boilers
- Phase 1B - up to 963 AFY (0.86 MGD) to half of the cooling towers
- Phase 2 – up to 963 AFY (0.86 MGD) to the remaining half of the cooling towers.

This project is the implementation of Phase 2 with a total capacity of 0.86 MGD.

Several potential supply sources for the COPRWP include the Pinole-Hercules WWTP, the Rodeo WWTP, and/or the COP WWTP (the last option was not evaluated further). EBMUD and COP have completed the first and second phases of the technical study, with results indicating that the project is feasible. The parties, in cooperation with the wastewater agencies, are now proceeding with additional studies and negotiations.

The proposed COPRWP would use all available dry weather wastewater flows from the supply treatment plants, and the project may therefore not be implemented concurrently with the Franklin Canyon Recycled Water Project. The project components (for Phase 2 only) include:

- Expansion of the high-purity recycled water treatment facility located on COP Refinery property in Rodeo (including MF and RO units and other associated equipment)

As with Phase 1 of this project, a high cost option and a low cost option were evaluated. The high cost option includes construction of new pipeline from Pinole-Hercules to Rodeo, whereas the low cost option includes the slip-lining of existing pipeline. As with Phase 1 of this project the option selected may affect the speed by which the project is implemented.

Capacity Information

Average Annual Production:	1,008 AFY
Max Capacity:	TBD
Minimum Capacity:	TBD
Production depends on (water source):	Supply

Project will be operated:	Continuously as baseload supply in all years (year round) (seasonally - for use in dry years and recharge in wet years)

Opportunities and Challenges Summary

Opportunities

- Planning studies indicate project feasibility.
- COP is cooperative project partner.

Challenges

- Supply availability
- Funding availability

Assumptions

- EBMUD will pay capital costs minus a $2.2 million contribution from COP. COP will operate and maintain the plant following construction in addition to paying debt servicing on capital costs.

Project: East Bayshore Recycled Water Project – Phase 1B Alameda

District Contact: Linda Hu; Florence Wedington

Status: Planning

First Year of Operation: 2012 (timing can change pending funding)

Type of Project: Recycling (irrigation only)

Project Overview

This East Bayshore Recycled Water Project (EBRWP) will provide tertiary treated recycled water from EBMUD's Main WWTP in Oakland to portions of Alameda, Albany, Berkeley, Emeryville, and Oakland. Uses include irrigation of parks, schools, and golf courses and industrial and commercial uses. Phase 1A is anticipated to begin operating in mid-2008. Phase 1A project includes the construction of a new 2.88 MGD recycled water tertiary-treatment facility (RWTTF), a 1.5 MG storage tank, pump station, and transmission and distribution pipelines. Service to Phase 1A customers is expected to begin in mid-2008 and all customers for Phase 1A will be connected to the system by mid-2009.

Phase 1B of the project involves pipeline extensions to serve users located in northern Alameda. A large portion of the potential demand consists of users in areas slated for redevelopment (i.e. areas currently occupied by the Alameda Naval Air Station).

Capacity Information

Average Annual Production:	1.2 MGD (1,340 AFY)
Max Capacity :	1.7 MGD
Minimum Capacity:	0.5 MGD
Production depends on (water source):	Customer demand
Project will be operated:	Continuously as baseload supply in all years (year round) (seasonally)

Opportunities and Challenges Summary

<u>Opportunities</u>

- Extension of existing distribution system
- Users located in compact geographic area
- Redevelopment of Alameda Naval Air Station may allow for implementation of comprehensive recycled water program in the area
- Recycled water source is EBMUD's Main WWTP with appropriate 80 MGD supply
- Potential WRDA appropriations available with recently approved $25 million federal authorization. If appropriations are secured, federal funding would match 75% of project capital costs.
- Potential benefits to adjacent wetlands.

Challenges

- Requires pipeline to cross the estuary, but potential benefit to partner with USACE if WRDA funding is secured
- Alameda Naval Air Station redevelopment schedule could be subject to change

Project: East Bayshore Recycled Water Project – Phase 2 Future Expansion

District Contact: Linda Hu; Florence Wedington

Status: Planning

First Year of Operation: 2014 (timing can change pending funding)

Type of Project: Recycling (irrigation, and commercial)

Project Overview

For general overview of the East Bayshore Recycled Water Project – Phase 2 Future Expansion, see EBRWP Phase 1B description.

The EBRWP Phase 2 project involves pipeline extensions to serve users located in the downtown Oakland area. Most potential users would be located close to existing EBRWP transmission pipeline alignments, and would therefore only require construction of short sections of laterals. This phase of the project will also expand use of recycled water to areas such as West Oakland, a disadvantaged community. There is also a potential future benefit to wetlands in the Lake Merritt area.

Capacity Information

Average Annual Production:	0.6 MGD (670 AFY)
Max Capacity:	0.6 MGD
Minimum Capacity:	0.1 MGD
Production depends on (water source):	Customer demand
Project will be operated:	Continuously as baseload supply in all years (year round) (seasonally)

Opportunities and Challenges Summary

<u>Opportunities</u>

- Extension of existing pipeline only
- Recycled water source is EBMUD's Main WWTP with approximately 80 MGD supply
- New building construction/urban in-fill development would allow for implementation of comprehensive recycled water program in the area
- Cost sharing opportunity with new development
- Potential WRDA appropriations available with recently approved $25 million federal authorization. If appropriations are secured, federal funding would match 75% of project capital costs.
- Potential benefits to adjacent wetlands.

Challenges

- Requires pipeline installation in highly urban areas
- New building construction/urban in-fill development schedule unknown at this time
- Funding availability

Project: Franklin Canyon Recycled Water Project

District Contact: Linda Hu; Florence Wedington

Status: Conceptual

First Year of Operation: 2020

Type of Project: Recycling (irrigation and industrial use)

Project Overview

The proposed project would deliver up to 340 AFY (0.3 MGD) of recycled water to replace potable water uses at the Conoco Phillips (COP) carbon plant and at the Franklin Canyon golf course (golf course).

Recycled water supply sources for the project include the Pinole-Hercules WWTP and potentially the Rodeo WWTP. Treated wastewater currently flows via a connector pipe from the Pinole-Hercules WWTP to a joint bay outfall at the Rodeo WWTP. The connector pipe is the closest supply source to serve the Franklin Canyon area. Both WWTPs currently produce secondary treated wastewater with potential plans for future tertiary treatment upgrades. Current average dry weather flows are 3.6 mgd (Pinole/Hercules) and 0.75 mgd (Rodeo). Average dry weather flows for Rodeo are anticipated to remain constant until the year 2040, while Pinole/Hercules flows are anticipated to increase to 4.0 mgd by the year 2015, and remain constant thereafter.

The major assumptions considered in the development of the cost estimate are as follows:

- Construction of tie-in facility on the Pinole/Hercules treated effluent pipeline in Rodeo.
- Construction of 150-hp booster pump station adjacent to the tie-in facility (includes one 50-hp spare pump).
- Construction of recycled water transmission mains, including:
    - 17,700-ft of 8-inch pipe from tie-in to Franklin Canyon golf course.
    - 1,700-ft of 4-inch lateral to COP carbon plant.
- EBMUD to provide cost sharing for 1.2-mgd of treatment capacity upgrades at the Pinole/Hercules WWTP (upgrade from secondary to tertiary).[1]

Capacity Information

Average Annual Production:	0.3 MGD (340 AFY)
Max Capacity:	0.3 MGD
Minimum Capacity:	0.2 MGD

[1] Assumes that EBMUD will share approximately ½ of the cost of upgrades necessary to supply peak hour flows for the Franklin Canyon recycled water project.

Production depends on (water source):	Pinole/Hercules/Rodeo supply availability; funding
Project will be operated:	Continuously as baseload supply in all years (year round) (seasonally)

Opportunities and Challenges Summary

Opportunities

- A potentially less costly project alternative may consist of the COP recycled water project moving forward, and installation of a recycled water transmission line directly from the COP refinery to serve the Franklin Canyon area. Such a pipeline would potentially be shorter (and therefore less costly) than a pipeline to the main Pinole/Hercules effluent pipeline in Rodeo.
- EBMUD and COP have been working together on the developing COP recycled water project.

Challenges

- Available supply must be confirmed if other local recycled water projects move forward (i.e. COP recycled water project). Depending on yield of COP recycled water project, the Franklin Canyon recycled water project may not happen concurrently due to supply limitations.
- Water quality requirements for process water at COP carbon plant would need to be evaluated.

Project: Lake Chabot Raw Water Expansion Project

District Contact: Linda Hu, Florence Wedington

Status: Conceptual

First Year of Operation: TBD

Type of Project: Potable water offset

Project Overview

EBMUD currently provides 0.21 MGD of raw water from Lake Chabot on an average annual basis to Lake Cabot Golf Course (0.13 MGD) and Willow Park Golf Course (0.08 MGD) for irrigation. This project is an expansion of the existing use of raw water from Lake Chabot and would entail expanding raw water use by providing water to the Sequoyah Country Club, Oakland Zoo and other nearby customers for irrigation and other non-potable water uses.

Capacity Information

Average Annual Production:	400 AFY (0.35 MGD)
Max Capacity:	1.4 MGD during peak irrigation months
Minimum Capacity:	TBD
Production depends on (water source):	Lake Chabot
Project will be operated:	Continuously as baseload supply in all years (year round) (seasonally)

Opportunities and Challenges Summary

Opportunities

- Expansion of existing project
- No additional treatment required
- Opportunity for public outreach/education

Challenges

- Public health concerns from potential contact with untreated water.
- Minor potable water offset would result from the project

Project: North Richmond Water Reclamation Plant Expansion Project – Surrounding Area

District Contact: Linda Hu, Florence Wedington

Status: Conceptual

First Year of Operation: TBD

Type of Project: Potable water offset

Project Overview

This project is an expansion of the District's North Richmond Water Reclamation Plant (NRWRP) to serve potential recycled water customers in the surrounding area. Currently, the NRWRP has the capacity to produce a max day flow of 5.4 MGD and a peak hourly flow of 6.4 MGD. Recycled water produced at the plant is used by the ChevronTexaco Richmond Refinery in three of its four cooling towers. The plant is producing recycled water at approximately 4 MGD annual average with peak flows at the plant's capacity.

The purpose of this project is to expand use of recycled water in the water reclamation plant vicinity and at the refinery. In a 2005 memorandum, the District identified 45 potential recycled water customers within and adjacent to the NRWRP study area. These customers represented a maximum day demand of 0.7 MGD. Additionally, in their Recycled Water TM #2, the District indicated that the fourth cooling tower at the refinery could use 1 MGD of recycled water.

Facilities to be included in the project (per the 2005 TM and recent information from the District) are an expansion of the existing tertiary treatment facilities, an additional booster pump station, 1,700 linear feet of new pipeline and customer retrofits at 15 sites. It was assumed that no new storage facilities would be required for delivery of recycled water to urban customers. Also, assumed is that the existing recycled water pipeline and facilities from the NRWRP to the Chevron Refinery has the capacity to transmit sufficient supplies to feed all four cooling towers at the refinery.

Capacity Information

Average Annual Production:	150 to 1,900 AF/yr (0.2 – 1.7 MGD)
Max Capacity:	5.4 MGD
Minimum Capacity:	TBD
Production depends on (water source):	Local wastewater streams.
Project will be operated:	Continuously as baseload supply in all years (year round) (seasonally)

Opportunities and Challenges Summary

Opportunities

- Expansion of existing project with large recycled water user (existing relationship)
- Can be implemented in two phases (cooling tower vs urban irrigation).
- Refinery may prefer a more reliable water supply.

Challenges

- Cannot be co-implemented with RARE as RARE would use all remaining secondary influent from WCWD during dry weather. Supply from WCWD is limited and dependent on growth; however, RARE could also potentially use Chevron's effluent in the future, thereby freeing up future WCWD supply as it develops for this expansion.
- Groundwater impact analyses may be required.

Project: Reliez Valley Recycled Water Project

District Contact: Linda Hu, Florence Wedington

Status: Conceptual

First Year of Operation: 2015

Type of Project: Potable water offset (irrigation)

Project Overview

This project would involve partnership with the Central Contra Costa Sanitation District (Central San) to obtain recycled water from their existing system and distribute it to the Queen of the Heaven Cemetery, Oakmont Memorial Park, Tri-Vista Golf Course and City of Pleasant Hill for landscape irrigation. The project will consist primarily of one pump station and 11,500 LF of pipe.

Capacity Information

Average Annual Production:	110 to 210 AF/yr (0.1 – 0.19 MGD)
Max Capacity:	N/A
Minimum Capacity:	N/A
Production depends on (water source):	CCSD local wastewater streams.
Project will be operated:	Continuously as baseload supply in all years (year round) (seasonally)

Opportunities and Challenges Summary

Opportunities

- Expansion of existing relationship to partnership with large recycled water producer
- Phaseability
- Recycled water production in place; distribution project only

Challenges

- Minor potable water offset (relative to need for water)
- EIR may be required
- Water quality/health concerns from local residents.

Project: Richmond Advanced Recycled Expansion (RARE) Water Project – Phase 2 Additional 0.5 MGD

District Contact: Linda Hu; Florence Wedington; Alice Towey

Status: Planning

First Year of Operation: 2012 (supply dependent)

Type of Project: Recycling (industrial use)

Project Overview

The RARE project consists of construction and operation of an advanced recycled water treatment plant within the Chevron Refinery property in Richmond. The treatment plant would produce high-purity recycled water for use in Chevron's steam boilers. The source water for the RARE treatment plant would be secondary effluent from the West County Water District (WCWD) water pollution control plant. The RARE treatment plant would be located on Chevron property but owned and operated by EBMUD in parallel with its existing North Richmond Water Reclamation Plant (NRWRP).

The RARE treatment plant is designed for an ultimate capacity of 4.0 mgd with an initial phase of 3.5 mgd of installed membrane capacity. Phase 2 consists of installation of additional MF and RO membrane modules to expand the plant capacity from 3.5 mgd to 4.0 mgd. One possible water source for the expansion would be WCWD treated wastewater, as currently supplied to the RARE project (called the Phase 2 Low Cost option). However, if WCWD supply is unavailable, the RARE expansion project may take water from the Chevron Refinery's wastewater effluent stream (called the Phase 2 High Cost option). Under that scenario, an additional pipeline and pump station would be required to convey flows from Chevron's effluent stream to the RARE treatment plant site. A key difference between the two source options is the implementation date: using WCWD water is supply dependent whereas using the Chevron Refinery's wastewater stream would allow the project to be implemented by as early as 2010.

During dry weather, the RARE project, in conjunction with the NRWRP, would use all of the available supply from WCWD and may require supplementation with potable water service.

Capacity Information

Average Annual Production:	0.5 MGD (560 AFY)
Max Capacity:	0.5 MGD
Minimum Capacity:	0.5 MGD
Production depends on (water source):	Supply
Project will be operated:	Continuously as baseload supply in all years (year round)

Opportunities and Challenges Summary

Opportunities

- Expansion of existing system. Only requires installation of additional membrane capacity (and possibly additional pipe and pump station facilities)
- Chevron is established EBMUD project partner, opportunity for cost sharing

Challenges

- Supply availability

Assumptions

- Chevron will pay full capital costs upfront. EBMUD will operate and maintain the plant following construction; however, Chevron will cover all O&M costs through monthly revenue payments to the District.

Project: Richmond Advanced Recycled Expansion (RARE) Water Project – Future Expansion (Expansion from 4.0 to 5.0 MGD)

District Contact: Linda Hu; Florence Wedington; Alice Towey

Status: Planning

First Year of Operation: 2015 (supply dependent)

Type of Project: Recycling (industrial use)

Project Overview

For general overview, see RARE phase 2 description.

The RARE expansion project includes expanding the RARE project's ultimate capacity from 4.0 to 5.0 mgd. It includes expansions of the MF and RO treatment system, and additional pump station and pipeline capacities. One possible water source for the expansion would be WCWD treated wastewater, as currently supplied to the RARE project (called the Phase 2 Low Cost option). However, if that source is unavailable, the project may take water from the Chevron Refinery's wastewater effluent stream (called the Phase 2 High Cost option). Under that scenario, an additional pipeline and pump station would be required to convey flows from Chevron's effluent stream to the RARE treatment plant site. A key difference between the two source options is the implementation date: using WCWD water is supply dependent whereas using the Chevron Refinery's wastewater stream is more likely to occur at an earlier date.

Capacity Information

Average Annual Production:	1.0 MGD (1,120 AFY)
Max Capacity:	1.0 MGD
Minimum Capacity:	1.0 MGD
Production depends on (water source):	Supply
Project will be operated:	Continuously as baseload supply in all years (year round)

Opportunities and Challenges Summary

<u>Opportunities</u>

- Expansion of existing system.
- Chevron is existing EBMUD project partner, opportunity for cost sharing

<u>Challenges</u>

- Supply availability

Assumptions

- Chevron will pay full capital costs upfront. EBMUD will operate and maintain the plant following construction; however, Chevron will cover all O&M costs through monthly revenue payments to the District.

Project: San Leandro Water Reclamation Facility Expansion Project – Phase 3 Oakland/Alameda

District Contact: Linda Hu; Florence Wedington

Status: Conceptual

First Year of Operation: 2015 (estimated)

Type of Project: Recycled water irrigation

Project Overview

As part of EBMUD's San Leandro Recycled Water Project, The current San Leandro Water Reclamation Facility (SLWRF) provides approximately 0.4 mgd of disinfected secondary recycled water produced by the City of San Leandro's Water Pollution Control Plant (WPCP) for irrigation at the Metropolitan Golf Links in Oakland, the Chuck Corcia Golf Complex, and Harbor Bay Parkway in Alameda.

The WSMP 2040 water recycling team coordinated with the City of San Leandro regarding the City's own recycled water program. The program currently consists of approximately 0.5 mgd of recycled water service to the Monarch Bay golf course and small City parks. Based on City input, the build-out demand for the City's program would likely remain below 1.0 mgd in the 2040 timeframe. Therefore wastewater supply limitations are not thought to be a limiting factor.

EBMUD's Phase 3 project consists of adding additional recycled water customers in the Oakland/Alameda area, including irrigation meters at the Oakland Airport, plus providing upgraded tertiary treated recycled water to all customers. The following components are anticipated for the Phase 3 Project.

- 0.45 mgd Tertiary treatment plant upgrades
- Pump station upgrades to install additional horsepower to supply increased demands
- Customer site retrofits to serve demands at the Oakland Airport and other various potential users north and south of the San Leandro Water Pollution Control Plant.
- Construct/upgrade transmission mains.

Capacity Information

Average Annual Production:	630 AFY of new potable water offsets (The project will actually provide 1,120 AFY, but only 630 AFY will be new)
Production depends on (water source):	
Project will be operated:	Continuously as baseload supply in all years (year round) (seasonally)

Opportunities and Challenges Summary

Opportunities

- Based on input from the City of San Leandro, the build-out demand for the City's program would likely remain below 1.0 mgd in the 2040 timeframe. Therefore wastewater supply limitations are not thought to be a limiting factor for the Phase 3 project.
- Existing distribution pipelines and pump station may be re-used for the phase 3 project, although they may require upsizing to serve the increased demands.
- There are opportunities for cost sharing with the City of San Leandro.

Challenges

- Expansion of committed project; supply availability depends on City's plans for recycling.

Project: San Ramon Valley Recycled Water Program (SRVRWP) – Phase 2 Bishop Ranch

District Contact: Linda Hu; Florence Wedington

Status: Planned

First Year of Operation: Earliest estimate is 2010 if WRDA funding is available

Type of Project: Recycling (irrigation only)

Project Overview

This is the second phase of the San Ramon Valley Recycled Water Project which is a part of the joint regional program between EBMUD and Dublin San Ramon Services District (DSRSD), serving tertiary treated recycled water to customers within the Bishop Ranch area. The two agencies formed a Joint Powers Authority known as DSRSD-EBMUD Recycled Water Authority (DERWA) in 1995. Phase 1 of the SRVRWP began water delivery of approximately 0.7mgd in February 2006.

Phase 2 includes the following components:

- Distribution pipelines throughout Bishop Ranch and along Bollinger Canyon Road (ranging in size from 4 to 16-inches)
- Customer retrofits at individual use sites

Capacity Information

Average Annual Production:	0.75 MGD (840 AFY)
Max Capacity:	0.75 MGD (or 5.7 MGD for DERWA treatment plant at buildout – includes all phases)
Minimum Capacity:	0.3 MGD
Production depends on (water source):	Construction of DERWA Phase 2 by Army Corps of Engineers
Project will be operated:	Continuously as baseload supply in all years (year round) (seasonally)

Opportunities and Challenges Summary

<u>Opportunities</u>

- Significant planning work has been completed; project is close to implementation
- Straightforward construction (pipelines only)
- $2.8 million WRDA funding secured for Phase 2A
- Pursuing $4.1 million WRDA funding for Phase 2B

Project: San Ramon Valley Recycled Water Program – Phase 3 Danville East

District Contact: Linda Hu; Florence Wedington

Status: Planned

First Year of Operation: Estimated at 2013 if WRDA funding is available

Type of Project: Recycling (irrigation only)

Project Overview

This is the third phase of the San Ramon Valley Recycled Water Project which is a part of the joint regional program between EBMUD and Dublin San Ramon Services District (DSRSD), serving tertiary treated recycled water to customers in northern San Ramon and southeastern Danville. The two agencies formed a Joint Powers Authority known as DSRSD-EBMUD Recycled Water Authority (DERWA) in 1995. Phase 1 of the SRVRWP began water delivery of approximately 0.7mgd in February 2006.

Phase 3 includes the following components:

- Distribution pipelines (ranging in size from 4 to 16-inches)
- Pump station
- Storage tank (currently in construction)
- Customer retrofits at individual use sites

Capacity Information

Average Annual Production:	0.58 MGD (650 AFY)
Max Capacity:	0.58 MGD
Minimum Capacity:	0.3 MGD (or 5.7 MGD for DERWA treatment plant at buildout – includes all phases)
Production depends on (water source):	
Project will be operated:	Continuously as baseload supply in all years (year round) (seasonally)

Opportunities and Challenges Summary

Opportunities

- Significant planning work has been completed; project is close to implementation
- A portion of the pipeline in Camino Tassajara and within the Alamo Creek Development has been constructed. The tank is currently in construction.

Challenges

- Continue to lobby for WRDA appropriations

Project: San Ramon Valley Recycled Water Program – Phase 4 Blackhawk East

District Contact: Linda Hu; Florence Wedington

Status: Planned

First Year of Operation: Estimated at 2016 if WRDA funding is available

Type of Project: Recycling (irrigation only)

This is the fourth phase of the joint regional program between EBMUD and Dublin San Ramon Services District (DSRSD), serving tertiary treated recycled water to customers within eastern Blackhawk. The two agencies formed a Joint Powers Authority known as DSRSD-EBMUD Recycled Water Authority (DERWA) in 1995. Phase 1 of the SRVRWP began water delivery of approximately 0.7mgd in February 2006.

Phase 4 includes the following components:

- Distribution pipelines (ranging in size from 4 to 12-inches)
- Pump station
- Customer retrofits at individual use sites

Capacity Information

Average Annual Production:	0.37 MGD (410 AFY)
Max Capacity:	0.37 MGD (or 5.7 MGD for DERWA treatment plant at buildout – includes all phases)
Minimum Capacity (MGD):	0.3 MGD
Production depends on (water source):	Supply is available but pending arrangement between DSRSD and other agency
Project will be operated:	Continuously as baseload supply in all years (year round) (seasonally)

Opportunities and Challenges Summary

Opportunities

- Significant planning work has been completed

Challenges

- WRDA funding availability
- Supply is available but pending arrangement between DSRSD and other agency

Project: San Ramon Valley Recycled Water Project – Phase 5 Blackhawk West

District Contact: Linda Hu; Florence Wedington

Status: Conceptual

First Year of Operation: Unknown

Type of Project: Recycling (irrigation only)

Project Overview

This is a conceptual fifth phase of the San Ramon Valley Recycled Water Project which is a part of the joint regional program between EBMUD and Dublin San Ramon Services District (DSRSD), serving tertiary treated recycled water to customers within eastern Blackhawk. The two agencies formed a Joint Powers Authority known as DSRSD-EBMUD Recycled Water Authority (DERWA) in 1995. Phase 1 of the SRVRWP began water delivery of approximately 0.7mgd in February 2006.

Phase 5 would serve the western portion of the Blackhawk Country Club currently not included in Phase 4. Required facilities include transmission mains, laterals, tie-in facilities to the existing SRVRWP transmission pipes, a booster pump station and customer site retrofits.

Capacity Information

Average Annual Production:	0.3 MGD (340 AFY)
Max Capacity:	0.3 MGD
Minimum Capacity:	0.2 MGD
Production depends on (water source):	Supply availability; funding
Project will be operated:	Continuously as baseload supply in all years (year round) (seasonally)

Opportunities and Challenges Summary

Opportunities

- Expansion of existing project.

Challenges

- Funding availability
- Potential recycled water supply limitations

Project: San Ramon Valley Recycled Water Program – Phase 6 Danville West

District Contact: Linda Hu; Florence Wedington

Status: Conceptual

First Year of Operation: Unknown

Type of Project: Recycling (irrigation only)

Project Overview

This is a conceptual sixth phase of the San Ramon Valley Recycled Water Project which is a part of the joint regional program between EBMUD and Dublin San Ramon Services District (DSRSD), serving tertiary treated recycled water to customers within eastern Blackhawk. The two agencies formed a Joint Powers Authority known as DSRSD-EBMUD Recycled Water Authority (DERWA) in 1995. Phase 1 of the SRVRWP began water delivery of approximately 0.7mgd in February 2006.

Phase 6 would serve users located along Camino Tassajara northwest of the intersection with Blackhawk Road. Required facilities include transmission mains, laterals, tie-in facilities to the existing SRVRWP transmission project, a booster pump station and customer site retrofits.

Capacity Information

Average Annual Production:	0.2 MGD (220 AFY)
Max Capacity:	0.2 MGD
Minimum Capacity:	0.1 MGD
Production depends on (water source):	Supply availability; funding
Project will be operated:	Continuously as baseload supply in all years (year round) (seasonally)

Opportunities and Challenges Summary

Opportunities

- Expansion of existing project.

Challenges

- Funding availability
- Potential recycled water supply limitations

Project: Satellite Recycled Water Projects (Retrofits)

District Contact: Linda Hu, Florence Wedington

Status: Conceptual

First Year of Operation: TBD

Type of Project: Potable water offset

Project Overview

This project consists of several satellite recycled water treatment plants (SRWTP) to cost-effectively provide recycled water to large users located remotely from where the District's main centralized system is located. In general, a SRWTP would take raw sewage from a wastewater collection pipeline and treat it at a tertiary level for local use.

In January 2005, EBMUD completed a study to determine the feasibility of constructing a SRWTP. The study explored technologies available for satellite treatment systems, identified three potential customers for a SRWTP demonstration, and included a cost-benefit analysis. A membrane bioreactor (MBR) was recommended as the preferred treatment technology for an SRWTP.

For the purposes of the WSMP, five satellite plants were evaluated as described below:

- Rolling Hills Cemetery, San Pablo/Richmond – This project would develop recycled water for irrigation of a future 45-acre cemetery expansion. The project yield would be approximately 50 to 200 AFY. The main potential constraint will be wastewater availability in the area.
- Diablo Country Club, Diablo Valley – This project was evaluated as part of the 1996 SRVRWP Facilities Plan, and would develop recycled water for golf course and landscape irrigation. The project would yield around 200 AFY. The main potential constraint will be the availability of wastewater in the area.
- Mountain View and St. Mary's Cemeteries, Oakland - The Mountain View Cemetery was previously evaluated as part of the 2005 Satellite Treatment Feasibility Study; no fatal flaws were found. The project would develop between 100 and 200 AFY of recycled water for irrigation of a future 40-acre cemetery expansion. One main project constraint may be high retrofit costs.
- Rossmoor Golf Course, Rossmoor Valley – Recycled water produced as part of this project would irrigate the golf course and landscaping at Rossmoor Country Club, in local parks and HOA landscaping. This project would develop approximately 100 to 150 AFY of recycled water, with the main potential constraint being the availability of wastewater.
- Moraga Country Club, Moraga – This project would develop between 100 and 200 AFY of recycled water for use irrigating the golf course and landscaping at Moraga Country Club, and landscape irrigation at St. Mary's College and Central Park. The main potential project constraint is the availability of wastewater.

Larger-scale new development could also be a likely candidate for Satellite Recycled Water Treatment, in addition to providing opportunities for cost sharing. However, this current cost analysis is based on retrofitting existing users and offsetting potable water use.

Capacity Information

Average Annual Production:	550 to 950 AF/yr
Max Capacity:	TBD
Minimum Capacity:	TBD
Production depends on (water source):	Local wastewater streams.
Project will be operated:	Continuously as baseload supply in all years (year round) (seasonally)

Opportunities and Challenges Summary

Opportunities

- Large local users near wastewater source
- Can be implemented in phases
- Irrigators users may prefer a more reliable water supply
- If new development, cost sharing opportunities available

Challenges

- Volume of local wastewater may constrain production rates and project yields
- Would require full EIR (could complete a programmatic EIR and then tier off)
- Water quality/health concerns from local residents
- Groundwater impact analyses may be required

Appendix B – Conservation Measures Evaluated in the WSMP 2040

Conservation Measures Evaluated in the WSMP 2040

Measure Number	Target Customer Category	Measure	Short Description
1	SF	Single Family Water Surveys I	Conventional indoor and outdoor water surveys for existing single-family residential customers. Normally those with high water use are targeted and provided a customized report to the homeowner on how to save water in their home. Assume 500 site surveys per year.
2	SF	Single Family Water Surveys II	Same as no. 1 above, except increase to 1,000 surveys per year.
3	SF	Single Family Water Surveys III	Same as no. 1 above, except increase to 2,500 surveys per year.
4	SF	Single Family Water Surveys I with AMS	Same as Measure 1 except that the survey would be enhanced by the availability of hourly consumption data from an Automatic Metering System (AMS) system. The AMS system would, on demand, indicate to the customer and EBMUD where and how their water is used thereby facilitating water use reduction. This would require EBMUD install an AMS system. Assume 500 surveys per year starting in 2018.
5	SF	Single Family Water Surveys II with AMS	Same as no. 4 above, except increase to 1,000 surveys per year.
6	SF	Single Family Water Surveys III with AMS	Same as no. 4 above, except increase to 3,250 surveys per year.
7	CONDO	Condo Surveys	Indoor and outdoor water surveys for existing condo residential customers (less than 5 units). Normally those with high water use are targeted and provided customized report to each resident. Assume 500 site surveys per year starting in 2010.
8	CONDO	Condo Water Surveys with AMS	Same as Measure 7 except that the survey would be enhanced by the availability of hourly consumption data from AMS system indicating to the customer where and how their water is used thereby facilitating water use reduction. This would require EBMUD install an AMS system. Assume 600 site surveys annually starting in the year 2018.
9	MF	Multifamily Surveys	Indoor and outdoor water surveys for existing multifamily residential customers (5 units or more). Normally those with high water use are targeted and provided a customized report to owner. 200 account surveys (or approximately 3,400 units) per year.

Measure Number	Target Customer Category	Measure	Short Description
10	MF	Multifamily Surveys with AMS	Same as Measure 9 except that the survey would be enhanced by the availability of hourly consumption data from AMS system indicating to the customer where and how their water is used thereby facilitating water use reduction. This would require EBMUD install an AMS system. Assume 250 account surveys (or approximately 4,250 units) annually starting in the year 2018.
11	SYSTEM	Real Water Loss Reduction - I	Measure covers efforts to find and repair leaks in the distribution system to reduce real water loss and take other actions (such as meter replacement) to reduce apparent water losses thereby improving the system water balance. A ten year program to reduce real water loss by approximately 0.6% of average water production is proposed for this measure. 40,000 data loggers would be installed over 10 years. Leak repairs would be handled by existing crews at no extra cost.
12	SYSTEM	Real Water Loss Reduction – II	Measure covers increased efforts (doubled the planned level of Measure 11) to find and repair leaks in the distribution system to reduce real water loss and take other actions (such as meter replacement) to reduce apparent water losses thereby improving the system water balance. A ten year program to reduce real water loss by approximately 1.2% of average water production is proposed for this measure. 40,000 data loggers would be installed over 10 years. Leak repairs would be handled by existing crews at extra cost.
13	SYSTEM	Real Water Loss Reduction – III	Measure covers significantly increased efforts (double the efforts of Measure 12) to find and repair leaks in the distribution system to reduce real water loss and take other actions (such as meter replacement) to reduce apparent water losses thereby improving the system water balance. A ten year program to reduce real water loss by approximately 1.8% of average water production is proposed for this measure. 40,000 data loggers would be installed over 10 years. Leak repairs would be handled by existing crews at increased cost.
14	IRR	Irrigation Water Budgets	Irrigators of landscapes with separate irrigation or mixed use accounts would receive a monthly or bi-monthly irrigation water use budget. Assume 100 new budgets per year, or 500 every 5 years (added to the existing program of some 5,000 water budgets). Budgets would be repeated every 5 years to remain current.

Measure Number	Target Customer Category	Measure	Short Description
15	IRR	Updated Irrigation Water Budgets with AMS on existing accounts	Same as Measure 14 except irrigation water budgets would be enhanced by the availability of hourly consumption data from AMS system indicating to the customer where and how their water is used, possibly irrigation station by station thereby by facilitating water use reduction and adherence to a budget. This would require EBMUD install an AMS system. Assume 40 budgets per year, or 400 every 10 years starting in the year 2018. Budgets would be repeated every 10 years to remain current.
16	COM, INS	Irrigation Water Surveys	All public and private irrigators of landscapes would be eligible for free landscape water surveys upon request. Normally those with high water use would be targeted and provided a customized report. Assume 150 surveys per year.
17	SF, MF, IRR	Smart Irrigation Controller Rebates	Provide a $400 rebate for the purchase of a SMART irrigation controller. Extension of current EBMUD rebate program. Assume 500 rebates per year. Program concludes in the year 2016.
18	SF, CONDO	Washer Rebates	Homeowners would be eligible to receive a rebate on a new water efficient clothes washer. Relative to the year 2040 planning horizon, this measure could have a shorter life cycle as efficiency standards will likely increase to catch up with past and ongoing market transformation. It is assumed that the rebates would remain consistent with relevant state and federal regulations (Department of Energy, Energy Star) and only offer the best available technology. Assume 5,000 rebates per year concluding in the year 2013.
19	SF, CONDO	Washer Rebates for High Efficiency Machines	Same as above, except that a higher rebate is offered for higher efficiency machines. Assume program starts in 2014 and concludes in the year 2020. Assume 2,500 rebates per year.
20	SF, CONDO	Public Information Program	Public education would be used to raise awareness of other conservation measures available to customers. Programs could include school programs but also include landscape classes for homeowners, poster contests, speakers to community groups, radio and television time, and printed educational material such as bill inserts, etc. Program would continue indefinitely.
21	COM, INS	CII Surveys	High water use accounts would be offered a free water survey that would evaluate ways for the business to save water and money. Assume 300 surveys per year.

Measure Number	Target Customer Category	Measure	Short Description
22	COM, INS	CII Surveys with AMS	Same as Measure 21 except survey would be enhanced by the availability of hourly consumption data from AMS system indicating to the customer where and how their water is used thereby by facilitating water use reduction. This would require EBMUD install an AMS system. Assume 400 surveys annually starting in the year 2018.
23	SF	Single Family Toilet Ordinance	Homeowners would be required to replace an existing high volume toilet with a 1.6 gpf toilet when the names on the water account changes. Program concludes in the year 2013.
24	MF	Multi family Toilet Ordinance	Apartment managers would be required to replace an existing high volume toilet with a 1.6 gpf toilet the when the name on water account changes. Program concludes in the year 2013.
25	Existing Customers SF, CONDO, MF	High Efficiency Toilet (HET) Rebates	Provide up to a $150 rebate or voucher for the installation of a high efficiency toilet (HET). HET's are defined as any toilet to flush 20% less than an ULFT and include dual flush technology. Rebate amounts would reflect the incremental purchase cost. Assume 8% market saturation. Program will be shorter lived as it is intended to be a market transformation measure and eventually would be stopped as 1.28 gpf units reach saturation. Program finishes in the year 2018.
26	Existing Customers SF, CONDO,MF	High Efficiency Toilet (HET) Rebates Intensive	Provide up to a $200 rebate or voucher for the installation of a high efficiency toilet (HET). HET's are defined as any toilet to flush 20% less than an ULFT and include dual flush technology. Rebate amounts would reflect the incremental purchase cost. Assume 12% market saturation. Program finishes in the year 2018.
27	Existing Customers CII	CII Rebates to Replace Inefficient Equipment	Provide up to a $1,000 rebate for a standard list of water efficient equipment. Included would be x-ray machines, ice makers, air-cooled ice machines, steamers, washers, spray valves, efficient dishwashers, replace once through cooling, and add conductivity meters on cooling towers. Assume 10% market saturation. Program concludes in the year 2023.

Measure Number	Target Customer Category	Measure	Short Description
28	Existing Customers MF	Multifamily Washer Rebate	Provide up to a $150 rebate (EBMUD provides $75 rebate, $75 grant match) to apartment complexes (5 or more units) for efficient washing machines in buildings over a certain size that has a common laundry room. It is assumed that the rebates would remain consistent with relevant state and federal regulations (Department of Energy, Energy Star) and only offer the best available technology. Assume market saturation of 15%. Program concludes in the year 2018.
29	Existing Customers MF	Multifamily Washer Rebate Intensive	Same as Measure 28 except increased market saturation to 25%. Program concludes in the year 2018.
30	Existing Customers SF, CONDO, MF, CII, IRR	Financial Incentives for Irrigation Upgrades	For SF, CONDO, MF, CII, and IRR customers with landscape, provide for rebates towards the purchase and installation of selected types of irrigation equipment upgrade including low volume sprinkler heads, check valves, and rain sensors. Rebate is up to $450 for residential accounts and up to $650 for mixed use accounts and up to $10,000 for irrigation accounts. Assume average rebate claimed equates to $2,500 for non-Residential accounts.
31	Existing Customers SF, CONDO, MF, CII, IRR	Financial Incentives for Irrigation Upgrades Intensive	Same as Measure 30, rebate is up to $700 for residential accounts and assume average rebate claimed equates to $5,000 for non-Residential accounts.
32	Existing CII	High Efficiency Urinal Rebate (<0.25 gallon)	Provide a rebate of up to $200 for high efficiency urinals to existing high use CII customers (such as restaurants). Eligible replacements would include urinals flushing with no more than 0.25 gpf and best available technology (1 pint). Assume 400 rebates (at 100 accounts) per year concluding in the year 2020.
33	ALL	ND-1 Install AMS	Require that new customers install AMS meters capable of providing hourly consumption data back to EBMUD and purchase means of viewing daily consumption inside their home/business either through the Internet (if available) or separate device. This system would require EBMUD to fully install an AMS system. Assume program begins in 2018.
34	ALL	NDR-2 Require Smart Irrigation Controllers and Rain Sensors	Require developers for all properties of greater than two residential units and all commercial development to provide the latest state of the art SMART irrigation controllers and rain sensors. These SMART controllers have on-site temperature sensors or rely on a signal from a central weather station that modifies irrigation times at least weekly.

Measure Number	Target Customer Category	Measure	Short Description
35	ALL	NDR-3 Require High Efficiency Toilets (HET)	Require developers to install a high efficiency toilet (HET). HETs are defined as any toilet to flush 20% less than an ULFT and include dual flush technology.
36	New Single Family	ND4 - Dishwasher Requirement	Require developers to install an efficient dishwasher (meeting certain water efficiency standards, such as gallons/load).
37	New Single Family	NDR5 - Clothes Washing Machine Requirement	Building departments would be requested to ensure that an efficient washer was installed before new home or building occupancy. EBMUD can enforce conditions of water service that may include efficiency standards for washing machines.
38	New Single Family	ND-6 Require Hot Water on Demand	Require developers to equip new homes or buildings with hot water on demand systems. These systems use a pump placed under the sink to recycle water sitting in the hot water pipes to the water heater.
39	ALL	NDR- 7 Require High Efficiency Faucets and Showerheads	Require developers to install lavatory faucets that flow at no more than 1.5 gpm, kitchen faucets and showerheads at no more than 2.0 gpm.
40	ALL	NDR-8 Require Landscape and Irrigation Requirements	Enforce a regulation that specifies that homes or buildings be landscaped according to Xeriscape principals, with appropriate plant selection and irrigation systems. (Combines with Smart Controller listed above).
41	Multi-Family	NDR-9 Require Multi Family Submetering on New Accounts	Require the metering of individual units in new multi-family, condos, townhouses, mobile-home parks and business centers (less than four stories and with water heater in the units). EBMUD administers meter read and bill program.
42	CII	NDR-10 Require 0.5 gal/flush urinals in new buildings	Require that new building be fitted with 0.5 gpf (or one liter) urinals rather than the current standard of 1.0-gal/flush models.
43	New Single Family	ND-11 Require Plumbing for Future Gray Water Use	Require that the drain lines in new single-family homes be plumbed for future installation of graywater systems.
44	CII	NDR -12 Require Plan Review for new CII	Require plan reviews for water use efficiency for all new business customers.
45	MF/Condo	MF Submeter Incentive	Provide a financial incentive (up to $300 per unit) to assist 75 MF building owners retrofit and install submeters on each individual apartment unit each year.

Measure Number	Target Customer Category	Measure	Short Description
46	Irrigation	Artificial Turf Sports Fields	Provide a rebate ($300 per dwelling unit) to assist 75 MF building owners retrofit and install submeters on each individual apartment unit each year.
47	SF	Artificial Turf SF Residential	Provide a rebate (up to $10,000) for customer to install artificial grass on one sports field per year.
48	SF	Cisterns	Provide a rebate (up to $1,000) to assist 250 single family homeowners per year with turf removal and installation of artificial turf.
49	SF	Garbage Disposal SF	Provide a rebate ($100) to assist 750 single family homeowners per year with installation of rain barrels.
50	SF	Graywater Retrofit SF	Encourage 500 single family homeowners per year to remove garbage disposals.
51	SF	Graywater New SF	Provide a rebate (up to $1,000) to assist 450 single family homeowners per year to install gray water systems.
52	COM	Dental Vacuum Pump	Provide a $500 rebate to assist builders of 300 single family homes per year with plumbing for future gray water system installation.
53	COM	Water Brooms	Provide a $125 rebate to assist 10 dental offices per year with installation of dry dental vacuum pumps.

Notes: ND = New Development New Regulation
NDR = New Development .Current Regulation
SF = Residential Single Family
MF = Residential Multi Family greater than 5 units
CONDO = Residential Duplexes and 3 or 4 units
CII = Commercial/Industrial/Institutional
IRR = Dedicated irrigation meters

Conservation Measures Selected for Programs

Measure Number	Measure Name	Program B	Program C	Program D	Program E
1	Single Family Water Surveys I				
2	Single Family Water Surveys II				
3	Single Family Water Surveys III		**X**	**X**	**X**
4	Single Family Water Surveys I with AMS				
5	Single Family Water Surveys II with AMS				
6	Single Family Water Surveys III with AMS		**X**	**X**	**X**
7	Condo Surveys		**X**	**X**	**X**
8	Condo Water Surveys with AMS		**X**	**X**	**X**
9	Multifamily Surveys	**X**	**X**	**X**	**X**
10	Multifamily Surveys with AMS		**X**	**X**	**X**
11	Real Water Loss Reduction - I				
12	Real Water Loss Reduction – II		**X**		
13	Real Water Loss Reduction – III			**X**	**X**
14	Irrigation Water Budgets	**X**	**X**	**X**	**X**
15	Updated Irrigation Water Budgets with AMS on existing accounts		**X**	**X**	**X**
16	Irrigation Water Surveys		**X**	**X**	**X**
17	Smart Irrigation Controller Rebates	**X**	**X**	**X**	**X**
18	Washer Rebates	**X**	**X**	**X**	**X**
19	Washer Rebates for High Efficiency Machines	**X**	**X**	**X**	**X**
20	Public Information Program	**X**	**X**	**X**	**X**

Measure Number	Measure Name	Program B	Program C	Program D	Program E
21	CII Surveys	**X**	**X**	**X**	**X**
22	CII Surveys with AMS		**X**	**X**	**X**
23	Single Family Toilet Ordinance	**X**	**X**	**X**	**X**
24	Multi family Toilet Ordinance	**X**	**X**	**X**	**X**
25	High Efficiency Toilet (HET) Rebates		**X**	**X**	**X**
26	High Efficiency Toilet (HET) Rebates Intensive		**X**	**X**	**X**
27	CII Rebates to Replace Inefficient Equipment		**X**	**X**	**X**
28	Multifamily Washer Rebate	**X**	**X**	**X**	**X**
29	Multifamily Washer Rebate Intensive	**X**	**X**	**X**	**X**
30	Financial Incentives for Irrigation Upgrades			**X**	**X**
31	Financial Incentives for Irrigation Upgrades Intensive				**X**
32	High Efficiency Urinal Rebate (<0.25 gallon)	**X**	**X**	**X**	**X**
33	Install AMS		**X**	**X**	**X**
34	Require Smart Irrigation Controllers and Rain Sensors	**X**	**X**	**X**	**X**
35	Require High Efficiency Toilets (HET)	**X**	**X**	**X**	**X**
36	Require Efficient Dishwashers	**X**	**X**	**X**	**X**
37	Require High Efficiency Clothes Washers	**X**	**X**	**X**	**X**
38	Require Hot Water on Demand	**X**	**X**	**X**	**X**
39	Require High Efficiency Faucets and Showerheads	**X**	**X**	**X**	**X**
40	Require Landscape and Irrigation Requirements	**X**	**X**	**X**	**X**
41	Require Multi Family Submetering on New Accounts	**X**	**X**	**X**	**X**

Measure Number	Measure Name	Program B	Program C	Program D	Program E
42	Require 0.5 gal/flush urinals in new buildings	**X**	**X**	**X**	**X**
43	Require Plumbing for Future Gray Water Use			**X**	**X**
44	Require Plan Review for new CII	**X**	**X**	**X**	**X**
45	MF Submeter Incentive			**X**	**X**
46	Artificial Turf Sports Fields	**X**	**X**	**X**	**X**
47	Artificial Turf SF Residential		**X**	**X**	**X**
48	Cisterns				**X**
49	Garbage Disposal SF		**X**	**X**	**X**
50	Graywater Retrofit SF				**X**
51	Graywater New SF				**X**
52	Dental Vacuum Pump	**X**	**X**	**X**	**X**
53	Water Brooms	**X**	**X**	**X**	**X**
TOTAL NUMBER OF MEASURES		**25**	**40**	**43**	**47**

Note: Program A includes only the plumbing code.

Appendix C – Customer Shortage Cost TM

POLICY ANALYSIS FOR THE PUBLIC AND PRIVATE SECTORS
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Date: July 29, 2008

From: M.Cubed
To: East Bay Municipal Utility District

Re: Method for Calculating Customer Shortage Costs for WSMP 2040 Portfolio Evaluations

1 Purpose and Scope of TM

WSMP 2040 portfolios were evaluated in terms of total costs to District customers. Total costs to customers consisted of (1) District costs to construct and operate new water supply projects and (2) customer shortage costs during periods of rationing. This TM describes how customer shortage costs during periods of rationing were estimated for WSMP 2040 portfolio evaluation.

2 Economic Valuation of Impacts

People and businesses incur economic losses when they reduce water use in response to rationing policies (Griffin 2006). Willingness-to-pay (WTP), defined as the maximum dollar amount individuals or businesses would be willing to pay to avoid the water shortage, is the standard approach to valuing water shortage costs (Dixon, et al. 1996) and is applicable to all sectors of water demand (Griffin 2006). Losses to businesses and industries can also be valued in terms of changes in output, value added, payroll, or employment (Brozovic, et al. 2007; MHB Consultants 1994).

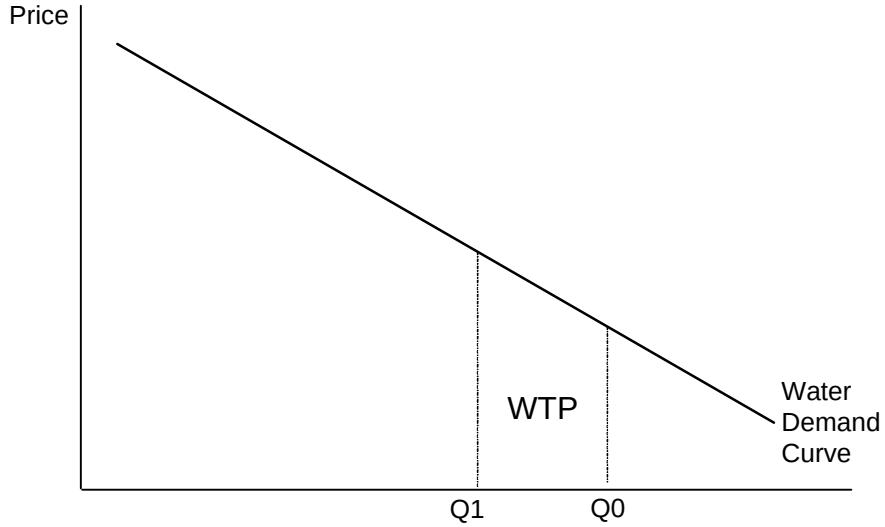
Following Brozovic, et al. (2007), shortage costs for residential, institutional, and irrigation customer classes were estimated in terms of WTP to avoid rationing while shortage costs to commercial and industrial customer classes were estimated in terms of losses in regional value added resulting from water rationing.[1]

[1] Value added is comprised of labor, proprietor, and property (capital) income plus indirect business taxes. It is a standard measure of the economic contribution made by business activity to a region.

2.1 Residential, Institutional, and Irrigation Shortage Cost Estimation

The *demand curve integration* method was used to estimate shortage costs for the residential, institutional, and irrigation customer classes.[2] This method estimates the cost of a rationing policy requiring a reduction in water use from Q0 to Q1 as the area under the customer class's water demand curve bounded by the unconstrained and rationed levels of consumption, as shown in Figure 1.

Figure 1. WTP to Avoid Rationing



WTP = Willingness-To-Pay

Shortage costs were estimated assuming both linear and constant elasticity demand curve specifications. As illustrated in Figure 2, shortage costs are approximately the same under both specifications when rationing is less than 25%.[3] The linear specification results in lower shortage costs when rationing exceeds 25%. This divergence can be used to construct lower and upper bound estimates of shortage cost.

The price elasticity of demand for water is defined as the percentage change in demand given a one percent change in price. At any price P and quantity Q, elasticity is defined by equation (1):

$$(1) \qquad \eta = \left(dQ/dP\right)\left(P/Q\right)$$

[2] A review of alternative methods for estimating willingness-to-pay to avoid water rationing and the reasons for selecting the *demand curve integration* method for WSMP 2040 are presented in Attachment 1 of the TM.

[3] The shortage cost curves in Figure 2 assume baseline household consumption of 304 gallons/day, baseline price of $1.72/CCF, and a price elasticity of -0.25.

Rearranging terms in equation (1) and integrating gives the inverse of the constant elasticity demand function for water:

(2) $$P(Q) = e^{\frac{\ln Q}{\eta} + C}$$

The integration constant, C, in equation (2) can be expressed as a function of the starting price, P0, the starting level of demand, Q0, and the price elasticity, η:

(3) $$C = \frac{P0}{Q0^{\frac{1}{\eta}}}$$

Substituting (3) into (2) and integrating over the range [Q1, Q0], where Q1 is less than Q0, gives the willingness-to-pay to avoid rationing water use to Q1:

(4) $$WTP(Q1, Q0, P0, \eta) = \int_{Q1}^{Q0} P(Q)dQ = \frac{\eta}{1+\eta} P0Q0\left[1 - \left(\frac{Q1}{Q0}\right)^{\frac{1+\eta}{\eta}}\right]$$

Equation (4) is the shortage cost function under the constant elasticity demand specification.

Under the linear specification, the inverse of the demand function for water is given by equation (5):

(5) $$P(Q) = a + bQ$$

The constants a and b can be expressed as functions of P0, Q0, and η. Integrating over the range [Q1, Q0] gives the willingness-to-pay to avoid rationing water use to Q1 under the linear specification, as shown by equation (6).

(6) $$WTP(Q1, Q0, P0, \eta) = P0\left(1 - \frac{1}{\eta}\right)(Q0 - Q1) + \frac{P0}{2\eta Q0}\left(Q0^2 - Q1^2\right)$$

Figure 2 depicts equations (4) and (6) graphically.

Information on baseline water use (Q0), baseline water rates (P0), class rationing level (Q1), and class demand elasticity (η) was required to estimate shortage costs with equations (4) and (6). Parameter values used for WSMP 2040 are shown in Table 1. The sources for these assumptions were as follows:

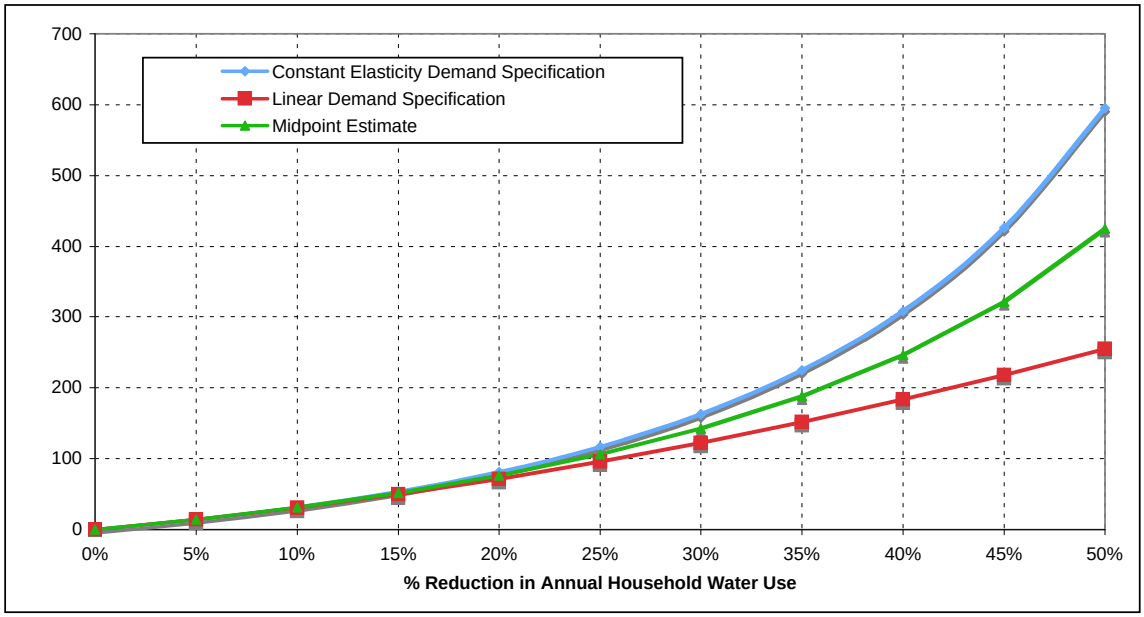
Baseline Class Water Use (Q0): The WSMP 2040 demand forecast and portfolio conservation level were used to construct the schedule of annual net demands over the planning period for each customer sector and pressure zone. This information was generated by the W-E model during the IS model runs.

Class Rationing Level (Q1): WEAP model output was used to calculate deviations from baseline water use during shortages. System shortages were distributed to customer classes by WEAP according to the shortage allocation weights shown in Table 1. These weights were developed by EBMUD. Class shortages were determined by multiplying the system-level shortage by the class shortage weight. For example, if the system-level shortage were 10%, the rationing level for the single-family customer class would be 12.1% (10% x 1.209).

Baseline Class Water Rate (PO): Baseline water rates for calculating WSMP 2040 shortage costs were provided by EBMUD.

Class Elasticity of Demand (η): Short-run price elasticity estimates were drawn from the literature on urban water demand.[4] Elasticity assumptions, by customer class, used for estimating WSMP 2040 shortage costs are shown in Table 1.

Figure 2. Illustration of Residential Shortage Cost Curves



[4] Espey et al. (1997), Renzetti (2002), Jenks et al. (2003), and Griffin (2006) provide comprehensive reviews of the urban water demand literature and empirical estimates of demand elasticity.

Table 1. Parameter Values for Residential, Institutional, and Irrigation Class Shortage Loss Functions

Rationing Class	WEAP User Class	Rationing Weight	Water Rate ($/CCF)	Price Elasticity
Single Family		1.209	$2.06	-0.15
	Low Density Res			
	Medium Density Res			
Multi-Family		0.746	$1.99	-0.10
	High Density Res			
	Very High Density Res			
	Special High Density Res			
	Mixed Use			
Irrigation		1.932	$2.20	-0.20
	Irrigated			
Institutional		0.631	$2.20	-0.20
	Public			
	School			

2.2 Commercial and Industrial Shortage Cost Estimation

Shortage costs for commercial and industrial customer classes were expressed in terms of reductions in regional value added and employment. The approach followed that of SFPUC (2007) and MHB Consultants (1994).[5]

MHB Consultants (1994) estimated the percentage change in commercial and industrial output and payroll for a one percent increase in rationing level using results of surveys of SFPUC commercial and industrial customers conducted during the 1987-1992 drought. These elasticity estimates were used by SFPUC (2007) to estimate commercial and industrial costs of drought-induced water shortages within the SFPUC service area. The output and payroll elasticities are depicted graphically in Figures 3 and 4, respectively. Figure 3 also compares the MHB Consultants (1994) output elasticity estimates to those estimated by Brozovic et al. (2007) using a different methodology.[6] The Brozovic

[5] A review of previous commercial and industrial water shortage impact studies and their applicability to WSMP 2040 is presented in Attachment 2 of this TM. A discussion of drought impacts to the landscaping sector is provided in Attachment 3 of this TM.

[6] Brozovic(2007) estimated business output responses to reductions in water supply using estimates of business sector resiliency. The methodology closely follows that of Chang, et al. (2002), but employs a more refined business output response function. The resiliency factors used by Brozovic(2007), however, were taken directly from Chang et al. (2002). The business resiliency factors in Chang et al. (2002) were estimated with data from the 1994 Northridge and 1995 Kobe earthquakes. Resiliency factors were estimated at the 2-digit NAICS level of industrial classification, thus enabling more disaggregated impact estimates than SFPUC(2007). The output resiliency functions can be used to estimate impacts of water shortage on output.

estimates are for combined industrial and commercial water use. Brozovic et al. (2007) did not estimate payroll impacts; therefore, no comparison is shown in Figure 4.

Figure 3

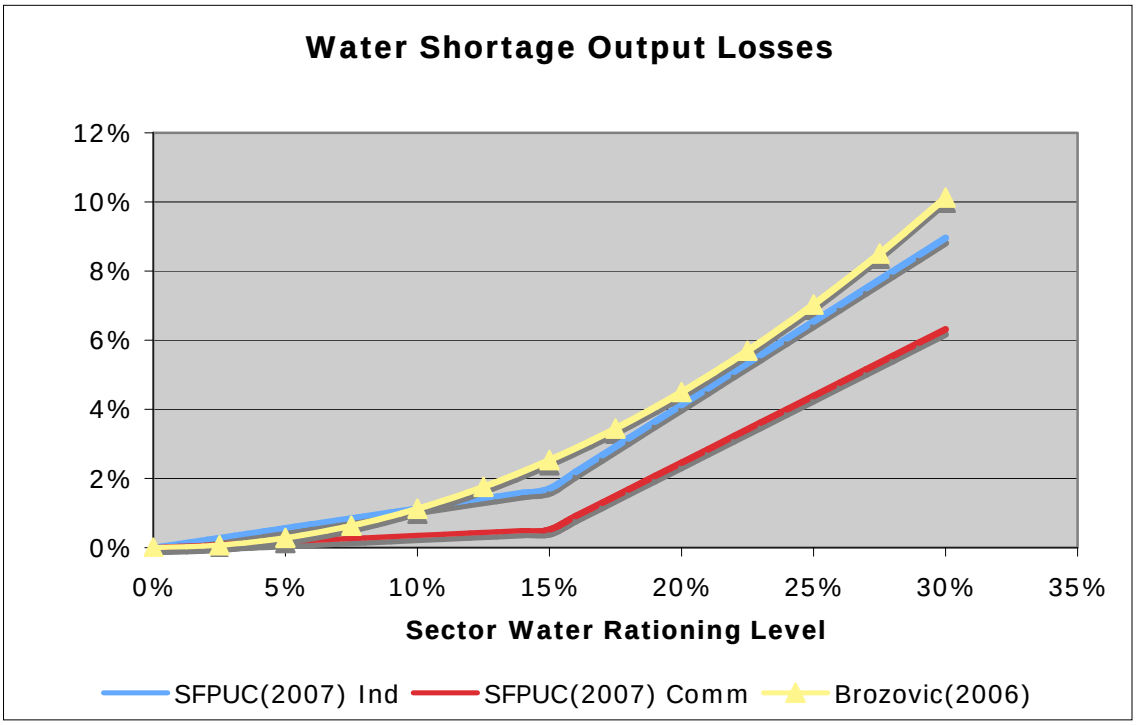


Figure 4

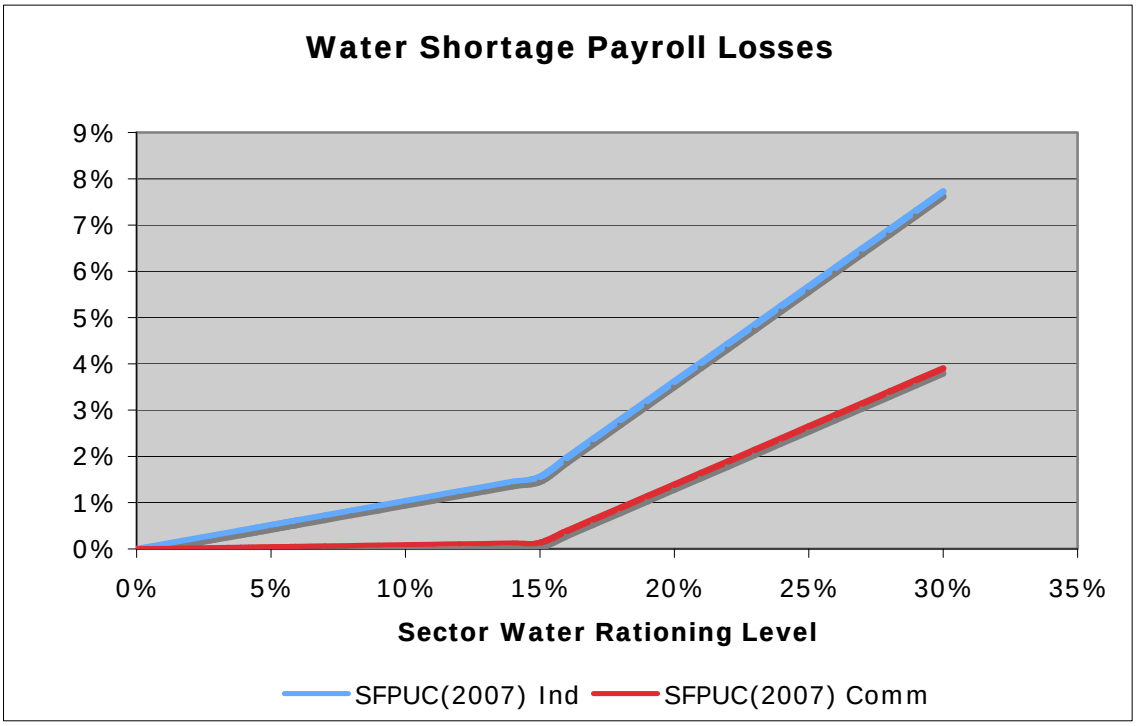


Table 2 shows the marginal output and payroll impact elasticities from SFPUC (2007) and MHB Consultants (1994). For shortages exceeding 15%, the impact elasticity is calculated as shown in equation (7):

(7) $$I = 0.15I_1 + (R - 0.15)I_2,$$

where I_1 is the marginal impact elasticity for shortages between 0% and 15% and I_2 is the marginal impact elasticity for shortages between 15% and 30%.

Table 2. Marginal Output and Payroll Impact Elasticities

Output Elasticities		
	Shortage Level	
	0-15%	15-30%
Industrial	0.114	0.483
Commercial	0.035	0.386
Payroll Elasticities		
	Shortage Level	
	0-15%	15-30%
Industrial	0.104	0.411
Commercial	0.009	0.251

Output impact estimates were converted to regional value added impacts by multiplying by the ratio of regional value added to regional output for Alameda and Contra Costa counties. Likewise, payroll impacts were converted to regional employment impacts by multiplying the ratio of regional employment to regional payroll. The conversion ratios were derived from 2006 IMPLAN county data files for Contra Costa and Alameda counties.[7]

The change in employment for customer class i (i = commercial or industrial) was calculated by multiplying the system rationing level, SR, by the class rationing weight RW, the class employment impact elasticity, ε, and the class baseline employment, EBaseline, as shown in equation (8).

(8) $$\Delta E_i = SR \times RW_i \times \varepsilon_i \times EBaseline_i$$

The change in value added for customer class i was calculated in a similar fashion, as shown in equation (9), where ν represent the value added impact elasticity.

(9) $$\Delta VA_i = SR \times RW_i \times \nu_i \times VABaseline_i$$

[7] IMPLAN is a regional economic impact software program. IMPLAN data files provide estimated employment, payroll, other income, output for over 500 commercial and industrial sectors. The data is provided by county. 2006 is most current IMPLAN data year.

Table 3 shows the class rationing weights and baseline employment and value added levels used to estimate commercial and industrial employment and value added shortage costs for WSMP 2040. Baseline employment was estimated as part of the WSMP 2040 demand analysis. Baseline value added was derived from baseline employment and 2006 IMPLAN data for Alameda and Contra Costa counties.[8]

Table 3. Parameter Values for Commercial and Industrial Shortage Loss Functions

Rationing Class	Rationing Weight	Baseline Employment (Thousands)	Baseline Value Added (Million $)
Commercial	0.782		
2010		321	24,551
2020		363	27,751
2030		411	31,414
2040		456	34,879
Industrial	0.341		
2010		110	12,297
2020		118	13,201
2030		128	14,241
2040		134	14,974

[8] Because the District service area does not encompass all of Alameda and Contra Costa counties, it was not possible to directly use the IMPLAN value added estimates. Baseline value added for the District's service area was estimated by multiplying baseline employment by the ratio of 2006 value added to 2006 employment for Alameda and Contra Costa counties.

Attachment 1:
Alternative Shortage Cost Valuation Methods

There are three basic approaches to quantifying the willingness-to-pay to avoid the consequences of water shortages (Brozovic, et al. 2006). One approach is to use survey techniques to directly elicit willingness-to-pay to avoid shortages from a representative sample of water customers. This is commonly referred to as the *stated preference method* in the economics literature. Another approach, the *mathematical programming method*, solves a cost minimization problem to identify the least cost combination of short- and long-term conservation measures that consumers could implement to avoid the impacts of water shortages. Estimated willingness-to-pay can be derived from the model solution values. A third approach uses demand curves to calculate the change in consumer surplus resulting from quantity restrictions or price increases.[9] This approach is sometimes referred to as the *demand curve integration method or the demand point expansion method*. It is referred to as the demand curve integration method in the discussion that follows.

Stated Preference Method

This method provides a direct means of estimating willingness-to-pay based on stated preferences of a representative sample of water users. Contingent valuation survey techniques are used to pose various water shortage scenarios to survey participants and to ask them questions about their willingness-to-pay to avoid these shortage events. Econometric analysis is then applied to the survey responses to estimate a willingness-to-pay function.

The stated preference method has been used to estimate residential willingness-to-pay for increased water supply reliability by several previous studies. Two of these studies (CUWA 1994 and Carson & Mitchell 1987) evaluated the willingness-to-pay of Bay Area and Southern California residential water users to avoid probabilistic water shortages. An advantage of this approach is that it directly focuses on the question of interest and can measure willingness-to-pay caused by all different types of shortage impacts (Dixon et al. 1996).

The cost and time required to implement this approach make it infeasible for WSMP 2040. This leaves the possibility of using results from previous stated preference studies to develop shortage loss functions for WSMP 2040. This approach is not recommended for the following reasons:

- The relatively small set of shortage scenarios evaluated by previous studies is a limiting factor for transferring results outside of the original study context.

[9] Consumer surplus is the excess that a consumer would be willing to pay for a commodity over the price that he does pay, rather than go without the commodity. It is a commonly used measure of the benefit consumers derive from consumption. As shown by Willig (1976), consumer surplus closely approximates willingness-to-pay under most circumstances.

- Results of previous stated preference studies may be upwardly biased. Jenkins, et al. (2003) point out that the two studies focusing on California urban water shortages used a survey format that has been shown to upwardly bias estimates of willingness-to-pay. Findings from Hensher et al. (2006) also suggest results from previous stated preference studies may be upwardly biased.
- Griffin and Mjelde (2000), using a contingent valuation survey designed to avoid biased responses, still found significant inconsistencies in their willingness-to-pay estimates. In their study, respondents stated higher *monthly* willingness-to-pay to avoid future, probabilistic water shortages than *total* willingness to pay to avoid immediate shortages of the same duration and severity, indicating that respondents did not have a clear understanding about what they were being asked to value.[10]

Mathematical Programming Method

The mathematical programming method sets up a cost minimization problem to select the least-cost mix of water savings alternatives to eliminate or manage a water shortage (Jenkins et al. 2003). Estimated willingness-to-pay can be derived from the model solution values. This approach can be combined with supply side cost information to solve the cost minimization problem previously illustrated in Figure 2.[11] Applications of this approach include Jenkins and Lund (2000), Wilchfort and Lund (1997), and Lund (1995).

The mathematical programming method is difficult to implement because it requires specification of the full costs of detailed conservation alternatives and actions, including non-market costs associated with changing habits and behaviors to reduce indoor and outdoor water use during shortages (Jenkins et al. 2003). In the absence of this data it is necessary to specify proxies for these costs. Jenkins and Lund (2000) note that estimates of consumer willingness-to-pay to avoid shortages can be used to approximate near-term shortage management costs. This strategy, however, makes willingness-to-pay an input to rather than output of the model, thereby defeating the purpose of using the method to estimate willingness-to-pay.

Demand Curve Integration Method

The demand curve integration method uses information on sector water uses, current water prices, and the price elasticity of demand to construct water demand functions. These functions are then used to analytically determine willingness-to-pay (Dixon et al. 1996).[12] This approach provides an economically robust and theoretically rigorous direct

[10] The results from Griffin and Mjelde (2000) seem to corroborate Dixon et al. (1996)'s concern that respondents to stated preference surveys may have little experience valuing water shortage impacts and may not give realistic answers.

[11] While this appears to be similar to our proposed use of WEAP, there is a fundamental difference. WEAP is not an optimization model. It is a simulation model. While WEAP can be used to identify the total resource cost of each evaluated portfolio it cannot be used to identify the least-cost option, other than by trial and error.

[12] The price elasticity of demand is defined as the percentage change in demand for a commodity given a one percent change in the price of the commodity.

assessment of the value of water use (Jenkins et al. 2003). The method can be implemented more quickly than the other methods and has modest data requirements (Dixon et al. 1996).

Several studies have used the demand curve integration method to evaluate California urban water users' willingness-to-pay to avoid water shortages. Brozovic et al. (2007) estimated the willingness-to-pay of residential water users served by the Hetch Hetchy water system to avoid prolonged disruption of water service caused by natural or man-made catastrophes. Hanemann et al. (2006) used the method to evaluate water shortage impacts for San Joaquin Valley agricultural water users and Southern California urban water users under alternative climate change scenarios. Jenkins et al. (2003) used the approach to develop monthly economic loss functions for major urban water users throughout California. Dixon et al. (1996) used the method to evaluate shortage impacts of the 1987-92 drought for residential water users served by Alameda County Water District.

While the demand curve integration method is theoretically robust and pragmatic, it has several limitations. First, the method only provides a lower-bound estimate of willingness-to-pay because it implicitly assumes that rationing policies result in water users curtailing their lowest value water uses first. This is a reasonable assumption when pricing policies are used to curb demand, but may understate the willingness-to-pay to avoid quantity or type-of-use restrictions (Dixon et al., 1996). Second, the method relies on two-parameter specifications of demand – either linear or constant elasticity. While these specifications are mathematically convenient, it should not be presumed that water demand actually exhibits linearity or constant elasticity across the full range of water use (Griffin 2006). Third, the method requires price elasticity estimates for all water demand sectors. While there is a large body of research on residential price elasticity, estimates for commercial and industrial water demand are more limited (Jenkins et al. 2003).[13]

Recommended Approach

Of the three methods considered, the demand curve integration method is considered the best approach for estimating customer shortage costs for WSMP 2040. This approach has three key advantages over the other reviewed approaches. First, it has been used in several urban water planning studies with specific application to California urban water use. Second, it is straightforward to implement and can be easily integrated into the WEAP modeling framework. And third, it has modest data requirements that can be easily satisfied with EBMUD system data.

Dr. Michael Hanemann, Chancellor's Professor of Agricultural and Natural Resource Economics at UC Berkeley and member of the CLAC, was asked to review the proposed methodology, indicate if he agreed with the approach, and suggest any modifications. A conference call with Professor Hanemann was held on October 18, 2007 to discuss his

[13] However, since an alternative method for estimating commercial and industrial shortage costs is being proposed, this is not viewed as a significant drawback.

review. Professor Hanemann indicated he agreed with the recommended approach and offered the following comments:

1. The analysis should use short-run demand elasticities to account for the immediacy and more limited response options of unpredictable and temporary shortage events.
2. Adjusting the demand forecast for variations in weather conditions would improve the shortage estimates. Higher demand generally correlates with years with higher than average temperatures and dry conditions. Hence use of normalized demands may bias downward to some extent shortage magnitude and cost estimates. Professor Hanemann indicated that the additional complications in modeling this would entail might not justify this refinement, however.
3. Truncating the shortage cost functions so that zero shortage costs are counted below some shortage threshold would avoid overstating impacts of very small shortages. He suggested a 5% shortage threshold.

Attachment 2:
Commercial and Industrial Water Shortage Studies

Six studies examing the impact of water shortages on business activity were reviewed for WSMP 2040. These studies were as follows:

- Spectrum Economics (1991). "Cost of Industrial Water Shortages: Preliminary Observations." Hereafter referred to as Spectrum(1991).
- Center for Regional Economy (2006). "East Bay Water Sources and a Pilot Study of User Response to a Potential Supply Disruption." Hereafter referred to as St. Mary's(2006).
- San Francisco Public Utilities Commission (2007). "Measures to Reduce the Economic Impacts of a Drought-Induced Water Shortage in the SF Bay Area." Hereafter referred to as SFPUC(2007).
- MHB Consultants, Inc. (1994). "The Economic Impact of Water Delivery Reductions on the San Francisco Water Department's Commercial and Industrial Customers." Hereafter referred to as MHB(1994). SFPUC(2007) utilized some of the results from MHB(1994) in its analysis.
- Brozovic, Nicholas, et al. (2006). "Estimating Business and Residential Water Supply Interruption Losses from Catastrophic Events." Hereafter referred to as Brozovic(2006).
- RAND (1996). "Drought Management Policies and Economic Effects in Urban Areas of California, 1987-1992."

The underlying data used for Spectrum(1991) is at least 20 years out of date (1987 base data and older industrial water use data from 1979). It also looks at only a 30% reduction scenario for a year, and respondents were told to ignore any measures they had instituted for the then-current drought (in 1990). This survey was primarily looking at impacts from permanent changes in Delta pumping requirements, not drought planning. The results are not directly applicable for the WSMP 2040.

St. Mary's(2006) attempted to update the Spectrum(1991) study. It added four scenarios, of which two or three are applicable to the WSMP, with 15% and 35% reductions for 6 months and 3 years. Unfortunately, the report provides only a qualitative discussion of potential impacts. The study's author reported they received only a handful of survey responses and were unable to conduct any analysis. As a result this report is not usable for estimating shortage costs.

SFPUC(2007) and MHB(1994) estimated changes in output and payroll using output and payroll elasticities derived from survey responses from SFPUC industrial and commercial customers. Elasticities for aggregated commercial water use and aggregated industrial water use were estimated. Elasticities for specific industries or business were not estimated. The elasticities estimate the percentage change in output (or payroll) for a one percent reduction in water supply to the industry and can be used to estimate impacts of water shortage on output and payroll.

Brozovic(2006) estimated business output responses to reductions in water supply using estimates of business sector resiliency. The methodology closely follows that of Chang, et al. (2002), but employs a more refined business output response function. The resiliency factors used by Brozovic(2006), however, were taken directly from Chang et al. (2002). The business resiliency factors in Chang et al. (2002) were estimated with data from the 1994 Northridge and 1995 Kobe earthquakes. Resiliency factors were estimated at the 2-digit NAICS level of industrial classification, thus enabling more disaggregated impact estimates than SFPUC(2007). The output resiliency functions can be used to estimate impacts of water shortage on output.

The methods used by SFPUC(2007) and Brozovic(2006) could be used in WSMP 2040 using data on business output (sales) and payroll from the 2002 Economic Census or from more recent IMPLAN county data files.[14] Economic Census data is available for all cities and towns served by EBMUD, except Alamo, Castro Valley, Crockett, El Sobrante, Kensington, Rodeo, and Selby. These are small communities relative to other cities served by EBMUD, and excluding them is not expected to significantly bias results. Using the 2002 Economic Census data would allow for impacts to be geographically disaggregated by city or by broader regions, such as West of Hills and East of Hills.

Change in output is not a good measure of regional impact because it does not account for imports of factors of production and intermediate goods into the region. Value-added provides a better measure of regional impacts. Value-added is defined as the sum of regional labor, proprietor, and other income plus indirect business taxes and is the basis for the familiar gross domestic product (GDP) and gross state product (GSP) often reported in the press as a measure of national and state economic growth. Changes in output can be converted into changes in value-added or GRP using Input-Output multipliers from a regional I-O model package such as IMPLAN. Likewise, changes in payroll can be combined with employment and payroll data from IMPLAN to estimate changes in employment.

Industrial and Commercial Payroll: 1987-1991

RAND (1996) examined industrial and commercial water use over the period 1987-1991. As hypothesized by the SFPUC(2007) and Brozovic(2006) models, the study found a positive correlation between industrial water use and industrial payroll during the drought, shown in Figure 5, though changes in payroll were much less than proportional to changes in water use. Additionally, the latter part of the drought coincided with a broad economic recession, which also negatively impacted industrial payroll. While industrial water use in 1991 decreased by about 15% from the previous year, industrial payroll decreased by only 4%; however, most of this decrease probably was due to the economic recession as U.S. manufacturing employment decreased 3.5% in 1991.[15] The SFPUC(2007) model estimates that industrial payroll would decrease by 1.6% given a 15% reduction in industrial water use. Given that much of the decrease in industrial

[14] The most recent IMPLAN county data is for 2006.

[15] U.S. Census Bureau, *Statistical Abstract of the United States, 1993,* Table No. 647.

payroll between 1990 and 1991 probably was attributable to the recession, this estimate appears reasonable.

The SFPUC(2007) predicts negligible impacts to commercial payroll for shortages of up to 15% and this appears consistent with changes in commercial payroll observed between 1987 and 1990 (Figure 6). During this period, while commercial water use decreased by about 4% from its 1986 level, commercial payroll continued to grow. Between 1990 and 1991 commercial water use fell by about 11% while commercial payroll decreased by about 2.6%. As with industrial payroll, given that the economic recession may account for much of this decrease the SFPUC(2007) payroll impact estimates appear plausible.

Figure 5

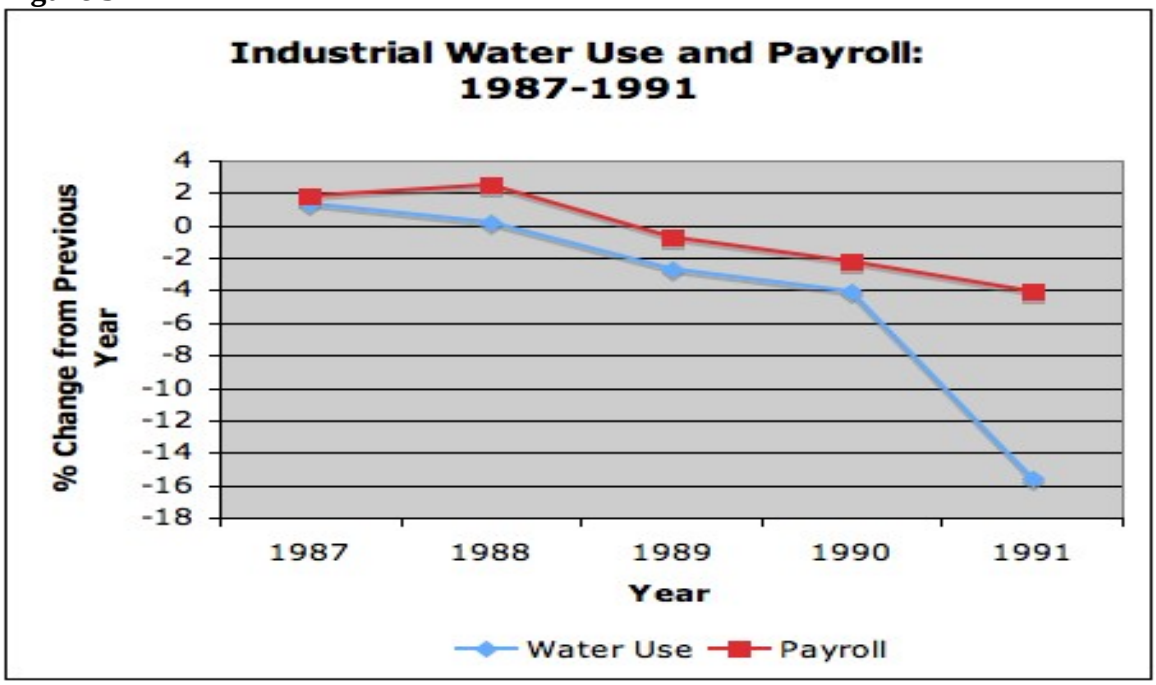
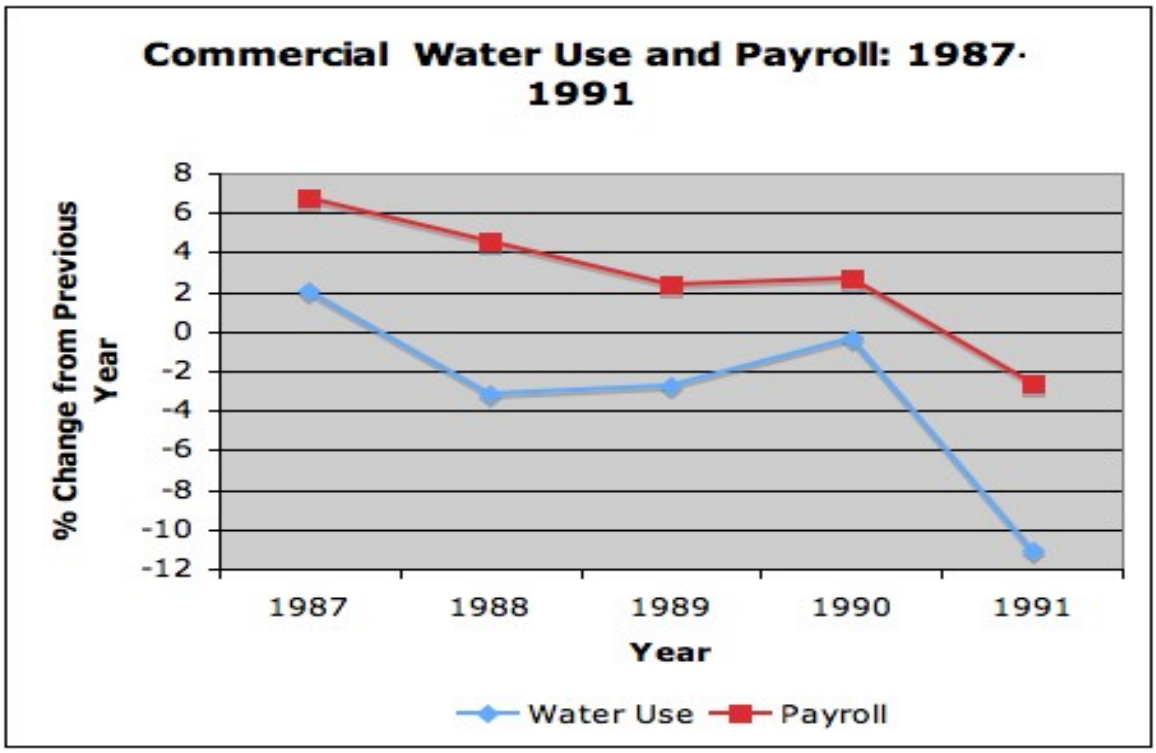


Figure 6


Commercial Water Use and Payroll: 1987-1991
% Change from Previous Year
8
6
4
2
0
-2
-4
-6
-8
-10
-12
1987
1988
1989
1990
1991
Year
Water Use
Payroll

Attachment 3:
Water Shortage Impact to Landscaping Sectors

The approach to estimating economic impacts of water shortages on EBMUD commercial and industrial water users relies on a 1994 SFPUC study. Using data from a survey of commercial and industrial water users served by SFPUC, this study estimated relationships between the magnitude of sector water shortages and changes in payroll and sales. WSMP 2040 uses these relationships to translate system water shortages into changes in commercial and industrial payroll, employment, and regional value added.

Implicit to this approach is the assumption that water is a primary input to production and constraints on the supply of this input limit production and hence employment and payroll. This is a reasonable way to describe how water shortages impact many water-intensive industries and businesses. For example, a chemical manufacturer uses water in its processes, as well as for cooling, heating, and sanitation. In the short-run, the ability to substitute other inputs for water in the production process may be limited and reductions in water supply may thus require changes in output and employment levels.

However, not all industry sectors considered vulnerable to water shortages follow this general model. The landscape services sector is one exception. Water shortages do not affect this sector's ability to supply its services. Rather, water shortages may reduce the demand for landscape services. Put another way, water shortages impact the landscape services sector indirectly through changes in demand. These indirect impacts are not presently accounted for in the WSMP 2040 shortage cost estimates.

Limited information on how water shortages impact the landscape services sector is available. We have identified two studies, the first sponsored by the State Water Contractors and the second sponsored by Metropolitan Water District, which examined the impact of drought on California's landscape services sector. The first study examined how the combination of drought and recession impacted statewide payroll and employment within the landscape services sector in 1991. Through a survey of landscape service sector employers, the second study estimated how much of the total impact could be attributed to the drought alone, the recession alone, or was not separable.

Results are summarized in the following table. The study estimated that between 1990 and 1991 California's landscape service sector payroll fell by $217 million and that 11%, or about $23.9 million, was attributable to the drought alone. That is, the drought alone was estimated to reduce 1991 forecast payroll by 1.7%.

RAND (1996) estimated that water shortages in California's urban areas averaged 14% in 1991, implying a payroll elasticity of 0.12.[16]

[16] Payroll elasticity is defined at the percentage change in landscape sector payroll given a one percent change in urban water supply. An elasticity of 0.12 means that a 10% urban shortage would reduce landscape sector payroll by 1.2%.

1991 Statewide Landscape Services Sector Payroll Impact (Million $)

1991 Forecast Payroll	1991 Actual Payroll	Difference	% Drought Related	$ Drought Related	1991 Statewide Urban Water Shortage*	Implied Payroll Elasticity
$1,421.5	$1,204.5	-$217	11%	-$23.9	-14%	0.12

*RAND 1996. "Drought Management Policies and Economic Effects in Urban Areas of California, 1987-1992."

The following table shows the size of the landscape services sector in Alameda and Contra Costa counties, as reported in the 2002 Economic Census.

Landscape Services in Alameda and Contra Costa Counties, 2002

County	No. Establish.	Sales ($1,000)	Ann. Payroll ($1,000)	Employees
Contra Costa	306	$203,747	$63,166	2,593
Alameda	262	$338,827	$131,079	4,557
Total	568	$542,574.00	$194,245.00	7,150

The next table shows the potential impact to annual payroll, employment, and value added for 10%, 15%, 20%, and 25% shortages. These impacts are for all of Alameda and Contra Costa Counties. Impacts to EBMUD service area would need to be scaled down to account for portions of the counties that fall outside its service area.

Landscape Services Impacts in Alameda and Contra Costa Counties, 2002.

Water Shortage	Employment	Payroll (Mil. $)	Value Added (Mil. $)*
10%	71	$2.3	$3.3
15%	107	$3.5	$5.0
20%	143	$4.6	$6.6
25%	179	$5.8	$8.6

* Based on ratio of value added to payroll for IMPLAN sector 458 "Services to Building and Dwellings," which includes NAICS 5617 "Landscape Services."

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Appendix D TM-7

Drought Planning Sequence TM

1. Technical Memorandum Overview

The East Bay Municipal Utility District (EBMUD) is in the process of developing a Water Supply Management Program (WSMP) which will define water needs and recommend a combination of water supply projects that will meet demands until year 2040. This combination of water projects is referred to as a "water supply portfolio" and is intended to ensure that, even under reasonably worst-case conditions, the District will be able to meet demands for essential services. Water supply portfolios will be evaluated under the drought planning sequence as a condition upon which the performance of water supply portfolios will be evaluated.

EBMUD's current drought planning sequence is defined as a three-year drought represented by hydrologic conditions in 1976, 1977 and an average of 1976 and 1977 conditions in place of hydrologic conditions for 1978. It is intended to capture the uncertainty in assuming the historical record has captured all possible drought conditions. Recently, however, there has been evidence suggesting the occurrence of systematic climate change, and to date, the effects of climate change have not been captured in EBMUD's drought planning sequence.

In preparation for evaluating possible future water supply portfolios, RMC has prepared this memo presenting a recommended approach for drought planning. Specifically, this technical memorandum will:

- Summarize EBMUD's current drought planning sequence;
- Summarize the benefits and limitations of stochastic drought forecasting and the use of tree ring studies to augment the hydrologic trace.
- Compare the current drought planning sequence to that of other major water districts;
- Recommend actions for drought management analyses for the 2040 Water Supply Management Program.

2. Background

EBMUD provides water to over 1.2 million customers in the eastern part of San Francisco Bay. Ninety-five percent of EBMUD's water supply is currently derived from surface runoff from a single source – the Mokelumne River watershed. The District diverts water collected and stored in Pardee and Camanche Reservoirs along the Mokelumne River and transports it 132 kilometers (82 miles) to their East Bay service area via three large pipelines known as the Mokelumne Aqueducts (Skinner, 2002). The Mokelumne watershed drains an area of approximately 627 square miles that begins on the western slopes of the Sierra Nevada Mountain Range and eventually drains to the California Delta.

Annual average runoff in the Mokelumne River is approximately 735 thousand acre-feet (TAF), 66% of which occurs in the spring snowmelt period. While there is over 800 TAF of storage on the Mokelumne River (between EBMUD's Pardee and Camanche Reservoirs and Pacific Gas and Electric Company's reservoirs upstream of Pardee and Camanche), the District's total storage is approximately 615 TAF. Despite high variability between normal and dry-year runoff in the Mokelumne River watershed, storage along the Mokelumne River and less than full-take by high-priority water rights are the primary reasons that sufficient water is available to meet all the needs of EBMUD's customers and downstream obligations in most years. During some historical dry periods, Mokelumne Basin runoff has been insufficient to supply all of EBMUD's needs. During these periods, most of the District's demands were supplied by water previously diverted to storage. The worst drought event in EBMUD's history (based on written records) was the 1976-77 drought, when runoff was only 25% of average and total reservoir storage decreased to 30% of capacity with only 47 TAF remaining in Pardee Reservoir at the end of 1977. This drought is discusses in more detail in Section 2.1

In addition to its on-river Mokelumne storage, EBMUD is currently constructing the Freeport Regional Water Project (FRWP). The FRWP is a water supply project expected to be operational in 2010 that will provide EBMUD as much as 100 million gallons per day (112,000 acre-feet per year) of water during dry years only. According to the FRWP draft EIR, EBMUD is expected to take Freeport water approximately three out of every 10 years.

2.1 Current Approach to Drought Sequencing

As previously mentioned, the 1976-1977 drought was the worst drought experienced by EBMUD on record. While the critically-dry year of 1977 was followed by a wet year in 1978 (which allowed the system to recover rapidly), it could not be known in September of 1977 what the following hydrologic year would bring in terms of precipitation and runoff. As a result, the District did not allow its storage to become fully depleted in 1977. Instead, it conservatively planned for a third dry year and chose to implement several

emergency measures in 1977 to provide adequate, but greatly reduced, carryover storage to preserve its remaining water supplies.

The drought planning sequence currently used by EBMUD to assess the adequacy of its water supply system reflects the District's experiences during the 1976-77 drought. The District has concluded that it would be prudent to consider the possibility of events more extreme than have occurred historically, especially considering the relatively short hydrologic record. It has therefore assumed a third year of drought (taken as the average runoff in 1976 and 1977, approximately 185 TAF) to replace the otherwise wet year of 1978 to form a more conservative drought scenario. In its water supply evaluations, the District assumes that carry-over storage would become fully depleted by the end of the third drought year, with none held back as carry-over for a fourth dry year (John W. Skinner; 2002). Figure 2-1 shows the District's drought planning sequence hydrology.

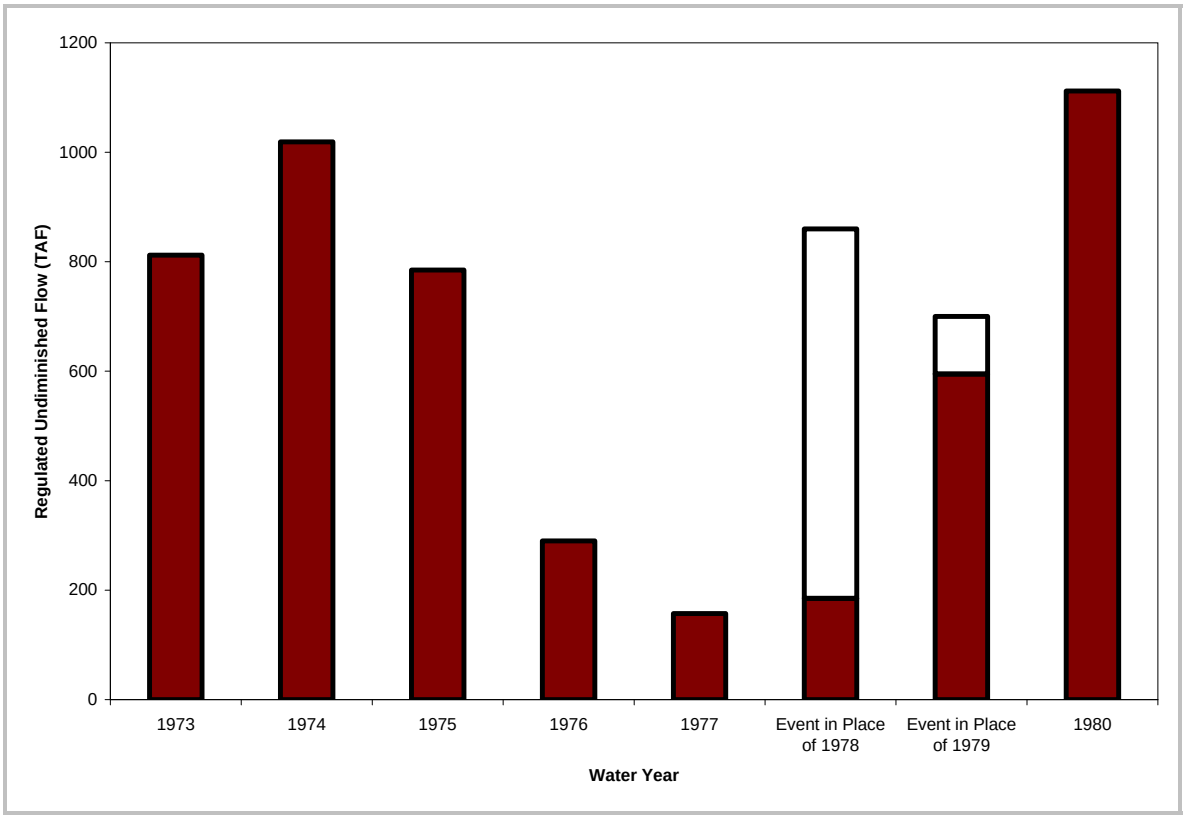


Figure 2-1: EBMUD's Current Drought Planning Sequence Hydrology

EBMUD assesses its water supply situation in April of each year (and as necessary during dry periods), taking into account the amount of water stored in its reservoirs and the amount of water stored in the Mokelumne River basin's snowpack. The Freeport Regional Water Project is planned to come online in 2010, and once operational, it will be included in water supply evaluations.

The California Department of Water Resources describes an approach to drought planning on Page 17 of their 1991 *Urban Drought Guidebook* as follows: "At a minimum, the carry-over amount should be enough to meet essential health, safety, and fire fighting needs if the subsequent winter is as dry as the driest year on record." Providing this carry-over storage is necessary because the following year's runoff is not known *apriori.* Operators must safeguard against the severe impacts which would result from a complete loss of water supply should drought conditions continue. Therefore, if the projected water supply were unable to fully meet customer needs, the District would initiate water reduction programs, as necessary, to allow enough water to remain in storage at the end of October (carry-over storage) to meet the basic needs for one more year should the following year turn out to be as dry as 1977 (235 TAF or 75% of demand plus the amount of dead storage in the District's system).

When projecting system storage at the end of September, the District prepares a Drought Management Program and considers limiting customer demands (rationing). The District's "Water Supply Availability and Deficiency" policy limits drought demand reductions to no more than 25%. A summary of EBMUD's drought planning program guidelines is shown in Table 2-1.

Table 2-1: EBMUD Drought Management Program Guidelines

Drought Stage	Carryover Storage	Target Drought Demand Reduction (Rationing Goal)
None	> 500 TAF	None
Moderate	450 TAF - 500 TAF	0 to 15%
Severe	450 TAF to 300 TAF	15% to 25%
Critical	< 300 TAF	25%

Source: John W. Skinner, East Bay Municipal Utility District's Drought Planning Sequence. March 2006

Finally, the District's current drought planning sequence assumes that a severe drought will not continue beyond the third, synthesized year of the sequence and that all accessible water in storage in the EBMUD water supply system, including all water in its East Bay Reservoirs, would be depleted at the end of the third drought year. Therefore, the minimum storage level at this time would be equal to the aggregate total amount of EBMUD's inaccessible or dead storage of 35.4 TAF.

3. Drought Forecasting Methodologies

The magnitude, duration, and frequency of droughts have a substantial impact on the performance of future water supply scenarios. In order to adequately assess the economic, social, and water reliability impacts of future hydrologic conditions, the water supply planning team needs to forecast those conditions. Droughts are forecasted in many different ways, most of which reflect the water agency's experience. Stochastic methods can be employed to determine a range of possible future conditions. Such methods are dependent on historic data which is often times insufficient to provide estimates of important statistics. Recorded streamflow data can be augmented with tree ring data and can serve as a way to lengthen the hydrologic record and improve statistical reliability. These methods are discussed in more detail below.

3.1.1 Historical Hydrology

EBMUD's period of record for Mokelumne River runoff (as measured at the Mokelumne Hill Gage) runs from 1905 to the present. During this period of historical record, there have been three "droughts of record" – from 1929 to 1934, 1976 to 1977, and 1987 to 1992. The severity of these droughts is reflected in the Sacramento Valley and San Joaquin Valley runoff values, as shown in Table 3-1.

Table 3-1: Severity of Extreme Droughts in the Sacramento & San Joaquin Valleys

Drought Period	Sacramento Valley Runoff		San Joaquin Valley Runoff	
	(MAF/Y)	(% Average 1901-1996)	(MAF/Y)	(% Average 1906-1996)
1929-1934	9.8	55	3.3	57
1976-1977	6.6	37	1.5	26
1987-1992	10.0	56	2.8	47

Source: California Department of Water Resources, Drought Preparedness as viewed at http://watersupplyconditions.water.ca.gov/background.cfm on June 11, 2007.

The 1976-1977 drought, while the shortest of the three extreme droughts on record, was also the deepest, that is, had the greatest reduced runoff. This effect can also be seen in the Mokelumne River runoff records as measured at the Mokelumne Hill gage and as shown in Figure 3-1. This data indicates that the EBMUD water supply system (without the Freeport Regional Water Project) is possibly more sensitive to the depth of a drought than to the length of a drought. This could be, perhaps, due to the volume of storage capacity on the river. At the same time, it is important to note that the District's current Drought Management Programs (establishing voluntary and mandatory water conservation goals) were developed in response to the 1976-1977 drought and were

found to be effective in reducing total customer demand during the six-year 1987 to 1992 drought, when Mokelumne River runoff was reduced by over 50%.

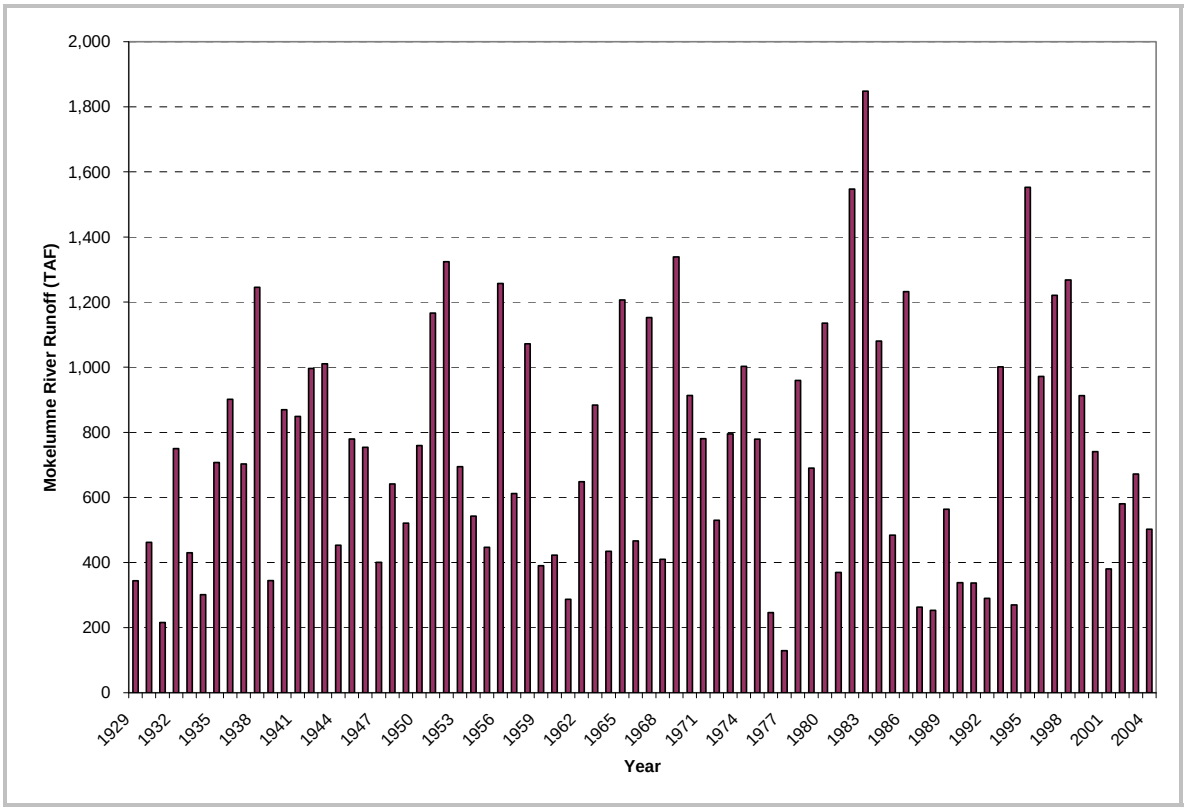


Figure 3-1: Mokelumne River Runoff – True Natural Flow as Measured at Mokelumne Hill Gage

3.1.2 Stochastic Forecasting

Hydrologic events appear as uncertainties in nature and are the result, it must be assumed, of an underlying process with random (stochastic) components. In stochastic forecasting, underlying processes are derived from historic streamflow data and inferences are made about the range and frequency of possible future droughts. Two assumptions are implicit in this type of determination:

Assumption 1: The historic data is long enough to capture representative statistical characteristics of the underlying processes.

Assumption 2: There is some probabilistic mechanism which is stationary over the historic trace, and will continue to be stationary in the future.

The first assumption accounts for variabilities and major oscillations in the climate system, which produces effects that manifest themselves on timescales that range from seasons to millennia. Proceedings of the U.S. National Academy of Sciences (PNAS) recently reported that more than half of the spatial and temporal variance in drought

frequency over the United States is attributable to the climatic oscillations which can span decades to centuries. Although 100 years of historic records is sufficient to capture smaller, more persistent tendencies in Mokelumne hydrology, it is not reasonable to assume these records have captured the full extent of climactic variability and major oscillations. EBMUD analyzed the effects that the addition of 12 years of data to a 69-year hydrologic database has on calculations of drought probabilities. The analysis showed that adding the 12 years of data (1976 through 1987) to the 1907 through 1975 hydrologic database dramatically increased the calculated probability of occurrence of extreme drought events. For droughts of two to three years in duration, the 1,000-year return interval drought calculated using the 1907 through 1975 data set became a drought with about a 200-year return interval using the 1907 through 1987 data set. RMC extended this analysis[1] and found that the 200-year drought calculated from the 1907 though 1987 data becomes a 100-year drought when all data from 1907 to 2007 is considered. In other words, the addition of thirty two years of data changed what could be considered an improbable 1000-year drought in 1975 to a much more probable drought in 2007.

As the planning period becomes sufficiently long relative to historic streamflows, the reliability of stochastic predictions will deteriorate. Even if the historic trace could be lengthened to such a degree that underlying processes, oscillations, and variability are understood, they are limited to a historical context. In stochastic analysis, the basic probabilistic model is assumed to be stationary over time (Assumption 2) or that a trend in stationarity can be determined. In other words, it is assumed that the probability of a drought of specific severity does not change over time, and if it does, how it changes over time must be understood. The assumption of hydrologic stationarity is called into question by the prospect of global climate change. The latest Intergovernmental Panel on Climate Change (IPCC) report reaffirms that the climate is changing in ways that cannot be accounted for by natural variability and that “global warming” is occurring (IPCC; 2001). Because hydrologic records are sufficiently “noisy” and the resolution of tree ring data sufficiently coarse (section 3.1.3), deciphering recent trends from either source is doubtful at this time.

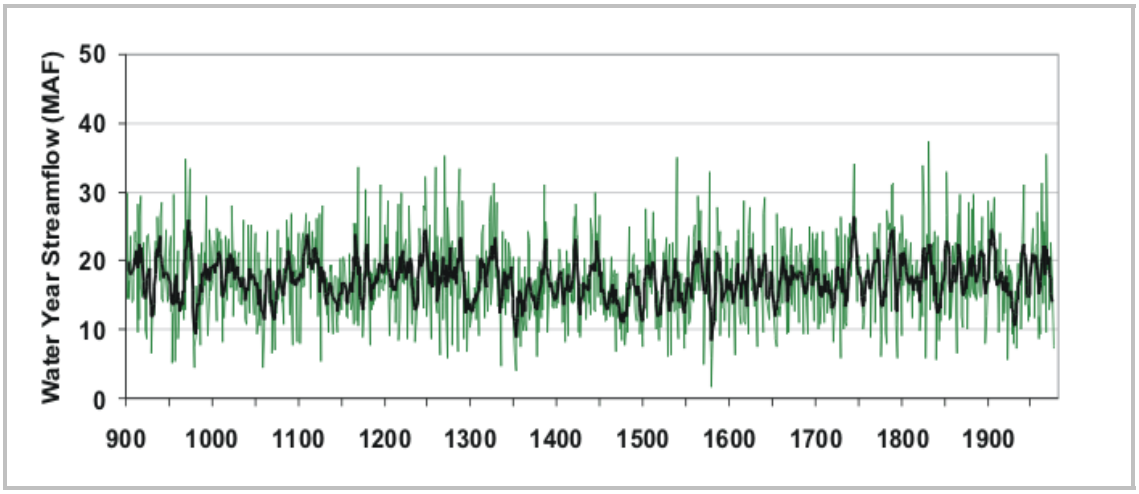
Although limitations exist in the ability of stochastic hydrology to forecast future streamflows, it can be however, a useful tool in assessing a water supply system’s ability to meet demand under conditions which differ from those experienced in the past. In 2004, water resource managers in the Washington D.C. area used a stochastic approach to drought planning, and they were successful in gaining necessary public support. The area had traditionally relied on a planning event based on the worst drought experienced in the 73 years of record, but recognized that the severity of future droughts is not limited to what has been observed historically. In order to move beyond historic events, stochastic streamflow series were generated using a stochastic modeling

[1] Using the *Gumbel S Method* and true natural flows measured at the Mokelumne Hill gage station.

package as input into their existing water supply system model. Several sequences were generated, involving several hundred years of synthetic streamflow. This long streamflow record allowed many different synthetic drought events to be modeled, some considerably more severe than have been observed in the historical record, with the goal of developing a range of risks based on the performance of their water system under varying hydrologic conditions.

3.1.3 Tree Ring Analysis

As stated in Section 3.1.2, the reliability of stochastic predictions determined from historic data will deteriorate as the planning period becomes sufficiently long relative to historic streamflows. Long-term reliability can be improved by reconstructing stream flows from "tree rings", a common technique used to lengthen the historic streamflow record. EBMUD's 2002 "Drought Planning Sequence" paper by John W. Skinner (Skinner Paper) dismissed the use of tree-ring data due to the lack of a runoff reconstruction for the Mokelumne Basin and lack of confidence in the correlation between tree-ring widths and streamflow. Research published since the Skinner Paper indicates at least one high quality streamflow reconstruction for the Sacramento River basin has been developed (Meko; 2005), see Figure 3-2. The study cites an explained-variance of 67% and found droughts of greater duration and severity than the drought of 1976-1977. A tree ring study conducted by the El Dorado Irrigation District had similar results. Currently, no reconstructions of Mokelumne Basin runoff have been located.



Source: NOAA Paleoclimatology Website

Figure 3-2: Sacramento River – Four Rivers Index Annual Streamflow Reconstruction

4. Future Conditions and the DPS

To date, current drought management techniques, derived from the Districts experiences during the 1976-1977 drought, have proven effective in limiting rationing to 25% and providing minimum carryover storage to meet essential health, safety, and fire fighting needs every year. But implementation of major water supply projects, and an increase in demand over the next 30 years, will affect how the future system responds to drought management. The current DPS is based on the worst case end of September total system storage, and it is possible that if the District's current system model (EBMUDSIM) were rerun with consideration to future levels of demand and planned projects such as the Freeport Regional Water Project, the worst case end of September storage might occur during a different historic drought. To test this presumption EBMUDSIM was run using historic hydrology, the 2040 level of demand, and Freeport supplies. The outcome shows that the 1976-1977 drought, even under possible future conditions, results in the worst-case total system storage.

5. Comparison of Other Major Municipal Drought Planning Sequences

A technical memorandum was prepared by CH2M HILL in January of 2002 comparing EBMUD's drought planning methodology to that of other major water agencies throughout California. The memorandum identified several methodologies used by other water management agencies for drought planning, including the following:

- Use of historical records to develop drought management strategies;
- Development of shortage management stages based on existing system and/or watershed supplies;
- Use of dry year assessments to evaluate impacts on system;
- Use of a series of consecutive dry years to evaluate system impacts; and
- Use of the Integrated Resources Planning Model (IRPM) using historic or forecasted hydrology.

RMC contacted several Bay Area water agencies to find out if their drought planning approaches have changed since CH2M HILL's memo was published in 2002. Only the San Francisco Public Utilities Commission (SFPUC) appears to have a current approach that is different. Instead of a 6-year drought sequence based on the 1986-92 drought (see Table 2, CH2M Hill *Comparison of Major Municipal and Industrial Water Agency Drought Planning Approaches*; 2002), SFPUC's 2005 Urban Water Management Plan presents an 8½ year design drought based on the historic records from 1986 to 1992 with an additional prospective period based on the 2½ year drought from 1976-1977.

The 2002 memorandum concluded that "there is no standardized approach to drought management planning and it is up to each individual agency to develop a strategy for early drought recognition and response based on regional water issues." In this regard, it is prudent for agencies to develop a drought sequence that captures the effects of historic droughts on their individual water sources, while considering how a changing climate and growing demands could impact future water systems. Out of the eight municipalities surveyed by CH2M HILL, only EBMUD and SFPUC use a multiple year drought sequence based on the 1976-77 drought (which, based on historical hydrological records for the Mokelumne River watershed, had the greatest affect on river runoff). EBMUD has chosen this drought planning sequence because it had the greatest affect on river runoff and the most severe impacts on total system storage, minimum carry-over requirements to meet the 'essential' water needs of its customers and rationing requirements. This DPS thereby reflects the District's reliance on the Mokelumne River (and its associated senior water rights) for over 95% of its supply. A number of other agencies base their drought sequencing on a longer drought sequence. This difference might be attributed to geographical variability, which caused the 1976-77 drought to be more severe in the Mokelumne watershed, or because other municipalities depend on

water supplies which are more affected by a drought that is less severe in any given year but continues for a longer duration.

But, as previously indicated, evidence suggests that the global climate is changing in ways that could affect streamflow patterns in the Sierras. In order to assess what other water managers are doing to incorporate such changes into their long-term drought plans, RMC contacted several major water agencies in the Bay Area, as well as representatives from State Water Project (SWP) and Central Valley Project (CVP) operations. This solicited information is summarized in Table 5-1.

Table 5-1: Update of Drought Planning by Other Agencies

Agency	How is climate change addressed in Drought Planning?
Contra Costa Water District	Maintain conservative historic drought planning sequence (no modifications for climate change analysis)[1]
Santa Clara Valley Water District	Maintain conservative historic drought planning sequence (no modifications for climate change analysis)[1]
SFPUC	Sensitivity analyses for temperature increase impacts on the Hetch Hetchy system were conducted.
SWP Operations (DWR)	Sensitivity analysis based on results of DWR's perturbation of historic hydrology for analyzing historical droughts.
CVP Operations (USBR)	Based on initial evaluations of results of DWR's perturbation of historic hydrology. Comprehensive sensitivity analysis diverging from DWR methodology is currently being conducted to evaluate climate change impacts on drought planning sequence. This analysis is based on a result portfolio using twenty-two GCM/emissions scenario modeling runs.

[1] *Climate change impacts on CVP supply have been estimated based on DWR's CALSIM2 climate change simulations.*

Overall, some water agencies are actively investigating the effects of climate change on their drought planning sequences, while others are continuing to use the methodologies described by CH2M HILL in their 2002 memorandum. It is important to note however, that evaluating climate change impacts on hydrologic sequences is an emerging science. Representatives of the agencies contacted expressed that no concrete or 'standardized' measures have been developed at this time by the water industry, yet they are actively monitoring this topic and may consider re-evaluating their drought planning approaches in light of climate change impacts and future studies.

6. DPS Recommendations

Protecting a utility's water supply from the inherent uncertainty of droughts, rainfall, and weather patterns is a critical aspect of water supply planning. Included in this section, are the recommendations to improve the current drought planning sequence relative to the WSMP 2040 planning horizon.

6.1 Stochastic Forecasting

The goal of stochastic forecasting in water resource planning should not be to generate a single worst-case future event, but instead should be used to generate multiple drought sequences that are close enough to historical records that they may be used to determine, within defined statistical errors, several possible droughts. For the purposes of the Districts' 2040 WSMP, the phrase "close enough" is a qualitative balance of future uncertainty and past experience. Given a synthetic trace of, say 100, different flow sequences, each of which is equally likely to be the actual sequence observed over the 2040 planning horizon, the District could run these sequences through its system model to obtain quantitative statistical measures of both the anticipated performance and associated risks of water supply portfolios. At the very least, such an analysis could be used to compare the robustness of different alternatives under varying hydrologic conditions. However, it is not recommended that stochastic analysis be used as the sole means to determine EBMUD's drought-planning sequence.

6.2 Tree Ring Analysis

Long-term reliability of the historic record can be improved by reconstructing stream flows from "tree rings", a familiar technique used to lengthen the historic streamflow record. These studies have proven to be effective in gauging the severity of historic droughts. But because these methods are an approximation of historic droughts, and because such reconstructions have yet to be developed for the Mokelumne Basin, these methods are not appropriate for defining the District's drought planning sequence.

6.3 Recommended DPS

It is recommended that EBMUD continue to use runoff from water years 1976 to 1977 as the drought planning sequence. This drought resulted in the worse case TSS in the past and represents the type of drought the District could be susceptible to in the future. RMC agrees that it is not prudent or reasonable to assume droughts of longer duration and severity will not occur in the future than have occurred historically, and based on this, RMC further recommends that the District lengthen the 1976-1977 drought to include a factor of safety. Given the districts positive experience and successful utilization of a hypothetical third of drought, and the difficulty of proving it to be any less conservative than more *avant-garde* methods, RMC recommends that the District continue to use a third year of drought taken as the average annual runoff between 1976 and 1977 in its drought planning sequence. In RMC's opinion, this DPS will balance hardships due to rationing with the risk of more severe water shortages.

6.4 Important Considerations for Portfolios Evaluation

As previously stated, the District has recognized its relatively unique position of relying on imported surface water for 95% of its supply. If, in the future, EBMUD decides to diversify its supply portfolio to incorporate a number of projects which are susceptible to less severe yet longer lasting droughts such as the 1976 -77 drought, it would be prudent for the District to again re-evaluate the performance of its water supply system against alternative drought scenarios regardless of what the current drought sequence may be. An example of these types of projects may be long-term groundwater banking projects or supplies outside of the Mokelumne watershed.

There are numerous indications evident in regional tree-rings and other paleoclimintologic records that worse droughts have occurred in the past, and climactic instabilities may produce more severe droughts in the future. Between now and the year 2040 the district will accumulate 30 years of additional streamflow records. As previously shown, adding 32 years to the hydrologic record has changed what would have been considered an improbable 1000-year drought in 1975 to be a 100-year drought in 2007. In short, future hydrologic conditions are shrouded in uncertainty. EBMUD has recognized that there is a need to examine droughts of greater severity than those in the historic record. By incorporating the worst drought on record and extending by an additional year, the District has adopted an approach that is generally considered to be conservative relative to historic hydrology. This approach has been an effective planning method to date, but unfortunately, the risk associated with assuming this hypothetical drought will be the worst case drought the District will experience over the next thirty years is difficult to assess quantitatively. It is therefore important to evaluate the sensitivity of future water supply portfolios to a full-range of potential future droughts beyond the recommended drought planning sequence. As a minimum, portfolios should be able to supply water to meet essential health, safety, and fire fighting needs during the DPS while not exceeding the District's rationing goals. It is also recommended that portfolios be tested against more severe and longer lasting droughts. The most desirable portfolios should be those that can not only meet basic requirements during the DPS but that are also robust—projects have built-in contingencies or can be readily expanded so that the District can efficiently respond to changing future conditions.

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Appendix D TM-8

Need for Water TM

East Bay Municipal Utility District's (EBMUD's) Water Supply Reliability

Water supply planning is complicated by the great variability that exists in the amount of water available each year. Drought planning is complicated further by the inability to predict the amount of rainfall and runoff that will occur in future years. This report presents summarizes analyses conducted to assess the East Bay Municipal Utility District's (District's) ability to meet future demands given current water supplies in light of current District drought planning policies.

1. Drought Management Program

The District has recognized its relatively unique position of relying on a single imported surface water source from the Mokelumne River for almost all of its supply. Annual precipitation (rainfall and snowfall) in the Mokelumne River watershed, and thus river runoff, is variable. The District mitigates the risk of climatic variability through its Drought Management Program which establishes voluntary and mandatory water rationing goals in the early years of drought. The effectiveness of its Drought Management Program to minimize drought impacts was proven during the drought from 1987 to 1992 when available supply from the Mokelumne River was less than 50% of an average six year period.

1.1 Drought Planning Sequence

The District's current approach to drought planning was developed in response to the 1976-1977 drought. During this drought, runoff in the Mokelumne Watershed was less than any other two consecutive years on record (which, for this project, runs from 1921 through 2003). While the critically-dry year of 1977 was followed by a wet year in 1978 (which allowed the system to recover rapidly), it could not be known in September of 1977 what the following hydrologic year would bring in terms of precipitation and runoff. As a result, the District did not allow its storage to become fully depleted in 1977. Instead, it conservatively planned for a third dry year and chose to implement several emergency measures in 1977 to provide adequate, but greatly reduced, carryover storage to preserve its remaining water supplies.

The drought planning sequence (DPS) used by the District to assess the adequacy of its water supply system reflects the District's experiences during the 1976-77 drought. In the District's DPS, runoff during water year 1978 has been replaced with a dry year amount of 228 M cubic meters (185 thousand acre feet or TAF) or the average annual runoff that occurred in 1976 and 1977. This reflects the fact that, in actual operations, water operators do not know and cannot predict future precipitation. The resulting drought planning sequence, shown in Figure 1-1 and Figure 1-2, is less conservative

than one that assumes that driest year-of-record conditions (that is, a worse, third year of drought) would occur following a two-year drought; but it does provide a safeguard against the possibility of dry conditions continuing for a third year.

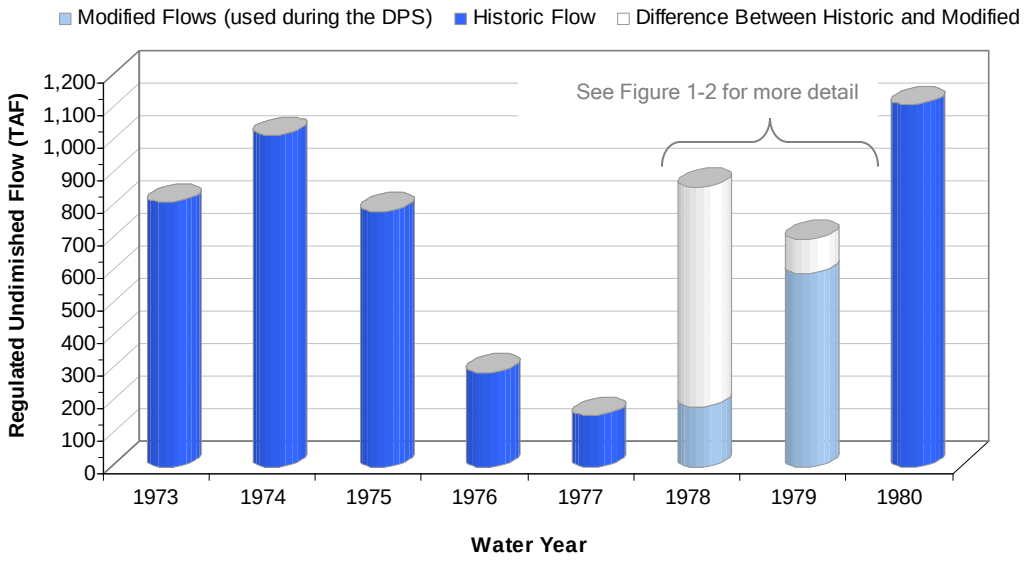


Figure 1-1: EBMUD's Current Drought Planning Sequence Hydrology[1]

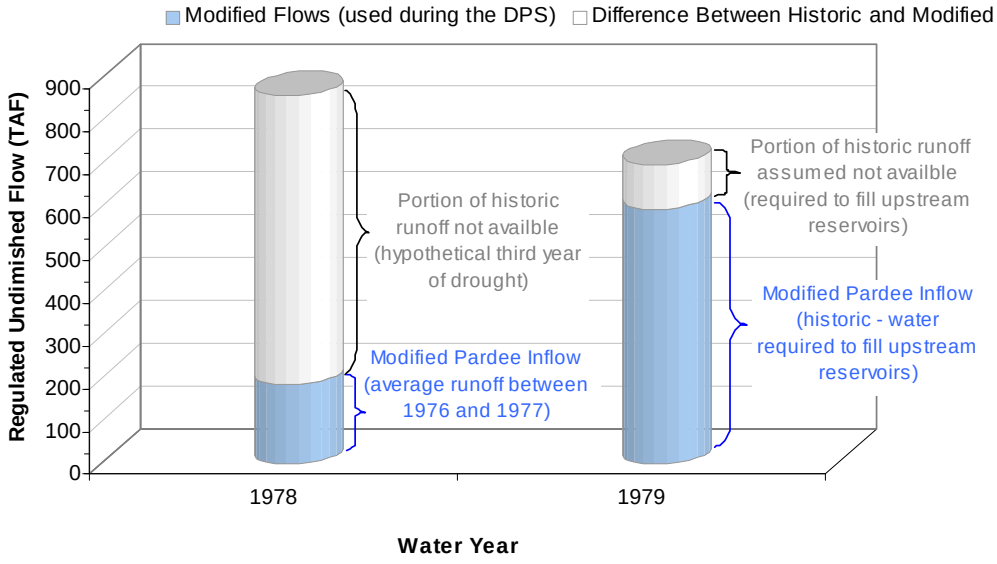


Figure 1-2: Modified Pardee Inflows during the Drought Planning Sequence

Note, the modified inflows into Pardee in 1979, as shown above, accounts for reduced runoff resulting from upstream reservoirs refilling after the drought period.

[1] Adapted from John W. Skinner, *East Bay Municipal Utility District's Drought Planning Sequence.* 2002

Finally, the District's current DPS assumes that a severe drought will not continue beyond the third, synthesized year of the sequence and that all accessible water in storage in the District's water supply system, including all water in its East Bay Reservoirs, would be depleted at the end of the third drought year (Skinner 2002). Therefore, the minimum storage level at this time would be equal to the aggregate total amount of the District's inaccessible or dead storage (35 TAF).

1.2 Alternatives to EBMUD's Drought Planning Sequence

The magnitude, duration, and frequency of droughts have a substantial impact on the management of the District's water supplies. Design droughts are determined in many different ways, most of which reflect an individual agency's experience. Stochastic methods can be employed to determine a range of possible future conditions. Such methods are dependent on historic data which is often times insufficient to provide estimates of important statistics. Recorded streamflow data can be augmented with tree ring data, and can serve as a way to lengthen the hydrologic record and improve statistical reliability.

1.2.1 Stochastic Forecasting

In stochastic forecasting, underlying processes are derived from historic streamflow data and inferences are made about the range and frequency of possible future droughts. Two assumptions are implicit in this type of determination:

Assumption 1: The historic data record is long enough to capture representative statistical characteristics of the underlying processes.

Assumption 2: There is some probabilistic mechanism which is stationary over the historic trace, and will continue to be stationary in the future.

The first assumption accounts for variabilities and major oscillations in the climate system which produces effects that manifest themselves on timescales that range from seasons to millennia. Proceedings of the U.S. National Academy of Sciences (PNAS) recently reported that more than half of the spatial and temporal variance in drought frequency over the United States is attributable to the climatic oscillations which can span decades to centuries. Although 100 years of historic records is sufficient to capture smaller, more persistent tendencies in Mokelumne River hydrology, it is not reasonable to assume these records have captured the full extent of climactic variability and major oscillations. For example, EBMUD analyzed the effects that the addition of 12 years of data to a 69-year hydrologic database has on calculations of drought probabilities. The analysis showed that adding the 12 years of data (1976 through 1987) to the 1907 through 1975 hydrologic database dramatically increased the calculated probability of occurrence of extreme drought events. For droughts of two to three years in duration, the 1,000-year return interval drought calculated using the 1907 through 1975 data set

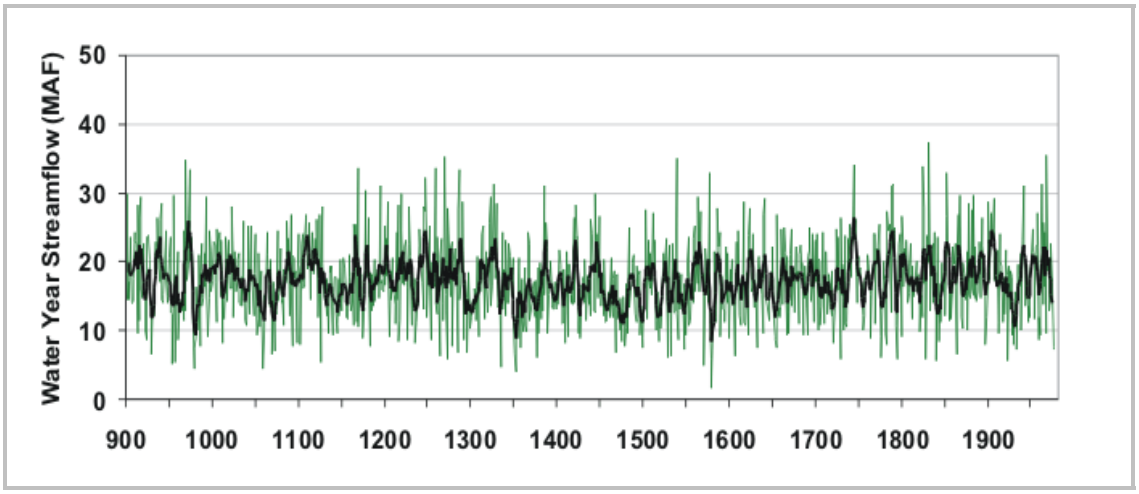
became a drought with about a 200-year return interval using the 1907 through 1987 data set. RMC extended this analysis[2] and found that the 200-year drought calculated from the 1907 though 1987 data becomes a 100-year drought when all data from 1907 to 2007 is considered. In other words, the addition of thirty-two years of data changed what could be considered an improbable 1000-year drought in 1975 to a much more probable drought in 2007.

As the planning period becomes sufficiently long relative to historic streamflows, the reliability of stochastic predictions will deteriorate. Even if the historic trace could be lengthened to such a degree that underlying processes, oscillations, and variability are understood, they are limited to a historical context. In stochastic analysis, the basic probabilistic model is assumed to be stationary over time (Assumption 2) or that a trend in stationarity can be determined. In other words, it is assumed that the probability of a drought of specific severity does not change over time, and if it does, how it changes over time must be understood. The assumption of hydrologic stationarity is called into question by the prospect of global climate change. The first IPCC report reaffirms that the climate is changing in ways that cannot be accounted for by natural variability and that "global warming" is occurring (IPCC, 2001). Because hydrologic records are sufficiently "noisy" and the resolution of tree ring data sufficiently coarse (as described in the next section), deciphering recent trends from either source is doubtful at this time. Therefore, for the purposes of the determining the District's future need for additional water supplies, stochastic forecasting would present significant uncertainty, and using the limited historical data available for the Mokelumne River watershed to make statistical inferences about future droughts can be of restricted utility.

1.2.2 Tree Ring Analysis

As stated in Section 1.2.1, the reliability of stochastic predictions determined from historic data will deteriorate as the planning period becomes sufficiently long relative to historic streamflows. Long-term reliability can be improved by reconstructing stream flows from "tree rings", a common technique used to lengthen the historic streamflow record. EBMUD's 2002 *Drought Planning Sequence* paper by John W. Skinner (Skinner Paper) dismissed the use of tree-ring data due to the lack of a runoff reconstruction for the Mokelumne Basin and lack of confidence in the correlation between tree-ring widths and streamflow. Research published since the Skinner Paper indicates at least one high-quality streamflow reconstruction for the Sacramento River basin has been developed (Meko, 2005). The study cites an explained-variance of 67% and found droughts of greater duration and severity than the drought of 1976-1977 (Figure 1-3). A tree ring study conducted by the El Dorado Irrigation District had similar results. Currently, no reconstructions of Mokelumne Basin runoff have been published.

[2] Using the *Gumbel S Method* and true natural flows measured at the Mokelumne Hill gage station.



Source: NOAA Paleoclimatology Website

Figure 1-3: Sacramento River – Four Rivers Index Annual Streamflow Reconstruction

These studies can be helpful in gauging the severity of historic droughts. But because these methods are an approximation of historic droughts, and because no such reconstructions have yet been developed for the Mokelumne River Basin, these methods are not appropriate for defining the District's Drought Planning Sequence.

1.3 Drought Management Planning

Given the lack of data, the degree of uncertainty in calculating drought probabilities, the shortage of redundancy in the District's water supply system, and the inability to predict the end of droughts during real-time events, the District selected the use of a drought planning sequence for long-term water supply planning. Using a DPS has the advantages of being both reliable (because it is based on the actual worst drought event in the District's history) and prudent (because it involves a scenario somewhat more severe than the actual worst historical drought event).

In planning for droughts, EBMUD assesses its water supply situation in April of each year (and as necessary during dry periods), taking into account the amount of water stored in its reservoirs and in the Mokelumne River watershed's snowpack, and the expected amount of customer demand. The Freeport Regional Water Project and Phase 1 of the Bayside Groundwater Project are scheduled to come online by 2010, and once operational, will be included in water supply evaluations.

The California Department of Water Resources describes an approach to drought planning on Page 17 of their 1991 *Urban Drought Guidebook* as follows:

> "At a minimum, the carryover [storage] amount should be enough to meet essential health, safety, and fire fighting needs if the subsequent winter is as dry as the driest year on record."

Providing this carryover storage is necessary because the following year's runoff is not known *a priori*. Operators must safeguard against the severe impacts that would result from a complete loss of water supply should drought conditions continue. Therefore, if the projected water supply is insufficient to fully meet customer needs, the District considers initiating water-use reduction programs, as necessary, to allow enough water to remain in storage at the end of October (carryover storage) to meet the basic needs for one more year should the following year turn out to be as dry as 1977.

When projected system storage at the end of September is 500 thousand acre-feet (TAF) or less, the District prepares a Drought Management Program and considers limiting customer demands (rationing). The District's current "Water Supply Availability and Deficiency" policy limits reductions to no more than 25%. The District's drought planning program guidelines are shown in Table 1-1.

Table 1-1: EBMUD Drought Management Program Guidelines

Drought Stage	Projected Carryover Storage	Target Drought Demand Reduction (Rationing Goal)
None	> 500 TAF	None
Moderate	450 TAF – 500 TAF	0 to 15%
Severe	450 TAF to 300 TAF	15% to 25%
Critical	< 300 TAF	25%

Source: *EBMUD Urban Water Management Plan,* 2005

During an initial year of drought, it can take approximately six months to implement a rationing response. To implement, for example, a 16% annual savings in water use during the initial year of drought, customers must decreases use by 32% in the second half of the year (as the drought conditions are not recognized until April or June of any calendar year). To alleviate the burden imposed by such high rationing during the second half of a drought year, the District reduces the annual target rationing goal by half in the first year that carryover storage is projected to fall below 500 TAF.

1.4 Comparison of Rationing Goals to Other Bay Area Water Agencies

During times of severe drought, EBMUD customers are expected to significantly reduce water use. A comparison of EBMUD's maximum rationing goals to other Bay Area water agencies is shown in Table 1-2. Note that each agency has selected a unique drought sequence for planning purposes.

Table 1-2: Drought Management Program Guidelines for San Francisco Bay Area Water Agencies

Agency	Source	Drought Sequence	Target Drought Reductions (Rationing Goal)
East Bay Municipal Utility District	2005 UWMP	1976 – 1978 (hypothetical third year of drought in 1978)	Maximum 25%
Santa Clara Valley Water District	2005 UWMP	Historic drought from 1987-1989	No demand reduction required for the driest three-year period on record. Variable levels of reduction triggered by more severe shortages.
Contra Costa Water District	2005 UWMP	Single and multiple dry year scenarios based on reduced CVP deliveries.	Rationing limited to 15% for worst-case single and multiple dry year scenarios.
San Francisco Public Utility Commission	2005 UWMP	Design drought sequence totals an 8½ year period based on the 6 years drought from July 1986 to June 1992 and a 2½ period during the1976 to1978 drought.	Rationing restricted to 20% in any one year, assuming no drought occurred greater than the design drought.

2. Projected Water Demand

As part of the Water Supply Management Plan (WSMP) 2040, a projection of future District water demands was prepared using land use projections and existing water demands as a starting point for the demand analysis, adjusted to reflect conservation efforts and recycled water projects currently underway.

2.1 Water Demand Projection

Land use data were used to project the District's future water demands. Current land use unit demands (LUDs) were developed and adjusted to reflect changing conditions. The updated LUDs were then applied to land use acreages as obtained from each community's General Plan to estimate future demands. This method resulted in a District-wide 2040 demand estimate of 312 million gallons per day (MGD), and did not account for changes in future climate conditions resulting from global warming. The 312 MGD was reduced to 280 MGD in order to reflect the existing conservation programs and recycled water projects, currently providing a supply of 32 MGD (see Table 2-1). Assumptions about the District's recycled water development and conservation programs are described in Sections 2.2.1 and 2.2.2, respectively.

Table 2-1: District-Wide Demand

	Demands & Offsets
District-Wide Demand (Unadjusted)	312 MGD
Conservation through 2008	- 22.5 MGD
Recycled Water through 2010	- 9.3 MGD
District-Wide Demand (Adjusted)	**280 MGD**

2.2 Demand Management

When looking at water supply and demand projections, the contribution of demand management to reducing water supply is important. In normal years, conservation and water recycling are expected to account for 12% of projected demands not met by the Mokelumne River, Freeport Water Project, and supplemental supplies.

2.2.1 Conservation

Water conservation is a central component of the Districts long-term water supply planning efforts and the WSMP process, both of which seek to address issues that impact the reliability the Districts water supply now and in the future. In the 2040 demand estimate, it is assumed that 30 MGD of needed supply will be offset by conservation. This amount includes District conservation programs in place before 2008 (22.5 MGD)

plus natural conservation achieved through 2020 (7.5 MGD). Natural conservation is the water saved because of the technological improvements that have occurred over time, such as improved faucets that no longer leak. EBMUD will continue investment in water conservation programs to meet the Districts water conservation goals and provide a reliable water supply.

2.2.2 Recycled Water

Recycled water can provide a drought-resistant water supply. The demand estimate accounts for recycled water projects that are committed or currently being implemented within the District's water service area through 2010, which will offset approximately 9.3 MGD (10,450 acre-ft/year) of average annual potable water use.

3. Evaluation Methodology

The WEAP-EBMUDSIM (W-E) model was used to analyze the District's need for supplemental water supply. W-E model closely links the District's planning and operations model, EBMUDSIM, with the Water Evaluation and Planning (WEAP) model. The coupled models provide a numerical platform for assessing the Districts current and future water supply system. For this coupled model, EBMUDSIM was converted to a dynamic-linked-library or DLL that can be called by the WEAP model to facilitate the linkage between the two models.

By modeling demands, supplies, and rationing, the W-E model was used to determine the supplemental supply needed for consumptive use reliability; that is, the additional amount of water necessary to reliably provide water to District customers and meet Pardee and Camanche Reservoir release requirements for all years in the hydrologic period of record considered, including the District's Drought Planning Sequence. This is the volume of water that needs to be developed by the Year 2040 in order to ensure that all District water supply needs are met in all years.

3.1 Model Description

EBMUD's current simulation and planning model, EBMUDSIM, simulates the complex operation of its raw water system, including Pardee Reservoir, Camanche Reservoir, the terminal reservoirs, and the Mokelumne Aqueducts. EBMUDSIM has proven to be a reliable and effective model of the District's Mokelumne system and has been the basis for past water supply analyses. WEAP is a proprietary planning model, developed by the Stockholm Environmental Institute (SEI), which uses an integrated approach to simulating water systems as a way to aid water supply planning. The American Water Works Association Research Foundation has recognized WEAP as a useful decision support system (DSS) tool for use by water management agencies. The model has been used by the Metropolitan Water District of Southern California, the El Dorado Irrigation District in Placerville, and the US Bureau of Reclamation on similar projects.

Despite WEAP qualifications and past use, it was deemed impractical and unnecessary to recreate the District's current EBMUDSIM model within WEAP; but instead to couple the models. This would take advantage of EBMUDSIM's proven simulation capabilities while saving time in model development. Therefore, EBMUDSIM was used to model current Mokelumne River reservoir operations and WEAP was used as the primary platform for balancing available supplies with future demands by incorporating information from EBMUDSIM and simulating District service area distribution. WEAP also accounts for future demands and additional water supplies such as the District's CVP contract for Sacramento River water via the Freeport Regional Water Project (Freeport) and the Bayside Phase 1 Groundwater Project (Bayside). The resulting W-E

model dynamically links EBMUDSIM and WEAP, passing information back and forth on an annual calendar year time-step.

3.2 Model Inputs

The following describes the general classes of data input into the W-E model for assessing the future need for supplemental water supplies.

3.2.1 Demands

The demand estimates, as described in Section 2, were disaggregated in the W-E model into eleven pressure zone regions and sixteen water user categories. This disaggregation was prepared by making the simplifying assumption that the projected 2020 distribution of water demands would not change in the intervening years between the years 2020 and 2040. Additional key demand assumptions included:

- Recycled water projects in operation or under construction in 2010 and District conservation programs in place before 2008 are accounted for in the demand projections. Natural conservation beyond 2008 is not considered in the modeled demand projection.

- System input, the flow into the District's distribution system, is assumed to be 280 MGD at the 2040 level of development.

3.2.2 Water Supplies

EBMUDSIM is used to simulate current Mokelumne River reservoir operations and WEAP is used to simulate future water supplies. More specifically, EBMUDSIM determines the maximum amount of water that can be drafted from the Mokelumne Reservoir system and WEAP determines the maximum supply and allocation from supplemental sources in addition to the Mokelumne supply: the Sacramento River via the Freeport and banked groundwater from the Bayside Project. These projects are expected to be online before 2010 and are therefore assumed available to augment Mokelumne River supply for the purposes of this analysis.

WEAP and EBMUDSIM work together to determine annual Mokelumne draft by considering demands, rationing, and alternative supply availability (Bayside and Freeport) while also adhering to physical, contractual, and environmental constraints. Key water supply assumptions used in the W-E model for this analysis are summarized below.

- The only supplies available are current supplies and those expected to be operational before 2010. These supplies include the Mokelumne River (Pardee Reservoir), Sacramento River via the FRWP, and Bayside Phase 1 Groundwater Project.

- EBMUDSIM DLL determines the maximum amount of Mokelumne River water available for draft to the East Bay service area.
- WEAP determines the annual maximum amount of water available from the Sacramento River via the Freeport Regional Water Project and the Bayside Phase 1 Groundwater Project subject to operational constraints, contracts, and agreements with other agencies.
- WEAP balances available supply from each source to meet demands.
- When triggered, supplies from Freeport and Bayside reduce demand on the Mokelumne System.

The Mokelumne Water Supply

EBMUDSIM is used to simulate the monthly operations and water balance for the District's entitlement from the Mokelumne River basin, consistent with the constraints under which the District must operate. The District's overall management objective for its reservoirs and water operations is to maximize the water supply reliability while meeting all legal and institutional requirements. The District also seeks to minimize energy costs and maximize hydroelectric power generation to the extent that these goals are consistent with the overall objective of maximizing supply reliability.

The maximum amount of water which can be drafted to the Mokelumne Aqueduct is dependent on terminal and Mokelumne reservoir operations and the availability of water from the Mokelumne River system. The EBMUDSIM DLL contains all necessary hydrologic inputs to model the Mokelumne River system for the hydrologic period of 1921 to 2003.

Pardee and Camanche Reservoirs

Camanche Reservoir releases and Pardee Reservoir inflows are determined by downstream release requirements (prior rights and contractual agreements), upstream senior appropriators, PG&E operations, flood control criteria, and historic Mokelumne River runoff. EBMUDSIM assumes that riparian and senior appropriators on the Mokelumne River will operate at their full entitlement by the year 2040. Table 3-1 summarizes these allocations.

Table 3-1: Riparian and Senior Water Rights Appropriations at 2040 Level-of-Development

Total Diversions	Maximum Allocation (Wet Year)
Amador County (includes allocation for Jackson Valley Irrigation District)	20 TAF
Calaveras County	27 TAF
Woodbridge	60 TAF
Riparian	11 TAF
Other Downstream Appropriators	10 TAF

The primary objectives of Pardee Reservoir operations are to maximize storage, provide for the direct diversion of water to the Mokelumne Aqueducts, and to supply water of sufficient quality and quantity to meet downstream obligations whenever the supply in Camanche Reservoir is inadequate to meet those needs. A secondary objective is to generate hydroelectric power. These goals, when combined, dictate that Pardee Reservoir be drawn down slightly during the winter months to provide hydroelectric power benefits and to minimize the potential for uncontrolled spills.

The operating objectives of Camanche Reservoir operation are to meet downstream release obligations including water quality targets, to meet flood control requirements, and to preserve storage for meeting downstream release obligations in dry years. Releases from Camanche Reservoir are also used to generate hydroelectric power to the extent possible consistent with these other release requirements.

Terminal Reservoir System

The objectives of terminal reservoir operations are to provide seasonal regulation of the supply delivered from the Mokelumne River (“Mokelumne River Drafts”) and to provide a reserve for emergencies including extended droughts or temporary loss of the Mokelumne supply. These goals dictate that the terminal reservoirs be drawn down during the summer through early winter and then filled to maximum levels by the following spring.

EBMUD operates each of its terminal reservoirs between upper and lower elevation rule curves. The lower elevation limit of the rule curve provides the reserve needed for emergency purposes. For EBMUDSIM modeling purposes, the District’s five terminal reservoirs (Upper San Leandro, Lafayette, Briones, San Pablo and Lake Chabot) have been combined and a composite rule curve has been derived by adding each of the individual reservoir rule curves. EBMUDSIM attempts to maintain terminal reservoir levels at the average of historical levels for the ten-year period from 1980 through 1989.

Supplemental Water Supplies

Water supply from the Sacramento River via Freeport and banked groundwater from the Bayside Phase 1 Groundwater Project are controlled through logic embedded in the WEAP model. The assumed operating rules for these supplies are described below.

Freeport Regional Water Project

WEAP determines the availability of water from the Freeport diversion per the District's contract with the Bureau of Reclamation. Per the District's CVP contract, the District may begin using Freeport water on March 1st when the District's forecast of its October 1st total system storage is less than 500 TAF. The District may take delivery of up to 133,000 acre-feet (AF) in any one year (118.7 MGD). An additional limitation is that CVP deliveries to EBMUD may not exceed 165,000 AF in any consecutive three-year period in which the District's October 1st storage forecast remains below 500 TAF. This corresponds to an average annual take of 55 TAF or 49 MGD per year. For the purposes of the Need for Water analysis, it is assumed that the District would take delivery of its CVP entitlement at a rate of 100 MGD with deliveries starting at the beginning of the CVP contract year (March 1st). Deliveries would cease when the District's CVP allocation for that year is reached or when the 165,000 AF limitation is reached, whichever comes first. Current operating rules embedded in the model algorithm also reduce Freeport deliveries when flood control releases from the Mokelumne Reservoirs become necessary. Such an occurrence would occur when a dry winter is followed by an exceptionally wet spring.

EBMUD's CVP deliveries are further constrained by the limitations set every year for North of Delta municipal and industrial (M&I) contractors as determined by the Bureau of Reclamation. For this analysis, the North of Delta M&I cutbacks used to estimate Freeport deliveries were based on output from the Department of Water Resources CALSIM II model at a 2020 level of development. This was the most current DWR data available at the time this work was completed. The magnitude to which these cutbacks would increase under a 2040 level of development is not well understood. However, It can be argued that over a three-year period, the District's CVP contractual limitation of 165 TAF will constrain the amount of water available to EBMUD more than would an increase in M&I cutbacks as a result of a more severe drought. For example, during the worst drought on record, 1976-1977, historic M&I cutbacks would have limited EBMUD's take of Freeport water to a total of 159 TAF. If this drought were to continue for a third year (as is assumed in the Drought Planning Sequence), EBMUD could only take 6 TAF in 1978 based on its 3-year maximum withdrawal (165 TAF – 159 TAF). In order for EBMUD's three-year Freeport allocation to be affected during the Drought Planning Sequence, M&I cutbacks would have to be reduced by over 95% in 1978 or by an average of 59% over the three year drought planning sequence. Based on modeling completed by DWR, since 1921 the largest single-year reduction is assumed to be 59% and the largest three-year average reduction is 43% – this is much less than what would

be necessary to affect EBMUD's expected 3-year Freeport allocation. Therefore, it is reasonable to assume the most recently published North of Delta M&I cutback schedule for use in this analysis.

Bayside Project

Under Phase 1 of the Bayside Groundwater Project, planned to be operational in 2010, the District would inject treated potable drinking water from the distribution system at a rate of 1 MGD for the portion of a "wet" year during which water is available. Conditions under which injection would take place include active flood releases on the Mokelumne River and sufficient runoff in the local watershed. During dry years, the District would recover stored water (both injected and native groundwater) by operating Bayside Well No. 1 in extraction mode during warm weather months. The pumps would be operated at a 2 MGD extraction rate during part of the year; however, for the purposes of modeling, it is assumed that the well would produce an average annual yield of 1 MGD, equivalent to 1,120 AF per year.

3.2.3 Rationing

A significant variable which affects the Districts water supply reliability during times of drought is the amount of rationing imposed on the District's customers. To illustrate this point, Figure 3-1 shows how different rationing scenarios can affect October 1st system storage from year to year.

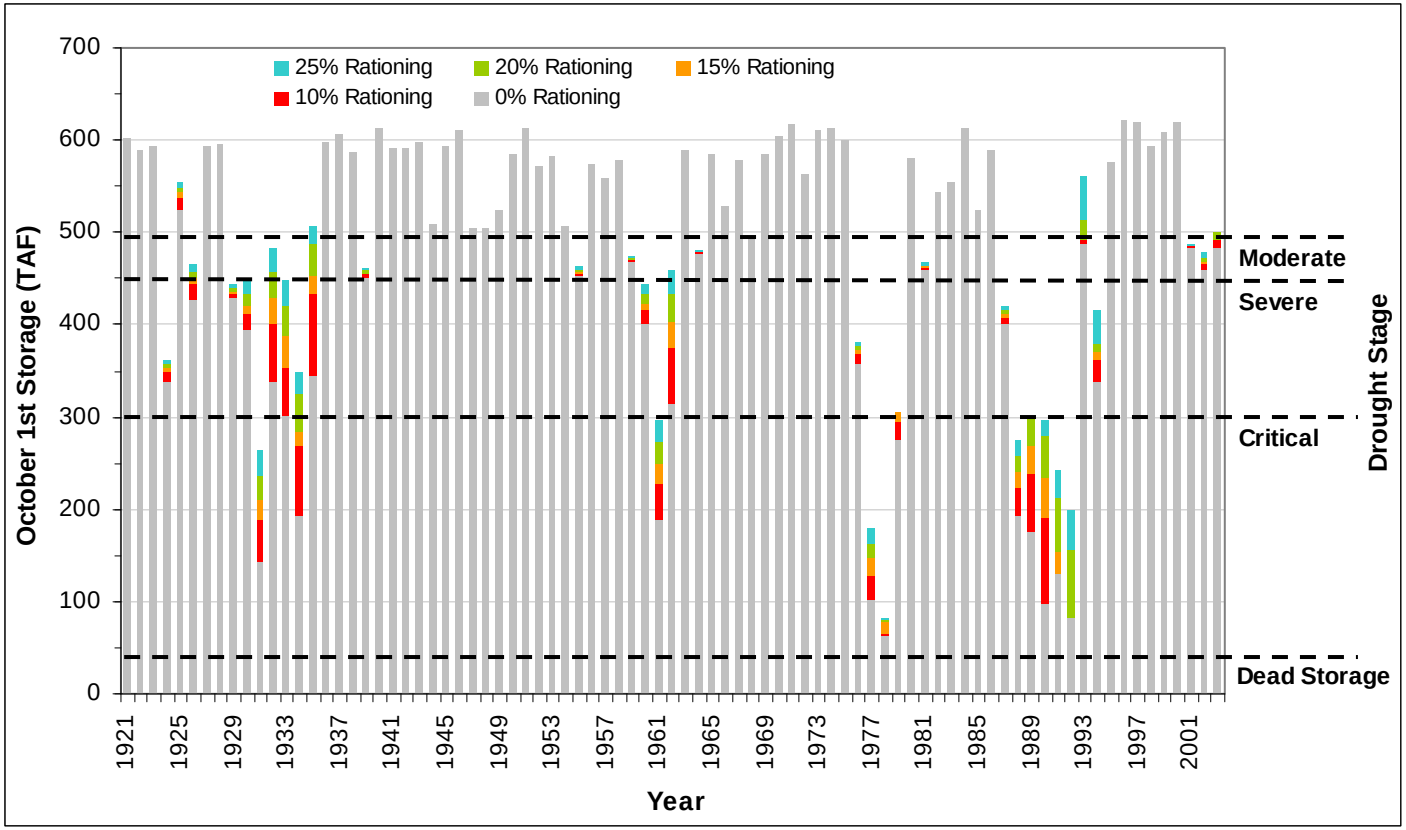


Figure 3-1: October 1st Storage for Various Rationing Scenarios at 2040 Demands[3]

[3] Although not shown in this figure, by the end of 1978, all three rationing scenarios deplete system storage to dead storage by the end of the calendar year.

The current rationing policy limits rationing to 25% (as described in Section 1). Alternative maximum rationing levels of 0%, 10%, 15%, and 20% were also evaluated as part of the Need for Water analysis. Figure 3-2 displays how rationing rules for 10%, 15% 20%, and 25% rationing scenarios were implemented in the WEAP modeling.

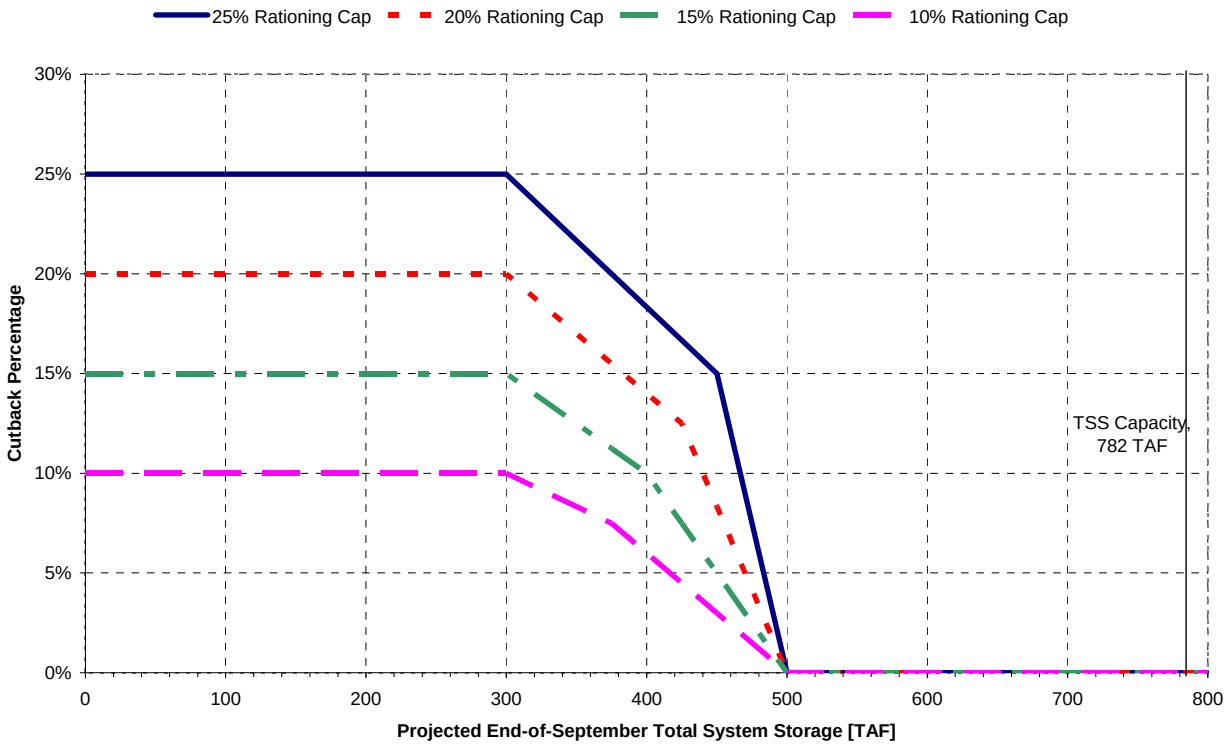


Figure 3-2: Rationing Rules for Modeling

4. Comparison of Projected Supply and Demand

This section summarizes the results of the Need for Water analysis using the assumptions presented in previous sections to quantify the amount of additional water needed to ensure reliable water supplies through the Year 2040. Several factors must be taken into account to determine supplemental water supply needs. The contribution of these factors to the District's total need for supplemental water is described in this section for each rationing scenario examined.

4.1 Customer Rationing

Based on current policy, EBMUD customers are expected to reduce their water consumption during droughts. Figure 4-1 shows simulated rationing levels over the modeling period, for two rationing scenarios. Table 4-1 lists the volume of water District customers are expected to ration over the three-year Drought Planning Sequence for each rationing scenario.

Table 4-1: Volume of Water Rationed by EBMUD Customers during the Drought Planning Sequence[4]

Rationing Scenario	Annual Demand During Normal and Wet years (Daily Demand)	Volume of Rationed Water Over the DPS
25% Maximum	280 MGD	259 TAF
20% Maximum	280 MGD	209 TAF
15% Maximum	280 MGD	158 TAF
10% Maximum	280 MGD	106 TAF
No rationing	280 MGD	0 TAF

Even with 25% maximum rationing, the Need for Water analysis indicates that EBMUD will not be able to supply its customers and meet all of its downstream obligations during the Drought Planning Sequence without supplemental water supplies and/or increased conservation.

[4] Includes the volume of water rationed in 1979.

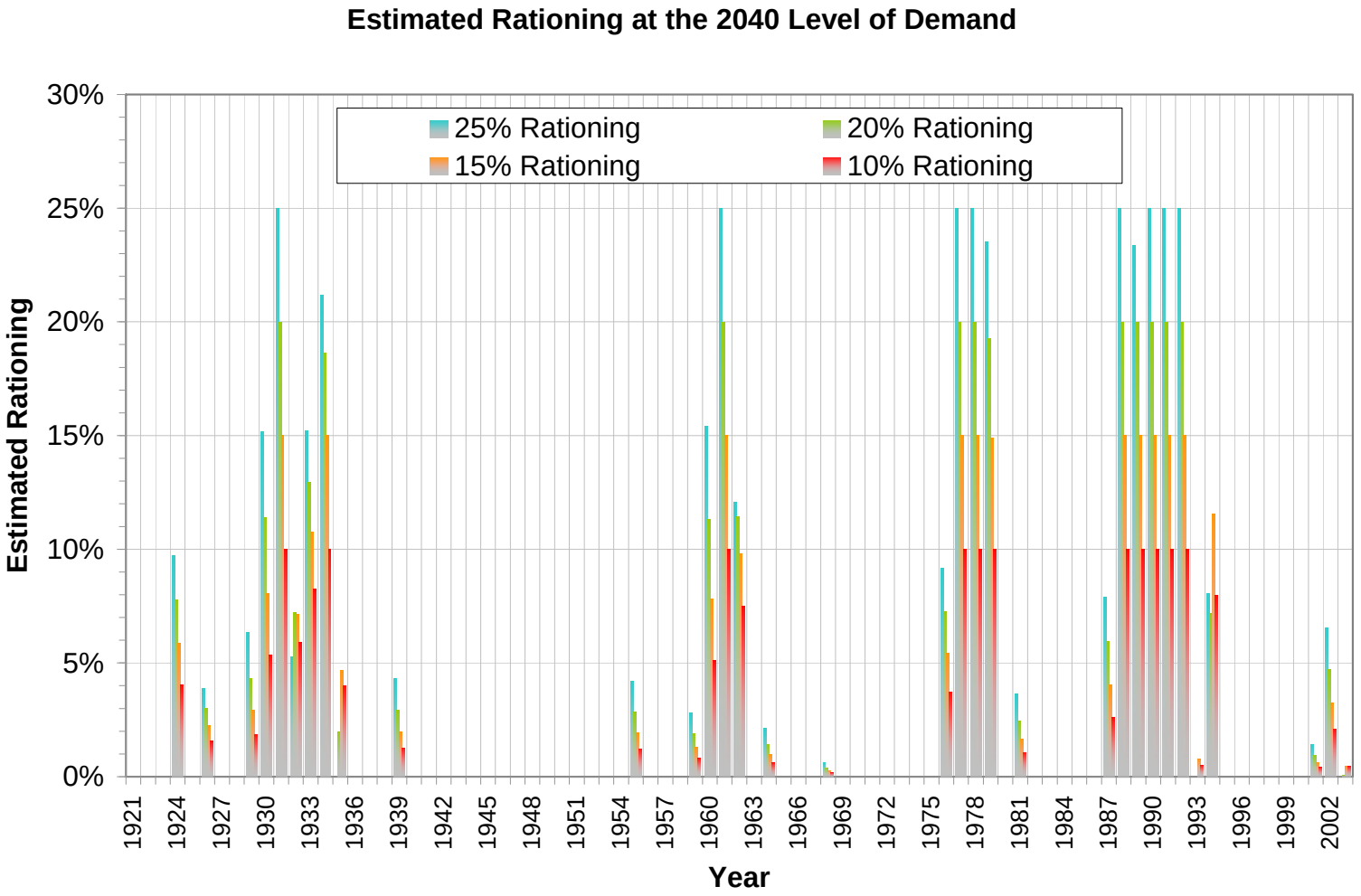


Figure 4-1: Simulated Rationing at the 2040 Level of Demand

4.2 Supply Shortages during the Drought Planning Sequence

Figures 4-2 through 4-6 show the amount of water the District expects to receive from its current water supply sources during each year of the Drought Planning Sequence (1976, 1977 and modified 1978) and the surrounding years under each rationing scenario examined. The difference between the full demand and the available water supply is the District's water supply deficiency. Absent programs to reduce demand and/or increase supplies, this deficiency is the amount of rationing that would be need to be imposed on District customers. Note that in all cases, the District's current water supply is insufficient in the third year of the DPS (1978) requiring rationing that exceeds the maximum objective.

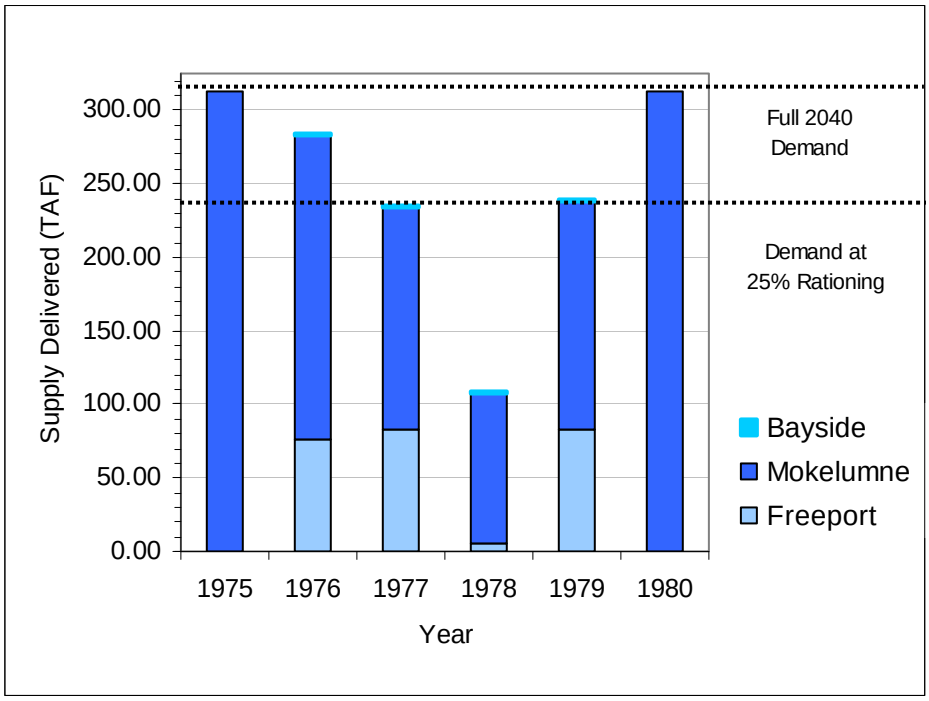


Figure 4-2: Water Delivered to the East Bay in the 25% Maximum Rationing Scenario

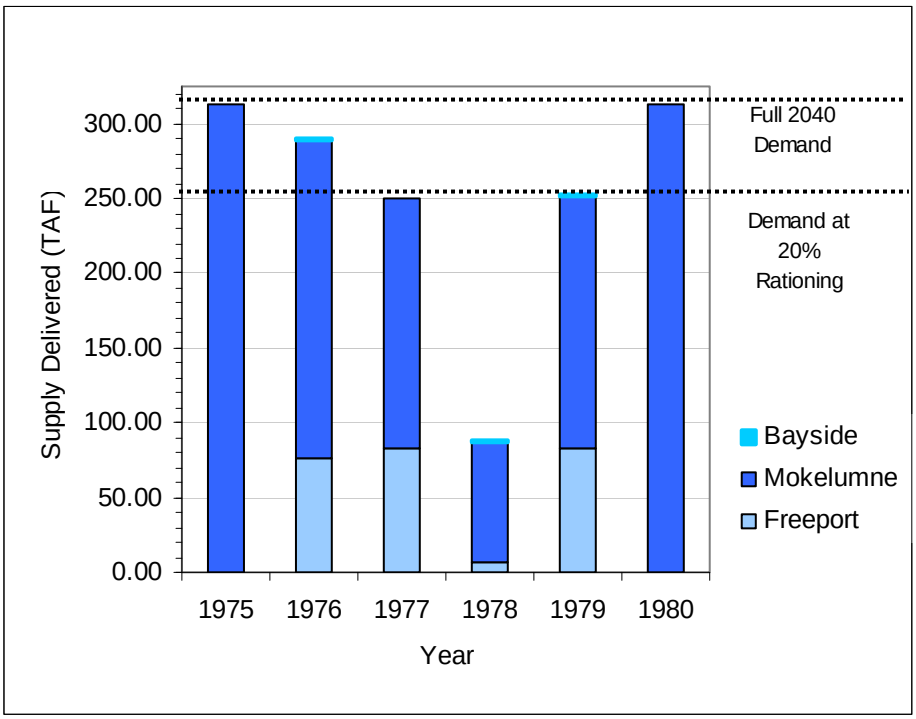


Figure 4-3: Water Delivered to the East Bay in the 20% Maximum Rationing Scenario

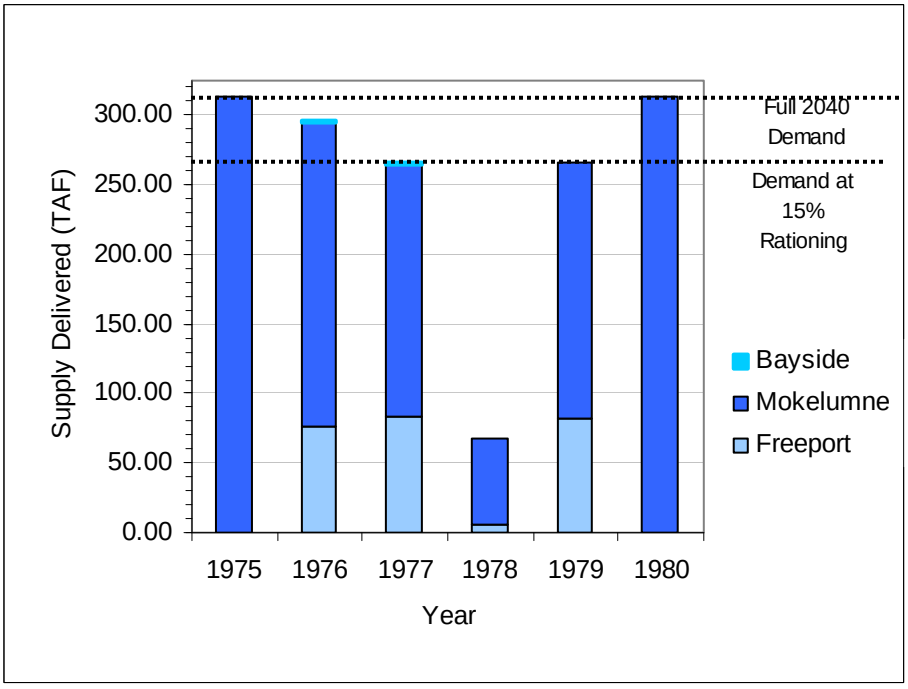


Figure 4-4: Water Delivered to the East Bay in the 15% Maximum Rationing Scenario

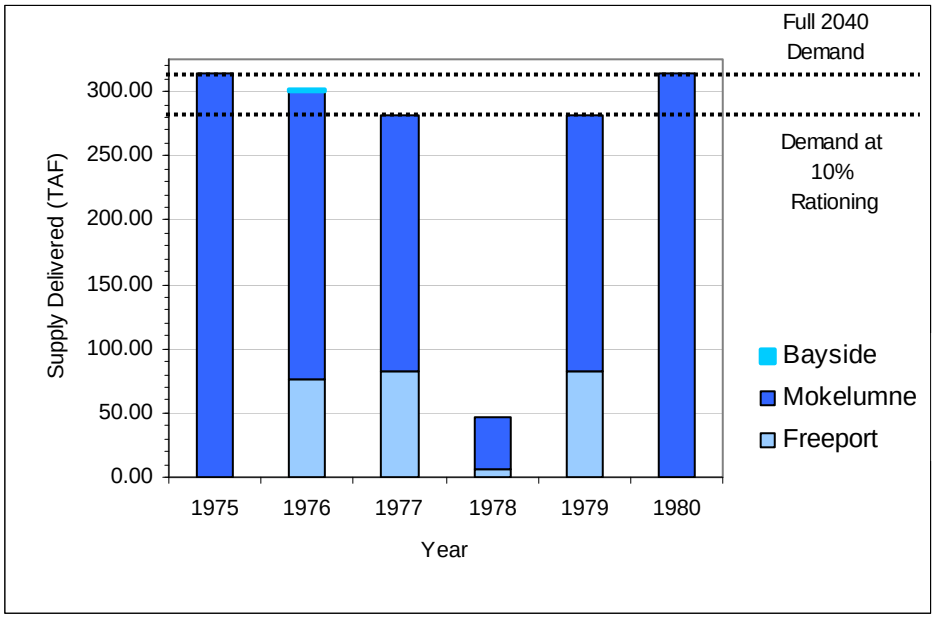


Figure 4-5: Water Delivered to the East Bay in the 10% Maximum Rationing Scenario

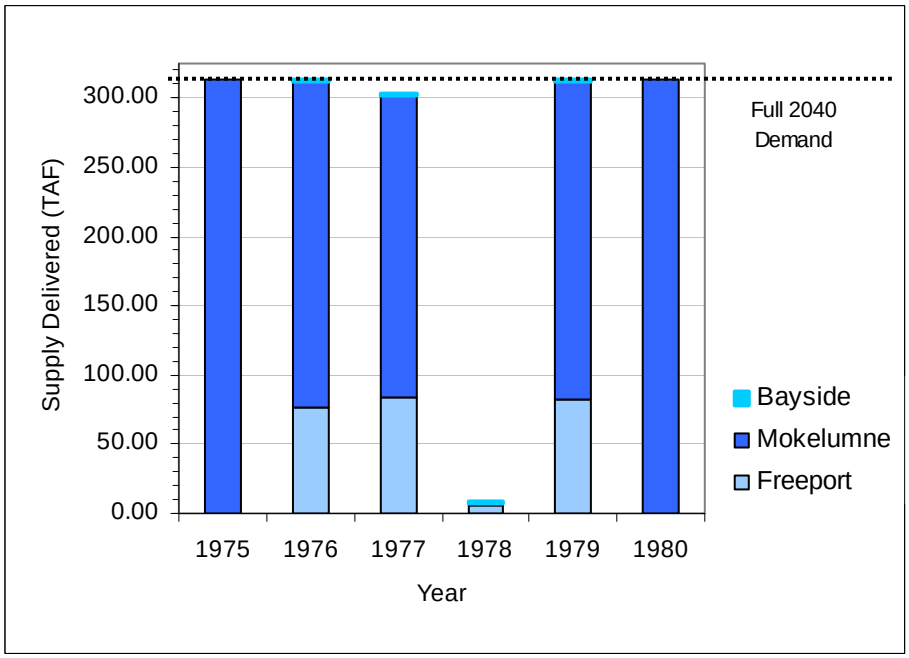


Figure 4-6: Water Delivered to the East Bay under the No Rationing Scenario

The District expects water shortages during the Drought Planning Sequence as shown in the figures above and listed in Table 4-2, below. These shortages are the amount of water the District would be deficient with its current supply if the DPS were to occur in 2040, considering obligations such as instream flow requirements, gainsharing, and senior and riparian appropriators. Instream flow requirements are dependent on the volume of water in the District's system storage, and therefore can increase as EBMUD's supply reliability improves. Also, more water in Pardee and Camanche Reservoirs will increase the water surface area of these water bodies, which in turn results in greater evaporative losses. Customer rationing goals would likely be reduced if supplemental supplies increase carryover storage volumes. The District must factor in these additional water supply requirements when quantifying its total Need for Water. These factors are described and quantified in more detail in the following sections.

It is important to note that the shortages shown in Table 4-2 do not include these additional requirements (that is, they only reflect the shortages in meeting customer demands), and thus represent the only the lower bound of the 2040 need for supplemental water to improve supply reliability. Any solution portfolio that increases the District's water supply will likely include some or all of these additional requirements as discussed in the following text and presented in Tables 4-3 through 4-5.

Table 4-2: Water Supply Reliability Shortages

Rationing Scenario	Annual Demand (Daily Demand)	Shortage
25% Maximum	280 MGD	154 TAF
20% Maximum	280 MGD	189 TAF
15% Maximum	280 MGD	225 TAF
10% Maximum	280 MGD	262 TAF
No Rationing	280 MGD	343 TAF

Supplemental Supply to Reduce Rationing

Rationing goals during each year of a drought are set based on projected carryover storage on October 1st. Once supplemental supplies and increased conservation are brought online, system storage will increase, changing the rationing goals, and thus reducing the volume of water rationed over the DPS. Supplemental supplies will not be sufficient to meet the increased demands unless additional water is provided to fill this gap. In all rationing scenarios evaluated, rationing goals were reduced only in the first of the three years of the DPS. Estimates of additional required supply resulting from a decrease in first-year rationing is presented in Table 4-3.

Table 4-3: Supplemental Supply to Reduce First-Year Rationing

Rationing Scenario	Annual Demand (Daily Demand)	Additional Supply Requirement
25% Maximum	280 MGD	14 TAF
20% Maximum	280 MGD	12 TAF
15% Maximum	280 MGD	8 TAF
10% Maximum	280 MGD	5 TAF
No Rationing	280 MGD	0

Supplemental Supply for Public Trust Resources

Under the Joint Settlement Agreement, fishery releases to the lower Mokelumne River during the period from October through March are determined by storage in Pardee and Camanche Reservoirs on November 5th of each year. As the District's water supply reliability improves, increased carryover storage can require more water to be released from Camanche Reservoir; therefore requiring even more water to meet demands during the Drought Planning Sequence. Specifically, the additional water in storage adds roughly 33 TAF to the District's need for supplemental water in order to cover additional releases to downstream fisheries. These additional releases are the result of moving from a 'critically dry' to a 'dry year' classification during the Drought Planning Sequence.

Table 4-4: Supplemental Supply for Public Trust Resources

Rationing Scenario	Annual Demand (Daily Demand)	Additional Supply Requirement
25% Maximum	280 MGD	33 TAF
20% Maximum	280 MGD	33 TAF
15% Maximum	280 MGD	33 TAF
10% Maximum	280 MGD	33 TAF
No Rationing	280 MGD	33 TAF

Supplemental Supply for Increased Evaporation

Improved water supplies will result in higher reservoir levels. The increased surface area from higher water storage levels, in turn, increases the amount of water lost by evaporation and seepage. This effect is estimated to add approximately 10 TAF[5] to the District's supplemental water supply needs[6].

Table 4-5: Supplemental Supply for Increased Evaporation

Rationing Scenario	Annual Demand (Daily Demand)	Additional Supply Requirement
25% Maximum	280 MGD	10 TAF
20% Maximum	280 MGD	10 TAF
15% Maximum	280 MGD	10 TAF
10% Maximum	280 MGD	10 TAF
No Rationing	280 MGD	10 TAF

4.3 Total Supplemental Water Needed for Supply Reliability

In order for EBMUD to reliably meet future demands and downstream obligations, the District needs additional water as presented in

[5] This exact quantity cannot be known until supplemental water supplies have been identified and quantified. Increased evaporation has been estimated based water supply reliability analysis completed for EBMUD's 2020 WSMP and the Freeport EIR.
[6] *Water Supply Reliability*, Freeport DEIR prepared by EBMUD, July 2003.

Table 4-6 for the five rationing scenarios examined. The values presented in this table are the sum of the customer demand shortages (as predicted by the W-E model) plus the additional supplies described in the preceding sections. These values are also presented in Figure 4-7.

Table 4-6: Total Need for Supplemental Water Supplies with Various Levels of Maximum Rationing over the Three-Year Drought Planning Sequence

Need for Supplemental Supply Component	Maximum Rationing Scenario				
	25%	20%	15%	10%	0%
Water Supply Reliability Shortages (TAF)[1]	154	189	225	262	343
Reduce First-Year Rationing (TAF)	14	12	8	5	0
Public Trust Resources (TAF)	33	33	33	33	33
Increased Evaporation (TAF)	10	10	10	10	10
Total[1] (TAF)	**210 TAF**	**244 TAF**	**277 TAF**	**310 TAF**	**386 TAF**
Total (MGD)	**187 MGD**	**218 MGD**	**247 MGD**	**277 MGD**	**344 MGD**
Average Annual Over DPS (3-yr period)	**62 MGD**	**73 MGD**	**82 MGD**	**92 MGD**	**115 MGD**

[1] Water supply reliability shortages include both customer shortages and Lower Mokelumne River shortages.
[2] Due to rounding, the total may not equal the sum of individual line items.

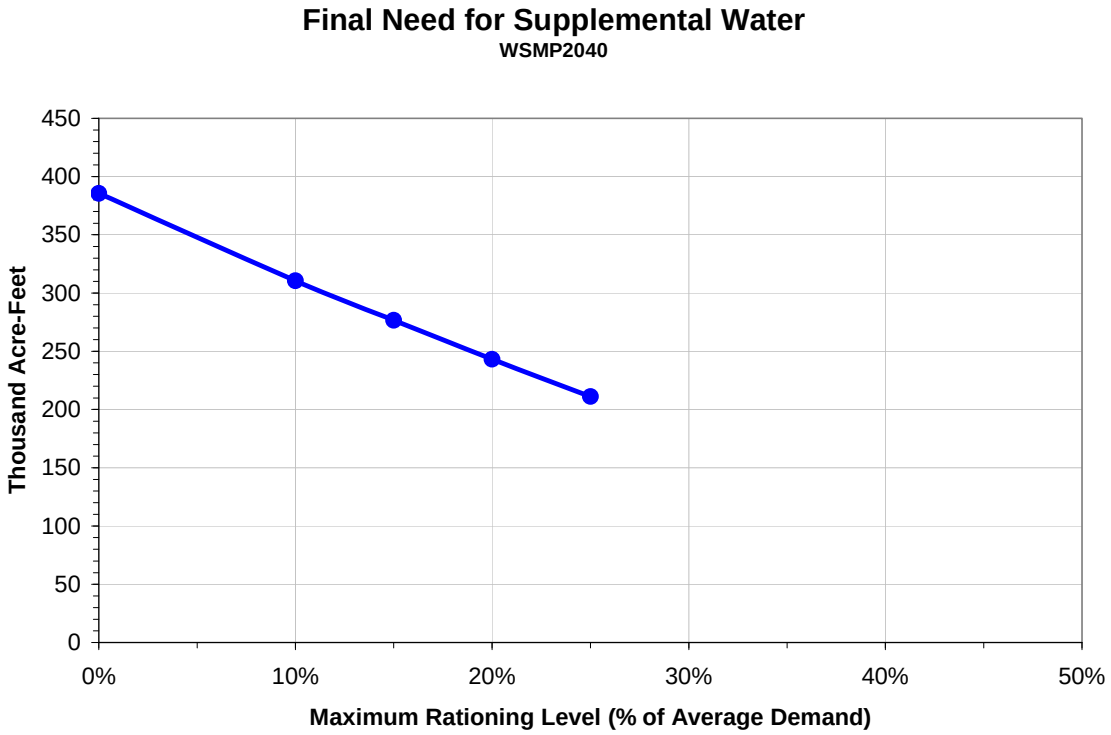


Figure 4-7: Total Supplemental Water Needed for Supply Reliability

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Appendix D TM-9

Climate Change Analysis TM

1. Climate Change

There is mounting scientific evidence that global climate conditions are changing and will continue to change as a result of the continued build-up of greenhouse gases in the Earth's atmosphere. Changes in climate can affect municipal water supplies through modifications in the timing, amount, and form of precipitation; as well as water demands and the quality of surface runoff. These changes can affect all elements of water supply systems, from watersheds to reservoirs, conveyance systems, and treatment plants. For this study, the goal was to assess East Bay Municipal Utility District's (EBMUD's) water supply system vulnerabilities to these possible impacts, both qualitatively and quantitatively.

Research conducted by the California Department of Water Resources (DWR), the American Water Works Association (AWWA), and the Intergovernmental Panel on Climate Change (IPCC), among others, indicates that it is likely that North America will see increased land and water temperatures and greater climatic variability in this

century. While the impacts of climate change will be felt differently between regions and even watersheds, most likely to be affected are those water supply systems which:

- Depend on surface storage for water supply and flood control;
- Depend on late spring snowmelt;
- Are sensitive to climactic variability;
- Contain biologic habitats that are sensitive to water temperatures, quality and runoff timing; and/or
- Are located in arid parts of western North America.

The current EBMUD water supply system includes every one of these characteristics. However, predicting future climate conditions and the potential resulting impacts on water resources is not an exact science. Detailed analysis relies on assumptions about future carbon emissions and coarse disaggregation of data from global and regional climate models into regional weather patterns.

EBMUD (also referred to herein as 'District') is in the process of developing a Water Supply Management Program (WSMP) which will define its water needs and recommend a combination of water supply and demand management projects that will meet demands under a variety of hydrologic conditions through 2040. This combination of water projects is referred to as a "water supply portfolio" and is intended to ensure that, even under reasonably worst-case conditions, EBMUD will be able to meet the water demands of its customers for essential services as well as fulfill environmental requirements in the Mokelumne River watershed. As such, the analysis of water supply portfolios incorporates an evaluation of potential climate change impacts on the District's water supply system to ensure that the portfolio ultimately selected will perform as needed under uncertain future hydrologic conditions. This memorandum presents the analysis of potential future climate change impacts on the District's water system, and summarizes recommendations to be considered in the WSMP portfolio selection process.

1.1 Background

EBMUD provides water to approximately 1.3 million customers in the eastern part of San Francisco Bay. On average, ninety percent of EBMUD's water supply is currently derived from surface runoff from a single source – the Mokelumne River watershed. The District diverts water stored in Pardee Reservoir on the Mokelumne River, and transports it 132 kilometers (82 miles) to their East Bay service area via three large pipelines known as the Mokelumne Aqueducts. The Mokelumne watershed drains an area of approximately

575 square miles above Pardee Reservoir, beginning on the western slopes of the Sierra Nevada Mountain Range and eventually draining to the San Francisco Bay Delta.

Annual average runoff in the Mokelumne River is 744 thousand acre-feet (TAF), 63% of which occurs in the spring snowmelt period (April – July). While there is over 800 TAF of storage on the Mokelumne River (between EBMUD's Pardee and Camanche Reservoirs and Pacific Gas and Electric Company's (PG&E's) reservoirs upstream of Pardee and Camanche), the District's total storage on the Mokelumne River is approximately 615 TAF. Despite high variability between normal and dry-year runoff in the Mokelumne River watershed, storage along the Mokelumne River and less than full-take by high-priority water rights are the primary reasons that sufficient water is available to meet all the needs of EBMUD's customers and downstream obligations in most years. During some historical dry periods, Mokelumne Basin runoff has been insufficient to supply all of EBMUD's needs. During these periods, most of the District's demands were supplied by water previously diverted to storage. The worst drought event in EBMUD's history (based on written records) was the 1976-77 drought when runoff was only 25% of average and total reservoir storage decreased to 30% of capacity with only 47 TAF remaining in Pardee Reservoir at the end of 1977. In order to help meet future dry year demands, the District is currently constructing the Freeport Regional Water Project (FRWP). The FRWP is a water supply project expected to be operational in 2010 that will provide EBMUD with as much as 100 million gallons per day (112,000 acre-feet per year or AFY) of water during dry years only. According to the FRWP Draft Environmental Impact Report (FRWA, 2003), EBMUD is expected to take FRWP water approximately three out of every 10 years.

The effects of climate change impacts have already been directly observed on the Mokelumne River watershed. Figure 1-1, below, shows maximum and minimum temperature at Camp Pardee, adjacent to Pardee Reservoir (EBMUD, 2006). The data shown in this graph clearly depicts an upward trend in both minimum and maximum annual temperatures.

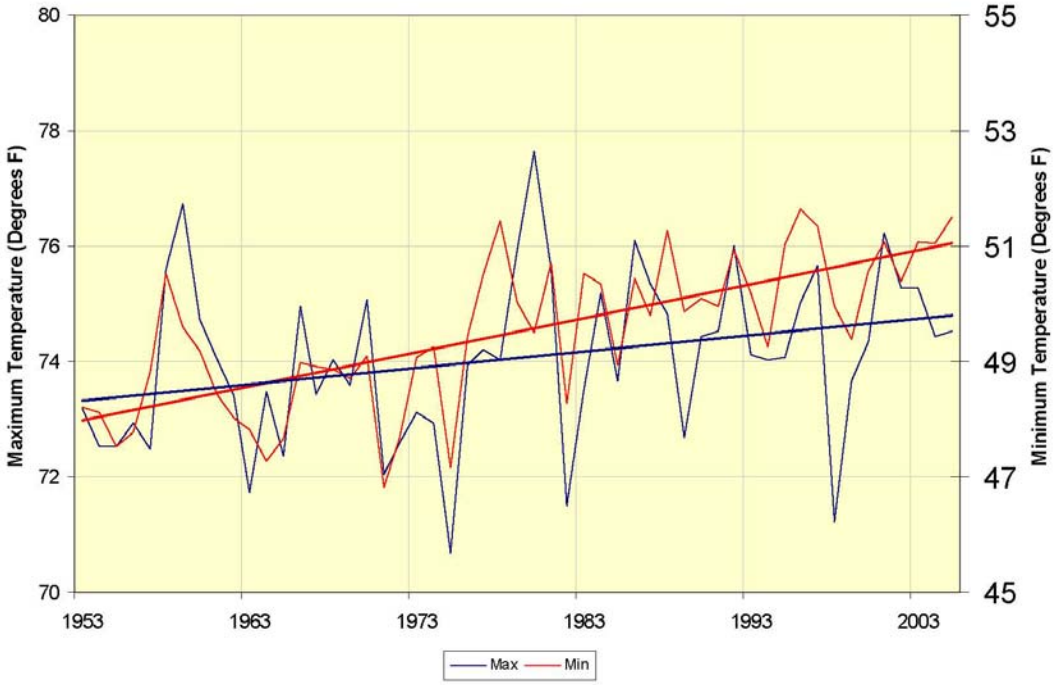


Figure 1-1: Camp Pardee Average Annual Temperature

Similarly, Figure 1-2 (EBMUD, 2006), below, shows the April-to-July Mokelumne River flows as fraction of a water year. As observed in this figure, there is a downward trend in the fraction of river flows occurring during the spring runoff period.

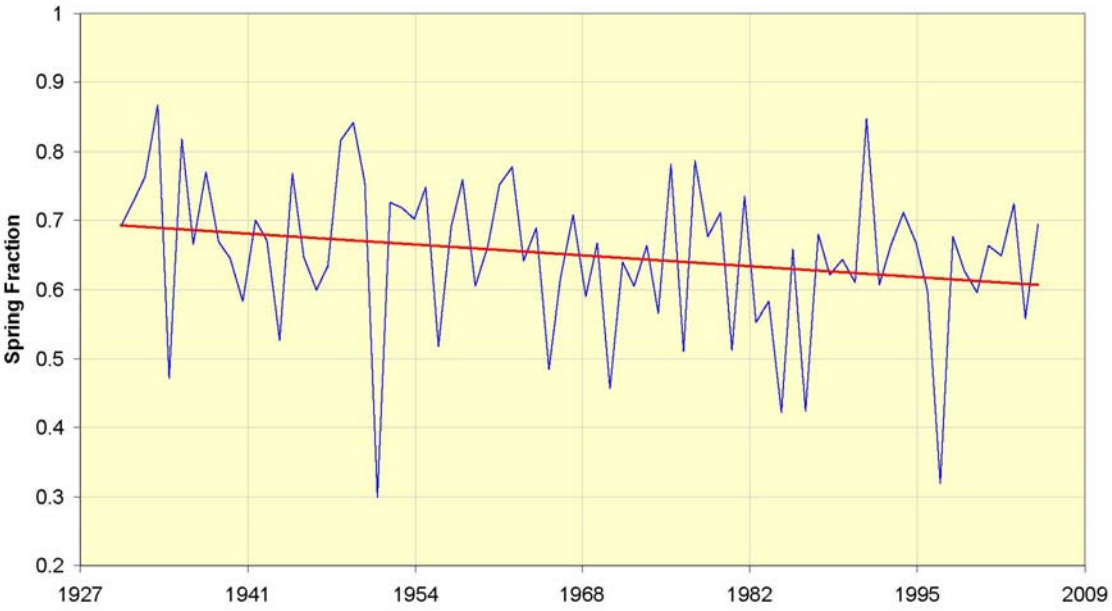


Figure 1-2: April-July Flow as Fraction of Water Year – Mokelumne River

1.2 Evaluation of Climate Change in California

In 2005, Governor Arnold Schwarzenegger signed Executive Order #S-3-05, ordering the State of California to assess the impacts of climate change on various sectors of the California economy, including the State's water supply. In response to the Governor's order, DWR, in collaboration with recognized industry and academic experts, prepared a report describing the progress made to incorporate climate change into water resources planning (DWR, 2006). The report presents empirical evidence that the State's climate has indeed been changing over the course of the 20th century, and documented a methodology for forecasting future climate conditions by downscaling information from general circulation models (or GCMs) to assess potential climate change impacts on the State's water resources. At the same time, the California Energy Commission's Public Interest Energy Research (PIER) and the California Climate Change Center (CCCC) created the first biennial science report (CEC, 2006) to evaluate and present potential impacts of continued global warming on certain sectors of the California economy, including water resources. This report presented a methodology similar to DWR's method, but also included an approach that diverged depending on the resource being impacted by climate change (i.e. agriculture, public health).

Predicting future climate conditions and the potential resulting impacts on water resources is not an exact science and relies on several key assumptions. A number of studies have been conducted to date to infer possible future changes in temperature and precipitation, and many more are currently underway. While it is generally accepted that temperatures will increase in California over the next century, the rate of temperature rise and specific changes in regional precipitation patterns are less resolute. The following section explains the most recent efforts by the DWR and the CCCC to quantify climate change impacts on California's water supply.

The DWR methodology for evaluating climate change impacts on water resources is summarized in Figure 1-3. This methodology, as published in their 2006 report entitled *Progress on Incorporating Climate Change into Management of California Water Resources*, is a scenario-planning approach using two representative GCMs: the Geophysical Fluid Dynamic Lab model (or GFDL) and the Parallel Climate Model (or PCM). These models were selected from a multitude of available models currently being run at 18 modeling centers around the world to calculate future global climate conditions. The GFDL model was selected as it is relatively sensitive to greenhouse gasses in modeling global and regional temperatures, while the PCM was selected as a counterpoint as it is less sensitive; both models, however, are within the mid-range of predictions by GCMs in use at that time.

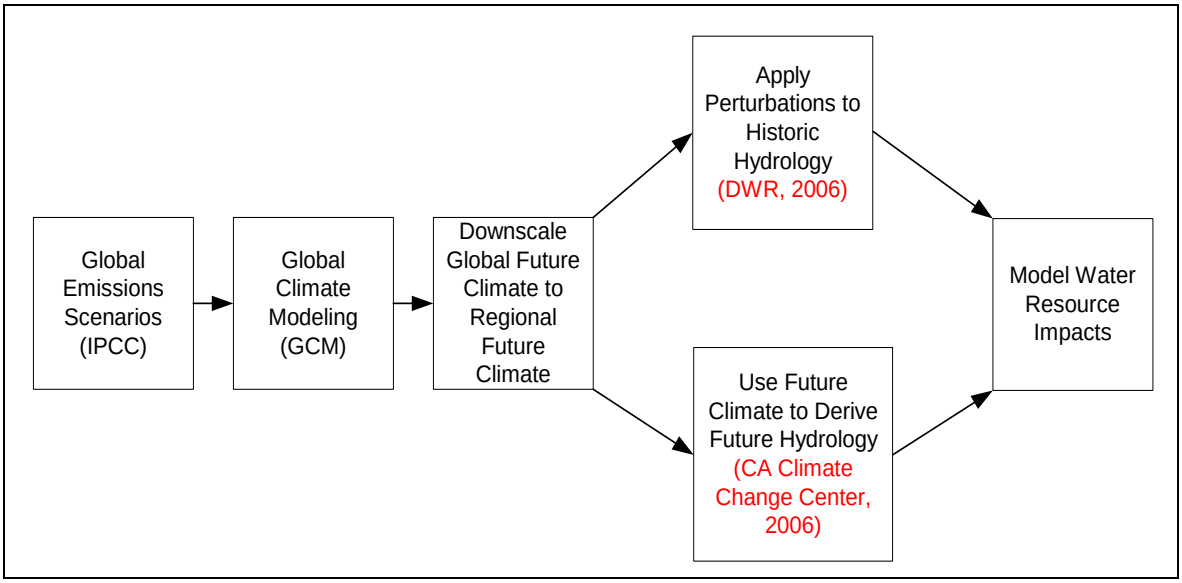


Figure 1-3: Summary of Climate Change Modeling

Additionally, both GCMs (GFDL and PCM) were evaluated under two emissions scenarios: the A2 emissions scenario, which assumes high population growth, regionally-based economic growth, and slow technological changes resulting in significantly higher greenhouse gas emissions, and the B1 scenario which assumes low population growth, global-based economic growth, and sustainable development that results in the lowest increase of greenhouse gas emissions of the IPCC scenarios[1]. This methodology again reflected the central range of modeling results (rather than the extremes), thereby neither overestimating nor underestimating potential climate change effects based on work conducted as of that time.

The resulting changes in global climate were downscaled to obtain regional climate data. Regional climate data were then used to predict regional streamflow runoff using an established hydrologic model (the Variable Infiltration Capacity or VIC model) relating regional temperature and precipitation to streamflow runoff. The model was calibrated by comparing historical streamflow data to modeled streamflow data generated using historic climate conditions. A comparison of monthly average model-generated flows under future climate conditions were then compared to historic streamflows to established monthly perturbation ratios or factors. (A perturbation ratio is the ratio of the value of the relevant variable – in this case, streamflow – to the corresponding value of the same variable in the same month under baseline or historical conditions). The resulting perturbation factors were then applied to the historic hydrology of local watersheds to set up a perturbed (or modified) hydrology reflecting potential future conditions under a climate change scenario. In the DWR study, perturbation factors were developed for eleven key California watersheds for use in the state-wide modeling.

[1] Emissions scenarios were developed by the Intergovernmental Panel on Climate Change (IPCC).

An alternative methodology to forecasting water resources impacts was developed by the CCCC under the direction of Governor Schwarzenegger to assess impacts on several sectors of the California economy (including water resources, agriculture, and public health). The methodology used to evaluate climate change impacts on each sector varied by investigator. For the agricultural sector in the Sacramento Valley, the methodology employed differed from the DWR approach mainly in how streamflows were generated from downscaled GCM data. In the DWR methodology, perturbed historic hydrology modified the magnitude of monthly streamflows but preserved the historic sequence of wet years and dry years (i.e. frequency and length of droughts remained constant). The CCCC methodology stipulated that, because the global climate is changing, past climate patterns are not longer an accurate guide for future patterns (Joyce et al, 2006). Like the DWR approach, the CCCC approach downscaled the GCM data to obtain regional climate data, however, these data were then input into a regional hydrologic model generating streamflow data for future years. The resulting climate-derived hydrologic conditions differ from the perturbed-historic hydrologic conditions in that the historic annual and decadal patterns (e.g. length, magnitude, and frequency of droughts) were not preserved. The results of the two methods are summarized in Table 1-1.

Table 1-1: Summary of Predicted Water Resources Impacts in Northern California

Method	Predicted Impacts			
	Snow Pack and Stream Flow Timing	**Total Annual Precipitation**	**Drought Frequency**	**Drought Length**
Perturbed Historic Hydrology (DWR, 2006)	Decreased Snow pack, Snowmelt earlier in year	Inconclusive – no major trends identified	None – historic patterns are preserved	Greater climate variability predicted (including potentially longer droughts)
Climate-Derived Hydrology (CCCC, 2006a)	Decreased Snow pack, Snowmelt earlier in year	Inconclusive – no major trends identified	Inconclusive - but some scenarios predict more frequent droughts	Inconclusive - but some scenarios predict longer droughts

Both methods (DWR's and CCCC's) relied on several assumptions and neither can be used to exactly predict future conditions. Additionally, while temperature projections are significant, even as early as 2011-2040, and are consistent between models, the magnitude of annual precipitation has been shown to vary, sometimes significantly, between GCMs (Maurer, 2005). However, the use of scenario planning reduces uncertainty by producing a bracketed range of results, and general trends are starting to emerge from the modeling. The most consistent findings are that a predicted increase in surface temperature will cause a decrease in total annual snow pack and that snowmelt (and therefore spring runoff) will occur earlier in the year. Additionally, there is no conclusive evidence from either approach as to the frequency or

severity of droughts, but DWR acknowledges the potential for increased climate variability (including potentially more severe droughts) and some scenarios under the climate-derived hydrology method predict longer and more frequent droughts.

2. Climate Change Approach for WSMP 2040

In deciding on the methodology for evaluating potential climate change impacts on EBMUD's water supply system, the District first surveyed approaches used by other water agencies in California for evaluating climate change impacts on their water systems. Then, considering this information along with knowledge of the District's system and the current state of climate change impact analysis science, EBMUD selected a 'Bottom-Up' approach as the appropriate approach for use in the WSMP. The goal of this method was to test the sensitivity of EBMUD's current water supply system to a range of possible climate scenarios and then use this information to guide future water supply planning.

2.1 Climate Change Considerations by Other Agencies

In developing an approach to evaluating climate change impacts on EBMUD's water supply system, RMC contacted several major water agencies in the Bay Area, as well as representatives from State Water Project (SWP) and Central Valley Project (CVP) operations, to solicit information as to the means and methods currently in use by others. Additionally, RMC collected and reviewed planning methodologies used by other agencies as documented in recently available literature and presentations. The results of this activity are summarized in Table 2-1, below.

Table 2-1: Update of Climate Change Analyses by Other Agencies[2]

Agency	How climate change is addressed
Contra Costa Water District	Maintain conservative historic drought planning sequence with no specific climate change analysis[1]
Santa Clara Valley Water District	Maintain conservative historic drought planning sequence with no specific climate change analysis[1]
San Francisco Public Utility Commission	Sensitivity analyses for climate change impacts on the Hetch Hetchy system were conducted. Specific details pending.
CVP Operations (USBR)	Based on initial evaluations of results of DWR's perturbation of historic hydrology. Comprehensive sensitivity analysis diverging from DWR methodology is currently being conducted to evaluate climate change impacts on drought planning sequence. This analysis is based on a result portfolio using twenty-two GCM/emissions scenario modeling runs.
SWP Operations (DWR)	Sensitivity analysis based on results of DWR's perturbation of historic hydrology for analyzing historical droughts.
City of Boulder, Colorado	Evaluated 12 potential water supply/demand futures for city including four alternative projected future demands with three hypothetical climate scenarios. Used a 300-year tree ring hydrologic reconstruction to derive alternative hydrologic traces based on changes in mean flow and annual variability.
Metropolitan Water District of Southern California	Adaptive management approach that includes voluntary water transfers to improve supply reliability, increasing storage capacity.
Seattle Public Utilities	Adaptive Management approach that includes joint climate change modeling with University of Washington
Portland Water Bureau	Conducted climate change modeling with University of Washington that included downscaling four GCMs to create four sets of changes in temperature and precipitation which was then applied to a Distributed Hydrology, Soil-Vegetation model and Storage and Transmission Model of the Portland watershed and distribution system.
San Diego County Water Authority	No specific climate change evaluation; expanding storage, diversifying supplies and implement prudent drought planning methodologies.

[1] Climate change impacts on CVP supply have been estimated based on DWR's CALSIM2 climate change simulations.

[2] This information was compiled in June 2007.

Overall, some water agencies are actively investigating the effects of climate change on their water supplies, while others are continuing to use the drought planning sequence methodologies described by CH2M HILL in their 2002 memorandum. It is important to note, however, that evaluating climate change impacts on hydrologic sequences is an emerging science. Representatives of the agencies contacted expressed that no concrete or 'standardized' measures have been developed at this time by the water industry, yet they are

actively monitoring this topic and may consider re-evaluating their drought planning approaches in light of climate change impacts and future studies.

2.2 Climate Change Approach for WSMP 2040 to Assess Water Supply Effects

A key goal of the WSMP is to develop solutions for ensuring that EBMUD has the necessary water supply to meet its current and future demands through the year 2040 under a variety of hydrologic conditions. Analysis of the District's water supply system under historical, as well as a variety of climate change conditions, will provide insights to be considered in developing a future water supply portfolio to achieve the District's goals. To that end, the process used for finding the recommended solutions for ensuring that future supply is shown in Table 2-2.

Quantitative analysis of multiple future scenarios can be a time-consuming process given a water supply system as complicated as EBMUD's. To expedite the analysis of possible future water supply scenarios, both under historic hydrologic conditions and a range of anticipated future climate scenarios, an integrated combination of the Water Evaluation And Planning (WEAP) system model and the District's EBMUDSIM model was developed (commonly referred to as the 'W-E model') and used as part of the evaluation process. The steps that include the modeling application to the portfolio analysis process are described below in Steps 4 and 5.

Table 2-2: Portfolio Evaluation Steps

	Step 1:	Component List Development - A list of potential projects for supplemental water supply is developed. These projects will form the portfolio components.
	Step 2:	Component Analysis - The list of potential projects (project components) is screened, eliminating those projects least likely technically, environmentally and/or economically to meet the need for water.
	Step 3:	Portfolio Construction - Portfolios are developed using the project components remaining after the component analysis in Step 2. Each portfolio contains one or more components (projects) to meet the required projected demands.
Modeling support applied here	Step 4:	Preliminary Portfolio Analysis - All portfolios developed in Step 3 are evaluated in Water Evaluation And Planning (WEAP) system model (linked to EBMUDSIM) using historical hydrology with the recommended drought planning sequence. Portfolios that do not perform well under the District's current hydrologic analysis methodology are eliminated.
	Step 5:	Detailed Portfolio Analysis - The most promising portfolios remaining after the Preliminary Portfolio Analysis (Step 4) are subjected to detailed modeling analyses in W-E model. During these analyses, the remaining portfolios are examined in light of their ability to perform under the anticipated climate change impacts. As before, each portfolio will contain a subset of projects or components to meet the need for water, but will also, at this time, specify project phasing.
	Step 6:	Final Portfolio Selection – The portfolios that have best performed during the Detailed Portfolio Analysis (Step 5) will then be evaluated and a 'preferred portfolio' selected.

The approach ultimately selected for evaluating climate change impacts on EBMUD's system required integration into the overall portfolio evaluation process.

2.2.1 Alternative Approaches Considered

As previously described, there are two key State-level California-specific studies published to date on applying climate change to the California water system, and numerous more are currently in progress. In one study (conducted by DWR), historic hydrology was perturbed. In the other study (conducted by PIER and the CCCC), a climate-derived future hydrology was developed that was not based on historical records. Additionally, a third approach (the 'Bottom-Up' approach) is recommended by yet another study (funded by the American Water Works Association Research Foundation or AWWARF). This approach was documented in AWWARF's

publication entitled *Climate Change and Water Resources: A Primer for Municipal Water Providers* (Miller and Yates, 2006).

Overall, science has progressed since these studies have been conducted, and work is ongoing to refine predictive methodologies, but the same general methodologies exist for use in climate change analyses today. At the time of this analysis, five primary possible alternatives for evaluating climate change in the context of the WSMP 2040 were identified to evaluate hydrologic changes in the Mokelumne watershed under climate change scenarios:

1. **Qualitative Only** – In this approach, a qualitative analysis of climate change effects on the system is used.

2. **Perturb Historic Hydrology –** In this method, perturbation factors are used to modify historic streamflows. Several different sets of perturbation factors were available for use (or were in the process of being developed) at the time this analysis was conducted:

    A. **DWR Factors** - Perturbation factors were published by DWR in their 2006 report entitled *Progress on Incorporating Climate Change into Management of California Water Resources.* These factors were not specific to the Mokelumne Watershed.

    B. **Modified Factors** - Based on conversations with Levi Brekke of the Bureau of Reclamation Technical Services Center (TSC), the previously-published (2006) perturbation factors were re-evaluated by the Bureau in 2007. These factors were not specific to the Mokelumne Watershed.

    C. **Ed Maurer/Santa Clara University Factors –** At the time this study was being conducted, Ed Maurer (who led the effort to develop the perturbation factors used by DWR in their 2006 report) independently conducted a study to develop new perturbation factors for several locations, including the Mokelumne watershed. These factors were based on multiple GCMs and emission scenarios (over 20 scenarios in all) but followed the same basic methodology which had been used to develop most other perturbation factors to date.

3. **Climate-Derived Hydrology.** This method is similar to the CCCC approach which used downscaled GCM output to develop climate-derived hydrology (temperature and precipitation) for the Sacramento River basin. At the time the WSMP analysis was being conducted, the Stockholm Environmental Institute (SEI) was working with the University of California in Davis on evaluating the impacts of global climate change on unimpaired natural runoff in the Upper Mokelumne River watershed. This method utilizes projected temperature and precipitation data, developed by and downscaled from several GCMs by SEI, as input into either WEAP or the Watershed Analysis Risk Management Framework model (WARMF). These models are then used to help generate projected streamflow runoff upstream of the Pacific Gas and Electric Company (PG&E) and EBMUD reservoirs on the Mokelumne River. A single data set is then selected or alternatively, two data sets

representing a warmer, drier GCM and warmer, wetter GCM are used to 'bookend' the range of potential impacts. These streamflow data are then fed into EBMUDSIM to generate downstream flows and aqueduct drafts.

As previously mentioned, two different models are available for simulating streamflows in the Upper Mokelumne watershed.

A. **WEAP** – A hydrologic module within WEAP is capable of generating streamflows from temperature and precipitation data. The module depends on lumped-variables and quasi-physical hydrologic functions. WEAP and its hydrologic components have been developed by SEI as part of a larger state-wide evaluation of climate change impacts on Sierra Nevada runoff.

B. **WARMF** – The streamflow generation module in WARMF is a physically-based model that simulates hydrology using a dynamic water balance. The model is linked to GIS allowing for detailed input of a watershed's characteristics. A WARMF model of the Upper Mokelumne River watershed has been developed by the Upper Mokelumne River Watershed Authority in a study in which EBMUD participated.

4. **Climate-Derived Temperature & Historic Precipitation** – This approach uses a hydrologic model of the Upper Mokelumne watershed (either in WEAP or WARMF) to model the effects of projected temperature and historic precipitation on the watershed. Temperature projections from either the CCCC or DWR reports are used. Because emission scenarios have a significant impact on temperature increases, an average emission scenario is selected or, as an alternative, two data sets, representing an upper and lower bound are used to 'bookend' the range of potential impacts. As before, either the WEAP model of the Upper Mokelumne watershed (as developed by SEI) is used to simulate true natural flows, or alternatively, the WARMF model (as developed for Upper Mokelumne River Watershed Assessment [RMC, 2007]) is used.

5. **Sensitivity Analyses using Historic Hydrology** – In this alternative, a 'Bottom-Up' approach (as recommended in the 2006 AWWARF study by Miller and Yates) is used to evaluate the sensitivity of EBMUD's system to factors likely affected by climate change. In a 'Bottom-Up' approach, the most critical vulnerabilities to the District's water supply system are identified and the causes of those vulnerabilities are articulated to suggest how climate change might or might not exacerbate those vulnerabilities. Steps are then taken to better address and solve the vulnerability in the face of climatic uncertainty. Under this alternative, the District's current water supply system is 'stressed' by systematically changing pre-identified factors and simulating the results using the W-E model. The climate change scenarios are then compared to a baseline case to determine how sensitive the system is to each of the factors and to identify critical vulnerabilities. The identified sensitivities are then compared to the general predicted range of climate change effects, and the results used to help design portfolios that address the system's vulnerabilities.

2.2.2 Selected Approach for WSMP

Option number 5, "Sensitivity Analyses using Historic Hydrology", was selected for evaluating climate change impacts for the WSMP. It is believed that this approach will provide the most useful information about the District's vulnerability to potential climate change impacts while staying within the most reasonable bounds of existing climate research.

There is substantial uncertainty around the range of possible greenhouse gas emissions scenarios and the resultant effects on regional and particularly local watersheds. At this point in time, both general circulation models and regional downscaling models do not offer consistent conclusions as to how the San Francisco Bay-Delta region and the Mokelumne River watershed will be impacted by climate change; current methodologies are only initial evaluations of the potential effects of climate change. Without more conclusive evidence and/or better scientific tools, it is difficult to say whether the District's current drought planning sequence is more or less conservative than one that incorporates possible future climate changes. While DWR and others in the State of California have acknowledged the potential for increased climate variability (including potentially more severe droughts), and, under some climate-derived hydrologic methods, longer and more frequent droughts are predicted, it is well recognized that the State will see a reduction in snowpack storage and subsequent earlier spring-time flows along the Mokelumne River and other state rivers, along with increased demands for outdoor use of water supplies.

In applying the 'Bottom-Up' approach for the WSMP, sensitivity analyses were conducted on identified variables with a strong likelihood of future change, in addition to application of the District's existing drought planning sequence, to evaluate the potential impacts of a drought even more severe than that currently evaluated. Specifically, the District's current drought planning sequence (herein referred to as the 'design drought' and consisting of the 1976/1977/Average 76'-77' drought pattern) was applied to the baseline scenario used to establish the Need for Water (and simulating the District's current supply projects and commitments) as well as to all potential future water supply portfolios for initial screening for adequacy and baseline performance. Concurrently, the baseline portfolio, used to establish the Need for Water, was evaluated under a range of estimated future climate change conditions using the W-E model. Portfolios that perform well in the design drought were then evaluated using lessons learned from the climate change sensitivity analyses and adjusted, as needed, to ensure the proper mix of projects/components. This approach helped the District understand how well those water supply portfolios may perform under a variety of hydrologic conditions and allows the District to 'hope for the best, but plan for the worst' in a cost-effective manner by selecting a portfolio that meet the widest range of possible future hydrologic conditions.

2.3 Climate Change Approach for WSMP 2040 to Assess Water Temperature Effects

As previously described, regional air temperatures are expected to increase in the future likely resulting in an increase in water temperature along the Mokelumne River and downstream in Pardee and Camanche Reservoirs. To simulate the anticipated increases in temperature of water entering Pardee Reservoir, the Watershed Analysis Risk Management Framework (WARMF) Upper Mokelumne River watershed application was run to determine the simulated increase in water temperature of the Mokelumne River at Highway 49 under a range of ambient air temperature increases The WARMF model was run simulating the period from October 1, 1999 through August 1, 2005, with minimum and maximum air temperature inputs for each weather station increased for each scenario.

Climate change is anticipated to affect weather patterns in a variety of ways in addition to increasing air temperatures. For example, precipitation is anticipated to increase in some locations and decrease in others. Storms are expected to increase in severity, such that a greater percentage of annual precipitation is experienced in a reduced number of events. The precise nature of these changes is currently unknown, and cannot be accurately simulated. The simulations described herein assumed that air temperature will uniformly increase while other weather patterns and characteristics remain stable. The simulations do not adequately simulate changes to other meteorological parameters, and therefore cannot be considered to simulate the impacts of climate change. The results of the simulations present only estimates of the potential impacts to water temperature resulting from changes in ambient temperatures.

3. Model Methodology

As described in Section 2, above, a 'Bottom-Up' approach was selected for analyzing the potential climate change impacts on the District's water system. In this approach, individual factors that may affect the water system are selected and varied to evaluate their impacts and to identify system vulnerabilities. This approach is in contrast to a 'Top-Down' approach which begins with climate derived hydrology under various emission scenarios; this data is then downscaled to a local hydrologic model and water system model (Figure 3-1).

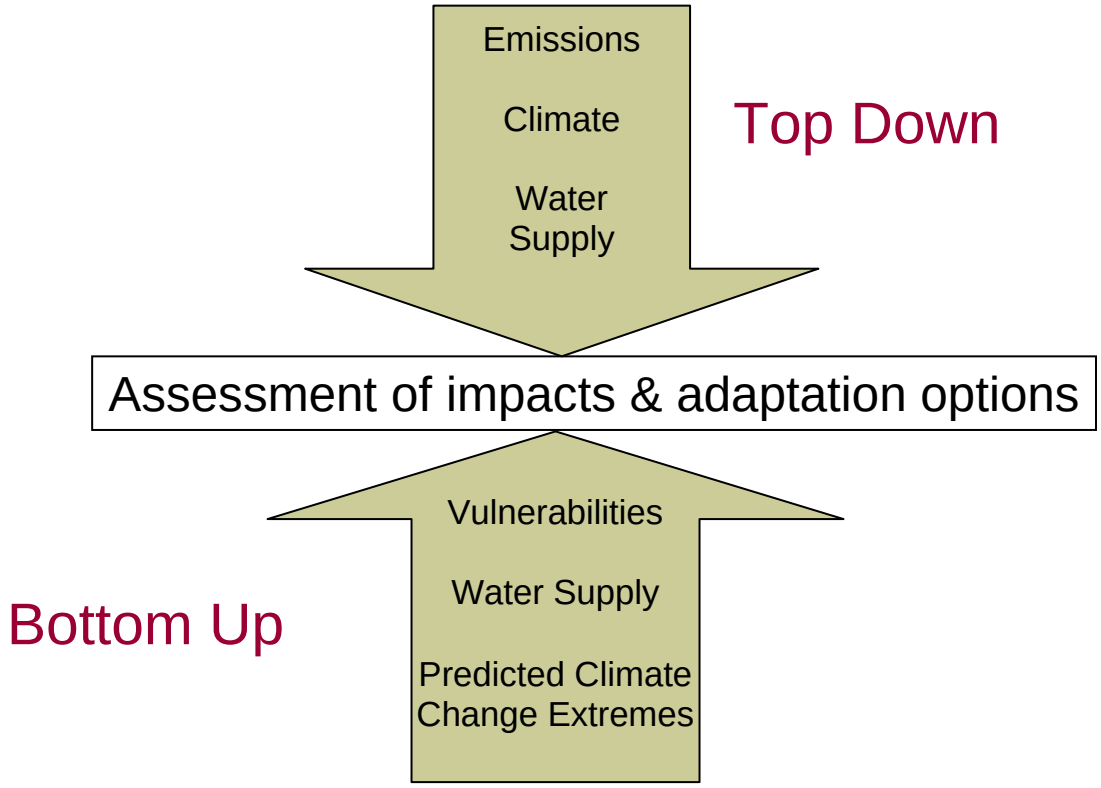


Figure 3-1: Methods for Assessing Climate Change Impacts

For the WSMP sensitivity evaluation, the following parameters were varied in the W-E model using the Need For Water analysis as the baseline case to provide relative levels of system sensitivity. Parameters varied were:

- 2040 customer demand
- Mokelumne River runoff timing
- Mokelumne River annual runoff volume

Each of these parameters were modified independently in the W-E model as described below; the results of the analyses are summarized in Section 4 of this memorandum.

In addition, the effects of increased future air temperatures on Mokelumne River water temperatures was evaluated using the WARMF model developed for the Upper Mokelumne River Watershed Assessment (RMC, 2007). The results of this analysis are summarized in Section 4, below.

Evidence of warming trends is already apparent in winter temperatures in the Sierra Nevada; an increase of almost 2°C (4°F) was observed during the second half of the 20th century. Unless there is a significant decrease in greenhouse gases, the incremental increase of an additional 2°C (4°F) is expected over the next half-century. In 2007, the IPCC released their Fourth

Assessment Report. In this report, the IPCC presented best estimates and likely ranges for global average surface air warming. For the 'high' scenario (A1F1), the best estimate is an increase of 2°C to over 9 °C, with a likely range between 2.4°C and 6.4°C.

Using similar ranges for global temperature increases, Michael Dettinger of the United States Geological Society (USGS) presented projected changes in annual precipitation in his 2004 paper entitled *From Climate-Change Spaghetti to Climate-Change Distribution* (Dettinger, 2004). This document presented the results of California-specific analyses conducted on behalf of the California Energy Commission which, in general, predict a +5°C warming between the years 2000 and 2100, with very little change in precipitation. The strength of this document, however, lies in its summary of studies conducted specifically for Northern California, and it presents the range of anticipated changes in both temperature and precipitation. Based on this document, Northern California can expect temperatures increases between +2°C to +6°C and precipitation changes between +20% to -20% by the year 2010. Using Dettinger's graphs, as shown in Figures 3-2 and 3-3, below, this translates to a +4°C increase in air temperatures by the year 2040.

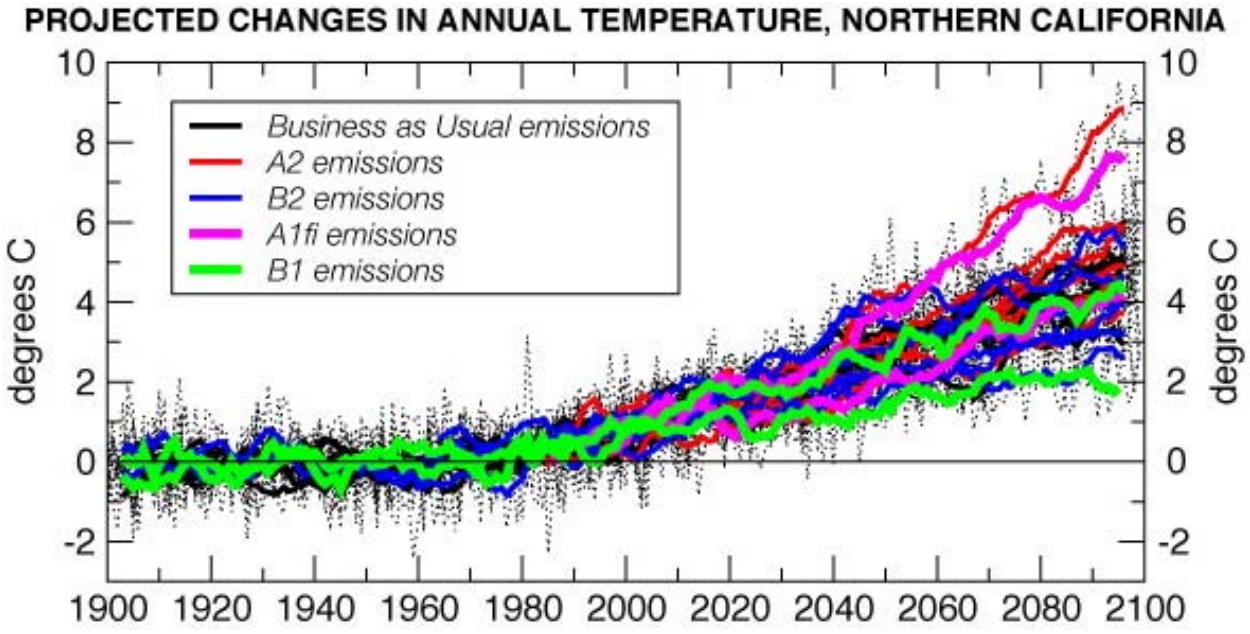


Figure 3-2: Projected Future Changes in Annual Temperature in Northern California
(Dettinger, 2005)

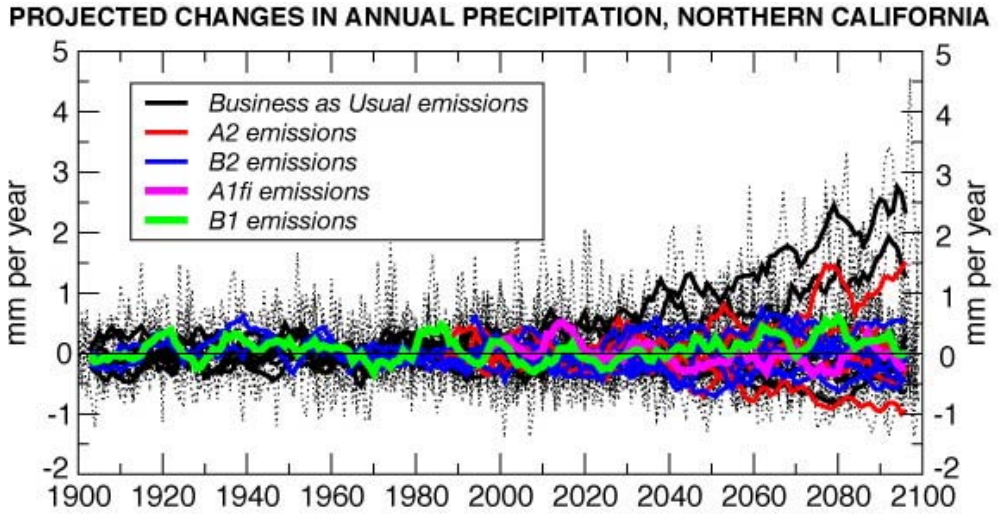


Figure 3-3: Projected Future Changes in Annual Precipitation in Northern California
(Dettinger, 2005)

Although changes by global warming will most likely not occur in a steady and predictable fashion, it is better to prepare for the worst case scenario. A recent report from the NRC, *Abrupt Climate Change: Inevitable Surprises* shows some major and widespread climatic changes have occurred with startling speed in the past, and can be expected to occur similarly in the future.

By the end of the 21st century, most scientists agree there will be a 3°C to 5°C increase in temperature in the western United States; projections for precipitation vary from 10% wetter to 20% drier. Therefore, based on this and other research available in published literature, the following anticipated changes will be used to evaluate climate change impacts on the District's system:

- Increase in average daily temperatures by up to 4°C from 1980 by the year 2040 (2.15 °C from 2005 by 2040)
- Decrease in precipitation rates by up to 20% from historical values by the year 2040

These values were selected to test the extreme predictions of climate change effects by the end of the WSMP planning period, thus defining the edges of the envelope of possible change. Intermediate values were tested to determine if there were breakpoints in the response of EBMUD's water supply system within that envelope.

3.1 Input to the W-E Model

Data used for simulating climate change impacts in the W-E model were for the period from 1953 to 2002, rather than 1921 to 2003 period used for the portfolio runs. This was because PG&E's Lower Bear Reservoir (the reservoir that is currently immediately upstream of Pardee Reservoir) came online in 1953, and no data exists as to how the Mokelumne River flows were controlled by reservoirs existing upstream of Pardee Reservoir on the river prior to 1953. Data for the year 2003 was not used in the climate change simulations as regression analyses

prepared prior to the WSMP (and integrated into the work described herein) only considered the hydrologic record through 2002 and modifying the work conducted to date to add the one additional year of data was not reasonable based on the time that would be expended versus the benefits received.

3.1.1 Temperature Impacts on Customer Demands

Projected customer demands are expected to vary under climate change scenarios depending predominantly on temperature changes. While indoor water use is not expected to change significantly under global warming, changes in outdoor water use may have significant impacts on projected future customer demands. As such, the projected 2040 customer demands were re-normalized using projected temperature changes under selected climate change scenarios.

For the purposes of modeling in the WSMP, a revised demand estimate for the Year 2040 was prepared to incorporate the assumed climate change impacts (specifically, a 2.15°C increase in temperature between the years 2005 and 2040), but no change in precipitation. Although a decrease in precipitation with an increase in air temperatures may seem to represent the most extreme climate change conditions, the analysis of projected future demands under such a scenario indicated that a 20% reduction in precipitation had little influence on overall customer demands in comparison to a 4°C increase in air temperature (between the years 1980 and 2040); therefore, only the 4°C increase in air temperatures was incorporated into the revised customer demands to account for climate change affects.

The application of the temperature changes described above in the demand model resulted in a 3.6% increase in customer demand by the year 2040 (or an increase of 10 million gallons per day [MGD]). This case was considered to provide a reasonable 'worst-case' scenario for climate change impacts on projected demands.

3.1.2 Temperature-Induced Earlier Spring Runoff

In order to estimate temperature-induced changes to snowmelt in the Mokelumne River watershed, EBMUD uses the Mokelumne Watershed digital elevation model (DEM) and a Geographic Information System (GIS) as tools for spatially quantifying expected changes in the river basin's snowpack.

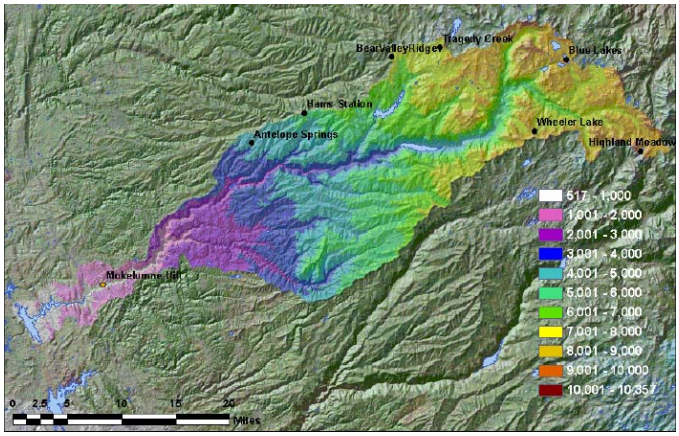


Figure 3-4: Mokelumne Watershed Digital Elevation Model

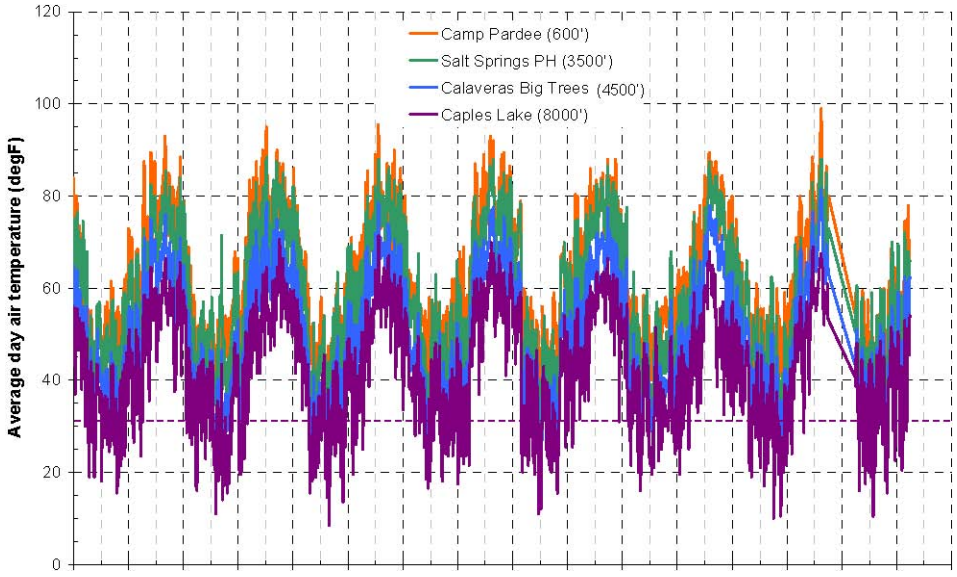
By analyzing the DEM data within GIS, an elevation-area relation was developed from which the watershed land area above/below specified isopleths (contour lines of equal elevation) were estimated (Figure 3-4). Five snow courses, which are used in EBMUD's annual runoff forecasting model (and are listed in Table 3-1, below), were selected for this analysis as they are good indices of annual Mokelumne Basin runoff and are at fairly equal elevation spacing, providing a good cross-section of elevation-dependent parameters such as temperature and snow pack. The snow survey data from these stations are readily available at the California Data Exchange Center (CDEC).

Table 3-1: Mokelumne River Watershed Snow Courses

Station	Elevation (feet)	Area Below (sq. miles)	Area above/between (acres)	Long-term Average April 1 SWE (inches)	Long-term Average Approximate Water Volume Above/Between (acre-feet)
Antelope Springs	4,350'	203	64,640	2.9	25,048
Hams Station	5,500'	304	54,400	6.4	71,173
Bear Valley Ridge 1	6,700'	389	67,840	25.0	171,861
Blue Lakes	8,000'	495	40,320	35.8	142,128
Highland Meadow	8,700'	558	12,800	48.8	52,053
Round Top	10,380'	578		48.8*	
Approximate April 1 snow water volume (Vtrapezoid = 0.5*(D1+D2)*Area):					**462,264**
Long-term average Mokelumne Hill unimpaired runoff during April-July:					**471,000**
*Estimated SWE assuming similar coverage at elevations above Highland Meadow					

Using the DEM to calculate watershed land area below and above the listed isopleths for the corresponding listed snow courses, an approximate watershed snow water volume is estimated by trapezoidal interpolation on surveyed snow water equivalent (SWE) data.

In addition to interpolating SWE data between snow courses from available snow course records, air temperature data were interpolated between snow courses from available weather station records. Figure 3-5, below, shows the seasonal variation in average day air temperature at EBMUD, DWR, and PG&E Mokelumne River weather stations. The Salt Springs Powerhouse and Caples Lake data have been recorded since 1948.



Note: Data included in this figure are from EBMUD's Camp Pardee and Calaveras Big Trees weather stations, DWR's Caples Lake weather station, and PG&E's Salt Springs Powerhouse weather station.

Figure 3-5: Average Day Air Temperature in Mokelumne River Watershed

In general, the average temperature drop from Salt Springs Powerhouse (at 3,500 feet msl) to Caples Lake (at 8,000 feet msl) varies from 11°F to 13°F on cold days and to 21°F on warm days. This is an approximate wintertime lapse rate of 1°F for every 400 feet of elevation change (close to the theoretical wet adiabatic lapse rate of 5°C per 1,000 meters); and an approximate summertime lapse rate of 1°F for every 200 feet (close to the theoretical dry adiabatic lapse rate of 10°C per 1,000 meters of elevation change). The persistence of this observed relation is illustrated in Appendix B scatter plots. Figure 3-6, below, illustrates the inclusion of these observed lapse rates in the interpolation/extrapolation of temperature for Hams Station and Highland Meadow snow courses based on the seasonal variation in temperatures at the Salt Springs Powerhouse and Caples Lake.

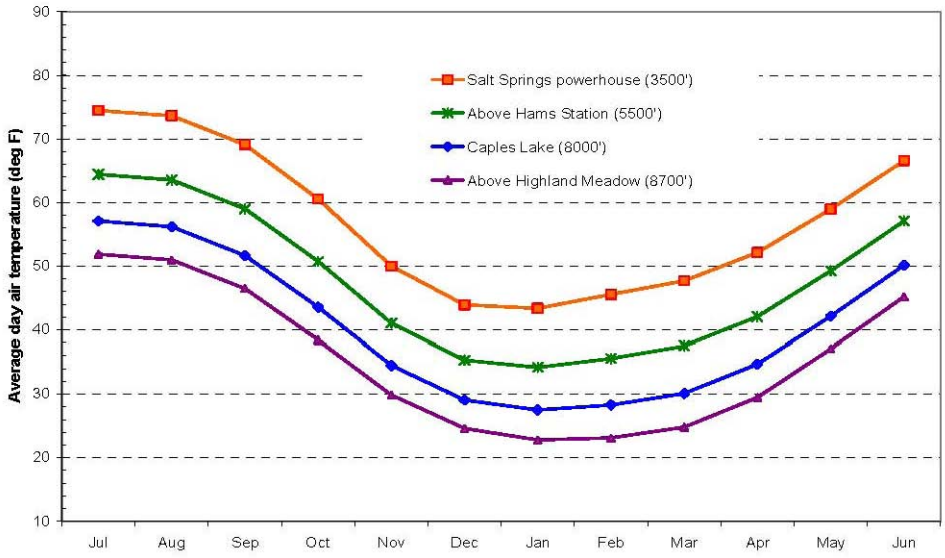


Figure 3-6: Long-Term Average Seasonal Variation in Temperature

The data sets described above are used as input to multiple linear regressions that calculate a relationship between monthly air temperature, precipitation, and SWE at the five snow courses over the term of the historical record. Assumptions used in preparing the regression include:

- Snow depth and water content at elevations above Highland Meadow (i.e. at elevations greater than 8,700 feet msl) are assumed to be similar. While this assumption is required because there are no snow courses above 8,700 feet msl, it is not expected to cause a significant impact on the results as only 3% of the total watershed area (approximately 12,800 acres) is at or above this elevation.

- Precipitation at snow courses is approximated with the Mokelumne Basin 4-Stations Average Index. This assumption is required as 1) few of the snow courses have good precipitation records, and 2) there is not a clear relationship by which to interpolate precipitation over elevation as is the case for temperature.

- Temperature at unmeasured snow courses is interpolated from the observed relationship between temperature and elevation. The average temperature over the month is converted to a melting potential by subtracting 32 degrees from the average monthly temperature and converting the negative values to 0. This is similar to a simple degree-day model, only the average temperature over the month is used rather than total degree-days over the month because the two parameters are highly correlated and there is less skew due to missing values with an average than with a sum.

Key observations identified from the regression analysis include the following:

- There are more snow survey data points in recent years; therefore, the skew in distribution of surveys over time (1948 – 2007) affects the model results since it sees more turn-of-the-century data than mid-century data in minimizing total predictive error. Since recent climate has trended warmer than mid-century; the model response may be considered "warm;" however, recent climate has also trended wetter than mid-century, and the baseline calculated SWE (regression equation using historical air temperature) results in 5% more long-term average snow water than observed.

- As with many models, it is hard to match peaks and lows, therefore a high degree of confidence should not be placed in results for particular months/years. However, overall, the overestimations appear to balance underestimations sufficiently such that the long-term average result may be considered meaningful." See Appendix C for regression results.

- Data for upper elevations do not fluctuate as much as those for lower elevations and therefore produce better regression fits. This is also illustrated in Appendix C.

Finally, the regression equations are used with historical precipitation and initial condition SWE data to calculate resultant SWE under three scenarios with average month air temperature being 2°C, 3°C, and 4°C warmer. The following observations were made in terms of long-term average results relative to the baseline:

- The highest percent reduction in SWE is at the low elevations; however there are some cold years with little or no snow loss and some warmer years with little to no snow to lose.

- The highest absolute reduction in SWE is at the mid-elevations.

The warmer calculated April 1 SWE for each snow course was converted to a total reduction in April 1 watershed snow water volume according to the trapezoidal interpolation method previously described. In these calculations, it was assumed that the percent reduction in the April to July runoff would be similar to the percent reduction in April 1 snow water volume. The changes to SWE resulting from the assumed air temperature increases are shown in Appendix C for the various stations within the Mokelumne River watershed. These data are also summarized in Table 3-2 and shown in Figure 3-7, below.

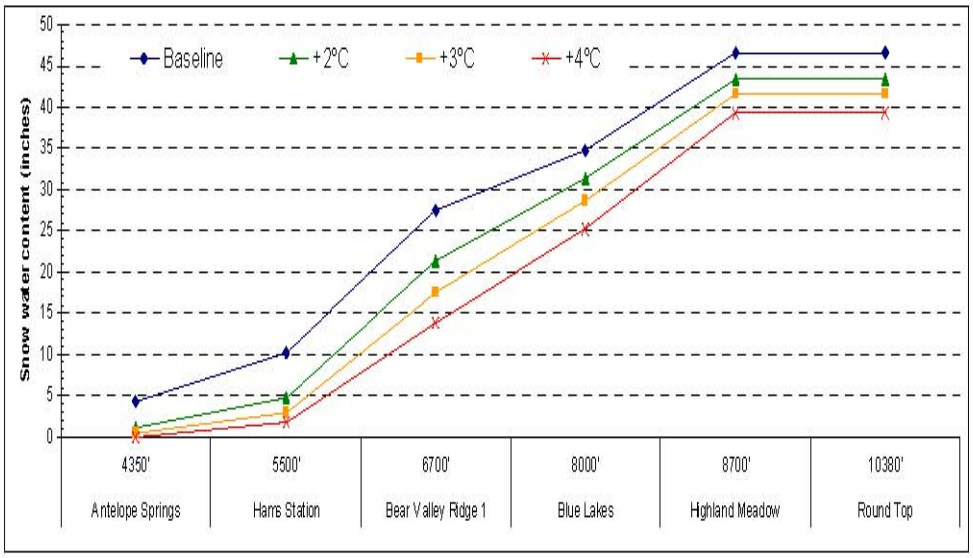


Figure 3-7: Impacts to April 1 SWE from Temperature Increases in Mokelumne River Watershed

Table 3-2: Summary of Impacts to SWE from Temperature Increases

Station	Elevation	+2°C		+3°C		+4°C		Baseline - LT Ave	
		April 1 SWE (inches)	Snow water volume above/between (acre-feet)	April 1 SWE (inches)	Snow water volume above/between (acre-feet)	April 1 SWE (inches)	Snow water volume above/between (acre-feet)	April 1 SWE (inches)	Snow water volume above/between (acre-feet)
Antelope Springs	4,350'	1.2	16,160	0.5	9,427	0.1	5,387	4.4	39,592
Hams Station	5,500'	4.8	59,160	3.0	46,693	1.9	35,587	10.3	85,453
Bear Valley Ridge 1	6,700'	21.3	148,683	17.6	130,592	13.8	110,523	27.4	175,536
Blue Lakes	8,000'	31.3	125,496	28.6	117,936	25.3	108,528	34.7	136,416
Highland Meadow	8,700'	43.4	46,293	41.6	44,373	39.3	41,920	46.5	49,600
Round Top	10,380'	43.4		41.6		39.3		46.5	
April 1 total now water volume			**395,792**		**349,021**		**301,944**		**486,597**
% reduction from baseline			**18.7%**		**28.3%**		**37.9%**		

Equations used in recalculating the Mokelumne River runoff to incorporate these impacts on SWE are as follows:

Let:

m = an index for month such that m = 1, 2,…, 12 corresponds to calendar year months January to December.

y = an index for calendar year where y = 1953,1954,…,2001,2002.

r = an index for run-off shift scenario where r = 1,2,3 corresponds to the percentage shift respectively corresponding to 2°C, 3°C, 4°C (where $p_{r=1}$=19%, $p_{r=2}$=28%, $p_{r=3}$=38%)

Then, for each percentage shift scenario, r = 1 to 3 do the following:

1. For each hydro-year, y = 1954 to 2002 do the following:

   a. Apply deduction to April through July period using Equation 1.

$$Q_{m,y} - p_r \times \left[\frac{Q_m}{\sum_{i=5}^{7} Q_{i,y}} \right] \times \sum_{i=4}^{7} \left(Q_{i,y} \right), \quad m = 5,6,7 \qquad \textbf{Eq. 1}$$

   b. Apply addition to November to March Period using Equation 2.

$$\begin{cases} \text{for } y-1 \quad Q_{m,y-1} + p_r \left[\dfrac{Q_{m,y-1}}{\sum_{m=11}^{12} Q_{m,y-1} + \sum_{m=1}^{3} Q_{m,y}} \right] \sum_{m=4}^{7} Q_{m,y}, \quad m = 11,12 \\ \text{for } y \qquad Q_{m,y} + p_r \left[\dfrac{Q_{m,y}}{\sum_{m=11}^{12} Q_{m,y-1} + \sum_{m=1}^{3} Q_{m,y}} \right] \sum_{m=4}^{7} Q_{m,y}, \quad m = 1,3 \end{cases} \qquad \textbf{Eq. 2}$$

In summary, for the purposes of modeling it was assumed that for temperature increases of 2°C, 3°C, and 4°C above historic values, the 18.7%, 28.3% and 37.9%, respective reductions in April 1st snow water would similarly affect the runoff that typically occurs between April and July by shifting that percentage of runoff to the November to March time period. As an example, the result of assuming a 3°C warming of average temperatures (corresponding to a 1,500-foot increase in snowpack elevations and a 28.3% decrease in snow covering the Mokelumne River

watershed) is shown in Figure 3-8, depicting the century-averaged unimpaired hydrographs for the historical record and the estimated potential runoff pattern under this climate change scenario.

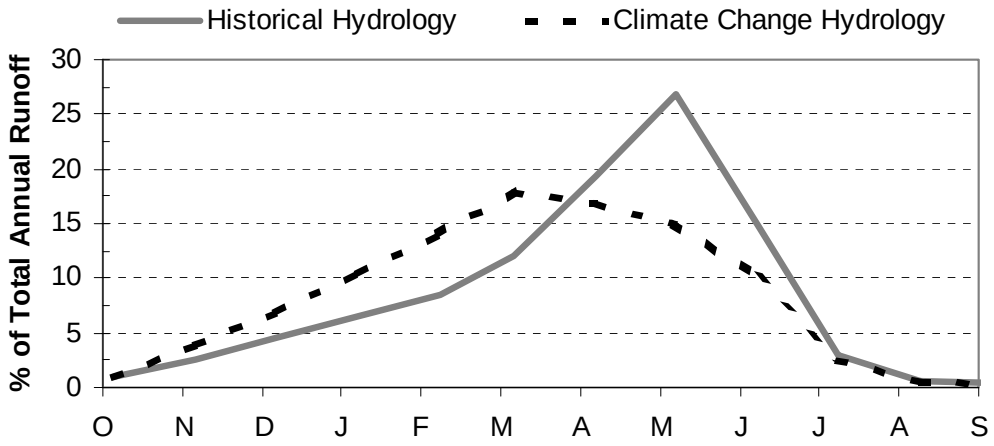


Figure 3-8: Comparison of Long-Term Average Mokelumne Hill Unimpaired Runoff under Historical and 3°C Change in Climate Conditions

3.1.3 Precipitation Impacts on Mokelumne River Watershed

General circulation models that have been downscaled to California regional areas have shown a greater degree in variability for predicted changes in precipitation; unlike that for temperature. Figure 3-3, presented earlier, shows the variability in projected changes in annual precipitation for Northern California (Dettinger, 2005). In general, based on the global climate change modeling published to date, precipitation volumes could increase as much as 77% or decrease as much as 25% by the year 2100, depending upon the future emissions scenario.

Precipitation increases are generally expected to increase the amount of water available to the District for supply. The purpose of the WSMP is to ensure an available future water supply under a variety of conditions, including the District's Drought Planning Sequence (DPS); therefore, potential future increases in precipitation in the Mokelumne River watershed is not considered to be relevant to the WSMP study, therefore only future decreases in precipitation were considered in the sensitivity analysis. To that end, 10% and 20% decreases in precipitation in the Mokelumne River watershed were evaluated and assumed to correspond directly to 10% and 20% decreases in river runoff. Table 3-3 presented the estimated decreases in precipitation (and therefore matching decrease in the historic Mokelumne River runoff) in five-year intervals with the corresponding anticipated changes in air temperature.

Table 3-3: Temperature and Precipitation Changes for Use in Assessing Climate Change Impacts on 2040 Demands

	1980[1]	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	2055	2060
Temperature Change (in °C)	0	1.85	2	2.25	2.4	2.5	3	3.5	4	4.21	4.43	4.64	4.85
Temperature Change (in °F)	0	3.33	3.6	4.05	4.32	4.5	5.4	6.3	7.2	7.58	7.97	8.35	8.73
Precipitation Change	0%	-15%	-15%	-15%	-20%	-20%	-20%	-20%	-20%	-25%	-25%	-25%	-25%

Notes:
Data estimated from ensembles of future temperature and precipitation projections from six coupled ocean-atmosphere general circulation models (Dettinger, 2005).
[1]1980 is the 'start' of recorded temperature increases associated with climate change per Dettinger, 2004.

3.1.4 Length and Frequency of Droughts

Historically, there have been three significant droughts of note on the Mokelumne River: 1929 to 1934, 1976 and 1977, and 1987 to 1992. Unfortunately, there is no historical regularity in the timing of the droughts that allows a logical increase in drought frequency. In fact, the unpredictability of historical droughts has resulted in the development of many methodologies in order to both better understand historical climate conditions and to predict future conditions. Examples of these methodologies include the use of tree ring analyses and stochastic modeling. In general, developing a protocol to simulate future droughts under a variety of climate change scenarios is time-consuming and the applicability of the data produced can be questionable.

Upon further examination of sensitivity scenarios modeled for the WSMP, it was determined that decreases in Mokelumne River runoff, and to a lesser extent shifts to earlier river runoff, may result in derived droughts that are both longer and deeper than those modeled by the drought planning sequence in the Need for Supplemental Water Supply analyses conducted to date. In other words, by changing the timing of the Mokelumne River runoff and/or decreasing the volume of runoff, new 'artificial' droughts are indirectly generated that can be examined for their potential impacts on the District's water supply system.

3.1.5 Impact to the District's CVP Allocations

In dry years occurring after 2009, EBMUD supplements Mokelumne supplies with water from the Sacramento River via the Freeport Regional Water Project (Freeport). The availability of water from the District's Freeport system is a function of contractual limitations and hydrologic conditions. The District cannot take more than 165 TAF in any three year period or 133 TAF in a single year. These volumes are subject to further reductions during dry years, similar to other North of Delta municipal and industrial (M&I) CVP contractors.

The extent to which the Sacramento River watershed is affected by changing climactic conditions may or may not be similar to the projected effects on the Mokelumne River. It is possible that all Northern California will experience drought conditions at the same time and therefore drought impacts on the Mokelumne River will also be experienced simultaneously on the Sacramento and other Northern California rivers, thus impacting the availability of CVP water at the same time. However, modeling water supply and allocation conditions on the Sacramento River with respect to CVP operations, especially as it relates to climatic changes in watersheds other than the Mokelumne River's, is complicated and beyond the scope of this project.

It can be argued that over a three year period, the District's CVP contractual limitation of 165 TAF will constrain the amount of water available to EBMUD more than would increased M&I cutbacks as a result of climate change impacts. For example, during the worst drought on record, 1976-1977, historic M&I cutbacks would have limited EBMUD's take of Freeport water to

a total of 159 TAF. If this drought were to have continue for a third year (as is assumed in the Drought Planning Sequence), EBMUD's maximum take would have been limited to 6 TAF in 1978 based on its 3 year maximum withdrawal (165 TAF – 159 TAF). In order for EBMUD's three-year Freeport allocation to be affected during the Drought Planning Sequence, M&I cutbacks would have to be reduced by over 95% in 1978 or by an average of 59% over the three year drought. Based information from DWR, since 1921, the largest single-year reduction has been 59% and the largest three-year average reduction has been 43%.

Based on the above logic, there appears to be buffer capacity in the District's CVP supply which could mitigate relatively small increases in M&I cutbacks relative to historical hydrology. However, it is important to note that the North of Delta M&I cutbacks used to estimate Freeport deliveries in this analysis were developed based on output from DWR's CALSIM II modeling at a 2020 level of development. This was the most current DWR data available at the time this work was completed; the magnitude to which these cutbacks would increase under the 2040 level of development is not well understood.

Because of these uncertainties, for the purposes of this modeling, it is assumed that there would be no additional limitations to EBMUD's allocation of Sacramento River water via Freeport as a result of future climate changes.

3.2 Input to the WARMF Model

WARMF is a decision support system (DSS) for watershed management. WARMF uses physically-based algorithms in a dynamic watershed simulation model to calculate stream flow and water quality conditions within a watershed. In the Upper Mokelumne River watershed assessment, the 550-square mile watershed was delineated into 207 subcatchments, 202 river segments and seven reservoirs/lakes. Given the potential for greater urban development in the South and Middle Fork watersheds in future years, the lower part of the watershed was given a finer resolution in subcatchment definition than the upper regions. The delineated subwatershed boundaries agreed relatively well with the CALFED defined boundaries for the Upper Mokelumne River Watershed. The model was then populated with available data regarding watershed land uses and cover (including forested areas, agriculture lands, or urbanized areas), required meteorology data (including daily minimum and maximum temperatures, precipitation, cloud cover, dew point temperature, air pressure, and wind speed), stream gauging data, reservoir elevation data, and water and air quality data. The Upper Mokelumne WARMF model was calibrated for the years 1999 through 2005 and validated for 1990 through 1999. The calibration and verification processes indicated that the model represents the watershed observed stream flow and water quality data very well.

To evaluate the impacts of increased air temperatures on water entering Pardee Reservoir, the Upper Mokelumne River WARMF model was run for the period from October 1, 1999 through August 1, 2005 to simulate increases in water temperature in the Mokelumne River at Highway

49 under three scenarios: 1) an increase in ambient air temperature of 2° C; 2) an increase in ambient air temperature of 3° C; and 3) an increase in ambient air temperature of 4° C. Simulated water temperatures from each of these scenarios was compared to the unaltered calibrated model (calibration run Calibration_051507) as the baseline scenario (RMC, 2008).

3.3 Procedure for Climate Change Sensitivity Analysis

The first step in the WSMP climate change sensitivity analysis was to develop the scenarios to be modeled using the W-E model. As previously described, the current global climate models and corresponding regional models have indicated for Northern California, future increases in temperatures accompanied by uncertain future precipitation rates. Additionally, studies have indicated the potential for a more unstable future hydrology, resulting in longer and more frequent droughts. Based on this information, four parameters were selected for variation in the W-E model:

- Change in customer demand resulting from an increase in air temperatures;
- Change in the timing of runoff in the Mokelumne River resulting from an increase in air temperature; and
- Change (decrease) in precipitation resulting in a corresponding decrease in Mokelumne River runoff.

To simulate these scenarios, input data for the W-E model were developed for each scenario and the following individual cases were run:

- Change in customer demands resulting from a 4°C increase in air temperatures;
- Change in the timing of Mokelumne River runoff corresponding to 2°C, 3°C and 4°C increases in air temperature;
- Reductions in Mokelumne River runoff corresponding to a 10% and 20% reduction in precipitation. While climate change could result in higher average runoff, only reduced runoff was evaluated because it would have an adverse effect on water supply.

Separate runs for evaluating a future with longer and more frequent droughts was not prepared as the cases with decreases in Mokelumne River runoff inherently also includes changes in future drought scenarios. The climate change sensitivity modeling studies changed only one variable at a time and did not evaluate combinations of changes, such as higher customer demand and reduced runoff. Compounding of climate change effects could have a greater overall impact on the EBMUD water supply system.

For the WSMP climate change analysis, each proposed scenario was run (including the baseline scenario) through a Visual Basic script (VBS) that approximates PG&E operations

under the assumed conditions. Output from VBS provided the necessary hydrologic inputs to the EBMUDSIM model, including regulated inflow to Pardee and updated PG&E reservoir storage values. These results were then incorporated as model input to scenario-specific EBMUDSIM dynamic link libraries for use by WEAP in the sensitivity study. WEAP was then run for each specific scenario using the baseline (Need for Water) conditions, projects (i.e. Bayside Phase 1) and operating rules for projects such as Freeport.

Following the W-E model simulations, the Upper Mokelumne River WARMF model was run to evaluate impacts of air temperature changes on Mokelumne River water. The three scenarios previously described were run, and the results are presented in Appendix E.

Simulation of the climate change scenarios required the development of assumptions regarding future hydrology and its correlation with the river flow and operations of facilities (i.e. powerhouses) on the river (in addition to case-specific climate change effects). Assumptions used in the climate change sensitivity study include the following:

- Reduction in precipitation is assumed to correspond to an equivalent reduction in run-off designated as true natural flow (TNF).
- Snow depth and water content at elevations above Highland Meadow (>8700') are assumed unchanged.
- Precipitation at snow courses is approximated with the Mokelumne Basin 4-Stations Average Index.
- At unmeasured snow courses, air temperature record is interpolated from observed relationship between Salt Springs Powerhouse and Caples Lake.

- Operating assumptions applied with respect to PG&E operation are the following:
  - When monthly unimpaired flow at Mokelumne Hill is less than historical, PGE storage is not adjusted. The routine attempts to conserve as much water as possible without violating the Lodi Decrees.
  - When monthly unimpaired flow at Mokelumne Hill is more than historical, the routine attempts to store as much as possible.
  - Hydrologic inputs required for executing VBS to approximate PG&E operations required modifications to year 1978 to be consistent with District's Drought Planning Sequence.
- Hydrologic period from 1953 to 2002 including District's Drought planning sequence is used in the climate change sensitivity analysis.
- Negative flow values are rounded up to zero.
- Reduction in April through July runoff was deducted from the May to July period to be consistent with Maurice Roos' 1994 study.
- Existing flood control capacity requirement is applied in all simulations.

All the climate change modeling studies assumed current conservation and recycled water levels, demands based on the 2040 level-of-development, and 25% maximum customer rationing. Mokelumne River runoff in 1978 was modified from historic values to simulate the Drought Planning Sequence.

4. Model Results and Implications

Seven separate analyses were conducted to test the sensitivity of the District's current water supply system to variables that will likely be affected by future changing climate. Table 4-1 presents the context of each climate change analysis and the results of each case.

Table 4-1: Summary of Climate Change Analysis

Ref	Description	Explanation	October 1st Carryover Storage	Customer Rationing	Flood Control Releases	Customer Shortage
CC 0	Baseline	No adjustment to TNF	Baseline	Baseline	Baseline	Baseline
CC 1	Increase in Demand	The "baseline" case from above with a demand increase of 3.6% to reflect a 4°C temperature	• Storage decreased in 48% of years simulated and increased in 6% • Average decrease was 3%; maximum decrease was 8% • Increases in storage were negligible	• Rationing increased slightly in 32% of years simulated • Average increase was 1.2 percentage points. • Up to 16 TAF increase in single year of rationing • Frequency is unchanged	Not Analyzed	Increased customer shortages by 17% in 1978, the last year of the Drought Planning Sequence.
CC 2-1	Earlier Runoff - 1	Models a 18.7% shift of April to July runoff to the November to March period due to a 2°C temperature increase	• Storage decreased in 52% of years simulated and increased in 30% • Average decrease was 2.5%; maximum decrease was 10% • Average increase was 3%; maximum increase was 10%	• Rationing decreased in 12% of years simulated and increased in 38% • Average decrease was 0.7 percentage points (2 TAF); maximum decrease was 5 TAF • Average increase was 1.4 percentage points (4 TAF); maximum increase was 9 TAF • Frequency is unchanged	• Releases increased in 60% of years during the November to March period; average increase was 66% • Releases decreased in 35% of years during the spring; average decrease was 40%	No significant changes[2]

[2] Customer shortages decreased by 2% in the last year of the Drought Planning Sequence because 1979 spring runoff was shifted to the November through March period -- this made more water available during the critically dry year of 1978.

Table 4-1: Summary of Climate Change Analysis

Ref	Description	Explanation	October 1st Carryover Storage	Customer Rationing	Flood Control Releases	Customer Shortage
CC 2-2	Earlier Runoff - 2	Models a 28.3% shift of April to July runoff to the Nov to March period due to a 3°C temperature increase	• Storage decreased in 50% of years simulated and increased in 38% • Average decrease was 5%; maximum decrease was 11% • Average increase was 3%; maximum increase was 10%	• Rationing decreased in 18% of years simulated and increased in 12% • Average decrease was 1.4 percentage points (4 TAF); maximum decrease was 19 TAF • Average increase was 2.6 percentage points (8 TAF); maximum increase was 20 TAF • Frequency is unchanged	• Releases increased in 60% of years during the November to March period; average increase was 81% • Releases decreased in 35% of years during the spring; average increase was 64%	No significant changes [2]
CC 2-3	Earlier Runoff - 3	Models a 37.9% shift of April to July runoff to the November to March period due to a 4°C temperature increase	• Storage decreased in 56% of years simulated and increased in 36% • Average decrease was 6%; maximum decrease was 16% • Average increase was 4%; maximum increase was 12%	• Rationing decreased in 20% of years simulated and increased in 14% • Average decrease was 1.9 percentage points (6 TAF); maximum decrease was 25 TAF • Average increase was 2.5 percentage points (7 TAF); maximum increase was 21 TAF • Frequency is unchanged.	• Releases increased in 60% of years during the November to March period; average increase was 89% • Releases decreased in 35% of years during the spring; average increase was 80%	No significant changes [3+]

[3] Customer shortages decreased by 9% in the last year of the Drought Planning Sequence because 1979 spring runoff was shifted to the November through March period -- this made more water available during the critically dry year of 1978.

Table 4-1: Summary of Climate Change Analysis

Ref	Description	Explanation	October 1st Carryover Storage	Customer Rationing	Flood Control Releases	Customer Shortage
CC 3-1	Decrease in Precipitation - 1	Models a 10% reduction in TNF runoff	• Storage decreased in 62% of years simulated and increased in 38% • Average decrease was 12%; maximum decrease was 47% • Average increase was 1%; maximum increase was 5.9%	• Rationing increased in 34% of years simulated • Average increase was 3.8 percentage points (12 TAF) • Rationing is more frequent, increasing from 36% in the Baseline scenario to 44% over the modeled period	Average annual flood release volume decreased by 43%	Customer shortage in 1978 increased by 16%
CC 3-2	Decrease in Precipitation - 2	Models a 20% reduction in TNF runoff	• Storage decreased in 72% of years simulated and increased in 28% • Average decrease was 24%; maximum decrease was 76% • Average increase was 0.4%; maximum increase was 2.2%.	• Rationing increased in 42% of years simulated • Average increase was 6.4 percentage points (20 TAF) • Rationing is much more frequent, increasing from 36% in the Baseline scenario to 52% over the modeled period	Average annual flood release volume decreased by 74%	Customer shortage in 1978 increased by 51%; also a shortage in 1992 is found that does not occur in the baseline.

4.1 Water Supply Effects

In this section, the modeling results are described in terms of how the parameters affected by climate change would impact carryover storage, customer shortages, customer rationing, and flood control releases. Carryover storage is important because it is a measure of the District's level of drought preparation. Customer shortage indicates the need for water, and thus the amount of demand management and supplemental supplies that should be obtained. The amount and frequency of rationing relates to the level of hardship the customers are expected to endure. Flood control release volumes are a measure of water not captured in District storage.

4.1.1 Increase in Demand

Customer demands in this run were modified assuming a 4°C increase in air temperatures between 1980 and 2040 (corresponding to a 2.15°C increase in air temperatures between 2005 and 2040) and no change in precipitation. The result was a 10 MGD increase in annual demand.

Carryover Storage

In this scenario, reservoirs are drained more quickly during summer months at elevated demand levels. In general, storage decreased in 27 years of the 50 years modeled, with an average decrease of 5%. Storage did increase slightly in some years, but never more than 0.2% (Figure 4-1)

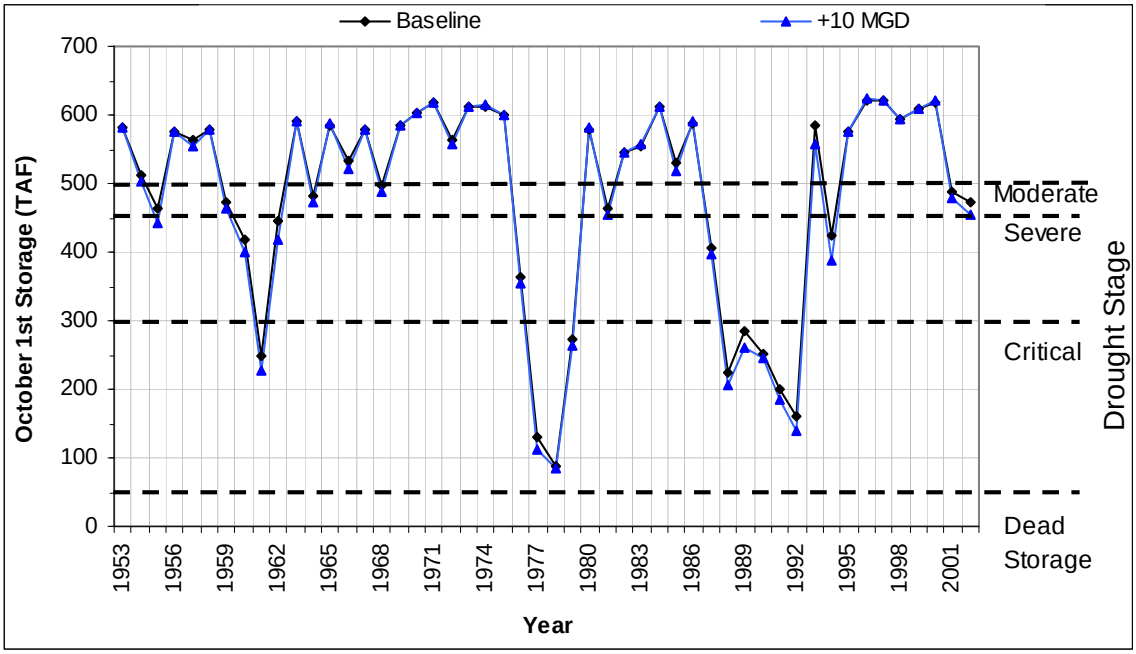


Figure 4-1: Impacts on October 1 Total System Storage due to Increased Customer Demands

Customer Shortages

The District's water supply system is sensitive to temperature-induced demand increases. For about a 2°C degree change in temperature between 2005 and 2040 (corresponding to a 4°C degree temperature increase between 1980 and 2040), the average District-wide demand increased by 3.6% (or 10 MGD), which induced a 17% (or 24 TAF) increase in customer shortages during the District's Drought Planning Sequence (DPS).

Rationing

As expected, the higher demand level caused more rationing; however, the frequency of rationing was unaffected. District-wide rationing increased, on average, by 1.2 rationing percentage points, with a maximum increase of 4.8 percentage points (up to 16 TAF increase in single year of rationing).

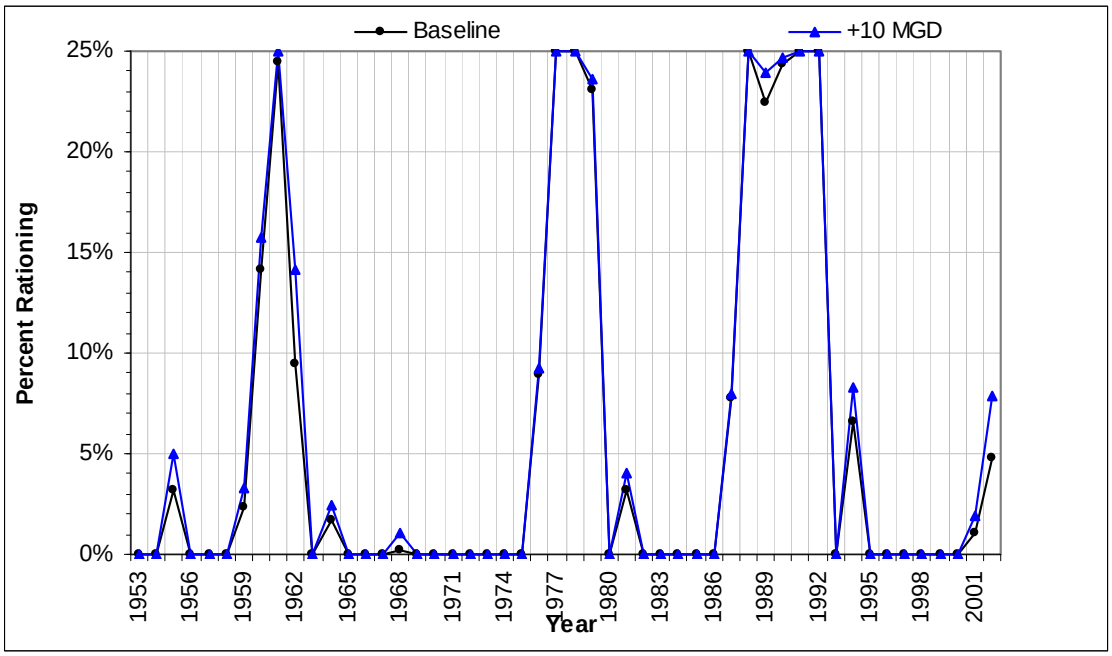


Figure 4-2: Impacts on Rationing due to Increased Customer Demands

4.1.2 Earlier Runoff

The effect of changes in runoff timing resulting from air temperature increases of 2°C, 3°C and 4°C was examined as part of the sensitivity analysis.

Carryover Storage

Carryover storage is susceptible to earlier springtime runoff; more so in normal and wet years than in dry years. Storage was impacted for the 2°C case, but these impacts did not increase significantly for the 3°C or 4°C change in average annual temperature. For the +2°C scenario, 50% of the years modeled showed an average decrease in carryover storage of 3% with a maximum decrease of 11%. For the +4°C scenario, the same percentage of years showed an average decrease in carryover storage of 6% with a maximum decrease of 16%. In general, storage appears to be moderately sensitive to change in runoff timing within the range of the changes modeled[4].

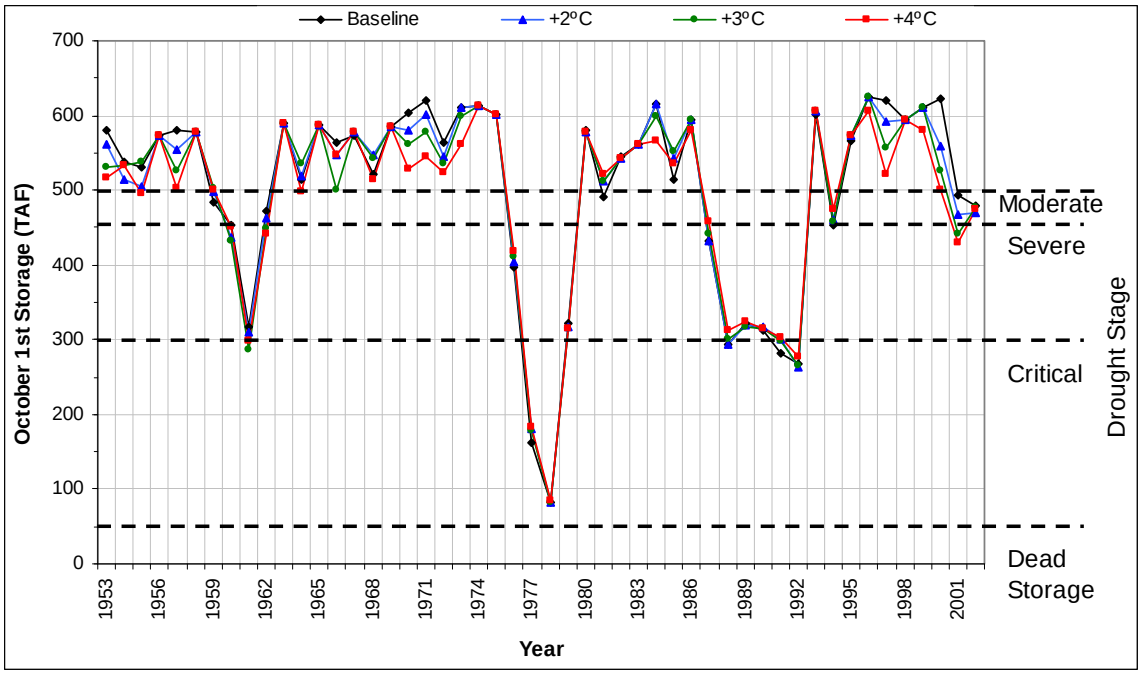


Figure 4-3: Impacts on October 1 Total System Storage due to Earlier Mokelumne River Runoff

Customer Shortages

In evaluating the likelihood and magnitude of customer shortages, it was assumed that EBMUD would meet all in-stream requirements ahead of customer needs, and therefore all water shortages would be borne by the District's customers.

[4]Only one year, 2000, showed a significant decrease in carryover storage, but this result is likely a modeling artifact of the procedure implemented for the analysis.2000 was relatively unique in that it was a wet year with no spring flood releases. The spring reduction was calculated based on April to July flows, but deducted from the May to July period. Because 2000 had a large amount of runoff in April but relatively little in June and July (another unique characteristic), a large amount of water was deducted from what actually was a small amount of late spring runoff. Since 2000 had a large volume of winter runoff, virtually all of the "shifted" water had to be released for flood control.

Decreases in carryover storage in years preceding the Drought Planning Sequence were not significant enough to increase customer shortages in 1978, the last year of the Drought Planning Sequence, or to cause customer shortages[5] in other droughts during the hydrologic record examined. As seen in Figure 4-4, below, customer shortages in 1978 (the last year of the DPS) appear to decrease somewhat; however this effect is due to increased runoff in November and December of that year resulting from the earlier snowmelt and associated runoff.

The largest decreases in storage typically occurred in years when overall precipitation was normal but when snowmelt was a relatively small contribution to overall runoff. If such a year were to precede a significant drought, customer shortages could be induced or worsened because storage at the beginning of the drought would be lower.

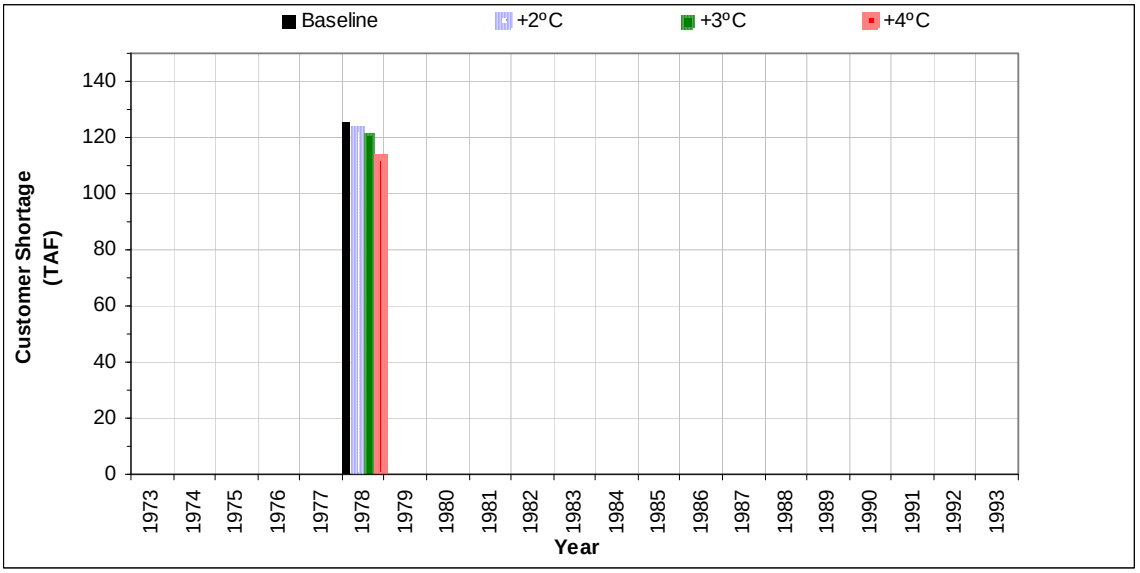


Figure 4-4: Impacts on Customer Shortages due to Earlier Mokelumne River Runoff

Rationing

The amount of rationing in a given year is not significantly affected by earlier spring runoff caused by a 2°C, 3°C, or 4°C increase in temperature.

[5] These shortages are the amount of water EBMUD would be deficient with its current supply system if the DPS were to occur in 2040, considering obligations such as instream flow requirements, gainsharing, and senior and riparian appropriators.

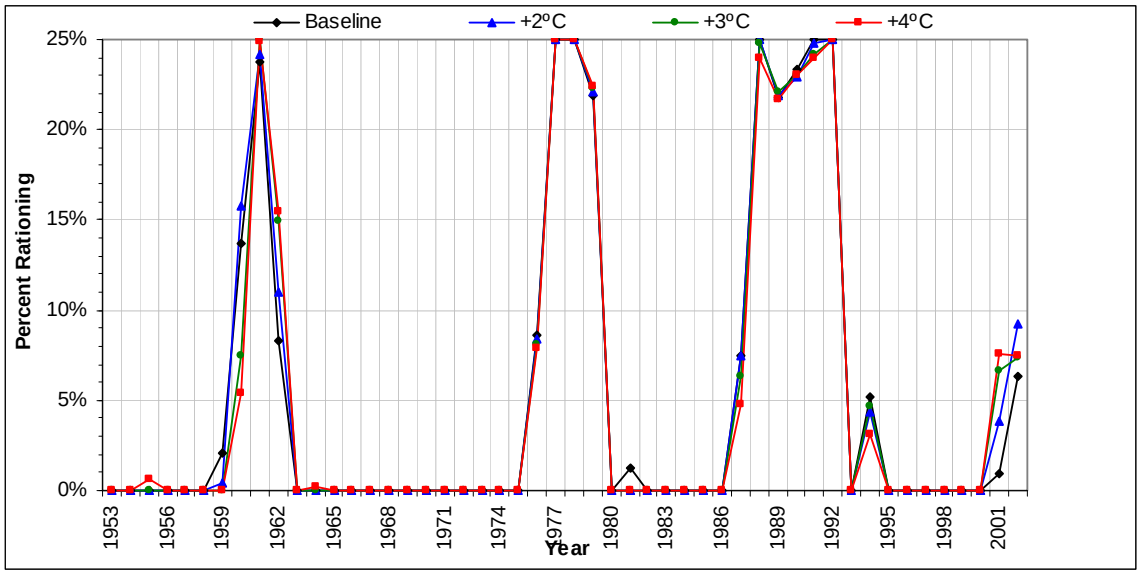


Figure 4-5: Impacts on Rationing due to Earlier Mokelumne River Runoff

Flood Control Releases

The volume of flood control releases in winter and spring is affected by earlier spring runoff. For all three scenarios modeled, flood control releases increased during the period from November to March in 60% of years modeled. The average increase was 66%, 81%, and 89% for the +2°C, +3°C, and +4°C scenarios, respectively. For the April through July period, releases decreased by slightly smaller magnitudes (40%, 64%, and 80%, respectively) in about 35% of the years modeled. Typically, years that resulted in an increase in winter flood releases were followed by a spring with fewer flood releases. However, the fact that that there were more years with an increase in winter releases than years with a decrease in spring releases indicates that the Mokelumne River system has capacity to absorb some of the shift in runoff timing. This is possibly attributed, at least in part, to the extensive reservoir system on the Mokelumne River and its tributaries.

Figure 4-6, below, shows the impacts of earlier Mokelumne River runoff on flood control releases between November and March, while Figure 4-7 shows the same information on an annual basis.

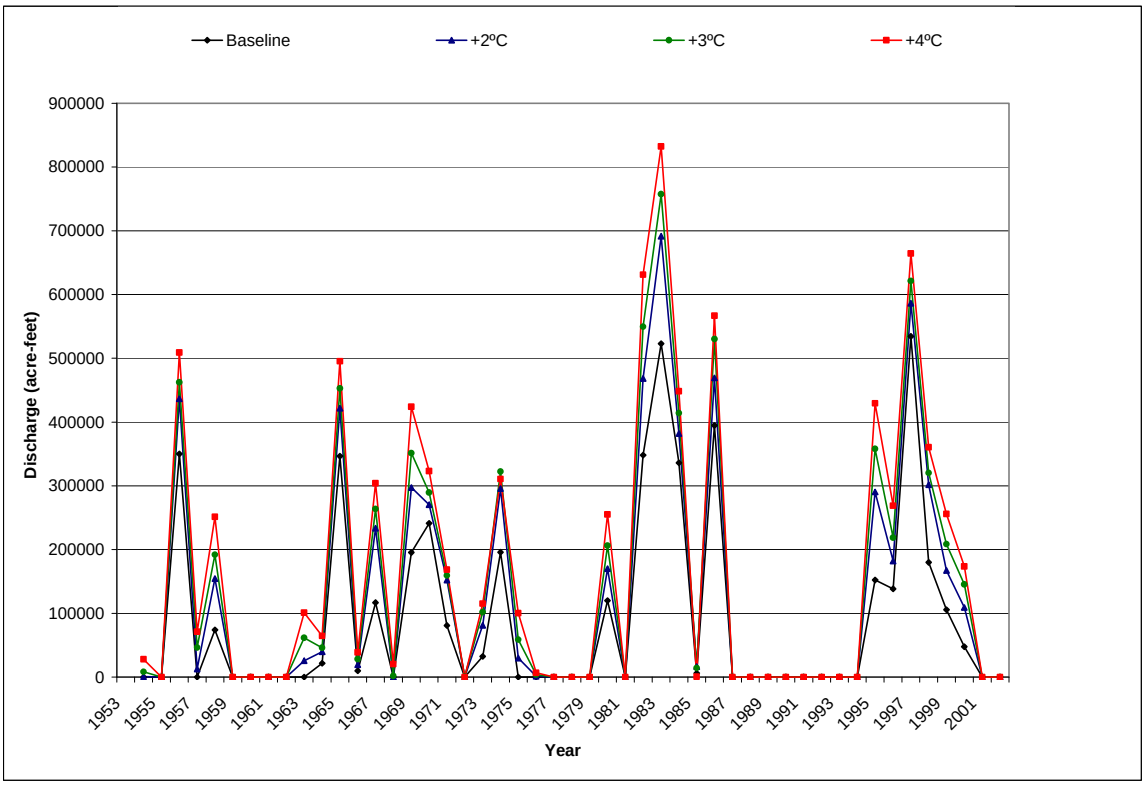


Figure 4-6: Impacts on Flood Control Releases between November and March due to Earlier Mokelumne River Runoff

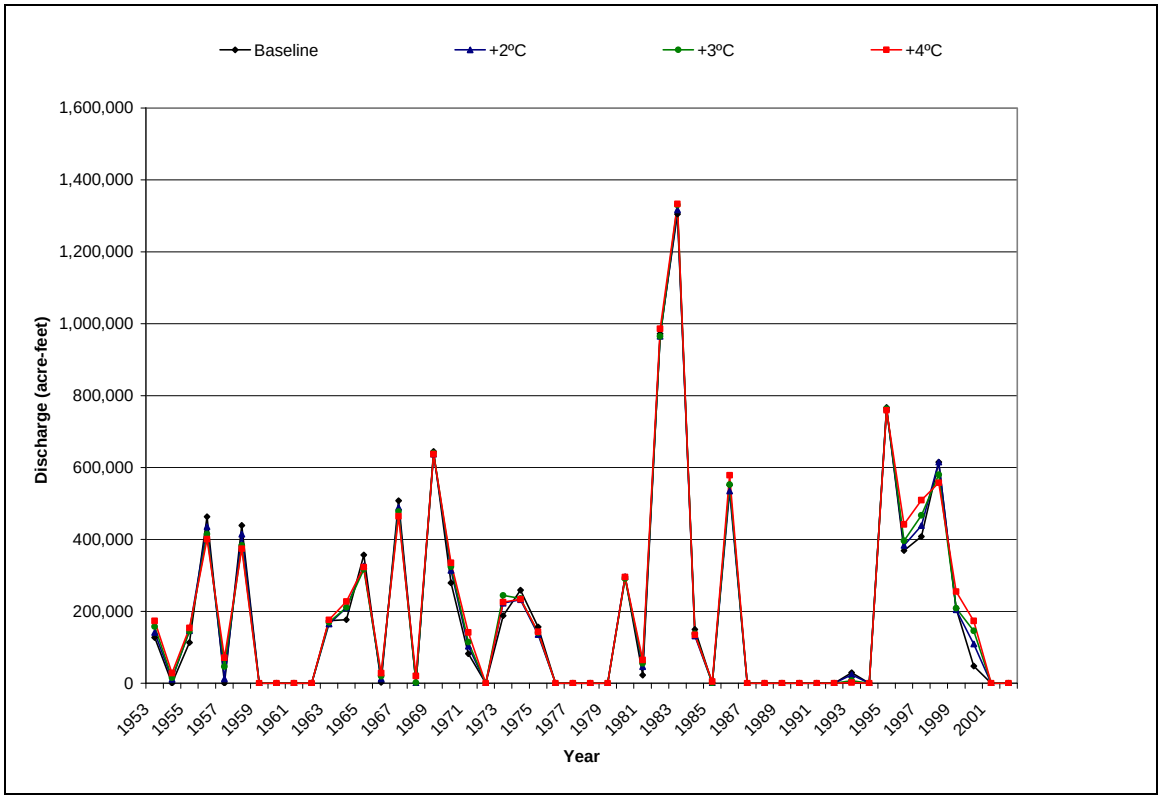


Figure 4-7: Impacts on Annual Flood Control Releases due to Earlier Mokelumne River Runoff

4.1.3 Decrease in Annual Precipitation

A key assumption in these scenarios is that Mokelumne TNF is decrease by the same percentage as annual precipitation. Annual decreases in precipitation of 10% and 20% (and therefore 10% and 20% decreases in Mokelumne River runoff) were examined.

Carryover Storage

Carryover storage is very sensitive to a decrease in annual runoff, especially in dry years. In about 70% of years analyzed in the hydrologic record, carryover storage is reduced, on average, by 12% and 24% for the 10% and 20% annual decrease scenarios, respectively. The graph in Figure 4-8 shows the Total System Storage on October 1 for each year in the model period under each of the reduction scenarios.

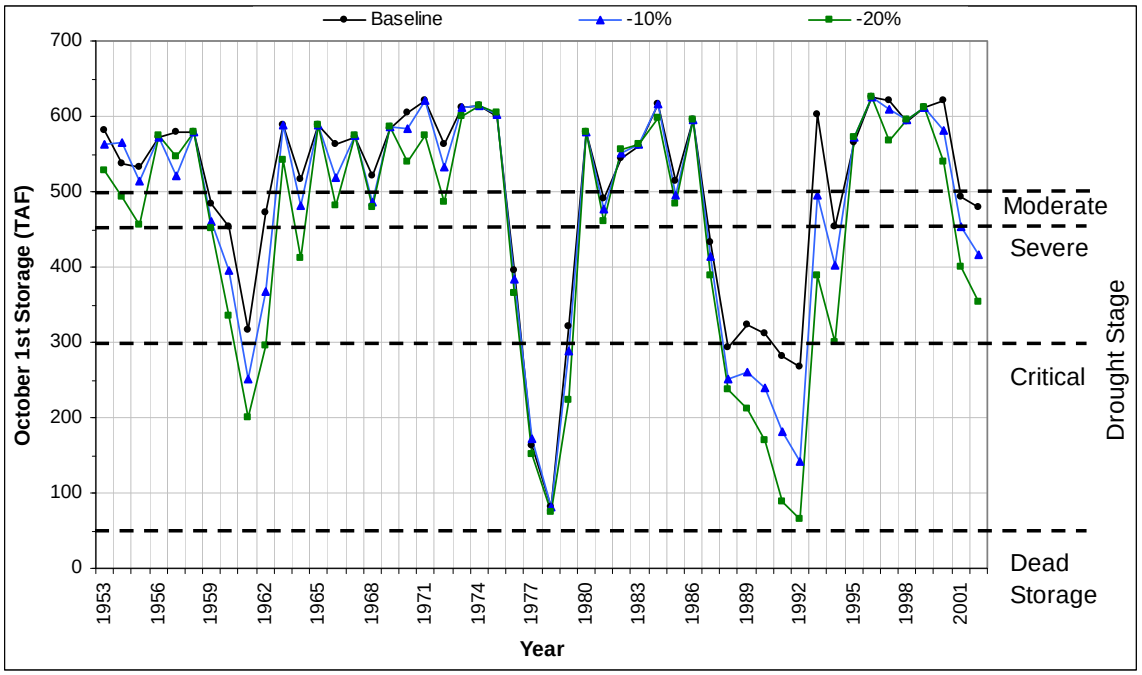


Figure 4-8: Impacts on Total System Storage due to Decrease in Mokelumne River Runoff

Customer Shortages

Decrease in annual precipitation has a significant impact on customer shortages[6]. In 1978, customer shortages increased by 16% (or 21 TAF) and 51% (or 64 TAF) for corresponding decreases in annual precipitation of 10% and 20%. For the 20% scenario, a shortage also occurs in 1992 that does not occur in the baseline scenario.

[6] These shortages are the amount of water EBMUD would be deficient with its current supply system if the DPS were to occur in 2040, considering obligations such as instream flow requirements, gainsharing, and senior and riparian appropriators.

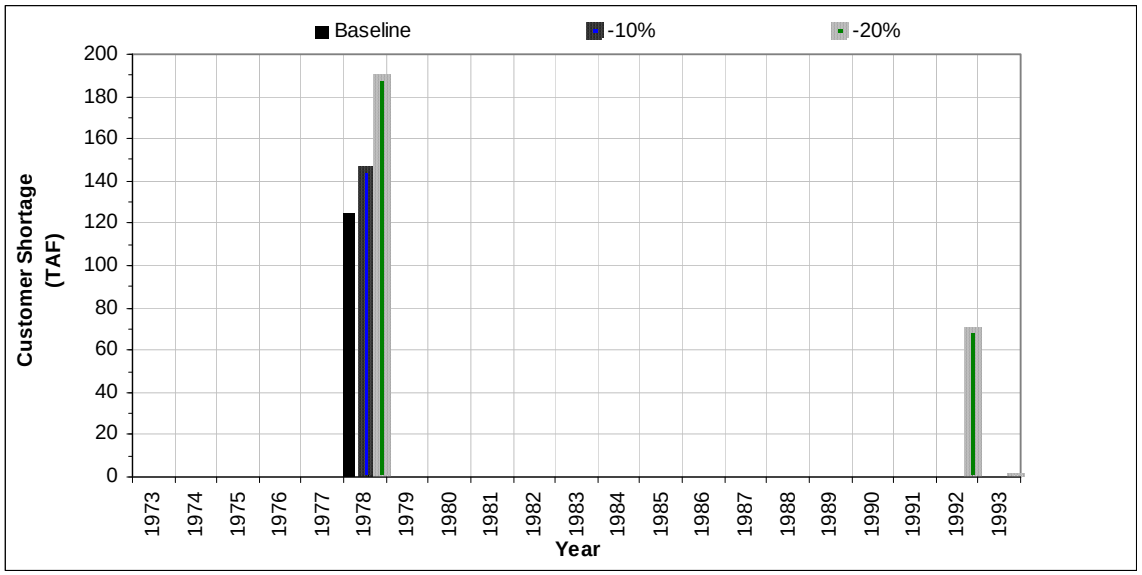


Figure 4-9: Impacts to Customer Shortages due to Decrease in Mokelumne River Runoff

Rationing

Decreases in annual precipitation tend to increase the magnitude and frequency of rationing. Rationing increased in at least 34% of the years analyzed by an average of 4% and 6% for the 10% and 20% scenarios, respectively. In addition, the frequency of rationing increased from 36% of years for the Baseline scenario (0% reduction in Mokelumne River runoff) to 44% and 52% for the 10% and 20% reduction scenarios.

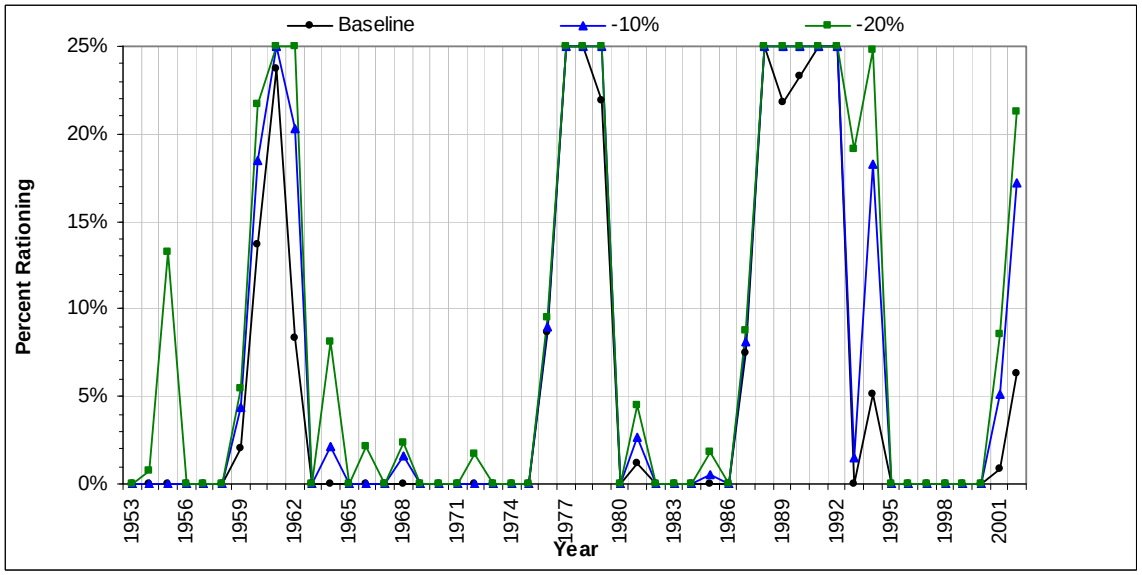


Figure 4-10: Impacts to Rationing due to Decrease in Mokelumne River Runoff

Flood Releases

The volume of flood control releases in winter and spring are significantly reduced when annual runoff is reduced. Annual flood volumes decreased, on average, by almost 50% for the 10% scenario and by almost 75% for the 20% scenario.

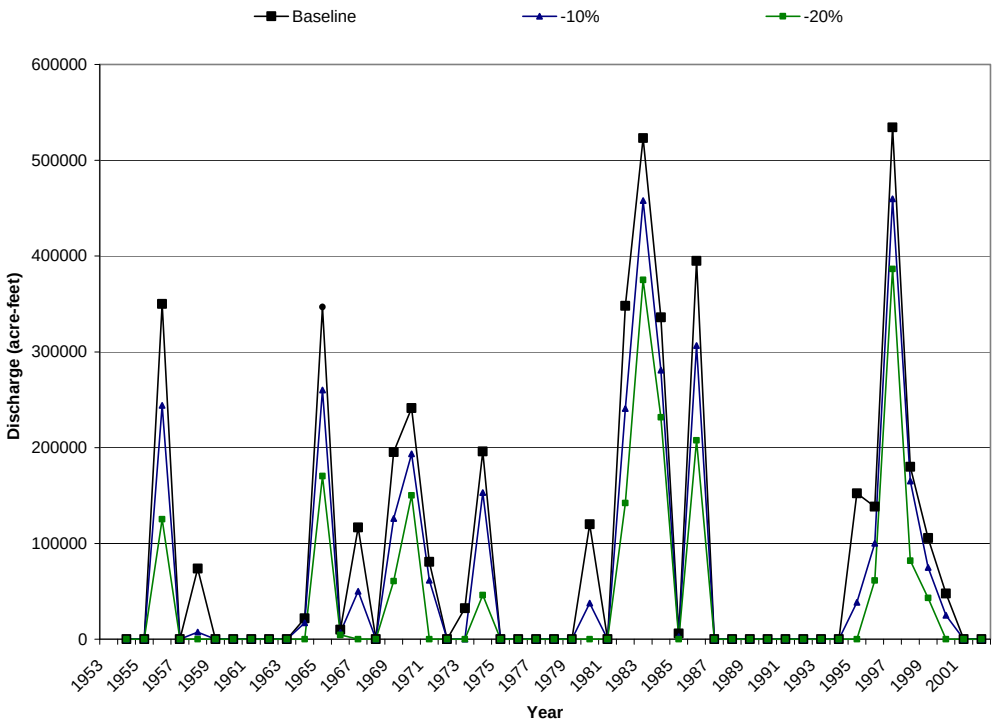


Figure 4-11: Impacts on Flood Releases between November and March due to Decrease in Mokelumne River Runoff

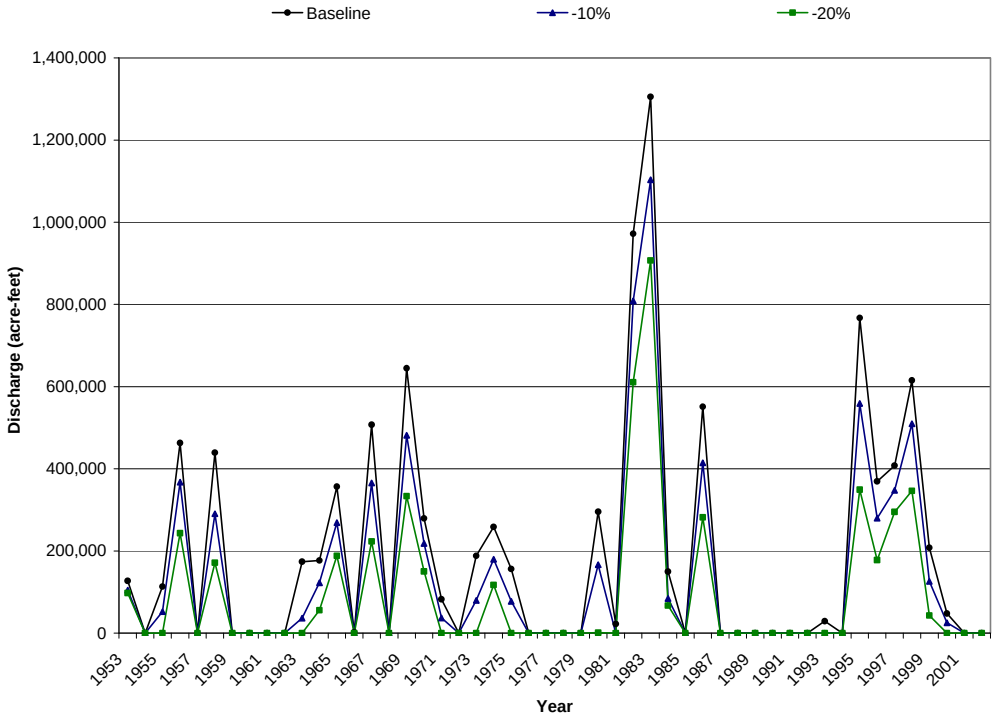


Figure 4-12: Impacts on Annual Flood Releases due to Decrease in Mokelumne River Runoff

4.2 Water Temperature Effects

WARMF simulations were run to evaluate the anticipated changes in water temperature flowing into Pardee Reservoir as a result of 2°C, 3°C and 4°C increases in ambient air temperature. A description of the modeling conducted and results from the simulations are provided in Appendix E of this memorandum. Additional information regarding the Upper Mokelumne River WARMF model can be found in the report entitled *Upper Mokelumne River Watershed Assessment and Planning Project*, prepared for the Upper Mokelumne River Watershed Authority (RMC, 2007). Simulated changes in water temperature with increasing ambient air temperature are shown in Figure 4-13 and summarized in Table 4-2.

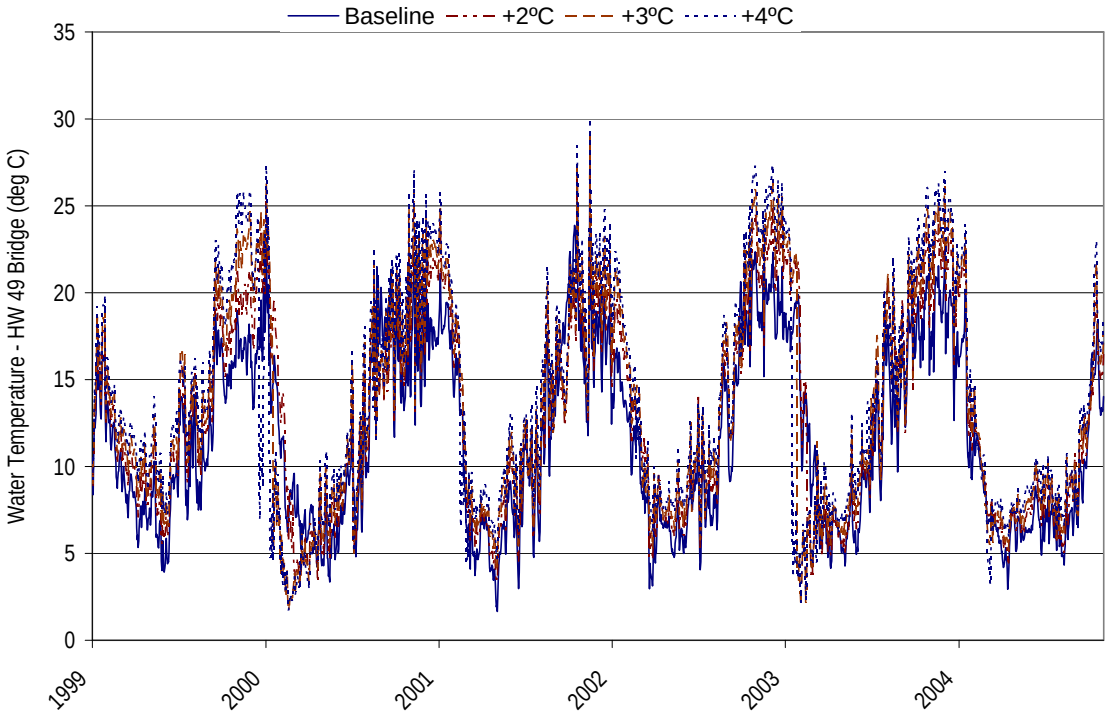


Figure 4-13: Change in Water Temperature with Increasing Air Temperature

As shown in Table 4-2, minimum, average, and maximum water temperatures would be expected to increase as a result of increasing ambient temperature. To understand the impact of an increase in ambient air temperature on water temperature under different hydrologic conditions, the water years 2000 through 2005 were classified as critically dry, dry, below normal, above normal, or wet years. Hydrologic year type classifications were established using forecasted values of unimpaired runoff into Pardee Reservoir presented in the DWR Bulletin 120 for May of each year. Years were classified as critically dry, dry, below normal, above normal, or wet based on the criteria set forth in Appendix A of the Federal Energy Regulatory Commission (FERC) 137 Mokelumne Relicensing Settlement Agreement dated July 27, 2000. The criteria for establishing hydrologic year type are summarized in Table 4-3.

Table 4-2: Change in Annual Water Temperature with Increase in Ambient Air Temperature

Scenario	Water Year:	Simulated Mokelumne River Water Temperature at Highway 49 by Water Year (° C)					
		2000	2001	2002	2003	2004	2005
Baseline	Min	3.9	3.3	1.7	3.0	4.1	2.9
	Ave	11.7	12.1	12.3	12.1	13.1	8.7
	Max	20.7	22.9	26.4	22.4	23.0	20.2
+2° C	Min	5.6	3.3	3.3	4.6	3.8	4.4
	Ave	13.6	12.9	13.3	13.8	14.4	9.8
	Max	23.5	25.3	28.2	24.8	25.1	22.6
+3° C	Min	6.6	1.7	4.0	5.3	2.0	5.2
	Ave	14.8	12.4	14.0	14.5	14.5	10.2
	Max	24.7	26.3	29.1	26.3	26.1	23.4
+4° C	Min	6.9	1.7	4.4	6.1	2.2	3.2
	Ave	15.3	12.7	14.6	15.2	14.5	10.7
	Max	25.9	27.3	30.0	27.4	27.0	23.9

Table 4-3: Change in Monthly Water Temperature with Increase in Ambient Air Temperature

Hydrologic Year Type	Forecasted Unimpaired Runoff to Pardee Reservoir
Wet	Greater than or equal to 958,700 AF
Above Normal	Less than 958,700 AF but greater than or equal to 724,400 AF
Below Normal	Less than 724,400 AF but greater than or equal to 518,100 AF
Dry	Less than 518,100 AF but greater than or equal to 376,100 AF
Critically Dry	Less than 376,100 AF

Based on this system, water years 2000 through 2005 can be classified as follows:

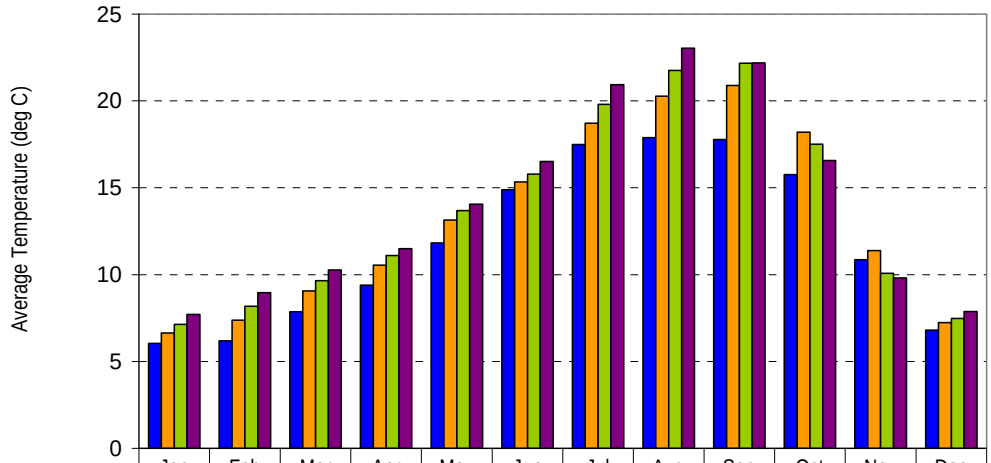
- Water Year 2000: Below normal
- Water Year 2001: Dry
- Water Year 2002: Below normal
- Water Year 2003: Below normal
- Water Year 2004: Dry
- Water Year 2005: Above normal

To understand the impact of increased temperatures in a dry year, water temperature changes in 2001 and 2004 under increased ambient air temperatures was simulated using WARMF. Under 2001 climate conditions, modeled ambient air temperature increases of 2°C, 3°C, and 4°C result in respective increases in average annual water temperature of 0.8°C (increasing from the baseline of 12.1°C to 12.9°C), 0.3°C (increasing from the baseline to 12.4°C) and 0.6°C (increasing from the baseline to 12.7°C). Under 2004 climate conditions, modeled ambient temperature increases of 2°C, 3°C, and 4°C would result in respective increases in average annual water temperature of 1.3°C (increasing from a baseline of 13.1°C to 14.4°C), 1.4°C (increasing from the baseline to 14.5°C) and 1.4°C (increasing from the baseline to 14.5°C).

Average water temperatures in the below normal years of 2000, 2002, and 2003 also increased with increasing ambient temperature. Under water year 2000 climate conditions, water temperatures increase from approximately 11.7°C in the baseline to 13.6°C (1.9°C increase), 14.8°C (3.0°C increase), and 15.3°C (3.5°C increase) for respective modeled increases in ambient temperatures of 2°C, 3°C, and 4°C. For water year 2002 climate conditions, modeled water temperatures increase from approximately 12.3°C in the baseline to 13.3°C (1°C increase), 14.0°C (1.7°C increase), and 14.6°C (2.3°C increase) with 2°C, 3°C, and 4°C increases in ambient temperature, respectively. Under water year 2003 climate conditions, water temperatures increase from approximately 12.1°C in the baseline to 13.8°C (1.7°C increase), 14.5°C (2.4°C increase), and 15.2°C (3.1°C increase) with 2°C, 3°C, and 4°C increases in ambient temperature, respectively.

Water year 2005 is classified as an above normal water year. Under water year 2005 climate conditions, streamflow temperatures increase from approximately 8.7°C in the baseline to 9.8°C (1.1°C increase), 10.2°C (1.5°C increase), and 10.7°C (2.0°C increase) with 2°C, 3°C, and 4°C increases in ambient temperature, respectively.

Figure 4-14 and Table 4-4 present simulated changes in monthly water temperature from 2000 through 2005 by month. As shown in this figure and table, water temperature is projected to increase while retaining seasonal temperature patterns.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Base Simulation	6.0	6.2	7.9	9.4	11.8	14.9	17.5	17.9	17.8	15.8	10.9	6.8
2deg Incr in Air T	6.6	7.4	9.1	10.6	13.1	15.3	18.7	20.3	20.9	18.2	11.4	7.2
3deg Incr in Air T	7.1	8.2	9.7	11.1	13.7	15.8	19.8	21.8	22.2	17.5	10.1	7.5
4deg Incr in Air T	7.7	9.0	10.3	11.5	14.1	16.5	20.9	23.0	22.2	16.6	9.8	7.9

Figure 4-14: Change in Monthly Water Temperature with Increasing Air Temperature (Water Years 2000-2005)

Table 4-4: Change in Monthly Water Temperature with Increase in Ambient Air Temperature

Month		Simulated Mokelumne River Water Temperature at Highway 49 (°C)			
		Baseline	2° C increase	3° C Increase	4° C Increase
Oct	Min	8.4	8.8	2.7	2.9
	Ave	15.8	18.2	17.5	16.6
	Max	22.9	25.3	26.3	27.3
Nov	Min	5.8	3.8	1.7	1.7
	Ave	10.9	11.4	10.1	9.8
	Max	16.5	18.1	18.9	19.5
Dec	Min	3.0	3.3	2.8	2.6
	Ave	6.8	7.2	7.5	7.9
	Max	11.2	11.6	12.2	12.8
Jan	Min	1.7	3.3	4.0	4.6
	Ave	6.0	6.6	7.1	7.7
	Max	8.7	10.5	11.3	12.1
Feb	Min	2.6	4.5	5.4	6.1
	Ave	6.2	7.4	8.2	9.0
	Max	10.3	12.1	13.0	14.0
Mar	Min	3.0	4.5	5.2	5.9
	Ave	7.9	9.1	9.7	10.3
	Max	13.2	15.3	16.1	16.8
Apr	Min	4.1	5.2	5.0	5.1
	Ave	9.4	10.6	11.1	11.5
	Max	17.8	19.6	19.3	20.2
May	Min	4.3	5.1	6.1	6.5
	Ave	11.8	13.1	13.7	14.1
	Max	21.5	21.2	21.8	22.6
Jun	Min	6.5	7.3	7.1	7.4
	Ave	14.9	15.3	15.8	16.5
	Max	21.3	21.3	22.2	23.3
Jul	Min	12.3	12.2	12.6	13.3
	Ave	17.5	18.7	19.8	20.9
	Max	24.9	26.5	27.5	28.5
Aug	Min	11.8	12.6	13.0	13.5
	Ave	17.9	20.3	21.8	23.0
	Max	26.4	28.2	29.1	30.0
Sep	Min	12.4	14.5	15.9	6.9
	Ave	17.8	20.9	22.2	22.2
	Max	23.0	25.1	26.3	27.4

In summary, increases in ambient air temperature are expected to cause increases in Mokelumne River water temperature[7].

- In a dry year such as 2001 or 2004, modeled increases in ambient air temperatures of 2°C, 3°C, and 4°C result in average annual water temperature increases ranging from 0.3°C to 1.5°C.
- In a below normal year similar to 2000, 2002, or 2003, modeled increases in ambient air temperatures of 2°C, 3°C, and 4°C result in average annual water temperature increases ranging from 1.0°C to 3.5°C.
- In an above normal year such as 2005, modeled increases in ambient air temperatures of 2°C, 3°C, and 4°C result in average annual water temperature increases ranging from 1.1°C to 2.5°C.

In general, the impact of air temperature increases is expected to depend on overall hydrologic year type; the drier the year, the greater the impacts on water temperature. This is primarily due to the reduction in overall water volume the system present in dry years as compared to wet years. While this trend is not strongly observed in the simulated data for the period from 2000 through 2005, a greater simulation period (e.g., 1990 through 2005) would likely reveal a stronger trend between hydrologic year type and influence of air temperature on water temperature. Similarly, an increase in air temperature would be expected to have a greater impact on water temperature in summer months as compared to winter months. This trend is illustrated in Figure 4-14 above. And shifts in the timing of river runoff, resulting from the increased air temperatures, will also have an impact on the relationship between air and water temperatures (though this potential impact was not examined as part of the scope of this study). Most importantly, the increased impact of elevated air temperature on water temperature during summer months and dry years could carry important ramifications for downstream aquatic species already vulnerable under reduced flow conditions.

5. Conclusions

In general, the results of the climate change sensitivity analysis identified that the District's water supply system is most vulnerable to reductions in precipitation resulting from climate change. Reductions in precipitation resulted in the greatest increases in rationing frequency and also showed the greatest impact on customer shortages. Shifts in spring-time runoff from the April-to-July period to winter months also created some, but less severe, impacts on the District's water supply system, but generally indicated that the District, and other upstream users, have sufficient storage on the Mokelumne River to capture the earlier runoff despite flood reserve requirements, thereby limiting impacts on customer supplies.

[7] Note: these conclusions are based on simulations using data from the years 2000 through 2005.

Impacts to storage are expected to be mildly to moderately susceptible to shifts in early springtime runoff and increased customer demands (depending on the year type), and very susceptible to decreases in annual runoff volumes.

In general, the modeling suggests that increasing customer demand by approximately 3.6% (or 10 MGD) will decrease system carryover storage in about 50% of years by an average of 3% to as much as 8% of total storage. Similarly, shifts in springtime runoff on the Mokelumne River could reduce total carryover storage in 50% of years by an average of 3% to a maximum of 10%. Finally, decreasing Mokelumne River runoff by 10% and 20% could result in average decreases in total system storage of 12% and 24%, respectively. Overall, increased storage in the District's supply system will increase carryover storage which, in turn, will increase reliability during drought periods (important if future climate change conditions create more and longer droughts).

Climate change impacts on rationing, as observed in the W-E model simulations, include:

- The frequency of rationing appears to be sensitive only to decreases in annual precipitation volume. In general, the frequency of rationing did not change with increased customer demand or shifts in springtime runoff, while there was a significant increase in rationing frequency due to decreases in Mokelumne River runoff.
- The magnitude of rationing appears to increase by up to 16 TAF in a single year with increased customer demands, but is most severe (increasing up to 60 TAF in a single year) under decreases in annual runoff volume.
- The amount of rationing decreases with shifts in runoff due to earlier re-filling of reservoirs

The climate change sensitivity analyses conducted with the W-E model also indicate that winter flood releases may increase by an average of 66% to 89% in most years due to earlier spring runoff and that spring releases may decrease by 40% to 80% in about 35% of years. Reductions in annual runoff volume could cause a 43% to 74% decrease in annual flood releases (not necessarily limited to the spring or winter time period). Furthermore, climate change impacts on customer shortages indicate that:

- Customer shortages do not appear to be significantly affected by shifts in Mokelumne River runoff;
- Customer shortages are somewhat sensitive to increased customer demands (resulting from temperature increases); and
- Customer shortages appear to be very sensitive to decreases in annual runoff.

Finally, the modeling results indicate that increases in water temperature can be expected with increases in air temperature; however, the severity of the impacts will depend on both the magnitude of air temperature increases and the hydrologic year type.

Overall, based on the W-E modeling results, additional storage combined with source diversity (i.e. different watersheds for water supplies) and a backlog of additional supplemental supply components will provide the District with the maximum amount of flexibility and the ability to adapt to unknown future conditions. This additional storage is needed to maintain water supply reliability in the face of increased customer demands resulting from atmospheric warming and an uncertain hydrologic future.

6. Limitations

The climate change analyses documented herein were based on the results of modeled simulations designed to provide input as to the possible range of impacts that changes in air temperatures and precipitation can have on EBMUD's water supply system and the Mokelumne River watershed. While input data entered to the W-E and WARMF models represented the best available information at the time the modeling was conducted, it is important to recognize that the scenarios examined via the models (e.g. increases in air temperatures with no change in precipitation), and the models themselves, represent simplified versions of a very complex hydrologic and water supply systems. Other meteorological effects could result from climate change; however with an understanding of the associated uncertainty, this sensitivity study demonstrates the impacts solely due to increases in ambient air temperature and separately, decreases in river runoff, to provide quantified ranges of potential impacts for future planning.

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Appendix A – Air Temperature Inputs into WARMF

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/1/1999	3.3	19.9	5.3	21.9	6.3	22.9	7.3	23.9
10/2/1999	3.2	18.7	5.2	20.7	6.2	21.7	7.2	22.7
10/3/1999	2.7	17.4	4.7	19.4	5.7	20.4	6.7	21.4
10/4/1999	3.1	18.6	5.1	20.6	6.1	21.6	7.1	22.6
10/5/1999	2.8	16.3	4.8	18.3	5.8	19.3	6.8	20.3
10/6/1999	1.5	13.4	3.5	15.4	4.5	16.4	5.5	17.4
10/7/1999	-0.5	5.5	1.5	7.5	2.5	8.5	3.5	9.5
10/8/1999	-1.1	13.5	0.9	15.5	1.9	16.5	2.9	17.5
10/9/1999	1.4	20.2	3.4	22.2	4.4	23.2	5.4	24.2
10/10/1999	1.4	19	3.4	21	4.4	22	5.4	23
10/11/1999	2.6	18.9	4.6	20.9	5.6	21.9	6.6	22.9
10/12/1999	4	17.9	6	19.9	7	20.9	8	21.9
10/13/1999	1.4	20.4	3.4	22.4	4.4	23.4	5.4	24.4
10/14/1999	1.3	19.7	3.3	21.7	4.3	22.7	5.3	23.7
10/15/1999	2.7	19.1	4.7	21.1	5.7	22.1	6.7	23.1
10/16/1999	1.1	13.8	3.1	15.8	4.1	16.8	5.1	17.8
10/17/1999	-2.5	9	-0.5	11	0.5	12	1.5	13
10/18/1999	-2.6	16.6	-0.6	18.6	0.4	19.6	1.4	20.6
10/19/1999	-0.8	17.4	1.2	19.4	2.2	20.4	3.2	21.4
10/20/1999	0.5	17.2	2.5	19.2	3.5	20.2	4.5	21.2
10/21/1999	0	20	2	22	3	23	4	24
10/22/1999	0.2	18.4	2.2	20.4	3.2	21.4	4.2	22.4
10/23/1999	-0.4	17.2	1.6	19.2	2.6	20.2	3.6	21.2
10/24/1999	1.3	15.2	3.3	17.2	4.3	18.2	5.3	19.2
10/25/1999	-0.7	16.1	1.3	18.1	2.3	19.1	3.3	20.1
10/26/1999	-0.3	15.9	1.7	17.9	2.7	18.9	3.7	19.9
10/27/1999	1.8	13.6	3.8	15.6	4.8	16.6	5.8	17.6
10/28/1999	3	12.2	5	14.2	6	15.2	7	16.2
10/29/1999	-2.8	5.9	-0.8	7.9	0.2	8.9	1.2	9.9
10/30/1999	-4.1	11.4	-2.1	13.4	-1.1	14.4	-0.1	15.4
10/31/1999	-0.9	15.6	1.1	17.6	2.1	18.6	3.1	19.6
11/1/1999	0.8	15.7	2.8	17.7	3.8	18.7	4.8	19.7
11/2/1999	-1.4	16.6	0.6	18.6	1.6	19.6	2.6	20.6
11/3/1999	-0.7	15.5	1.3	17.5	2.3	18.5	3.3	19.5
11/4/1999	-2	15.2	0	17.2	1	18.2	2	19.2
11/5/1999	-1.5	14.3	0.5	16.3	1.5	17.3	2.5	18.3
11/6/1999	-0.2	13.8	1.8	15.8	2.8	16.8	3.8	17.8
11/7/1999	3.3	14.1	5.3	16.1	6.3	17.1	7.3	18.1
11/8/1999	-2.2	9.7	-0.2	11.7	0.8	12.7	1.8	13.7
11/9/1999	-6.2	0.6	-4.2	2.6	-3.2	3.6	-2.2	4.6
11/10/1999	-6.5	3.1	-4.5	5.1	-3.5	6.1	-2.5	7.1
11/11/1999	-0.5	5.9	1.5	7.9	2.5	8.9	3.5	9.9
11/12/1999	-1.1	10.7	0.9	12.7	1.9	13.7	2.9	14.7
11/13/1999	-1.5	12.5	0.5	14.5	1.5	15.5	2.5	16.5
11/14/1999	-1.3	13.7	0.7	15.7	1.7	16.7	2.7	17.7
11/15/1999	-0.9	13.2	1.1	15.2	2.1	16.2	3.1	17.2
11/16/1999	-1.3	6.7	0.7	8.7	1.7	9.7	2.7	10.7
11/17/1999	-3.4	6.3	-1.4	8.3	-0.4	9.3	0.6	10.3

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/18/1999	-8.1	-1.1	-6.1	0.9	-5.1	1.9	-4.1	2.9
11/19/1999	-8.4	5.2	-6.4	7.2	-5.4	8.2	-4.4	9.2
11/20/1999	-2.3	2.4	-0.3	4.4	0.7	5.4	1.7	6.4
11/21/1999	-5.4	1.3	-3.4	3.3	-2.4	4.3	-1.4	5.3
11/22/1999	-10.3	-3	-8.3	-1	-7.3	0	-6.3	1
11/23/1999	-12.9	0.8	-10.9	2.8	-9.9	3.8	-8.9	4.8
11/24/1999	-9.7	-1.4	-7.7	0.6	-6.7	1.6	-5.7	2.6
11/25/1999	-10.1	4	-8.1	6	-7.1	7	-6.1	8
11/26/1999	-4.3	7.3	-2.3	9.3	-1.3	10.3	-0.3	11.3
11/27/1999	-5.4	9.3	-3.4	11.3	-2.4	12.3	-1.4	13.3
11/28/1999	-5	7.1	-3	9.1	-2	10.1	-1	11.1
11/29/1999	-1.9	8.7	0.1	10.7	1.1	11.7	2.1	12.7
11/30/1999	2.2	7.1	4.2	9.1	5.2	10.1	6.2	11.1
12/1/1999	-6.2	3.2	-4.2	5.2	-3.2	6.2	-2.2	7.2
12/2/1999	-8.2	1.3	-6.2	3.3	-5.2	4.3	-4.2	5.3
12/3/1999	-9.7	-0.6	-7.7	1.4	-6.7	2.4	-5.7	3.4
12/4/1999	-10.7	-3.1	-8.7	-1.1	-7.7	-0.1	-6.7	0.9
12/5/1999	-11.5	7.3	-9.5	9.3	-8.5	10.3	-7.5	11.3
12/6/1999	-4.9	4.2	-2.9	6.2	-1.9	7.2	-0.9	8.2
12/7/1999	-7.6	4.2	-5.6	6.2	-4.6	7.2	-3.6	8.2
12/8/1999	-11.5	-4	-9.5	-2	-8.5	-1	-7.5	0
12/9/1999	-12.5	3.3	-10.5	5.3	-9.5	6.3	-8.5	7.3
12/10/1999	-9.3	-2.1	-7.3	-0.1	-6.3	0.9	-5.3	1.9
12/11/1999	-9.6	-5.7	-7.6	-3.7	-6.6	-2.7	-5.6	-1.7
12/12/1999	-9.6	2.2	-7.6	4.2	-6.6	5.2	-5.6	6.2
12/13/1999	-7.5	5.5	-5.5	7.5	-4.5	8.5	-3.5	9.5
12/14/1999	-11.5	-1.7	-9.5	0.3	-8.5	1.3	-7.5	2.3
12/15/1999	-13.2	0.6	-11.2	2.6	-10.2	3.6	-9.2	4.6
12/16/1999	-9.2	7.9	-7.2	9.9	-6.2	10.9	-5.2	11.9
12/17/1999	-6.6	19.2	-4.6	21.2	-3.6	22.2	-2.6	23.2
12/18/1999	-5.5	11.1	-3.5	13.1	-2.5	14.1	-1.5	15.1
12/19/1999	-4	6.9	-2	8.9	-1	9.9	0	10.9
12/20/1999	-3.3	4.5	-1.3	6.5	-0.3	7.5	0.7	8.5
12/21/1999	-4.5	4.5	-2.5	6.5	-1.5	7.5	-0.5	8.5
12/22/1999	-7.2	3.8	-5.2	5.8	-4.2	6.8	-3.2	7.8
12/23/1999	-8.5	5.2	-6.5	7.2	-5.5	8.2	-4.5	9.2
12/24/1999	-6.7	6.5	-4.7	8.5	-3.7	9.5	-2.7	10.5
12/25/1999	-9.9	5	-7.9	7	-6.9	8	-5.9	9
12/26/1999	-9.2	3.1	-7.2	5.1	-6.2	6.1	-5.2	7.1
12/27/1999	-10.3	5.1	-8.3	7.1	-7.3	8.1	-6.3	9.1
12/28/1999	-10.2	1.7	-8.2	3.7	-7.2	4.7	-6.2	5.7
12/29/1999	-10.8	7	-8.8	9	-7.8	10	-6.8	11
12/30/1999	-11.5	6	-9.5	8	-8.5	9	-7.5	10
12/31/1999	-10.5	6.9	-8.5	8.9	-7.5	9.9	-6.5	10.9
1/1/2000	-9	6	-7	8	-6	9	-5	10
1/2/2000	-13.4	-0.6	-11.4	1.4	-10.4	2.4	-9.4	3.4
1/3/2000	-19	-4.6	-17	-2.6	-16	-1.6	-15	-0.6
1/4/2000	-9.9	2.7	-7.9	4.7	-6.9	5.7	-5.9	6.7

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/5/2000	-12.9	0	-10.9	2	-9.9	3	-8.9	4
1/6/2000	-12.9	-4	-10.9	-2	-9.9	-1	-8.9	0
1/7/2000	-11.4	6.5	-9.4	8.5	-8.4	9.5	-7.4	10.5
1/8/2000	-9.4	3.6	-7.4	5.6	-6.4	6.6	-5.4	7.6
1/9/2000	-10.6	4.9	-8.6	6.9	-7.6	7.9	-6.6	8.9
1/10/2000	-5.6	-0.4	-3.6	1.6	-2.6	2.6	-1.6	3.6
1/11/2000	-4.3	0.4	-2.3	2.4	-1.3	3.4	-0.3	4.4
1/12/2000	-3.9	-1.7	-1.9	0.3	-0.9	1.3	0.1	2.3
1/13/2000	-5	-1.9	-3	0.1	-2	1.1	-1	2.1
1/14/2000	-4.2	2.1	-2.2	4.1	-1.2	5.1	-0.2	6.1
1/15/2000	-2.2	3.2	-0.2	5.2	0.8	6.2	1.8	7.2
1/16/2000	-2.1	0.1	-0.1	2.1	0.9	3.1	1.9	4.1
1/17/2000	-5.3	-1.3	-3.3	0.7	-2.3	1.7	-1.3	2.7
1/18/2000	-1.6	0.1	0.4	2.1	1.4	3.1	2.4	4.1
1/19/2000	-1.3	0.9	0.7	2.9	1.7	3.9	2.7	4.9
1/20/2000	-0.8	1.6	1.2	3.6	2.2	4.6	3.2	5.6
1/21/2000	-2.9	0.9	-0.9	2.9	0.1	3.9	1.1	4.9
1/22/2000	-7.2	-1.7	-5.2	0.3	-4.2	1.3	-3.2	2.3
1/23/2000	-8.3	-0.2	-6.3	1.8	-5.3	2.8	-4.3	3.8
1/24/2000	-4.2	-0.9	-2.2	1.1	-1.2	2.1	-0.2	3.1
1/25/2000	-1.9	-0.3	0.1	1.7	1.1	2.7	2.1	3.7
1/26/2000	-6.9	0.3	-4.9	2.3	-3.9	3.3	-2.9	4.3
1/27/2000	-14.2	2	-12.2	4	-11.2	5	-10.2	6
1/28/2000	-14.1	1.7	-12.1	3.7	-11.1	4.7	-10.1	5.7
1/29/2000	-16.1	3.2	-14.1	5.2	-13.1	6.2	-12.1	7.2
1/30/2000	-14.3	2.6	-12.3	4.6	-11.3	5.6	-10.3	6.6
1/31/2000	-6.9	-2.6	-4.9	-0.6	-3.9	0.4	-2.9	1.4
2/1/2000	-7.9	-0.4	-5.9	1.6	-4.9	2.6	-3.9	3.6
2/2/2000	-5.5	6.2	-3.5	8.2	-2.5	9.2	-1.5	10.2
2/3/2000	-6.3	17.6	-4.3	19.6	-3.3	20.6	-2.3	21.6
2/4/2000	-7.5	5.6	-5.5	7.6	-4.5	8.6	-3.5	9.6
2/5/2000	-3.6	1	-1.6	3	-0.6	4	0.4	5
2/6/2000	-4.4	2.8	-2.4	4.8	-1.4	5.8	-0.4	6.8
2/7/2000	-10	8.5	-8	10.5	-7	11.5	-6	12.5
2/8/2000	-6.6	8.6	-4.6	10.6	-3.6	11.6	-2.6	12.6
2/9/2000	-3.6	8.3	-1.6	10.3	-0.6	11.3	0.4	12.3
2/10/2000	-1.6	3.6	0.4	5.6	1.4	6.6	2.4	7.6
2/11/2000	-6.6	-0.2	-4.6	1.8	-3.6	2.8	-2.6	3.8
2/12/2000	-7.2	-2.2	-5.2	-0.2	-4.2	0.8	-3.2	1.8
2/13/2000	-6.6	-3.3	-4.6	-1.3	-3.6	-0.3	-2.6	0.7
2/14/2000	-4.9	-0.2	-2.9	1.8	-1.9	2.8	-0.9	3.8
2/15/2000	-7.9	-0.1	-5.9	1.9	-4.9	2.9	-3.9	3.9
2/16/2000	-8.4	2.6	-6.4	4.6	-5.4	5.6	-4.4	6.6
2/17/2000	-9.3	-2.6	-7.3	-0.6	-6.3	0.4	-5.3	1.4
2/18/2000	-8.9	2.7	-6.9	4.7	-5.9	5.7	-4.9	6.7
2/19/2000	-7.8	1.7	-5.8	3.7	-4.8	4.7	-3.8	5.7
2/20/2000	-12.7	5.6	-10.7	7.6	-9.7	8.6	-8.7	9.6
2/21/2000	-3.6	2.7	-1.6	4.7	-0.6	5.7	0.4	6.7

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/22/2000	-8.5	2.4	-6.5	4.4	-5.5	5.4	-4.5	6.4
2/23/2000	-6.4	-2.1	-4.4	-0.1	-3.4	0.9	-2.4	1.9
2/24/2000	-11.9	-4	-9.9	-2	-8.9	-1	-7.9	0
2/25/2000	-21.9	-3.9	-19.9	-1.9	-18.9	-0.9	-17.9	0.1
2/26/2000	-9.3	1.5	-7.3	3.5	-6.3	4.5	-5.3	5.5
2/27/2000	-4.9	2.1	-2.9	4.1	-1.9	5.1	-0.9	6.1
2/28/2000	-7.1	-1.4	-5.1	0.6	-4.1	1.6	-3.1	2.6
2/29/2000	-7.8	2.6	-5.8	4.6	-4.8	5.6	-3.8	6.6
3/1/2000	-13.5	-1.5	-11.5	0.5	-10.5	1.5	-9.5	2.5
3/2/2000	-15	2.7	-13	4.7	-12	5.7	-11	6.7
3/3/2000	-9.2	0.9	-7.2	2.9	-6.2	3.9	-5.2	4.9
3/4/2000	-6.2	1.2	-4.2	3.2	-3.2	4.2	-2.2	5.2
3/5/2000	-10	7.3	-8	9.3	-7	10.3	-6	11.3
3/6/2000	-6.8	-0.4	-4.8	1.6	-3.8	2.6	-2.8	3.6
3/7/2000	-8.1	-2.5	-6.1	-0.5	-5.1	0.5	-4.1	1.5
3/8/2000	-13.6	-0.8	-11.6	1.2	-10.6	2.2	-9.6	3.2
3/9/2000	-8.6	-3.4	-6.6	-1.4	-5.6	-0.4	-4.6	0.6
3/10/2000	-11.2	-1.8	-9.2	0.2	-8.2	1.2	-7.2	2.2
3/11/2000	-14.6	5.8	-12.6	7.8	-11.6	8.8	-10.6	9.8
3/12/2000	-7.2	5.9	-5.2	7.9	-4.2	8.9	-3.2	9.9
3/13/2000	-12.2	11.8	-10.2	13.8	-9.2	14.8	-8.2	15.8
3/14/2000	-9.6	13.1	-7.6	15.1	-6.6	16.1	-5.6	17.1
3/15/2000	-4.6	12.8	-2.6	14.8	-1.6	15.8	-0.6	16.8
3/16/2000	-9.3	9.5	-7.3	11.5	-6.3	12.5	-5.3	13.5
3/17/2000	-5.6	6.2	-3.6	8.2	-2.6	9.2	-1.6	10.2
3/18/2000	-6.9	10.3	-4.9	12.3	-3.9	13.3	-2.9	14.3
3/19/2000	-7.3	13	-5.3	15	-4.3	16	-3.3	17
3/20/2000	-7.8	7.2	-5.8	9.2	-4.8	10.2	-3.8	11.2
3/21/2000	-10.6	-2.1	-8.6	-0.1	-7.6	0.9	-6.6	1.9
3/22/2000	-9.8	3.2	-7.8	5.2	-6.8	6.2	-5.8	7.2
3/23/2000	-8.9	9.5	-6.9	11.5	-5.9	12.5	-4.9	13.5
3/24/2000	-3.5	7.3	-1.5	9.3	-0.5	10.3	0.5	11.3
3/25/2000	-7.1	8.8	-5.1	10.8	-4.1	11.8	-3.1	12.8
3/26/2000	-3.8	9.9	-1.8	11.9	-0.8	12.9	0.2	13.9
3/27/2000	-5.9	13.6	-3.9	15.6	-2.9	16.6	-1.9	17.6
3/28/2000	-3.6	8.6	-1.6	10.6	-0.6	11.6	0.4	12.6
3/29/2000	-9.5	7.7	-7.5	9.7	-6.5	10.7	-5.5	11.7
3/30/2000	-9.1	9.7	-7.1	11.7	-6.1	12.7	-5.1	13.7
3/31/2000	-7.3	5.7	-5.3	7.7	-4.3	8.7	-3.3	9.7
4/1/2000	-6.3	5.2	-4.3	7.2	-3.3	8.2	-2.3	9.2
4/2/2000	-2.9	10.1	-0.9	12.1	0.1	13.1	1.1	14.1
4/3/2000	-2.7	14.6	-0.7	16.6	0.3	17.6	1.3	18.6
4/4/2000	-1.5	19.1	0.5	21.1	1.5	22.1	2.5	23.1
4/5/2000	-1.9	12.1	0.1	14.1	1.1	15.1	2.1	16.1
4/6/2000	-4.6	13.2	-2.6	15.2	-1.6	16.2	-0.6	17.2
4/7/2000	-4.2	12.2	-2.2	14.2	-1.2	15.2	-0.2	16.2
4/8/2000	-4.7	15.3	-2.7	17.3	-1.7	18.3	-0.7	19.3
4/9/2000	-2.4	10.3	-0.4	12.3	0.6	13.3	1.6	14.3

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/10/2000	-6	7.8	-4	9.8	-3	10.8	-2	11.8
4/11/2000	-3.2	10.1	-1.2	12.1	-0.2	13.1	0.8	14.1
4/12/2000	-3.6	13.7	-1.6	15.7	-0.6	16.7	0.4	17.7
4/13/2000	-0.7	12.7	1.3	14.7	2.3	15.7	3.3	16.7
4/14/2000	-3	1.7	-1	3.7	0	4.7	1	5.7
4/15/2000	-4.6	2.8	-2.6	4.8	-1.6	5.8	-0.6	6.8
4/16/2000	-5.1	3.3	-3.1	5.3	-2.1	6.3	-1.1	7.3
4/17/2000	-2.5	3.5	-0.5	5.5	0.5	6.5	1.5	7.5
4/18/2000	-6	1.2	-4	3.2	-3	4.2	-2	5.2
4/19/2000	-6.6	-1.1	-4.6	0.9	-3.6	1.9	-2.6	2.9
4/20/2000	-7.4	6.1	-5.4	8.1	-4.4	9.1	-3.4	10.1
4/21/2000	-2.6	11.3	-0.6	13.3	0.4	14.3	1.4	15.3
4/22/2000	-2.8	14.7	-0.8	16.7	0.2	17.7	1.2	18.7
4/23/2000	-3.5	7.4	-1.5	9.4	-0.5	10.4	0.5	11.4
4/24/2000	-6.2	8.2	-4.2	10.2	-3.2	11.2	-2.2	12.2
4/25/2000	-9.5	14.3	-7.5	16.3	-6.5	17.3	-5.5	18.3
4/26/2000	-4.1	11.3	-2.1	13.3	-1.1	14.3	-0.1	15.3
4/27/2000	-2.8	18.2	-0.8	20.2	0.2	21.2	1.2	22.2
4/28/2000	-0.5	13.6	1.5	15.6	2.5	16.6	3.5	17.6
4/29/2000	-3.9	3.8	-1.9	5.8	-0.9	6.8	0.1	7.8
4/30/2000	-6.3	12	-4.3	14	-3.3	15	-2.3	16
5/1/2000	-4.2	16.9	-2.2	18.9	-1.2	19.9	-0.2	20.9
5/2/2000	-2.1	15.7	-0.1	17.7	0.9	18.7	1.9	19.7
5/3/2000	-2.6	14.2	-0.6	16.2	0.4	17.2	1.4	18.2
5/4/2000	-2.7	13.7	-0.7	15.7	0.3	16.7	1.3	17.7
5/5/2000	1.7	11.7	3.7	13.7	4.7	14.7	5.7	15.7
5/6/2000	0	8.2	2	10.2	3	11.2	4	12.2
5/7/2000	-1.3	7.8	0.7	9.8	1.7	10.8	2.7	11.8
5/8/2000	-0.6	3.9	1.4	5.9	2.4	6.9	3.4	7.9
5/9/2000	-1.7	8.2	0.3	10.2	1.3	11.2	2.3	12.2
5/10/2000	-0.5	7.1	1.5	9.1	2.5	10.1	3.5	11.1
5/11/2000	-12.5	1.4	-10.5	3.4	-9.5	4.4	-8.5	5.4
5/12/2000	-14.4	5.8	-12.4	7.8	-11.4	8.8	-10.4	9.8
5/13/2000	-9.4	9.1	-7.4	11.1	-6.4	12.1	-5.4	13.1
5/14/2000	-2.6	9.1	-0.6	11.1	0.4	12.1	1.4	13.1
5/15/2000	-2.8	8.5	-0.8	10.5	0.2	11.5	1.2	12.5
5/16/2000	-2.7	5.4	-0.7	7.4	0.3	8.4	1.3	9.4
5/17/2000	-4.1	0.8	-2.1	2.8	-1.1	3.8	-0.1	4.8
5/18/2000	-3.7	11.7	-1.7	13.7	-0.7	14.7	0.3	15.7
5/19/2000	-1.8	13.5	0.2	15.5	1.2	16.5	2.2	17.5
5/20/2000	-0.7	17.7	1.3	19.7	2.3	20.7	3.3	21.7
5/21/2000	-0.4	19.2	1.6	21.2	2.6	22.2	3.6	23.2
5/22/2000	0.9	20.9	2.9	22.9	3.9	23.9	4.9	24.9
5/23/2000	1.1	19.7	3.1	21.7	4.1	22.7	5.1	23.7
5/24/2000	1.7	17.1	3.7	19.1	4.7	20.1	5.7	21.1
5/25/2000	3.5	16.7	5.5	18.7	6.5	19.7	7.5	20.7
5/26/2000	0.7	14.5	2.7	16.5	3.7	17.5	4.7	18.5
5/27/2000	-1.1	16.6	0.9	18.6	1.9	19.6	2.9	20.6

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/28/2000	-0.8	17.6	1.2	19.6	2.2	20.6	3.2	21.6
5/29/2000	0.1	17.2	2.1	19.2	3.1	20.2	4.1	21.2
5/30/2000	3.3	14.9	5.3	16.9	6.3	17.9	7.3	18.9
5/31/2000	-0.7	13.6	1.3	15.6	2.3	16.6	3.3	17.6
6/1/2000	-2.8	14	-0.8	16	0.2	17	1.2	18
6/2/2000	-1.8	19.2	0.2	21.2	1.2	22.2	2.2	23.2
6/3/2000	0.4	17.9	2.4	19.9	3.4	20.9	4.4	21.9
6/4/2000	0.1	20.9	2.1	22.9	3.1	23.9	4.1	24.9
6/5/2000	2.3	18.2	4.3	20.2	5.3	21.2	6.3	22.2
6/6/2000	2.8	14.8	4.8	16.8	5.8	17.8	6.8	18.8
6/7/2000	0.2	18.5	2.2	20.5	3.2	21.5	4.2	22.5
6/8/2000	3.6	14.2	5.6	16.2	6.6	17.2	7.6	18.2
6/9/2000	-1.4	4.2	0.6	6.2	1.6	7.2	2.6	8.2
6/10/2000	-1.7	10.1	0.3	12.1	1.3	13.1	2.3	14.1
6/11/2000	-1.7	12.9	0.3	14.9	1.3	15.9	2.3	16.9
6/12/2000	-0.2	15.4	1.8	17.4	2.8	18.4	3.8	19.4
6/13/2000	3.7	18.8	5.7	20.8	6.7	21.8	7.7	22.8
6/14/2000	5.4	21.3	7.4	23.3	8.4	24.3	9.4	25.3
6/15/2000	9.1	25.6	11.1	27.6	12.1	28.6	13.1	29.6
6/16/2000	6.4	26	8.4	28	9.4	29	10.4	30
6/17/2000	7.4	21.8	9.4	23.8	10.4	24.8	11.4	25.8
6/18/2000	6.5	22.9	8.5	24.9	9.5	25.9	10.5	26.9
6/19/2000	6	18.9	8	20.9	9	21.9	10	22.9
6/20/2000	4.8	20.6	6.8	22.6	7.8	23.6	8.8	24.6
6/21/2000	7.1	22.4	9.1	24.4	10.1	25.4	11.1	26.4
6/22/2000	6.4	23	8.4	25	9.4	26	10.4	27
6/23/2000	5.4	22.1	7.4	24.1	8.4	25.1	9.4	26.1
6/24/2000	6.4	22.2	8.4	24.2	9.4	25.2	10.4	26.2
6/25/2000	7.6	21.2	9.6	23.2	10.6	24.2	11.6	25.2
6/26/2000	6.6	22.2	8.6	24.2	9.6	25.2	10.6	26.2
6/27/2000	5.7	18.6	7.7	20.6	8.7	21.6	9.7	22.6
6/28/2000	7.5	22.3	9.5	24.3	10.5	25.3	11.5	26.3
6/29/2000	9.2	20.8	11.2	22.8	12.2	23.8	13.2	24.8
6/30/2000	8	22.8	10	24.8	11	25.8	12	26.8
7/1/2000	7.4	20.4	9.4	22.4	10.4	23.4	11.4	24.4
7/2/2000	6.8	18.4	8.8	20.4	9.8	21.4	10.8	22.4
7/3/2000	5.2	16.2	7.2	18.2	8.2	19.2	9.2	20.2
7/4/2000	2.3	14.8	4.3	16.8	5.3	17.8	6.3	18.8
7/5/2000	0	15.1	2	17.1	3	18.1	4	19.1
7/6/2000	1.7	11.7	3.7	13.7	4.7	14.7	5.7	15.7
7/7/2000	1.9	15.7	3.9	17.7	4.9	18.7	5.9	19.7
7/8/2000	2.4	15.8	4.4	17.8	5.4	18.8	6.4	19.8
7/9/2000	3.4	16.7	5.4	18.7	6.4	19.7	7.4	20.7
7/10/2000	4.2	19.1	6.2	21.1	7.2	22.1	8.2	23.1
7/11/2000	4.6	19.7	6.6	21.7	7.6	22.7	8.6	23.7
7/12/2000	6.9	22.2	8.9	24.2	9.9	25.2	10.9	26.2
7/13/2000	6.2	22.4	8.2	24.4	9.2	25.4	10.2	26.4
7/14/2000	6.4	22.1	8.4	24.1	9.4	25.1	10.4	26.1

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/15/2000	7.7	22.7	9.7	24.7	10.7	25.7	11.7	26.7
7/16/2000	6.4	20.9	8.4	22.9	9.4	23.9	10.4	24.9
7/17/2000	5.9	18.8	7.9	20.8	8.9	21.8	9.9	22.8
7/18/2000	5.2	19.7	7.2	21.7	8.2	22.7	9.2	23.7
7/19/2000	3.8	20.4	5.8	22.4	6.8	23.4	7.8	24.4
7/20/2000	3.6	21.9	5.6	23.9	6.6	24.9	7.6	25.9
7/21/2000	5.5	24	7.5	26	8.5	27	9.5	28
7/22/2000	6.3	25.2	8.3	27.2	9.3	28.2	10.3	29.2
7/23/2000	8.2	23.3	10.2	25.3	11.2	26.3	12.2	27.3
7/24/2000	7.3	24.8	9.3	26.8	10.3	27.8	11.3	28.8
7/25/2000	6.4	23.7	8.4	25.7	9.4	26.7	10.4	27.7
7/26/2000	6.8	23.7	8.8	25.7	9.8	26.7	10.8	27.7
7/27/2000	8.1	22.4	10.1	24.4	11.1	25.4	12.1	26.4
7/28/2000	5.5	23	7.5	25	8.5	26	9.5	27
7/29/2000	6.4	25	8.4	27	9.4	28	10.4	29
7/30/2000	7.9	25.7	9.9	27.7	10.9	28.7	11.9	29.7
7/31/2000	11	26.7	13	28.7	14	29.7	15	30.7
8/1/2000	11.2	27.7	13.2	29.7	14.2	30.7	15.2	31.7
8/2/2000	11.4	26.7	13.4	28.7	14.4	29.7	15.4	30.7
8/3/2000	10.3	25.6	12.3	27.6	13.3	28.6	14.3	29.6
8/4/2000	9.7	23.3	11.7	25.3	12.7	26.3	13.7	27.3
8/5/2000	8.8	20	10.8	22	11.8	23	12.8	24
8/6/2000	7.8	22.7	9.8	24.7	10.8	25.7	11.8	26.7
8/7/2000	7.9	22.1	9.9	24.1	10.9	25.1	11.9	26.1
8/8/2000	7.3	20.8	9.3	22.8	10.3	23.8	11.3	24.8
8/9/2000	6.3	21.3	8.3	23.3	9.3	24.3	10.3	25.3
8/10/2000	6.4	20.6	8.4	22.6	9.4	23.6	10.4	24.6
8/11/2000	5.3	18.6	7.3	20.6	8.3	21.6	9.3	22.6
8/12/2000	3.3	23.2	5.3	25.2	6.3	26.2	7.3	27.2
8/13/2000	5	23	7	25	8	26	9	27
8/14/2000	4.9	22	6.9	24	7.9	25	8.9	26
8/15/2000	4.7	23.1	6.7	25.1	7.7	26.1	8.7	27.1
8/16/2000	5.5	23.6	7.5	25.6	8.5	26.6	9.5	27.6
8/17/2000	7.2	25.1	9.2	27.1	10.2	28.1	11.2	29.1
8/18/2000	6.8	23	8.8	25	9.8	26	10.8	27
8/19/2000	8.1	20	10.1	22	11.1	23	12.1	24
8/20/2000	5.8	19.5	7.8	21.5	8.8	22.5	9.8	23.5
8/21/2000	3.6	19.7	5.6	21.7	6.6	22.7	7.6	23.7
8/22/2000	4.5	21.3	6.5	23.3	7.5	24.3	8.5	25.3
8/23/2000	5.5	21.8	7.5	23.8	8.5	24.8	9.5	25.8
8/24/2000	6.7	21.2	8.7	23.2	9.7	24.2	10.7	25.2
8/25/2000	5.1	22.1	7.1	24.1	8.1	25.1	9.1	26.1
8/26/2000	7.7	22.2	9.7	24.2	10.7	25.2	11.7	26.2
8/27/2000	8.3	21.3	10.3	23.3	11.3	24.3	12.3	25.3
8/28/2000	7.3	22.1	9.3	24.1	10.3	25.1	11.3	26.1
8/29/2000	7.7	23.7	9.7	25.7	10.7	26.7	11.7	27.7
8/30/2000	7.6	15	9.6	17	10.6	18	11.6	19
8/31/2000	5.6	10.1	7.6	12.1	8.6	13.1	9.6	14.1

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/1/2000	4	13.4	6	15.4	7	16.4	8	17.4
9/2/2000	0.1	4.8	2.1	6.8	3.1	7.8	4.1	8.8
9/3/2000	0.2	4.5	2.2	6.5	3.2	7.5	4.2	8.5
9/4/2000	1.9	9.1	3.9	11.1	4.9	12.1	5.9	13.1
9/5/2000	0.3	9.5	2.3	11.5	3.3	12.5	4.3	13.5
9/6/2000	-2.8	10.1	-0.8	12.1	0.2	13.1	1.2	14.1
9/7/2000	0	12.4	2	14.4	3	15.4	4	16.4
9/8/2000	0.1	18.4	2.1	20.4	3.1	21.4	4.1	22.4
9/9/2000	3.3	17.1	5.3	19.1	6.3	20.1	7.3	21.1
9/10/2000	3.5	18.6	5.5	20.6	6.5	21.6	7.5	22.6
9/11/2000	2.9	18.8	4.9	20.8	5.9	21.8	6.9	22.8
9/12/2000	3.3	22.6	5.3	24.6	6.3	25.6	7.3	26.6
9/13/2000	4.3	21.8	6.3	23.8	7.3	24.8	8.3	25.8
9/14/2000	8.5	23	10.5	25	11.5	26	12.5	27
9/15/2000	10.3	20.9	12.3	22.9	13.3	23.9	14.3	24.9
9/16/2000	6.3	19.8	8.3	21.8	9.3	22.8	10.3	23.8
9/17/2000	5.8	19.5	7.8	21.5	8.8	22.5	9.8	23.5
9/18/2000	4.5	23.4	6.5	25.4	7.5	26.4	8.5	27.4
9/19/2000	7.7	22.5	9.7	24.5	10.7	25.5	11.7	26.5
9/20/2000	7.8	24	9.8	26	10.8	27	11.8	28
9/21/2000	9.4	24.1	11.4	26.1	12.4	27.1	13.4	28.1
9/22/2000	7.4	17.5	9.4	19.5	10.4	20.5	11.4	21.5
9/23/2000	0.5	9.4	2.5	11.4	3.5	12.4	4.5	13.4
9/24/2000	-1.3	13.7	0.7	15.7	1.7	16.7	2.7	17.7
9/25/2000	-0.9	17.4	1.1	19.4	2.1	20.4	3.1	21.4
9/26/2000	1.4	17.1	3.4	19.1	4.4	20.1	5.4	21.1
9/27/2000	1.3	18	3.3	20	4.3	21	5.3	22
9/28/2000	2.2	17.1	4.2	19.1	5.2	20.1	6.2	21.1
9/29/2000	3.8	17.3	5.8	19.3	6.8	20.3	7.8	21.3
9/30/2000	4.1	17.3	6.1	19.3	7.1	20.3	8.1	21.3
10/1/2000	5.2	21	7.2	23	8.2	24	9.2	25
10/2/2000	4	20.1	6	22.1	7	23.1	8	24.1
10/3/2000	5.5	17.3	7.5	19.3	8.5	20.3	9.5	21.3
10/4/2000	2.6	17.4	4.6	19.4	5.6	20.4	6.6	21.4
10/5/2000	1.9	18.1	3.9	20.1	4.9	21.1	5.9	22.1
10/6/2000	4.1	18.9	6.1	20.9	7.1	21.9	8.1	22.9
10/7/2000	3.1	18.1	5.1	20.1	6.1	21.1	7.1	22.1
10/8/2000	3.6	18.2	5.6	20.2	6.6	21.2	7.6	22.2
10/9/2000	2.6	18.6	4.6	20.6	5.6	21.6	6.6	22.6
10/10/2000	-2.4	11.6	-0.4	13.6	0.6	14.6	1.6	15.6
10/11/2000	-3.3	0.5	-1.3	2.5	-0.3	3.5	0.7	4.5
10/12/2000	-4.4	-0.2	-2.4	1.8	-1.4	2.8	-0.4	3.8
10/13/2000	-5.5	2.3	-3.5	4.3	-2.5	5.3	-1.5	6.3
10/14/2000	-3.5	8.6	-1.5	10.6	-0.5	11.6	0.5	12.6
10/15/2000	0.2	10.1	2.2	12.1	3.2	13.1	4.2	14.1
10/16/2000	-1.5	11.6	0.5	13.6	1.5	14.6	2.5	15.6
10/17/2000	-1.6	13.8	0.4	15.8	1.4	16.8	2.4	17.8
10/18/2000	-0.7	14.6	1.3	16.6	2.3	17.6	3.3	18.6

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/19/2000	-0.2	13.2	1.8	15.2	2.8	16.2	3.8	17.2
10/20/2000	-1.1	16.2	0.9	18.2	1.9	19.2	2.9	20.2
10/21/2000	0.8	11.8	2.8	13.8	3.8	14.8	4.8	15.8
10/22/2000	-4.6	1.9	-2.6	3.9	-1.6	4.9	-0.6	5.9
10/23/2000	-7.3	0.4	-5.3	2.4	-4.3	3.4	-3.3	4.4
10/24/2000	-4.7	8.2	-2.7	10.2	-1.7	11.2	-0.7	12.2
10/25/2000	-2.7	10.2	-0.7	12.2	0.3	13.2	1.3	14.2
10/26/2000	-1.6	4.1	0.4	6.1	1.4	7.1	2.4	8.1
10/27/2000	-4.1	0.5	-2.1	2.5	-1.1	3.5	-0.1	4.5
10/28/2000	-2.8	2.9	-0.8	4.9	0.2	5.9	1.2	6.9
10/29/2000	-1.9	-0.8	0.1	1.2	1.1	2.2	2.1	3.2
10/30/2000	-6.6	-2.1	-4.6	-0.1	-3.6	0.9	-2.6	1.9
10/31/2000	-6.4	-0.2	-4.4	1.8	-3.4	2.8	-2.4	3.8
11/1/2000	-7.2	0	-5.2	2	-4.2	3	-3.2	4
11/2/2000	-8.2	5.3	-6.2	7.3	-5.2	8.3	-4.2	9.3
11/3/2000	-5.6	5.1	-3.6	7.1	-2.6	8.1	-1.6	9.1
11/4/2000	-4.6	3.4	-2.6	5.4	-1.6	6.4	-0.6	7.4
11/5/2000	-6.8	10.9	-4.8	12.9	-3.8	13.9	-2.8	14.9
11/6/2000	-4.9	8.9	-2.9	10.9	-1.9	11.9	-0.9	12.9
11/7/2000	-5.3	0.2	-3.3	2.2	-2.3	3.2	-1.3	4.2
11/8/2000	-7.4	3.2	-5.4	5.2	-4.4	6.2	-3.4	7.2
11/9/2000	-3.7	2.6	-1.7	4.6	-0.7	5.6	0.3	6.6
11/10/2000	-8.8	-3.5	-6.8	-1.5	-5.8	-0.5	-4.8	0.5
11/11/2000	-11.6	-6.2	-9.6	-4.2	-8.6	-3.2	-7.6	-2.2
11/12/2000	-16.5	-5.3	-14.5	-3.3	-13.5	-2.3	-12.5	-1.3
11/13/2000	-16.1	-0.1	-14.1	1.9	-13.1	2.9	-12.1	3.9
11/14/2000	-15	-2.8	-13	-0.8	-12	0.2	-11	1.2
11/15/2000	-14.7	-5.5	-12.7	-3.5	-11.7	-2.5	-10.7	-1.5
11/16/2000	-15.5	-3.6	-13.5	-1.6	-12.5	-0.6	-11.5	0.4
11/17/2000	-12	-5.4	-10	-3.4	-9	-2.4	-8	-1.4
11/18/2000	-13.8	0.3	-11.8	2.3	-10.8	3.3	-9.8	4.3
11/19/2000	-9.7	9.5	-7.7	11.5	-6.7	12.5	-5.7	13.5
11/20/2000	-7.5	9.3	-5.5	11.3	-4.5	12.3	-3.5	13.3
11/21/2000	-9.2	9.4	-7.2	11.4	-6.2	12.4	-5.2	13.4
11/22/2000	-5.4	5.8	-3.4	7.8	-2.4	8.8	-1.4	9.8
11/23/2000	-10.2	1.8	-8.2	3.8	-7.2	4.8	-6.2	5.8
11/24/2000	-9.6	7.8	-7.6	9.8	-6.6	10.8	-5.6	11.8
11/25/2000	-6	6	-4	8	-3	9	-2	10
11/26/2000	-7.2	8.6	-5.2	10.6	-4.2	11.6	-3.2	12.6
11/27/2000	-5.6	6.3	-3.6	8.3	-2.6	9.3	-1.6	10.3
11/28/2000	-4.1	4.5	-2.1	6.5	-1.1	7.5	-0.1	8.5
11/29/2000	-5	9.7	-3	11.7	-2	12.7	-1	13.7
11/30/2000	-4.6	2.2	-2.6	4.2	-1.6	5.2	-0.6	6.2
12/1/2000	-8.7	1.8	-6.7	3.8	-5.7	4.8	-4.7	5.8
12/2/2000	-7.3	5.9	-5.3	7.9	-4.3	8.9	-3.3	9.9
12/3/2000	-8.4	9.1	-6.4	11.1	-5.4	12.1	-4.4	13.1
12/4/2000	-7.2	9.6	-5.2	11.6	-4.2	12.6	-3.2	13.6
12/5/2000	-5.9	7.8	-3.9	9.8	-2.9	10.8	-1.9	11.8

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/6/2000	-7.3	10.9	-5.3	12.9	-4.3	13.9	-3.3	14.9
12/7/2000	-7.2	8	-5.2	10	-4.2	11	-3.2	12
12/8/2000	-2.1	4.6	-0.1	6.6	0.9	7.6	1.9	8.6
12/9/2000	-6.3	3.7	-4.3	5.7	-3.3	6.7	-2.3	7.7
12/10/2000	-6.9	1.7	-4.9	3.7	-3.9	4.7	-2.9	5.7
12/11/2000	-11.7	0.6	-9.7	2.6	-8.7	3.6	-7.7	4.6
12/12/2000	-12.5	1.8	-10.5	3.8	-9.5	4.8	-8.5	5.8
12/13/2000	-12.2	-3.6	-10.2	-1.6	-9.2	-0.6	-8.2	0.4
12/14/2000	-9.1	-4.1	-7.1	-2.1	-6.1	-1.1	-5.1	-0.1
12/15/2000	-4.8	-2.1	-2.8	-0.1	-1.8	0.9	-0.8	1.9
12/16/2000	-5.8	0.8	-3.8	2.8	-2.8	3.8	-1.8	4.8
12/17/2000	-9.1	4.8	-7.1	6.8	-6.1	7.8	-5.1	8.8
12/18/2000	-11.4	2.8	-9.4	4.8	-8.4	5.8	-7.4	6.8
12/19/2000	-11.9	7.2	-9.9	9.2	-8.9	10.2	-7.9	11.2
12/20/2000	-6.1	7.2	-4.1	9.2	-3.1	10.2	-2.1	11.2
12/21/2000	-6.4	7.2	-4.4	9.2	-3.4	10.2	-2.4	11.2
12/22/2000	-2.6	6.3	-0.6	8.3	0.4	9.3	1.4	10.3
12/23/2000	-7.8	3.9	-5.8	5.9	-4.8	6.9	-3.8	7.9
12/24/2000	-9.2	5.4	-7.2	7.4	-6.2	8.4	-5.2	9.4
12/25/2000	-10.9	2.5	-8.9	4.5	-7.9	5.5	-6.9	6.5
12/26/2000	-9.9	0	-7.9	2	-6.9	3	-5.9	4
12/27/2000	-8.6	5	-6.6	7	-5.6	8	-4.6	9
12/28/2000	-8.6	6.6	-6.6	8.6	-5.6	9.6	-4.6	10.6
12/29/2000	-8.1	10.3	-6.1	12.3	-5.1	13.3	-4.1	14.3
12/30/2000	-7.4	10	-5.4	12	-4.4	13	-3.4	14
12/31/2000	-9.3	8.9	-7.3	10.9	-6.3	11.9	-5.3	12.9
1/1/2001	-9.9	8	-7.9	10	-6.9	11	-5.9	12
1/2/2001	-7.9	7.4	-5.9	9.4	-4.9	10.4	-3.9	11.4
1/3/2001	-10.6	6.6	-8.6	8.6	-7.6	9.6	-6.6	10.6
1/4/2001	-7.6	13.6	-5.6	15.6	-4.6	16.6	-3.6	17.6
1/5/2001	-7.3	12.2	-5.3	14.2	-4.3	15.2	-3.3	16.2
1/6/2001	-6.8	11	-4.8	13	-3.8	14	-2.8	15
1/7/2001	-8	8.6	-6	10.6	-5	11.6	-4	12.6
1/8/2001	-6.8	7.4	-4.8	9.4	-3.8	10.4	-2.8	11.4
1/9/2001	-4.8	-0.1	-2.8	1.9	-1.8	2.9	-0.8	3.9
1/10/2001	-11.6	-0.9	-9.6	1.1	-8.6	2.1	-7.6	3.1
1/11/2001	-9.8	-1.7	-7.8	0.3	-6.8	1.3	-5.8	2.3
1/12/2001	-8.6	-5.1	-6.6	-3.1	-5.6	-2.1	-4.6	-1.1
1/13/2001	-16.8	-3.9	-14.8	-1.9	-13.8	-0.9	-12.8	0.1
1/14/2001	-16.8	-3.7	-14.8	-1.7	-13.8	-0.7	-12.8	0.3
1/15/2001	-14.9	-4.1	-12.9	-2.1	-11.9	-1.1	-10.9	-0.1
1/16/2001	-12.7	-9	-10.7	-7	-9.7	-6	-8.7	-5
1/17/2001	-15	-10.2	-13	-8.2	-12	-7.2	-11	-6.2
1/18/2001	-19.5	-3.8	-17.5	-1.8	-16.5	-0.8	-15.5	0.2
1/19/2001	-9.4	4.9	-7.4	6.9	-6.4	7.9	-5.4	8.9
1/20/2001	-12.6	2.4	-10.6	4.4	-9.6	5.4	-8.6	6.4
1/21/2001	-15.2	3.7	-13.2	5.7	-12.2	6.7	-11.2	7.7
1/22/2001	-4.2	6.4	-2.2	8.4	-1.2	9.4	-0.2	10.4

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/23/2001	-9.5	3.5	-7.5	5.5	-6.5	6.5	-5.5	7.5
1/24/2001	-9.8	2.9	-7.8	4.9	-6.8	5.9	-5.8	6.9
1/25/2001	-11.3	-4.8	-9.3	-2.8	-8.3	-1.8	-7.3	-0.8
1/26/2001	-11.8	-6.9	-9.8	-4.9	-8.8	-3.9	-7.8	-2.9
1/27/2001	-9.8	-4.5	-7.8	-2.5	-6.8	-1.5	-5.8	-0.5
1/28/2001	-10.3	-6.4	-8.3	-4.4	-7.3	-3.4	-6.3	-2.4
1/29/2001	-16.7	4.1	-14.7	6.1	-13.7	7.1	-12.7	8.1
1/30/2001	-13.6	-3.6	-11.6	-1.6	-10.6	-0.6	-9.6	0.4
1/31/2001	-15.3	-1.6	-13.3	0.4	-12.3	1.4	-11.3	2.4
2/1/2001	-18.1	-2.3	-16.1	-0.3	-15.1	0.7	-14.1	1.7
2/2/2001	-14.3	6.2	-12.3	8.2	-11.3	9.2	-10.3	10.2
2/3/2001	-7.7	5.1	-5.7	7.1	-4.7	8.1	-3.7	9.1
2/4/2001	-4	9.5	-2	11.5	-1	12.5	0	13.5
2/5/2001	-4.2	12.4	-2.2	14.4	-1.2	15.4	-0.2	16.4
2/6/2001	-7.4	9.2	-5.4	11.2	-4.4	12.2	-3.4	13.2
2/7/2001	-11.3	-0.6	-9.3	1.4	-8.3	2.4	-7.3	3.4
2/8/2001	-14.9	-10.7	-12.9	-8.7	-11.9	-7.7	-10.9	-6.7
2/9/2001	-16.9	-1.8	-14.9	0.2	-13.9	1.2	-12.9	2.2
2/10/2001	-10.8	-7.3	-8.8	-5.3	-7.8	-4.3	-6.8	-3.3
2/11/2001	-10.9	-7.3	-8.9	-5.3	-7.9	-4.3	-6.9	-3.3
2/12/2001	-12.4	-7.4	-10.4	-5.4	-9.4	-4.4	-8.4	-3.4
2/13/2001	-23.3	-6.9	-21.3	-4.9	-20.3	-3.9	-19.3	-2.9
2/14/2001	-10.8	-4.7	-8.8	-2.7	-7.8	-1.7	-6.8	-0.7
2/15/2001	-16.4	0.9	-14.4	2.9	-13.4	3.9	-12.4	4.9
2/16/2001	-18	1.7	-16	3.7	-15	4.7	-14	5.7
2/17/2001	-12.3	2.2	-10.3	4.2	-9.3	5.2	-8.3	6.2
2/18/2001	-11.8	1	-9.8	3	-8.8	4	-7.8	5
2/19/2001	-6	-0.5	-4	1.5	-3	2.5	-2	3.5
2/20/2001	-7.4	-2.7	-5.4	-0.7	-4.4	0.3	-3.4	1.3
2/21/2001	-6.5	-2.3	-4.5	-0.3	-3.5	0.7	-2.5	1.7
2/22/2001	-5.8	-0.5	-3.8	1.5	-2.8	2.5	-1.8	3.5
2/23/2001	-12.5	-4.7	-10.5	-2.7	-9.5	-1.7	-8.5	-0.7
2/24/2001	-14.9	-1.4	-12.9	0.6	-11.9	1.6	-10.9	2.6
2/25/2001	-9	-4	-7	-2	-6	-1	-5	0
2/26/2001	-7.3	0.5	-5.3	2.5	-4.3	3.5	-3.3	4.5
2/27/2001	-6.4	-3.8	-4.4	-1.8	-3.4	-0.8	-2.4	0.2
2/28/2001	-11.3	0.9	-9.3	2.9	-8.3	3.9	-7.3	4.9
3/1/2001	-16.4	-4.5	-14.4	-2.5	-13.4	-1.5	-12.4	-0.5
3/2/2001	-20.1	4.5	-18.1	6.5	-17.1	7.5	-16.1	8.5
3/3/2001	-15.6	-0.4	-13.6	1.6	-12.6	2.6	-11.6	3.6
3/4/2001	-20.2	1.2	-18.2	3.2	-17.2	4.2	-16.2	5.2
3/5/2001	-4.6	-0.9	-2.6	1.1	-1.6	2.1	-0.6	3.1
3/6/2001	-3.6	0.3	-1.6	2.3	-0.6	3.3	0.4	4.3
3/7/2001	-2.8	4.7	-0.8	6.7	0.2	7.7	1.2	8.7
3/8/2001	-3.5	8.2	-1.5	10.2	-0.5	11.2	0.5	12.2
3/9/2001	-7.6	5.6	-5.6	7.6	-4.6	8.6	-3.6	9.6
3/10/2001	-7.5	1.9	-5.5	3.9	-4.5	4.9	-3.5	5.9
3/11/2001	-7.6	-0.2	-5.6	1.8	-4.6	2.8	-3.6	3.8

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/12/2001	-11.9	4.6	-9.9	6.6	-8.9	7.6	-7.9	8.6
3/13/2001	-7.3	7.2	-5.3	9.2	-4.3	10.2	-3.3	11.2
3/14/2001	-6.6	12.3	-4.6	14.3	-3.6	15.3	-2.6	16.3
3/15/2001	-9.6	10.4	-7.6	12.4	-6.6	13.4	-5.6	14.4
3/16/2001	-9.6	6.2	-7.6	8.2	-6.6	9.2	-5.6	10.2
3/17/2001	-5.4	8.4	-3.4	10.4	-2.4	11.4	-1.4	12.4
3/18/2001	-3.8	10.3	-1.8	12.3	-0.8	13.3	0.2	14.3
3/19/2001	-4.6	13.2	-2.6	15.2	-1.6	16.2	-0.6	17.2
3/20/2001	-3.8	14.8	-1.8	16.8	-0.8	17.8	0.2	18.8
3/21/2001	-2	11.6	0	13.6	1	14.6	2	15.6
3/22/2001	-4.1	11.7	-2.1	13.7	-1.1	14.7	-0.1	15.7
3/23/2001	-3.6	11	-1.6	13	-0.6	14	0.4	15
3/24/2001	-4.6	12.1	-2.6	14.1	-1.6	15.1	-0.6	16.1
3/25/2001	-3.3	10.2	-1.3	12.2	-0.3	13.2	0.7	14.2
3/26/2001	-3	5.6	-1	7.6	0	8.6	1	9.6
3/27/2001	-7.4	12.6	-5.4	14.6	-4.4	15.6	-3.4	16.6
3/28/2001	-6.5	13.3	-4.5	15.3	-3.5	16.3	-2.5	17.3
3/29/2001	0.1	13	2.1	15	3.1	16	4.1	17
3/30/2001	-3.1	8.4	-1.1	10.4	-0.1	11.4	0.9	12.4
3/31/2001	-5.5	14.4	-3.5	16.4	-2.5	17.4	-1.5	18.4
4/1/2001	-3.7	14.1	-1.7	16.1	-0.7	17.1	0.3	18.1
4/2/2001	-2.3	9.4	-0.3	11.4	0.7	12.4	1.7	13.4
4/3/2001	-6.7	2.6	-4.7	4.6	-3.7	5.6	-2.7	6.6
4/4/2001	-11	-2.4	-9	-0.4	-8	0.6	-7	1.6
4/5/2001	-9.6	0	-7.6	2	-6.6	3	-5.6	4
4/6/2001	-8.9	5.8	-6.9	7.8	-5.9	8.8	-4.9	9.8
4/7/2001	-6.4	-3.5	-4.4	-1.5	-3.4	-0.5	-2.4	0.5
4/8/2001	-12.4	-3.8	-10.4	-1.8	-9.4	-0.8	-8.4	0.2
4/9/2001	-16.1	-4	-14.1	-2	-13.1	-1	-12.1	0
4/10/2001	-16.6	-4	-14.6	-2	-13.6	-1	-12.6	0
4/11/2001	-15.7	4.9	-13.7	6.9	-12.7	7.9	-11.7	8.9
4/12/2001	-7.7	-2.4	-5.7	-0.4	-4.7	0.6	-3.7	1.6
4/13/2001	-16.4	4.3	-14.4	6.3	-13.4	7.3	-12.4	8.3
4/14/2001	-9	4.2	-7	6.2	-6	7.2	-5	8.2
4/15/2001	-13.5	7.2	-11.5	9.2	-10.5	10.2	-9.5	11.2
4/16/2001	-10.4	11.6	-8.4	13.6	-7.4	14.6	-6.4	15.6
4/17/2001	-1.7	12.2	0.3	14.2	1.3	15.2	2.3	16.2
4/18/2001	-2.3	12.1	-0.3	14.1	0.7	15.1	1.7	16.1
4/19/2001	-5.6	9.5	-3.6	11.5	-2.6	12.5	-1.6	13.5
4/20/2001	-8	-0.5	-6	1.5	-5	2.5	-4	3.5
4/21/2001	-8	-3.3	-6	-1.3	-5	-0.3	-4	0.7
4/22/2001	-8.9	2	-6.9	4	-5.9	5	-4.9	6
4/23/2001	-11.2	9.5	-9.2	11.5	-8.2	12.5	-7.2	13.5
4/24/2001	-5.8	14.6	-3.8	16.6	-2.8	17.6	-1.8	18.6
4/25/2001	-2.8	16.3	-0.8	18.3	0.2	19.3	1.2	20.3
4/26/2001	-1.6	17.3	0.4	19.3	1.4	20.3	2.4	21.3
4/27/2001	-1.9	15.4	0.1	17.4	1.1	18.4	2.1	19.4
4/28/2001	-3.1	13.5	-1.1	15.5	-0.1	16.5	0.9	17.5

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/29/2001	-4	7.8	-2	9.8	-1	10.8	0	11.8
4/30/2001	-5.7	15.4	-3.7	17.4	-2.7	18.4	-1.7	19.4
5/1/2001	-2	17.3	0	19.3	1	20.3	2	21.3
5/2/2001	-2.7	16.3	-0.7	18.3	0.3	19.3	1.3	20.3
5/3/2001	-6	2.8	-4	4.8	-3	5.8	-2	6.8
5/4/2001	-6.4	6.4	-4.4	8.4	-3.4	9.4	-2.4	10.4
5/5/2001	-4.3	14.2	-2.3	16.2	-1.3	17.2	-0.3	18.2
5/6/2001	-2.6	15.6	-0.6	17.6	0.4	18.6	1.4	19.6
5/7/2001	-2.8	17.4	-0.8	19.4	0.2	20.4	1.2	21.4
5/8/2001	-0.6	18.9	1.4	20.9	2.4	21.9	3.4	22.9
5/9/2001	0.8	19.8	2.8	21.8	3.8	22.8	4.8	23.8
5/10/2001	-0.9	18.5	1.1	20.5	2.1	21.5	3.1	22.5
5/11/2001	-1.9	19	0.1	21	1.1	22	2.1	23
5/12/2001	0.5	19.7	2.5	21.7	3.5	22.7	4.5	23.7
5/13/2001	1.6	14.6	3.6	16.6	4.6	17.6	5.6	18.6
5/14/2001	0.5	13.9	2.5	15.9	3.5	16.9	4.5	17.9
5/15/2001	0.3	13.6	2.3	15.6	3.3	16.6	4.3	17.6
5/16/2001	2.8	7.7	4.8	9.7	5.8	10.7	6.8	11.7
5/17/2001	0.1	15.6	2.1	17.6	3.1	18.6	4.1	19.6
5/18/2001	-1.1	16.5	0.9	18.5	1.9	19.5	2.9	20.5
5/19/2001	-0.9	16.9	1.1	18.9	2.1	19.9	3.1	20.9
5/20/2001	1.9	18.3	3.9	20.3	4.9	21.3	5.9	22.3
5/21/2001	0.5	19.7	2.5	21.7	3.5	22.7	4.5	23.7
5/22/2001	3.6	18.2	5.6	20.2	6.6	21.2	7.6	22.2
5/23/2001	2.6	21.2	4.6	23.2	5.6	24.2	6.6	25.2
5/24/2001	3.6	20.8	5.6	22.8	6.6	23.8	7.6	24.8
5/25/2001	2.7	20.5	4.7	22.5	5.7	23.5	6.7	24.5
5/26/2001	3.2	20.1	5.2	22.1	6.2	23.1	7.2	24.1
5/27/2001	3.8	17.8	5.8	19.8	6.8	20.8	7.8	21.8
5/28/2001	2.3	15	4.3	17	5.3	18	6.3	19
5/29/2001	0.6	14.9	2.6	16.9	3.6	17.9	4.6	18.9
5/30/2001	2.1	20.5	4.1	22.5	5.1	23.5	6.1	24.5
5/31/2001	5.5	20.7	7.5	22.7	8.5	23.7	9.5	24.7
6/1/2001	7.1	24.6	9.1	26.6	10.1	27.6	11.1	28.6
6/2/2001	6.7	19.2	8.7	21.2	9.7	22.2	10.7	23.2
6/3/2001	3.5	13.7	5.5	15.7	6.5	16.7	7.5	17.7
6/4/2001	1.2	13.1	3.2	15.1	4.2	16.1	5.2	17.1
6/5/2001	-2.5	14.9	-0.5	16.9	0.5	17.9	1.5	18.9
6/6/2001	2.8	13.8	4.8	15.8	5.8	16.8	6.8	17.8
6/7/2001	2.3	19.9	4.3	21.9	5.3	22.9	6.3	23.9
6/8/2001	2.8	21.3	4.8	23.3	5.8	24.3	6.8	25.3
6/9/2001	3.7	18.9	5.7	20.9	6.7	21.9	7.7	22.9
6/10/2001	4.7	20.1	6.7	22.1	7.7	23.1	8.7	24.1
6/11/2001	5	18	7	20	8	21	9	22
6/12/2001	2	17.1	4	19.1	5	20.1	6	21.1
6/13/2001	2	14.2	4	16.2	5	17.2	6	18.2
6/14/2001	-0.9	12.9	1.1	14.9	2.1	15.9	3.1	16.9
6/15/2001	0	18.9	2	20.9	3	21.9	4	22.9

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/16/2001	3.3	20.5	5.3	22.5	6.3	23.5	7.3	24.5
6/17/2001	3.9	24	5.9	26	6.9	27	7.9	28
6/18/2001	5.5	20.3	7.5	22.3	8.5	23.3	9.5	24.3
6/19/2001	3.5	22.1	5.5	24.1	6.5	25.1	7.5	26.1
6/20/2001	3.8	22.9	5.8	24.9	6.8	25.9	7.8	26.9
6/21/2001	7	25.4	9	27.4	10	28.4	11	29.4
6/22/2001	8.1	24.7	10.1	26.7	11.1	27.7	12.1	28.7
6/23/2001	7.5	23.9	9.5	25.9	10.5	26.9	11.5	27.9
6/24/2001	7.6	21.2	9.6	23.2	10.6	24.2	11.6	25.2
6/25/2001	6.5	17.6	8.5	19.6	9.5	20.6	10.5	21.6
6/26/2001	4.2	17.8	6.2	19.8	7.2	20.8	8.2	21.8
6/27/2001	4.3	15.1	6.3	17.1	7.3	18.1	8.3	19.1
6/28/2001	5.8	8.8	7.8	10.8	8.8	11.8	9.8	12.8
6/29/2001	5.8	19.5	7.8	21.5	8.8	22.5	9.8	23.5
6/30/2001	3.9	22.4	5.9	24.4	6.9	25.4	7.9	26.4
7/1/2001	6.6	23.9	8.6	25.9	9.6	26.9	10.6	27.9
7/2/2001	7.7	25.1	9.7	27.1	10.7	28.1	11.7	29.1
7/3/2001	9.3	27.3	11.3	29.3	12.3	30.3	13.3	31.3
7/4/2001	11.2	26.7	13.2	28.7	14.2	29.7	15.2	30.7
7/5/2001	11.1	21.4	13.1	23.4	14.1	24.4	15.1	25.4
7/6/2001	9.5	21.7	11.5	23.7	12.5	24.7	13.5	25.7
7/7/2001	9.9	17.1	11.9	19.1	12.9	20.1	13.9	21.1
7/8/2001	7.9	17.7	9.9	19.7	10.9	20.7	11.9	21.7
7/9/2001	6.4	22.6	8.4	24.6	9.4	25.6	10.4	26.6
7/10/2001	7	18.5	9	20.5	10	21.5	11	22.5
7/11/2001	6.2	20.9	8.2	22.9	9.2	23.9	10.2	24.9
7/12/2001	5.2	18.5	7.2	20.5	8.2	21.5	9.2	22.5
7/13/2001	2.6	21.3	4.6	23.3	5.6	24.3	6.6	25.3
7/14/2001	5.7	22.1	7.7	24.1	8.7	25.1	9.7	26.1
7/15/2001	5	20.6	7	22.6	8	23.6	9	24.6
7/16/2001	3.8	18.5	5.8	20.5	6.8	21.5	7.8	22.5
7/17/2001	6.2	16.7	8.2	18.7	9.2	19.7	10.2	20.7
7/18/2001	3.3	16.8	5.3	18.8	6.3	19.8	7.3	20.8
7/19/2001	3.4	18.3	5.4	20.3	6.4	21.3	7.4	22.3
7/20/2001	4	18.1	6	20.1	7	21.1	8	22.1
7/21/2001	5.1	17.6	7.1	19.6	8.1	20.6	9.1	21.6
7/22/2001	5.3	18.4	7.3	20.4	8.3	21.4	9.3	22.4
7/23/2001	3.4	19.9	5.4	21.9	6.4	22.9	7.4	23.9
7/24/2001	5.8	22.5	7.8	24.5	8.8	25.5	9.8	26.5
7/25/2001	8.5	24.6	10.5	26.6	11.5	27.6	12.5	28.6
7/26/2001	9.4	26.7	11.4	28.7	12.4	29.7	13.4	30.7
7/27/2001	8.6	25.2	10.6	27.2	11.6	28.2	12.6	29.2
7/28/2001	7.7	23.7	9.7	25.7	10.7	26.7	11.7	27.7
7/29/2001	11.5	24	13.5	26	14.5	27	15.5	28
7/30/2001	10.3	22.8	12.3	24.8	13.3	25.8	14.3	26.8
7/31/2001	5.2	17.3	7.2	19.3	8.2	20.3	9.2	21.3
8/1/2001	4.8	21.9	6.8	23.9	7.8	24.9	8.8	25.9
8/2/2001	6	23.2	8	25.2	9	26.2	10	27.2

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/3/2001	8.1	23.5	10.1	25.5	11.1	26.5	12.1	27.5
8/4/2001	9.3	21.1	11.3	23.1	12.3	24.1	13.3	25.1
8/5/2001	7.1	19.1	9.1	21.1	10.1	22.1	11.1	23.1
8/6/2001	6.7	24	8.7	26	9.7	27	10.7	28
8/7/2001	7.8	27	9.8	29	10.8	30	11.8	31
8/8/2001	10.4	24.1	12.4	26.1	13.4	27.1	14.4	28.1
8/9/2001	11.6	26.8	13.6	28.8	14.6	29.8	15.6	30.8
8/10/2001	10.2	26	12.2	28	13.2	29	14.2	30
8/11/2001	9	24.2	11	26.2	12	27.2	13	28.2
8/12/2001	6.5	25.7	8.5	27.7	9.5	28.7	10.5	29.7
8/13/2001	10.6	24.8	12.6	26.8	13.6	27.8	14.6	28.8
8/14/2001	8.9	25.1	10.9	27.1	11.9	28.1	12.9	29.1
8/15/2001	8.5	25.6	10.5	27.6	11.5	28.6	12.5	29.6
8/16/2001	7.4	25.2	9.4	27.2	10.4	28.2	11.4	29.2
8/17/2001	8.5	27.1	10.5	29.1	11.5	30.1	12.5	31.1
8/18/2001	10.3	26	12.3	28	13.3	29	14.3	30
8/19/2001	13.4	26.5	15.4	28.5	16.4	29.5	17.4	30.5
8/20/2001	10.7	24.8	12.7	26.8	13.7	27.8	14.7	28.8
8/21/2001	8.9	21.2	10.9	23.2	11.9	24.2	12.9	25.2
8/22/2001	5.8	18.9	7.8	20.9	8.8	21.9	9.8	22.9
8/23/2001	3.7	18.4	5.7	20.4	6.7	21.4	7.7	22.4
8/24/2001	2.9	19.5	4.9	21.5	5.9	22.5	6.9	23.5
8/25/2001	5.4	23	7.4	25	8.4	26	9.4	27
8/26/2001	8.9	26.9	10.9	28.9	11.9	29.9	12.9	30.9
8/27/2001	9	25.6	11	27.6	12	28.6	13	29.6
8/28/2001	8.6	27.2	10.6	29.2	11.6	30.2	12.6	31.2
8/29/2001	9.8	27.5	11.8	29.5	12.8	30.5	13.8	31.5
8/30/2001	8.1	24.7	10.1	26.7	11.1	27.7	12.1	28.7
8/31/2001	7.2	23.4	9.2	25.4	10.2	26.4	11.2	27.4
9/1/2001	7	23.1	9	25.1	10	26.1	11	27.1
9/2/2001	6.7	21.7	8.7	23.7	9.7	24.7	10.7	25.7
9/3/2001	7.5	22.2	9.5	24.2	10.5	25.2	11.5	26.2
9/4/2001	7.6	21.6	9.6	23.6	10.6	24.6	11.6	25.6
9/5/2001	6.7	20.7	8.7	22.7	9.7	23.7	10.7	24.7
9/6/2001	6.7	19.4	8.7	21.4	9.7	22.4	10.7	23.4
9/7/2001	0.4	18.9	2.4	20.9	3.4	21.9	4.4	22.9
9/8/2001	4.1	24.4	6.1	26.4	7.1	27.4	8.1	28.4
9/9/2001	6	21	8	23	9	24	10	25
9/10/2001	5.7	23.5	7.7	25.5	8.7	26.5	9.7	27.5
9/11/2001	5.8	21.1	7.8	23.1	8.8	24.1	9.8	25.1
9/12/2001	8	16.4	10	18.4	11	19.4	12	20.4
9/13/2001	3.9	16.8	5.9	18.8	6.9	19.8	7.9	20.8
9/14/2001	1.2	18	3.2	20	4.2	21	5.2	22
9/15/2001	2.7	20.6	4.7	22.6	5.7	23.6	6.7	24.6
9/16/2001	4.5	19.3	6.5	21.3	7.5	22.3	8.5	23.3
9/17/2001	5.7	17.4	7.7	19.4	8.7	20.4	9.7	21.4
9/18/2001	3.9	21	5.9	23	6.9	24	7.9	25
9/19/2001	6	20.7	8	22.7	9	23.7	10	24.7

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/20/2001	5.2	21.6	7.2	23.6	8.2	24.6	9.2	25.6
9/21/2001	5.5	20.4	7.5	22.4	8.5	23.4	9.5	24.4
9/22/2001	5	21.7	7	23.7	8	24.7	9	25.7
9/23/2001	5.5	23.2	7.5	25.2	8.5	26.2	9.5	27.2
9/24/2001	6.3	19.2	8.3	21.2	9.3	22.2	10.3	23.2
9/25/2001	5.3	22.6	7.3	24.6	8.3	25.6	9.3	26.6
9/26/2001	5	13.2	7	15.2	8	16.2	9	17.2
9/27/2001	4.2	18.5	6.2	20.5	7.2	21.5	8.2	22.5
9/28/2001	3.7	17.5	5.7	19.5	6.7	20.5	7.7	21.5
9/29/2001	3.6	15.2	5.6	17.2	6.6	18.2	7.6	19.2
9/30/2001	2.8	16.9	4.8	18.9	5.8	19.9	6.8	20.9
10/1/2001	3.4	21.4	5.4	23.4	6.4	24.4	7.4	25.4
10/2/2001	5.3	22.3	7.3	24.3	8.3	25.3	9.3	26.3
10/3/2001	5.9	21.5	7.9	23.5	8.9	24.5	9.9	25.5
10/4/2001	5.5	21.5	7.5	23.5	8.5	24.5	9.5	25.5
10/5/2001	4.4	18.8	6.4	20.8	7.4	21.8	8.4	22.8
10/6/2001	3.6	16.7	5.6	18.7	6.6	19.7	7.6	20.7
10/7/2001	2.2	16	4.2	18	5.2	19	6.2	20
10/8/2001	2.7	17.3	4.7	19.3	5.7	20.3	6.7	21.3
10/9/2001	-1	12.2	1	14.2	2	15.2	3	16.2
10/10/2001	-3.4	13	-1.4	15	-0.4	16	0.6	17
10/11/2001	-2	14.7	0	16.7	1	17.7	2	18.7
10/12/2001	1.2	10.2	3.2	12.2	4.2	13.2	5.2	14.2
10/13/2001	-1.4	14.4	0.6	16.4	1.6	17.4	2.6	18.4
10/14/2001	1.1	19.9	3.1	21.9	4.1	22.9	5.1	23.9
10/15/2001	1.5	21.1	3.5	23.1	4.5	24.1	5.5	25.1
10/16/2001	3.1	19.7	5.1	21.7	6.1	22.7	7.1	23.7
10/17/2001	6.7	16.9	8.7	18.9	9.7	19.9	10.7	20.9
10/18/2001	3.6	15.9	5.6	17.9	6.6	18.9	7.6	19.9
10/19/2001	0	16.6	2	18.6	3	19.6	4	20.6
10/20/2001	1	16.3	3	18.3	4	19.3	5	20.3
10/21/2001	2	14.6	4	16.6	5	17.6	6	18.6
10/22/2001	0.3	13.1	2.3	15.1	3.3	16.1	4.3	17.1
10/23/2001	-0.3	11.7	1.7	13.7	2.7	14.7	3.7	15.7
10/24/2001	-0.2	13.3	1.8	15.3	2.8	16.3	3.8	17.3
10/25/2001	-1.6	16.3	0.4	18.3	1.4	19.3	2.4	20.3
10/26/2001	0.2	16.6	2.2	18.6	3.2	19.6	4.2	20.6
10/27/2001	1.5	15.7	3.5	17.7	4.5	18.7	5.5	19.7
10/28/2001	3.8	12.6	5.8	14.6	6.8	15.6	7.8	16.6
10/29/2001	1.2	10.6	3.2	12.6	4.2	13.6	5.2	14.6
10/30/2001	2.4	10	4.4	12	5.4	13	6.4	14
10/31/2001	-1.6	5.4	0.4	7.4	1.4	8.4	2.4	9.4
11/1/2001	-2.3	3.8	-0.3	5.8	0.7	6.8	1.7	7.8
11/2/2001	-3.2	11	-1.2	13	-0.2	14	0.8	15
11/3/2001	-1.7	10.3	0.3	12.3	1.3	13.3	2.3	14.3
11/4/2001	-1.5	10.6	0.5	12.6	1.5	13.6	2.5	14.6
11/5/2001	-1	13.6	1	15.6	2	16.6	3	17.6
11/6/2001	-0.9	13.3	1.1	15.3	2.1	16.3	3.1	17.3

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/7/2001	-0.3	9.1	1.7	11.1	2.7	12.1	3.7	13.1
11/8/2001	-2.3	8.4	-0.3	10.4	0.7	11.4	1.7	12.4
11/9/2001	-3.2	10.4	-1.2	12.4	-0.2	13.4	0.8	14.4
11/10/2001	-3.3	9.4	-1.3	11.4	-0.3	12.4	0.7	13.4
11/11/2001	-2.8	8.8	-0.8	10.8	0.2	11.8	1.2	12.8
11/12/2001	0	2.9	2	4.9	3	5.9	4	6.9
11/13/2001	-3.3	4.6	-1.3	6.6	-0.3	7.6	0.7	8.6
11/14/2001	-3.8	0.7	-1.8	2.7	-0.8	3.7	0.2	4.7
11/15/2001	-2.5	6.2	-0.5	8.2	0.5	9.2	1.5	10.2
11/16/2001	-2.1	7.6	-0.1	9.6	0.9	10.6	1.9	11.6
11/17/2001	-0.4	7.6	1.6	9.6	2.6	10.6	3.6	11.6
11/18/2001	-1.3	5.3	0.7	7.3	1.7	8.3	2.7	9.3
11/19/2001	-3.2	8.8	-1.2	10.8	-0.2	11.8	0.8	12.8
11/20/2001	-2	8.6	0	10.6	1	11.6	2	12.6
11/21/2001	0.5	6.8	2.5	8.8	3.5	9.8	4.5	10.8
11/22/2001	-1.4	2.8	0.6	4.8	1.6	5.8	2.6	6.8
11/23/2001	-6.1	0	-4.1	2	-3.1	3	-2.1	4
11/24/2001	-8.8	-0.2	-6.8	1.8	-5.8	2.8	-4.8	3.8
11/25/2001	-7.9	-0.1	-5.9	1.9	-4.9	2.9	-3.9	3.9
11/26/2001	-12.4	-5.5	-10.4	-3.5	-9.4	-2.5	-8.4	-1.5
11/27/2001	-14.4	-3	-12.4	-1	-11.4	0	-10.4	1
11/28/2001	-12.2	-5.1	-10.2	-3.1	-9.2	-2.1	-8.2	-1.1
11/29/2001	-9.4	-3.3	-7.4	-1.3	-6.4	-0.3	-5.4	0.7
11/30/2001	-7.6	-3.7	-5.6	-1.7	-4.6	-0.7	-3.6	0.3
12/1/2001	-9.5	-0.8	-7.5	1.2	-6.5	2.2	-5.5	3.2
12/2/2001	-6.7	-2.3	-4.7	-0.3	-3.7	0.7	-2.7	1.7
12/3/2001	-7.1	-1.8	-5.1	0.2	-4.1	1.2	-3.1	2.2
12/4/2001	-11.4	-3.9	-9.4	-1.9	-8.4	-0.9	-7.4	0.1
12/5/2001	-17.3	-3.3	-15.3	-1.3	-14.3	-0.3	-13.3	0.7
12/6/2001	-8.8	-3	-6.8	-1	-5.8	0	-4.8	1
12/7/2001	-6.4	0.9	-4.4	2.9	-3.4	3.9	-2.4	4.9
12/8/2001	-8.5	0	-6.5	2	-5.5	3	-4.5	4
12/9/2001	-8.8	3.4	-6.8	5.4	-5.8	6.4	-4.8	7.4
12/10/2001	-7.8	-4.2	-5.8	-2.2	-4.8	-1.2	-3.8	-0.2
12/11/2001	-10.9	-6	-8.9	-4	-7.9	-3	-6.9	-2
12/12/2001	-10.3	-1.8	-8.3	0.2	-7.3	1.2	-6.3	2.2
12/13/2001	-9.1	0.8	-7.1	2.8	-6.1	3.8	-5.1	4.8
12/14/2001	-7	2.8	-5	4.8	-4	5.8	-3	6.8
12/15/2001	-14.4	-4.7	-12.4	-2.7	-11.4	-1.7	-10.4	-0.7
12/16/2001	-19.5	-4.1	-17.5	-2.1	-16.5	-1.1	-15.5	-0.1
12/17/2001	-12.6	1.6	-10.6	3.6	-9.6	4.6	-8.6	5.6
12/18/2001	-13.1	-1.5	-11.1	0.5	-10.1	1.5	-9.1	2.5
12/19/2001	-10.2	-2.3	-8.2	-0.3	-7.2	0.7	-6.2	1.7
12/20/2001	-7.1	0.9	-5.1	2.9	-4.1	3.9	-3.1	4.9
12/21/2001	-9.1	-3.3	-7.1	-1.3	-6.1	-0.3	-5.1	0.7
12/22/2001	-12.9	-3.1	-10.9	-1.1	-9.9	-0.1	-8.9	0.9
12/23/2001	-8	-4.7	-6	-2.7	-5	-1.7	-4	-0.7
12/24/2001	-9.2	-4.2	-7.2	-2.2	-6.2	-1.2	-5.2	-0.2

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/25/2001	-17.9	-0.1	-15.9	1.9	-14.9	2.9	-13.9	3.9
12/26/2001	-8.3	1.5	-6.3	3.5	-5.3	4.5	-4.3	5.5
12/27/2001	-2.8	3	-0.8	5	0.2	6	1.2	7
12/28/2001	-3.8	4	-1.8	6	-0.8	7	0.2	8
12/29/2001	-2.3	0.5	-0.3	2.5	0.7	3.5	1.7	4.5
12/30/2001	-1.1	0.9	0.9	2.9	1.9	3.9	2.9	4.9
12/31/2001	-1.1	1.8	0.9	3.8	1.9	4.8	2.9	5.8
1/1/2002	-4.2	3.1	-2.2	5.1	-1.2	6.1	-0.2	7.1
1/2/2002	-5.3	0.8	-3.3	2.8	-2.3	3.8	-1.3	4.8
1/3/2002	-2.2	0.4	-0.2	2.4	0.8	3.4	1.8	4.4
1/4/2002	-16.1	-0.9	-14.1	1.1	-13.1	2.1	-12.1	3.1
1/5/2002	-16.4	1.8	-14.4	3.8	-13.4	4.8	-12.4	5.8
1/6/2002	-10.6	1.9	-8.6	3.9	-7.6	4.9	-6.6	5.9
1/7/2002	-1.1	1.7	0.9	3.7	1.9	4.7	2.9	5.7
1/8/2002	-0.4	5.9	1.6	7.9	2.6	8.9	3.6	9.9
1/9/2002	-5.6	5.8	-3.6	7.8	-2.6	8.8	-1.6	9.8
1/10/2002	-10.5	0.2	-8.5	2.2	-7.5	3.2	-6.5	4.2
1/11/2002	-9.1	8.4	-7.1	10.4	-6.1	11.4	-5.1	12.4
1/12/2002	-7.2	12.5	-5.2	14.5	-4.2	15.5	-3.2	16.5
1/13/2002	-8.8	7.8	-6.8	9.8	-5.8	10.8	-4.8	11.8
1/14/2002	-10.1	8.6	-8.1	10.6	-7.1	11.6	-6.1	12.6
1/15/2002	-15.6	3.6	-13.6	5.6	-12.6	6.6	-11.6	7.6
1/16/2002	-15.3	-5.5	-13.3	-3.5	-12.3	-2.5	-11.3	-1.5
1/17/2002	-16.2	-5.4	-14.2	-3.4	-13.2	-2.4	-12.2	-1.4
1/18/2002	-18.5	-5.9	-16.5	-3.9	-15.5	-2.9	-14.5	-1.9
1/19/2002	-20.2	-1.6	-18.2	0.4	-17.2	1.4	-16.2	2.4
1/20/2002	-11.9	-2.7	-9.9	-0.7	-8.9	0.3	-7.9	1.3
1/21/2002	-14.2	3.2	-12.2	5.2	-11.2	6.2	-10.2	7.2
1/22/2002	-10.1	-0.7	-8.1	1.3	-7.1	2.3	-6.1	3.3
1/23/2002	-21.4	-6.7	-19.4	-4.7	-18.4	-3.7	-17.4	-2.7
1/24/2002	-21.7	-4.8	-19.7	-2.8	-18.7	-1.8	-17.7	-0.8
1/25/2002	-10.8	8.6	-8.8	10.6	-7.8	11.6	-6.8	12.6
1/26/2002	-3.4	4.5	-1.4	6.5	-0.4	7.5	0.6	8.5
1/27/2002	-5.8	-1	-3.8	1	-2.8	2	-1.8	3
1/28/2002	-17.6	-5	-15.6	-3	-14.6	-2	-13.6	-1
1/29/2002	-20.4	-9.3	-18.4	-7.3	-17.4	-6.3	-16.4	-5.3
1/30/2002	-25.1	-9.5	-23.1	-7.5	-22.1	-6.5	-21.1	-5.5
1/31/2002	-18.6	-7	-16.6	-5	-15.6	-4	-14.6	-3
2/1/2002	-20.2	-0.4	-18.2	1.6	-17.2	2.6	-16.2	3.6
2/2/2002	-16.7	-1.8	-14.7	0.2	-13.7	1.2	-12.7	2.2
2/3/2002	-17.2	3	-15.2	5	-14.2	6	-13.2	7
2/4/2002	-16.7	5	-14.7	7	-13.7	8	-12.7	9
2/5/2002	-17.2	8	-15.2	10	-14.2	11	-13.2	12
2/6/2002	-15.1	6.4	-13.1	8.4	-12.1	9.4	-11.1	10.4
2/7/2002	-15.3	6.8	-13.3	8.8	-12.3	9.8	-11.3	10.8
2/8/2002	-3.8	2	-1.8	4	-0.8	5	0.2	6
2/9/2002	-10.3	1.5	-8.3	3.5	-7.3	4.5	-6.3	5.5
2/10/2002	-13.2	0.9	-11.2	2.9	-10.2	3.9	-9.2	4.9

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/11/2002	-14.6	10.9	-12.6	12.9	-11.6	13.9	-10.6	14.9
2/12/2002	-8	11.7	-6	13.7	-5	14.7	-4	15.7
2/13/2002	-6.6	4.9	-4.6	6.9	-3.6	7.9	-2.6	8.9
2/14/2002	-6.1	3.9	-4.1	5.9	-3.1	6.9	-2.1	7.9
2/15/2002	-7.2	5.4	-5.2	7.4	-4.2	8.4	-3.2	9.4
2/16/2002	-5.8	5.1	-3.8	7.1	-2.8	8.1	-1.8	9.1
2/17/2002	-3.9	4.9	-1.9	6.9	-0.9	7.9	0.1	8.9
2/18/2002	-12.9	-1.7	-10.9	0.3	-9.9	1.3	-8.9	2.3
2/19/2002	-12.6	1.8	-10.6	3.8	-9.6	4.8	-8.6	5.8
2/20/2002	-5.1	0.7	-3.1	2.7	-2.1	3.7	-1.1	4.7
2/21/2002	-3.3	4.4	-1.3	6.4	-0.3	7.4	0.7	8.4
2/22/2002	-5.8	9.9	-3.8	11.9	-2.8	12.9	-1.8	13.9
2/23/2002	-1.3	12.1	0.7	14.1	1.7	15.1	2.7	16.1
2/24/2002	-9.3	2.1	-7.3	4.1	-6.3	5.1	-5.3	6.1
2/25/2002	-11.7	9	-9.7	11	-8.7	12	-7.7	13
2/26/2002	-11	10	-9	12	-8	13	-7	14
2/27/2002	-8.8	12	-6.8	14	-5.8	15	-4.8	16
2/28/2002	-7.4	8.2	-5.4	10.2	-4.4	11.2	-3.4	12.2
3/1/2002	-11.1	8.1	-9.1	10.1	-8.1	11.1	-7.1	12.1
3/2/2002	-13.6	0.3	-11.6	2.3	-10.6	3.3	-9.6	4.3
3/3/2002	-13.4	1.8	-11.4	3.8	-10.4	4.8	-9.4	5.8
3/4/2002	-16.2	6	-14.2	8	-13.2	9	-12.2	10
3/5/2002	-11.1	6.5	-9.1	8.5	-8.1	9.5	-7.1	10.5
3/6/2002	-7.1	6	-5.1	8	-4.1	9	-3.1	10
3/7/2002	-5.5	0.2	-3.5	2.2	-2.5	3.2	-1.5	4.2
3/8/2002	-12.6	-2.7	-10.6	-0.7	-9.6	0.3	-8.6	1.3
3/9/2002	-19.2	2.4	-17.2	4.4	-16.2	5.4	-15.2	6.4
3/10/2002	-13.5	2.1	-11.5	4.1	-10.5	5.1	-9.5	6.1
3/11/2002	-6.8	0	-4.8	2	-3.8	3	-2.8	4
3/12/2002	-11.4	6.7	-9.4	8.7	-8.4	9.7	-7.4	10.7
3/13/2002	-6.8	4	-4.8	6	-3.8	7	-2.8	8
3/14/2002	-12.1	-1.3	-10.1	0.7	-9.1	1.7	-8.1	2.7
3/15/2002	-18.8	-4.2	-16.8	-2.2	-15.8	-1.2	-14.8	-0.2
3/16/2002	-21.7	-4.3	-19.7	-2.3	-18.7	-1.3	-17.7	-0.3
3/17/2002	-16.8	-5.5	-14.8	-3.5	-13.8	-2.5	-12.8	-1.5
3/18/2002	-12.2	-6.5	-10.2	-4.5	-9.2	-3.5	-8.2	-2.5
3/19/2002	-14	-2.5	-12	-0.5	-11	0.5	-10	1.5
3/20/2002	-12.1	11.3	-10.1	13.3	-9.1	14.3	-8.1	15.3
3/21/2002	-10.1	10.3	-8.1	12.3	-7.1	13.3	-6.1	14.3
3/22/2002	-4.1	11.5	-2.1	13.5	-1.1	14.5	-0.1	15.5
3/23/2002	-3.7	5.8	-1.7	7.8	-0.7	8.8	0.3	9.8
3/24/2002	-6	-0.3	-4	1.7	-3	2.7	-2	3.7
3/25/2002	-10.8	4.8	-8.8	6.8	-7.8	7.8	-6.8	8.8
3/26/2002	-13.9	5.1	-11.9	7.1	-10.9	8.1	-9.9	9.1
3/27/2002	-11	8.7	-9	10.7	-8	11.7	-7	12.7
3/28/2002	-9.7	14.2	-7.7	16.2	-6.7	17.2	-5.7	18.2
3/29/2002	-5.9	9.8	-3.9	11.8	-2.9	12.8	-1.9	13.8
3/30/2002	-4.1	14.2	-2.1	16.2	-1.1	17.2	-0.1	18.2

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/31/2002	-5.3	15.8	-3.3	17.8	-2.3	18.8	-1.3	19.8
4/1/2002	-4.6	15.4	-2.6	17.4	-1.6	18.4	-0.6	19.4
4/2/2002	-3.6	16.8	-1.6	18.8	-0.6	19.8	0.4	20.8
4/3/2002	-3.3	16	-1.3	18	-0.3	19	0.7	20
4/4/2002	-2.9	15.9	-0.9	17.9	0.1	18.9	1.1	19.9
4/5/2002	-2.3	17.3	-0.3	19.3	0.7	20.3	1.7	21.3
4/6/2002	-2.3	10.6	-0.3	12.6	0.7	13.6	1.7	14.6
4/7/2002	-6.5	11.3	-4.5	13.3	-3.5	14.3	-2.5	15.3
4/8/2002	-5.9	12.5	-3.9	14.5	-2.9	15.5	-1.9	16.5
4/9/2002	-3.9	10.3	-1.9	12.3	-0.9	13.3	0.1	14.3
4/10/2002	-0.5	4.8	1.5	6.8	2.5	7.8	3.5	8.8
4/11/2002	-0.4	9.5	1.6	11.5	2.6	12.5	3.6	13.5
4/12/2002	-0.6	10.1	1.4	12.1	2.4	13.1	3.4	14.1
4/13/2002	-3.6	14.6	-1.6	16.6	-0.6	17.6	0.4	18.6
4/14/2002	-3	17.6	-1	19.6	0	20.6	1	21.6
4/15/2002	-0.4	12.8	1.6	14.8	2.6	15.8	3.6	16.8
4/16/2002	-10.5	-1	-8.5	1	-7.5	2	-6.5	3
4/17/2002	-11.7	1.4	-9.7	3.4	-8.7	4.4	-7.7	5.4
4/18/2002	-9.5	-2.6	-7.5	-0.6	-6.5	0.4	-5.5	1.4
4/19/2002	-12.4	-0.4	-10.4	1.6	-9.4	2.6	-8.4	3.6
4/20/2002	-7.4	0.2	-5.4	2.2	-4.4	3.2	-3.4	4.2
4/21/2002	-12.5	6.2	-10.5	8.2	-9.5	9.2	-8.5	10.2
4/22/2002	-9.3	10.8	-7.3	12.8	-6.3	13.8	-5.3	14.8
4/23/2002	-6.5	13.6	-4.5	15.6	-3.5	16.6	-2.5	17.6
4/24/2002	-5.2	15.4	-3.2	17.4	-2.2	18.4	-1.2	19.4
4/25/2002	-2.6	13.2	-0.6	15.2	0.4	16.2	1.4	17.2
4/26/2002	-2.2	12.2	-0.2	14.2	0.8	15.2	1.8	16.2
4/27/2002	-2.2	3.6	-0.2	5.6	0.8	6.6	1.8	7.6
4/28/2002	-5.9	0.7	-3.9	2.7	-2.9	3.7	-1.9	4.7
4/29/2002	-10.1	6.8	-8.1	8.8	-7.1	9.8	-6.1	10.8
4/30/2002	-4.6	0.2	-2.6	2.2	-1.6	3.2	-0.6	4.2
5/1/2002	-9.4	1.5	-7.4	3.5	-6.4	4.5	-5.4	5.5
5/2/2002	-14.1	8.3	-12.1	10.3	-11.1	11.3	-10.1	12.3
5/3/2002	-4.2	10.8	-2.2	12.8	-1.2	13.8	-0.2	14.8
5/4/2002	-5.1	11.5	-3.1	13.5	-2.1	14.5	-1.1	15.5
5/5/2002	-3.5	12.8	-1.5	14.8	-0.5	15.8	0.5	16.8
5/6/2002	-4.6	12.5	-2.6	14.5	-1.6	15.5	-0.6	16.5
5/7/2002	-4.1	12	-2.1	14	-1.1	15	-0.1	16
5/8/2002	-3.6	10.1	-1.6	12.1	-0.6	13.1	0.4	14.1
5/9/2002	-5.9	12.2	-3.9	14.2	-2.9	15.2	-1.9	16.2
5/10/2002	-2.4	8.7	-0.4	10.7	0.6	11.7	1.6	12.7
5/11/2002	-3	5.5	-1	7.5	0	8.5	1	9.5
5/12/2002	-2.7	9	-0.7	11	0.3	12	1.3	13
5/13/2002	-4.6	14.5	-2.6	16.5	-1.6	17.5	-0.6	18.5
5/14/2002	-0.5	13.5	1.5	15.5	2.5	16.5	3.5	17.5
5/15/2002	-1.8	15.9	0.2	17.9	1.2	18.9	2.2	19.9
5/16/2002	-2	13.5	0	15.5	1	16.5	2	17.5
5/17/2002	-2.5	17.5	-0.5	19.5	0.5	20.5	1.5	21.5

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/18/2002	-0.4	16.5	1.6	18.5	2.6	19.5	3.6	20.5
5/19/2002	1.7	13.5	3.7	15.5	4.7	16.5	5.7	17.5
5/20/2002	-1.2	8.2	0.8	10.2	1.8	11.2	2.8	12.2
5/21/2002	-6.1	-1.2	-4.1	0.8	-3.1	1.8	-2.1	2.8
5/22/2002	-7.7	0.8	-5.7	2.8	-4.7	3.8	-3.7	4.8
5/23/2002	-11.4	7.7	-9.4	9.7	-8.4	10.7	-7.4	11.7
5/24/2002	-2.8	11.1	-0.8	13.1	0.2	14.1	1.2	15.1
5/25/2002	-2.9	14.5	-0.9	16.5	0.1	17.5	1.1	18.5
5/26/2002	-0.8	13.5	1.2	15.5	2.2	16.5	3.2	17.5
5/27/2002	-1.4	14.4	0.6	16.4	1.6	17.4	2.6	18.4
5/28/2002	0.3	13.8	2.3	15.8	3.3	16.8	4.3	17.8
5/29/2002	-0.4	15.5	1.6	17.5	2.6	18.5	3.6	19.5
5/30/2002	2.3	20.5	4.3	22.5	5.3	23.5	6.3	24.5
5/31/2002	2.4	20.4	4.4	22.4	5.4	23.4	6.4	24.4
6/1/2002	3	21.7	5	23.7	6	24.7	7	25.7
6/2/2002	-0.6	11.9	1.4	13.9	2.4	14.9	3.4	15.9
6/3/2002	-1.7	14.5	0.3	16.5	1.3	17.5	2.3	18.5
6/4/2002	1.8	17.5	3.8	19.5	4.8	20.5	5.8	21.5
6/5/2002	2.6	20.6	4.6	22.6	5.6	23.6	6.6	24.6
6/6/2002	4.5	23.5	6.5	25.5	7.5	26.5	8.5	27.5
6/7/2002	3.6	21.3	5.6	23.3	6.6	24.3	7.6	25.3
6/8/2002	3.9	19.3	5.9	21.3	6.9	22.3	7.9	23.3
6/9/2002	-2	14	0	16	1	17	2	18
6/10/2002	-4.9	9.2	-2.9	11.2	-1.9	12.2	-0.9	13.2
6/11/2002	-1.9	13.5	0.1	15.5	1.1	16.5	2.1	17.5
6/12/2002	1.5	17.7	3.5	19.7	4.5	20.7	5.5	21.7
6/13/2002	3.2	20.9	5.2	22.9	6.2	23.9	7.2	24.9
6/14/2002	4.9	20.5	6.9	22.5	7.9	23.5	8.9	24.5
6/15/2002	3.1	19.9	5.1	21.9	6.1	22.9	7.1	23.9
6/16/2002	2.2	20.6	4.2	22.6	5.2	23.6	6.2	24.6
6/17/2002	2.4	21	4.4	23	5.4	24	6.4	25
6/18/2002	4.2	19.6	6.2	21.6	7.2	22.6	8.2	23.6
6/19/2002	6.3	18.4	8.3	20.4	9.3	21.4	10.3	22.4
6/20/2002	4.4	19.6	6.4	21.6	7.4	22.6	8.4	23.6
6/21/2002	5.6	19.8	7.6	21.8	8.6	22.8	9.6	23.8
6/22/2002	4.6	17	6.6	19	7.6	20	8.6	21
6/23/2002	3	19.3	5	21.3	6	22.3	7	23.3
6/24/2002	5.4	20.2	7.4	22.2	8.4	23.2	9.4	24.2
6/25/2002	4.8	21.4	6.8	23.4	7.8	24.4	8.8	25.4
6/26/2002	7.5	25.2	9.5	27.2	10.5	28.2	11.5	29.2
6/27/2002	7.7	21.9	9.7	23.9	10.7	24.9	11.7	25.9
6/28/2002	6.2	21.4	8.2	23.4	9.2	24.4	10.2	25.4
6/29/2002	5.6	22.2	7.6	24.2	8.6	25.2	9.6	26.2
6/30/2002	6.2	22.1	8.2	24.1	9.2	25.1	10.2	26.1
7/1/2002	7.3	26.1	9.3	28.1	10.3	29.1	11.3	30.1
7/2/2002	9.2	25.5	11.2	27.5	12.2	28.5	13.2	29.5
7/3/2002	8.8	24.7	10.8	26.7	11.8	27.7	12.8	28.7
7/4/2002	7.2	20.3	9.2	22.3	10.2	23.3	11.2	24.3

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/5/2002	7.6	22.2	9.6	24.2	10.6	25.2	11.6	26.2
7/6/2002	8	22.6	10	24.6	11	25.6	12	26.6
7/7/2002	7.3	23.8	9.3	25.8	10.3	26.8	11.3	27.8
7/8/2002	8.5	22.3	10.5	24.3	11.5	25.3	12.5	26.3
7/9/2002	5.8	26.9	7.8	28.9	8.8	29.9	9.8	30.9
7/10/2002	11.7	29.6	13.7	31.6	14.7	32.6	15.7	33.6
7/11/2002	11.5	30.5	13.5	32.5	14.5	33.5	15.5	34.5
7/12/2002	12.4	31.6	14.4	33.6	15.4	34.6	16.4	35.6
7/13/2002	11.4	26.2	13.4	28.2	14.4	29.2	15.4	30.2
7/14/2002	11	25.3	13	27.3	14	28.3	15	29.3
7/15/2002	10.3	24.3	12.3	26.3	13.3	27.3	14.3	28.3
7/16/2002	9.4	22.9	11.4	24.9	12.4	25.9	13.4	26.9
7/17/2002	10.3	23.4	12.3	25.4	13.3	26.4	14.3	27.4
7/18/2002	9.3	22.7	11.3	24.7	12.3	25.7	13.3	26.7
7/19/2002	6.6	17.8	8.6	19.8	9.6	20.8	10.6	21.8
7/20/2002	6.1	21	8.1	23	9.1	24	10.1	25
7/21/2002	9	24.7	11	26.7	12	27.7	13	28.7
7/22/2002	9.7	23.2	11.7	25.2	12.7	26.2	13.7	27.2
7/23/2002	7.8	21.5	9.8	23.5	10.8	24.5	11.8	25.5
7/24/2002	6.3	23.8	8.3	25.8	9.3	26.8	10.3	27.8
7/25/2002	8.9	23	10.9	25	11.9	26	12.9	27
7/26/2002	7.4	22.6	9.4	24.6	10.4	25.6	11.4	26.6
7/27/2002	5.2	23.8	7.2	25.8	8.2	26.8	9.2	27.8
7/28/2002	8.9	25.2	10.9	27.2	11.9	28.2	12.9	29.2
7/29/2002	9.8	26.6	11.8	28.6	12.8	29.6	13.8	30.6
7/30/2002	10.2	26.9	12.2	28.9	13.2	29.9	14.2	30.9
7/31/2002	10.9	26.4	12.9	28.4	13.9	29.4	14.9	30.4
8/1/2002	9	25	11	27	12	28	13	29
8/2/2002	9.4	23.4	11.4	25.4	12.4	26.4	13.4	27.4
8/3/2002	8.3	22.3	10.3	24.3	11.3	25.3	12.3	26.3
8/4/2002	6.7	20.8	8.7	22.8	9.7	23.8	10.7	24.8
8/5/2002	7.1	17.7	9.1	19.7	10.1	20.7	11.1	21.7
8/6/2002	6.6	16.8	8.6	18.8	9.6	19.8	10.6	20.8
8/7/2002	4.5	17.7	6.5	19.7	7.5	20.7	8.5	21.7
8/8/2002	2.6	18.9	4.6	20.9	5.6	21.9	6.6	22.9
8/9/2002	5.1	21.9	7.1	23.9	8.1	24.9	9.1	25.9
8/10/2002	7.8	25	9.8	27	10.8	28	11.8	29
8/11/2002	8.8	26.6	10.8	28.6	11.8	29.6	12.8	30.6
8/12/2002	9.1	24.7	11.1	26.7	12.1	27.7	13.1	28.7
8/13/2002	9.9	28.8	11.9	30.8	12.9	31.8	13.9	32.8
8/14/2002	11	29.7	13	31.7	14	32.7	15	33.7
8/15/2002	10.3	27.4	12.3	29.4	13.3	30.4	14.3	31.4
8/16/2002	10.4	27	12.4	29	13.4	30	14.4	31
8/17/2002	9.1	26.1	11.1	28.1	12.1	29.1	13.1	30.1
8/18/2002	8.5	24.8	10.5	26.8	11.5	27.8	12.5	28.8
8/19/2002	8	24.3	10	26.3	11	27.3	12	28.3
8/20/2002	6.1	20.9	8.1	22.9	9.1	23.9	10.1	24.9
8/21/2002	4	16.8	6	18.8	7	19.8	8	20.8

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/22/2002	1	17.7	3	19.7	4	20.7	5	21.7
8/23/2002	3.3	17.6	5.3	19.6	6.3	20.6	7.3	21.6
8/24/2002	3.5	18.1	5.5	20.1	6.5	21.1	7.5	22.1
8/25/2002	3.2	20.6	5.2	22.6	6.2	23.6	7.2	24.6
8/26/2002	3.5	20.8	5.5	22.8	6.5	23.8	7.5	24.8
8/27/2002	4.1	20.7	6.1	22.7	7.1	23.7	8.1	24.7
8/28/2002	6.2	19.5	8.2	21.5	9.2	22.5	10.2	23.5
8/29/2002	6.9	22.6	8.9	24.6	9.9	25.6	10.9	26.6
8/30/2002	5.7	21.4	7.7	23.4	8.7	24.4	9.7	25.4
8/31/2002	6.3	19.9	8.3	21.9	9.3	22.9	10.3	23.9
9/1/2002	6.4	21.7	8.4	23.7	9.4	24.7	10.4	25.7
9/2/2002	7.9	24.8	9.9	26.8	10.9	27.8	11.9	28.8
9/3/2002	8.2	24.1	10.2	26.1	11.2	27.1	12.2	28.1
9/4/2002	8.7	21.2	10.7	23.2	11.7	24.2	12.7	25.2
9/5/2002	8.1	12.9	10.1	14.9	11.1	15.9	12.1	16.9
9/6/2002	7.3	15	9.3	17	10.3	18	11.3	19
9/7/2002	1.8	7.6	3.8	9.6	4.8	10.6	5.8	11.6
9/8/2002	-1.5	11.2	0.5	13.2	1.5	14.2	2.5	15.2
9/9/2002	-0.6	14.2	1.4	16.2	2.4	17.2	3.4	18.2
9/10/2002	2.6	19	4.6	21	5.6	22	6.6	23
9/11/2002	3.5	20.9	5.5	22.9	6.5	23.9	7.5	24.9
9/12/2002	4.9	22.3	6.9	24.3	7.9	25.3	8.9	26.3
9/13/2002	5.5	22.5	7.5	24.5	8.5	25.5	9.5	26.5
9/14/2002	5.5	24.2	7.5	26.2	8.5	27.2	9.5	28.2
9/15/2002	6.2	23	8.2	25	9.2	26	10.2	27
9/16/2002	4.8	20.4	6.8	22.4	7.8	23.4	8.8	24.4
9/17/2002	0.8	15.7	2.8	17.7	3.8	18.7	4.8	19.7
9/18/2002	2.4	16.3	4.4	18.3	5.4	19.3	6.4	20.3
9/19/2002	2.6	15.1	4.6	17.1	5.6	18.1	6.6	19.1
9/20/2002	5.1	20.5	7.1	22.5	8.1	23.5	9.1	24.5
9/21/2002	4.5	21.3	6.5	23.3	7.5	24.3	8.5	25.3
9/22/2002	5	23	7	25	8	26	9	27
9/23/2002	5.9	22.8	7.9	24.8	8.9	25.8	9.9	26.8
9/24/2002	6.3	22.6	8.3	24.6	9.3	25.6	10.3	26.6
9/25/2002	5.3	21.6	7.3	23.6	8.3	24.6	9.3	25.6
9/26/2002	5.1	20.9	7.1	22.9	8.1	23.9	9.1	24.9
9/27/2002	3.7	19.6	5.7	21.6	6.7	22.6	7.7	23.6
9/28/2002	4.4	14.3	6.4	16.3	7.4	17.3	8.4	18.3
9/29/2002	1.2	14.2	3.2	16.2	4.2	17.2	5.2	18.2
9/30/2002	-0.4	11.6	1.6	13.6	2.6	14.6	3.6	15.6
10/1/2002	-1.8	10.5	0.2	12.5	1.2	13.5	2.2	14.5
10/2/2002	-4.1	2.3	-2.1	4.3	-1.1	5.3	-0.1	6.3
10/3/2002	-5.1	3.5	-3.1	5.5	-2.1	6.5	-1.1	7.5
10/4/2002	-3.3	13	-1.3	15	-0.3	16	0.7	17
10/5/2002	0.1	8.1	2.1	10.1	3.1	11.1	4.1	12.1
10/6/2002	-0.4	13.9	1.6	15.9	2.6	16.9	3.6	17.9
10/7/2002	2.9	14.8	4.9	16.8	5.9	17.8	6.9	18.8
10/8/2002	2.5	17.5	4.5	19.5	5.5	20.5	6.5	21.5

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/9/2002	1.7	21	3.7	23	4.7	24	5.7	25
10/10/2002	2.2	17.7	4.2	19.7	5.2	20.7	6.2	21.7
10/11/2002	4	13.4	6	15.4	7	16.4	8	17.4
10/12/2002	-0.2	13.5	1.8	15.5	2.8	16.5	3.8	17.5
10/13/2002	0.3	12.6	2.3	14.6	3.3	15.6	4.3	16.6
10/14/2002	-0.2	16.3	1.8	18.3	2.8	19.3	3.8	20.3
10/15/2002	2.3	18.3	4.3	20.3	5.3	21.3	6.3	22.3
10/16/2002	0.7	15.2	2.7	17.2	3.7	18.2	4.7	19.2
10/17/2002	1	14.1	3	16.1	4	17.1	5	18.1
10/18/2002	-0.1	16.3	1.9	18.3	2.9	19.3	3.9	20.3
10/19/2002	0.1	17.4	2.1	19.4	3.1	20.4	4.1	21.4
10/20/2002	-0.6	14.4	1.4	16.4	2.4	17.4	3.4	18.4
10/21/2002	-1.7	13.2	0.3	15.2	1.3	16.2	2.3	17.2
10/22/2002	-1.5	9.8	0.5	11.8	1.5	12.8	2.5	13.8
10/23/2002	-2.7	9.8	-0.7	11.8	0.3	12.8	1.3	13.8
10/24/2002	-2.6	9	-0.6	11	0.4	12	1.4	13
10/25/2002	-4.6	8.6	-2.6	10.6	-1.6	11.6	-0.6	12.6
10/26/2002	-2.5	7.9	-0.5	9.9	0.5	10.9	1.5	11.9
10/27/2002	-3.4	8.4	-1.4	10.4	-0.4	11.4	0.6	12.4
10/28/2002	-3.3	10.2	-1.3	12.2	-0.3	13.2	0.7	14.2
10/29/2002	-2.7	10.8	-0.7	12.8	0.3	13.8	1.3	14.8
10/30/2002	-3.6	7.7	-1.6	9.7	-0.6	10.7	0.4	11.7
10/31/2002	-3.4	7.2	-1.4	9.2	-0.4	10.2	0.6	11.2
11/1/2002	-8.9	8.6	-6.9	10.6	-5.9	11.6	-4.9	12.6
11/2/2002	-12.1	6.6	-10.1	8.6	-9.1	9.6	-8.1	10.6
11/3/2002	-5.2	9.4	-3.2	11.4	-2.2	12.4	-1.2	13.4
11/4/2002	-3.1	7.6	-1.1	9.6	-0.1	10.6	0.9	11.6
11/5/2002	-4.6	10.1	-2.6	12.1	-1.6	13.1	-0.6	14.1
11/6/2002	-4.1	11.5	-2.1	13.5	-1.1	14.5	-0.1	15.5
11/7/2002	-2.7	10.6	-0.7	12.6	0.3	13.6	1.3	14.6
11/8/2002	-2.8	3	-0.8	5	0.2	6	1.2	7
11/9/2002	-0.9	1.7	1.1	3.7	2.1	4.7	3.1	5.7
11/10/2002	-4.2	-1.1	-2.2	0.9	-1.2	1.9	-0.2	2.9
11/11/2002	-5.5	-0.9	-3.5	1.1	-2.5	2.1	-1.5	3.1
11/12/2002	-6.4	4.7	-4.4	6.7	-3.4	7.7	-2.4	8.7
11/13/2002	-1.6	6.3	0.4	8.3	1.4	9.3	2.4	10.3
11/14/2002	-3.3	6.4	-1.3	8.4	-0.3	9.4	0.7	10.4
11/15/2002	-4.5	6.2	-2.5	8.2	-1.5	9.2	-0.5	10.2
11/16/2002	-6.6	9.2	-4.6	11.2	-3.6	12.2	-2.6	13.2
11/17/2002	0.2	7.9	2.2	9.9	3.2	10.9	4.2	11.9
11/18/2002	-4.7	5.7	-2.7	7.7	-1.7	8.7	-0.7	9.7
11/19/2002	-5.9	9.4	-3.9	11.4	-2.9	12.4	-1.9	13.4
11/20/2002	-2.7	10.4	-0.7	12.4	0.3	13.4	1.3	14.4
11/21/2002	-2.4	11.8	-0.4	13.8	0.6	14.8	1.6	15.8
11/22/2002	-1.6	11.9	0.4	13.9	1.4	14.9	2.4	15.9
11/23/2002	-1.6	9.6	0.4	11.6	1.4	12.6	2.4	13.6
11/24/2002	-3.2	6.9	-1.2	8.9	-0.2	9.9	0.8	10.9
11/25/2002	-5.2	7.3	-3.2	9.3	-2.2	10.3	-1.2	11.3

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/26/2002	-7.9	-1.6	-5.9	0.4	-4.9	1.4	-3.9	2.4
11/27/2002	-6.7	3.1	-4.7	5.1	-3.7	6.1	-2.7	7.1
11/28/2002	-6.6	2.3	-4.6	4.3	-3.6	5.3	-2.6	6.3
11/29/2002	-7.2	6.6	-5.2	8.6	-4.2	9.6	-3.2	10.6
11/30/2002	-6.9	5.5	-4.9	7.5	-3.9	8.5	-2.9	9.5
12/1/2002	-6.2	2.2	-4.2	4.2	-3.2	5.2	-2.2	6.2
12/2/2002	-6.6	4.3	-4.6	6.3	-3.6	7.3	-2.6	8.3
12/3/2002	-6	3.6	-4	5.6	-3	6.6	-2	7.6
12/4/2002	-7.3	5.3	-5.3	7.3	-4.3	8.3	-3.3	9.3
12/5/2002	-6.4	8.7	-4.4	10.7	-3.4	11.7	-2.4	12.7
12/6/2002	-5	5.8	-3	7.8	-2	8.8	-1	9.8
12/7/2002	-4.1	5	-2.1	7	-1.1	8	-0.1	9
12/8/2002	-7.4	5	-5.4	7	-4.4	8	-3.4	9
12/9/2002	-7.7	7.4	-5.7	9.4	-4.7	10.4	-3.7	11.4
12/10/2002	-3.4	2.2	-1.4	4.2	-0.4	5.2	0.6	6.2
12/11/2002	-9.8	-0.4	-7.8	1.6	-6.8	2.6	-5.8	3.6
12/12/2002	-10.5	1.5	-8.5	3.5	-7.5	4.5	-6.5	5.5
12/13/2002	-7.9	3.1	-5.9	5.1	-4.9	6.1	-3.9	7.1
12/14/2002	-2.5	0.1	-0.5	2.1	0.5	3.1	1.5	4.1
12/15/2002	-5.8	0.4	-3.8	2.4	-2.8	3.4	-1.8	4.4
12/16/2002	-6	-3.3	-4	-1.3	-3	-0.3	-2	0.7
12/17/2002	-6.4	-3.1	-4.4	-1.1	-3.4	-0.1	-2.4	0.9
12/18/2002	-9.7	-5.9	-7.7	-3.9	-6.7	-2.9	-5.7	-1.9
12/19/2002	-17.5	-4	-15.5	-2	-14.5	-1	-13.5	0
12/20/2002	-16.4	-5	-14.4	-3	-13.4	-2	-12.4	-1
12/21/2002	-8.9	-5.6	-6.9	-3.6	-5.9	-2.6	-4.9	-1.6
12/22/2002	-12.4	-2.2	-10.4	-0.2	-9.4	0.8	-8.4	1.8
12/23/2002	-10.2	-6.8	-8.2	-4.8	-7.2	-3.8	-6.2	-2.8
12/24/2002	-19.7	-7.5	-17.7	-5.5	-16.7	-4.5	-15.7	-3.5
12/25/2002	-19.1	-5.4	-17.1	-3.4	-16.1	-2.4	-15.1	-1.4
12/26/2002	-17.6	-3	-15.6	-1	-14.6	0	-13.6	1
12/27/2002	-6.2	-1.2	-4.2	0.8	-3.2	1.8	-2.2	2.8
12/28/2002	-1.7	0.5	0.3	2.5	1.3	3.5	2.3	4.5
12/29/2002	-7.8	-0.7	-5.8	1.3	-4.8	2.3	-3.8	3.3
12/30/2002	-11.6	-3.3	-9.6	-1.3	-8.6	-0.3	-7.6	0.7
12/31/2002	-11.2	-1.5	-9.2	0.5	-8.2	1.5	-7.2	2.5
1/1/2003	-14.5	-2.8	-12.5	-0.8	-11.5	0.2	-10.5	1.2
1/2/2003	-14	3.9	-12	5.9	-11	6.9	-10	7.9
1/3/2003	-2.5	4.1	-0.5	6.1	0.5	7.1	1.5	8.1
1/4/2003	-2.7	7.5	-0.7	9.5	0.3	10.5	1.3	11.5
1/5/2003	-3.4	7.6	-1.4	9.6	-0.4	10.6	0.6	11.6
1/6/2003	-5.1	6.3	-3.1	8.3	-2.1	9.3	-1.1	10.3
1/7/2003	-10.8	0.9	-8.8	2.9	-7.8	3.9	-6.8	4.9
1/8/2003	-12.3	7.8	-10.3	9.8	-9.3	10.8	-8.3	11.8
1/9/2003	-7.5	6.2	-5.5	8.2	-4.5	9.2	-3.5	10.2
1/10/2003	-2.7	-0.2	-0.7	1.8	0.3	2.8	1.3	3.8
1/11/2003	-3	-0.3	-1	1.7	0	2.7	1	3.7
1/12/2003	-9.8	1.7	-7.8	3.7	-6.8	4.7	-5.8	5.7

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/13/2003	-3.4	3.1	-1.4	5.1	-0.4	6.1	0.6	7.1
1/14/2003	-4.1	6.7	-2.1	8.7	-1.1	9.7	-0.1	10.7
1/15/2003	-10.2	4.3	-8.2	6.3	-7.2	7.3	-6.2	8.3
1/16/2003	-14.7	10.7	-12.7	12.7	-11.7	13.7	-10.7	14.7
1/17/2003	-9	12.6	-7	14.6	-6	15.6	-5	16.6
1/18/2003	-6.2	10.4	-4.2	12.4	-3.2	13.4	-2.2	14.4
1/19/2003	-6.3	8.7	-4.3	10.7	-3.3	11.7	-2.3	12.7
1/20/2003	-7.8	9.2	-5.8	11.2	-4.8	12.2	-3.8	13.2
1/21/2003	-9.2	7.3	-7.2	9.3	-6.2	10.3	-5.2	11.3
1/22/2003	-3.1	0.6	-1.1	2.6	-0.1	3.6	0.9	4.6
1/23/2003	-2.5	5.3	-0.5	7.3	0.5	8.3	1.5	9.3
1/24/2003	-0.3	3	1.7	5	2.7	6	3.7	7
1/25/2003	-4.2	3	-2.2	5	-1.2	6	-0.2	7
1/26/2003	-3.1	7.2	-1.1	9.2	-0.1	10.2	0.9	11.2
1/27/2003	-2.4	10.1	-0.4	12.1	0.6	13.1	1.6	14.1
1/28/2003	-1.6	6.1	0.4	8.1	1.4	9.1	2.4	10.1
1/29/2003	-7.5	5.1	-5.5	7.1	-4.5	8.1	-3.5	9.1
1/30/2003	-7.1	10.4	-5.1	12.4	-4.1	13.4	-3.1	14.4
1/31/2003	-4.8	10.8	-2.8	12.8	-1.8	13.8	-0.8	14.8
2/1/2003	-2.9	13	-0.9	15	0.1	16	1.1	17
2/2/2003	-8.8	4.4	-6.8	6.4	-5.8	7.4	-4.8	8.4
2/3/2003	-10.6	-1.8	-8.6	0.2	-7.6	1.2	-6.6	2.2
2/4/2003	-13.3	5	-11.3	7	-10.3	8	-9.3	9
2/5/2003	-12.4	3.6	-10.4	5.6	-9.4	6.6	-8.4	7.6
2/6/2003	-14.4	1.7	-12.4	3.7	-11.4	4.7	-10.4	5.7
2/7/2003	-15.8	-3.8	-13.8	-1.8	-12.8	-0.8	-11.8	0.2
2/8/2003	-18	-4.3	-16	-2.3	-15	-1.3	-14	-0.3
2/9/2003	-20.6	1.7	-18.6	3.7	-17.6	4.7	-16.6	5.7
2/10/2003	-15.9	4.9	-13.9	6.9	-12.9	7.9	-11.9	8.9
2/11/2003	-13	8.3	-11	10.3	-10	11.3	-9	12.3
2/12/2003	-7.6	3.1	-5.6	5.1	-4.6	6.1	-3.6	7.1
2/13/2003	-10.1	1.8	-8.1	3.8	-7.1	4.8	-6.1	5.8
2/14/2003	-1.9	1	0.1	3	1.1	4	2.1	5
2/15/2003	-8.3	7.3	-6.3	9.3	-5.3	10.3	-4.3	11.3
2/16/2003	-7.4	2.6	-5.4	4.6	-4.4	5.6	-3.4	6.6
2/17/2003	-11.1	-1.2	-9.1	0.8	-8.1	1.8	-7.1	2.8
2/18/2003	-15.2	0.7	-13.2	2.7	-12.2	3.7	-11.2	4.7
2/19/2003	-17.6	3.2	-15.6	5.2	-14.6	6.2	-13.6	7.2
2/20/2003	-11.5	-3.6	-9.5	-1.6	-8.5	-0.6	-7.5	0.4
2/21/2003	-6	1.6	-4	3.6	-3	4.6	-2	5.6
2/22/2003	-13.4	8.6	-11.4	10.6	-10.4	11.6	-9.4	12.6
2/23/2003	-10	7.2	-8	9.2	-7	10.2	-6	11.2
2/24/2003	-10.8	7.1	-8.8	9.1	-7.8	10.1	-6.8	11.1
2/25/2003	-5.9	2.2	-3.9	4.2	-2.9	5.2	-1.9	6.2
2/26/2003	-8	-2.5	-6	-0.5	-5	0.5	-4	1.5
2/27/2003	-14.9	-0.7	-12.9	1.3	-11.9	2.3	-10.9	3.3
2/28/2003	-13.1	-1.9	-11.1	0.1	-10.1	1.1	-9.1	2.1
3/1/2003	-10.6	-0.5	-8.6	1.5	-7.6	2.5	-6.6	3.5

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/2/2003	-8.8	0.2	-6.8	2.2	-5.8	3.2	-4.8	4.2
3/3/2003	-10.8	9.9	-8.8	11.9	-7.8	12.9	-6.8	13.9
3/4/2003	-6.5	1.6	-4.5	3.6	-3.5	4.6	-2.5	5.6
3/5/2003	-9.2	-0.6	-7.2	1.4	-6.2	2.4	-5.2	3.4
3/6/2003	-12.3	7.2	-10.3	9.2	-9.3	10.2	-8.3	11.2
3/7/2003	-8.8	6.4	-6.8	8.4	-5.8	9.4	-4.8	10.4
3/8/2003	-7.9	6.5	-5.9	8.5	-4.9	9.5	-3.9	10.5
3/9/2003	-11.1	8.8	-9.1	10.8	-8.1	11.8	-7.1	12.8
3/10/2003	-9.4	7.7	-7.4	9.7	-6.4	10.7	-5.4	11.7
3/11/2003	-5.8	8.6	-3.8	10.6	-2.8	11.6	-1.8	12.6
3/12/2003	-7.4	10.4	-5.4	12.4	-4.4	13.4	-3.4	14.4
3/13/2003	-6.8	10.6	-4.8	12.6	-3.8	13.6	-2.8	14.6
3/14/2003	-0.5	8.7	1.5	10.7	2.5	11.7	3.5	12.7
3/15/2003	-2.1	4.3	-0.1	6.3	0.9	7.3	1.9	8.3
3/16/2003	-12.4	0.2	-10.4	2.2	-9.4	3.2	-8.4	4.2
3/17/2003	-12.8	2.1	-10.8	4.1	-9.8	5.1	-8.8	6.1
3/18/2003	-8.3	-0.6	-6.3	1.4	-5.3	2.4	-4.3	3.4
3/19/2003	-9.4	1.7	-7.4	3.7	-6.4	4.7	-5.4	5.7
3/20/2003	-14.8	9.5	-12.8	11.5	-11.8	12.5	-10.8	13.5
3/21/2003	-7.8	3.9	-5.8	5.9	-4.8	6.9	-3.8	7.9
3/22/2003	-8	10.7	-6	12.7	-5	13.7	-4	14.7
3/23/2003	-4.3	8.3	-2.3	10.3	-1.3	11.3	-0.3	12.3
3/24/2003	-1.4	2	0.6	4	1.6	5	2.6	6
3/25/2003	-4.6	5.8	-2.6	7.8	-1.6	8.8	-0.6	9.8
3/26/2003	-6.5	10	-4.5	12	-3.5	13	-2.5	14
3/27/2003	-4.1	1.7	-2.1	3.7	-1.1	4.7	-0.1	5.7
3/28/2003	-8.3	3.4	-6.3	5.4	-5.3	6.4	-4.3	7.4
3/29/2003	-7.4	4.3	-5.4	6.3	-4.4	7.3	-3.4	8.3
3/30/2003	-5.3	11.5	-3.3	13.5	-2.3	14.5	-1.3	15.5
3/31/2003	-1.6	14.9	0.4	16.9	1.4	17.9	2.4	18.9
4/1/2003	-2.5	12.3	-0.5	14.3	0.5	15.3	1.5	16.3
4/2/2003	-8.3	2.7	-6.3	4.7	-5.3	5.7	-4.3	6.7
4/3/2003	-9.8	-5	-7.8	-3	-6.8	-2	-5.8	-1
4/4/2003	-11.4	-1.2	-9.4	0.8	-8.4	1.8	-7.4	2.8
4/5/2003	-12.8	-2.8	-10.8	-0.8	-9.8	0.2	-8.8	1.2
4/6/2003	-19.9	0.8	-17.9	2.8	-16.9	3.8	-15.9	4.8
4/7/2003	-10.2	-1.2	-8.2	0.8	-7.2	1.8	-6.2	2.8
4/8/2003	-7.3	10.3	-5.3	12.3	-4.3	13.3	-3.3	14.3
4/9/2003	-4.6	12.2	-2.6	14.2	-1.6	15.2	-0.6	16.2
4/10/2003	-4.6	13	-2.6	15	-1.6	16	-0.6	17
4/11/2003	-1.1	9	0.9	11	1.9	12	2.9	13
4/12/2003	-0.4	8	1.6	10	2.6	11	3.6	12
4/13/2003	-3	-0.4	-1	1.6	0	2.6	1	3.6
4/14/2003	-6	-2.7	-4	-0.7	-3	0.3	-2	1.3
4/15/2003	-10.2	1.5	-8.2	3.5	-7.2	4.5	-6.2	5.5
4/16/2003	-15.4	3	-13.4	5	-12.4	6	-11.4	7
4/17/2003	-7.4	1	-5.4	3	-4.4	4	-3.4	5
4/18/2003	-5.1	2.6	-3.1	4.6	-2.1	5.6	-1.1	6.6

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/19/2003	-6.2	2.9	-4.2	4.9	-3.2	5.9	-2.2	6.9
4/20/2003	-8	8.1	-6	10.1	-5	11.1	-4	12.1
4/21/2003	-6.8	5.7	-4.8	7.7	-3.8	8.7	-2.8	9.7
4/22/2003	-11.7	-1.5	-9.7	0.5	-8.7	1.5	-7.7	2.5
4/23/2003	-12	2.9	-10	4.9	-9	5.9	-8	6.9
4/24/2003	-6.4	7.8	-4.4	9.8	-3.4	10.8	-2.4	11.8
4/25/2003	-4.3	-0.2	-2.3	1.8	-1.3	2.8	-0.3	3.8
4/26/2003	-5.1	-1.2	-3.1	0.8	-2.1	1.8	-1.1	2.8
4/27/2003	-6	3.6	-4	5.6	-3	6.6	-2	7.6
4/28/2003	-4.8	3	-2.8	5	-1.8	6	-0.8	7
4/29/2003	-6.5	2.6	-4.5	4.6	-3.5	5.6	-2.5	6.6
4/30/2003	-7.1	0.9	-5.1	2.9	-4.1	3.9	-3.1	4.9
5/1/2003	-15	5.1	-13	7.1	-12	8.1	-11	9.1
5/2/2003	-6.5	7.4	-4.5	9.4	-3.5	10.4	-2.5	11.4
5/3/2003	-2.1	2.6	-0.1	4.6	0.9	5.6	1.9	6.6
5/4/2003	-2.3	3	-0.3	5	0.7	6	1.7	7
5/5/2003	-8.9	1.6	-6.9	3.6	-5.9	4.6	-4.9	5.6
5/6/2003	-11.7	9.3	-9.7	11.3	-8.7	12.3	-7.7	13.3
5/7/2003	-7.9	7.3	-5.9	9.3	-4.9	10.3	-3.9	11.3
5/8/2003	-2.9	5	-0.9	7	0.1	8	1.1	9
5/9/2003	-8.3	-2.7	-6.3	-0.7	-5.3	0.3	-4.3	1.3
5/10/2003	-13.2	5.9	-11.2	7.9	-10.2	8.9	-9.2	9.9
5/11/2003	-7.2	9	-5.2	11	-4.2	12	-3.2	13
5/12/2003	-6.2	12.5	-4.2	14.5	-3.2	15.5	-2.2	16.5
5/13/2003	-4.1	15.2	-2.1	17.2	-1.1	18.2	-0.1	19.2
5/14/2003	-2	18.1	0	20.1	1	21.1	2	22.1
5/15/2003	-2.3	11.8	-0.3	13.8	0.7	14.8	1.7	15.8
5/16/2003	-3.9	14	-1.9	16	-0.9	17	0.1	18
5/17/2003	-4.6	15.3	-2.6	17.3	-1.6	18.3	-0.6	19.3
5/18/2003	-3.1	14.4	-1.1	16.4	-0.1	17.4	0.9	18.4
5/19/2003	-6.1	15.4	-4.1	17.4	-3.1	18.4	-2.1	19.4
5/20/2003	-3.1	15	-1.1	17	-0.1	18	0.9	19
5/21/2003	-2.7	18.7	-0.7	20.7	0.3	21.7	1.3	22.7
5/22/2003	-1.5	20.4	0.5	22.4	1.5	23.4	2.5	24.4
5/23/2003	0.5	22.8	2.5	24.8	3.5	25.8	4.5	26.8
5/24/2003	0.1	23.2	2.1	25.2	3.1	26.2	4.1	27.2
5/25/2003	0.4	19.9	2.4	21.9	3.4	22.9	4.4	23.9
5/26/2003	2.1	12.9	4.1	14.9	5.1	15.9	6.1	16.9
5/27/2003	-1	16.8	1	18.8	2	19.8	3	20.8
5/28/2003	2	23.5	4	25.5	5	26.5	6	27.5
5/29/2003	1.6	22.3	3.6	24.3	4.6	25.3	5.6	26.3
5/30/2003	2.5	19.2	4.5	21.2	5.5	22.2	6.5	23.2
5/31/2003	0.7	16.4	2.7	18.4	3.7	19.4	4.7	20.4
6/1/2003	-0.1	18.1	1.9	20.1	2.9	21.1	3.9	22.1
6/2/2003	-1	20.6	1	22.6	2	23.6	3	24.6
6/3/2003	-0.1	23.7	1.9	25.7	2.9	26.7	3.9	27.7
6/4/2003	2	22.8	4	24.8	5	25.8	6	26.8
6/5/2003	2.2	22.6	4.2	24.6	5.2	25.6	6.2	26.6

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/6/2003	2.3	21.3	4.3	23.3	5.3	24.3	6.3	25.3
6/7/2003	2.4	22.9	4.4	24.9	5.4	25.9	6.4	26.9
6/8/2003	1.8	23.1	3.8	25.1	4.8	26.1	5.8	27.1
6/9/2003	0.7	20.1	2.7	22.1	3.7	23.1	4.7	24.1
6/10/2003	2.3	18	4.3	20	5.3	21	6.3	22
6/11/2003	1.4	17.7	3.4	19.7	4.4	20.7	5.4	21.7
6/12/2003	-0.6	16	1.4	18	2.4	19	3.4	20
6/13/2003	-1.9	15.4	0.1	17.4	1.1	18.4	2.1	19.4
6/14/2003	0.2	15.9	2.2	17.9	3.2	18.9	4.2	19.9
6/15/2003	-0.1	18.8	1.9	20.8	2.9	21.8	3.9	22.8
6/16/2003	1.1	20.3	3.1	22.3	4.1	23.3	5.1	24.3
6/17/2003	4.2	22.3	6.2	24.3	7.2	25.3	8.2	26.3
6/18/2003	5.1	24.1	7.1	26.1	8.1	27.1	9.1	28.1
6/19/2003	5.8	20.6	7.8	22.6	8.8	23.6	9.8	24.6
6/20/2003	2.7	16.5	4.7	18.5	5.7	19.5	6.7	20.5
6/21/2003	1.3	14.8	3.3	16.8	4.3	17.8	5.3	18.8
6/22/2003	0.8	14.5	2.8	16.5	3.8	17.5	4.8	18.5
6/23/2003	-0.8	14.1	1.2	16.1	2.2	17.1	3.2	18.1
6/24/2003	-1	10.1	1	12.1	2	13.1	3	14.1
6/25/2003	0.5	13.2	2.5	15.2	3.5	16.2	4.5	17.2
6/26/2003	1.7	18.2	3.7	20.2	4.7	21.2	5.7	22.2
6/27/2003	4.2	22.4	6.2	24.4	7.2	25.4	8.2	26.4
6/28/2003	5.6	24.5	7.6	26.5	8.6	27.5	9.6	28.5
6/29/2003	7.6	26	9.6	28	10.6	29	11.6	30
6/30/2003	6.4	20.7	8.4	22.7	9.4	23.7	10.4	24.7
7/1/2003	4.9	21.5	6.9	23.5	7.9	24.5	8.9	25.5
7/2/2003	6.6	18.1	8.6	20.1	9.6	21.1	10.6	22.1
7/3/2003	7.7	19.6	9.7	21.6	10.7	22.6	11.7	23.6
7/4/2003	6.2	19.2	8.2	21.2	9.2	22.2	10.2	23.2
7/5/2003	3.8	22.7	5.8	24.7	6.8	25.7	7.8	26.7
7/6/2003	4.8	22.8	6.8	24.8	7.8	25.8	8.8	26.8
7/7/2003	4.2	22.1	6.2	24.1	7.2	25.1	8.2	26.1
7/8/2003	3.4	20.6	5.4	22.6	6.4	23.6	7.4	24.6
7/9/2003	3.4	21.8	5.4	23.8	6.4	24.8	7.4	25.8
7/10/2003	6.5	26.9	8.5	28.9	9.5	29.9	10.5	30.9
7/11/2003	8.5	23	10.5	25	11.5	26	12.5	27
7/12/2003	7.1	25.7	9.1	27.7	10.1	28.7	11.1	29.7
7/13/2003	7.2	23.2	9.2	25.2	10.2	26.2	11.2	27.2
7/14/2003	7	22.9	9	24.9	10	25.9	11	26.9
7/15/2003	6.1	25.9	8.1	27.9	9.1	28.9	10.1	29.9
7/16/2003	8	24	10	26	11	27	12	28
7/17/2003	12.2	24.5	14.2	26.5	15.2	27.5	16.2	28.5
7/18/2003	10.4	26.5	12.4	28.5	13.4	29.5	14.4	30.5
7/19/2003	10.4	25.2	12.4	27.2	13.4	28.2	14.4	29.2
7/20/2003	12.2	26	14.2	28	15.2	29	16.2	30
7/21/2003	11.9	25.5	13.9	27.5	14.9	28.5	15.9	29.5
7/22/2003	10.8	26.2	12.8	28.2	13.8	29.2	14.8	30.2
7/23/2003	11.6	29.4	13.6	31.4	14.6	32.4	15.6	33.4

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/24/2003	12.3	22.8	14.3	24.8	15.3	25.8	16.3	26.8
7/25/2003	10.4	21.9	12.4	23.9	13.4	24.9	14.4	25.9
7/26/2003	9.8	21.8	11.8	23.8	12.8	24.8	13.8	25.8
7/27/2003	9.3	23	11.3	25	12.3	26	13.3	27
7/28/2003	10.6	22.2	12.6	24.2	13.6	25.2	14.6	26.2
7/29/2003	9.3	25.8	11.3	27.8	12.3	28.8	13.3	29.8
7/30/2003	9.8	25.9	11.8	27.9	12.8	28.9	13.8	29.9
7/31/2003	11.8	25.5	13.8	27.5	14.8	28.5	15.8	29.5
8/1/2003	9.5	20.8	11.5	22.8	12.5	23.8	13.5	24.8
8/2/2003	8.3	16.7	10.3	18.7	11.3	19.7	12.3	20.7
8/3/2003	7.1	11.8	9.1	13.8	10.1	14.8	11.1	15.8
8/4/2003	6.5	18	8.5	20	9.5	21	10.5	22
8/5/2003	8.2	19.7	10.2	21.7	11.2	22.7	12.2	23.7
8/6/2003	5	17.5	7	19.5	8	20.5	9	21.5
8/7/2003	6.4	16.9	8.4	18.9	9.4	19.9	10.4	20.9
8/8/2003	3.7	18	5.7	20	6.7	21	7.7	22
8/9/2003	6.6	19.1	8.6	21.1	9.6	22.1	10.6	23.1
8/10/2003	4.1	21	6.1	23	7.1	24	8.1	25
8/11/2003	6.9	22.3	8.9	24.3	9.9	25.3	10.9	26.3
8/12/2003	8.2	20.5	10.2	22.5	11.2	23.5	12.2	24.5
8/13/2003	7.6	21.4	9.6	23.4	10.6	24.4	11.6	25.4
8/14/2003	6.7	21.6	8.7	23.6	9.7	24.6	10.7	25.6
8/15/2003	8	22	10	24	11	25	12	26
8/16/2003	9.1	21.5	11.1	23.5	12.1	24.5	13.1	25.5
8/17/2003	7.7	22.7	9.7	24.7	10.7	25.7	11.7	26.7
8/18/2003	7.7	23.4	9.7	25.4	10.7	26.4	11.7	27.4
8/19/2003	8.9	25.7	10.9	27.7	11.9	28.7	12.9	29.7
8/20/2003	9.3	23.9	11.3	25.9	12.3	26.9	13.3	27.9
8/21/2003	8.4	24	10.4	26	11.4	27	12.4	28
8/22/2003	10.7	17.5	12.7	19.5	13.7	20.5	14.7	21.5
8/23/2003	6.8	16.4	8.8	18.4	9.8	19.4	10.8	20.4
8/24/2003	5.1	19.6	7.1	21.6	8.1	22.6	9.1	23.6
8/25/2003	4.7	22.3	6.7	24.3	7.7	25.3	8.7	26.3
8/26/2003	6.7	23.3	8.7	25.3	9.7	26.3	10.7	27.3
8/27/2003	7.1	18.2	9.1	20.2	10.1	21.2	11.1	22.2
8/28/2003	7.6	20	9.6	22	10.6	23	11.6	24
8/29/2003	8.5	20	10.5	22	11.5	23	12.5	24
8/30/2003	4.7	20.9	6.7	22.9	7.7	23.9	8.7	24.9
8/31/2003	7.3	23.7	9.3	25.7	10.3	26.7	11.3	27.7
9/1/2003	6.6	16.2	8.6	18.2	9.6	19.2	10.6	20.2
9/2/2003	5.3	20.8	7.3	22.8	8.3	23.8	9.3	24.8
9/3/2003	6.7	23.1	8.7	25.1	9.7	26.1	10.7	27.1
9/4/2003	7.4	21.1	9.4	23.1	10.4	24.1	11.4	25.1
9/5/2003	7.2	19.5	9.2	21.5	10.2	22.5	11.2	23.5
9/6/2003	6.6	20.4	8.6	22.4	9.6	23.4	10.6	24.4
9/7/2003	7.7	19.6	9.7	21.6	10.7	22.6	11.7	23.6
9/8/2003	6.2	17.2	8.2	19.2	9.2	20.2	10.2	21.2
9/9/2003	3.7	14.6	5.7	16.6	6.7	17.6	7.7	18.6

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/10/2003	1.2	11.9	3.2	13.9	4.2	14.9	5.2	15.9
9/11/2003	0.2	14.7	2.2	16.7	3.2	17.7	4.2	18.7
9/12/2003	6.8	20	8.8	22	9.8	23	10.8	24
9/13/2003	4.5	23.3	6.5	25.3	7.5	26.3	8.5	27.3
9/14/2003	4.5	16.9	6.5	18.9	7.5	19.9	8.5	20.9
9/15/2003	4.1	20.2	6.1	22.2	7.1	23.2	8.1	24.2
9/16/2003	7.6	19.1	9.6	21.1	10.6	22.1	11.6	23.1
9/17/2003	4.4	14.9	6.4	16.9	7.4	17.9	8.4	18.9
9/18/2003	-0.2	13.3	1.8	15.3	2.8	16.3	3.8	17.3
9/19/2003	-0.5	19	1.5	21	2.5	22	3.5	23
9/20/2003	2.9	19.5	4.9	21.5	5.9	22.5	6.9	23.5
9/21/2003	3.4	20.9	5.4	22.9	6.4	23.9	7.4	24.9
9/22/2003	5.9	23.3	7.9	25.3	8.9	26.3	9.9	27.3
9/23/2003	5.9	23.4	7.9	25.4	8.9	26.4	9.9	27.4
9/24/2003	5.7	24.1	7.7	26.1	8.7	27.1	9.7	28.1
9/25/2003	5.9	23.9	7.9	25.9	8.9	26.9	9.9	27.9
9/26/2003	6	23.3	8	25.3	9	26.3	10	27.3
9/27/2003	6.3	22.7	8.3	24.7	9.3	25.7	10.3	26.7
9/28/2003	5.4	24.6	7.4	26.6	8.4	27.6	9.4	28.6
9/29/2003	6.4	23.9	8.4	25.9	9.4	26.9	10.4	27.9
9/30/2003	6.9	19.5	8.9	21.5	9.9	22.5	10.9	23.5
10/1/2003	5.9	19.8	7.9	21.8	8.9	22.8	9.9	23.8
10/2/2003	4.4	17.2	6.4	19.2	7.4	20.2	8.4	21.2
10/3/2003	2.1	15.4	4.1	17.4	5.1	18.4	6.1	19.4
10/4/2003	3.3	15.9	5.3	17.9	6.3	18.9	7.3	19.9
10/5/2003	5.2	17.1	7.2	19.1	8.2	20.1	9.2	21.1
10/6/2003	2.9	17.6	4.9	19.6	5.9	20.6	6.9	21.6
10/7/2003	3.6	19.1	5.6	21.1	6.6	22.1	7.6	23.1
10/8/2003	3.7	18.6	5.7	20.6	6.7	21.6	7.7	22.6
10/9/2003	3.8	18.9	5.8	20.9	6.8	21.9	7.8	22.9
10/10/2003	5.4	16.5	7.4	18.5	8.4	19.5	9.4	20.5
10/11/2003	-2.8	9.7	-0.8	11.7	0.2	12.7	1.2	13.7
10/12/2003	-1.4	17	0.6	19	1.6	20	2.6	21
10/13/2003	0.9	16.8	2.9	18.8	3.9	19.8	4.9	20.8
10/14/2003	0.7	16.5	2.7	18.5	3.7	19.5	4.7	20.5
10/15/2003	1.8	15.9	3.8	17.9	4.8	18.9	5.8	19.9
10/16/2003	1.1	14.3	3.1	16.3	4.1	17.3	5.1	18.3
10/17/2003	1.2	16.9	3.2	18.9	4.2	19.9	5.2	20.9
10/18/2003	2.4	19.8	4.4	21.8	5.4	22.8	6.4	23.8
10/19/2003	5	17.2	7	19.2	8	20.2	9	21.2
10/20/2003	4.6	17.7	6.6	19.7	7.6	20.7	8.6	21.7
10/21/2003	5.3	20	7.3	22	8.3	23	9.3	24
10/22/2003	3.2	20.4	5.2	22.4	6.2	23.4	7.2	24.4
10/23/2003	4.6	18.8	6.6	20.8	7.6	21.8	8.6	22.8
10/24/2003	3.4	15.6	5.4	17.6	6.4	18.6	7.4	19.6
10/25/2003	-0.7	17.7	1.3	19.7	2.3	20.7	3.3	21.7
10/26/2003	2.6	14.4	4.6	16.4	5.6	17.4	6.6	18.4
10/27/2003	2.1	15.8	4.1	17.8	5.1	18.8	6.1	19.8

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/28/2003	2.3	18.4	4.3	20.4	5.3	21.4	6.3	22.4
10/29/2003	4.9	20.2	6.9	22.2	7.9	23.2	8.9	24.2
10/30/2003	-0.4	13	1.6	15	2.6	16	3.6	17
10/31/2003	-9.4	-0.1	-7.4	1.9	-6.4	2.9	-5.4	3.9
11/1/2003	-8.7	-5	-6.7	-3	-5.7	-2	-4.7	-1
11/2/2003	-11.2	-4	-9.2	-2	-8.2	-1	-7.2	0
11/3/2003	-11.6	-3	-9.6	-1	-8.6	0	-7.6	1
11/4/2003	-13.1	-3.7	-11.1	-1.7	-10.1	-0.7	-9.1	0.3
11/5/2003	-13.6	-0.4	-11.6	1.6	-10.6	2.6	-9.6	3.6
11/6/2003	-9.4	0.8	-7.4	2.8	-6.4	3.8	-5.4	4.8
11/7/2003	-9.8	3.2	-7.8	5.2	-6.8	6.2	-5.8	7.2
11/8/2003	-3.6	0.2	-1.6	2.2	-0.6	3.2	0.4	4.2
11/9/2003	-3	1.3	-1	3.3	0	4.3	1	5.3
11/10/2003	-6.5	-1.3	-4.5	0.7	-3.5	1.7	-2.5	2.7
11/11/2003	-7.8	0.3	-5.8	2.3	-4.8	3.3	-3.8	4.3
11/12/2003	-9.8	3	-7.8	5	-6.8	6	-5.8	7
11/13/2003	-5.5	-1	-3.5	1	-2.5	2	-1.5	3
11/14/2003	-4.8	0	-2.8	2	-1.8	3	-0.8	4
11/15/2003	-6.4	2	-4.4	4	-3.4	5	-2.4	6
11/16/2003	-7.9	-2.2	-5.9	-0.2	-4.9	0.8	-3.9	1.8
11/17/2003	-10.2	1.1	-8.2	3.1	-7.2	4.1	-6.2	5.1
11/18/2003	-4	3.3	-2	5.3	-1	6.3	0	7.3
11/19/2003	-5.9	10.7	-3.9	12.7	-2.9	13.7	-1.9	14.7
11/20/2003	0.7	8.5	2.7	10.5	3.7	11.5	4.7	12.5
11/21/2003	-1.6	5.8	0.4	7.8	1.4	8.8	2.4	9.8
11/22/2003	-12.2	-1.7	-10.2	0.3	-9.2	1.3	-8.2	2.3
11/23/2003	-13.7	-5.9	-11.7	-3.9	-10.7	-2.9	-9.7	-1.9
11/24/2003	-11	4.8	-9	6.8	-8	7.8	-7	8.8
11/25/2003	-8	2.9	-6	4.9	-5	5.9	-4	6.9
11/26/2003	-10.4	0.5	-8.4	2.5	-7.4	3.5	-6.4	4.5
11/27/2003	-11.4	2.6	-9.4	4.6	-8.4	5.6	-7.4	6.6
11/28/2003	-9	7.8	-7	9.8	-6	10.8	-5	11.8
11/29/2003	-1.5	7.6	0.5	9.6	1.5	10.6	2.5	11.6
11/30/2003	-2.3	6.5	-0.3	8.5	0.7	9.5	1.7	10.5
12/1/2003	-3.2	5.2	-1.2	7.2	-0.2	8.2	0.8	9.2
12/2/2003	-3.7	2.5	-1.7	4.5	-0.7	5.5	0.3	6.5
12/3/2003	-7.3	4.1	-5.3	6.1	-4.3	7.1	-3.3	8.1
12/4/2003	-7.7	8	-5.7	10	-4.7	11	-3.7	12
12/5/2003	-5.6	6.3	-3.6	8.3	-2.6	9.3	-1.6	10.3
12/6/2003	0	3.6	2	5.6	3	6.6	4	7.6
12/7/2003	-1.4	1.9	0.6	3.9	1.6	4.9	2.6	5.9
12/8/2003	-8.3	-0.4	-6.3	1.6	-5.3	2.6	-4.3	3.6
12/9/2003	-11.5	-2.8	-9.5	-0.8	-8.5	0.2	-7.5	1.2
12/10/2003	-10.9	-1.9	-8.9	0.1	-7.9	1.1	-6.9	2.1
12/11/2003	-6.1	-2.4	-4.1	-0.4	-3.1	0.6	-2.1	1.6
12/12/2003	-16	-4.1	-14	-2.1	-13	-1.1	-12	-0.1
12/13/2003	-15.8	-0.1	-13.8	1.9	-12.8	2.9	-11.8	3.9
12/14/2003	-4.6	-0.1	-2.6	1.9	-1.6	2.9	-0.6	3.9

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/15/2003	-17.8	-2.9	-15.8	-0.9	-14.8	0.1	-13.8	1.1
12/16/2003	-19.5	-2.1	-17.5	-0.1	-16.5	0.9	-15.5	1.9
12/17/2003	-12.4	3.1	-10.4	5.1	-9.4	6.1	-8.4	7.1
12/18/2003	-9.2	3.4	-7.2	5.4	-6.2	6.4	-5.2	7.4
12/19/2003	-7.4	7.4	-5.4	9.4	-4.4	10.4	-3.4	11.4
12/20/2003	-3.8	6.5	-1.8	8.5	-0.8	9.5	0.2	10.5
12/21/2003	-2.6	0.8	-0.6	2.8	0.4	3.8	1.4	4.8
12/22/2003	-10.9	2.6	-8.9	4.6	-7.9	5.6	-6.9	6.6
12/23/2003	-12.8	2.4	-10.8	4.4	-9.8	5.4	-8.8	6.4
12/24/2003	-6.8	-1.1	-4.8	0.9	-3.8	1.9	-2.8	2.9
12/25/2003	-5.4	-1	-3.4	1	-2.4	2	-1.4	3
12/26/2003	-9.7	-4.9	-7.7	-2.9	-6.7	-1.9	-5.7	-0.9
12/27/2003	-21.3	-9	-19.3	-7	-18.3	-6	-17.3	-5
12/28/2003	-23.9	-6.9	-21.9	-4.9	-20.9	-3.9	-19.9	-2.9
12/29/2003	-21.8	-4.6	-19.8	-2.6	-18.8	-1.6	-17.8	-0.6
12/30/2003	-7.9	-4.7	-5.9	-2.7	-4.9	-1.7	-3.9	-0.7
12/31/2003	-6.4	-0.5	-4.4	1.5	-3.4	2.5	-2.4	3.5
1/1/2004	-5.7	-3.5	-3.7	-1.5	-2.7	-0.5	-1.7	0.5
1/2/2004	-8.5	-5.1	-6.5	-3.1	-5.5	-2.1	-4.5	-1.1
1/3/2004	-12.1	-7.8	-10.1	-5.8	-9.1	-4.8	-8.1	-3.8
1/4/2004	-23.2	-9	-21.2	-7	-20.2	-6	-19.2	-5
1/5/2004	-25.5	-6.9	-23.5	-4.9	-22.5	-3.9	-21.5	-2.9
1/6/2004	-16.7	-1.5	-14.7	0.5	-13.7	1.5	-12.7	2.5
1/7/2004	-9.5	-1.2	-7.5	0.8	-6.5	1.8	-5.5	2.8
1/8/2004	-4.8	-0.4	-2.8	1.6	-1.8	2.6	-0.8	3.6
1/9/2004	-3.2	3.7	-1.2	5.7	-0.2	6.7	0.8	7.7
1/10/2004	-4.6	3.6	-2.6	5.6	-1.6	6.6	-0.6	7.6
1/11/2004	-4.5	6.4	-2.5	8.4	-1.5	9.4	-0.5	10.4
1/12/2004	-6.7	7.2	-4.7	9.2	-3.7	10.2	-2.7	11.2
1/13/2004	-7.3	6.6	-5.3	8.6	-4.3	9.6	-3.3	10.6
1/14/2004	-9	8.6	-7	10.6	-6	11.6	-5	12.6
1/15/2004	-9.6	7.3	-7.6	9.3	-6.6	10.3	-5.6	11.3
1/16/2004	-10.3	4.8	-8.3	6.8	-7.3	7.8	-6.3	8.8
1/17/2004	-12.6	4.6	-10.6	6.6	-9.6	7.6	-8.6	8.6
1/18/2004	-9.8	7.7	-7.8	9.7	-6.8	10.7	-5.8	11.7
1/19/2004	-8.7	3.5	-6.7	5.5	-5.7	6.5	-4.7	7.5
1/20/2004	-12.8	3.6	-10.8	5.6	-9.8	6.6	-8.8	7.6
1/21/2004	-13.3	-3.8	-11.3	-1.8	-10.3	-0.8	-9.3	0.2
1/22/2004	-9	-2.1	-7	-0.1	-6	0.9	-5	1.9
1/23/2004	-15	5.9	-13	7.9	-12	8.9	-11	9.9
1/24/2004	-12.2	7.5	-10.2	9.5	-9.2	10.5	-8.2	11.5
1/25/2004	-6.8	-1.1	-4.8	0.9	-3.8	1.9	-2.8	2.9
1/26/2004	-15	-1.7	-13	0.3	-12	1.3	-11	2.3
1/27/2004	-16.7	-2.2	-14.7	-0.2	-13.7	0.8	-12.7	1.8
1/28/2004	-5.9	-2.1	-3.9	-0.1	-2.9	0.9	-1.9	1.9
1/29/2004	-14.1	0.9	-12.1	2.9	-11.1	3.9	-10.1	4.9
1/30/2004	-9.3	6.3	-7.3	8.3	-6.3	9.3	-5.3	10.3
1/31/2004	-11.5	-1	-9.5	1	-8.5	2	-7.5	3

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/1/2004	-13.2	-0.4	-11.2	1.6	-10.2	2.6	-9.2	3.6
2/2/2004	-13.5	-1.9	-11.5	0.1	-10.5	1.1	-9.5	2.1
2/3/2004	-8.9	-2.7	-6.9	-0.7	-5.9	0.3	-4.9	1.3
2/4/2004	-12.3	-2.8	-10.3	-0.8	-9.3	0.2	-8.3	1.2
2/5/2004	-17.1	-2.5	-15.1	-0.5	-14.1	0.5	-13.1	1.5
2/6/2004	-14.6	-2.6	-12.6	-0.6	-11.6	0.4	-10.6	1.4
2/7/2004	-13.9	3.6	-11.9	5.6	-10.9	6.6	-9.9	7.6
2/8/2004	-15.1	-0.9	-13.1	1.1	-12.1	2.1	-11.1	3.1
2/9/2004	-17.4	-0.6	-15.4	1.4	-14.4	2.4	-13.4	3.4
2/10/2004	-10.8	-3.5	-8.8	-1.5	-7.8	-0.5	-6.8	0.5
2/11/2004	-15.8	2.9	-13.8	4.9	-12.8	5.9	-11.8	6.9
2/12/2004	-12.2	4.7	-10.2	6.7	-9.2	7.7	-8.2	8.7
2/13/2004	-16.5	5	-14.5	7	-13.5	8	-12.5	9
2/14/2004	-13	2.7	-11	4.7	-10	5.7	-9	6.7
2/15/2004	-10.6	2.2	-8.6	4.2	-7.6	5.2	-6.6	6.2
2/16/2004	-8.7	2.2	-6.7	4.2	-5.7	5.2	-4.7	6.2
2/17/2004	-3.5	0.2	-1.5	2.2	-0.5	3.2	0.5	4.2
2/18/2004	-2.7	0.1	-0.7	2.1	0.3	3.1	1.3	4.1
2/19/2004	-7.3	-0.6	-5.3	1.4	-4.3	2.4	-3.3	3.4
2/20/2004	-14.8	2.6	-12.8	4.6	-11.8	5.6	-10.8	6.6
2/21/2004	-10.3	-0.5	-8.3	1.5	-7.3	2.5	-6.3	3.5
2/22/2004	-7.4	-0.1	-5.4	1.9	-4.4	2.9	-3.4	3.9
2/23/2004	-7.3	-0.6	-5.3	1.4	-4.3	2.4	-3.3	3.4
2/24/2004	-12.5	0.6	-10.5	2.6	-9.5	3.6	-8.5	4.6
2/25/2004	-6.9	-1.6	-4.9	0.4	-3.9	1.4	-2.9	2.4
2/26/2004	-7	-1.4	-5	0.6	-4	1.6	-3	2.6
2/27/2004	-8.7	-3.9	-6.7	-1.9	-5.7	-0.9	-4.7	0.1
2/28/2004	-17.7	-0.1	-15.7	1.9	-14.7	2.9	-13.7	3.9
2/29/2004	-15.1	0.2	-13.1	2.2	-12.1	3.2	-11.1	4.2
3/1/2004	-16.8	0.5	-14.8	2.5	-13.8	3.5	-12.8	4.5
3/2/2004	-13.1	-1.7	-11.1	0.3	-10.1	1.3	-9.1	2.3
3/3/2004	-13.8	-2.8	-11.8	-0.8	-10.8	0.2	-9.8	1.2
3/4/2004	-9.9	7.9	-7.9	9.9	-6.9	10.9	-5.9	11.9
3/5/2004	-12.6	5.1	-10.6	7.1	-9.6	8.1	-8.6	9.1
3/6/2004	-8.2	4.8	-6.2	6.8	-5.2	7.8	-4.2	8.8
3/7/2004	-3.8	9.7	-1.8	11.7	-0.8	12.7	0.2	13.7
3/8/2004	-3.6	10.2	-1.6	12.2	-0.6	13.2	0.4	14.2
3/9/2004	-5.9	13	-3.9	15	-2.9	16	-1.9	17
3/10/2004	-5	14.2	-3	16.2	-2	17.2	-1	18.2
3/11/2004	-1.3	8.9	0.7	10.9	1.7	11.9	2.7	12.9
3/12/2004	-3.2	13.3	-1.2	15.3	-0.2	16.3	0.8	17.3
3/13/2004	-7	12.5	-5	14.5	-4	15.5	-3	16.5
3/14/2004	-6	14.4	-4	16.4	-3	17.4	-2	18.4
3/15/2004	-3.6	15.7	-1.6	17.7	-0.6	18.7	0.4	19.7
3/16/2004	-2.8	11.6	-0.8	13.6	0.2	14.6	1.2	15.6
3/17/2004	-3.2	12.6	-1.2	14.6	-0.2	15.6	0.8	16.6
3/18/2004	-4.6	14.1	-2.6	16.1	-1.6	17.1	-0.6	18.1
3/19/2004	-3.4	13.6	-1.4	15.6	-0.4	16.6	0.6	17.6

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/20/2004	-1.3	12.8	0.7	14.8	1.7	15.8	2.7	16.8
3/21/2004	-2.6	19.7	-0.6	21.7	0.4	22.7	1.4	23.7
3/22/2004	-2.3	17.3	-0.3	19.3	0.7	20.3	1.7	21.3
3/23/2004	-1.1	14.9	0.9	16.9	1.9	17.9	2.9	18.9
3/24/2004	-0.8	12.9	1.2	14.9	2.2	15.9	3.2	16.9
3/25/2004	-2.3	8	-0.3	10	0.7	11	1.7	12
3/26/2004	-3.9	3.7	-1.9	5.7	-0.9	6.7	0.1	7.7
3/27/2004	-10.5	1.5	-8.5	3.5	-7.5	4.5	-6.5	5.5
3/28/2004	-7.1	10.3	-5.1	12.3	-4.1	13.3	-3.1	14.3
3/29/2004	-4.2	12.1	-2.2	14.1	-1.2	15.1	-0.2	16.1
3/30/2004	-2.9	14.9	-0.9	16.9	0.1	17.9	1.1	18.9
3/31/2004	1.2	9	3.2	11	4.2	12	5.2	13
4/1/2004	-2.1	9.3	-0.1	11.3	0.9	12.3	1.9	13.3
4/2/2004	-5.7	0.1	-3.7	2.1	-2.7	3.1	-1.7	4.1
4/3/2004	-7	5.3	-5	7.3	-4	8.3	-3	9.3
4/4/2004	-4.1	13.8	-2.1	15.8	-1.1	16.8	-0.1	17.8
4/5/2004	-2.7	11.6	-0.7	13.6	0.3	14.6	1.3	15.6
4/6/2004	-0.5	10.7	1.5	12.7	2.5	13.7	3.5	14.7
4/7/2004	-2.5	8.4	-0.5	10.4	0.5	11.4	1.5	12.4
4/8/2004	-2.6	11.7	-0.6	13.7	0.4	14.7	1.4	15.7
4/9/2004	-2.8	13.4	-0.8	15.4	0.2	16.4	1.2	17.4
4/10/2004	-2.4	13	-0.4	15	0.6	16	1.6	17
4/11/2004	-3	11.1	-1	13.1	0	14.1	1	15.1
4/12/2004	-2.9	15.1	-0.9	17.1	0.1	18.1	1.1	19.1
4/13/2004	-2.3	11	-0.3	13	0.7	14	1.7	15
4/14/2004	-2.6	5.7	-0.6	7.7	0.4	8.7	1.4	9.7
4/15/2004	-3.5	6.1	-1.5	8.1	-0.5	9.1	0.5	10.1
4/16/2004	-2.8	3.5	-0.8	5.5	0.2	6.5	1.2	7.5
4/17/2004	-3.7	2.8	-1.7	4.8	-0.7	5.8	0.3	6.8
4/18/2004	-6.3	-1.2	-4.3	0.8	-3.3	1.8	-2.3	2.8
4/19/2004	-7.5	1.3	-5.5	3.3	-4.5	4.3	-3.5	5.3
4/20/2004	-5.5	0.5	-3.5	2.5	-2.5	3.5	-1.5	4.5
4/21/2004	-2.6	3.1	-0.6	5.1	0.4	6.1	1.4	7.1
4/22/2004	-4.2	3.5	-2.2	5.5	-1.2	6.5	-0.2	7.5
4/23/2004	-6.2	4	-4.2	6	-3.2	7	-2.2	8
4/24/2004	-3	13.1	-1	15.1	0	16.1	1	17.1
4/25/2004	-4	14.1	-2	16.1	-1	17.1	0	18.1
4/26/2004	-2.2	15.6	-0.2	17.6	0.8	18.6	1.8	19.6
4/27/2004	-1	17.9	1	19.9	2	20.9	3	21.9
4/28/2004	-1.5	16.4	0.5	18.4	1.5	19.4	2.5	20.4
4/29/2004	-2.6	12.3	-0.6	14.3	0.4	15.3	1.4	16.3
4/30/2004	-4.9	9.1	-2.9	11.1	-1.9	12.1	-0.9	13.1
5/1/2004	-3.8	14.6	-1.8	16.6	-0.8	17.6	0.2	18.6
5/2/2004	-2.3	16.6	-0.3	18.6	0.7	19.6	1.7	20.6
5/3/2004	-0.3	17.9	1.7	19.9	2.7	20.9	3.7	21.9
5/4/2004	-0.2	19.3	1.8	21.3	2.8	22.3	3.8	23.3
5/5/2004	1.3	16.6	3.3	18.6	4.3	19.6	5.3	20.6
5/6/2004	4	13.7	6	15.7	7	16.7	8	17.7

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/7/2004	3.2	12.7	5.2	14.7	6.2	15.7	7.2	16.7
5/8/2004	2.5	11.3	4.5	13.3	5.5	14.3	6.5	15.3
5/9/2004	-0.6	10.8	1.4	12.8	2.4	13.8	3.4	14.8
5/10/2004	-3	14.3	-1	16.3	0	17.3	1	18.3
5/11/2004	-4	3.8	-2	5.8	-1	6.8	0	7.8
5/12/2004	-2.9	6.1	-0.9	8.1	0.1	9.1	1.1	10.1
5/13/2004	-5	10.6	-3	12.6	-2	13.6	-1	14.6
5/14/2004	-3.1	13.9	-1.1	15.9	-0.1	16.9	0.9	17.9
5/15/2004	-2.8	13.6	-0.8	15.6	0.2	16.6	1.2	17.6
5/16/2004	-1.3	13.7	0.7	15.7	1.7	16.7	2.7	17.7
5/17/2004	-2	14.4	0	16.4	1	17.4	2	18.4
5/18/2004	-0.6	10.7	1.4	12.7	2.4	13.7	3.4	14.7
5/19/2004	-1.8	8.4	0.2	10.4	1.2	11.4	2.2	12.4
5/20/2004	-2.7	11.2	-0.7	13.2	0.3	14.2	1.3	15.2
5/21/2004	-2.2	8.5	-0.2	10.5	0.8	11.5	1.8	12.5
5/22/2004	-2.4	8.6	-0.4	10.6	0.6	11.6	1.6	12.6
5/23/2004	-2.3	10.1	-0.3	12.1	0.7	13.1	1.7	14.1
5/24/2004	-1.6	10.7	0.4	12.7	1.4	13.7	2.4	14.7
5/25/2004	-2.2	12.6	-0.2	14.6	0.8	15.6	1.8	16.6
5/26/2004	-0.7	12.6	1.3	14.6	2.3	15.6	3.3	16.6
5/27/2004	-0.6	16	1.4	18	2.4	19	3.4	20
5/28/2004	2.4	14.1	4.4	16.1	5.4	17.1	6.4	18.1
5/29/2004	-1.5	7.7	0.5	9.7	1.5	10.7	2.5	11.7
5/30/2004	-2.6	13.1	-0.6	15.1	0.4	16.1	1.4	17.1
5/31/2004	0.1	17.2	2.1	19.2	3.1	20.2	4.1	21.2
6/1/2004	2	19	4	21	5	22	6	23
6/2/2004	2	18.5	4	20.5	5	21.5	6	22.5
6/3/2004	2.7	20.2	4.7	22.2	5.7	23.2	6.7	24.2
6/4/2004	4.3	19	6.3	21	7.3	22	8.3	23
6/5/2004	3.8	21.8	5.8	23.8	6.8	24.8	7.8	25.8
6/6/2004	3.7	21.3	5.7	23.3	6.7	24.3	7.7	25.3
6/7/2004	4.1	18.3	6.1	20.3	7.1	21.3	8.1	22.3
6/8/2004	2.4	15.3	4.4	17.3	5.4	18.3	6.4	19.3
6/9/2004	-1.2	10.7	0.8	12.7	1.8	13.7	2.8	14.7
6/10/2004	-3.3	6.9	-1.3	8.9	-0.3	9.9	0.7	10.9
6/11/2004	-1.5	11.9	0.5	13.9	1.5	14.9	2.5	15.9
6/12/2004	-1	15	1	17	2	18	3	19
6/13/2004	1.3	17.2	3.3	19.2	4.3	20.2	5.3	21.2
6/14/2004	4.2	20.4	6.2	22.4	7.2	23.4	8.2	24.4
6/15/2004	4.1	21	6.1	23	7.1	24	8.1	25
6/16/2004	7.2	21.7	9.2	23.7	10.2	24.7	11.2	25.7
6/17/2004	6.4	20.9	8.4	22.9	9.4	23.9	10.4	24.9
6/18/2004	5.9	19.3	7.9	21.3	8.9	22.3	9.9	23.3
6/19/2004	4.9	19.3	6.9	21.3	7.9	22.3	8.9	23.3
6/20/2004	3.9	19.6	5.9	21.6	6.9	22.6	7.9	23.6
6/21/2004	4	20.9	6	22.9	7	23.9	8	24.9
6/22/2004	5.8	21	7.8	23	8.8	24	9.8	25
6/23/2004	7	22.9	9	24.9	10	25.9	11	26.9

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/24/2004	7	23.3	9	25.3	10	26.3	11	27.3
6/25/2004	5.6	20.2	7.6	22.2	8.6	23.2	9.6	24.2
6/26/2004	4.9	21.1	6.9	23.1	7.9	24.1	8.9	25.1
6/27/2004	4.9	20.8	6.9	22.8	7.9	23.8	8.9	24.8
6/28/2004	5.9	21.9	7.9	23.9	8.9	24.9	9.9	25.9
6/29/2004	7.2	16.4	9.2	18.4	10.2	19.4	11.2	20.4
6/30/2004	5	19.6	7	21.6	8	22.6	9	23.6
7/1/2004	4.3	17.2	6.3	19.2	7.3	20.2	8.3	21.2
7/2/2004	3.3	17.8	5.3	19.8	6.3	20.8	7.3	21.8
7/3/2004	4.4	19.5	6.4	21.5	7.4	22.5	8.4	23.5
7/4/2004	5.6	20.2	7.6	22.2	8.6	23.2	9.6	24.2
7/5/2004	6	21.7	8	23.7	9	24.7	10	25.7
7/6/2004	7.4	24.4	9.4	26.4	10.4	27.4	11.4	28.4
7/7/2004	9.1	25.6	11.1	27.6	12.1	28.6	13.1	29.6
7/8/2004	9.6	21.8	11.6	23.8	12.6	24.8	13.6	25.8
7/9/2004	7	21.1	9	23.1	10	24.1	11	25.1
7/10/2004	8	18.1	10	20.1	11	21.1	12	22.1
7/11/2004	7.6	19	9.6	21	10.6	22	11.6	23
7/12/2004	5.3	21.9	7.3	23.9	8.3	24.9	9.3	25.9
7/13/2004	7.1	21.8	9.1	23.8	10.1	24.8	11.1	25.8
7/14/2004	7.4	22	9.4	24	10.4	25	11.4	26
7/15/2004	8.2	23.7	10.2	25.7	11.2	26.7	12.2	27.7
7/16/2004	8	22.9	10	24.9	11	25.9	12	26.9
7/17/2004	9.6	22.6	11.6	24.6	12.6	25.6	13.6	26.6
7/18/2004	9.5	22.8	11.5	24.8	12.5	25.8	13.5	26.8
7/19/2004	8.8	23.3	10.8	25.3	11.8	26.3	12.8	27.3
7/20/2004	8.6	21.3	10.6	23.3	11.6	24.3	12.6	25.3
7/21/2004	7.7	22.2	9.7	24.2	10.7	25.2	11.7	26.2
7/22/2004	8.5	23.3	10.5	25.3	11.5	26.3	12.5	27.3
7/23/2004	8.8	25.2	10.8	27.2	11.8	28.2	12.8	29.2
7/24/2004	9.6	25.6	11.6	27.6	12.6	28.6	13.6	29.6
7/25/2004	9.4	24.3	11.4	26.3	12.4	27.3	13.4	28.3
7/26/2004	9.5	23.4	11.5	25.4	12.5	26.4	13.5	27.4
7/27/2004	8.9	23.5	10.9	25.5	11.9	26.5	12.9	27.5
7/28/2004	7.1	22.7	9.1	24.7	10.1	25.7	11.1	26.7
7/29/2004	9.5	24.5	11.5	26.5	12.5	27.5	13.5	28.5
7/30/2004	7.7	23	9.7	25	10.7	26	11.7	27
7/31/2004	7.1	22.5	9.1	24.5	10.1	25.5	11.1	26.5
8/1/2004	6.9	22.8	8.9	24.8	9.9	25.8	10.9	26.8
8/2/2004	6.4	22.1	8.4	24.1	9.4	25.1	10.4	26.1
8/3/2004	7.1	20	9.1	22	10.1	23	11.1	24
8/4/2004	3.8	19.3	5.8	21.3	6.8	22.3	7.8	23.3
8/5/2004	4.7	19.5	6.7	21.5	7.7	22.5	8.7	23.5
8/6/2004	7.3	19.5	9.3	21.5	10.3	22.5	11.3	23.5
8/7/2004	5.5	18.8	7.5	20.8	8.5	21.8	9.5	22.8
8/8/2004	4.7	22.7	6.7	24.7	7.7	25.7	8.7	26.7
8/9/2004	9.5	25.1	11.5	27.1	12.5	28.1	13.5	29.1
8/10/2004	9.1	25.7	11.1	27.7	12.1	28.7	13.1	29.7

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/11/2004	9.4	25.2	11.4	27.2	12.4	28.2	13.4	29.2
8/12/2004	9.2	27.6	11.2	29.6	12.2	30.6	13.2	31.6
8/13/2004	11.2	23.6	13.2	25.6	14.2	26.6	15.2	27.6
8/14/2004	10.5	23.9	12.5	25.9	13.5	26.9	14.5	27.9
8/15/2004	9.5	24	11.5	26	12.5	27	13.5	28
8/16/2004	9.7	19.2	11.7	21.2	12.7	22.2	13.7	23.2
8/17/2004	7.3	19.9	9.3	21.9	10.3	22.9	11.3	23.9
8/18/2004	5.9	22.5	7.9	24.5	8.9	25.5	9.9	26.5
8/19/2004	8.5	24.1	10.5	26.1	11.5	27.1	12.5	28.1
8/20/2004	9.2	23.9	11.2	25.9	12.2	26.9	13.2	27.9
8/21/2004	8.1	23.6	10.1	25.6	11.1	26.6	12.1	27.6
8/22/2004	8.5	22	10.5	24	11.5	25	12.5	26
8/23/2004	7.3	14.6	9.3	16.6	10.3	17.6	11.3	18.6
8/24/2004	3.9	15.6	5.9	17.6	6.9	18.6	7.9	19.6
8/25/2004	7.1	17	9.1	19	10.1	20	11.1	21
8/26/2004	6.4	17.7	8.4	19.7	9.4	20.7	10.4	21.7
8/27/2004	5	17.6	7	19.6	8	20.6	9	21.6
8/28/2004	4.3	17.5	6.3	19.5	7.3	20.5	8.3	21.5
8/29/2004	4.6	23.2	6.6	25.2	7.6	26.2	8.6	27.2
8/30/2004	7.3	24.7	9.3	26.7	10.3	27.7	11.3	28.7
8/31/2004	7.9	25	9.9	27	10.9	28	11.9	29
9/1/2004	8.1	24	10.1	26	11.1	27	12.1	28
9/2/2004	8.7	24.1	10.7	26.1	11.7	27.1	12.7	28.1
9/3/2004	3.8	18.3	5.8	20.3	6.8	21.3	7.8	22.3
9/4/2004	0.1	11.5	2.1	13.5	3.1	14.5	4.1	15.5
9/5/2004	1.2	17.5	3.2	19.5	4.2	20.5	5.2	21.5
9/6/2004	4.8	21.4	6.8	23.4	7.8	24.4	8.8	25.4
9/7/2004	6.3	22.4	8.3	24.4	9.3	25.4	10.3	26.4
9/8/2004	7	23.3	9	25.3	10	26.3	11	27.3
9/9/2004	6.6	23.3	8.6	25.3	9.6	26.3	10.6	27.3
9/10/2004	6.2	21.5	8.2	23.5	9.2	24.5	10.2	25.5
9/11/2004	7.1	21.8	9.1	23.8	10.1	24.8	11.1	25.8
9/12/2004	7.1	21.8	9.1	23.8	10.1	24.8	11.1	25.8
9/13/2004	8.5	18.4	10.5	20.4	11.5	21.4	12.5	22.4
9/14/2004	5	18.6	7	20.6	8	21.6	9	22.6
9/15/2004	0.4	19.7	2.4	21.7	3.4	22.7	4.4	23.7
9/16/2004	3	20.2	5	22.2	6	23.2	7	24.2
9/17/2004	4.8	20.1	6.8	22.1	7.8	23.1	8.8	24.1
9/18/2004	4.8	18.2	6.8	20.2	7.8	21.2	8.8	22.2
9/19/2004	0.8	6.6	2.8	8.6	3.8	9.6	4.8	10.6
9/20/2004	-3.3	0.8	-1.3	2.8	-0.3	3.8	0.7	4.8
9/21/2004	-5.8	3.7	-3.8	5.7	-2.8	6.7	-1.8	7.7
9/22/2004	-1.8	11.3	0.2	13.3	1.2	14.3	2.2	15.3
9/23/2004	1	19.1	3	21.1	4	22.1	5	23.1
9/24/2004	2.5	18.3	4.5	20.3	5.5	21.3	6.5	22.3
9/25/2004	3.5	20.7	5.5	22.7	6.5	23.7	7.5	24.7
9/26/2004	3.6	20.5	5.6	22.5	6.6	23.5	7.6	24.5
9/27/2004	3.4	19.8	5.4	21.8	6.4	22.8	7.4	23.8

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/28/2004	2	19.9	4	21.9	5	22.9	6	23.9
9/29/2004	3.1	17	5.1	19	6.1	20	7.1	21
9/30/2004	2.9	16.1	4.9	18.1	5.9	19.1	6.9	20.1
10/1/2004	2.2	14	4.2	16	5.2	17	6.2	18
10/2/2004	2.1	16	4.1	18	5.1	19	6.1	20
10/3/2004	3.2	16.7	5.2	18.7	6.2	19.7	7.2	20.7
10/4/2004	2.2	15.4	4.2	17.4	5.2	18.4	6.2	19.4
10/5/2004	3.4	16.9	5.4	18.9	6.4	19.9	7.4	20.9
10/6/2004	2	17.5	4	19.5	5	20.5	6	21.5
10/7/2004	2.7	17.3	4.7	19.3	5.7	20.3	6.7	21.3
10/8/2004	2.1	18.1	4.1	20.1	5.1	21.1	6.1	22.1
10/9/2004	3.9	17.3	5.9	19.3	6.9	20.3	7.9	21.3
10/10/2004	1.6	10.1	3.6	12.1	4.6	13.1	5.6	14.1
10/11/2004	-1.6	7.9	0.4	9.9	1.4	10.9	2.4	11.9
10/12/2004	-1.3	8.9	0.7	10.9	1.7	11.9	2.7	12.9
10/13/2004	0.4	13.8	2.4	15.8	3.4	16.8	4.4	17.8
10/14/2004	1.9	16	3.9	18	4.9	19	5.9	20
10/15/2004	2.3	20.2	4.3	22.2	5.3	23.2	6.3	24.2
10/16/2004	3	20.4	5	22.4	6	23.4	7	24.4
10/17/2004	2	14.3	4	16.3	5	17.3	6	18.3
10/18/2004	-1.6	3.2	0.4	5.2	1.4	6.2	2.4	7.2
10/19/2004	-3.2	-0.4	-1.2	1.6	-0.2	2.6	0.8	3.6
10/20/2004	-2.8	-0.3	-0.8	1.7	0.2	2.7	1.2	3.7
10/21/2004	-7.4	-0.1	-5.4	1.9	-4.4	2.9	-3.4	3.9
10/22/2004	-9.2	2	-7.2	4	-6.2	5	-5.2	6
10/23/2004	-7.3	5.9	-5.3	7.9	-4.3	8.9	-3.3	9.9
10/24/2004	-1.9	0.2	0.1	2.2	1.1	3.2	2.1	4.2
10/25/2004	-2	4.4	0	6.4	1	7.4	2	8.4
10/26/2004	-2.6	0.3	-0.6	2.3	0.4	3.3	1.4	4.3
10/27/2004	-6.4	-2.5	-4.4	-0.5	-3.4	0.5	-2.4	1.5
10/28/2004	-9.7	-0.7	-7.7	1.3	-6.7	2.3	-5.7	3.3
10/29/2004	-10.6	-2.9	-8.6	-0.9	-7.6	0.1	-6.6	1.1
10/30/2004	-7.9	4.6	-5.9	6.6	-4.9	7.6	-3.9	8.6
10/31/2004	-6.8	5.3	-4.8	7.3	-3.8	8.3	-2.8	9.3
11/1/2004	-8.8	1.8	-6.8	3.8	-5.8	4.8	-4.8	5.8
11/2/2004	-8.8	3.4	-6.8	5.4	-5.8	6.4	-4.8	7.4
11/3/2004	-3.8	7.5	-1.8	9.5	-0.8	10.5	0.2	11.5
11/4/2004	-5.1	0.1	-3.1	2.1	-2.1	3.1	-1.1	4.1
11/5/2004	-6.8	-0.1	-4.8	1.9	-3.8	2.9	-2.8	3.9
11/6/2004	-7.2	2.2	-5.2	4.2	-4.2	5.2	-3.2	6.2
11/7/2004	-4.3	4.9	-2.3	6.9	-1.3	7.9	-0.3	8.9
11/8/2004	-3.2	7.4	-1.2	9.4	-0.2	10.4	0.8	11.4
11/9/2004	-0.4	3.5	1.6	5.5	2.6	6.5	3.6	7.5
11/10/2004	-2.4	7.7	-0.4	9.7	0.6	10.7	1.6	11.7
11/11/2004	-2.7	5.3	-0.7	7.3	0.3	8.3	1.3	9.3
11/12/2004	-2.6	0.2	-0.6	2.2	0.4	3.2	1.4	4.2
11/13/2004	-2.9	0.9	-0.9	2.9	0.1	3.9	1.1	4.9
11/14/2004	-3.8	0.5	-1.8	2.5	-0.8	3.5	0.2	4.5

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/15/2004	-6	2.3	-4	4.3	-3	5.3	-2	6.3
11/16/2004	-5.1	5.3	-3.1	7.3	-2.1	8.3	-1.1	9.3
11/17/2004	-4.2	8.1	-2.2	10.1	-1.2	11.1	-0.2	12.1
11/18/2004	-3.4	8.9	-1.4	10.9	-0.4	11.9	0.6	12.9
11/19/2004	-4.5	9.6	-2.5	11.6	-1.5	12.6	-0.5	13.6
11/20/2004	-6	-0.8	-4	1.2	-3	2.2	-2	3.2
11/21/2004	-11	1	-9	3	-8	4	-7	5
11/22/2004	-11.9	-5.7	-9.9	-3.7	-8.9	-2.7	-7.9	-1.7
11/23/2004	-9.6	4.4	-7.6	6.4	-6.6	7.4	-5.6	8.4
11/24/2004	-7.9	2.6	-5.9	4.6	-4.9	5.6	-3.9	6.6
11/25/2004	-6.1	8.5	-4.1	10.5	-3.1	11.5	-2.1	12.5
11/26/2004	-4	5.5	-2	7.5	-1	8.5	0	9.5
11/27/2004	-7.2	1.3	-5.2	3.3	-4.2	4.3	-3.2	5.3
11/28/2004	-11.1	-1	-9.1	1	-8.1	2	-7.1	3
11/29/2004	-15.7	-10.9	-13.7	-8.9	-12.7	-7.9	-11.7	-6.9
11/30/2004	-16.6	-2.2	-14.6	-0.2	-13.6	0.8	-12.6	1.8
12/1/2004	-14	-0.6	-12	1.4	-11	2.4	-10	3.4
12/2/2004	-11	-6.2	-9	-4.2	-8	-3.2	-7	-2.2
12/3/2004	-12.2	-7.8	-10.2	-5.8	-9.2	-4.8	-8.2	-3.8
12/4/2004	-13.9	-1.6	-11.9	0.4	-10.9	1.4	-9.9	2.4
12/5/2004	-15	-0.2	-13	1.8	-12	2.8	-11	3.8
12/6/2004	-15.7	-2	-13.7	0	-12.7	1	-11.7	2
12/7/2004	-7.4	-2.5	-5.4	-0.5	-4.4	0.5	-3.4	1.5
12/8/2004	-6	-1.9	-4	0.1	-3	1.1	-2	2.1
12/9/2004	-4.4	0.2	-2.4	2.2	-1.4	3.2	-0.4	4.2
12/10/2004	-1.8	5.3	0.2	7.3	1.2	8.3	2.2	9.3
12/11/2004	-2.3	10.1	-0.3	12.1	0.7	13.1	1.7	14.1
12/12/2004	-2	11.7	0	13.7	1	14.7	2	15.7
12/13/2004	-2.2	10.9	-0.2	12.9	0.8	13.9	1.8	14.9
12/14/2004	-4.8	8.7	-2.8	10.7	-1.8	11.7	-0.8	12.7
12/15/2004	-6.8	9	-4.8	11	-3.8	12	-2.8	13
12/16/2004	-10.5	7	-8.5	9	-7.5	10	-6.5	11
12/17/2004	-10.5	1.6	-8.5	3.6	-7.5	4.6	-6.5	5.6
12/18/2004	-10.1	11.8	-8.1	13.8	-7.1	14.8	-6.1	15.8
12/19/2004	-5.7	10.9	-3.7	12.9	-2.7	13.9	-1.7	14.9
12/20/2004	-5.3	10.3	-3.3	12.3	-2.3	13.3	-1.3	14.3
12/21/2004	-7.1	8.5	-5.1	10.5	-4.1	11.5	-3.1	12.5
12/22/2004	-8.7	1.5	-6.7	3.5	-5.7	4.5	-4.7	5.5
12/23/2004	-9.6	-0.9	-7.6	1.1	-6.6	2.1	-5.6	3.1
12/24/2004	-10.9	-2.1	-8.9	-0.1	-7.9	0.9	-6.9	1.9
12/25/2004	-7.6	9.9	-5.6	11.9	-4.6	12.9	-3.6	13.9
12/26/2004	-9.1	4.7	-7.1	6.7	-6.1	7.7	-5.1	8.7
12/27/2004	-3.5	1.2	-1.5	3.2	-0.5	4.2	0.5	5.2
12/28/2004	-4.2	-0.6	-2.2	1.4	-1.2	2.4	-0.2	3.4
12/29/2004	-6	-3.7	-4	-1.7	-3	-0.7	-2	0.3
12/30/2004	-8.3	-4.5	-6.3	-2.5	-5.3	-1.5	-4.3	-0.5
12/31/2004	-7.1	-2.8	-5.1	-0.8	-4.1	0.2	-3.1	1.2
1/1/2005	-9.8	-3	-7.8	-1	-6.8	0	-5.8	1

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/2/2005	-8.3	-5.9	-6.3	-3.9	-5.3	-2.9	-4.3	-1.9
1/3/2005	-10.3	-5.9	-8.3	-3.9	-7.3	-2.9	-6.3	-1.9
1/4/2005	-10.7	-7.5	-8.7	-5.5	-7.7	-4.5	-6.7	-3.5
1/5/2005	-9.1	-3.7	-7.1	-1.7	-6.1	-0.7	-5.1	0.3
1/6/2005	-9.7	-3.4	-7.7	-1.4	-6.7	-0.4	-5.7	0.6
1/7/2005	-15.1	-5.7	-13.1	-3.7	-12.1	-2.7	-11.1	-1.7
1/8/2005	-8.9	-2.7	-6.9	-0.7	-5.9	0.3	-4.9	1.3
1/9/2005	-7.3	-5	-5.3	-3	-4.3	-2	-3.3	-1
1/10/2005	-5.8	-0.6	-3.8	1.4	-2.8	2.4	-1.8	3.4
1/11/2005	-4.5	-0.8	-2.5	1.2	-1.5	2.2	-0.5	3.2
1/12/2005	-12.1	-4.2	-10.1	-2.2	-9.1	-1.2	-8.1	-0.2
1/13/2005	-17	-0.5	-15	1.5	-14	2.5	-13	3.5
1/14/2005	-15	0.1	-13	2.1	-12	3.1	-11	4.1
1/15/2005	-13.8	3.5	-11.8	5.5	-10.8	6.5	-9.8	7.5
1/16/2005	-9.9	6.6	-7.9	8.6	-6.9	9.6	-5.9	10.6
1/17/2005	-7.5	6.3	-5.5	8.3	-4.5	9.3	-3.5	10.3
1/18/2005	-8.3	7.8	-6.3	9.8	-5.3	10.8	-4.3	11.8
1/19/2005	-3.9	8.7	-1.9	10.7	-0.9	11.7	0.1	12.7
1/20/2005	-6.2	14.9	-4.2	16.9	-3.2	17.9	-2.2	18.9
1/21/2005	-5.1	10.2	-3.1	12.2	-2.1	13.2	-1.1	14.2
1/22/2005	-6.8	10.4	-4.8	12.4	-3.8	13.4	-2.8	14.4
1/23/2005	-8.1	12.4	-6.1	14.4	-5.1	15.4	-4.1	16.4
1/24/2005	-6.1	9.4	-4.1	11.4	-3.1	12.4	-2.1	13.4
1/25/2005	-7.1	7	-5.1	9	-4.1	10	-3.1	11
1/26/2005	-1.1	1.8	0.9	3.8	1.9	4.8	2.9	5.8
1/27/2005	-4.5	-0.3	-2.5	1.7	-1.5	2.7	-0.5	3.7
1/28/2005	-8.2	-0.1	-6.2	1.9	-5.2	2.9	-4.2	3.9
1/29/2005	-14.4	-3.4	-12.4	-1.4	-11.4	-0.4	-10.4	0.6
1/30/2005	-17.5	-3.3	-15.5	-1.3	-14.5	-0.3	-13.5	0.7
1/31/2005	-10.4	0.9	-8.4	2.9	-7.4	3.9	-6.4	4.9
2/1/2005	-7.8	4.9	-5.8	6.9	-4.8	7.9	-3.8	8.9
2/2/2005	-7.3	1.7	-5.3	3.7	-4.3	4.7	-3.3	5.7
2/3/2005	-9	1.8	-7	3.8	-6	4.8	-5	5.8
2/4/2005	-7.5	5.2	-5.5	7.2	-4.5	8.2	-3.5	9.2
2/5/2005	-12.4	7	-10.4	9	-9.4	10	-8.4	11
2/6/2005	-11.4	6.4	-9.4	8.4	-8.4	9.4	-7.4	10.4
2/7/2005	-5.2	1.7	-3.2	3.7	-2.2	4.7	-1.2	5.7
2/8/2005	-6.2	-0.5	-4.2	1.5	-3.2	2.5	-2.2	3.5
2/9/2005	-14.7	0.2	-12.7	2.2	-11.7	3.2	-10.7	4.2
2/10/2005	-15.3	3	-13.3	5	-12.3	6	-11.3	7
2/11/2005	-13.9	2.9	-11.9	4.9	-10.9	5.9	-9.9	6.9
2/12/2005	-5.3	2	-3.3	4	-2.3	5	-1.3	6
2/13/2005	-5.2	3.1	-3.2	5.1	-2.2	6.1	-1.2	7.1
2/14/2005	-3.6	3	-1.6	5	-0.6	6	0.4	7
2/15/2005	-4.1	1.4	-2.1	3.4	-1.1	4.4	-0.1	5.4
2/16/2005	-5.5	-0.9	-3.5	1.1	-2.5	2.1	-1.5	3.1
2/17/2005	-6.1	1.3	-4.1	3.3	-3.1	4.3	-2.1	5.3
2/18/2005	-7.2	-0.3	-5.2	1.7	-4.2	2.7	-3.2	3.7

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/19/2005	-8.2	-0.1	-6.2	1.9	-5.2	2.9	-4.2	3.9
2/20/2005	-8.7	2	-6.7	4	-5.7	5	-4.7	6
2/21/2005	-4.2	0.8	-2.2	2.8	-1.2	3.8	-0.2	4.8
2/22/2005	-3.8	1	-1.8	3	-0.8	4	0.2	5
2/23/2005	-4.8	1.1	-2.8	3.1	-1.8	4.1	-0.8	5.1
2/24/2005	-5.2	1.7	-3.2	3.7	-2.2	4.7	-1.2	5.7
2/25/2005	-10.1	6.2	-8.1	8.2	-7.1	9.2	-6.1	10.2
2/26/2005	-10.4	2.3	-8.4	4.3	-7.4	5.3	-6.4	6.3
2/27/2005	-14.3	4.6	-12.3	6.6	-11.3	7.6	-10.3	8.6
2/28/2005	-11.2	2.5	-9.2	4.5	-8.2	5.5	-7.2	6.5
3/1/2005	-12.5	3.1	-10.5	5.1	-9.5	6.1	-8.5	7.1
3/2/2005	-14.6	4.2	-12.6	6.2	-11.6	7.2	-10.6	8.2
3/3/2005	-11	2.4	-9	4.4	-8	5.4	-7	6.4
3/4/2005	-14.2	4.3	-12.2	6.3	-11.2	7.3	-10.2	8.3
3/5/2005	-4.4	2.5	-2.4	4.5	-1.4	5.5	-0.4	6.5
3/6/2005	-6.6	5.8	-4.6	7.8	-3.6	8.8	-2.6	9.8
3/7/2005	-5.6	7.7	-3.6	9.7	-2.6	10.7	-1.6	11.7
3/8/2005	-7.4	10.8	-5.4	12.8	-4.4	13.8	-3.4	14.8
3/9/2005	-5.3	15.1	-3.3	17.1	-2.3	18.1	-1.3	19.1
3/10/2005	-6.5	15.3	-4.5	17.3	-3.5	18.3	-2.5	19.3
3/11/2005	-4.8	10	-2.8	12	-1.8	13	-0.8	14
3/12/2005	-4.2	16.3	-2.2	18.3	-1.2	19.3	-0.2	20.3
3/13/2005	-6.3	14.7	-4.3	16.7	-3.3	17.7	-2.3	18.7
3/14/2005	-5	8	-3	10	-2	11	-1	12
3/15/2005	-10.1	1.8	-8.1	3.8	-7.1	4.8	-6.1	5.8
3/16/2005	-12.4	8.6	-10.4	10.6	-9.4	11.6	-8.4	12.6
3/17/2005	-9.4	6.2	-7.4	8.2	-6.4	9.2	-5.4	10.2
3/18/2005	-6.1	3.9	-4.1	5.9	-3.1	6.9	-2.1	7.9
3/19/2005	-7	2.8	-5	4.8	-4	5.8	-3	6.8
3/20/2005	-5.2	0.2	-3.2	2.2	-2.2	3.2	-1.2	4.2
3/21/2005	-5.9	-1.1	-3.9	0.9	-2.9	1.9	-1.9	2.9
3/22/2005	-6.5	3.3	-4.5	5.3	-3.5	6.3	-2.5	7.3
3/23/2005	-5.7	-0.8	-3.7	1.2	-2.7	2.2	-1.7	3.2
3/24/2005	-7	-2.5	-5	-0.5	-4	0.5	-3	1.5
3/25/2005	-15.2	0.9	-13.2	2.9	-12.2	3.9	-11.2	4.9
3/26/2005	-20.4	5.2	-18.4	7.2	-17.4	8.2	-16.4	9.2
3/27/2005	-12.4	9.9	-10.4	11.9	-9.4	12.9	-8.4	13.9
3/28/2005	-3.3	4.3	-1.3	6.3	-0.3	7.3	0.7	8.3
3/29/2005	-10.4	0.6	-8.4	2.6	-7.4	3.6	-6.4	4.6
3/30/2005	-9.7	-0.1	-7.7	1.9	-6.7	2.9	-5.7	3.9
3/31/2005	-13.4	7.6	-11.4	9.6	-10.4	10.6	-9.4	11.6
4/1/2005	-11	11.2	-9	13.2	-8	14.2	-7	15.2
4/2/2005	-1.9	11.3	0.1	13.3	1.1	14.3	2.1	15.3
4/3/2005	-2.9	8	-0.9	10	0.1	11	1.1	12
4/4/2005	-6.7	-1	-4.7	1	-3.7	2	-2.7	3
4/5/2005	-9.9	5	-7.9	7	-6.9	8	-5.9	9
4/6/2005	-11.1	14.9	-9.1	16.9	-8.1	17.9	-7.1	18.9
4/7/2005	-4	14.1	-2	16.1	-1	17.1	0	18.1

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/8/2005	-10	2.4	-8	4.4	-7	5.4	-6	6.4
4/9/2005	-12	-3	-10	-1	-9	0	-8	1
4/10/2005	-11.4	4.4	-9.4	6.4	-8.4	7.4	-7.4	8.4
4/11/2005	-13.3	8.1	-11.3	10.1	-10.3	11.1	-9.3	12.1
4/12/2005	-4.9	9.2	-2.9	11.2	-1.9	12.2	-0.9	13.2
4/13/2005	-2.5	8.2	-0.5	10.2	0.5	11.2	1.5	12.2
4/14/2005	-13.5	1	-11.5	3	-10.5	4	-9.5	5
4/15/2005	-16.6	8.2	-14.6	10.2	-13.6	11.2	-12.6	12.2
4/16/2005	-10.4	14.4	-8.4	16.4	-7.4	17.4	-6.4	18.4
4/17/2005	-5	14	-3	16	-2	17	-1	18
4/18/2005	-1.7	9.2	0.3	11.2	1.3	12.2	2.3	13.2
4/19/2005	-7.9	7.2	-5.9	9.2	-4.9	10.2	-3.9	11.2
4/20/2005	-9.7	2.5	-7.7	4.5	-6.7	5.5	-5.7	6.5
4/21/2005	-11	3	-9	5	-8	6	-7	7
4/22/2005	-10	12.6	-8	14.6	-7	15.6	-6	16.6
4/23/2005	-6	13.2	-4	15.2	-3	16.2	-2	17.2
4/24/2005	-3.3	6.2	-1.3	8.2	-0.3	9.2	0.7	10.2
4/25/2005	-7.2	4.9	-5.2	6.9	-4.2	7.9	-3.2	8.9
4/26/2005	-10.8	11.3	-8.8	13.3	-7.8	14.3	-6.8	15.3
4/27/2005	-4.5	12.9	-2.5	14.9	-1.5	15.9	-0.5	16.9
4/28/2005	-2.5	7.8	-0.5	9.8	0.5	10.8	1.5	11.8
4/29/2005	-3.8	6.4	-1.8	8.4	-0.8	9.4	0.2	10.4
4/30/2005	-7	9.2	-5	11.2	-4	12.2	-3	13.2
5/1/2005	-3.3	7.9	-1.3	9.9	-0.3	10.9	0.7	11.9
5/2/2005	-2.5	4.3	-0.5	6.3	0.5	7.3	1.5	8.3
5/3/2005	-4.2	9.6	-2.2	11.6	-1.2	12.6	-0.2	13.6
5/4/2005	-5.5	12.8	-3.5	14.8	-2.5	15.8	-1.5	16.8
5/5/2005	-2.2	9.8	-0.2	11.8	0.8	12.8	1.8	13.8
5/6/2005	-1.6	5	0.4	7	1.4	8	2.4	9
5/7/2005	-3.9	1.8	-1.9	3.8	-0.9	4.8	0.1	5.8
5/8/2005	-7.9	9.4	-5.9	11.4	-4.9	12.4	-3.9	13.4
5/9/2005	-0.9	2.1	1.1	4.1	2.1	5.1	3.1	6.1
5/10/2005	-6.1	1.3	-4.1	3.3	-3.1	4.3	-2.1	5.3
5/11/2005	-12.8	7.7	-10.8	9.7	-9.8	10.7	-8.8	11.7
5/12/2005	-8	11.2	-6	13.2	-5	14.2	-4	15.2
5/13/2005	-3.4	13.8	-1.4	15.8	-0.4	16.8	0.6	17.8
5/14/2005	-1	16.5	1	18.5	2	19.5	3	20.5
5/15/2005	-1.8	17.2	0.2	19.2	1.2	20.2	2.2	21.2
5/16/2005	2.5	11.3	4.5	13.3	5.5	14.3	6.5	15.3
5/17/2005	-2.3	4.8	-0.3	6.8	0.7	7.8	1.7	8.8
5/18/2005	-4.6	6.3	-2.6	8.3	-1.6	9.3	-0.6	10.3
5/19/2005	0	4.1	2	6.1	3	7.1	4	8.1
5/20/2005	3.1	7.9	5.1	9.9	6.1	10.9	7.1	11.9
5/21/2005	-2.7	9	-0.7	11	0.3	12	1.3	13
5/22/2005	-4.7	18.2	-2.7	20.2	-1.7	21.2	-0.7	22.2
5/23/2005	-1.6	17.6	0.4	19.6	1.4	20.6	2.4	21.6
5/24/2005	-1.5	18.6	0.5	20.6	1.5	21.6	2.5	22.6
5/25/2005	-2.3	19.2	-0.3	21.2	0.7	22.2	1.7	23.2

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/26/2005	2.3	19.5	4.3	21.5	5.3	22.5	6.3	23.5
5/27/2005	1.2	20.3	3.2	22.3	4.2	23.3	5.2	24.3
5/28/2005	1.9	20.5	3.9	22.5	4.9	23.5	5.9	24.5
5/29/2005	-0.1	15.3	1.9	17.3	2.9	18.3	3.9	19.3
5/30/2005	-2.5	8.4	-0.5	10.4	0.5	11.4	1.5	12.4
5/31/2005	-3.6	16	-1.6	18	-0.6	19	0.4	20
6/1/2005	-0.4	17.4	1.6	19.4	2.6	20.4	3.6	21.4
6/2/2005	1.226	16.25	3.226	18.25	4.226	19.25	5.226	20.25
6/3/2005	-1.074	14.05	0.926	16.05	1.926	17.05	2.926	18.05
6/4/2005	-2.474	15.05	-0.474	17.05	0.526	18.05	1.526	19.05
6/5/2005	2.026	14.75	4.026	16.75	5.026	17.75	6.026	18.75
6/6/2005	-3.774	19.055	-1.774	21.055	-0.774	22.055	0.226	23.055
6/7/2005	-6.574	15.355	-4.574	17.355	-3.574	18.355	-2.574	19.355
6/8/2005	-7.274	18.155	-5.274	20.155	-4.274	21.155	-3.274	22.155
6/9/2005	-3.874	15.555	-1.874	17.555	-0.874	18.555	0.126	19.555
6/10/2005	-0.07435	19.455	1.92565	21.455	2.92565	22.455	3.92565	23.455
6/11/2005	-0.9744	15.05	1.0256	17.05	2.0256	18.05	3.0256	19.05
6/12/2005	-0.5744	14.65	1.4256	16.65	2.4256	17.65	3.4256	18.65
6/13/2005	0.5256	18.45	2.5256	20.45	3.5256	21.45	4.5256	22.45
6/14/2005	2.226	19.65	4.226	21.65	5.226	22.65	6.226	23.65
6/15/2005	5.626	16.25	7.626	18.25	8.626	19.25	9.626	20.25
6/16/2005	4.326	15.95	6.326	17.95	7.326	18.95	8.326	19.95
6/17/2005	-1.974	10.85	0.026	12.85	1.026	13.85	2.026	14.85
6/18/2005	-3.674	3.255	-1.674	5.255	-0.674	6.255	0.326	7.255
6/19/2005	-4.174	7.555	-2.174	9.555	-1.174	10.555	-0.174	11.555
6/20/2005	-2.374	11.45	-0.374	13.45	0.626	14.45	1.626	15.45
6/21/2005	2.126	15.75	4.126	17.75	5.126	18.75	6.126	19.75
6/22/2005	5.426	14.75	7.426	16.75	8.426	17.75	9.426	18.75
6/23/2005	4.926	16.85	6.926	18.85	7.926	19.85	8.926	20.85
6/24/2005	3.926	17.05	5.926	19.05	6.926	20.05	7.926	21.05
6/25/2005	4.526	15.75	6.526	17.75	7.526	18.75	8.526	19.75
6/26/2005	2.426	14.65	4.426	16.65	5.426	17.65	6.426	18.65
6/27/2005	1.626	14.55	3.626	16.55	4.626	17.55	5.626	18.55
6/28/2005	3.026	14.65	5.026	16.65	6.026	17.65	7.026	18.65
6/29/2005	3.626	16.45	5.626	18.45	6.626	19.45	7.626	20.45
6/30/2005	3.126	20.35	5.126	22.35	6.126	23.35	7.126	24.35
7/1/2005	6.626	21.55	8.626	23.55	9.626	24.55	10.626	25.55
7/2/2005	9.026	22.55	11.026	24.55	12.026	25.55	13.026	26.55
7/3/2005	7.926	20.75	9.926	22.75	10.926	23.75	11.926	24.75
7/4/2005	7.726	20.65	9.726	22.65	10.726	23.65	11.726	24.65
7/5/2005	7.026	21.75	9.026	23.75	10.026	24.75	11.026	25.75
7/6/2005	7.726	21.35	9.726	23.35	10.726	24.35	11.726	25.35
7/7/2005	8.526	22.55	10.526	24.55	11.526	25.55	12.526	26.55
7/8/2005	7.926	21.35	9.926	23.35	10.926	24.35	11.926	25.35
7/9/2005	8.026	19.75	10.026	21.75	11.026	22.75	12.026	23.75
7/10/2005	6.326	15.95	8.326	17.95	9.326	18.95	10.326	19.95
7/11/2005	6.026	19.25	8.026	21.25	9.026	22.25	10.026	23.25
7/12/2005	7.626	23.55	9.626	25.55	10.626	26.55	11.626	27.55

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BLUE LAKES							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/13/2005	9.2	26.7	11.2	28.7	12.2	29.7	13.2	30.7
7/14/2005	9	26.2	11	28.2	12	29.2	13	30.2
7/15/2005	9.9	27.5	11.9	29.5	12.9	30.5	13.9	31.5
7/16/2005	10.1	26.4	12.1	28.4	13.1	29.4	14.1	30.4
7/17/2005	11.3	27.6	13.3	29.6	14.3	30.6	15.3	31.6
7/18/2005	10.8	28	12.8	30	13.8	31	14.8	32
7/19/2005	11.9	27.4	13.9	29.4	14.9	30.4	15.9	31.4
7/20/2005	10.7	25.8	12.7	27.8	13.7	28.8	14.7	29.8
7/21/2005	9.6	26.5	11.6	28.5	12.6	29.5	13.6	30.5
7/22/2005	11.5	24.6	13.5	26.6	14.5	27.6	15.5	28.6
7/23/2005	10.2	22.5	12.2	24.5	13.2	25.5	14.2	26.5
7/24/2005	6.8	25.6	8.8	27.6	9.8	28.6	10.8	29.6
7/25/2005	7.8	24.7	9.8	26.7	10.8	27.7	11.8	28.7
7/26/2005	6	23	8	25	9	26	10	27
7/27/2005	8.3	24.7	10.3	26.7	11.3	27.7	12.3	28.7
7/28/2005	9.5	25.9	11.5	27.9	12.5	28.9	13.5	29.9
7/29/2005	10.8	23.9	12.8	25.9	13.8	26.9	14.8	27.9
7/30/2005	9.7	23.3	11.7	25.3	12.7	26.3	13.7	27.3
7/31/2005	8.4	23.3	10.4	25.3	11.4	26.3	12.4	27.3
8/1/2005	9	21.9	11	23.9	12	24.9	13	25.9

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/1/1999	14.44	30	16.44	32	17.44	33	18.44	34
10/2/1999	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
10/3/1999	13.33	27.22	15.33	29.22	16.33	30.22	17.33	31.22
10/4/1999	12.78	28.89	14.78	30.89	15.78	31.89	16.78	32.89
10/5/1999	7.78	23.33	9.78	25.33	10.78	26.33	11.78	27.33
10/6/1999	7.22	17.78	9.22	19.78	10.22	20.78	11.22	21.78
10/7/1999	9.44	26.67	11.44	28.67	12.44	29.67	13.44	30.67
10/8/1999	15	28.89	17	30.89	18	31.89	19	32.89
10/9/1999	13.33	30.56	15.33	32.56	16.33	33.56	17.33	34.56
10/10/1999	14.44	30.56	16.44	32.56	17.44	33.56	18.44	34.56
10/11/1999	14.44	27.78	16.44	29.78	17.44	30.78	18.44	31.78
10/12/1999	13.33	30	15.33	32	16.33	33	17.33	34
10/13/1999	13.89	31.11	15.89	33.11	16.89	34.11	17.89	35.11
10/14/1999	14.44	30	16.44	32	17.44	33	18.44	34
10/15/1999	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67
10/16/1999	12.78	28.89	14.78	30.89	15.78	31.89	16.78	32.89
10/17/1999	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
10/18/1999	10	24.44	12	26.44	13	27.44	14	28.44
10/19/1999	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
10/20/1999	12.78	28.89	14.78	30.89	15.78	31.89	16.78	32.89
10/21/1999	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
10/22/1999	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
10/23/1999	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
10/24/1999	9.44	25	11.44	27	12.44	28	13.44	29
10/25/1999	9.44	25.56	11.44	27.56	12.44	28.56	13.44	29.56
10/26/1999	9.44	22.78	11.44	24.78	12.44	25.78	13.44	26.78
10/27/1999	10	21.67	12	23.67	13	24.67	14	25.67
10/28/1999	5	11.11	7	13.11	8	14.11	9	15.11
10/29/1999	5	21.67	7	23.67	8	24.67	9	25.67
10/30/1999	10.56	25	12.56	27	13.56	28	14.56	29
10/31/1999	10	25.56	12	27.56	13	28.56	14	29.56
11/1/1999	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67
11/2/1999	11.11	25.56	13.11	27.56	14.11	28.56	15.11	29.56
11/3/1999	10	25	12	27	13	28	14	29
11/4/1999	9.44	23.33	11.44	25.33	12.44	26.33	13.44	27.33
11/5/1999	8.89	23.33	10.89	25.33	11.89	26.33	12.89	27.33
11/6/1999	11.11	23.89	13.11	25.89	14.11	26.89	15.11	27.89
11/7/1999	1.67	18.33	3.67	20.33	4.67	21.33	5.67	22.33
11/8/1999	0.56	11.11	2.56	13.11	3.56	14.11	4.56	15.11
11/9/1999	2.78	15	4.78	17	5.78	18	6.78	19
11/10/1999	5	16.11	7	18.11	8	19.11	9	20.11
11/11/1999	7.78	22.22	9.78	24.22	10.78	25.22	11.78	26.22
11/12/1999	10	24.44	12	26.44	13	27.44	14	28.44
11/13/1999	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
11/14/1999	11.11	24.44	13.11	26.44	14.11	27.44	15.11	28.44
11/15/1999	7.22	17.22	9.22	19.22	10.22	20.22	11.22	21.22
11/16/1999	0.56	15	2.56	17	3.56	18	4.56	19

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/17/1999	0	10	2	12	3	13	4	14
11/18/1999	1.11	13.89	3.11	15.89	4.11	16.89	5.11	17.89
11/19/1999	4.44	10.56	6.44	12.56	7.44	13.56	8.44	14.56
11/20/1999	2.22	11.67	4.22	13.67	5.22	14.67	6.22	15.67
11/21/1999	-0.56	7.22	1.44	9.22	2.44	10.22	3.44	11.22
11/22/1999	-0.56	10.56	1.44	12.56	2.44	13.56	3.44	14.56
11/23/1999	-0.56	10.56	1.44	12.56	2.44	13.56	3.44	14.56
11/24/1999	1.11	12.22	3.11	14.22	4.11	15.22	5.11	16.22
11/25/1999	5.56	17.22	7.56	19.22	8.56	20.22	9.56	21.22
11/26/1999	5.56	17.78	7.56	19.78	8.56	20.78	9.56	21.78
11/27/1999	3.89	17.78	5.89	19.78	6.89	20.78	7.89	21.78
11/28/1999	7.78	18.33	9.78	20.33	10.78	21.33	11.78	22.33
11/29/1999	8.89	15.56	10.89	17.56	11.89	18.56	12.89	19.56
11/30/1999	0.56	9.44	2.56	11.44	3.56	12.44	4.56	13.44
12/1/1999	-0.56	8.89	1.44	10.89	2.44	11.89	3.44	12.89
12/2/1999	-1.67	7.22	0.33	9.22	1.33	10.22	2.33	11.22
12/3/1999	-1.11	12.22	0.89	14.22	1.89	15.22	2.89	16.22
12/4/1999	2.78	13.89	4.78	15.89	5.78	16.89	6.78	17.89
12/5/1999	2.22	13.33	4.22	15.33	5.22	16.33	6.22	17.33
12/6/1999	2.22	13.33	4.22	15.33	5.22	16.33	6.22	17.33
12/7/1999	-4.44	2.78	-2.44	4.78	-1.44	5.78	-0.44	6.78
12/8/1999	-4.44	9.44	-2.44	11.44	-1.44	12.44	-0.44	13.44
12/9/1999	-2.22	5	-0.22	7	0.78	8	1.78	9
12/10/1999	-3.89	8.89	-1.89	10.89	-0.89	11.89	0.11	12.89
12/11/1999	1.11	15.56	3.11	17.56	4.11	18.56	5.11	19.56
12/12/1999	3.89	15	5.89	17	6.89	18	7.89	19
12/13/1999	1.11	8.33	3.11	10.33	4.11	11.33	5.11	12.33
12/14/1999	0	10	2	12	3	13	4	14
12/15/1999	3.33	15.56	5.33	17.56	6.33	18.56	7.33	19.56
12/16/1999	5.56	18.33	7.56	20.33	8.56	21.33	9.56	22.33
12/17/1999	7.78	19.44	9.78	21.44	10.78	22.44	11.78	23.44
12/18/1999	6.11	13.89	8.11	15.89	9.11	16.89	10.11	17.89
12/19/1999	8.89	20	10.89	22	11.89	23	12.89	24
12/20/1999	11.11	20.56	13.11	22.56	14.11	23.56	15.11	24.56
12/21/1999	7.22	18.33	9.22	20.33	10.22	21.33	11.22	22.33
12/22/1999	7.78	17.22	9.78	19.22	10.78	20.22	11.78	21.22
12/23/1999	7.78	18.33	9.78	20.33	10.78	21.33	11.78	22.33
12/24/1999	6.67	18.33	8.67	20.33	9.67	21.33	10.67	22.33
12/25/1999	8.89	18.33	10.89	20.33	11.89	21.33	12.89	22.33
12/26/1999	7.22	17.78	9.22	19.78	10.22	20.78	11.22	21.78
12/27/1999	5	16.11	7	18.11	8	19.11	9	20.11
12/28/1999	4.44	16.67	6.44	18.67	7.44	19.67	8.44	20.67
12/29/1999	3.33	15.56	5.33	17.56	6.33	18.56	7.33	19.56
12/30/1999	3.89	15.56	5.89	17.56	6.89	18.56	7.89	19.56
12/31/1999	-0.56	13.33	1.44	15.33	2.44	16.33	3.44	17.33
1/1/2000	-1.67	7.22	0.33	9.22	1.33	10.22	2.33	11.22
1/2/2000	-5	5.56	-3	7.56	-2	8.56	-1	9.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/3/2000	-2.78	11.11	-0.78	13.11	0.22	14.11	1.22	15.11
1/4/2000	0.56	10	2.56	12	3.56	13	4.56	14
1/5/2000	-0.56	11.11	1.44	13.11	2.44	14.11	3.44	15.11
1/6/2000	5	14.44	7	16.44	8	17.44	9	18.44
1/7/2000	2.78	13.89	4.78	15.89	5.78	16.89	6.78	17.89
1/8/2000	1.67	15	3.67	17	4.67	18	5.67	19
1/9/2000	2.78	8.89	4.78	10.89	5.78	11.89	6.78	12.89
1/10/2000	2.22	11.67	4.22	13.67	5.22	14.67	6.22	15.67
1/11/2000	0.56	5.56	2.56	7.56	3.56	8.56	4.56	9.56
1/12/2000	1.67	7.22	3.67	9.22	4.67	10.22	5.67	11.22
1/13/2000	5.56	13.89	7.56	15.89	8.56	16.89	9.56	17.89
1/14/2000	7.78	13.33	9.78	15.33	10.78	16.33	11.78	17.33
1/15/2000	3.89	9.44	5.89	11.44	6.89	12.44	7.89	13.44
1/16/2000	0	8.33	2	10.33	3	11.33	4	12.33
1/17/2000	4.44	7.22	6.44	9.22	7.44	10.22	8.44	11.22
1/18/2000	5.56	10.56	7.56	12.56	8.56	13.56	9.56	14.56
1/19/2000	6.67	13.33	8.67	15.33	9.67	16.33	10.67	17.33
1/20/2000	2.22	8.89	4.22	10.89	5.22	11.89	6.22	12.89
1/21/2000	0.56	10	2.56	12	3.56	13	4.56	14
1/22/2000	0	10.56	2	12.56	3	13.56	4	14.56
1/23/2000	2.78	5.56	4.78	7.56	5.78	8.56	6.78	9.56
1/24/2000	2.78	7.22	4.78	9.22	5.78	10.22	6.78	11.22
1/25/2000	0.56	5.56	2.56	7.56	3.56	8.56	4.56	9.56
1/26/2000	-1.11	11.67	0.89	13.67	1.89	14.67	2.89	15.67
1/27/2000	0.56	11.67	2.56	13.67	3.56	14.67	4.56	15.67
1/28/2000	1.11	13.33	3.11	15.33	4.11	16.33	5.11	17.33
1/29/2000	1.67	13.33	3.67	15.33	4.67	16.33	5.67	17.33
1/30/2000	0	5.56	2	7.56	3	8.56	4	9.56
1/31/2000	-0.56	5	1.44	7	2.44	8	3.44	9
2/1/2000	2.78	15.56	4.78	17.56	5.78	18.56	6.78	19.56
2/2/2000	6.67	20.56	8.67	22.56	9.67	23.56	10.67	24.56
2/3/2000	3.33	15	5.33	17	6.33	18	7.33	19
2/4/2000	3.33	8.33	5.33	10.33	6.33	11.33	7.33	12.33
2/5/2000	3.33	12.78	5.33	14.78	6.33	15.78	7.33	16.78
2/6/2000	2.78	16.11	4.78	18.11	5.78	19.11	6.78	20.11
2/7/2000	7.22	19.44	9.22	21.44	10.22	22.44	11.22	23.44
2/8/2000	6.11	18.89	8.11	20.89	9.11	21.89	10.11	22.89
2/9/2000	4.44	11.11	6.44	13.11	7.44	14.11	8.44	15.11
2/10/2000	0	8.33	2	10.33	3	11.33	4	12.33
2/11/2000	0	4.44	2	6.44	3	7.44	4	8.44
2/12/2000	0.56	2.78	2.56	4.78	3.56	5.78	4.56	6.78
2/13/2000	0.56	7.22	2.56	9.22	3.56	10.22	4.56	11.22
2/14/2000	0	7.22	2	9.22	3	10.22	4	11.22
2/15/2000	-0.56	11.67	1.44	13.67	2.44	14.67	3.44	15.67
2/16/2000	-0.56	3.89	1.44	5.89	2.44	6.89	3.44	7.89
2/17/2000	-1.11	6.11	0.89	8.11	1.89	9.11	2.89	10.11
2/18/2000	-1.67	13.33	0.33	15.33	1.33	16.33	2.33	17.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/19/2000	3.33	15.56	5.33	17.56	6.33	18.56	7.33	19.56
2/20/2000	1.11	10	3.11	12	4.11	13	5.11	14
2/21/2000	0.56	11.11	2.56	13.11	3.56	14.11	4.56	15.11
2/22/2000	4.091	4.44	6.091	6.44	7.091	7.44	8.091	8.44
2/23/2000	-3.89	8.33	-1.89	10.33	-0.89	11.33	0.11	12.33
2/24/2000	-6.67	6.67	-4.67	8.67	-3.67	9.67	-2.67	10.67
2/25/2000	-2.22	10	-0.22	12	0.78	13	1.78	14
2/26/2000	2.22	11.11	4.22	13.11	5.22	14.11	6.22	15.11
2/27/2000	0	5	2	7	3	8	4	9
2/28/2000	-1.11	10	0.89	12	1.89	13	2.89	14
2/29/2000	-2.78	4.44	-0.78	6.44	0.22	7.44	1.22	8.44
3/1/2000	-2.78	14.44	-0.78	16.44	0.22	17.44	1.22	18.44
3/2/2000	0.56	5.56	2.56	7.56	3.56	8.56	4.56	9.56
3/3/2000	0.56	15	2.56	17	3.56	18	4.56	19
3/4/2000	1.67	14.44	3.67	16.44	4.67	17.44	5.67	18.44
3/5/2000	-0.56	5.56	1.44	7.56	2.44	8.56	3.44	9.56
3/6/2000	-1.11	3.33	0.89	5.33	1.89	6.33	2.89	7.33
3/7/2000	-1.67	5	0.33	7	1.33	8	2.33	9
3/8/2000	-1.11	6.11	0.89	8.11	1.89	9.11	2.89	10.11
3/9/2000	-1.11	5.56	0.89	7.56	1.89	8.56	2.89	9.56
3/10/2000	-1.11	14.44	0.89	16.44	1.89	17.44	2.89	18.44
3/11/2000	3.89	14.44	5.89	16.44	6.89	17.44	7.89	18.44
3/12/2000	3.33	17.22	5.33	19.22	6.33	20.22	7.33	21.22
3/13/2000	3.89	18.89	5.89	20.89	6.89	21.89	7.89	22.89
3/14/2000	6.11	20	8.11	22	9.11	23	10.11	24
3/15/2000	5.56	20.56	7.56	22.56	8.56	23.56	9.56	24.56
3/16/2000	3.33	13.33	5.33	15.33	6.33	16.33	7.33	17.33
3/17/2000	2.78	18.89	4.78	20.89	5.78	21.89	6.78	22.89
3/18/2000	7.78	20.56	9.78	22.56	10.78	23.56	11.78	24.56
3/19/2000	1.67	16.11	3.67	18.11	4.67	19.11	5.67	20.11
3/20/2000	0.56	10.56	2.56	12.56	3.56	13.56	4.56	14.56
3/21/2000	2.78	16.11	4.78	18.11	5.78	19.11	6.78	20.11
3/22/2000	5	17.78	7	19.78	8	20.78	9	21.78
3/23/2000	5.56	17.78	7.56	19.78	8.56	20.78	9.56	21.78
3/24/2000	5	18.33	7	20.33	8	21.33	9	22.33
3/25/2000	5	17.22	7	19.22	8	20.22	9	21.22
3/26/2000	5.56	20.56	7.56	22.56	8.56	23.56	9.56	24.56
3/27/2000	1.67	16.11	3.67	18.11	4.67	19.11	5.67	20.11
3/28/2000	1.67	14.44	3.67	16.44	4.67	17.44	5.67	18.44
3/29/2000	1.11	16.11	3.11	18.11	4.11	19.11	5.11	20.11
3/30/2000	5.56	17.78	7.56	19.78	8.56	20.78	9.56	21.78
3/31/2000	5.56	18.89	7.56	20.89	8.56	21.89	9.56	22.89
4/1/2000	7.22	21.67	9.22	23.67	10.22	24.67	11.22	25.67
4/2/2000	10.56	25	12.56	27	13.56	28	14.56	29
4/3/2000	10	24.44	12	26.44	13	27.44	14	28.44
4/4/2000	9.44	23.33	11.44	25.33	12.44	26.33	13.44	27.33
4/5/2000	8.33	22.78	10.33	24.78	11.33	25.78	12.33	26.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/6/2000	6.67	22.78	8.67	24.78	9.67	25.78	10.67	26.78
4/7/2000	8.33	23.89	10.33	25.89	11.33	26.89	12.33	27.89
4/8/2000	4.44	19.44	6.44	21.44	7.44	22.44	8.44	23.44
4/9/2000	3.89	17.78	5.89	19.78	6.89	20.78	7.89	21.78
4/10/2000	5.56	21.67	7.56	23.67	8.56	24.67	9.56	25.67
4/11/2000	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
4/12/2000	9.44	23.89	11.44	25.89	12.44	26.89	13.44	27.89
4/13/2000	2.78	10	4.78	12	5.78	13	6.78	14
4/14/2000	1.67	12.78	3.67	14.78	4.67	15.78	5.67	16.78
4/15/2000	2.22	10.56	4.22	12.56	5.22	13.56	6.22	14.56
4/16/2000	5.56	11.67	7.56	13.67	8.56	14.67	9.56	15.67
4/17/2000	1.11	6.67	3.11	8.67	4.11	9.67	5.11	10.67
4/18/2000	0	6.67	2	8.67	3	9.67	4	10.67
4/19/2000	1.67	13.33	3.67	15.33	4.67	16.33	5.67	17.33
4/20/2000	3.33	19.44	5.33	21.44	6.33	22.44	7.33	23.44
4/21/2000	7.22	20.56	9.22	22.56	10.22	23.56	11.22	24.56
4/22/2000	4.44	13.89	6.44	15.89	7.44	16.89	8.44	17.89
4/23/2000	3.89	15.56	5.89	17.56	6.89	18.56	7.89	19.56
4/24/2000	4.44	21.11	6.44	23.11	7.44	24.11	8.44	25.11
4/25/2000	6.11	21.11	8.11	23.11	9.11	24.11	10.11	25.11
4/26/2000	9.44	25.56	11.44	27.56	12.44	28.56	13.44	29.56
4/27/2000	5	21.67	7	23.67	8	24.67	9	25.67
4/28/2000	1.67	13.33	3.67	15.33	4.67	16.33	5.67	17.33
4/29/2000	1.11	20	3.11	22	4.11	23	5.11	24
4/30/2000	10	24.44	12	26.44	13	27.44	14	28.44
5/1/2000	10	24.44	12	26.44	13	27.44	14	28.44
5/2/2000	7.78	22.78	9.78	24.78	10.78	25.78	11.78	26.78
5/3/2000	8.33	24.44	10.33	26.44	11.33	27.44	12.33	28.44
5/4/2000	8.89	21.67	10.89	23.67	11.89	24.67	12.89	25.67
5/5/2000	6.67	17.78	8.67	19.78	9.67	20.78	10.67	21.78
5/6/2000	3.89	17.78	5.89	19.78	6.89	20.78	7.89	21.78
5/7/2000	5	10.56	7	12.56	8	13.56	9	14.56
5/8/2000	8.33	18.33	10.33	20.33	11.33	21.33	12.33	22.33
5/9/2000	7.22	17.78	9.22	19.78	10.22	20.78	11.22	21.78
5/10/2000	-1.67	9.44	0.33	11.44	1.33	12.44	2.33	13.44
5/11/2000	-3.33	13.89	-1.33	15.89	-0.33	16.89	0.67	17.89
5/12/2000	2.22	16.11	4.22	18.11	5.22	19.11	6.22	20.11
5/13/2000	8.33	18.33	10.33	20.33	11.33	21.33	12.33	22.33
5/14/2000	5.56	18.33	7.56	20.33	8.56	21.33	9.56	22.33
5/15/2000	2.78	12.22	4.78	14.22	5.78	15.22	6.78	16.22
5/16/2000	0.56	5.56	2.56	7.56	3.56	8.56	4.56	9.56
5/17/2000	2.78	16.11	4.78	18.11	5.78	19.11	6.78	20.11
5/18/2000	8.89	22.78	10.89	24.78	11.89	25.78	12.89	26.78
5/19/2000	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
5/20/2000	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
5/21/2000	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
5/22/2000	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/23/2000	16.67	31.67	18.67	33.67	19.67	34.67	20.67	35.67
5/24/2000	15	27.78	17	29.78	18	30.78	19	31.78
5/25/2000	11.11	22.22	13.11	24.22	14.11	25.22	15.11	26.22
5/26/2000	10	24.44	12	26.44	13	27.44	14	28.44
5/27/2000	12.22	27.78	14.22	29.78	15.22	30.78	16.22	31.78
5/28/2000	11.67	27.22	13.67	29.22	14.67	30.22	15.67	31.22
5/29/2000	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
5/30/2000	8.89	22.22	10.89	24.22	11.89	25.22	12.89	26.22
5/31/2000	7.78	23.89	9.78	25.89	10.78	26.89	11.78	27.89
6/1/2000	13.33	25	15.33	27	16.33	28	17.33	29
6/2/2000	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11
6/3/2000	13.33	28.89	15.33	30.89	16.33	31.89	17.33	32.89
6/4/2000	13.89	29.44	15.89	31.44	16.89	32.44	17.89	33.44
6/5/2000	11.11	22.78	13.11	24.78	14.11	25.78	15.11	26.78
6/6/2000	10.56	25	12.56	27	13.56	28	14.56	29
6/7/2000	7.78	22.22	9.78	24.22	10.78	25.22	11.78	26.22
6/8/2000	5.56	12.78	7.56	14.78	8.56	15.78	9.56	16.78
6/9/2000	4.44	18.33	6.44	20.33	7.44	21.33	8.44	22.33
6/10/2000	5.56	20	7.56	22	8.56	23	9.56	24
6/11/2000	8.33	23.89	10.33	25.89	11.33	26.89	12.33	27.89
6/12/2000	12.22	26.67	14.22	28.67	15.22	29.67	16.22	30.67
6/13/2000	13.89	33.89	15.89	35.89	16.89	36.89	17.89	37.89
6/14/2000	23.33	35.56	25.33	37.56	26.33	38.56	27.33	39.56
6/15/2000	20	33.33	22	35.33	23	36.33	24	37.33
6/16/2000	21.11	32.78	23.11	34.78	24.11	35.78	25.11	36.78
6/17/2000	18.33	31.11	20.33	33.11	21.33	34.11	22.33	35.11
6/18/2000	15	28.33	17	30.33	18	31.33	19	32.33
6/19/2000	13.89	27.22	15.89	29.22	16.89	30.22	17.89	31.22
6/20/2000	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
6/21/2000	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
6/22/2000	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
6/23/2000	16.11	30.56	18.11	32.56	19.11	33.56	20.11	34.56
6/24/2000	16.67	30.56	18.67	32.56	19.67	33.56	20.67	34.56
6/25/2000	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
6/26/2000	17.78	31.11	19.78	33.11	20.78	34.11	21.78	35.11
6/27/2000	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22
6/28/2000	19.44	33.33	21.44	35.33	22.44	36.33	23.44	37.33
6/29/2000	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
6/30/2000	15.56	30	17.56	32	18.56	33	19.56	34
7/1/2000	13.89	27.22	15.89	29.22	16.89	30.22	17.89	31.22
7/2/2000	12.22	25.56	14.22	27.56	15.22	28.56	16.22	29.56
7/3/2000	10.56	22.22	12.56	24.22	13.56	25.22	14.56	26.22
7/4/2000	9.44	23.33	11.44	25.33	12.44	26.33	13.44	27.33
7/5/2000	8.89	21.11	10.89	23.11	11.89	24.11	12.89	25.11
7/6/2000	9.44	23.33	11.44	25.33	12.44	26.33	13.44	27.33
7/7/2000	10.56	22.78	12.56	24.78	13.56	25.78	14.56	26.78
7/8/2000	10	24.44	12	26.44	13	27.44	14	28.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/9/2000	11.67	27.22	13.67	29.22	14.67	30.22	15.67	31.22
7/10/2000	14.44	27.78	16.44	29.78	17.44	30.78	18.44	31.78
7/11/2000	14.44	30	16.44	32	17.44	33	18.44	34
7/12/2000	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
7/13/2000	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
7/14/2000	14.44	30	16.44	32	17.44	33	18.44	34
7/15/2000	16.11	29.44	18.11	31.44	19.11	32.44	20.11	33.44
7/16/2000	15	28.33	17	30.33	18	31.33	19	32.33
7/17/2000	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67
7/18/2000	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
7/19/2000	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
7/20/2000	15.56	33.33	17.56	35.33	18.56	36.33	19.56	37.33
7/21/2000	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
7/22/2000	16.11	30.56	18.11	32.56	19.11	33.56	20.11	34.56
7/23/2000	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
7/24/2000	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22
7/25/2000	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
7/26/2000	15	30.56	17	32.56	18	33.56	19	34.56
7/27/2000	15	30.56	17	32.56	18	33.56	19	34.56
7/28/2000	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
7/29/2000	17.22	33.33	19.22	35.33	20.22	36.33	21.22	37.33
7/30/2000	19.44	35	21.44	37	22.44	38	23.44	39
7/31/2000	20.56	36.11	22.56	38.11	23.56	39.11	24.56	40.11
8/1/2000	22.22	36.67	24.22	38.67	25.22	39.67	26.22	40.67
8/2/2000	21.11	34.44	23.11	36.44	24.11	37.44	25.11	38.44
8/3/2000	20.56	33.89	22.56	35.89	23.56	36.89	24.56	37.89
8/4/2000	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
8/5/2000	18.33	33.33	20.33	35.33	21.33	36.33	22.33	37.33
8/6/2000	16.11	32.78	18.11	34.78	19.11	35.78	20.11	36.78
8/7/2000	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
8/8/2000	15	30	17	32	18	33	19	34
8/9/2000	15.56	30	17.56	32	18.56	33	19.56	34
8/10/2000	15	28.33	17	30.33	18	31.33	19	32.33
8/11/2000	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
8/12/2000	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78
8/13/2000	14.44	32.22	16.44	34.22	17.44	35.22	18.44	36.22
8/14/2000	16.11	32.78	18.11	34.78	19.11	35.78	20.11	36.78
8/15/2000	16.67	33.89	18.67	35.89	19.67	36.89	20.67	37.89
8/16/2000	17.78	34.44	19.78	36.44	20.78	37.44	21.78	38.44
8/17/2000	17.22	33.89	19.22	35.89	20.22	36.89	21.22	37.89
8/18/2000	15	30	17	32	18	33	19	34
8/19/2000	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
8/20/2000	12.78	27.78	14.78	29.78	15.78	30.78	16.78	31.78
8/21/2000	13.33	28.89	15.33	30.89	16.33	31.89	17.33	32.89
8/22/2000	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
8/23/2000	15	28.89	17	30.89	18	31.89	19	32.89
8/24/2000	14.44	30.56	16.44	32.56	17.44	33.56	18.44	34.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/25/2000	16.67	32.78	18.67	34.78	19.67	35.78	20.67	36.78
8/26/2000	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
8/27/2000	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
8/28/2000	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22
8/29/2000	15	22.22	17	24.22	18	25.22	19	26.22
8/30/2000	12.78	18.33	14.78	20.33	15.78	21.33	16.78	22.33
8/31/2000	9.44	22.22	11.44	24.22	12.44	25.22	13.44	26.22
9/1/2000	8.33	12.78	10.33	14.78	11.33	15.78	12.33	16.78
9/2/2000	6.67	10.56	8.67	12.56	9.67	13.56	10.67	14.56
9/3/2000	7.22	16.67	9.22	18.67	10.22	19.67	11.22	20.67
9/4/2000	6.11	16.67	8.11	18.67	9.11	19.67	10.11	20.67
9/5/2000	5	21.11	7	23.11	8	24.11	9	25.11
9/6/2000	11.67	25	13.67	27	14.67	28	15.67	29
9/7/2000	12.78	29.44	14.78	31.44	15.78	32.44	16.78	33.44
9/8/2000	11.67	28.33	13.67	30.33	14.67	31.33	15.67	32.33
9/9/2000	12.78	28.33	14.78	30.33	15.78	31.33	16.78	32.33
9/10/2000	13.33	28.89	15.33	30.89	16.33	31.89	17.33	32.89
9/11/2000	13.89	30	15.89	32	16.89	33	17.89	34
9/12/2000	15	32.22	17	34.22	18	35.22	19	36.22
9/13/2000	18.89	33.89	20.89	35.89	21.89	36.89	22.89	37.89
9/14/2000	15	27.78	17	29.78	18	30.78	19	31.78
9/15/2000	14.44	27.22	16.44	29.22	17.44	30.22	18.44	31.22
9/16/2000	13.33	28.89	15.33	30.89	16.33	31.89	17.33	32.89
9/17/2000	15	33.33	17	35.33	18	36.33	19	37.33
9/18/2000	21.11	33.33	23.11	35.33	24.11	36.33	25.11	37.33
9/19/2000	21.67	33.89	23.67	35.89	24.67	36.89	25.67	37.89
9/20/2000	18.33	33.89	20.33	35.89	21.33	36.89	22.33	37.89
9/21/2000	10.56	26.67	12.56	28.67	13.56	29.67	14.56	30.67
9/22/2000	7.78	13.33	9.78	15.33	10.78	16.33	11.78	17.33
9/23/2000	6.11	22.78	8.11	24.78	9.11	25.78	10.11	26.78
9/24/2000	9.44	25.56	11.44	27.56	12.44	28.56	13.44	29.56
9/25/2000	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
9/26/2000	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
9/27/2000	12.78	27.78	14.78	29.78	15.78	30.78	16.78	31.78
9/28/2000	12.22	25.56	14.22	27.56	15.22	28.56	16.22	29.56
9/29/2000	12.78	30.56	14.78	32.56	15.78	33.56	16.78	34.56
9/30/2000	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
10/1/2000	15	31.11	17	33.11	18	34.11	19	35.11
10/2/2000	15	28.89	17	30.89	18	31.89	19	32.89
10/3/2000	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
10/4/2000	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
10/5/2000	15.56	30	17.56	32	18.56	33	19.56	34
10/6/2000	16.11	30	18.11	32	19.11	33	20.11	34
10/7/2000	15	27.78	17	29.78	18	30.78	19	31.78
10/8/2000	12.22	27.78	14.22	29.78	15.22	30.78	16.22	31.78
10/9/2000	5.56	17.78	7.56	19.78	8.56	20.78	9.56	21.78
10/10/2000	2.22	10	4.22	12	5.22	13	6.22	14

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/11/2000	3.33	7.22	5.33	9.22	6.33	10.22	7.33	11.22
10/12/2000	1.67	13.33	3.67	15.33	4.67	16.33	5.67	17.33
10/13/2000	2.78	17.78	4.78	19.78	5.78	20.78	6.78	21.78
10/14/2000	8.33	20.56	10.33	22.56	11.33	23.56	12.33	24.56
10/15/2000	7.22	21.11	9.22	23.11	10.22	24.11	11.22	25.11
10/16/2000	7.78	23.89	9.78	25.89	10.78	26.89	11.78	27.89
10/17/2000	9.44	25	11.44	27	12.44	28	13.44	29
10/18/2000	11.11	24.44	13.11	26.44	14.11	27.44	15.11	28.44
10/19/2000	8.89	24.44	10.89	26.44	11.89	27.44	12.89	28.44
10/20/2000	8.541	20.56	10.541	22.56	11.541	23.56	12.541	24.56
10/21/2000	6.67	16.11	8.67	18.11	9.67	19.11	10.67	20.11
10/22/2000	3.89	12.78	5.89	14.78	6.89	15.78	7.89	16.78
10/23/2000	7.78	21.11	9.78	23.11	10.78	24.11	11.78	25.11
10/24/2000	6.11	20.56	8.11	22.56	9.11	23.56	10.11	24.56
10/25/2000	4.44	12.22	6.44	14.22	7.44	15.22	8.44	16.22
10/26/2000	3.89	7.22	5.89	9.22	6.89	10.22	7.89	11.22
10/27/2000	1.67	15.56	3.67	17.56	4.67	18.56	5.67	19.56
10/28/2000	5	8.33	7	10.33	8	11.33	9	12.33
10/29/2000	0.56	4.44	2.56	6.44	3.56	7.44	4.56	8.44
10/30/2000	-0.56	10	1.44	12	2.44	13	3.44	14
10/31/2000	-0.56	13.89	1.44	15.89	2.44	16.89	3.44	17.89
11/1/2000	3.89	15	5.89	17	6.89	18	7.89	19
11/2/2000	3.89	18.33	5.89	20.33	6.89	21.33	7.89	22.33
11/3/2000	7.78	17.78	9.78	19.78	10.78	20.78	11.78	21.78
11/4/2000	4.44	17.78	6.44	19.78	7.44	20.78	8.44	21.78
11/5/2000	5	18.33	7	20.33	8	21.33	9	22.33
11/6/2000	3.33	13.89	5.33	15.89	6.33	16.89	7.33	17.89
11/7/2000	3.33	16.67	5.33	18.67	6.33	19.67	7.33	20.67
11/8/2000	3.89	10.56	5.89	12.56	6.89	13.56	7.89	14.56
11/9/2000	-1.67	8.33	0.33	10.33	1.33	11.33	2.33	12.33
11/10/2000	-4.44	3.33	-2.44	5.33	-1.44	6.33	-0.44	7.33
11/11/2000	-7.22	7.78	-5.22	9.78	-4.22	10.78	-3.22	11.78
11/12/2000	-5	8.89	-3	10.89	-2	11.89	-1	12.89
11/13/2000	-0.9086	4.44	1.0914	6.44	2.0914	7.44	3.0914	8.44
11/14/2000	-4.44	7.22	-2.44	9.22	-1.44	10.22	-0.44	11.22
11/15/2000	-3.89	8.33	-1.89	10.33	-0.89	11.33	0.11	12.33
11/16/2000	-2.22	9.44	-0.22	11.44	0.78	12.44	1.78	13.44
11/17/2000	-0.56	11.67	1.44	13.67	2.44	14.67	3.44	15.67
11/18/2000	2.22	15	4.22	17	5.22	18	6.22	19
11/19/2000	3.89	18.33	5.89	20.33	6.89	21.33	7.89	22.33
11/20/2000	5.56	20	7.56	22	8.56	23	9.56	24
11/21/2000	1.67	12.78	3.67	14.78	4.67	15.78	5.67	16.78
11/22/2000	-1.11	11.11	0.89	13.11	1.89	14.11	2.89	15.11
11/23/2000	3.33	13.33	5.33	15.33	6.33	16.33	7.33	17.33
11/24/2000	4.44	16.11	6.44	18.11	7.44	19.11	8.44	20.11
11/25/2000	5	17.78	7	19.78	8	20.78	9	21.78
11/26/2000	5.56	16.67	7.56	18.67	8.56	19.67	9.56	20.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/27/2000	6.11	17.22	8.11	19.22	9.11	20.22	10.11	21.22
11/28/2000	6.11	21.67	8.11	23.67	9.11	24.67	10.11	25.67
11/29/2000	1.11	11.11	3.11	13.11	4.11	14.11	5.11	15.11
11/30/2000	2.22	13.89	4.22	15.89	5.22	16.89	6.22	17.89
12/1/2000	3.89	16.11	5.89	18.11	6.89	19.11	7.89	20.11
12/2/2000	4.44	17.22	6.44	19.22	7.44	20.22	8.44	21.22
12/3/2000	5.56	19.44	7.56	21.44	8.56	22.44	9.56	23.44
12/4/2000	7.22	17.78	9.22	19.78	10.22	20.78	11.22	21.78
12/5/2000	7.22	20.56	9.22	22.56	10.22	23.56	11.22	24.56
12/6/2000	8.33	20	10.33	22	11.33	23	12.33	24
12/7/2000	6.67	15	8.67	17	9.67	18	10.67	19
12/8/2000	3.89	14.44	5.89	16.44	6.89	17.44	7.89	18.44
12/9/2000	3.635	11.94	5.635	13.94	6.635	14.94	7.635	15.94
12/10/2000	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89
12/11/2000	0.56	10.56	2.56	12.56	3.56	13.56	4.56	14.56
12/12/2000	-1.11	7.22	0.89	9.22	1.89	10.22	2.89	11.22
12/13/2000	-0.56	4.44	1.44	6.44	2.44	7.44	3.44	8.44
12/14/2000	0.56	3.33	2.56	5.33	3.56	6.33	4.56	7.33
12/15/2000	1.67	10.56	3.67	12.56	4.67	13.56	5.67	14.56
12/16/2000	4.44	17.78	6.44	19.78	7.44	20.78	8.44	21.78
12/17/2000	3.33	16.11	5.33	18.11	6.33	19.11	7.33	20.11
12/18/2000	6.67	17.78	8.67	19.78	9.67	20.78	10.67	21.78
12/19/2000	5.56	18.33	7.56	20.33	8.56	21.33	9.56	22.33
12/20/2000	5	17.78	7	19.78	8	20.78	9	21.78
12/21/2000	4.44	17.22	6.44	19.22	7.44	20.22	8.44	21.22
12/22/2000	-16.11	12.22	-14.11	14.22	-13.11	15.22	-12.11	16.22
12/23/2000	2.22	11.11	4.22	13.11	5.22	14.11	6.22	15.11
12/24/2000	1.67	13.33	3.67	15.33	4.67	16.33	5.67	17.33
12/25/2000	4.44	15	6.44	17	7.44	18	8.44	19
12/26/2000	5.56	16.67	7.56	18.67	8.56	19.67	9.56	20.67
12/27/2000	4.44	16.11	6.44	18.11	7.44	19.11	8.44	20.11
12/28/2000	6.11	19.44	8.11	21.44	9.11	22.44	10.11	23.44
12/29/2000	7.22	20	9.22	22	10.22	23	11.22	24
12/30/2000	5.56	18.89	7.56	20.89	8.56	21.89	9.56	22.89
12/31/2000	5	17.78	7	19.78	8	20.78	9	21.78
1/1/2001	6.67	18.33	8.67	20.33	9.67	21.33	10.67	22.33
1/2/2001	7.22	20	9.22	22	10.22	23	11.22	24
1/3/2001	6.67	21.11	8.67	23.11	9.67	24.11	10.67	25.11
1/4/2001	7.22	21.11	9.22	23.11	10.22	24.11	11.22	25.11
1/5/2001	7.78	20	9.78	22	10.78	23	11.78	24
1/6/2001	6.11	18.33	8.11	20.33	9.11	21.33	10.11	22.33
1/7/2001	5.56	17.78	7.56	19.78	8.56	20.78	9.56	21.78
1/8/2001	0.56	9.44	2.56	11.44	3.56	12.44	4.56	13.44
1/9/2001	-0.56	7.78	1.44	9.78	2.44	10.78	3.44	11.78
1/10/2001	0	7.22	2	9.22	3	10.22	4	11.22
1/11/2001	-0.56	3.89	1.44	5.89	2.44	6.89	3.44	7.89
1/12/2001	-3.89	9.44	-1.89	11.44	-0.89	12.44	0.11	13.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/13/2001	-2.22	7.22	-0.22	9.22	0.78	10.22	1.78	11.22
1/14/2001	-2.22	8.33	-0.22	10.33	0.78	11.33	1.78	12.33
1/15/2001	-2.78	5	-0.78	7	0.22	8	1.22	9
1/16/2001	-3.89	3.89	-1.89	5.89	-0.89	6.89	0.11	7.89
1/17/2001	-2.22	11.11	-0.22	13.11	0.78	14.11	1.78	15.11
1/18/2001	-0.56	12.78	1.44	14.78	2.44	15.78	3.44	16.78
1/19/2001	2.78	15.56	4.78	17.56	5.78	18.56	6.78	19.56
1/20/2001	2.22	14.44	4.22	16.44	5.22	17.44	6.22	18.44
1/21/2001	4.44	15.56	6.44	17.56	7.44	18.56	8.44	19.56
1/22/2001	3.89	15	5.89	17	6.89	18	7.89	19
1/23/2001	0	11.11	2	13.11	3	14.11	4	15.11
1/24/2001	-3.33	1.67	-1.33	3.67	-0.33	4.67	0.67	5.67
1/25/2001	-4.44	1.11	-2.44	3.11	-1.44	4.11	-0.44	5.11
1/26/2001	-3.33	5	-1.33	7	-0.33	8	0.67	9
1/27/2001	-1.67	10	0.33	12	1.33	13	2.33	14
1/28/2001	-1.11	10	0.89	12	1.89	13	2.89	14
1/29/2001	-2.78	7.22	-0.78	9.22	0.22	10.22	1.22	11.22
1/30/2001	-1.67	10.56	0.33	12.56	1.33	13.56	2.33	14.56
1/31/2001	0.56	13.33	2.56	15.33	3.56	16.33	4.56	17.33
2/1/2001	1.67	15.56	3.67	17.56	4.67	18.56	5.67	19.56
2/2/2001	3.33	14.44	5.33	16.44	6.33	17.44	7.33	18.44
2/3/2001	5.56	20.56	7.56	22.56	8.56	23.56	9.56	24.56
2/4/2001	8.89	22.22	10.89	24.22	11.89	25.22	12.89	26.22
2/5/2001	5	19.44	7	21.44	8	22.44	9	23.44
2/6/2001	-3.89	8.89	-1.89	10.89	-0.89	11.89	0.11	12.89
2/7/2001	-5.56	3.33	-3.56	5.33	-2.56	6.33	-1.56	7.33
2/8/2001	-3.33	11.11	-1.33	13.11	-0.33	14.11	0.67	15.11
2/9/2001	-1.67	1.67	0.33	3.67	1.33	4.67	2.33	5.67
2/10/2001	-2.78	1.11	-0.78	3.11	0.22	4.11	1.22	5.11
2/11/2001	-4.44	2.22	-2.44	4.22	-1.44	5.22	-0.44	6.22
2/12/2001	-7.22	4.44	-5.22	6.44	-4.22	7.44	-3.22	8.44
2/13/2001	-0.56	7.78	1.44	9.78	2.44	10.78	3.44	11.78
2/14/2001	-2.78	8.33	-0.78	10.33	0.22	11.33	1.22	12.33
2/15/2001	-3.89	9.44	-1.89	11.44	-0.89	12.44	0.11	13.44
2/16/2001	-2.78	12.78	-0.78	14.78	0.22	15.78	1.22	16.78
2/17/2001	2.78	9.44	4.78	11.44	5.78	12.44	6.78	13.44
2/18/2001	2.22	6.67	4.22	8.67	5.22	9.67	6.22	10.67
2/19/2001	0.56	4.44	2.56	6.44	3.56	7.44	4.56	8.44
2/20/2001	0.56	6.11	2.56	8.11	3.56	9.11	4.56	10.11
2/21/2001	0.56	7.22	2.56	9.22	3.56	10.22	4.56	11.22
2/22/2001	-3.89	3.89	-1.89	5.89	-0.89	6.89	0.11	7.89
2/23/2001	-3.89	7.22	-1.89	9.22	-0.89	10.22	0.11	11.22
2/24/2001	-0.56	1.67	1.44	3.67	2.44	4.67	3.44	5.67
2/25/2001	-0.56	10.56	1.44	12.56	2.44	13.56	3.44	14.56
2/26/2001	4.44	8.33	6.44	10.33	7.44	11.33	8.44	12.33
2/27/2001	1.11	15	3.11	17	4.11	18	5.11	19
2/28/2001	-1.67	6.11	0.33	8.11	1.33	9.11	2.33	10.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/1/2001	-2.22	10.56	-0.22	12.56	0.78	13.56	1.78	14.56
3/2/2001	0.7614	3.33	2.7614	5.33	3.7614	6.33	4.7614	7.33
3/3/2001	-4.44	10	-2.44	12	-1.44	13	-0.44	14
3/4/2001	2.22	5	4.22	7	5.22	8	6.22	9
3/5/2001	0.56	6.11	2.56	8.11	3.56	9.11	4.56	10.11
3/6/2001	3.89	15	5.89	17	6.89	18	7.89	19
3/7/2001	4.44	18.33	6.44	20.33	7.44	21.33	8.44	22.33
3/8/2001	3.33	15	5.33	17	6.33	18	7.33	19
3/9/2001	-1.67	10	0.33	12	1.33	13	2.33	14
3/10/2001	-1.11	12.22	0.89	14.22	1.89	15.22	2.89	16.22
3/11/2001	0.56	14.44	2.56	16.44	3.56	17.44	4.56	18.44
3/12/2001	2.78	16.11	4.78	18.11	5.78	19.11	6.78	20.11
3/13/2001	5.56	20.56	7.56	22.56	8.56	23.56	9.56	24.56
3/14/2001	3.89	18.89	5.89	20.89	6.89	21.89	7.89	22.89
3/15/2001	2.22	15	4.22	17	5.22	18	6.22	19
3/16/2001	1.67	15.56	3.67	17.56	4.67	18.56	5.67	19.56
3/17/2001	3.89	20	5.89	22	6.89	23	7.89	24
3/18/2001	6.67	22.22	8.67	24.22	9.67	25.22	10.67	26.22
3/19/2001	7.78	23.89	9.78	25.89	10.78	26.89	11.78	27.89
3/20/2001	8.89	21.67	10.89	23.67	11.89	24.67	12.89	25.67
3/21/2001	8.33	23.33	10.33	25.33	11.33	26.33	12.33	27.33
3/22/2001	7.78	20.56	9.78	22.56	10.78	23.56	11.78	24.56
3/23/2001	6.67	21.11	8.67	23.11	9.67	24.11	10.67	25.11
3/24/2001	7.22	18.33	9.22	20.33	10.22	21.33	11.22	22.33
3/25/2001	4.44	15	6.44	17	7.44	18	8.44	19
3/26/2001	3.33	18.89	5.33	20.89	6.33	21.89	7.33	22.89
3/27/2001	5	21.11	7	23.11	8	24.11	9	25.11
3/28/2001	8.33	21.67	10.33	23.67	11.33	24.67	12.33	25.67
3/29/2001	6.11	21.11	8.11	23.11	9.11	24.11	10.11	25.11
3/30/2001	8.33	22.78	10.33	24.78	11.33	25.78	12.33	26.78
3/31/2001	8.89	23.89	10.89	25.89	11.89	26.89	12.89	27.89
4/1/2001	5.56	19.44	7.56	21.44	8.56	22.44	9.56	23.44
4/2/2001	-1.67	10	0.33	12	1.33	13	2.33	14
4/3/2001	-3.33	7.78	-1.33	9.78	-0.33	10.78	0.67	11.78
4/4/2001	-2.22	10.56	-0.22	12.56	0.78	13.56	1.78	14.56
4/5/2001	-1.11	11.67	0.89	13.67	1.89	14.67	2.89	15.67
4/6/2001	0.56	5.56	2.56	7.56	3.56	8.56	4.56	9.56
4/7/2001	-16.11	5.56	-14.11	7.56	-13.11	8.56	-12.11	9.56
4/8/2001	-3.33	5.56	-1.33	7.56	-0.33	8.56	0.67	9.56
4/9/2001	-4.44	9.44	-2.44	11.44	-1.44	12.44	-0.44	13.44
4/10/2001	0.56	12.78	2.56	14.78	3.56	15.78	4.56	16.78
4/11/2001	0.56	3.33	2.56	5.33	3.56	6.33	4.56	7.33
4/12/2001	-2.78	11.11	-0.78	13.11	0.22	14.11	1.22	15.11
4/13/2001	1.11	12.78	3.11	14.78	4.11	15.78	5.11	16.78
4/14/2001	0	14.44	2	16.44	3	17.44	4	18.44
4/15/2001	1.67	18.33	3.67	20.33	4.67	21.33	5.67	22.33
4/16/2001	6.11	18.89	8.11	20.89	9.11	21.89	10.11	22.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/17/2001	5	18.89	7	20.89	8	21.89	9	22.89
4/18/2001	3.33	18.33	5.33	20.33	6.33	21.33	7.33	22.33
4/19/2001	-0.56	4.44	1.44	6.44	2.44	7.44	3.44	8.44
4/20/2001	-1.11	2.22	0.89	4.22	1.89	5.22	2.89	6.22
4/21/2001	-2.78	13.33	-0.78	15.33	0.22	16.33	1.22	17.33
4/22/2001	0.56	15	2.56	17	3.56	18	4.56	19
4/23/2001	4.44	20	6.44	22	7.44	23	8.44	24
4/24/2001	8.33	23.33	10.33	25.33	11.33	26.33	12.33	27.33
4/25/2001	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
4/26/2001	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
4/27/2001	7.22	23.33	9.22	25.33	10.22	26.33	11.22	27.33
4/28/2001	3.89	15.56	5.89	17.56	6.89	18.56	7.89	19.56
4/29/2001	3.89	21.11	5.89	23.11	6.89	24.11	7.89	25.11
4/30/2001	10	25	12	27	13	28	14	29
5/1/2001	8.33	23.89	10.33	25.89	11.33	26.89	12.33	27.89
5/2/2001	6.11	16.11	8.11	18.11	9.11	19.11	10.11	20.11
5/3/2001	5	20	7	22	8	23	9	24
5/4/2001	-15	22.22	-13	24.22	-12	25.22	-11	26.22
5/5/2001	8.89	24.44	10.89	26.44	11.89	27.44	12.89	28.44
5/6/2001	9.44	26.11	11.44	28.11	12.44	29.11	13.44	30.11
5/7/2001	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
5/8/2001	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
5/9/2001	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
5/10/2001	12.78	30	14.78	32	15.78	33	16.78	34
5/11/2001	14.44	28.33	16.44	30.33	17.44	31.33	18.44	32.33
5/12/2001	14.44	26.67	16.44	28.67	17.44	29.67	18.44	30.67
5/13/2001	10.56	23.33	12.56	25.33	13.56	26.33	14.56	27.33
5/14/2001	10	23.33	12	25.33	13	26.33	14	27.33
5/15/2001	-15	19.44	-13	21.44	-12	22.44	-11	23.44
5/16/2001	10.56	25	12.56	27	13.56	28	14.56	29
5/17/2001	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11
5/18/2001	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
5/19/2001	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
5/20/2001	15.56	30.56	17.56	32.56	18.56	33.56	19.56	34.56
5/21/2001	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
5/22/2001	17.22	30.56	19.22	32.56	20.22	33.56	21.22	34.56
5/23/2001	16.11	31.67	18.11	33.67	19.11	34.67	20.11	35.67
5/24/2001	15	31.11	17	33.11	18	34.11	19	35.11
5/25/2001	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
5/26/2001	12.78	27.22	14.78	29.22	15.78	30.22	16.78	31.22
5/27/2001	12.22	26.67	14.22	28.67	15.22	29.67	16.22	30.67
5/28/2001	9.44	24.44	11.44	26.44	12.44	27.44	13.44	28.44
5/29/2001	11.11	28.33	13.11	30.33	14.11	31.33	15.11	32.33
5/30/2001	16.11	33.89	18.11	35.89	19.11	36.89	20.11	37.89
5/31/2001	18.89	32.78	20.89	34.78	21.89	35.78	22.89	36.78
6/1/2001	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
6/2/2001	8.89	23.33	10.89	25.33	11.89	26.33	12.89	27.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/3/2001	7.78	22.22	9.78	24.22	10.78	25.22	11.78	26.22
6/4/2001	9.44	24.44	11.44	26.44	12.44	27.44	13.44	28.44
6/5/2001	10.56	22.78	12.56	24.78	13.56	25.78	14.56	26.78
6/6/2001	10.56	29.44	12.56	31.44	13.56	32.44	14.56	33.44
6/7/2001	13.33	30	15.33	32	16.33	33	17.33	34
6/8/2001	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
6/9/2001	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
6/10/2001	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
6/11/2001	11.11	25.56	13.11	27.56	14.11	28.56	15.11	29.56
6/12/2001	10	23.89	12	25.89	13	26.89	14	27.89
6/13/2001	7.78	27.22	9.78	29.22	10.78	30.22	11.78	31.22
6/14/2001	12.22	28.33	14.22	30.33	15.22	31.33	16.22	32.33
6/15/2001	13.89	30	15.89	32	16.89	33	17.89	34
6/16/2001	15.56	31.11	17.56	33.11	18.56	34.11	19.56	35.11
6/17/2001	15	30	17	32	18	33	19	34
6/18/2001	14.44	31.67	16.44	33.67	17.44	34.67	18.44	35.67
6/19/2001	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
6/20/2001	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
6/21/2001	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
6/22/2001	17.78	32.78	19.78	34.78	20.78	35.78	21.78	36.78
6/23/2001	16.11	30	18.11	32	19.11	33	20.11	34
6/24/2001	12.22	25.56	14.22	27.56	15.22	28.56	16.22	29.56
6/25/2001	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
6/26/2001	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
6/27/2001	11.67	17.78	13.67	19.78	14.67	20.78	15.67	21.78
6/28/2001	11.11	26.67	13.11	28.67	14.11	29.67	15.11	30.67
6/29/2001	13.33	30.56	15.33	32.56	16.33	33.56	17.33	34.56
6/30/2001	15.56	31.11	17.56	33.11	18.56	34.11	19.56	35.11
7/1/2001	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
7/2/2001	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
7/3/2001	22.22	34.44	24.22	36.44	25.22	37.44	26.22	38.44
7/4/2001	21.11	33.33	23.11	35.33	24.11	36.33	25.11	37.33
7/5/2001	20	33.33	22	35.33	23	36.33	24	37.33
7/6/2001	18.33	28.89	20.33	30.89	21.33	31.89	22.33	32.89
7/7/2001	14.44	28.33	16.44	30.33	17.44	31.33	18.44	32.33
7/8/2001	15.56	32.22	17.56	34.22	18.56	35.22	19.56	36.22
7/9/2001	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
7/10/2001	16.11	30.56	18.11	32.56	19.11	33.56	20.11	34.56
7/11/2001	15	28.89	17	30.89	18	31.89	19	32.89
7/12/2001	12.78	29.44	14.78	31.44	15.78	32.44	16.78	33.44
7/13/2001	13.89	30	15.89	32	16.89	33	17.89	34
7/14/2001	15	29.44	17	31.44	18	32.44	19	33.44
7/15/2001	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
7/16/2001	11.67	23.89	13.67	25.89	14.67	26.89	15.67	27.89
7/17/2001	11.11	25	13.11	27	14.11	28	15.11	29
7/18/2001	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
7/19/2001	12.78	27.78	14.78	29.78	15.78	30.78	16.78	31.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/20/2001	13.33	27.22	15.33	29.22	16.33	30.22	17.33	31.22
7/21/2001	12.78	27.78	14.78	29.78	15.78	30.78	16.78	31.78
7/22/2001	12.22	28.89	14.22	30.89	15.22	31.89	16.22	32.89
7/23/2001	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
7/24/2001	16.11	32.78	18.11	34.78	19.11	35.78	20.11	36.78
7/25/2001	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
7/26/2001	17.78	33.33	19.78	35.33	20.78	36.33	21.78	37.33
7/27/2001	18.33	33.89	20.33	35.89	21.33	36.89	22.33	37.89
7/28/2001	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
7/29/2001	16.67	33.33	18.67	35.33	19.67	36.33	20.67	37.33
7/30/2001	13.33	25	15.33	27	16.33	28	17.33	29
7/31/2001	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
8/1/2001	15	31.11	17	33.11	18	34.11	19	35.11
8/2/2001	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
8/3/2001	15.56	30	17.56	32	18.56	33	19.56	34
8/4/2001	15	28.33	17	30.33	18	31.33	19	32.33
8/5/2001	13.89	31.11	15.89	33.11	16.89	34.11	17.89	35.11
8/6/2001	17.22	33.89	19.22	35.89	20.22	36.89	21.22	37.89
8/7/2001	20	34.44	22	36.44	23	37.44	24	38.44
8/8/2001	21.67	34.44	23.67	36.44	24.67	37.44	25.67	38.44
8/9/2001	20.56	33.33	22.56	35.33	23.56	36.33	24.56	37.33
8/10/2001	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
8/11/2001	17.22	34.44	19.22	36.44	20.22	37.44	21.22	38.44
8/12/2001	19.44	32.78	21.44	34.78	22.44	35.78	23.44	36.78
8/13/2001	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
8/14/2001	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
8/15/2001	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22
8/16/2001	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
8/17/2001	19.44	32.22	21.44	34.22	22.44	35.22	23.44	36.22
8/18/2001	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
8/19/2001	17.22	34.44	19.22	36.44	20.22	37.44	21.22	38.44
8/20/2001	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
8/21/2001	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
8/22/2001	11.67	27.22	13.67	29.22	14.67	30.22	15.67	31.22
8/23/2001	11.67	28.33	13.67	30.33	14.67	31.33	15.67	32.33
8/24/2001	13.33	30.56	15.33	32.56	16.33	33.56	17.33	34.56
8/25/2001	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78
8/26/2001	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
8/27/2001	19.44	33.33	21.44	35.33	22.44	36.33	23.44	37.33
8/28/2001	20	32.78	22	34.78	23	35.78	24	36.78
8/29/2001	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
8/30/2001	-15	30	-13	32	-12	33	-11	34
8/31/2001	15	30	17	32	18	33	19	34
9/1/2001	15	31.11	17	33.11	18	34.11	19	35.11
9/2/2001	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
9/3/2001	16.67	31.67	18.67	33.67	19.67	34.67	20.67	35.67
9/4/2001	16.11	32.78	18.11	34.78	19.11	35.78	20.11	36.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/5/2001	14.44	30.56	16.44	32.56	17.44	33.56	18.44	34.56
9/6/2001	12.78	29.44	14.78	31.44	15.78	32.44	16.78	33.44
9/7/2001	15	30	17	32	18	33	19	34
9/8/2001	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
9/9/2001	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
9/10/2001	14.44	27.78	16.44	29.78	17.44	30.78	18.44	31.78
9/11/2001	15.76	26.67	17.76	28.67	18.76	29.67	19.76	30.67
9/12/2001	12.78	24.44	14.78	26.44	15.78	27.44	16.78	28.44
9/13/2001	11.11	27.78	13.11	29.78	14.11	30.78	15.11	31.78
9/14/2001	12.78	29.44	14.78	31.44	15.78	32.44	16.78	33.44
9/15/2001	12.78	28.89	14.78	30.89	15.78	31.89	16.78	32.89
9/16/2001	14.44	28.33	16.44	30.33	17.44	31.33	18.44	32.33
9/17/2001	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
9/18/2001	14.44	30	16.44	32	17.44	33	18.44	34
9/19/2001	15	30	17	32	18	33	19	34
9/20/2001	15	30	17	32	18	33	19	34
9/21/2001	15.56	31.11	17.56	33.11	18.56	34.11	19.56	35.11
9/22/2001	15	31.11	17	33.11	18	34.11	19	35.11
9/23/2001	15	29.44	17	31.44	18	32.44	19	33.44
9/24/2001	15	31.67	17	33.67	18	34.67	19	35.67
9/25/2001	10	21.67	12	23.67	13	24.67	14	25.67
9/26/2001	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
9/27/2001	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
9/28/2001	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
9/29/2001	12.22	31.11	14.22	33.11	15.22	34.11	16.22	35.11
9/30/2001	18.89	31.11	20.89	33.11	21.89	34.11	22.89	35.11
10/1/2001	18.33	31.67	20.33	33.67	21.33	34.67	22.33	35.67
10/2/2001	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
10/3/2001	16.67	31.67	18.67	33.67	19.67	34.67	20.67	35.67
10/4/2001	14.44	30	16.44	32	17.44	33	18.44	34
10/5/2001	10	26.11	12	28.11	13	29.11	14	30.11
10/6/2001	9.44	22.22	11.44	24.22	12.44	25.22	13.44	26.22
10/7/2001	10	23.33	12	25.33	13	26.33	14	27.33
10/8/2001	10	23.33	12	25.33	13	26.33	14	27.33
10/9/2001	8.33	23.89	10.33	25.89	11.33	26.89	12.33	27.89
10/10/2001	10	25	12	27	13	28	14	29
10/11/2001	10.56	21.67	12.56	23.67	13.56	24.67	14.56	25.67
10/12/2001	11.67	28.33	13.67	30.33	14.67	31.33	15.67	32.33
10/13/2001	12.22	30	14.22	32	15.22	33	16.22	34
10/14/2001	16.11	30	18.11	32	19.11	33	20.11	34
10/15/2001	14.44	30.56	16.44	32.56	17.44	33.56	18.44	34.56
10/16/2001	15	27.78	17	29.78	18	30.78	19	31.78
10/17/2001	12.78	25	14.78	27	15.78	28	16.78	29
10/18/2001	11.67	27.22	13.67	29.22	14.67	30.22	15.67	31.22
10/19/2001	12.22	26.67	14.22	28.67	15.22	29.67	16.22	30.67
10/20/2001	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
10/21/2001	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/22/2001	8.89	22.78	10.89	24.78	11.89	25.78	12.89	26.78
10/23/2001	8.33	22.22	10.33	24.22	11.33	25.22	12.33	26.22
10/24/2001	9.44	25	11.44	27	12.44	28	13.44	29
10/25/2001	11.11	27.22	13.11	29.22	14.11	30.22	15.11	31.22
10/26/2001	11.67	26.67	13.67	28.67	14.67	29.67	15.67	30.67
10/27/2001	12.22	23.89	14.22	25.89	15.22	26.89	16.22	27.89
10/28/2001	7.22	18.33	9.22	20.33	10.22	21.33	11.22	22.33
10/29/2001	7.22	18.33	9.22	20.33	10.22	21.33	11.22	22.33
10/30/2001	4.44	11.67	6.44	13.67	7.44	14.67	8.44	15.67
10/31/2001	3.33	16.11	5.33	18.11	6.33	19.11	7.33	20.11
11/1/2001	4.44	18.33	6.44	20.33	7.44	21.33	8.44	22.33
11/2/2001	7.22	20	9.22	22	10.22	23	11.22	24
11/3/2001	8.33	22.22	10.33	24.22	11.33	25.22	12.33	26.22
11/4/2001	10	24.44	12	26.44	13	27.44	14	28.44
11/5/2001	8.33	22.22	10.33	24.22	11.33	25.22	12.33	26.22
11/6/2001	8.33	20	10.33	22	11.33	23	12.33	24
11/7/2001	6.67	21.11	8.67	23.11	9.67	24.11	10.67	25.11
11/8/2001	9.44	23.89	11.44	25.89	12.44	26.89	13.44	27.89
11/9/2001	7.78	21.67	9.78	23.67	10.78	24.67	11.78	25.67
11/10/2001	7.22	20	9.22	22	10.22	23	11.22	24
11/11/2001	7.78	11.11	9.78	13.11	10.78	14.11	11.78	15.11
11/12/2001	0	13.89	2	15.89	3	16.89	4	17.89
11/13/2001	1.11	10	3.11	12	4.11	13	5.11	14
11/14/2001	3.33	15.56	5.33	17.56	6.33	18.56	7.33	19.56
11/15/2001	6.11	18.89	8.11	20.89	9.11	21.89	10.11	22.89
11/16/2001	5.56	17.78	7.56	19.78	8.56	20.78	9.56	21.78
11/17/2001	6.11	16.67	8.11	18.67	9.11	19.67	10.11	20.67
11/18/2001	4.44	18.33	6.44	20.33	7.44	21.33	8.44	22.33
11/19/2001	7.78	19.44	9.78	21.44	10.78	22.44	11.78	23.44
11/20/2001	6.67	13.33	8.67	15.33	9.67	16.33	10.67	17.33
11/21/2001	5.56	10.56	7.56	12.56	8.56	13.56	9.56	14.56
11/22/2001	1.11	8.89	3.11	10.89	4.11	11.89	5.11	12.89
11/23/2001	-0.56	9.44	1.44	11.44	2.44	12.44	3.44	13.44
11/24/2001	-1.11	6.67	0.89	8.67	1.89	9.67	2.89	10.67
11/25/2001	-4.44	3.33	-2.44	5.33	-1.44	6.33	-0.44	7.33
11/26/2001	-6.11	7.78	-4.11	9.78	-3.11	10.78	-2.11	11.78
11/27/2001	-2.78	9.44	-0.78	11.44	0.22	12.44	1.22	13.44
11/28/2001	-0.56	5	1.44	7	2.44	8	3.44	9
11/29/2001	-0.56	1.67	1.44	3.67	2.44	4.67	3.44	5.67
11/30/2001	-1.67	8.33	0.33	10.33	1.33	11.33	2.33	12.33
12/1/2001	0	3.33	2	5.33	3	6.33	4	7.33
12/2/2001	-0.56	4.44	1.44	6.44	2.44	7.44	3.44	8.44
12/3/2001	-3.33	8.33	-1.33	10.33	-0.33	11.33	0.67	12.33
12/4/2001	-5	7.22	-3	9.22	-2	10.22	-1	11.22
12/5/2001	-1.67	2.22	0.33	4.22	1.33	5.22	2.33	6.22
12/6/2001	1.67	13.33	3.67	15.33	4.67	16.33	5.67	17.33
12/7/2001	2.78	16.11	4.78	18.11	5.78	19.11	6.78	20.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/8/2001	4.44	19.44	6.44	21.44	7.44	22.44	8.44	23.44
12/9/2001	-1.67	6.11	0.33	8.11	1.33	9.11	2.33	10.11
12/10/2001	-3.33	6.67	-1.33	8.67	-0.33	9.67	0.67	10.67
12/11/2001	-3.33	8.89	-1.33	10.89	-0.33	11.89	0.67	12.89
12/12/2001	-2.78	10.56	-0.78	12.56	0.22	13.56	1.22	14.56
12/13/2001	1.11	11.11	3.11	13.11	4.11	14.11	5.11	15.11
12/14/2001	-3.89	3.33	-1.89	5.33	-0.89	6.33	0.11	7.33
12/15/2001	-6.11	6.67	-4.11	8.67	-3.11	9.67	-2.11	10.67
12/16/2001	-0.56	11.11	1.44	13.11	2.44	14.11	3.44	15.11
12/17/2001	-0.56	4.44	1.44	6.44	2.44	7.44	3.44	8.44
12/18/2001	-1.67	7.22	0.33	9.22	1.33	10.22	2.33	11.22
12/19/2001	0.56	14.44	2.56	16.44	3.56	17.44	4.56	18.44
12/20/2001	-1.11	5.56	0.89	7.56	1.89	8.56	2.89	9.56
12/21/2001	-3.33	7.22	-1.33	9.22	-0.33	10.22	0.67	11.22
12/22/2001	-1.11	2.78	0.89	4.78	1.89	5.78	2.89	6.78
12/23/2001	-0.56	8.33	1.44	10.33	2.44	11.33	3.44	12.33
12/24/2001	0	13.33	2	15.33	3	16.33	4	17.33
12/25/2001	1.11	10	3.11	12	4.11	13	5.11	14
12/26/2001	3.33	13.33	5.33	15.33	6.33	16.33	7.33	17.33
12/27/2001	2.78	15.56	4.78	17.56	5.78	18.56	6.78	19.56
12/28/2001	2.78	7.22	4.78	9.22	5.78	10.22	6.78	11.22
12/29/2001	3.33	8.33	5.33	10.33	6.33	11.33	7.33	12.33
12/30/2001	4.44	10	6.44	12	7.44	13	8.44	14
12/31/2001	3.89	13.33	5.89	15.33	6.89	16.33	7.89	17.33
1/1/2002	5	14.44	7	16.44	8	17.44	9	18.44
1/2/2002	2.22	8.89	4.22	10.89	5.22	11.89	6.22	12.89
1/3/2002	-0.56	11.11	1.44	13.11	2.44	14.11	3.44	15.11
1/4/2002	-0.56	12.22	1.44	14.22	2.44	15.22	3.44	16.22
1/5/2002	2.22	12.22	4.22	14.22	5.22	15.22	6.22	16.22
1/6/2002	5.56	10	7.56	12	8.56	13	9.56	14
1/7/2002	7.78	18.33	9.78	20.33	10.78	21.33	11.78	22.33
1/8/2002	3.89	14.44	5.89	16.44	6.89	17.44	7.89	18.44
1/9/2002	2.78	13.89	4.78	15.89	5.78	16.89	6.78	17.89
1/10/2002	5	18.33	7	20.33	8	21.33	9	22.33
1/11/2002	6.11	20	8.11	22	9.11	23	10.11	24
1/12/2002	4.44	18.33	6.44	20.33	7.44	21.33	8.44	22.33
1/13/2002	3.89	20	5.89	22	6.89	23	7.89	24
1/14/2002	-2.78	12.22	-0.78	14.22	0.22	15.22	1.22	16.22
1/15/2002	-2.78	9.44	-0.78	11.44	0.22	12.44	1.22	13.44
1/16/2002	-2.78	7.78	-0.78	9.78	0.22	10.78	1.22	11.78
1/17/2002	-2.22	7.78	-0.22	9.78	0.78	10.78	1.78	11.78
1/18/2002	-4.44	11.67	-2.44	13.67	-1.44	14.67	-0.44	15.67
1/19/2002	-2.78	6.67	-0.78	8.67	0.22	9.67	1.22	10.67
1/20/2002	-2.78	11.67	-0.78	13.67	0.22	14.67	1.22	15.67
1/21/2002	-2.22	7.22	-0.22	9.22	0.78	10.22	1.78	11.22
1/22/2002	-7.22	3.89	-5.22	5.89	-4.22	6.89	-3.22	7.89
1/23/2002	-7.22	7.78	-5.22	9.78	-4.22	10.78	-3.22	11.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/24/2002	0	13.33	2	15.33	3	16.33	4	17.33
1/25/2002	3.33	12.22	5.33	14.22	6.33	15.22	7.33	16.22
1/26/2002	-1.11	5	0.89	7	1.89	8	2.89	9
1/27/2002	-8.33	0.56	-6.33	2.56	-5.33	3.56	-4.33	4.56
1/28/2002	-8.89	0	-6.89	2	-5.89	3	-4.89	4
1/29/2002	-11.67	3.33	-9.67	5.33	-8.67	6.33	-7.67	7.33
1/30/2002	-8.33	5.56	-6.33	7.56	-5.33	8.56	-4.33	9.56
1/31/2002	-5.56	8.33	-3.56	10.33	-2.56	11.33	-1.56	12.33
2/1/2002	-2.78	10	-0.78	12	0.22	13	1.22	14
2/2/2002	-0.56	12.22	1.44	14.22	2.44	15.22	3.44	16.22
2/3/2002	-1.11	14.44	0.89	16.44	1.89	17.44	2.89	18.44
2/4/2002	0.56	17.22	2.56	19.22	3.56	20.22	4.56	21.22
2/5/2002	2.22	17.22	4.22	19.22	5.22	20.22	6.22	21.22
2/6/2002	2.22	15.56	4.22	17.56	5.22	18.56	6.22	19.56
2/7/2002	3.33	11.11	5.33	13.11	6.33	14.11	7.33	15.11
2/8/2002	0	12.22	2	14.22	3	15.22	4	16.22
2/9/2002	3.33	16.11	5.33	18.11	6.33	19.11	7.33	20.11
2/10/2002	4.44	18.89	6.44	20.89	7.44	21.89	8.44	22.89
2/11/2002	5.56	19.44	7.56	21.44	8.56	22.44	9.56	23.44
2/12/2002	7.22	18.89	9.22	20.89	10.22	21.89	11.22	22.89
2/13/2002	5.56	12.22	7.56	14.22	8.56	15.22	9.56	16.22
2/14/2002	5	17.22	7	19.22	8	20.22	9	21.22
2/15/2002	5	16.11	7	18.11	8	19.11	9	20.11
2/16/2002	0.56	13.33	2.56	15.33	3.56	16.33	4.56	17.33
2/17/2002	-1.67	5.56	0.33	7.56	1.33	8.56	2.33	9.56
2/18/2002	-3.89	8.33	-1.89	10.33	-0.89	11.33	0.11	12.33
2/19/2002	1.11	5	3.11	7	4.11	8	5.11	9
2/20/2002	4.44	13.33	6.44	15.33	7.44	16.33	8.44	17.33
2/21/2002	5.56	21.67	7.56	23.67	8.56	24.67	9.56	25.67
2/22/2002	7.22	22.78	9.22	24.78	10.22	25.78	11.22	26.78
2/23/2002	1.11	11.11	3.11	13.11	4.11	14.11	5.11	15.11
2/24/2002	1.11	18.33	3.11	20.33	4.11	21.33	5.11	22.33
2/25/2002	5.56	21.67	7.56	23.67	8.56	24.67	9.56	25.67
2/26/2002	6.67	21.67	8.67	23.67	9.67	24.67	10.67	25.67
2/27/2002	8.33	21.67	10.33	23.67	11.33	24.67	12.33	25.67
2/28/2002	2.78	18.33	4.78	20.33	5.78	21.33	6.78	22.33
3/1/2002	-1.11	13.89	0.89	15.89	1.89	16.89	2.89	17.89
3/2/2002	0.56	16.11	2.56	18.11	3.56	19.11	4.56	20.11
3/3/2002	0	15	2	17	3	18	4	19
3/4/2002	1.67	15	3.67	17	4.67	18	5.67	19
3/5/2002	2.78	16.67	4.78	18.67	5.78	19.67	6.78	20.67
3/6/2002	0	5.56	2	7.56	3	8.56	4	9.56
3/7/2002	-2.78	3.89	-0.78	5.89	0.22	6.89	1.22	7.89
3/8/2002	-6.67	11.11	-4.67	13.11	-3.67	14.11	-2.67	15.11
3/9/2002	-0.56	12.78	1.44	14.78	2.44	15.78	3.44	16.78
3/10/2002	0.56	12.22	2.56	14.22	3.56	15.22	4.56	16.22
3/11/2002	1.67	16.11	3.67	18.11	4.67	19.11	5.67	20.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/12/2002	1.67	12.78	3.67	14.78	4.67	15.78	5.67	16.78
3/13/2002	-3.89	6.11	-1.89	8.11	-0.89	9.11	0.11	10.11
3/14/2002	-6.11	8.33	-4.11	10.33	-3.11	11.33	-2.11	12.33
3/15/2002	-4.44	5	-2.44	7	-1.44	8	-0.44	9
3/16/2002	-5	1.11	-3	3.11	-2	4.11	-1	5.11
3/17/2002	-6.11	4.44	-4.11	6.44	-3.11	7.44	-2.11	8.44
3/18/2002	-4.44	11.67	-2.44	13.67	-1.44	14.67	-0.44	15.67
3/19/2002	0.56	17.22	2.56	19.22	3.56	20.22	4.56	21.22
3/20/2002	4.44	20	6.44	22	7.44	23	8.44	24
3/21/2002	7.22	20.56	9.22	22.56	10.22	23.56	11.22	24.56
3/22/2002	1.11	12.22	3.11	14.22	4.11	15.22	5.11	16.22
3/23/2002	0	6.11	2	8.11	3	9.11	4	10.11
3/24/2002	-0.56	10	1.44	12	2.44	13	3.44	14
3/25/2002	-1.67	12.78	0.33	14.78	1.33	15.78	2.33	16.78
3/26/2002	2.22	16.67	4.22	18.67	5.22	19.67	6.22	20.67
3/27/2002	3.89	20.56	5.89	22.56	6.89	23.56	7.89	24.56
3/28/2002	10	22.22	12	24.22	13	25.22	14	26.22
3/29/2002	10	25	12	27	13	28	14	29
3/30/2002	10	25.56	12	27.56	13	28.56	14	29.56
3/31/2002	10	24.44	12	26.44	13	27.44	14	28.44
4/1/2002	9.44	25.56	11.44	27.56	12.44	28.56	13.44	29.56
4/2/2002	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
4/3/2002	10	23.33	12	25.33	13	26.33	14	27.33
4/4/2002	7.78	21.11	9.78	23.11	10.78	24.11	11.78	25.11
4/5/2002	5	13.89	7	15.89	8	16.89	9	17.89
4/6/2002	2.22	15.56	4.22	17.56	5.22	18.56	6.22	19.56
4/7/2002	3.33	18.89	5.33	20.89	6.33	21.89	7.33	22.89
4/8/2002	5.56	20.56	7.56	22.56	8.56	23.56	9.56	24.56
4/9/2002	6.11	13.89	8.11	15.89	9.11	16.89	10.11	17.89
4/10/2002	5	18.89	7	20.89	8	21.89	9	22.89
4/11/2002	7.22	20.56	9.22	22.56	10.22	23.56	11.22	24.56
4/12/2002	6.67	23.89	8.67	25.89	9.67	26.89	10.67	27.89
4/13/2002	9.44	26.67	11.44	28.67	12.44	29.67	13.44	30.67
4/14/2002	8.33	23.33	10.33	25.33	11.33	26.33	12.33	27.33
4/15/2002	-3.33	8.33	-1.33	10.33	-0.33	11.33	0.67	12.33
4/16/2002	-1.67	8.89	0.33	10.89	1.33	11.89	2.33	12.89
4/17/2002	-2.22	6.11	-0.22	8.11	0.78	9.11	1.78	10.11
4/18/2002	-5	8.33	-3	10.33	-2	11.33	-1	12.33
4/19/2002	-1.67	13.33	0.33	15.33	1.33	16.33	2.33	17.33
4/20/2002	0.56	14.44	2.56	16.44	3.56	17.44	4.56	18.44
4/21/2002	2.78	18.33	4.78	20.33	5.78	21.33	6.78	22.33
4/22/2002	5.56	22.22	7.56	24.22	8.56	25.22	9.56	26.22
4/23/2002	7.22	23.89	9.22	25.89	10.22	26.89	11.22	27.89
4/24/2002	6.67	19.44	8.67	21.44	9.67	22.44	10.67	23.44
4/25/2002	7.22	19.44	9.22	21.44	10.22	22.44	11.22	23.44
4/26/2002	3.33	8.89	5.33	10.89	6.33	11.89	7.33	12.89
4/27/2002	0.56	3.89	2.56	5.89	3.56	6.89	4.56	7.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/28/2002	0	10.56	2	12.56	3	13.56	4	14.56
4/29/2002	0	5.56	2	7.56	3	8.56	4	9.56
4/30/2002	-0.56	8.33	1.44	10.33	2.44	11.33	3.44	12.33
5/1/2002	-1.11	13.33	0.89	15.33	1.89	16.33	2.89	17.33
5/2/2002	2.78	18.33	4.78	20.33	5.78	21.33	6.78	22.33
5/3/2002	5	19.44	7	21.44	8	22.44	9	23.44
5/4/2002	6.11	21.11	8.11	23.11	9.11	24.11	10.11	25.11
5/5/2002	6.11	22.78	8.11	24.78	9.11	25.78	10.11	26.78
5/6/2002	7.22	21.11	9.22	23.11	10.22	24.11	11.22	25.11
5/7/2002	6.11	18.89	8.11	20.89	9.11	21.89	10.11	22.89
5/8/2002	6.11	19.44	8.11	21.44	9.11	22.44	10.11	23.44
5/9/2002	5	19.44	7	21.44	8	22.44	9	23.44
5/10/2002	2.22	13.89	4.22	15.89	5.22	16.89	6.22	17.89
5/11/2002	5.56	22.22	7.56	24.22	8.56	25.22	9.56	26.22
5/12/2002	7.78	22.78	9.78	24.78	10.78	25.78	11.78	26.78
5/13/2002	9.44	23.89	11.44	25.89	12.44	26.89	13.44	27.89
5/14/2002	8.89	24.44	10.89	26.44	11.89	27.44	12.89	28.44
5/15/2002	8.33	23.89	10.33	25.89	11.33	26.89	12.33	27.89
5/16/2002	8.33	24.44	10.33	26.44	11.33	27.44	12.33	28.44
5/17/2002	10	26.11	12	28.11	13	29.11	14	30.11
5/18/2002	7.78	23.33	9.78	25.33	10.78	26.33	11.78	27.33
5/19/2002	4.44	17.22	6.44	19.22	7.44	20.22	8.44	21.22
5/20/2002	0	5	2	7	3	8	4	9
5/21/2002	0	10	2	12	3	13	4	14
5/22/2002	0	16.11	2	18.11	3	19.11	4	20.11
5/23/2002	3.33	20	5.33	22	6.33	23	7.33	24
5/24/2002	9.44	23.89	11.44	25.89	12.44	26.89	13.44	27.89
5/25/2002	10	23.89	12	25.89	13	26.89	14	27.89
5/26/2002	9.44	24.44	11.44	26.44	12.44	27.44	13.44	28.44
5/27/2002	8.33	22.22	10.33	24.22	11.33	25.22	12.33	26.22
5/28/2002	8.89	24.44	10.89	26.44	11.89	27.44	12.89	28.44
5/29/2002	12.22	28.89	14.22	30.89	15.22	31.89	16.22	32.89
5/30/2002	15	29.44	17	31.44	18	32.44	19	33.44
5/31/2002	14.44	30.56	16.44	32.56	17.44	33.56	18.44	34.56
6/1/2002	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
6/2/2002	8.89	23.33	10.89	25.33	11.89	26.33	12.89	27.33
6/3/2002	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
6/4/2002	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
6/5/2002	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
6/6/2002	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
6/7/2002	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
6/8/2002	7.22	22.22	9.22	24.22	10.22	25.22	11.22	26.22
6/9/2002	6.11	22.22	8.11	24.22	9.11	25.22	10.11	26.22
6/10/2002	10	26.11	12	28.11	13	29.11	14	30.11
6/11/2002	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
6/12/2002	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
6/13/2002	13.89	29.44	15.89	31.44	16.89	32.44	17.89	33.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/14/2002	11.67	27.22	13.67	29.22	14.67	30.22	15.67	31.22
6/15/2002	11.11	28.33	13.11	30.33	14.11	31.33	15.11	32.33
6/16/2002	11.11	28.89	13.11	30.89	14.11	31.89	15.11	32.89
6/17/2002	13.33	28.89	15.33	30.89	16.33	31.89	17.33	32.89
6/18/2002	12.78	27.78	14.78	29.78	15.78	30.78	16.78	31.78
6/19/2002	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
6/20/2002	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
6/21/2002	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
6/22/2002	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11
6/23/2002	12.22	27.78	14.22	29.78	15.22	30.78	16.22	31.78
6/24/2002	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
6/25/2002	14.44	30.56	16.44	32.56	17.44	33.56	18.44	34.56
6/26/2002	16.11	30	18.11	32	19.11	33	20.11	34
6/27/2002	13.89	29.44	15.89	31.44	16.89	32.44	17.89	33.44
6/28/2002	13.89	29.44	15.89	31.44	16.89	32.44	17.89	33.44
6/29/2002	13.33	30	15.33	32	16.33	33	17.33	34
6/30/2002	14.44	32.78	16.44	34.78	17.44	35.78	18.44	36.78
7/1/2002	17.78	33.33	19.78	35.33	20.78	36.33	21.78	37.33
7/2/2002	17.78	30.56	19.78	32.56	20.78	33.56	21.78	34.56
7/3/2002	15	31.11	17	33.11	18	34.11	19	35.11
7/4/2002	13.89	30	15.89	32	16.89	33	17.89	34
7/5/2002	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
7/6/2002	15	31.67	17	33.67	18	34.67	19	35.67
7/7/2002	13.89	30	15.89	32	16.89	33	17.89	34
7/8/2002	13.33	32.78	15.33	34.78	16.33	35.78	17.33	36.78
7/9/2002	20.56	34.44	22.56	36.44	23.56	37.44	24.56	38.44
7/10/2002	21.67	37.22	23.67	39.22	24.67	40.22	25.67	41.22
7/11/2002	20	34.44	22	36.44	23	37.44	24	38.44
7/12/2002	21.11	32.78	23.11	34.78	24.11	35.78	25.11	36.78
7/13/2002	20.56	35	22.56	37	23.56	38	24.56	39
7/14/2002	19.44	33.33	21.44	35.33	22.44	36.33	23.44	37.33
7/15/2002	18.89	32.22	20.89	34.22	21.89	35.22	22.89	36.22
7/16/2002	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
7/17/2002	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
7/18/2002	16.11	30.56	18.11	32.56	19.11	33.56	20.11	34.56
7/19/2002	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
7/20/2002	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
7/21/2002	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67
7/22/2002	15	31.11	17	33.11	18	34.11	19	35.11
7/23/2002	14.44	31.67	16.44	33.67	17.44	34.67	18.44	35.67
7/24/2002	17.22	33.33	19.22	35.33	20.22	36.33	21.22	37.33
7/25/2002	15	32.22	17	34.22	18	35.22	19	36.22
7/26/2002	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78
7/27/2002	16.11	32.78	18.11	34.78	19.11	35.78	20.11	36.78
7/28/2002	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22
7/29/2002	16.11	33.33	18.11	35.33	19.11	36.33	20.11	37.33
7/30/2002	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/31/2002	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
8/1/2002	16.67	31.67	18.67	33.67	19.67	34.67	20.67	35.67
8/2/2002	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
8/3/2002	14.44	30	16.44	32	17.44	33	18.44	34
8/4/2002	12.78	27.78	14.78	29.78	15.78	30.78	16.78	31.78
8/5/2002	11.67	27.22	13.67	29.22	14.67	30.22	15.67	31.22
8/6/2002	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11
8/7/2002	10.56	28.89	12.56	30.89	13.56	31.89	14.56	32.89
8/8/2002	15	32.22	17	34.22	18	35.22	19	36.22
8/9/2002	18.33	34.44	20.33	36.44	21.33	37.44	22.33	38.44
8/10/2002	18.33	33.89	20.33	35.89	21.33	36.89	22.33	37.89
8/11/2002	18.33	35	20.33	37	21.33	38	22.33	39
8/12/2002	18.89	34.44	20.89	36.44	21.89	37.44	22.89	38.44
8/13/2002	19.44	35	21.44	37	22.44	38	23.44	39
8/14/2002	18.89	36.11	20.89	38.11	21.89	39.11	22.89	40.11
8/15/2002	18.89	34.44	20.89	36.44	21.89	37.44	22.89	38.44
8/16/2002	18.33	35.56	20.33	37.56	21.33	38.56	22.33	39.56
8/17/2002	17.78	34.44	19.78	36.44	20.78	37.44	21.78	38.44
8/18/2002	17.22	33.33	19.22	35.33	20.22	36.33	21.22	37.33
8/19/2002	15	31.11	17	33.11	18	34.11	19	35.11
8/20/2002	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
8/21/2002	10.56	27.22	12.56	29.22	13.56	30.22	14.56	31.22
8/22/2002	11.11	27.78	13.11	29.78	14.11	30.78	15.11	31.78
8/23/2002	11.11	26.67	13.11	28.67	14.11	29.67	15.11	30.67
8/24/2002	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
8/25/2002	12.22	30	14.22	32	15.22	33	16.22	34
8/26/2002	12.22	30.56	14.22	32.56	15.22	33.56	16.22	34.56
8/27/2002	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22
8/28/2002	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
8/29/2002	15	30	17	32	18	33	19	34
8/30/2002	14.44	30	16.44	32	17.44	33	18.44	34
8/31/2002	14.44	31.67	16.44	33.67	17.44	34.67	18.44	35.67
9/1/2002	16.67	34.44	18.67	36.44	19.67	37.44	20.67	38.44
9/2/2002	18.33	34.44	20.33	36.44	21.33	37.44	22.33	38.44
9/3/2002	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
9/4/2002	13.89	26.67	15.89	28.67	16.89	29.67	17.89	30.67
9/5/2002	11.67	25	13.67	27	14.67	28	15.67	29
9/6/2002	5.56	18.89	7.56	20.89	8.56	21.89	9.56	22.89
9/7/2002	5.56	21.11	7.56	23.11	8.56	24.11	9.56	25.11
9/8/2002	7.22	23.89	9.22	25.89	10.22	26.89	11.22	27.89
9/9/2002	11.67	30.56	13.67	32.56	14.67	33.56	15.67	34.56
9/10/2002	13.89	31.67	15.89	33.67	16.89	34.67	17.89	35.67
9/11/2002	14.44	32.22	16.44	34.22	17.44	35.22	18.44	36.22
9/12/2002	14.44	32.22	16.44	34.22	17.44	35.22	18.44	36.22
9/13/2002	14.44	32.78	16.44	34.78	17.44	35.78	18.44	36.78
9/14/2002	16.11	33.89	18.11	35.89	19.11	36.89	20.11	37.89
9/15/2002	10	28.89	12	30.89	13	31.89	14	32.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/16/2002	8.33	26.11	10.33	28.11	11.33	29.11	12.33	30.11
9/17/2002	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11
9/18/2002	11.11	30	13.11	32	14.11	33	15.11	34
9/19/2002	16.67	32.78	18.67	34.78	19.67	35.78	20.67	36.78
9/20/2002	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78
9/21/2002	15.56	33.33	17.56	35.33	18.56	36.33	19.56	37.33
9/22/2002	17.22	33.89	19.22	35.89	20.22	36.89	21.22	37.89
9/23/2002	16.67	32.78	18.67	34.78	19.67	35.78	20.67	36.78
9/24/2002	16.11	32.78	18.11	34.78	19.11	35.78	20.11	36.78
9/25/2002	15	32.78	17	34.78	18	35.78	19	36.78
9/26/2002	14.44	30.56	16.44	32.56	17.44	33.56	18.44	34.56
9/27/2002	10.56	21.67	12.56	23.67	13.56	24.67	14.56	25.67
9/28/2002	8.89	18.89	10.89	20.89	11.89	21.89	12.89	22.89
9/29/2002	6.67	20	8.67	22	9.67	23	10.67	24
9/30/2002	6.67	21.11	8.67	23.11	9.67	24.11	10.67	25.11
10/1/2002	4.44	16.11	6.44	18.11	7.44	19.11	8.44	20.11
10/2/2002	4.44	18.89	6.44	20.89	7.44	21.89	8.44	22.89
10/3/2002	6.11	21.67	8.11	23.67	9.11	24.67	10.11	25.67
10/4/2002	7.78	25	9.78	27	10.78	28	11.78	29
10/5/2002	8.89	26.11	10.89	28.11	11.89	29.11	12.89	30.11
10/6/2002	15.56	30	17.56	32	18.56	33	19.56	34
10/7/2002	15.56	30	17.56	32	18.56	33	19.56	34
10/8/2002	12.78	30	14.78	32	15.78	33	16.78	34
10/9/2002	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
10/10/2002	10	22.22	12	24.22	13	25.22	14	26.22
10/11/2002	8.89	24.44	10.89	26.44	11.89	27.44	12.89	28.44
10/12/2002	12.22	28.33	14.22	30.33	15.22	31.33	16.22	32.33
10/13/2002	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
10/14/2002	12.22	27.78	14.22	29.78	15.22	30.78	16.22	31.78
10/15/2002	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
10/16/2002	11.67	25.56	13.67	27.56	14.67	28.56	15.67	29.56
10/17/2002	10	26.67	12	28.67	13	29.67	14	30.67
10/18/2002	7.22	22.22	9.22	24.22	10.22	25.22	11.22	26.22
10/19/2002	7.22	22.22	9.22	24.22	10.22	25.22	11.22	26.22
10/20/2002	8.33	23.33	10.33	25.33	11.33	26.33	12.33	27.33
10/21/2002	6.11	21.11	8.11	23.11	9.11	24.11	10.11	25.11
10/22/2002	7.22	20.56	9.22	22.56	10.22	23.56	11.22	24.56
10/23/2002	5	19.44	7	21.44	8	22.44	9	23.44
10/24/2002	4.44	17.78	6.44	19.78	7.44	20.78	8.44	21.78
10/25/2002	3.33	17.22	5.33	19.22	6.33	20.22	7.33	21.22
10/26/2002	2.78	17.22	4.78	19.22	5.78	20.22	6.78	21.22
10/27/2002	3.89	21.11	5.89	23.11	6.89	24.11	7.89	25.11
10/28/2002	5.56	20	7.56	22	8.56	23	9.56	24
10/29/2002	3.89	18.33	5.89	20.33	6.89	21.33	7.89	22.33
10/30/2002	3.33	18.33	5.33	20.33	6.33	21.33	7.33	22.33
10/31/2002	3.33	18.89	5.33	20.89	6.33	21.89	7.33	22.89
11/1/2002	1.11	17.78	3.11	19.78	4.11	20.78	5.11	21.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/2/2002	2.78	18.33	4.78	20.33	5.78	21.33	6.78	22.33
11/3/2002	5.56	20.56	7.56	22.56	8.56	23.56	9.56	24.56
11/4/2002	3.89	19.44	5.89	21.44	6.89	22.44	7.89	23.44
11/5/2002	5	21.11	7	23.11	8	24.11	9	25.11
11/6/2002	6.11	21.67	8.11	23.67	9.11	24.67	10.11	25.67
11/7/2002	2.78	12.22	4.78	14.22	5.78	15.22	6.78	16.22
11/8/2002	5.56	8.89	7.56	10.89	8.56	11.89	9.56	12.89
11/9/2002	2.78	10	4.78	12	5.78	13	6.78	14
11/10/2002	1.67	5	3.67	7	4.67	8	5.67	9
11/11/2002	1.67	15	3.67	17	4.67	18	5.67	19
11/12/2002	7.22	18.33	9.22	20.33	10.22	21.33	11.22	22.33
11/13/2002	6.11	17.22	8.11	19.22	9.11	20.22	10.11	21.22
11/14/2002	4.44	20.56	6.44	22.56	7.44	23.56	8.44	24.56
11/15/2002	6.67	20.56	8.67	22.56	9.67	23.56	10.67	24.56
11/16/2002	7.22	20	9.22	22	10.22	23	11.22	24
11/17/2002	4.44	16.67	6.44	18.67	7.44	19.67	8.44	20.67
11/18/2002	4.44	18.33	6.44	20.33	7.44	21.33	8.44	22.33
11/19/2002	7.78	23.33	9.78	25.33	10.78	26.33	11.78	27.33
11/20/2002	11.67	25	13.67	27	14.67	28	15.67	29
11/21/2002	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
11/22/2002	7.78	20.56	9.78	22.56	10.78	23.56	11.78	24.56
11/23/2002	5.56	16.67	7.56	18.67	8.56	19.67	9.56	20.67
11/24/2002	3.89	16.11	5.89	18.11	6.89	19.11	7.89	20.11
11/25/2002	5	13.33	7	15.33	8	16.33	9	17.33
11/26/2002	6.67	18.33	8.67	20.33	9.67	21.33	10.67	22.33
11/27/2002	7.22	19.44	9.22	21.44	10.22	22.44	11.22	23.44
11/28/2002	7.22	18.89	9.22	20.89	10.22	21.89	11.22	22.89
11/29/2002	6.11	16.67	8.11	18.67	9.11	19.67	10.11	20.67
11/30/2002	2.22	9.44	4.22	11.44	5.22	12.44	6.22	13.44
12/1/2002	1.67	12.78	3.67	14.78	4.67	15.78	5.67	16.78
12/2/2002	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89
12/3/2002	2.22	13.89	4.22	15.89	5.22	16.89	6.22	17.89
12/4/2002	3.33	15.56	5.33	17.56	6.33	18.56	7.33	19.56
12/5/2002	7.22	16.11	9.22	18.11	10.22	19.11	11.22	20.11
12/6/2002	2.78	15	4.78	17	5.78	18	6.78	19
12/7/2002	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89
12/8/2002	3.33	16.11	5.33	18.11	6.33	19.11	7.33	20.11
12/9/2002	2.78	10	4.78	12	5.78	13	6.78	14
12/10/2002	-0.56	6.11	1.44	8.11	2.44	9.11	3.44	10.11
12/11/2002	-1.11	12.22	0.89	14.22	1.89	15.22	2.89	16.22
12/12/2002	3.33	15.56	5.33	17.56	6.33	18.56	7.33	19.56
12/13/2002	2.22	8.33	4.22	10.33	5.22	11.33	6.22	12.33
12/14/2002	0	10	2	12	3	13	4	14
12/15/2002	0	5	2	7	3	8	4	9
12/16/2002	0	3.33	2	5.33	3	6.33	4	7.33
12/17/2002	-2.22	0.56	-0.22	2.56	0.78	3.56	1.78	4.56
12/18/2002	-5	7.78	-3	9.78	-2	10.78	-1	11.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/19/2002	-5	5	-3	7	-2	8	-1	9
12/20/2002	-2.22	2.22	-0.22	4.22	0.78	5.22	1.78	6.22
12/21/2002	0.7614	7.22	2.7614	9.22	3.7614	10.22	4.7614	11.22
12/22/2002	-3.33	5.56	-1.33	7.56	-0.33	8.56	0.67	9.56
12/23/2002	-5	5.56	-3	7.56	-2	8.56	-1	9.56
12/24/2002	-5	3.89	-3	5.89	-2	6.89	-1	7.89
12/25/2002	-4.44	7.78	-2.44	9.78	-1.44	10.78	-0.44	11.78
12/26/2002	2.22	6.11	4.22	8.11	5.22	9.11	6.22	10.11
12/27/2002	4.44	10	6.44	12	7.44	13	8.44	14
12/28/2002	-1.11	7.22	0.89	9.22	1.89	10.22	2.89	11.22
12/29/2002	-2.78	5.56	-0.78	7.56	0.22	8.56	1.22	9.56
12/30/2002	-2.78	4.44	-0.78	6.44	0.22	7.44	1.22	8.44
12/31/2002	-3.89	3.89	-1.89	5.89	-0.89	6.89	0.11	7.89
1/1/2003	-3.89	12.78	-1.89	14.78	-0.89	15.78	0.11	16.78
1/2/2003	5.56	15	7.56	17	8.56	18	9.56	19
1/3/2003	6.67	20	8.67	22	9.67	23	10.67	24
1/4/2003	6.11	19.44	8.11	21.44	9.11	22.44	10.11	23.44
1/5/2003	5.56	19.44	7.56	21.44	8.56	22.44	9.56	23.44
1/6/2003	8.33	18.89	10.33	20.89	11.33	21.89	12.33	22.89
1/7/2003	7.22	21.11	9.22	23.11	10.22	24.11	11.22	25.11
1/8/2003	6.11	18.33	8.11	20.33	9.11	21.33	10.11	22.33
1/9/2003	2.22	6.67	4.22	8.67	5.22	9.67	6.22	10.67
1/10/2003	2.22	5	4.22	7	5.22	8	6.22	9
1/11/2003	1.11	9.44	3.11	11.44	4.11	12.44	5.11	13.44
1/12/2003	5.56	14.44	7.56	16.44	8.56	17.44	9.56	18.44
1/13/2003	4.44	16.11	6.44	18.11	7.44	19.11	8.44	20.11
1/14/2003	2.22	12.78	4.22	14.78	5.22	15.78	6.22	16.78
1/15/2003	1.67	16.67	3.67	18.67	4.67	19.67	5.67	20.67
1/16/2003	6.11	21.67	8.11	23.67	9.11	24.67	10.11	25.67
1/17/2003	10.56	22.78	12.56	24.78	13.56	25.78	14.56	26.78
1/18/2003	7.78	20.56	9.78	22.56	10.78	23.56	11.78	24.56
1/19/2003	6.11	19.44	8.11	21.44	9.11	22.44	10.11	23.44
1/20/2003	5	17.78	7	19.78	8	20.78	9	21.78
1/21/2003	3.89	11.67	5.89	13.67	6.89	14.67	7.89	15.67
1/22/2003	5.56	15	7.56	17	8.56	18	9.56	19
1/23/2003	5	13.33	7	15.33	8	16.33	9	17.33
1/24/2003	3.33	13.33	5.33	15.33	6.33	16.33	7.33	17.33
1/25/2003	5	18.33	7	20.33	8	21.33	9	22.33
1/26/2003	7.22	17.78	9.22	19.78	10.22	20.78	11.22	21.78
1/27/2003	3.89	15	5.89	17	6.89	18	7.89	19
1/28/2003	3.33	16.11	5.33	18.11	6.33	19.11	7.33	20.11
1/29/2003	3.89	16.67	5.89	18.67	6.89	19.67	7.89	20.67
1/30/2003	6.67	17.78	8.67	19.78	9.67	20.78	10.67	21.78
1/31/2003	10	22.22	12	24.22	13	25.22	14	26.22
2/1/2003	-2.22	12.78	-0.22	14.78	0.78	15.78	1.78	16.78
2/2/2003	-2.78	12.78	-0.78	14.78	0.22	15.78	1.22	16.78
2/3/2003	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/4/2003	-0.56	13.33	1.44	15.33	2.44	16.33	3.44	17.33
2/5/2003	-1.67	12.78	0.33	14.78	1.33	15.78	2.33	16.78
2/6/2003	-0.56	9.44	1.44	11.44	2.44	12.44	3.44	13.44
2/7/2003	-1.67	10	0.33	12	1.33	13	2.33	14
2/8/2003	-2.78	11.67	-0.78	13.67	0.22	14.67	1.22	15.67
2/9/2003	-1.67	14.44	0.33	16.44	1.33	17.44	2.33	18.44
2/10/2003	1.11	16.11	3.11	18.11	4.11	19.11	5.11	20.11
2/11/2003	3.89	10.56	5.89	12.56	6.89	13.56	7.89	14.56
2/12/2003	3.89	13.33	5.89	15.33	6.89	16.33	7.89	17.33
2/13/2003	2.78	11.67	4.78	13.67	5.78	14.67	6.78	15.67
2/14/2003	1.11	15	3.11	17	4.11	18	5.11	19
2/15/2003	3.33	13.33	5.33	15.33	6.33	16.33	7.33	17.33
2/16/2003	-0.56	9.44	1.44	11.44	2.44	12.44	3.44	13.44
2/17/2003	-0.56	10	1.44	12	2.44	13	3.44	14
2/18/2003	-1.67	12.78	0.33	14.78	1.33	15.78	2.33	16.78
2/19/2003	-3.33	2.78	-1.33	4.78	-0.33	5.78	0.67	6.78
2/20/2003	-2.78	13.33	-0.78	15.33	0.22	16.33	1.22	17.33
2/21/2003	2.22	16.11	4.22	18.11	5.22	19.11	6.22	20.11
2/22/2003	1.67	16.11	3.67	18.11	4.67	19.11	5.67	20.11
2/23/2003	1.67	15.56	3.67	17.56	4.67	18.56	5.67	19.56
2/24/2003	2.22	8.89	4.22	10.89	5.22	11.89	6.22	12.89
2/25/2003	0.56	8.89	2.56	10.89	3.56	11.89	4.56	12.89
2/26/2003	-1.67	10.56	0.33	12.56	1.33	13.56	2.33	14.56
2/27/2003	-1.67	5.56	0.33	7.56	1.33	8.56	2.33	9.56
2/28/2003	-3.33	10	-1.33	12	-0.33	13	0.67	14
3/1/2003	-0.56	10	1.44	12	2.44	13	3.44	14
3/2/2003	0	13.33	2	15.33	3	16.33	4	17.33
3/3/2003	0.56	9.44	2.56	11.44	3.56	12.44	4.56	13.44
3/4/2003	-1.11	8.33	0.89	10.33	1.89	11.33	2.89	12.33
3/5/2003	-1.11	14.44	0.89	16.44	1.89	17.44	2.89	18.44
3/6/2003	0.56	16.11	2.56	18.11	3.56	19.11	4.56	20.11
3/7/2003	1.11	16.11	3.11	18.11	4.11	19.11	5.11	20.11
3/8/2003	2.22	18.89	4.22	20.89	5.22	21.89	6.22	22.89
3/9/2003	3.33	18.89	5.33	20.89	6.33	21.89	7.33	22.89
3/10/2003	4.44	17.78	6.44	19.78	7.44	20.78	8.44	21.78
3/11/2003	3.89	19.44	5.89	21.44	6.89	22.44	7.89	23.44
3/12/2003	5	20	7	22	8	23	9	24
3/13/2003	7.78	17.78	9.78	19.78	10.78	20.78	11.78	21.78
3/14/2003	3.89	16.11	5.89	18.11	6.89	19.11	7.89	20.11
3/15/2003	0	9.44	2	11.44	3	12.44	4	13.44
3/16/2003	-1.11	12.22	0.89	14.22	1.89	15.22	2.89	16.22
3/17/2003	-1.11	9.44	0.89	11.44	1.89	12.44	2.89	13.44
3/18/2003	-1.11	14.44	0.89	16.44	1.89	17.44	2.89	18.44
3/19/2003	2.22	16.11	4.22	18.11	5.22	19.11	6.22	20.11
3/20/2003	1.67	12.78	3.67	14.78	4.67	15.78	5.67	16.78
3/21/2003	1.11	17.22	3.11	19.22	4.11	20.22	5.11	21.22
3/22/2003	4.44	18.33	6.44	20.33	7.44	21.33	8.44	22.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/23/2003	3.89	8.89	5.89	10.89	6.89	11.89	7.89	12.89
3/24/2003	3.89	15.56	5.89	17.56	6.89	18.56	7.89	19.56
3/25/2003	3.89	18.89	5.89	20.89	6.89	21.89	7.89	22.89
3/26/2003	2.78	12.78	4.78	14.78	5.78	15.78	6.78	16.78
3/27/2003	0.56	16.11	2.56	18.11	3.56	19.11	4.56	20.11
3/28/2003	3.33	16.67	5.33	18.67	6.33	19.67	7.33	20.67
3/29/2003	7.22	20.56	9.22	22.56	10.22	23.56	11.22	24.56
3/30/2003	10.56	22.78	12.56	24.78	13.56	25.78	14.56	26.78
3/31/2003	7.78	22.22	9.78	24.22	10.78	25.22	11.78	26.22
4/1/2003	-1.11	10	0.89	12	1.89	13	2.89	14
4/2/2003	-2.78	6.67	-0.78	8.67	0.22	9.67	1.22	10.67
4/3/2003	-5	8.33	-3	10.33	-2	11.33	-1	12.33
4/4/2003	-3.89	5	-1.89	7	-0.89	8	0.11	9
4/5/2003	-7.22	10	-5.22	12	-4.22	13	-3.22	14
4/6/2003	-1.67	11.11	0.33	13.11	1.33	14.11	2.33	15.11
4/7/2003	0	17.78	2	19.78	3	20.78	4	21.78
4/8/2003	5.56	20.56	7.56	22.56	8.56	23.56	9.56	24.56
4/9/2003	5.56	21.67	7.56	23.67	8.56	24.67	9.56	25.67
4/10/2003	6.67	16.67	8.67	18.67	9.67	19.67	10.67	20.67
4/11/2003	6.67	15.56	8.67	17.56	9.67	18.56	10.67	19.56
4/12/2003	2.78	7.22	4.78	9.22	5.78	10.22	6.78	11.22
4/13/2003	0.56	4.44	2.56	6.44	3.56	7.44	4.56	8.44
4/14/2003	-0.56	7.22	1.44	9.22	2.44	10.22	3.44	11.22
4/15/2003	-2.78	10	-0.78	12	0.22	13	1.22	14
4/16/2003	1.67	8.33	3.67	10.33	4.67	11.33	5.67	12.33
4/17/2003	0.56	5.56	2.56	7.56	3.56	8.56	4.56	9.56
4/18/2003	0	11.67	2	13.67	3	14.67	4	15.67
4/19/2003	-0.56	16.11	1.44	18.11	2.44	19.11	3.44	20.11
4/20/2003	3.89	15	5.89	17	6.89	18	7.89	19
4/21/2003	-1.67	6.67	0.33	8.67	1.33	9.67	2.33	10.67
4/22/2003	-3.33	8.89	-1.33	10.89	-0.33	11.89	0.67	12.89
4/23/2003	1.67	13.33	3.67	15.33	4.67	16.33	5.67	17.33
4/24/2003	4.651	6.11	6.651	8.11	7.651	9.11	8.651	10.11
4/25/2003	0	3.89	2	5.89	3	6.89	4	7.89
4/26/2003	-2.22	11.67	-0.22	13.67	0.78	14.67	1.78	15.67
4/27/2003	2.78	13.33	4.78	15.33	5.78	16.33	6.78	17.33
4/28/2003	-1.11	11.11	0.89	13.11	1.89	14.11	2.89	15.11
4/29/2003	-0.56	6.67	1.44	8.67	2.44	9.67	3.44	10.67
4/30/2003	-2.22	12.78	-0.22	14.78	0.78	15.78	1.78	16.78
5/1/2003	2.78	15.56	4.78	17.56	5.78	18.56	6.78	19.56
5/2/2003	5	11.67	7	13.67	8	14.67	9	15.67
5/3/2003	3.33	8.89	5.33	10.89	6.33	11.89	7.33	12.89
5/4/2003	1.11	8.33	3.11	10.33	4.11	11.33	5.11	12.33
5/5/2003	0	16.11	2	18.11	3	19.11	4	20.11
5/6/2003	2.22	15.56	4.22	17.56	5.22	18.56	6.22	19.56
5/7/2003	3.89	10.56	5.89	12.56	6.89	13.56	7.89	14.56
5/8/2003	-1.11	4.44	0.89	6.44	1.89	7.44	2.89	8.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/9/2003	-3.89	8.89	-1.89	10.89	-0.89	11.89	0.11	12.89
5/10/2003	-0.56	16.11	1.44	18.11	2.44	19.11	3.44	20.11
5/11/2003	3.33	19.44	5.33	21.44	6.33	22.44	7.33	23.44
5/12/2003	6.11	22.78	8.11	24.78	9.11	25.78	10.11	26.78
5/13/2003	9.44	24.44	11.44	26.44	12.44	27.44	13.44	28.44
5/14/2003	9.44	21.67	11.44	23.67	12.44	24.67	13.44	25.67
5/15/2003	7.22	21.11	9.22	23.11	10.22	24.11	11.22	25.11
5/16/2003	6.67	22.22	8.67	24.22	9.67	25.22	10.67	26.22
5/17/2003	7.78	21.67	9.78	23.67	10.78	24.67	11.78	25.67
5/18/2003	5.56	21.67	7.56	23.67	8.56	24.67	9.56	25.67
5/19/2003	9.44	24.44	11.44	26.44	12.44	27.44	13.44	28.44
5/20/2003	9.44	26.11	11.44	28.11	12.44	29.11	13.44	30.11
5/21/2003	12.22	28.33	14.22	30.33	15.22	31.33	16.22	32.33
5/22/2003	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
5/23/2003	14.44	30	16.44	32	17.44	33	18.44	34
5/24/2003	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
5/25/2003	10	22.78	12	24.78	13	25.78	14	26.78
5/26/2003	8.89	25.56	10.89	27.56	11.89	28.56	12.89	29.56
5/27/2003	15	32.78	17	34.78	18	35.78	19	36.78
5/28/2003	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
5/29/2003	13.33	30	15.33	32	16.33	33	17.33	34
5/30/2003	13.33	27.22	15.33	29.22	16.33	30.22	17.33	31.22
5/31/2003	11.67	27.22	13.67	29.22	14.67	30.22	15.67	31.22
6/1/2003	12.22	30	14.22	32	15.22	33	16.22	34
6/2/2003	14.44	32.22	16.44	34.22	17.44	35.22	18.44	36.22
6/3/2003	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
6/4/2003	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22
6/5/2003	17.78	30.56	19.78	32.56	20.78	33.56	21.78	34.56
6/6/2003	15.56	30	17.56	32	18.56	33	19.56	34
6/7/2003	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
6/8/2003	15	29.44	17	31.44	18	32.44	19	33.44
6/9/2003	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
6/10/2003	11.67	26.67	13.67	28.67	14.67	29.67	15.67	30.67
6/11/2003	9.44	23.33	11.44	25.33	12.44	26.33	13.44	27.33
6/12/2003	8.89	23.89	10.89	25.89	11.89	26.89	12.89	27.89
6/13/2003	9.44	25	11.44	27	12.44	28	13.44	29
6/14/2003	10	27.22	12	29.22	13	30.22	14	31.22
6/15/2003	12.22	28.33	14.22	30.33	15.22	31.33	16.22	32.33
6/16/2003	13.89	30	15.89	32	16.89	33	17.89	34
6/17/2003	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
6/18/2003	13.33	28.89	15.33	30.89	16.33	31.89	17.33	32.89
6/19/2003	10.56	25	12.56	27	13.56	28	14.56	29
6/20/2003	10	23.89	12	25.89	13	26.89	14	27.89
6/21/2003	9.44	23.33	11.44	25.33	12.44	26.33	13.44	27.33
6/22/2003	7.22	24.44	9.22	26.44	10.22	27.44	11.22	28.44
6/23/2003	7.22	21.67	9.22	23.67	10.22	24.67	11.22	25.67
6/24/2003	8.33	25.56	10.33	27.56	11.33	28.56	12.33	29.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/25/2003	12.78	30	14.78	32	15.78	33	16.78	34
6/26/2003	17.78	32.78	19.78	34.78	20.78	35.78	21.78	36.78
6/27/2003	16.11	33.33	18.11	35.33	19.11	36.33	20.11	37.33
6/28/2003	16.67	32.78	18.67	34.78	19.67	35.78	20.67	36.78
6/29/2003	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
6/30/2003	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
7/1/2003	13.33	28.89	15.33	30.89	16.33	31.89	17.33	32.89
7/2/2003	12.78	30	14.78	32	15.78	33	16.78	34
7/3/2003	13.89	30	15.89	32	16.89	33	17.89	34
7/4/2003	13.33	31.67	15.33	33.67	16.33	34.67	17.33	35.67
7/5/2003	14.44	31.67	16.44	33.67	17.44	34.67	18.44	35.67
7/6/2003	15	30.56	17	32.56	18	33.56	19	34.56
7/7/2003	12.78	30.56	14.78	32.56	15.78	33.56	16.78	34.56
7/8/2003	12.22	31.11	14.22	33.11	15.22	34.11	16.22	35.11
7/9/2003	15	33.33	17	35.33	18	36.33	19	37.33
7/10/2003	15.56	33.33	17.56	35.33	18.56	36.33	19.56	37.33
7/11/2003	15.56	33.33	17.56	35.33	18.56	36.33	19.56	37.33
7/12/2003	16.11	33.33	18.11	35.33	19.11	36.33	20.11	37.33
7/13/2003	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78
7/14/2003	16.11	33.89	18.11	35.89	19.11	36.89	20.11	37.89
7/15/2003	16.67	33.33	18.67	35.33	19.67	36.33	20.67	37.33
7/16/2003	17.22	34.44	19.22	36.44	20.22	37.44	21.22	38.44
7/17/2003	19.44	36.11	21.44	38.11	22.44	39.11	23.44	40.11
7/18/2003	20.56	35.56	22.56	37.56	23.56	38.56	24.56	39.56
7/19/2003	21.11	34.44	23.11	36.44	24.11	37.44	25.11	38.44
7/20/2003	20.56	35	22.56	37	23.56	38	24.56	39
7/21/2003	20	35.56	22	37.56	23	38.56	24	39.56
7/22/2003	20	35.56	22	37.56	23	38.56	24	39.56
7/23/2003	21.11	33.33	23.11	35.33	24.11	36.33	25.11	37.33
7/24/2003	20	34.44	22	36.44	23	37.44	24	38.44
7/25/2003	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
7/26/2003	18.33	35	20.33	37	21.33	38	22.33	39
7/27/2003	20.56	35.56	22.56	37.56	23.56	38.56	24.56	39.56
7/28/2003	21.11	35	23.11	37	24.11	38	25.11	39
7/29/2003	21.11	36.67	23.11	38.67	24.11	39.67	25.11	40.67
7/30/2003	21.67	31.67	23.67	33.67	24.67	34.67	25.67	35.67
7/31/2003	16.11	28.89	18.11	30.89	19.11	31.89	20.11	32.89
8/1/2003	15	25.56	17	27.56	18	28.56	19	29.56
8/2/2003	13.89	22.22	15.89	24.22	16.89	25.22	17.89	26.22
8/3/2003	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
8/4/2003	14.44	28.33	16.44	30.33	17.44	31.33	18.44	32.33
8/5/2003	12.22	25	14.22	27	15.22	28	16.22	29
8/6/2003	12.78	24.44	14.78	26.44	15.78	27.44	16.78	28.44
8/7/2003	12.22	26.67	14.22	28.67	15.22	29.67	16.22	30.67
8/8/2003	12.22	27.78	14.22	29.78	15.22	30.78	16.22	31.78
8/9/2003	12.22	30.56	14.22	32.56	15.22	33.56	16.22	34.56
8/10/2003	15	30.56	17	32.56	18	33.56	19	34.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/11/2003	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
8/12/2003	14.44	30.56	16.44	32.56	17.44	33.56	18.44	34.56
8/13/2003	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
8/14/2003	16.11	33.33	18.11	35.33	19.11	36.33	20.11	37.33
8/15/2003	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
8/16/2003	16.67	32.78	18.67	34.78	19.67	35.78	20.67	36.78
8/17/2003	17.22	33.89	19.22	35.89	20.22	36.89	21.22	37.89
8/18/2003	17.22	34.44	19.22	36.44	20.22	37.44	21.22	38.44
8/19/2003	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
8/20/2003	16.67	32.78	18.67	34.78	19.67	35.78	20.67	36.78
8/21/2003	16.67	28.33	18.67	30.33	19.67	31.33	20.67	32.33
8/22/2003	13.33	25	15.33	27	16.33	28	17.33	29
8/23/2003	14.09	28.89	16.09	30.89	17.09	31.89	18.09	32.89
8/24/2003	13.89	32.22	15.89	34.22	16.89	35.22	17.89	36.22
8/25/2003	16.11	35	18.11	37	19.11	38	20.11	39
8/26/2003	12.78	31.11	14.78	33.11	15.78	34.11	16.78	35.11
8/27/2003	16.67	31.67	18.67	33.67	19.67	34.67	20.67	35.67
8/28/2003	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
8/29/2003	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
8/30/2003	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78
8/31/2003	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
9/1/2003	17.22	33.89	19.22	35.89	20.22	36.89	21.22	37.89
9/2/2003	17.78	35.56	19.78	37.56	20.78	38.56	21.78	39.56
9/3/2003	16.67	34.44	18.67	36.44	19.67	37.44	20.67	38.44
9/4/2003	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
9/5/2003	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
9/6/2003	17.78	30.56	19.78	32.56	20.78	33.56	21.78	34.56
9/7/2003	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
9/8/2003	11.11	24.44	13.11	26.44	14.11	27.44	15.11	28.44
9/9/2003	10	18.89	12	20.89	13	21.89	14	22.89
9/10/2003	9.44	27.22	11.44	29.22	12.44	30.22	13.44	31.22
9/11/2003	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
9/12/2003	16.11	33.33	18.11	35.33	19.11	36.33	20.11	37.33
9/13/2003	15.2	33.65	17.2	35.65	18.2	36.65	19.2	37.65
9/14/2003	16.32	33.65	18.32	35.65	19.32	36.65	20.32	37.65
9/15/2003	14.09	30.32	16.09	32.32	17.09	33.32	18.09	34.32
9/16/2003	11.32	26.98	13.32	28.98	14.32	29.98	15.32	30.98
9/17/2003	8.541	26.98	10.541	28.98	11.541	29.98	12.541	30.98
9/18/2003	15.56	30.56	17.56	32.56	18.56	33.56	19.56	34.56
9/19/2003	13.33	31.11	15.33	33.11	16.33	34.11	17.33	35.11
9/20/2003	16.11	33.33	18.11	35.33	19.11	36.33	20.11	37.33
9/21/2003	18.33	35	20.33	37	21.33	38	22.33	39
9/22/2003	20	35	22	37	23	38	24	39
9/23/2003	17.78	35.56	19.78	37.56	20.78	38.56	21.78	39.56
9/24/2003	16.11	34.44	18.11	36.44	19.11	37.44	20.11	38.44
9/25/2003	18.89	34.44	20.89	36.44	21.89	37.44	22.89	38.44
9/26/2003	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/27/2003	17.78	34.44	19.78	36.44	20.78	37.44	21.78	38.44
9/28/2003	16.67	33.33	18.67	35.33	19.67	36.33	20.67	37.33
9/29/2003	15	30.56	17	32.56	18	33.56	19	34.56
9/30/2003	13.89	29.44	15.89	31.44	16.89	32.44	17.89	33.44
10/1/2003	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
10/2/2003	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
10/3/2003	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11
10/4/2003	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
10/5/2003	11.11	27.22	13.11	29.22	14.11	30.22	15.11	31.22
10/6/2003	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
10/7/2003	13.33	30	15.33	32	16.33	33	17.33	34
10/8/2003	12.78	29.44	14.78	31.44	15.78	32.44	16.78	33.44
10/9/2003	8.33	26.67	10.33	28.67	11.33	29.67	12.33	30.67
10/10/2003	6.11	23.33	8.11	25.33	9.11	26.33	10.11	27.33
10/11/2003	8.33	26.67	10.33	28.67	11.33	29.67	12.33	30.67
10/12/2003	11.11	28.33	13.11	30.33	14.11	31.33	15.11	32.33
10/13/2003	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
10/14/2003	11.11	27.78	13.11	29.78	14.11	30.78	15.11	31.78
10/15/2003	10	26.11	12	28.11	13	29.11	14	30.11
10/16/2003	10	26.67	12	28.67	13	29.67	14	30.67
10/17/2003	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
10/18/2003	12.78	28.89	14.78	30.89	15.78	31.89	16.78	32.89
10/19/2003	12.78	28.89	14.78	30.89	15.78	31.89	16.78	32.89
10/20/2003	14.44	31.67	16.44	33.67	17.44	34.67	18.44	35.67
10/21/2003	14.44	31.67	16.44	33.67	17.44	34.67	18.44	35.67
10/22/2003	13.33	30	15.33	32	16.33	33	17.33	34
10/23/2003	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
10/24/2003	7.431	29.21	9.431	31.21	10.431	32.21	11.431	33.21
10/25/2003	18.89	31.11	20.89	33.11	21.89	34.11	22.89	35.11
10/26/2003	17.78	31.11	19.78	33.11	20.78	34.11	21.78	35.11
10/27/2003	16.67	30	18.67	32	19.67	33	20.67	34
10/28/2003	15	30.56	17	32.56	18	33.56	19	34.56
10/29/2003	6.11	25.56	8.11	27.56	9.11	28.56	10.11	29.56
10/30/2003	-0.56	12.22	1.44	14.22	2.44	15.22	3.44	16.22
10/31/2003	0	3.33	2	5.33	3	6.33	4	7.33
11/1/2003	-2.78	9.44	-0.78	11.44	0.22	12.44	1.22	13.44
11/2/2003	-1.67	6.11	0.33	8.11	1.33	9.11	2.33	10.11
11/3/2003	-2.78	7.22	-0.78	9.22	0.22	10.22	1.22	11.22
11/4/2003	-3.33	9.44	-1.33	11.44	-0.33	12.44	0.67	13.44
11/5/2003	0.56	11.11	2.56	13.11	3.56	14.11	4.56	15.11
11/6/2003	1.11	13.89	3.11	15.89	4.11	16.89	5.11	17.89
11/7/2003	3.89	10.56	5.89	12.56	6.89	13.56	7.89	14.56
11/8/2003	4.44	11.67	6.44	13.67	7.44	14.67	8.44	15.67
11/9/2003	0.56	5	2.56	7	3.56	8	4.56	9
11/10/2003	0	13.33	2	15.33	3	16.33	4	17.33
11/11/2003	2.22	17.22	4.22	19.22	5.22	20.22	6.22	21.22
11/12/2003	6.67	13.89	8.67	15.89	9.67	16.89	10.67	17.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/13/2003	3.89	8.89	5.89	10.89	6.89	11.89	7.89	12.89
11/14/2003	2.22	14.44	4.22	16.44	5.22	17.44	6.22	18.44
11/15/2003	0	3.89	2	5.89	3	6.89	4	7.89
11/16/2003	-1.11	10.56	0.89	12.56	1.89	13.56	2.89	14.56
11/17/2003	3.33	13.89	5.33	15.89	6.33	16.89	7.33	17.89
11/18/2003	5	21.11	7	23.11	8	24.11	9	25.11
11/19/2003	7.78	21.11	9.78	23.11	10.78	24.11	11.78	25.11
11/20/2003	5.56	15.56	7.56	17.56	8.56	18.56	9.56	19.56
11/21/2003	-3.89	6.11	-1.89	8.11	-0.89	9.11	0.11	10.11
11/22/2003	-3.89	8.33	-1.89	10.33	-0.89	11.33	0.11	12.33
11/23/2003	0	12.78	2	14.78	3	15.78	4	16.78
11/24/2003	0	12.78	2	14.78	3	15.78	4	16.78
11/25/2003	-1.11	11.11	0.89	13.11	1.89	14.11	2.89	15.11
11/26/2003	-1.67	11.67	0.33	13.67	1.33	14.67	2.33	15.67
11/27/2003	3.89	17.22	5.89	19.22	6.89	20.22	7.89	21.22
11/28/2003	6.67	15	8.67	17	9.67	18	10.67	19
11/29/2003	6.67	15	8.67	17	9.67	18	10.67	19
11/30/2003	6.11	13.33	8.11	15.33	9.11	16.33	10.11	17.33
12/1/2003	4.44	11.67	6.44	13.67	7.44	14.67	8.44	15.67
12/2/2003	2.78	13.89	4.78	15.89	5.78	16.89	6.78	17.89
12/3/2003	2.78	17.22	4.78	19.22	5.78	20.22	6.78	21.22
12/4/2003	5.56	15.56	7.56	17.56	8.56	18.56	9.56	19.56
12/5/2003	6.11	11.67	8.11	13.67	9.11	14.67	10.11	15.67
12/6/2003	5.56	8.89	7.56	10.89	8.56	11.89	9.56	12.89
12/7/2003	0	6.67	2	8.67	3	9.67	4	10.67
12/8/2003	-2.78	10.56	-0.78	12.56	0.22	13.56	1.22	14.56
12/9/2003	0	10	2	12	3	13	4	14
12/10/2003	0	4.44	2	6.44	3	7.44	4	8.44
12/11/2003	-2.22	7.22	-0.22	9.22	0.78	10.22	1.78	11.22
12/12/2003	-2.22	5	-0.22	7	0.78	8	1.78	9
12/13/2003	2.78	6.67	4.78	8.67	5.78	9.67	6.78	10.67
12/14/2003	-3.89	6.11	-1.89	8.11	-0.89	9.11	0.11	10.11
12/15/2003	-4.44	8.89	-2.44	10.89	-1.44	11.89	-0.44	12.89
12/16/2003	-0.56	12.78	1.44	14.78	2.44	15.78	3.44	16.78
12/17/2003	2.78	18.33	4.78	20.33	5.78	21.33	6.78	22.33
12/18/2003	6.11	19.44	8.11	21.44	9.11	22.44	10.11	23.44
12/19/2003	2.22	18.89	4.22	20.89	5.22	21.89	6.22	22.89
12/20/2003	3.33	7.78	5.33	9.78	6.33	10.78	7.33	11.78
12/21/2003	1.11	11.67	3.11	13.67	4.11	14.67	5.11	15.67
12/22/2003	2.78	13.89	4.78	15.89	5.78	16.89	6.78	17.89
12/23/2003	3.33	8.33	5.33	10.33	6.33	11.33	7.33	12.33
12/24/2003	1.11	5.56	3.11	7.56	4.11	8.56	5.11	9.56
12/25/2003	-2.22	37.78	-0.22	39.78	0.78	40.78	1.78	41.78
12/26/2003	-6.67	5.56	-4.67	7.56	-3.67	8.56	-2.67	9.56
12/27/2003	-8.89	5.56	-6.89	7.56	-5.89	8.56	-4.89	9.56
12/28/2003	-6.11	5	-4.11	7	-3.11	8	-2.11	9
12/29/2003	-1.11	0.56	0.89	2.56	1.89	3.56	2.89	4.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/30/2003	0	8.33	2	10.33	3	11.33	4	12.33
12/31/2003	0.56	5.56	2.56	7.56	3.56	8.56	4.56	9.56
1/1/2004	0	2.78	2	4.78	3	5.78	4	6.78
1/2/2004	-2.22	1.11	-0.22	3.11	0.78	4.11	1.78	5.11
1/3/2004	-8.33	3.33	-6.33	5.33	-5.33	6.33	-4.33	7.33
1/4/2004	-8.89	5	-6.89	7	-5.89	8	-4.89	9
1/5/2004	-2.78	12.22	-0.78	14.22	0.22	15.22	1.22	16.22
1/6/2004	0.56	7.22	2.56	9.22	3.56	10.22	4.56	11.22
1/7/2004	0.56	9.44	2.56	11.44	3.56	12.44	4.56	13.44
1/8/2004	6.11	14.44	8.11	16.44	9.11	17.44	10.11	18.44
1/9/2004	5.56	15.56	7.56	17.56	8.56	18.56	9.56	19.56
1/10/2004	4.44	17.22	6.44	19.22	7.44	20.22	8.44	21.22
1/11/2004	5	18.89	7	20.89	8	21.89	9	22.89
1/12/2004	5.56	17.78	7.56	19.78	8.56	20.78	9.56	21.78
1/13/2004	3.89	20	5.89	22	6.89	23	7.89	24
1/14/2004	3.89	17.22	5.89	19.22	6.89	20.22	7.89	21.22
1/15/2004	3.33	15.56	5.33	17.56	6.33	18.56	7.33	19.56
1/16/2004	1.67	14.44	3.67	16.44	4.67	17.44	5.67	18.44
1/17/2004	2.78	15.56	4.78	17.56	5.78	18.56	6.78	19.56
1/18/2004	2.22	14.44	4.22	16.44	5.22	17.44	6.22	18.44
1/19/2004	0	12.78	2	14.78	3	15.78	4	16.78
1/20/2004	-0.56	10.56	1.44	12.56	2.44	13.56	3.44	14.56
1/21/2004	1.67	13.33	3.67	15.33	4.67	16.33	5.67	17.33
1/22/2004	2.22	13.89	4.22	15.89	5.22	16.89	6.22	17.89
1/23/2004	1.11	16.11	3.11	18.11	4.11	19.11	5.11	20.11
1/24/2004	0	5.56	2	7.56	3	8.56	4	9.56
1/25/2004	-2.22	9.44	-0.22	11.44	0.78	12.44	1.78	13.44
1/26/2004	-1.67	6.11	0.33	8.11	1.33	9.11	2.33	10.11
1/27/2004	0	3.89	2	5.89	3	6.89	4	7.89
1/28/2004	-1.67	8.89	0.33	10.89	1.33	11.89	2.33	12.89
1/29/2004	1.67	14.44	3.67	16.44	4.67	17.44	5.67	18.44
1/30/2004	-0.56	7.22	1.44	9.22	2.44	10.22	3.44	11.22
1/31/2004	-3.33	8.89	-1.33	10.89	-0.33	11.89	0.67	12.89
2/1/2004	-0.56	6.11	1.44	8.11	2.44	9.11	3.44	10.11
2/2/2004	-1.11	5	0.89	7	1.89	8	2.89	9
2/3/2004	-1.67	2.22	0.33	4.22	1.33	5.22	2.33	6.22
2/4/2004	-5	10.56	-3	12.56	-2	13.56	-1	14.56
2/5/2004	-2.22	12.22	-0.22	14.22	0.78	15.22	1.78	16.22
2/6/2004	0	12.78	2	14.78	3	15.78	4	16.78
2/7/2004	-3.89	10	-1.89	12	-0.89	13	0.11	14
2/8/2004	-0.56	13.89	1.44	15.89	2.44	16.89	3.44	17.89
2/9/2004	0	11.11	2	13.11	3	14.11	4	15.11
2/10/2004	0	14.44	2	16.44	3	17.44	4	18.44
2/11/2004	3.33	17.22	5.33	19.22	6.33	20.22	7.33	21.22
2/12/2004	2.22	16.11	4.22	18.11	5.22	19.11	6.22	20.11
2/13/2004	1.67	12.22	3.67	14.22	4.67	15.22	5.67	16.22
2/14/2004	0.56	12.78	2.56	14.78	3.56	15.78	4.56	16.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/15/2004	2.22	12.78	4.22	14.78	5.22	15.78	6.22	16.78
2/16/2004	2.22	8.89	4.22	10.89	5.22	11.89	6.22	12.89
2/17/2004	2.78	11.67	4.78	13.67	5.78	14.67	6.78	15.67
2/18/2004	0	5	2	7	3	8	4	9
2/19/2004	-1.67	12.22	0.33	14.22	1.33	15.22	2.33	16.22
2/20/2004	0	7.78	2	9.78	3	10.78	4	11.78
2/21/2004	0.56	6.67	2.56	8.67	3.56	9.67	4.56	10.67
2/22/2004	0	5	2	7	3	8	4	9
2/23/2004	0	10	2	12	3	13	4	14
2/24/2004	0	6.11	2	8.11	3	9.11	4	10.11
2/25/2004	0.56	5.56	2.56	7.56	3.56	8.56	4.56	9.56
2/26/2004	-1.11	4.44	0.89	6.44	1.89	7.44	2.89	8.44
2/27/2004	-5	8.89	-3	10.89	-2	11.89	-1	12.89
2/28/2004	-4.44	11.67	-2.44	13.67	-1.44	14.67	-0.44	15.67
2/29/2004	-2.78	11.67	-0.78	13.67	0.22	14.67	1.22	15.67
3/1/2004	-0.56	3.89	1.44	5.89	2.44	6.89	3.44	7.89
3/2/2004	-2.22	11.67	-0.22	13.67	0.78	14.67	1.78	15.67
3/3/2004	0	12.78	2	14.78	3	15.78	4	16.78
3/4/2004	0	15.56	2	17.56	3	18.56	4	19.56
3/5/2004	0.56	13.89	2.56	15.89	3.56	16.89	4.56	17.89
3/6/2004	3.89	18.89	5.89	20.89	6.89	21.89	7.89	22.89
3/7/2004	8.89	22.78	10.89	24.78	11.89	25.78	12.89	26.78
3/8/2004	10	25.56	12	27.56	13	28.56	14	29.56
3/9/2004	7.78	25	9.78	27	10.78	28	11.78	29
3/10/2004	11.11	21.67	13.11	23.67	14.11	24.67	15.11	25.67
3/11/2004	9.44	23.33	11.44	25.33	12.44	26.33	13.44	27.33
3/12/2004	6.11	22.78	8.11	24.78	9.11	25.78	10.11	26.78
3/13/2004	9.44	23.89	11.44	25.89	12.44	26.89	13.44	27.89
3/14/2004	7.78	24.44	9.78	26.44	10.78	27.44	11.78	28.44
3/15/2004	10	23.33	12	25.33	13	26.33	14	27.33
3/16/2004	11.67	25	13.67	27	14.67	28	15.67	29
3/17/2004	9.44	25.56	11.44	27.56	12.44	28.56	13.44	29.56
3/18/2004	8.89	25	10.89	27	11.89	28	12.89	29
3/19/2004	7.22	24.44	9.22	26.44	10.22	27.44	11.22	28.44
3/20/2004	9.44	28.33	11.44	30.33	12.44	31.33	13.44	32.33
3/21/2004	11.11	27.78	13.11	29.78	14.11	30.78	15.11	31.78
3/22/2004	8.89	25	10.89	27	11.89	28	12.89	29
3/23/2004	6.11	23.33	8.11	25.33	9.11	26.33	10.11	27.33
3/24/2004	5	18.89	7	20.89	8	21.89	9	22.89
3/25/2004	0	11.11	2	13.11	3	14.11	4	15.11
3/26/2004	0	10	2	12	3	13	4	14
3/27/2004	0.56	17.78	2.56	19.78	3.56	20.78	4.56	21.78
3/28/2004	8.33	23.89	10.33	25.89	11.33	26.89	12.33	27.89
3/29/2004	9.44	24.44	11.44	26.44	12.44	27.44	13.44	28.44
3/30/2004	6.11	18.33	8.11	20.33	9.11	21.33	10.11	22.33
3/31/2004	5	17.22	7	19.22	8	20.22	9	21.22
4/1/2004	1.11	13.89	3.11	15.89	4.11	16.89	5.11	17.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/2/2004	3.89	18.89	5.89	20.89	6.89	21.89	7.89	22.89
4/3/2004	4.44	20.56	6.44	22.56	7.44	23.56	8.44	24.56
4/4/2004	6.11	18.89	8.11	20.89	9.11	21.89	10.11	22.89
4/5/2004	5	19.44	7	21.44	8	22.44	9	23.44
4/6/2004	3.89	17.78	5.89	19.78	6.89	20.78	7.89	21.78
4/7/2004	5.56	21.67	7.56	23.67	8.56	24.67	9.56	25.67
4/8/2004	6.67	22.22	8.67	24.22	9.67	25.22	10.67	26.22
4/9/2004	7.78	23.33	9.78	25.33	10.78	26.33	11.78	27.33
4/10/2004	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
4/11/2004	10	25	12	27	13	28	14	29
4/12/2004	8.89	22.78	10.89	24.78	11.89	25.78	12.89	26.78
4/13/2004	2.78	16.67	4.78	18.67	5.78	19.67	6.78	20.67
4/14/2004	0	16.67	2	18.67	3	19.67	4	20.67
4/15/2004	1.11	12.78	3.11	14.78	4.11	15.78	5.11	16.78
4/16/2004	0.56	8.89	2.56	10.89	3.56	11.89	4.56	12.89
4/17/2004	0	10	2	12	3	13	4	14
4/18/2004	-0.56	10.56	1.44	12.56	2.44	13.56	3.44	14.56
4/19/2004	0	8.89	2	10.89	3	11.89	4	12.89
4/20/2004	3.33	13.89	5.33	15.89	6.33	16.89	7.33	17.89
4/21/2004	2.78	15.56	4.78	17.56	5.78	18.56	6.78	19.56
4/22/2004	2.78	16.67	4.78	18.67	5.78	19.67	6.78	20.67
4/23/2004	6.11	21.67	8.11	23.67	9.11	24.67	10.11	25.67
4/24/2004	8.33	24.44	10.33	26.44	11.33	27.44	12.33	28.44
4/25/2004	10	26.67	12	28.67	13	29.67	14	30.67
4/26/2004	12.78	28.89	14.78	30.89	15.78	31.89	16.78	32.89
4/27/2004	11.67	28.33	13.67	30.33	14.67	31.33	15.67	32.33
4/28/2004	8.89	23.89	10.89	25.89	11.89	26.89	12.89	27.89
4/29/2004	3.89	21.67	5.89	23.67	6.89	24.67	7.89	25.67
4/30/2004	9.44	23.89	11.44	25.89	12.44	26.89	13.44	27.89
5/1/2004	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
5/2/2004	11.67	29.44	13.67	31.44	14.67	32.44	15.67	33.44
5/3/2004	12.78	31.11	14.78	33.11	15.78	34.11	16.78	35.11
5/4/2004	11.67	29.44	13.67	31.44	14.67	32.44	15.67	33.44
5/5/2004	11.11	25.56	13.11	27.56	14.11	28.56	15.11	29.56
5/6/2004	10.56	22.78	12.56	24.78	13.56	25.78	14.56	26.78
5/7/2004	7.22	22.78	9.22	24.78	10.22	25.78	11.22	26.78
5/8/2004	4.44	21.11	6.44	23.11	7.44	24.11	8.44	25.11
5/9/2004	6.67	23.89	8.67	25.89	9.67	26.89	10.67	27.89
5/10/2004	2.78	15.56	4.78	17.56	5.78	18.56	6.78	19.56
5/11/2004	2.78	16.11	4.78	18.11	5.78	19.11	6.78	20.11
5/12/2004	3.89	21.11	5.89	23.11	6.89	24.11	7.89	25.11
5/13/2004	5.56	24.44	7.56	26.44	8.56	27.44	9.56	28.44
5/14/2004	8.33	26.11	10.33	28.11	11.33	29.11	12.33	30.11
5/15/2004	8.89	25	10.89	27	11.89	28	12.89	29
5/16/2004	7.78	23.89	9.78	25.89	10.78	26.89	11.78	27.89
5/17/2004	6.11	20	8.11	22	9.11	23	10.11	24
5/18/2004	2.78	19.44	4.78	21.44	5.78	22.44	6.78	23.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/19/2004	3.89	21.67	5.89	23.67	6.89	24.67	7.89	25.67
5/20/2004	5	20.56	7	22.56	8	23.56	9	24.56
5/21/2004	5.56	20.56	7.56	22.56	8.56	23.56	9.56	24.56
5/22/2004	5.56	21.11	7.56	23.11	8.56	24.11	9.56	25.11
5/23/2004	6.11	21.11	8.11	23.11	9.11	24.11	10.11	25.11
5/24/2004	5.56	22.22	7.56	24.22	8.56	25.22	9.56	26.22
5/25/2004	5.56	21.67	7.56	23.67	8.56	24.67	9.56	25.67
5/26/2004	8.33	25.56	10.33	27.56	11.33	28.56	12.33	29.56
5/27/2004	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
5/28/2004	5.56	16.67	7.56	18.67	8.56	19.67	9.56	20.67
5/29/2004	5	22.78	7	24.78	8	25.78	9	26.78
5/30/2004	8.33	26.67	10.33	28.67	11.33	29.67	12.33	30.67
5/31/2004	11.11	28.33	13.11	30.33	14.11	31.33	15.11	32.33
6/1/2004	11.11	29.44	13.11	31.44	14.11	32.44	15.11	33.44
6/2/2004	12.78	31.67	14.78	33.67	15.78	34.67	16.78	35.67
6/3/2004	13.33	30	15.33	32	16.33	33	17.33	34
6/4/2004	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
6/5/2004	12.78	30.56	14.78	32.56	15.78	33.56	16.78	34.56
6/6/2004	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
6/7/2004	6.11	23.89	8.11	25.89	9.11	26.89	10.11	27.89
6/8/2004	5	18.89	7	20.89	8	21.89	9	22.89
6/9/2004	3.33	16.67	5.33	18.67	6.33	19.67	7.33	20.67
6/10/2004	7.22	23.33	9.22	25.33	10.22	26.33	11.22	27.33
6/11/2004	7.22	25	9.22	27	10.22	28	11.22	29
6/12/2004	8.89	26.67	10.89	28.67	11.89	29.67	12.89	30.67
6/13/2004	11.67	29.44	13.67	31.44	14.67	32.44	15.67	33.44
6/14/2004	13.33	31.11	15.33	33.11	16.33	34.11	17.33	35.11
6/15/2004	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
6/16/2004	16.67	32.78	18.67	34.78	19.67	35.78	20.67	36.78
6/17/2004	15	30	17	32	18	33	19	34
6/18/2004	13.89	28.89	15.89	30.89	16.89	31.89	17.89	32.89
6/19/2004	12.22	28.33	14.22	30.33	15.22	31.33	16.22	32.33
6/20/2004	12.22	30	14.22	32	15.22	33	16.22	34
6/21/2004	13.33	30	15.33	32	16.33	33	17.33	34
6/22/2004	13.89	30.56	15.89	32.56	16.89	33.56	17.89	34.56
6/23/2004	15	30.56	17	32.56	18	33.56	19	34.56
6/24/2004	14.44	26.11	16.44	28.11	17.44	29.11	18.44	30.11
6/25/2004	13.89	29.44	15.89	31.44	16.89	32.44	17.89	33.44
6/26/2004	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
6/27/2004	12.78	30.56	14.78	32.56	15.78	33.56	16.78	34.56
6/28/2004	15	30	17	32	18	33	19	34
6/29/2004	13.89	29.44	15.89	31.44	16.89	32.44	17.89	33.44
6/30/2004	12.78	27.22	14.78	29.22	15.78	30.22	16.78	31.22
7/1/2004	11.11	27.22	13.11	29.22	14.11	30.22	15.11	31.22
7/2/2004	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
7/3/2004	13.33	30.56	15.33	32.56	16.33	33.56	17.33	34.56
7/4/2004	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/5/2004	15.56	33.89	17.56	35.89	18.56	36.89	19.56	37.89
7/6/2004	17.78	35.56	19.78	37.56	20.78	38.56	21.78	39.56
7/7/2004	16.11	33.33	18.11	35.33	19.11	36.33	20.11	37.33
7/8/2004	15	30.56	17	32.56	18	33.56	19	34.56
7/9/2004	12.78	27.78	14.78	29.78	15.78	30.78	16.78	31.78
7/10/2004	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
7/11/2004	13.89	31.11	15.89	33.11	16.89	34.11	17.89	35.11
7/12/2004	14.44	32.78	16.44	34.78	17.44	35.78	18.44	36.78
7/13/2004	14.44	32.22	16.44	34.22	17.44	35.22	18.44	36.22
7/14/2004	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
7/15/2004	15	33.33	17	35.33	18	36.33	19	37.33
7/16/2004	16.11	32.78	18.11	34.78	19.11	35.78	20.11	36.78
7/17/2004	17.22	33.33	19.22	35.33	20.22	36.33	21.22	37.33
7/18/2004	16.67	33.33	18.67	35.33	19.67	36.33	20.67	37.33
7/19/2004	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
7/20/2004	15	32.22	17	34.22	18	35.22	19	36.22
7/21/2004	16.11	34.44	18.11	36.44	19.11	37.44	20.11	38.44
7/22/2004	16.67	35	18.67	37	19.67	38	20.67	39
7/23/2004	17.22	35	19.22	37	20.22	38	21.22	39
7/24/2004	17.78	33.89	19.78	35.89	20.78	36.89	21.78	37.89
7/25/2004	17.22	35.56	19.22	37.56	20.22	38.56	21.22	39.56
7/26/2004	17.22	34.44	19.22	36.44	20.22	37.44	21.22	38.44
7/27/2004	16.11	34.44	18.11	36.44	19.11	37.44	20.11	38.44
7/28/2004	16.67	33.33	18.67	35.33	19.67	36.33	20.67	37.33
7/29/2004	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78
7/30/2004	14.44	32.78	16.44	34.78	17.44	35.78	18.44	36.78
7/31/2004	15	31.11	17	33.11	18	34.11	19	35.11
8/1/2004	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
8/2/2004	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
8/3/2004	12.22	30	14.22	32	15.22	33	16.22	34
8/4/2004	13.33	30.56	15.33	32.56	16.33	33.56	17.33	34.56
8/5/2004	12.22	30	14.22	32	15.22	33	16.22	34
8/6/2004	13.89	30	15.89	32	16.89	33	17.89	34
8/7/2004	13.33	32.22	15.33	34.22	16.33	35.22	17.33	36.22
8/8/2004	16.11	35.56	18.11	37.56	19.11	38.56	20.11	39.56
8/9/2004	16.67	36.11	18.67	38.11	19.67	39.11	20.67	40.11
8/10/2004	18.33	36.11	20.33	38.11	21.33	39.11	22.33	40.11
8/11/2004	17.78	39.44	19.78	41.44	20.78	42.44	21.78	43.44
8/12/2004	20.56	35	22.56	37	23.56	38	24.56	39
8/13/2004	20	36.11	22	38.11	23	39.11	24	40.11
8/14/2004	18.33	34.44	20.33	36.44	21.33	37.44	22.33	38.44
8/15/2004	16.67	31.67	18.67	33.67	19.67	34.67	20.67	35.67
8/16/2004	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
8/17/2004	16.11	32.78	18.11	34.78	19.11	35.78	20.11	36.78
8/18/2004	16.67	34.44	18.67	36.44	19.67	37.44	20.67	38.44
8/19/2004	17.78	35	19.78	37	20.78	38	21.78	39
8/20/2004	17.22	33.89	19.22	35.89	20.22	36.89	21.22	37.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/21/2004	17.22	33.33	19.22	35.33	20.22	36.33	21.22	37.33
8/22/2004	12.78	25.56	14.78	27.56	15.78	28.56	16.78	29.56
8/23/2004	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
8/24/2004	11.67	28.33	13.67	30.33	14.67	31.33	15.67	32.33
8/25/2004	11.11	28.89	13.11	30.89	14.11	31.89	15.11	32.89
8/26/2004	10.56	27.22	12.56	29.22	13.56	30.22	14.56	31.22
8/27/2004	15	31.11	17	33.11	18	34.11	19	35.11
8/28/2004	16.67	33.89	18.67	35.89	19.67	36.89	20.67	37.89
8/29/2004	17.22	33.89	19.22	35.89	20.22	36.89	21.22	37.89
8/30/2004	17.22	35.56	19.22	37.56	20.22	38.56	21.22	39.56
8/31/2004	16.67	34.44	18.67	36.44	19.67	37.44	20.67	38.44
9/1/2004	17.22	35	19.22	37	20.22	38	21.22	39
9/2/2004	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
9/3/2004	11.11	25	13.11	27	14.11	28	15.11	29
9/4/2004	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
9/5/2004	15	32.22	17	34.22	18	35.22	19	36.22
9/6/2004	15	33.89	17	35.89	18	36.89	19	37.89
9/7/2004	15.56	34.44	17.56	36.44	18.56	37.44	19.56	38.44
9/8/2004	16.67	35.56	18.67	37.56	19.67	38.56	20.67	39.56
9/9/2004	15.56	35	17.56	37	18.56	38	19.56	39
9/10/2004	15.56	33.33	17.56	35.33	18.56	36.33	19.56	37.33
9/11/2004	16.67	34.44	18.67	36.44	19.67	37.44	20.67	38.44
9/12/2004	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
9/13/2004	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
9/14/2004	11.67	29.44	13.67	31.44	14.67	32.44	15.67	33.44
9/15/2004	14.44	31.67	16.44	33.67	17.44	34.67	18.44	35.67
9/16/2004	13.89	31.67	15.89	33.67	16.89	34.67	17.89	35.67
9/17/2004	10.56	30	12.56	32	13.56	33	14.56	34
9/18/2004	4.44	15	6.44	17	7.44	18	8.44	19
9/19/2004	1.67	9.44	3.67	11.44	4.67	12.44	5.67	13.44
9/20/2004	0	16.11	2	18.11	3	19.11	4	20.11
9/21/2004	8.33	24.44	10.33	26.44	11.33	27.44	12.33	28.44
9/22/2004	10.56	26.67	12.56	28.67	13.56	29.67	14.56	30.67
9/23/2004	10.56	30	12.56	32	13.56	33	14.56	34
9/24/2004	12.78	31.67	14.78	33.67	15.78	34.67	16.78	35.67
9/25/2004	13.89	31.67	15.89	33.67	16.89	34.67	17.89	35.67
9/26/2004	12.78	30.56	14.78	32.56	15.78	33.56	16.78	34.56
9/27/2004	12.78	31.11	14.78	33.11	15.78	34.11	16.78	35.11
9/28/2004	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
9/29/2004	9.44	24.44	11.44	26.44	12.44	27.44	13.44	28.44
9/30/2004	8.33	25	10.33	27	11.33	28	12.33	29
10/1/2004	8.89	27.22	10.89	29.22	11.89	30.22	12.89	31.22
10/2/2004	12.78	28.33	14.78	30.33	15.78	31.33	16.78	32.33
10/3/2004	12.78	28.89	14.78	30.89	15.78	31.89	16.78	32.89
10/4/2004	12.78	28.33	14.78	30.33	15.78	31.33	16.78	32.33
10/5/2004	12.22	28.89	14.22	30.89	15.22	31.89	16.22	32.89
10/6/2004	11.67	29.44	13.67	31.44	14.67	32.44	15.67	33.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/7/2004	10.56	27.78	12.56	29.78	13.56	30.78	14.56	31.78
10/8/2004	11.11	29.44	13.11	31.44	14.11	32.44	15.11	33.44
10/9/2004	7.78	22.78	9.78	24.78	10.78	25.78	11.78	26.78
10/10/2004	9.44	18.33	11.44	20.33	12.44	21.33	13.44	22.33
10/11/2004	10	23.33	12	25.33	13	26.33	14	27.33
10/12/2004	15	28.89	17	30.89	18	31.89	19	32.89
10/13/2004	17.78	30.56	19.78	32.56	20.78	33.56	21.78	34.56
10/14/2004	17.78	30.56	19.78	32.56	20.78	33.56	21.78	34.56
10/15/2004	15.56	26.11	17.56	28.11	18.56	29.11	19.56	30.11
10/16/2004	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
10/17/2004	5.56	11.11	7.56	13.11	8.56	14.11	9.56	15.11
10/18/2004	3.33	7.78	5.33	9.78	6.33	10.78	7.33	11.78
10/19/2004	2.22	7.22	4.22	9.22	5.22	10.22	6.22	11.22
10/20/2004	0.56	10	2.56	12	3.56	13	4.56	14
10/21/2004	0	14.44	2	16.44	3	17.44	4	18.44
10/22/2004	1.67	15.56	3.67	17.56	4.67	18.56	5.67	19.56
10/23/2004	5	7.22	7	9.22	8	10.22	9	11.22
10/24/2004	5	15	7	17	8	18	9	19
10/25/2004	3.89	11.11	5.89	13.11	6.89	14.11	7.89	15.11
10/26/2004	0	6.11	2	8.11	3	9.11	4	10.11
10/27/2004	-1.11	10.56	0.89	12.56	1.89	13.56	2.89	14.56
10/28/2004	-1.67	6.67	0.33	8.67	1.33	9.67	2.33	10.67
10/29/2004	0	13.89	2	15.89	3	16.89	4	17.89
10/30/2004	1.67	16.11	3.67	18.11	4.67	19.11	5.67	20.11
10/31/2004	1.67	15.56	3.67	17.56	4.67	18.56	5.67	19.56
11/1/2004	3.89	19.44	5.89	21.44	6.89	22.44	7.89	23.44
11/2/2004	5	19.44	7	21.44	8	22.44	9	23.44
11/3/2004	0.56	7.22	2.56	9.22	3.56	10.22	4.56	11.22
11/4/2004	0	8.89	2	10.89	3	11.89	4	12.89
11/5/2004	0.56	17.78	2.56	19.78	3.56	20.78	4.56	21.78
11/6/2004	8.89	22.22	10.89	24.22	11.89	25.22	12.89	26.22
11/7/2004	6.11	22.22	8.11	24.22	9.11	25.22	10.11	26.22
11/8/2004	5	9.44	7	11.44	8	12.44	9	13.44
11/9/2004	5	11.67	7	13.67	8	14.67	9	15.67
11/10/2004	3.33	13.33	5.33	15.33	6.33	16.33	7.33	17.33
11/11/2004	2.78	6.11	4.78	8.11	5.78	9.11	6.78	10.11
11/12/2004	0.56	16.11	2.56	18.11	3.56	19.11	4.56	20.11
11/13/2004	2.22	14.44	4.22	16.44	5.22	17.44	6.22	18.44
11/14/2004	5	16.11	7	18.11	8	19.11	9	20.11
11/15/2004	5	15.56	7	17.56	8	18.56	9	19.56
11/16/2004	5	17.78	7	19.78	8	20.78	9	21.78
11/17/2004	5	17.78	7	19.78	8	20.78	9	21.78
11/18/2004	5	18.89	7	20.89	8	21.89	9	22.89
11/19/2004	2.78	14.44	4.78	16.44	5.78	17.44	6.78	18.44
11/20/2004	0	15	2	17	3	18	4	19
11/21/2004	-0.56	7.78	1.44	9.78	2.44	10.78	3.44	11.78
11/22/2004	1.11	17.22	3.11	19.22	4.11	20.22	5.11	21.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/23/2004	0	14.44	2	16.44	3	17.44	4	18.44
11/24/2004	5	16.67	7	18.67	8	19.67	9	20.67
11/25/2004	3.89	15.56	5.89	17.56	6.89	18.56	7.89	19.56
11/26/2004	1.67	12.78	3.67	14.78	4.67	15.78	5.67	16.78
11/27/2004	-1.11	6.67	0.89	8.67	1.89	9.67	2.89	10.67
11/28/2004	-2.78	3.89	-0.78	5.89	0.22	6.89	1.22	7.89
11/29/2004	-2.22	8.33	-0.22	10.33	0.78	11.33	1.78	12.33
11/30/2004	-2.22	8.89	-0.22	10.89	0.78	11.89	1.78	12.89
12/1/2004	0	8.89	2	10.89	3	11.89	4	12.89
12/2/2004	-0.56	7.78	1.44	9.78	2.44	10.78	3.44	11.78
12/3/2004	0	13.33	2	15.33	3	16.33	4	17.33
12/4/2004	-0.56	11.11	1.44	13.11	2.44	14.11	3.44	15.11
12/5/2004	-1.67	10	0.33	12	1.33	13	2.33	14
12/6/2004	0	8.89	2	10.89	3	11.89	4	12.89
12/7/2004	0	4.44	2	6.44	3	7.44	4	8.44
12/8/2004	0.56	6.11	2.56	8.11	3.56	9.11	4.56	10.11
12/9/2004	4.44	14.44	6.44	16.44	7.44	17.44	8.44	18.44
12/10/2004	6.67	21.67	8.67	23.67	9.67	24.67	10.67	25.67
12/11/2004	8.89	24.44	10.89	26.44	11.89	27.44	12.89	28.44
12/12/2004	8.33	21.11	10.33	23.11	11.33	24.11	12.33	25.11
12/13/2004	5.56	18.33	7.56	20.33	8.56	21.33	9.56	22.33
12/14/2004	5	18.33	7	20.33	8	21.33	9	22.33
12/15/2004	5.56	21.11	7.56	23.11	8.56	24.11	9.56	25.11
12/16/2004	5.56	17.22	7.56	19.22	8.56	20.22	9.56	21.22
12/17/2004	5	17.78	7	19.78	8	20.78	9	21.78
12/18/2004	8.89	22.22	10.89	24.22	11.89	25.22	12.89	26.22
12/19/2004	7.78	21.67	9.78	23.67	10.78	24.67	11.78	25.67
12/20/2004	6.67	17.22	8.67	19.22	9.67	20.22	10.67	21.22
12/21/2004	4.44	16.11	6.44	18.11	7.44	19.11	8.44	20.11
12/22/2004	1.67	12.22	3.67	14.22	4.67	15.22	5.67	16.22
12/23/2004	1.67	12.78	3.67	14.78	4.67	15.78	5.67	16.78
12/24/2004	3.33	14.44	5.33	16.44	6.33	17.44	7.33	18.44
12/25/2004	1.67	15	3.67	17	4.67	18	5.67	19
12/26/2004	1.67	8.33	3.67	10.33	4.67	11.33	5.67	12.33
12/27/2004	2.78	7.22	4.78	9.22	5.78	10.22	6.78	11.22
12/28/2004	0	4.44	2	6.44	3	7.44	4	8.44
12/29/2004	0	1.67	2	3.67	3	4.67	4	5.67
12/30/2004	0	3.33	2	5.33	3	6.33	4	7.33
12/31/2004	-1.11	5	0.89	7	1.89	8	2.89	9
1/1/2005	-1.11	1.67	0.89	3.67	1.89	4.67	2.89	5.67
1/2/2005	-0.56	2.78	1.44	4.78	2.44	5.78	3.44	6.78
1/3/2005	-1.67	5	0.33	7	1.33	8	2.33	9
1/4/2005	-3.89	5.56	-1.89	7.56	-0.89	8.56	0.11	9.56
1/5/2005	-2.22	5.56	-0.22	7.56	0.78	8.56	1.78	9.56
1/6/2005	-2.22	8.89	-0.22	10.89	0.78	11.89	1.78	12.89
1/7/2005	-1.11	3.33	0.89	5.33	1.89	6.33	2.89	7.33
1/8/2005	-1.11	1.11	0.89	3.11	1.89	4.11	2.89	5.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/9/2005	0	5	2	7	3	8	4	9
1/10/2005	0	5	2	7	3	8	4	9
1/11/2005	-3.89	3.33	-1.89	5.33	-0.89	6.33	0.11	7.33
1/12/2005	-4.44	10	-2.44	12	-1.44	13	-0.44	14
1/13/2005	-0.56	11.11	1.44	13.11	2.44	14.11	3.44	15.11
1/14/2005	0.56	16.67	2.56	18.67	3.56	19.67	4.56	20.67
1/15/2005	3.33	20.56	5.33	22.56	6.33	23.56	7.33	24.56
1/16/2005	5	18.33	7	20.33	8	21.33	9	22.33
1/17/2005	5.56	23.33	7.56	25.33	8.56	26.33	9.56	27.33
1/18/2005	7.78	21.11	9.78	23.11	10.78	24.11	11.78	25.11
1/19/2005	7.78	24.44	9.78	26.44	10.78	27.44	11.78	28.44
1/20/2005	7.22	21.67	9.22	23.67	10.22	24.67	11.22	25.67
1/21/2005	5.56	18.89	7.56	20.89	8.56	21.89	9.56	22.89
1/22/2005	6.11	20.56	8.11	22.56	9.11	23.56	10.11	24.56
1/23/2005	6.11	20.56	8.11	22.56	9.11	23.56	10.11	24.56
1/24/2005	5.56	18.89	7.56	20.89	8.56	21.89	9.56	22.89
1/25/2005	5.56	11.67	7.56	13.67	8.56	14.67	9.56	15.67
1/26/2005	0	5.56	2	7.56	3	8.56	4	9.56
1/27/2005	0	10.56	2	12.56	3	13.56	4	14.56
1/28/2005	-2.22	7.22	-0.22	9.22	0.78	10.22	1.78	11.22
1/29/2005	-4.44	10.56	-2.44	12.56	-1.44	13.56	-0.44	14.56
1/30/2005	0.56	16.11	2.56	18.11	3.56	19.11	4.56	20.11
1/31/2005	5	18.89	7	20.89	8	21.89	9	22.89
2/1/2005	5	16.67	7	18.67	8	19.67	9	20.67
2/2/2005	6.11	15.56	8.11	17.56	9.11	18.56	10.11	19.56
2/3/2005	7.22	20	9.22	22	10.22	23	11.22	24
2/4/2005	3.89	15.56	5.89	17.56	6.89	18.56	7.89	19.56
2/5/2005	2.22	16.11	4.22	18.11	5.22	19.11	6.22	20.11
2/6/2005	1.11	12.22	3.11	14.22	4.11	15.22	5.11	16.22
2/7/2005	-0.56	5	1.44	7	2.44	8	3.44	9
2/8/2005	-1.11	11.11	0.89	13.11	1.89	14.11	2.89	15.11
2/9/2005	1.11	12.78	3.11	14.78	4.11	15.78	5.11	16.78
2/10/2005	1.67	16.11	3.67	18.11	4.67	19.11	5.67	20.11
2/11/2005	4.44	11.11	6.44	13.11	7.44	14.11	8.44	15.11
2/12/2005	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89
2/13/2005	2.22	12.22	4.22	14.22	5.22	15.22	6.22	16.22
2/14/2005	3.33	7.78	5.33	9.78	6.33	10.78	7.33	11.78
2/15/2005	2.78	5.56	4.78	7.56	5.78	8.56	6.78	9.56
2/16/2005	2.22	10	4.22	12	5.22	13	6.22	14
2/17/2005	2.78	11.67	4.78	13.67	5.78	14.67	6.78	15.67
2/18/2005	2.78	7.22	4.78	9.22	5.78	10.22	6.78	11.22
2/19/2005	0.56	10	2.56	12	3.56	13	4.56	14
2/20/2005	0	7.78	2	9.78	3	10.78	4	11.78
2/21/2005	2.22	10.56	4.22	12.56	5.22	13.56	6.22	14.56
2/22/2005	1.67	13.33	3.67	15.33	4.67	16.33	5.67	17.33
2/23/2005	3.89	15	5.89	17	6.89	18	7.89	19
2/24/2005	3.33	15.56	5.33	17.56	6.33	18.56	7.33	19.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/25/2005	1.11	14.44	3.11	16.44	4.11	17.44	5.11	18.44
2/26/2005	0.56	13.33	2.56	15.33	3.56	16.33	4.56	17.33
2/27/2005	0.56	10.56	2.56	12.56	3.56	13.56	4.56	14.56
2/28/2005	0	13.89	2	15.89	3	16.89	4	17.89
3/1/2005	0	12.22	2	14.22	3	15.22	4	16.22
3/2/2005	1.11	11.11	3.11	13.11	4.11	14.11	5.11	15.11
3/3/2005	1.11	12.22	3.11	14.22	4.11	15.22	5.11	16.22
3/4/2005	3.89	8.33	5.89	10.33	6.89	11.33	7.89	12.33
3/5/2005	6.11	18.89	8.11	20.89	9.11	21.89	10.11	22.89
3/6/2005	6.11	20.56	8.11	22.56	9.11	23.56	10.11	24.56
3/7/2005	7.78	20	9.78	22	10.78	23	11.78	24
3/8/2005	8.89	25.56	10.89	27.56	11.89	28.56	12.89	29.56
3/9/2005	8.33	24.44	10.33	26.44	11.33	27.44	12.33	28.44
3/10/2005	8.33	22.22	10.33	24.22	11.33	25.22	12.33	26.22
3/11/2005	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11
3/12/2005	8.89	24.44	10.89	26.44	11.89	27.44	12.89	28.44
3/13/2005	7.78	20.56	9.78	22.56	10.78	23.56	11.78	24.56
3/14/2005	3.33	14.44	5.33	16.44	6.33	17.44	7.33	18.44
3/15/2005	3.33	16.67	5.33	18.67	6.33	19.67	7.33	20.67
3/16/2005	2.22	15	4.22	17	5.22	18	6.22	19
3/17/2005	1.67	11.67	3.67	13.67	4.67	14.67	5.67	15.67
3/18/2005	2.22	10.56	4.22	12.56	5.22	13.56	6.22	14.56
3/19/2005	1.11	6.11	3.11	8.11	4.11	9.11	5.11	10.11
3/20/2005	0	5	2	7	3	8	4	9
3/21/2005	0	9.44	2	11.44	3	12.44	4	13.44
3/22/2005	0.56	6.11	2.56	8.11	3.56	9.11	4.56	10.11
3/23/2005	0	2.22	2	4.22	3	5.22	4	6.22
3/24/2005	-1.11	10.56	0.89	12.56	1.89	13.56	2.89	14.56
3/25/2005	-2.78	12.78	-0.78	14.78	0.22	15.78	1.22	16.78
3/26/2005	0.56	17.22	2.56	19.22	3.56	20.22	4.56	21.22
3/27/2005	2.22	15	4.22	17	5.22	18	6.22	19
3/28/2005	0	5.56	2	7.56	3	8.56	4	9.56
3/29/2005	0	3.89	2	5.89	3	6.89	4	7.89
3/30/2005	-1.67	14.44	0.33	16.44	1.33	17.44	2.33	18.44
3/31/2005	3.89	19.44	5.89	21.44	6.89	22.44	7.89	23.44
4/1/2005	5	20	7	22	8	23	9	24
4/2/2005	3.89	16.67	5.89	18.67	6.89	19.67	7.89	20.67
4/3/2005	0	8.89	2	10.89	3	11.89	4	12.89
4/4/2005	-1.11	10.56	0.89	12.56	1.89	13.56	2.89	14.56
4/5/2005	1.67	20.56	3.67	22.56	4.67	23.56	5.67	24.56
4/6/2005	7.22	22.22	9.22	24.22	10.22	25.22	11.22	26.22
4/7/2005	-1.11	12.22	0.89	14.22	1.89	15.22	2.89	16.22
4/8/2005	-2.78	2.22	-0.78	4.22	0.22	5.22	1.22	6.22
4/9/2005	-2.78	11.67	-0.78	13.67	0.22	14.67	1.22	15.67
4/10/2005	1.11	16.67	3.11	18.67	4.11	19.67	5.11	20.67
4/11/2005	3.33	17.22	5.33	19.22	6.33	20.22	7.33	21.22
4/12/2005	2.78	16.11	4.78	18.11	5.78	19.11	6.78	20.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/13/2005	-0.56	11.11	1.44	13.11	2.44	14.11	3.44	15.11
4/14/2005	-1.11	17.22	0.89	19.22	1.89	20.22	2.89	21.22
4/15/2005	5	20	7	22	8	23	9	24
4/16/2005	6.67	22.78	8.67	24.78	9.67	25.78	10.67	26.78
4/17/2005	3.33	17.78	5.33	19.78	6.33	20.78	7.33	21.78
4/18/2005	1.11	15.56	3.11	17.56	4.11	18.56	5.11	19.56
4/19/2005	0	10.56	2	12.56	3	13.56	4	14.56
4/20/2005	1.11	15	3.11	17	4.11	18	5.11	19
4/21/2005	3.33	18.89	5.33	20.89	6.33	21.89	7.33	22.89
4/22/2005	6.11	21.67	8.11	23.67	9.11	24.67	10.11	25.67
4/23/2005	3.89	13.33	5.89	15.33	6.89	16.33	7.89	17.33
4/24/2005	2.78	12.22	4.78	14.22	5.78	15.22	6.78	16.22
4/25/2005	1.11	18.33	3.11	20.33	4.11	21.33	5.11	22.33
4/26/2005	5	19.44	7	21.44	8	22.44	9	23.44
4/27/2005	3.33	16.11	5.33	18.11	6.33	19.11	7.33	20.11
4/28/2005	2.78	11.11	4.78	13.11	5.78	14.11	6.78	15.11
4/29/2005	1.11	16.11	3.11	18.11	4.11	19.11	5.11	20.11
4/30/2005	4.44	17.22	6.44	19.22	7.44	20.22	8.44	21.22
5/1/2005	5	13.33	7	15.33	8	16.33	9	17.33
5/2/2005	5	18.89	7	20.89	8	21.89	9	22.89
5/3/2005	5.56	20	7.56	22	8.56	23	9.56	24
5/4/2005	7.78	18.33	9.78	20.33	10.78	21.33	11.78	22.33
5/5/2005	3.89	8.89	5.89	10.89	6.89	11.89	7.89	12.89
5/6/2005	3.89	12.78	5.89	14.78	6.89	15.78	7.89	16.78
5/7/2005	2.22	17.78	4.22	19.78	5.22	20.78	6.22	21.78
5/8/2005	6.67	8.89	8.67	10.89	9.67	11.89	10.67	12.89
5/9/2005	0	6.67	2	8.67	3	9.67	4	10.67
5/10/2005	-0.56	11.67	1.44	13.67	2.44	14.67	3.44	15.67
5/11/2005	1.67	16.11	3.67	18.11	4.67	19.11	5.67	20.11
5/12/2005	6.11	21.11	8.11	23.11	9.11	24.11	10.11	25.11
5/13/2005	8.89	23.33	10.89	25.33	11.89	26.33	12.89	27.33
5/14/2005	10	25.56	12	27.56	13	28.56	14	29.56
5/15/2005	10.56	19.44	12.56	21.44	13.56	22.44	14.56	23.44
5/16/2005	5	11.11	7	13.11	8	14.11	9	15.11
5/17/2005	2.78	13.33	4.78	15.33	5.78	16.33	6.78	17.33
5/18/2005	5.56	13.33	7.56	15.33	8.56	16.33	9.56	17.33
5/19/2005	10	18.89	12	20.89	13	21.89	14	22.89
5/20/2005	7.22	18.89	9.22	20.89	10.22	21.89	11.22	22.89
5/21/2005	6.11	25.56	8.11	27.56	9.11	28.56	10.11	29.56
5/22/2005	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11
5/23/2005	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
5/24/2005	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
5/25/2005	15.56	28.89	17.56	30.89	18.56	31.89	19.56	32.89
5/26/2005	15	28.89	17	30.89	18	31.89	19	32.89
5/27/2005	15.56	28.89	17.56	30.89	18.56	31.89	19.56	32.89
5/28/2005	6.11	23.89	8.11	25.89	9.11	26.89	10.11	27.89
5/29/2005	5.56	19.44	7.56	21.44	8.56	22.44	9.56	23.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/30/2005	6.67	23.33	8.67	25.33	9.67	26.33	10.67	27.33
5/31/2005	10.56	26.67	12.56	28.67	13.56	29.67	14.56	30.67
6/1/2005	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
6/2/2005	8.89	23.33	10.89	25.33	11.89	26.33	12.89	27.33
6/3/2005	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
6/4/2005	10	25.56	12	27.56	13	28.56	14	29.56
6/5/2005	5.56	18.89	7.56	20.89	8.56	21.89	9.56	22.89
6/6/2005	3.33	16.11	5.33	18.11	6.33	19.11	7.33	20.11
6/7/2005	1.67	18.89	3.67	20.89	4.67	21.89	5.67	22.89
6/8/2005	5	11.67	7	13.67	8	14.67	9	15.67
6/9/2005	8.33	18.33	10.33	20.33	11.33	21.33	12.33	22.33
6/10/2005	7.78	22.78	9.78	24.78	10.78	25.78	11.78	26.78
6/11/2005	8.33	24.44	10.33	26.44	11.33	27.44	12.33	28.44
6/12/2005	10	25.56	12	27.56	13	28.56	14	29.56
6/13/2005	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
6/14/2005	13.54	29.76	15.54	31.76	16.54	32.76	17.54	33.76
6/15/2005	11.32	27.54	13.32	29.54	14.32	30.54	15.32	31.54
6/16/2005	9.651	19.76	11.651	21.76	12.651	22.76	13.651	23.76
6/17/2005	9.091	12.54	11.091	14.54	12.091	15.54	13.091	16.54
6/18/2005	6.321	18.09	8.321	20.09	9.321	21.09	10.321	22.09
6/19/2005	6.871	22.54	8.871	24.54	9.871	25.54	10.871	26.54
6/20/2005	7.981	25.32	9.981	27.32	10.981	28.32	11.981	29.32
6/21/2005	9.651	24.76	11.651	26.76	12.651	27.76	13.651	28.76
6/22/2005	10.76	26.43	12.76	28.43	13.76	29.43	14.76	30.43
6/23/2005	11.32	27.54	13.32	29.54	14.32	30.54	15.32	31.54
6/24/2005	11.87	25.32	13.87	27.32	14.87	28.32	15.87	29.32
6/25/2005	11.87	24.76	13.87	26.76	14.87	27.76	15.87	28.76
6/26/2005	10.76	25.32	12.76	27.32	13.76	28.32	14.76	29.32
6/27/2005	10.76	24.76	12.76	26.76	13.76	27.76	14.76	28.76
6/28/2005	11.32	25.87	13.32	27.87	14.32	28.87	15.32	29.87
6/29/2005	12.43	29.76	14.43	31.76	15.43	32.76	16.43	33.76
6/30/2005	14.65	32.54	16.65	34.54	17.65	35.54	18.65	36.54
7/1/2005	15.76	33.09	17.76	35.09	18.76	36.09	19.76	37.09
7/2/2005	15.76	31.98	17.76	33.98	18.76	34.98	19.76	35.98
7/3/2005	12.43	31.98	14.43	33.98	15.43	34.98	16.43	35.98
7/4/2005	12.98	31.43	14.98	33.43	15.98	34.43	16.98	35.43
7/5/2005	14.09	30.87	16.09	32.87	17.09	33.87	18.09	34.87
7/6/2005	15.76	30.32	17.76	32.32	18.76	33.32	19.76	34.32
7/7/2005	15.2	30.87	17.2	32.87	18.2	33.87	19.2	34.87
7/8/2005	14.09	27.54	16.09	29.54	17.09	30.54	18.09	31.54
7/9/2005	12.98	25.87	14.98	27.87	15.98	28.87	16.98	29.87
7/10/2005	13.54	28.65	15.54	30.65	16.54	31.65	17.54	32.65
7/11/2005	12.98	31.43	14.98	33.43	15.98	34.43	16.98	35.43
7/12/2005	15.76	33.65	17.76	35.65	18.76	36.65	19.76	37.65
7/13/2005	16.32	34.21	18.32	36.21	19.32	37.21	20.32	38.21
7/14/2005	17.98	35.32	19.98	37.32	20.98	38.32	21.98	39.32
7/15/2005	17.43	36.43	19.43	38.43	20.43	39.43	21.43	40.43

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: BE							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/16/2005	19.65	36.98	21.65	38.98	22.65	39.98	23.65	40.98
7/17/2005	17.43	36.43	19.43	38.43	20.43	39.43	21.43	40.43
7/18/2005	19.09	36.43	21.09	38.43	22.09	39.43	23.09	40.43
7/19/2005	18.54	35.87	20.54	37.87	21.54	38.87	22.54	39.87
7/20/2005	16.87	36.43	18.87	38.43	19.87	39.43	20.87	40.43
7/21/2005	19.65	34.76	21.65	36.76	22.65	37.76	23.65	38.76
7/22/2005	17.98	31.98	19.98	33.98	20.98	34.98	21.98	35.98
7/23/2005	16.87	34.76	18.87	36.76	19.87	37.76	20.87	38.76
7/24/2005	15.76	34.21	17.76	36.21	18.76	37.21	19.76	38.21
7/25/2005	14.09	34.21	16.09	36.21	17.09	37.21	18.09	38.21
7/26/2005	14.65	35.32	16.65	37.32	17.65	38.32	18.65	39.32
7/27/2005	15.76	34.76	17.76	36.76	18.76	37.76	19.76	38.76
7/28/2005	16.87	34.21	18.87	36.21	19.87	37.21	20.87	38.21
7/29/2005	16.87	33.09	18.87	35.09	19.87	36.09	20.87	37.09
7/30/2005	16.87	33.65	18.87	35.65	19.87	36.65	20.87	37.65
7/31/2005	17.98	33.65	19.98	35.65	20.98	36.65	21.98	37.65
8/1/2005	15.2	33.09	17.2	35.09	18.2	36.09	19.2	37.09

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/1/1999	8.6	19.8	10.6	21.8	11.6	22.8	12.6	23.8
10/2/1999	7.2	18.5	9.2	20.5	10.2	21.5	11.2	22.5
10/3/1999	6.6	15.8	8.6	17.8	9.6	18.8	10.6	19.8
10/4/1999	4.9	18.1	6.9	20.1	7.9	21.1	8.9	22.1
10/5/1999	6.2	15	8.2	17	9.2	18	10.2	19
10/6/1999	0.9	11.2	2.9	13.2	3.9	14.2	4.9	15.2
10/7/1999	-1.9	6.2	0.1	8.2	1.1	9.2	2.1	10.2
10/8/1999	-3	12.9	-1	14.9	0	15.9	1	16.9
10/9/1999	4.1	19.8	6.1	21.8	7.1	22.8	8.1	23.8
10/10/1999	6.5	19	8.5	21	9.5	22	10.5	23
10/11/1999	6.6	17.4	8.6	19.4	9.6	20.4	10.6	21.4
10/12/1999	6.3	16.4	8.3	18.4	9.3	19.4	10.3	20.4
10/13/1999	5.3	19.9	7.3	21.9	8.3	22.9	9.3	23.9
10/14/1999	7.1	19	9.1	21	10.1	22	11.1	23
10/15/1999	6.4	17.2	8.4	19.2	9.4	20.2	10.4	21.2
10/16/1999	0.1	10.9	2.1	12.9	3.1	13.9	4.1	14.9
10/17/1999	-5	8.1	-3	10.1	-2	11.1	-1	12.1
10/18/1999	-3.5	13	-1.5	15	-0.5	16	0.5	17
10/19/1999	2.9	15.5	4.9	17.5	5.9	18.5	6.9	19.5
10/20/1999	1.7	16.2	3.7	18.2	4.7	19.2	5.7	20.2
10/21/1999	5	16.4	7	18.4	8	19.4	9	20.4
10/22/1999	5	17.8	7	19.8	8	20.8	9	21.8
10/23/1999	4.9	15.9	6.9	17.9	7.9	18.9	8.9	19.9
10/24/1999	5.3	13	7.3	15	8.3	16	9.3	17
10/25/1999	4.9	15	6.9	17	7.9	18	8.9	19
10/26/1999	4.9	15.7	6.9	17.7	7.9	18.7	8.9	19.7
10/27/1999	4.7	12.9	6.7	14.9	7.7	15.9	8.7	16.9
10/28/1999	2.8	11.2	4.8	13.2	5.8	14.2	6.8	15.2
10/29/1999	-1.3	5.2	0.7	7.2	1.7	8.2	2.7	9.2
10/30/1999	-3.6	8.7	-1.6	10.7	-0.6	11.7	0.4	12.7
10/31/1999	2.9	14.8	4.9	16.8	5.9	17.8	6.9	18.8
11/1/1999	3.1	14.6	5.1	16.6	6.1	17.6	7.1	18.6
11/2/1999	1.6	16.1	3.6	18.1	4.6	19.1	5.6	20.1
11/3/1999	5.2	15.1	7.2	17.1	8.2	18.1	9.2	19.1
11/4/1999	3.3	15.3	5.3	17.3	6.3	18.3	7.3	19.3
11/5/1999	3.9	14.9	5.9	16.9	6.9	17.9	7.9	18.9
11/6/1999	3.9	13.8	5.9	15.8	6.9	16.8	7.9	17.8
11/7/1999	2.8	13.9	4.8	15.9	5.8	16.9	6.8	17.9
11/8/1999	-3.6	9.3	-1.6	11.3	-0.6	12.3	0.4	13.3
11/9/1999	-5.5	-0.4	-3.5	1.6	-2.5	2.6	-1.5	3.6
11/10/1999	-1.9	7.3	0.1	9.3	1.1	10.3	2.1	11.3
11/11/1999	-0.5	7	1.5	9	2.5	10	3.5	11
11/12/1999	0.8	10.9	2.8	12.9	3.8	13.9	4.8	14.9
11/13/1999	4.4	12.6	6.4	14.6	7.4	15.6	8.4	16.6
11/14/1999	3.5	12.8	5.5	14.8	6.5	15.8	7.5	16.8
11/15/1999	4.7	15.2	6.7	17.2	7.7	18.2	8.7	19.2
11/16/1999	0.1	5.4	2.1	7.4	3.1	8.4	4.1	9.4

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/17/1999	-4.4	6.2	-2.4	8.2	-1.4	9.2	-0.4	10.2
11/18/1999	-8.5	-1.4	-6.5	0.6	-5.5	1.6	-4.5	2.6
11/19/1999	-8.4	9.3	-6.4	11.3	-5.4	12.3	-4.4	13.3
11/20/1999	-3.1	3.1	-1.1	5.1	-0.1	6.1	0.9	7.1
11/21/1999	-6.7	0.5	-4.7	2.5	-3.7	3.5	-2.7	4.5
11/22/1999	-11.4	-2.8	-9.4	-0.8	-8.4	0.2	-7.4	1.2
11/23/1999	-13.7	3.6	-11.7	5.6	-10.7	6.6	-9.7	7.6
11/24/1999	-7.8	1	-5.8	3	-4.8	4	-3.8	5
11/25/1999	-6.7	7.3	-4.7	9.3	-3.7	10.3	-2.7	11.3
11/26/1999	-0.8	10.3	1.2	12.3	2.2	13.3	3.2	14.3
11/27/1999	0.6	9.9	2.6	11.9	3.6	12.9	4.6	13.9
11/28/1999	-1.4	6.5	0.6	8.5	1.6	9.5	2.6	10.5
11/29/1999	-0.5	7.9	1.5	9.9	2.5	10.9	3.5	11.9
11/30/1999	1.2	7.3	3.2	9.3	4.2	10.3	5.2	11.3
12/1/1999	-7.6	2.4	-5.6	4.4	-4.6	5.4	-3.6	6.4
12/2/1999	-9.8	2.6	-7.8	4.6	-6.8	5.6	-5.8	6.6
12/3/1999	-11.2	0.1	-9.2	2.1	-8.2	3.1	-7.2	4.1
12/4/1999	-11.8	-2.2	-9.8	-0.2	-8.8	0.8	-7.8	1.8
12/5/1999	-9.2	11.2	-7.2	13.2	-6.2	14.2	-5.2	15.2
12/6/1999	-3.1	3.9	-1.1	5.9	-0.1	6.9	0.9	7.9
12/7/1999	-4.3	3.4	-2.3	5.4	-1.3	6.4	-0.3	7.4
12/8/1999	-12.4	-4.4	-10.4	-2.4	-9.4	-1.4	-8.4	-0.4
12/9/1999	-14	4.3	-12	6.3	-11	7.3	-10	8.3
12/10/1999	-10.4	-2.3	-8.4	-0.3	-7.4	0.7	-6.4	1.7
12/11/1999	-11.4	-6.4	-9.4	-4.4	-8.4	-3.4	-7.4	-2.4
12/12/1999	-9.6	2	-7.6	4	-6.6	5	-5.6	6
12/13/1999	-4.2	6.5	-2.2	8.5	-1.2	9.5	-0.2	10.5
12/14/1999	-10.6	-1.9	-8.6	0.1	-7.6	1.1	-6.6	2.1
12/15/1999	-11.4	-0.9	-9.4	1.1	-8.4	2.1	-7.4	3.1
12/16/1999	-3.9	8.2	-1.9	10.2	-0.9	11.2	0.1	12.2
12/17/1999	-0.7	11.9	1.3	13.9	2.3	14.9	3.3	15.9
12/18/1999	-1.2	11.1	0.8	13.1	1.8	14.1	2.8	15.1
12/19/1999	-0.5	6.6	1.5	8.6	2.5	9.6	3.5	10.6
12/20/1999	-3.9	5.3	-1.9	7.3	-0.9	8.3	0.1	9.3
12/21/1999	-4.1	3.9	-2.1	5.9	-1.1	6.9	-0.1	7.9
12/22/1999	-5.1	3.9	-3.1	5.9	-2.1	6.9	-1.1	7.9
12/23/1999	-7	4.1	-5	6.1	-4	7.1	-3	8.1
12/24/1999	-5.4	3.7	-3.4	5.7	-2.4	6.7	-1.4	7.7
12/25/1999	-5.8	3.7	-3.8	5.7	-2.8	6.7	-1.8	7.7
12/26/1999	-7.6	1.1	-5.6	3.1	-4.6	4.1	-3.6	5.1
12/27/1999	-7.2	6.1	-5.2	8.1	-4.2	9.1	-3.2	10.1
12/28/1999	-8.2	1.7	-6.2	3.7	-5.2	4.7	-4.2	5.7
12/29/1999	-6	7.3	-4	9.3	-3	10.3	-2	11.3
12/30/1999	-3.6	6.8	-1.6	8.8	-0.6	9.8	0.4	10.8
12/31/1999	-4.3	7.3	-2.3	9.3	-1.3	10.3	-0.3	11.3
1/1/2000	-5.2	4.6	-3.2	6.6	-2.2	7.6	-1.2	8.6
1/2/2000	-10.4	-0.5	-8.4	1.5	-7.4	2.5	-6.4	3.5

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/3/2000	-14.7	-4.4	-12.7	-2.4	-11.7	-1.4	-10.7	-0.4
1/4/2000	-8.8	2.7	-6.8	4.7	-5.8	5.7	-4.8	6.7
1/5/2000	-6	1.6	-4	3.6	-3	4.6	-2	5.6
1/6/2000	-10.9	-3.7	-8.9	-1.7	-7.9	-0.7	-6.9	0.3
1/7/2000	-7.4	7.2	-5.4	9.2	-4.4	10.2	-3.4	11.2
1/8/2000	-6.3	3.4	-4.3	5.4	-3.3	6.4	-2.3	7.4
1/9/2000	-3.4	6.1	-1.4	8.1	-0.4	9.1	0.6	10.1
1/10/2000	-3.7	-0.8	-1.7	1.2	-0.7	2.2	0.3	3.2
1/11/2000	-3.7	0.1	-1.7	2.1	-0.7	3.1	0.3	4.1
1/12/2000	-4.7	-2.1	-2.7	-0.1	-1.7	0.9	-0.7	1.9
1/13/2000	-6.5	-3.1	-4.5	-1.1	-3.5	-0.1	-2.5	0.9
1/14/2000	-4.7	3	-2.7	5	-1.7	6	-0.7	7
1/15/2000	-1.9	3.5	0.1	5.5	1.1	6.5	2.1	7.5
1/16/2000	-3.2	-0.9	-1.2	1.1	-0.2	2.1	0.8	3.1
1/17/2000	-5.4	-2	-3.4	0	-2.4	1	-1.4	2
1/18/2000	-2.2	-0.4	-0.2	1.6	0.8	2.6	1.8	3.6
1/19/2000	-1.3	0.6	0.7	2.6	1.7	3.6	2.7	4.6
1/20/2000	-2.3	1.9	-0.3	3.9	0.7	4.9	1.7	5.9
1/21/2000	-3.2	0.5	-1.2	2.5	-0.2	3.5	0.8	4.5
1/22/2000	-6	-1.9	-4	0.1	-3	1.1	-2	2.1
1/23/2000	-7.4	-0.3	-5.4	1.7	-4.4	2.7	-3.4	3.7
1/24/2000	-5.5	-1.3	-3.5	0.7	-2.5	1.7	-1.5	2.7
1/25/2000	-2.8	-1.4	-0.8	0.6	0.2	1.6	1.2	2.6
1/26/2000	-6.6	-0.4	-4.6	1.6	-3.6	2.6	-2.6	3.6
1/27/2000	-10	0.5	-8	2.5	-7	3.5	-6	4.5
1/28/2000	-9.1	3.9	-7.1	5.9	-6.1	6.9	-5.1	7.9
1/29/2000	-13.4	4.1	-11.4	6.1	-10.4	7.1	-9.4	8.1
1/30/2000	-6.6	4.5	-4.6	6.5	-3.6	7.5	-2.6	8.5
1/31/2000	-8.3	-3.1	-6.3	-1.1	-5.3	-0.1	-4.3	0.9
2/1/2000	-9.3	-0.2	-7.3	1.8	-6.3	2.8	-5.3	3.8
2/2/2000	-0.9	10	1.1	12	2.1	13	3.1	14
2/3/2000	0.6	11	2.6	13	3.6	14	4.6	15
2/4/2000	-3.8	6.2	-1.8	8.2	-0.8	9.2	0.2	10.2
2/5/2000	-4.3	0.5	-2.3	2.5	-1.3	3.5	-0.3	4.5
2/6/2000	-4.4	4.1	-2.4	6.1	-1.4	7.1	-0.4	8.1
2/7/2000	-4.2	6.9	-2.2	8.9	-1.2	9.9	-0.2	10.9
2/8/2000	-1.3	7	0.7	9	1.7	10	2.7	11
2/9/2000	-1	7.2	1	9.2	2	10.2	3	11.2
2/10/2000	-2.5	2.9	-0.5	4.9	0.5	5.9	1.5	6.9
2/11/2000	-6.5	-1	-4.5	1	-3.5	2	-2.5	3
2/12/2000	-6.6	-2.1	-4.6	-0.1	-3.6	0.9	-2.6	1.9
2/13/2000	-7.8	-4.3	-5.8	-2.3	-4.8	-1.3	-3.8	-0.3
2/14/2000	-5.9	-0.6	-3.9	1.4	-2.9	2.4	-1.9	3.4
2/15/2000	-8.4	-0.9	-6.4	1.1	-5.4	2.1	-4.4	3.1
2/16/2000	-8.4	2.5	-6.4	4.5	-5.4	5.5	-4.4	6.5
2/17/2000	-9	-2.6	-7	-0.6	-6	0.4	-5	1.4
2/18/2000	-9	-1.7	-7	0.3	-6	1.3	-5	2.3

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/19/2000	-10.2	0.3	-8.2	2.3	-7.2	3.3	-6.2	4.3
2/20/2000	-8.9	5.6	-6.9	7.6	-5.9	8.6	-4.9	9.6
2/21/2000	-4.9	2	-2.9	4	-1.9	5	-0.9	6
2/22/2000	-7.9	1.4	-5.9	3.4	-4.9	4.4	-3.9	5.4
2/23/2000	-7.4	-1.8	-5.4	0.2	-4.4	1.2	-3.4	2.2
2/24/2000	-12.8	-6.2	-10.8	-4.2	-9.8	-3.2	-8.8	-2.2
2/25/2000	-15.9	-5.3	-13.9	-3.3	-12.9	-2.3	-11.9	-1.3
2/26/2000	-10.2	2.2	-8.2	4.2	-7.2	5.2	-6.2	6.2
2/27/2000	-5.8	0.4	-3.8	2.4	-2.8	3.4	-1.8	4.4
2/28/2000	-8.5	-2.3	-6.5	-0.3	-5.5	0.7	-4.5	1.7
2/29/2000	-9.4	1.4	-7.4	3.4	-6.4	4.4	-5.4	5.4
3/1/2000	-11.1	-3.5	-9.1	-1.5	-8.1	-0.5	-7.1	0.5
3/2/2000	-12.2	0.6	-10.2	2.6	-9.2	3.6	-8.2	4.6
3/3/2000	-5.4	-0.1	-3.4	1.9	-2.4	2.9	-1.4	3.9
3/4/2000	-5.5	0.1	-3.5	2.1	-2.5	3.1	-1.5	4.1
3/5/2000	-3.8	7.2	-1.8	9.2	-0.8	10.2	0.2	11.2
3/6/2000	-8.2	-1.2	-6.2	0.8	-5.2	1.8	-4.2	2.8
3/7/2000	-9.5	-3.8	-7.5	-1.8	-6.5	-0.8	-5.5	0.2
3/8/2000	-10.4	-0.5	-8.4	1.5	-7.4	2.5	-6.4	3.5
3/9/2000	-9.6	-4.8	-7.6	-2.8	-6.6	-1.8	-5.6	-0.8
3/10/2000	-9.4	-4.7	-7.4	-2.7	-6.4	-1.7	-5.4	-0.7
3/11/2000	-8	4.5	-6	6.5	-5	7.5	-4	8.5
3/12/2000	-5	4.3	-3	6.3	-2	7.3	-1	8.3
3/13/2000	-6.8	10.2	-4.8	12.2	-3.8	13.2	-2.8	14.2
3/14/2000	-2.8	9.2	-0.8	11.2	0.2	12.2	1.2	13.2
3/15/2000	-1.6	10.7	0.4	12.7	1.4	13.7	2.4	14.7
3/16/2000	-3.7	7.1	-1.7	9.1	-0.7	10.1	0.3	11.1
3/17/2000	-6.2	6.8	-4.2	8.8	-3.2	9.8	-2.2	10.8
3/18/2000	-6.9	7.5	-4.9	9.5	-3.9	10.5	-2.9	11.5
3/19/2000	-3.5	12	-1.5	14	-0.5	15	0.5	16
3/20/2000	-9	5.5	-7	7.5	-6	8.5	-5	9.5
3/21/2000	-12.2	-5.3	-10.2	-3.3	-9.2	-2.3	-8.2	-1.3
3/22/2000	-10.3	2.4	-8.3	4.4	-7.3	5.4	-6.3	6.4
3/23/2000	-5.8	8.4	-3.8	10.4	-2.8	11.4	-1.8	12.4
3/24/2000	-2.3	5.9	-0.3	7.9	0.7	8.9	1.7	9.9
3/25/2000	-3.3	6.9	-1.3	8.9	-0.3	9.9	0.7	10.9
3/26/2000	-1.2	8.4	0.8	10.4	1.8	11.4	2.8	12.4
3/27/2000	-2.3	11.1	-0.3	13.1	0.7	14.1	1.7	15.1
3/28/2000	-3.6	6.6	-1.6	8.6	-0.6	9.6	0.4	10.6
3/29/2000	-4.5	5.8	-2.5	7.8	-1.5	8.8	-0.5	9.8
3/30/2000	-5.8	6.5	-3.8	8.5	-2.8	9.5	-1.8	10.5
3/31/2000	-8.7	2.6	-6.7	4.6	-5.7	5.6	-4.7	6.6
4/1/2000	-5.5	2.4	-3.5	4.4	-2.5	5.4	-1.5	6.4
4/2/2000	-1.8	7.2	0.2	9.2	1.2	10.2	2.2	11.2
4/3/2000	0.7	11.6	2.7	13.6	3.7	14.6	4.7	15.6
4/4/2000	1.6	15.7	3.6	17.7	4.6	18.7	5.6	19.7
4/5/2000	2.4	9.9	4.4	11.9	5.4	12.9	6.4	13.9

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/6/2000	1.5	11.2	3.5	13.2	4.5	14.2	5.5	15.2
4/7/2000	1.2	9.9	3.2	11.9	4.2	12.9	5.2	13.9
4/8/2000	0.3	12.9	2.3	14.9	3.3	15.9	4.3	16.9
4/9/2000	-2.5	7.8	-0.5	9.8	0.5	10.8	1.5	11.8
4/10/2000	-3.2	5.1	-1.2	7.1	-0.2	8.1	0.8	9.1
4/11/2000	-2.9	7.2	-0.9	9.2	0.1	10.2	1.1	11.2
4/12/2000	-1.1	10.6	0.9	12.6	1.9	13.6	2.9	14.6
4/13/2000	0.1	11.2	2.1	13.2	3.1	14.2	4.1	15.2
4/14/2000	-4.6	1	-2.6	3	-1.6	4	-0.6	5
4/15/2000	-6.4	1.1	-4.4	3.1	-3.4	4.1	-2.4	5.1
4/16/2000	-5.6	3.2	-3.6	5.2	-2.6	6.2	-1.6	7.2
4/17/2000	-3.9	2.7	-1.9	4.7	-0.9	5.7	0.1	6.7
4/18/2000	-7.2	0.2	-5.2	2.2	-4.2	3.2	-3.2	4.2
4/19/2000	-8.3	-2.1	-6.3	-0.1	-5.3	0.9	-4.3	1.9
4/20/2000	-6.9	8.1	-4.9	10.1	-3.9	11.1	-2.9	12.1
4/21/2000	-2.6	8.8	-0.6	10.8	0.4	11.8	1.4	12.8
4/22/2000	-0.6	11.7	1.4	13.7	2.4	14.7	3.4	15.7
4/23/2000	-2.6	5.3	-0.6	7.3	0.4	8.3	1.4	9.3
4/24/2000	-4.1	5.6	-2.1	7.6	-1.1	8.6	-0.1	9.6
4/25/2000	-3.9	12.1	-1.9	14.1	-0.9	15.1	0.1	16.1
4/26/2000	1.3	9.7	3.3	11.7	4.3	12.7	5.3	13.7
4/27/2000	4.4	16.3	6.4	18.3	7.4	19.3	8.4	20.3
4/28/2000	0.9	12.3	2.9	14.3	3.9	15.3	4.9	16.3
4/29/2000	-4.3	1.5	-2.3	3.5	-1.3	4.5	-0.3	5.5
4/30/2000	-7.2	8.6	-5.2	10.6	-4.2	11.6	-3.2	12.6
5/1/2000	-0.5	16.8	1.5	18.8	2.5	19.8	3.5	20.8
5/2/2000	2.8	14.4	4.8	16.4	5.8	17.4	6.8	18.4
5/3/2000	2.5	11.9	4.5	13.9	5.5	14.9	6.5	15.9
5/4/2000	3.1	12.6	5.1	14.6	6.1	15.6	7.1	16.6
5/5/2000	2	10.7	4	12.7	5	13.7	6	14.7
5/6/2000	-0.9	6.9	1.1	8.9	2.1	9.9	3.1	10.9
5/7/2000	-1.8	6.8	0.2	8.8	1.2	9.8	2.2	10.8
5/8/2000	-1.1	2	0.9	4	1.9	5	2.9	6
5/9/2000	0.4	7.2	2.4	9.2	3.4	10.2	4.4	11.2
5/10/2000	0.6	5.9	2.6	7.9	3.6	8.9	4.6	9.9
5/11/2000	-11.8	0.5	-9.8	2.5	-8.8	3.5	-7.8	4.5
5/12/2000	-12	2.8	-10	4.8	-9	5.8	-8	6.8
5/13/2000	-7.3	7	-5.3	9	-4.3	10	-3.3	11
5/14/2000	-1.1	8.4	0.9	10.4	1.9	11.4	2.9	12.4
5/15/2000	-1.4	6.8	0.6	8.8	1.6	9.8	2.6	10.8
5/16/2000	-4.1	5.3	-2.1	7.3	-1.1	8.3	-0.1	9.3
5/17/2000	-5.3	-0.4	-3.3	1.6	-2.3	2.6	-1.3	3.6
5/18/2000	-2.6	8.3	-0.6	10.3	0.4	11.3	1.4	12.3
5/19/2000	-0.4	11.6	1.6	13.6	2.6	14.6	3.6	15.6
5/20/2000	2.4	14.9	4.4	16.9	5.4	17.9	6.4	18.9
5/21/2000	5.2	17.6	7.2	19.6	8.2	20.6	9.2	21.6
5/22/2000	6.8	20.1	8.8	22.1	9.8	23.1	10.8	24.1

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/23/2000	8.8	19.3	10.8	21.3	11.8	22.3	12.8	23.3
5/24/2000	6.1	19	8.1	21	9.1	22	10.1	23
5/25/2000	5.4	16.3	7.4	18.3	8.4	19.3	9.4	20.3
5/26/2000	4.1	12.2	6.1	14.2	7.1	15.2	8.1	16.2
5/27/2000	2.2	14.4	4.2	16.4	5.2	17.4	6.2	18.4
5/28/2000	7.7	16.6	9.7	18.6	10.7	19.6	11.7	20.6
5/29/2000	6.9	15.8	8.9	17.8	9.9	18.8	10.9	19.8
5/30/2000	4.9	12.4	6.9	14.4	7.9	15.4	8.9	16.4
5/31/2000	3.6	11.6	5.6	13.6	6.6	14.6	7.6	15.6
6/1/2000	1.7	12	3.7	14	4.7	15	5.7	16
6/2/2000	-0.3	16.6	1.7	18.6	2.7	19.6	3.7	20.6
6/3/2000	5.8	15.5	7.8	17.5	8.8	18.5	9.8	19.5
6/4/2000	6.3	19.1	8.3	21.1	9.3	22.1	10.3	23.1
6/5/2000	8.2	17.6	10.2	19.6	11.2	20.6	12.2	21.6
6/6/2000	5.7	12.9	7.7	14.9	8.7	15.9	9.7	16.9
6/7/2000	5	17.8	7	19.8	8	20.8	9	21.8
6/8/2000	2.2	12.5	4.2	14.5	5.2	15.5	6.2	16.5
6/9/2000	-2.6	2.4	-0.6	4.4	0.4	5.4	1.4	6.4
6/10/2000	-3.3	7.4	-1.3	9.4	-0.3	10.4	0.7	11.4
6/11/2000	1.6	10.7	3.6	12.7	4.6	13.7	5.6	14.7
6/12/2000	4.1	15.5	6.1	17.5	7.1	18.5	8.1	19.5
6/13/2000	6.6	16.9	8.6	18.9	9.6	19.9	10.6	20.9
6/14/2000	5.1	19.5	7.1	21.5	8.1	22.5	9.1	23.5
6/15/2000	8.8	24	10.8	26	11.8	27	12.8	28
6/16/2000	11	24.7	13	26.7	14	27.7	15	28.7
6/17/2000	7.5	19	9.5	21	10.5	22	11.5	23
6/18/2000	4.9	19.9	6.9	21.9	7.9	22.9	8.9	23.9
6/19/2000	7.7	16.4	9.7	18.4	10.7	19.4	11.7	20.4
6/20/2000	5.3	19	7.3	21	8.3	22	9.3	23
6/21/2000	5.5	20.3	7.5	22.3	8.5	23.3	9.5	24.3
6/22/2000	9.8	20.4	11.8	22.4	12.8	23.4	13.8	24.4
6/23/2000	10.5	19.5	12.5	21.5	13.5	22.5	14.5	23.5
6/24/2000	9.9	19.7	11.9	21.7	12.9	22.7	13.9	23.7
6/25/2000	9.8	20.2	11.8	22.2	12.8	23.2	13.8	24.2
6/26/2000	6.7	21.3	8.7	23.3	9.7	24.3	10.7	25.3
6/27/2000	6.6	19.5	8.6	21.5	9.6	22.5	10.6	23.5
6/28/2000	10.2	21.7	12.2	23.7	13.2	24.7	14.2	25.7
6/29/2000	8.5	22.2	10.5	24.2	11.5	25.2	12.5	26.2
6/30/2000	8.9	22.2	10.9	24.2	11.9	25.2	12.9	26.2
7/1/2000	9.3	17.7	11.3	19.7	12.3	20.7	13.3	21.7
7/2/2000	7.4	15.8	9.4	17.8	10.4	18.8	11.4	19.8
7/3/2000	4.2	13.9	6.2	15.9	7.2	16.9	8.2	17.9
7/4/2000	3.1	10.2	5.1	12.2	6.1	13.2	7.1	14.2
7/5/2000	1.3	12.2	3.3	14.2	4.3	15.2	5.3	16.2
7/6/2000	1.2	9.8	3.2	11.8	4.2	12.8	5.2	13.8
7/7/2000	2	13	4	15	5	16	6	17
7/8/2000	2.9	13.3	4.9	15.3	5.9	16.3	6.9	17.3

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/9/2000	2.7	14	4.7	16	5.7	17	6.7	18
7/10/2000	4.4	18.4	6.4	20.4	7.4	21.4	8.4	22.4
7/11/2000	7.1	18.5	9.1	20.5	10.1	21.5	11.1	22.5
7/12/2000	7.9	20.9	9.9	22.9	10.9	23.9	11.9	24.9
7/13/2000	11	21.2	13	23.2	14	24.2	15	25.2
7/14/2000	10.3	18.9	12.3	20.9	13.3	21.9	14.3	22.9
7/15/2000	10.1	19.9	12.1	21.9	13.1	22.9	14.1	23.9
7/16/2000	10.1	19.1	12.1	21.1	13.1	22.1	14.1	23.1
7/17/2000	7.8	18	9.8	20	10.8	21	11.8	22
7/18/2000	7.4	16.7	9.4	18.7	10.4	19.7	11.4	20.7
7/19/2000	5.2	17.2	7.2	19.2	8.2	20.2	9.2	21.2
7/20/2000	7.9	19.8	9.9	21.8	10.9	22.8	11.9	23.8
7/21/2000	9.5	22.3	11.5	24.3	12.5	25.3	13.5	26.3
7/22/2000	10.4	23.1	12.4	25.1	13.4	26.1	14.4	27.1
7/23/2000	7.6	19.5	9.6	21.5	10.6	22.5	11.6	23.5
7/24/2000	9.2	20.8	11.2	22.8	12.2	23.8	13.2	24.8
7/25/2000	9.2	21.8	11.2	23.8	12.2	24.8	13.2	25.8
7/26/2000	11.8	22.3	13.8	24.3	14.8	25.3	15.8	26.3
7/27/2000	10.6	19.5	12.6	21.5	13.6	22.5	14.6	23.5
7/28/2000	6.9	20.3	8.9	22.3	9.9	23.3	10.9	24.3
7/29/2000	12.6	22	14.6	24	15.6	25	16.6	26
7/30/2000	11.8	23	13.8	25	14.8	26	15.8	27
7/31/2000	14.8	24.1	16.8	26.1	17.8	27.1	18.8	28.1
8/1/2000	15.1	26.7	17.1	28.7	18.1	29.7	19.1	30.7
8/2/2000	14.1	25.3	16.1	27.3	17.1	28.3	18.1	29.3
8/3/2000	13.5	25.4	15.5	27.4	16.5	28.4	17.5	29.4
8/4/2000	9.5	21.2	11.5	23.2	12.5	24.2	13.5	25.2
8/5/2000	10.2	19.4	12.2	21.4	13.2	22.4	14.2	23.4
8/6/2000	10.8	22.1	12.8	24.1	13.8	25.1	14.8	26.1
8/7/2000	9.3	21.3	11.3	23.3	12.3	24.3	13.3	25.3
8/8/2000	9.4	20.8	11.4	22.8	12.4	23.8	13.4	24.8
8/9/2000	9.2	19.8	11.2	21.8	12.2	22.8	13.2	23.8
8/10/2000	6.5	18.4	8.5	20.4	9.5	21.4	10.5	22.4
8/11/2000	6.9	16	8.9	18	9.9	19	10.9	20
8/12/2000	6.3	21	8.3	23	9.3	24	10.3	25
8/13/2000	10.5	21.6	12.5	23.6	13.5	24.6	14.5	25.6
8/14/2000	9.3	20.1	11.3	22.1	12.3	23.1	13.3	24.1
8/15/2000	8.7	21.4	10.7	23.4	11.7	24.4	12.7	25.4
8/16/2000	7.664	22.1	9.664	24.1	10.664	25.1	11.664	26.1
8/17/2000	9.364	23.6	11.364	25.6	12.364	26.6	13.364	27.6
8/18/2000	8.964	21.5	10.964	23.5	11.964	24.5	12.964	25.5
8/19/2000	10.26	18.5	12.26	20.5	13.26	21.5	14.26	22.5
8/20/2000	7.964	18	9.964	20	10.964	21	11.964	22
8/21/2000	5.764	18.2	7.764	20.2	8.764	21.2	9.764	22.2
8/22/2000	6.664	19.8	8.664	21.8	9.664	22.8	10.664	23.8
8/23/2000	7.664	20.3	9.664	22.3	10.664	23.3	11.664	24.3
8/24/2000	8.864	19.7	10.864	21.7	11.864	22.7	12.864	23.7

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/25/2000	7.264	20.6	9.264	22.6	10.264	23.6	11.264	24.6
8/26/2000	9.864	20.7	11.864	22.7	12.864	23.7	13.864	24.7
8/27/2000	10.46	19.8	12.46	21.8	13.46	22.8	14.46	23.8
8/28/2000	9.464	20.6	11.464	22.6	12.464	23.6	13.464	24.6
8/29/2000	9.864	22.2	11.864	24.2	12.864	25.2	13.864	26.2
8/30/2000	9.764	13.5	11.764	15.5	12.764	16.5	13.764	17.5
8/31/2000	7.764	8.601	9.764	10.601	10.764	11.601	11.764	12.601
9/1/2000	6.164	11.9	8.164	13.9	9.164	14.9	10.164	15.9
9/2/2000	2.264	3.301	4.264	5.301	5.264	6.301	6.264	7.301
9/3/2000	2.364	3.001	4.364	5.001	5.364	6.001	6.364	7.001
9/4/2000	4.064	7.601	6.064	9.601	7.064	10.601	8.064	11.601
9/5/2000	2.464	8.001	4.464	10.001	5.464	11.001	6.464	12.001
9/6/2000	-0.6359	8.601	1.3641	10.601	2.3641	11.601	3.3641	12.601
9/7/2000	2.164	10.9	4.164	12.9	5.164	13.9	6.164	14.9
9/8/2000	2.264	16.9	4.264	18.9	5.264	19.9	6.264	20.9
9/9/2000	5.464	15.6	7.464	17.6	8.464	18.6	9.464	19.6
9/10/2000	5.664	17.1	7.664	19.1	8.664	20.1	9.664	21.1
9/11/2000	5.064	17.3	7.064	19.3	8.064	20.3	9.064	21.3
9/12/2000	5.464	21.1	7.464	23.1	8.464	24.1	9.464	25.1
9/13/2000	6.464	20.3	8.464	22.3	9.464	23.3	10.464	24.3
9/14/2000	10.66	21.5	12.66	23.5	13.66	24.5	14.66	25.5
9/15/2000	9.7	19	11.7	21	12.7	22	13.7	23
9/16/2000	7.6	17.3	9.6	19.3	10.6	20.3	11.6	21.3
9/17/2000	9.9	17.1	11.9	19.1	12.9	20.1	13.9	21.1
9/18/2000	10	21.2	12	23.2	13	24.2	14	25.2
9/19/2000	7.6	21	9.6	23	10.6	24	11.6	25
9/20/2000	9.2	24	11.2	26	12.2	27	13.2	28
9/21/2000	7.8	22.8	9.8	24.8	10.8	25.8	11.8	26.8
9/22/2000	6.1	14.7	8.1	16.7	9.1	17.7	10.1	18.7
9/23/2000	0.8	8.5	2.8	10.5	3.8	11.5	4.8	12.5
9/24/2000	-0.8	14.2	1.2	16.2	2.2	17.2	3.2	18.2
9/25/2000	0.3	16.9	2.3	18.9	3.3	19.9	4.3	20.9
9/26/2000	6.5	15.7	8.5	17.7	9.5	18.7	10.5	19.7
9/27/2000	5.6	18	7.6	20	8.6	21	9.6	22
9/28/2000	6.8	15.6	8.8	17.6	9.8	18.6	10.8	19.6
9/29/2000	5.7	15.8	7.7	17.8	8.7	18.8	9.7	19.8
9/30/2000	5.2	17	7.2	19	8.2	20	9.2	21
10/1/2000	6.6	20.7	8.6	22.7	9.6	23.7	10.6	24.7
10/2/2000	9	19	11	21	12	22	13	23
10/3/2000	8.3	15	10.3	17	11.3	18	12.3	19
10/4/2000	4	15.9	6	17.9	7	18.9	8	19.9
10/5/2000	5.3	18.3	7.3	20.3	8.3	21.3	9.3	22.3
10/6/2000	5.4	17.5	7.4	19.5	8.4	20.5	9.4	21.5
10/7/2000	5.6	17.2	7.6	19.2	8.6	20.2	9.6	21.2
10/8/2000	6.3	17.2	8.3	19.2	9.3	20.2	10.3	21.2
10/9/2000	7.8	17.9	9.8	19.9	10.8	20.9	11.8	21.9
10/10/2000	-2.4	9.2	-0.4	11.2	0.6	12.2	1.6	13.2

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/11/2000	-3.4	2	-1.4	4	-0.4	5	0.6	6
10/12/2000	-3.8	-0.1	-1.8	1.9	-0.8	2.9	0.2	3.9
10/13/2000	-5.1	5.8	-3.1	7.8	-2.1	8.8	-1.1	9.8
10/14/2000	-2.5	10.8	-0.5	12.8	0.5	13.8	1.5	14.8
10/15/2000	-0.2	12.3	1.8	14.3	2.8	15.3	3.8	16.3
10/16/2000	1.9	12.5	3.9	14.5	4.9	15.5	5.9	16.5
10/17/2000	3.9	14.1	5.9	16.1	6.9	17.1	7.9	18.1
10/18/2000	5.4	13.2	7.4	15.2	8.4	16.2	9.4	17.2
10/19/2000	4.4	14.1	6.4	16.1	7.4	17.1	8.4	18.1
10/20/2000	3.1	15.7	5.1	17.7	6.1	18.7	7.1	19.7
10/21/2000	2.4	10.7	4.4	12.7	5.4	13.7	6.4	14.7
10/22/2000	-4.6	2.6	-2.6	4.6	-1.6	5.6	-0.6	6.6
10/23/2000	-6.8	1.5	-4.8	3.5	-3.8	4.5	-2.8	5.5
10/24/2000	-5.4	8	-3.4	10	-2.4	11	-1.4	12
10/25/2000	1.4	10.7	3.4	12.7	4.4	13.7	5.4	14.7
10/26/2000	-1.2	3.8	0.8	5.8	1.8	6.8	2.8	7.8
10/27/2000	-3.3	2.9	-1.3	4.9	-0.3	5.9	0.7	6.9
10/28/2000	-2.9	6.9	-0.9	8.9	0.1	9.9	1.1	10.9
10/29/2000	-1.9	0.3	0.1	2.3	1.1	3.3	2.1	4.3
10/30/2000	-5.5	-0.5	-3.5	1.5	-2.5	2.5	-1.5	3.5
10/31/2000	-6	1.4	-4	3.4	-3	4.4	-2	5.4
11/1/2000	-5.2	2.9	-3.2	4.9	-2.2	5.9	-1.2	6.9
11/2/2000	-4.6	9.2	-2.6	11.2	-1.6	12.2	-0.6	13.2
11/3/2000	-4.2	7.3	-2.2	9.3	-1.2	10.3	-0.2	11.3
11/4/2000	-4.6	4.8	-2.6	6.8	-1.6	7.8	-0.6	8.8
11/5/2000	-5.2	10.9	-3.2	12.9	-2.2	13.9	-1.2	14.9
11/6/2000	-0.8	10.1	1.2	12.1	2.2	13.1	3.2	14.1
11/7/2000	-5.5	2.2	-3.5	4.2	-2.5	5.2	-1.5	6.2
11/8/2000	-7.3	5.3	-5.3	7.3	-4.3	8.3	-3.3	9.3
11/9/2000	-3.6	3.4	-1.6	5.4	-0.6	6.4	0.4	7.4
11/10/2000	-8.6	-3.3	-6.6	-1.3	-5.6	-0.3	-4.6	0.7
11/11/2000	-10.7	-5.4	-8.7	-3.4	-7.7	-2.4	-6.7	-1.4
11/12/2000	-13.6	-3.6	-11.6	-1.6	-10.6	-0.6	-9.6	0.4
11/13/2000	-13.2	4.1	-11.2	6.1	-10.2	7.1	-9.2	8.1
11/14/2000	-8.8	0.3	-6.8	2.3	-5.8	3.3	-4.8	4.3
11/15/2000	-11.4	-4.4	-9.4	-2.4	-8.4	-1.4	-7.4	-0.4
11/16/2000	-10.5	-0.4	-8.5	1.6	-7.5	2.6	-6.5	3.6
11/17/2000	-11.4	-1.8	-9.4	0.2	-8.4	1.2	-7.4	2.2
11/18/2000	-11.5	3.3	-9.5	5.3	-8.5	6.3	-7.5	7.3
11/19/2000	-5.1	12	-3.1	14	-2.1	15	-1.1	16
11/20/2000	0.7	9.8	2.7	11.8	3.7	12.8	4.7	13.8
11/21/2000	0.7	10.5	2.7	12.5	3.7	13.5	4.7	14.5
11/22/2000	-4.2	5.9	-2.2	7.9	-1.2	8.9	-0.2	9.9
11/23/2000	-6.7	4	-4.7	6	-3.7	7	-2.7	8
11/24/2000	-3	9.8	-1	11.8	0	12.8	1	13.8
11/25/2000	-2.2	9	-0.2	11	0.8	12	1.8	13
11/26/2000	1.3	8.8	3.3	10.8	4.3	11.8	5.3	12.8

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/27/2000	0.4	8.1	2.4	10.1	3.4	11.1	4.4	12.1
11/28/2000	0.7	4.3	2.7	6.3	3.7	7.3	4.7	8.3
11/29/2000	2.3	10.4	4.3	12.4	5.3	13.4	6.3	14.4
11/30/2000	-3.8	3	-1.8	5	-0.8	6	0.2	7
12/1/2000	-4.4	8.4	-2.4	10.4	-1.4	11.4	-0.4	12.4
12/2/2000	1.9	8.4	3.9	10.4	4.9	11.4	5.9	12.4
12/3/2000	-0.5	10.5	1.5	12.5	2.5	13.5	3.5	14.5
12/4/2000	1.9	10.6	3.9	12.6	4.9	13.6	5.9	14.6
12/5/2000	0.9	9.5	2.9	11.5	3.9	12.5	4.9	13.5
12/6/2000	-0.8	12.5	1.2	14.5	2.2	15.5	3.2	16.5
12/7/2000	0.8	9.7	2.8	11.7	3.8	12.7	4.8	13.7
12/8/2000	-0.5	6.9	1.5	8.9	2.5	9.9	3.5	10.9
12/9/2000	-2.3	6.2	-0.3	8.2	0.7	9.2	1.7	10.2
12/10/2000	-2.1	1	-0.1	3	0.9	4	1.9	5
12/11/2000	-4.4	1.7	-2.4	3.7	-1.4	4.7	-0.4	5.7
12/12/2000	-4.6	3.1	-2.6	5.1	-1.6	6.1	-0.6	7.1
12/13/2000	-8.2	1	-6.2	3	-5.2	4	-4.2	5
12/14/2000	-6.8	-3.3	-4.8	-1.3	-3.8	-0.3	-2.8	0.7
12/15/2000	-4.4	-1.2	-2.4	0.8	-1.4	1.8	-0.4	2.8
12/16/2000	-5.7	4.2	-3.7	6.2	-2.7	7.2	-1.7	8.2
12/17/2000	-6.1	10.1	-4.1	12.1	-3.1	13.1	-2.1	14.1
12/18/2000	-8.2	6.5	-6.2	8.5	-5.2	9.5	-4.2	10.5
12/19/2000	-4.4	12.7	-2.4	14.7	-1.4	15.7	-0.4	16.7
12/20/2000	1.1	6.7	3.1	8.7	4.1	9.7	5.1	10.7
12/21/2000	0.3	8.9	2.3	10.9	3.3	11.9	4.3	12.9
12/22/2000	-1.7	5.6	0.3	7.6	1.3	8.6	2.3	9.6
12/23/2000	-2.2	4.4	-0.2	6.4	0.8	7.4	1.8	8.4
12/24/2000	-1.5	5.1	0.5	7.1	1.5	8.1	2.5	9.1
12/25/2000	-7.9	7.2	-5.9	9.2	-4.9	10.2	-3.9	11.2
12/26/2000	-8.9	2.8	-6.9	4.8	-5.9	5.8	-4.9	6.8
12/27/2000	-8.6	9.9	-6.6	11.9	-5.6	12.9	-4.6	13.9
12/28/2000	1.8	8.5	3.8	10.5	4.8	11.5	5.8	12.5
12/29/2000	0.2	12.6	2.2	14.6	3.2	15.6	4.2	16.6
12/30/2000	2.8	11.4	4.8	13.4	5.8	14.4	6.8	15.4
12/31/2000	0.9	11.1	2.9	13.1	3.9	14.1	4.9	15.1
1/1/2001	-1.4	9.9	0.6	11.9	1.6	12.9	2.6	13.9
1/2/2001	-3.7	9.2	-1.7	11.2	-0.7	12.2	0.3	13.2
1/3/2001	-3.5	10.9	-1.5	12.9	-0.5	13.9	0.5	14.9
1/4/2001	2.9	14.7	4.9	16.7	5.9	17.7	6.9	18.7
1/5/2001	3.3	14	5.3	16	6.3	17	7.3	18
1/6/2001	1.4	11.9	3.4	13.9	4.4	14.9	5.4	15.9
1/7/2001	-0.6	12.7	1.4	14.7	2.4	15.7	3.4	16.7
1/8/2001	0.4	9.7	2.4	11.7	3.4	12.7	4.4	13.7
1/9/2001	-4.4	0.3	-2.4	2.3	-1.4	3.3	-0.4	4.3
1/10/2001	-6.7	1	-4.7	3	-3.7	4	-2.7	5
1/11/2001	-5.1	0.2	-3.1	2.2	-2.1	3.2	-1.1	4.2
1/12/2001	-8.1	-4.7	-6.1	-2.7	-5.1	-1.7	-4.1	-0.7

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/13/2001	-9.4	0.3	-7.4	2.3	-6.4	3.3	-5.4	4.3
1/14/2001	-7.3	-3.7	-5.3	-1.7	-4.3	-0.7	-3.3	0.3
1/15/2001	-10.4	-1	-8.4	1	-7.4	2	-6.4	3
1/16/2001	-12.4	-8.2	-10.4	-6.2	-9.4	-5.2	-8.4	-4.2
1/17/2001	-14.6	-8.4	-12.6	-6.4	-11.6	-5.4	-10.6	-4.4
1/18/2001	-15.6	-0.9	-13.6	1.1	-12.6	2.1	-11.6	3.1
1/19/2001	-6.7	6.9	-4.7	8.9	-3.7	9.9	-2.7	10.9
1/20/2001	-4.6	5	-2.6	7	-1.6	8	-0.6	9
1/21/2001	-2.7	5.2	-0.7	7.2	0.3	8.2	1.3	9.2
1/22/2001	-0.7	8.1	1.3	10.1	2.3	11.1	3.3	12.1
1/23/2001	-3.9	5.4	-1.9	7.4	-0.9	8.4	0.1	9.4
1/24/2001	-4.7	2.6	-2.7	4.6	-1.7	5.6	-0.7	6.6
1/25/2001	-10.5	-4.3	-8.5	-2.3	-7.5	-1.3	-6.5	-0.3
1/26/2001	-10.9	-4.9	-8.9	-2.9	-7.9	-1.9	-6.9	-0.9
1/27/2001	-9.2	-1.8	-7.2	0.2	-6.2	1.2	-5.2	2.2
1/28/2001	-9.7	-5	-7.7	-3	-6.7	-2	-5.7	-1
1/29/2001	-12.4	8.8	-10.4	10.8	-9.4	11.8	-8.4	12.8
1/30/2001	-12.1	-0.8	-10.1	1.2	-9.1	2.2	-8.1	3.2
1/31/2001	-14.1	0	-12.1	2	-11.1	3	-10.1	4
2/1/2001	-13.9	1.4	-11.9	3.4	-10.9	4.4	-9.9	5.4
2/2/2001	-7.2	9.7	-5.2	11.7	-4.2	12.7	-3.2	13.7
2/3/2001	-0.1	5.9	1.9	7.9	2.9	8.9	3.9	9.9
2/4/2001	1.3	11.9	3.3	13.9	4.3	14.9	5.3	15.9
2/5/2001	2.2	13.4	4.2	15.4	5.2	16.4	6.2	17.4
2/6/2001	0.1	9.5	2.1	11.5	3.1	12.5	4.1	13.5
2/7/2001	-11.1	0	-9.1	2	-8.1	3	-7.1	4
2/8/2001	-14.1	-9.5	-12.1	-7.5	-11.1	-6.5	-10.1	-5.5
2/9/2001	-16.5	3.6	-14.5	5.6	-13.5	6.6	-12.5	7.6
2/10/2001	-9.5	-6.4	-7.5	-4.4	-6.5	-3.4	-5.5	-2.4
2/11/2001	-10.3	-7.8	-8.3	-5.8	-7.3	-4.8	-6.3	-3.8
2/12/2001	-12.2	-7.6	-10.2	-5.6	-9.2	-4.6	-8.2	-3.6
2/13/2001	-15.2	-4.7	-13.2	-2.7	-12.2	-1.7	-11.2	-0.7
2/14/2001	-9.8	-4.4	-7.8	-2.4	-6.8	-1.4	-5.8	-0.4
2/15/2001	-10.1	2.9	-8.1	4.9	-7.1	5.9	-6.1	6.9
2/16/2001	-9.3	4.9	-7.3	6.9	-6.3	7.9	-5.3	8.9
2/17/2001	-5.7	4.7	-3.7	6.7	-2.7	7.7	-1.7	8.7
2/18/2001	-4.6	1.5	-2.6	3.5	-1.6	4.5	-0.6	5.5
2/19/2001	-4.5	-0.3	-2.5	1.7	-1.5	2.7	-0.5	3.7
2/20/2001	-5.6	-2.2	-3.6	-0.2	-2.6	0.8	-1.6	1.8
2/21/2001	-5.8	-2.1	-3.8	-0.1	-2.8	0.9	-1.8	1.9
2/22/2001	-4.9	0.2	-2.9	2.2	-1.9	3.2	-0.9	4.2
2/23/2001	-11.3	-4.2	-9.3	-2.2	-8.3	-1.2	-7.3	-0.2
2/24/2001	-13.5	0.3	-11.5	2.3	-10.5	3.3	-9.5	4.3
2/25/2001	-7.8	-2.8	-5.8	-0.8	-4.8	0.2	-3.8	1.2
2/26/2001	-6.8	2.8	-4.8	4.8	-3.8	5.8	-2.8	6.8
2/27/2001	-5.8	-2.9	-3.8	-0.9	-2.8	0.1	-1.8	1.1
2/28/2001	-11.2	1.8	-9.2	3.8	-8.2	4.8	-7.2	5.8

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/1/2001	-14.6	-1.8	-12.6	0.2	-11.6	1.2	-10.6	2.2
3/2/2001	-10.9	6.3	-8.9	8.3	-7.9	9.3	-6.9	10.3
3/3/2001	-10.6	-0.9	-8.6	1.1	-7.6	2.1	-6.6	3.1
3/4/2001	-11.2	2.7	-9.2	4.7	-8.2	5.7	-7.2	6.7
3/5/2001	-2.8	-0.5	-0.8	1.5	0.2	2.5	1.2	3.5
3/6/2001	-3	2.5	-1	4.5	0	5.5	1	6.5
3/7/2001	-1.5	5.2	0.5	7.2	1.5	8.2	2.5	9.2
3/8/2001	-1.8	8.9	0.2	10.9	1.2	11.9	2.2	12.9
3/9/2001	-1.8	6.5	0.2	8.5	1.2	9.5	2.2	10.5
3/10/2001	-7	-0.1	-5	1.9	-4	2.9	-3	3.9
3/11/2001	-7.2	-1.1	-5.2	0.9	-4.2	1.9	-3.2	2.9
3/12/2001	-6.7	4.1	-4.7	6.1	-3.7	7.1	-2.7	8.1
3/13/2001	-6.8	7.1	-4.8	9.1	-3.8	10.1	-2.8	11.1
3/14/2001	-3.5	12.3	-1.5	14.3	-0.5	15.3	0.5	16.3
3/15/2001	-2.2	11.8	-0.2	13.8	0.8	14.8	1.8	15.8
3/16/2001	-2.5	7.5	-0.5	9.5	0.5	10.5	1.5	11.5
3/17/2001	-3.4	8.8	-1.4	10.8	-0.4	11.8	0.6	12.8
3/18/2001	0	12.3	2	14.3	3	15.3	4	16.3
3/19/2001	-0.1	14	1.9	16	2.9	17	3.9	18
3/20/2001	3.3	14.5	5.3	16.5	6.3	17.5	7.3	18.5
3/21/2001	2.1	10.3	4.1	12.3	5.1	13.3	6.1	14.3
3/22/2001	3.3	11.8	5.3	13.8	6.3	14.8	7.3	15.8
3/23/2001	0.3	11	2.3	13	3.3	14	4.3	15
3/24/2001	-0.1	11.6	1.9	13.6	2.9	14.6	3.9	15.6
3/25/2001	1	8.3	3	10.3	4	11.3	5	12.3
3/26/2001	-1.2	8.5	0.8	10.5	1.8	11.5	2.8	12.5
3/27/2001	-1	12.3	1	14.3	2	15.3	3	16.3
3/28/2001	-2.1	13.9	-0.1	15.9	0.9	16.9	1.9	17.9
3/29/2001	2.2	14.5	4.2	16.5	5.2	17.5	6.2	18.5
3/30/2001	-0.3	10.8	1.7	12.8	2.7	13.8	3.7	14.8
3/31/2001	0	15	2	17	3	18	4	19
4/1/2001	1.3	15.8	3.3	17.8	4.3	18.8	5.3	19.8
4/2/2001	-1.4	8	0.6	10	1.6	11	2.6	12
4/3/2001	-7.2	1.8	-5.2	3.8	-4.2	4.8	-3.2	5.8
4/4/2001	-9.6	-4	-7.6	-2	-6.6	-1	-5.6	0
4/5/2001	-9	2.1	-7	4.1	-6	5.1	-5	6.1
4/6/2001	-6.8	4.9	-4.8	6.9	-3.8	7.9	-2.8	8.9
4/7/2001	-6.1	-1.8	-4.1	0.2	-3.1	1.2	-2.1	2.2
4/8/2001	-11.4	-1.7	-9.4	0.3	-8.4	1.3	-7.4	2.3
4/9/2001	-12.6	-3.3	-10.6	-1.3	-9.6	-0.3	-8.6	0.7
4/10/2001	-12.1	-1.2	-10.1	0.8	-9.1	1.8	-8.1	2.8
4/11/2001	-11.5	5.3	-9.5	7.3	-8.5	8.3	-7.5	9.3
4/12/2001	-7.1	-2.3	-5.1	-0.3	-4.1	0.7	-3.1	1.7
4/13/2001	-10.5	7.9	-8.5	9.9	-7.5	10.9	-6.5	11.9
4/14/2001	-6.4	2.2	-4.4	4.2	-3.4	5.2	-2.4	6.2
4/15/2001	-5.6	6.5	-3.6	8.5	-2.6	9.5	-1.6	10.5
4/16/2001	-2	9.9	0	11.9	1	12.9	2	13.9

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/17/2001	1.5	10.9	3.5	12.9	4.5	13.9	5.5	14.9
4/18/2001	0.6	10.2	2.6	12.2	3.6	13.2	4.6	14.2
4/19/2001	-2.3	7.3	-0.3	9.3	0.7	10.3	1.7	11.3
4/20/2001	-7.1	-0.8	-5.1	1.2	-4.1	2.2	-3.1	3.2
4/21/2001	-7.6	-3	-5.6	-1	-4.6	0	-3.6	1
4/22/2001	-6.9	2.5	-4.9	4.5	-3.9	5.5	-2.9	6.5
4/23/2001	-5.5	9.7	-3.5	11.7	-2.5	12.7	-1.5	13.7
4/24/2001	-0.4	14.3	1.6	16.3	2.6	17.3	3.6	18.3
4/25/2001	1	17	3	19	4	20	5	21
4/26/2001	3.9	15.4	5.9	17.4	6.9	18.4	7.9	19.4
4/27/2001	4.1	13.5	6.1	15.5	7.1	16.5	8.1	17.5
4/28/2001	2.1	11.4	4.1	13.4	5.1	14.4	6.1	15.4
4/29/2001	-0.8	6.4	1.2	8.4	2.2	9.4	3.2	10.4
4/30/2001	-0.7	15.5	1.3	17.5	2.3	18.5	3.3	19.5
5/1/2001	5.7	16.3	7.7	18.3	8.7	19.3	9.7	20.3
5/2/2001	-0.3	15.6	1.7	17.6	2.7	18.6	3.7	19.6
5/3/2001	-5.5	2.3	-3.5	4.3	-2.5	5.3	-1.5	6.3
5/4/2001	-5.7	7.4	-3.7	9.4	-2.7	10.4	-1.7	11.4
5/5/2001	-0.7	14.4	1.3	16.4	2.3	17.4	3.3	18.4
5/6/2001	2.8	15	4.8	17	5.8	18	6.8	19
5/7/2001	3.1	16.8	5.1	18.8	6.1	19.8	7.1	20.8
5/8/2001	4.5	20.2	6.5	22.2	7.5	23.2	8.5	24.2
5/9/2001	8	17	10	19	11	20	12	21
5/10/2001	6.8	16.5	8.8	18.5	9.8	19.5	10.8	20.5
5/11/2001	5.5	18.7	7.5	20.7	8.5	21.7	9.5	22.7
5/12/2001	8.2	18.1	10.2	20.1	11.2	21.1	12.2	22.1
5/13/2001	5.7	14.4	7.7	16.4	8.7	17.4	9.7	18.4
5/14/2001	5.1	12.3	7.1	14.3	8.1	15.3	9.1	16.3
5/15/2001	4.8	11.9	6.8	13.9	7.8	14.9	8.8	15.9
5/16/2001	5.1	8.7	7.1	10.7	8.1	11.7	9.1	12.7
5/17/2001	5.4	14.3	7.4	16.3	8.4	17.3	9.4	18.3
5/18/2001	4.5	15	6.5	17	7.5	18	8.5	19
5/19/2001	4.9	16.4	6.9	18.4	7.9	19.4	8.9	20.4
5/20/2001	5.6	17.4	7.6	19.4	8.6	20.4	9.6	21.4
5/21/2001	6.4	17.8	8.4	19.8	9.4	20.8	10.4	21.8
5/22/2001	5.7	18	7.7	20	8.7	21	9.7	22
5/23/2001	5.7	19.1	7.7	21.1	8.7	22.1	9.7	23.1
5/24/2001	10.3	19.4	12.3	21.4	13.3	22.4	14.3	23.4
5/25/2001	8.8	19.2	10.8	21.2	11.8	22.2	12.8	23.2
5/26/2001	8.2	18.8	10.2	20.8	11.2	21.8	12.2	22.8
5/27/2001	8.6	15.4	10.6	17.4	11.6	18.4	12.6	19.4
5/28/2001	6.9	13.8	8.9	15.8	9.9	16.8	10.9	17.8
5/29/2001	4.7	15	6.7	17	7.7	18	8.7	19
5/30/2001	6.3	19.6	8.3	21.6	9.3	22.6	10.3	23.6
5/31/2001	5.6	20.3	7.6	22.3	8.6	23.3	9.6	24.3
6/1/2001	8	21	10	23	11	24	12	25
6/2/2001	7	15.8	9	17.8	10	18.8	11	19.8

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/3/2001	4.1	10.3	6.1	12.3	7.1	13.3	8.1	14.3
6/4/2001	0.7	12.4	2.7	14.4	3.7	15.4	4.7	16.4
6/5/2001	-2	13.8	0	15.8	1	16.8	2	17.8
6/6/2001	4.4	11	6.4	13	7.4	14	8.4	15
6/7/2001	6.3	17.4	8.3	19.4	9.3	20.4	10.3	21.4
6/8/2001	8.5	17.8	10.5	19.8	11.5	20.8	12.5	21.8
6/9/2001	8.3	15.8	10.3	17.8	11.3	18.8	12.3	19.8
6/10/2001	8.3	16.3	10.3	18.3	11.3	19.3	12.3	20.3
6/11/2001	7.3	14.9	9.3	16.9	10.3	17.9	11.3	18.9
6/12/2001	5.7	13.6	7.7	15.6	8.7	16.6	9.7	17.6
6/13/2001	2.6	13.4	4.6	15.4	5.6	16.4	6.6	17.4
6/14/2001	-1.2	13	0.8	15	1.8	16	2.8	17
6/15/2001	2.8	17	4.8	19	5.8	20	6.8	21
6/16/2001	7.8	18	9.8	20	10.8	21	11.8	22
6/17/2001	10.5	20.7	12.5	22.7	13.5	23.7	14.5	24.7
6/18/2001	9.4	16.8	11.4	18.8	12.4	19.8	13.4	20.8
6/19/2001	8.3	18.1	10.3	20.1	11.3	21.1	12.3	22.1
6/20/2001	9.4	19.7	11.4	21.7	12.4	22.7	13.4	23.7
6/21/2001	10.3	22.2	12.3	24.2	13.3	25.2	14.3	26.2
6/22/2001	11.3	21.9	13.3	23.9	14.3	24.9	15.3	25.9
6/23/2001	11.8	20	13.8	22	14.8	23	15.8	24
6/24/2001	9.7	17.2	11.7	19.2	12.7	20.2	13.7	21.2
6/25/2001	7.7	13.7	9.7	15.7	10.7	16.7	11.7	17.7
6/26/2001	4.9	13.8	6.9	15.8	7.9	16.8	8.9	17.8
6/27/2001	5.3	12.5	7.3	14.5	8.3	15.5	9.3	16.5
6/28/2001	6.5	9.2	8.5	11.2	9.5	12.2	10.5	13.2
6/29/2001	6.7	17.3	8.7	19.3	9.7	20.3	10.7	21.3
6/30/2001	11	20.8	13	22.8	14	23.8	15	24.8
7/1/2001	11.4	20	13.4	22	14.4	23	15.4	24
7/2/2001	9.5	21.8	11.5	23.8	12.5	24.8	13.5	25.8
7/3/2001	14.3	24.7	16.3	26.7	17.3	27.7	18.3	28.7
7/4/2001	14.2	23.8	16.2	25.8	17.2	26.8	18.2	27.8
7/5/2001	11.5	20.4	13.5	22.4	14.5	23.4	15.5	24.4
7/6/2001	11.3	20.2	13.3	22.2	14.3	23.2	15.3	24.2
7/7/2001	8.8	16.4	10.8	18.4	11.8	19.4	12.8	20.4
7/8/2001	8.9	16	10.9	18	11.9	19	12.9	20
7/9/2001	8.5	19.5	10.5	21.5	11.5	22.5	12.5	23.5
7/10/2001	7.8	19	9.8	21	10.8	22	11.8	23
7/11/2001	7.8	18.7	9.8	20.7	10.8	21.7	11.8	22.7
7/12/2001	7.4	16.7	9.4	18.7	10.4	19.7	11.4	20.7
7/13/2001	6.5	19	8.5	21	9.5	22	10.5	23
7/14/2001	9.4	18.8	11.4	20.8	12.4	21.8	13.4	22.8
7/15/2001	7.2	16.3	9.2	18.3	10.2	19.3	11.2	20.3
7/16/2001	6.9	15.4	8.9	17.4	9.9	18.4	10.9	19.4
7/17/2001	5.6	13	7.6	15	8.6	16	9.6	17
7/18/2001	4.7	13.6	6.7	15.6	7.7	16.6	8.7	17.6
7/19/2001	5.9	16.2	7.9	18.2	8.9	19.2	9.9	20.2

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/20/2001	7.3	14.9	9.3	16.9	10.3	17.9	11.3	18.9
7/21/2001	6.7	14.5	8.7	16.5	9.7	17.5	10.7	18.5
7/22/2001	3.8	15.1	5.8	17.1	6.8	18.1	7.8	19.1
7/23/2001	6.5	18	8.5	20	9.5	21	10.5	22
7/24/2001	8	19.6	10	21.6	11	22.6	12	23.6
7/25/2001	9.8	22	11.8	24	12.8	25	13.8	26
7/26/2001	12.5	23.6	14.5	25.6	15.5	26.6	16.5	27.6
7/27/2001	11.5	22.4	13.5	24.4	14.5	25.4	15.5	26.4
7/28/2001	12.7	21.3	14.7	23.3	15.7	24.3	16.7	25.3
7/29/2001	11.4	20.2	13.4	22.2	14.4	23.2	15.4	24.2
7/30/2001	10.1	18.7	12.1	20.7	13.1	21.7	14.1	22.7
7/31/2001	5.8	13.2	7.8	15.2	8.8	16.2	9.8	17.2
8/1/2001	4.6	19.7	6.6	21.7	7.6	22.7	8.6	23.7
8/2/2001	9.5	19.7	11.5	21.7	12.5	22.7	13.5	23.7
8/3/2001	12.1	20.7	14.1	22.7	15.1	23.7	16.1	24.7
8/4/2001	9	17.7	11	19.7	12	20.7	13	21.7
8/5/2001	7.7	15.9	9.7	17.9	10.7	18.9	11.7	19.9
8/6/2001	10	21.8	12	23.8	13	24.8	14	25.8
8/7/2001	12.2	23.7	14.2	25.7	15.2	26.7	16.2	27.7
8/8/2001	12.6	24.3	14.6	26.3	15.6	27.3	16.6	28.3
8/9/2001	13.7	23.7	15.7	25.7	16.7	26.7	17.7	27.7
8/10/2001	12.5	22.9	14.5	24.9	15.5	25.9	16.5	26.9
8/11/2001	11.9	21.6	13.9	23.6	14.9	24.6	15.9	25.6
8/12/2001	11	23.6	13	25.6	14	26.6	15	27.6
8/13/2001	13.4	21.1	15.4	23.1	16.4	24.1	17.4	25.1
8/14/2001	12.7	21	14.7	23	15.7	24	16.7	25
8/15/2001	12.1	22.3	14.1	24.3	15.1	25.3	16.1	26.3
8/16/2001	13.6	22.9	15.6	24.9	16.6	25.9	17.6	26.9
8/17/2001	14.3	24.4	16.3	26.4	17.3	27.4	18.3	28.4
8/18/2001	13.9	22.2	15.9	24.2	16.9	25.2	17.9	26.2
8/19/2001	13.1	22	15.1	24	16.1	25	17.1	26
8/20/2001	10.9	20.8	12.9	22.8	13.9	23.8	14.9	24.8
8/21/2001	8.4	17.5	10.4	19.5	11.4	20.5	12.4	21.5
8/22/2001	6.9	16.8	8.9	18.8	9.9	19.8	10.9	20.8
8/23/2001	7	15.3	9	17.3	10	18.3	11	19.3
8/24/2001	7.1	18.1	9.1	20.1	10.1	21.1	11.1	22.1
8/25/2001	8.5	22.9	10.5	24.9	11.5	25.9	12.5	26.9
8/26/2001	10.5	22.9	12.5	24.9	13.5	25.9	14.5	26.9
8/27/2001	14.1	22.9	16.1	24.9	17.1	25.9	18.1	26.9
8/28/2001	11.8	25.9	13.8	27.9	14.8	28.9	15.8	29.9
8/29/2001	13.1	25.2	15.1	27.2	16.1	28.2	17.1	29.2
8/30/2001	11.3	23	13.3	25	14.3	26	15.3	27
8/31/2001	10.9	21.2	12.9	23.2	13.9	24.2	14.9	25.2
9/1/2001	9.8	22.2	11.8	24.2	12.8	25.2	13.8	26.2
9/2/2001	11.1	21.7	13.1	23.7	14.1	24.7	15.1	25.7
9/3/2001	10.1	19.1	12.1	21.1	13.1	22.1	14.1	23.1
9/4/2001	10.2	20.1	12.2	22.1	13.2	23.1	14.2	24.1

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/5/2001	10	20.2	12	22.2	13	23.2	14	24.2
9/6/2001	7.7	16.2	9.7	18.2	10.7	19.2	11.7	20.2
9/7/2001	2.5	18	4.5	20	5.5	21	6.5	22
9/8/2001	5.7	22.6	7.7	24.6	8.7	25.6	9.7	26.6
9/9/2001	4.7	19.5	6.7	21.5	7.7	22.5	8.7	23.5
9/10/2001	8.4	19.8	10.4	21.8	11.4	22.8	12.4	23.8
9/11/2001	10.2	17.7	12.2	19.7	13.2	20.7	14.2	21.7
9/12/2001	8	16.5	10	18.5	11	19.5	12	20.5
9/13/2001	4.6	15.6	6.6	17.6	7.6	18.6	8.6	19.6
9/14/2001	4.4	17.1	6.4	19.1	7.4	20.1	8.4	21.1
9/15/2001	6.3	18.7	8.3	20.7	9.3	21.7	10.3	22.7
9/16/2001	6.1	17.5	8.1	19.5	9.1	20.5	10.1	21.5
9/17/2001	7.3	16.8	9.3	18.8	10.3	19.8	11.3	20.8
9/18/2001	5.4	18.8	7.4	20.8	8.4	21.8	9.4	22.8
9/19/2001	7.2	19.5	9.2	21.5	10.2	22.5	11.2	23.5
9/20/2001	8.8	20.4	10.8	22.4	11.8	23.4	12.8	24.4
9/21/2001	9.4	19.3	11.4	21.3	12.4	22.3	13.4	23.3
9/22/2001	10.6	21.4	12.6	23.4	13.6	24.4	14.6	25.4
9/23/2001	9.5	23.3	11.5	25.3	12.5	26.3	13.5	27.3
9/24/2001	9.2	17	11.2	19	12.2	20	13.2	21
9/25/2001	8.2	18.9	10.2	20.9	11.2	21.9	12.2	22.9
9/26/2001	5.1	11.9	7.1	13.9	8.1	14.9	9.1	15.9
9/27/2001	8.6	17.2	10.6	19.2	11.6	20.2	12.6	21.2
9/28/2001	7	14.9	9	16.9	10	17.9	11	18.9
9/29/2001	4.7	14.6	6.7	16.6	7.7	17.6	8.7	18.6
9/30/2001	3.6	17.1	5.6	19.1	6.6	20.1	7.6	21.1
10/1/2001	6.9	20.1	8.9	22.1	9.9	23.1	10.9	24.1
10/2/2001	10.4	20.9	12.4	22.9	13.4	23.9	14.4	24.9
10/3/2001	10.4	21	12.4	23	13.4	24	14.4	25
10/4/2001	9.7	21.7	11.7	23.7	12.7	24.7	13.7	25.7
10/5/2001	9.1	18.7	11.1	20.7	12.1	21.7	13.1	22.7
10/6/2001	7.4	17.7	9.4	19.7	10.4	20.7	11.4	21.7
10/7/2001	5.1	16.1	7.1	18.1	8.1	19.1	9.1	20.1
10/8/2001	5.1	17	7.1	19	8.1	20	9.1	21
10/9/2001	1.2	11.8	3.2	13.8	4.2	14.8	5.2	15.8
10/10/2001	-2.1	12.3	-0.1	14.3	0.9	15.3	1.9	16.3
10/11/2001	-0.6	15	1.4	17	2.4	18	3.4	19
10/12/2001	1	10.5	3	12.5	4	13.5	5	14.5
10/13/2001	-2	14.9	0	16.9	1	17.9	2	18.9
10/14/2001	5.7	19	7.7	21	8.7	22	9.7	23
10/15/2001	4.2	19.5	6.2	21.5	7.2	22.5	8.2	23.5
10/16/2001	7.5	18	9.5	20	10.5	21	11.5	22
10/17/2001	7.5	15.2	9.5	17.2	10.5	18.2	11.5	19.2
10/18/2001	4.5	13.6	6.5	15.6	7.5	16.6	8.5	17.6
10/19/2001	2.5	17	4.5	19	5.5	20	6.5	21
10/20/2001	4.8	14.6	6.8	16.6	7.8	17.6	8.8	18.6
10/21/2001	5.9	13.9	7.9	15.9	8.9	16.9	9.9	17.9

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/22/2001	4.7	12.2	6.7	14.2	7.7	15.2	8.7	16.2
10/23/2001	3.1	12	5.1	14	6.1	15	7.1	16
10/24/2001	0.1	14.7	2.1	16.7	3.1	17.7	4.1	18.7
10/25/2001	0.8	16.2	2.8	18.2	3.8	19.2	4.8	20.2
10/26/2001	5.3	15.3	7.3	17.3	8.3	18.3	9.3	19.3
10/27/2001	5.9	13.6	7.9	15.6	8.9	16.6	9.9	17.6
10/28/2001	3.6	10.9	5.6	12.9	6.6	13.9	7.6	14.9
10/29/2001	3.7	10.1	5.7	12.1	6.7	13.1	7.7	14.1
10/30/2001	4.5	10.2	6.5	12.2	7.5	13.2	8.5	14.2
10/31/2001	-1	5.9	1	7.9	2	8.9	3	9.9
11/1/2001	-1.1	5	0.9	7	1.9	8	2.9	9
11/2/2001	2.3	13.1	4.3	15.1	5.3	16.1	6.3	17.1
11/3/2001	1.6	11.4	3.6	13.4	4.6	14.4	5.6	15.4
11/4/2001	-0.4	11.1	1.6	13.1	2.6	14.1	3.6	15.1
11/5/2001	2.8	14.8	4.8	16.8	5.8	17.8	6.8	18.8
11/6/2001	3.5	12	5.5	14	6.5	15	7.5	16
11/7/2001	2.4	8.3	4.4	10.3	5.4	11.3	6.4	12.3
11/8/2001	-2	8.8	0	10.8	1	11.8	2	12.8
11/9/2001	-2	11.3	0	13.3	1	14.3	2	15.3
11/10/2001	0.5	9.6	2.5	11.6	3.5	12.6	4.5	13.6
11/11/2001	-0.2	8.6	1.8	10.6	2.8	11.6	3.8	12.6
11/12/2001	1.1	3.5	3.1	5.5	4.1	6.5	5.1	7.5
11/13/2001	-3	5.8	-1	7.8	0	8.8	1	9.8
11/14/2001	-3.8	2.7	-1.8	4.7	-0.8	5.7	0.2	6.7
11/15/2001	-1.8	12.5	0.2	14.5	1.2	15.5	2.2	16.5
11/16/2001	3.1	9.6	5.1	11.6	6.1	12.6	7.1	13.6
11/17/2001	1	7.9	3	9.9	4	10.9	5	11.9
11/18/2001	0.5	5.1	2.5	7.1	3.5	8.1	4.5	9.1
11/19/2001	1.2	10.8	3.2	12.8	4.2	13.8	5.2	14.8
11/20/2001	2.1	8.5	4.1	10.5	5.1	11.5	6.1	12.5
11/21/2001	1.1	6.8	3.1	8.8	4.1	9.8	5.1	10.8
11/22/2001	-0.8	2.6	1.2	4.6	2.2	5.6	3.2	6.6
11/23/2001	-6	1.2	-4	3.2	-3	4.2	-2	5.2
11/24/2001	-6.5	3.1	-4.5	5.1	-3.5	6.1	-2.5	7.1
11/25/2001	-7.3	1.1	-5.3	3.1	-4.3	4.1	-3.3	5.1
11/26/2001	-9.3	-4.6	-7.3	-2.6	-6.3	-1.6	-5.3	-0.6
11/27/2001	-12	-3.1	-10	-1.1	-9	-0.1	-8	0.9
11/28/2001	-11.3	-3.1	-9.3	-1.1	-8.3	-0.1	-7.3	0.9
11/29/2001	-6	-0.7	-4	1.3	-3	2.3	-2	3.3
11/30/2001	-7.4	-2.9	-5.4	-0.9	-4.4	0.1	-3.4	1.1
12/1/2001	-7.7	-1.9	-5.7	0.1	-4.7	1.1	-3.7	2.1
12/2/2001	-5.6	-0.7	-3.6	1.3	-2.6	2.3	-1.6	3.3
12/3/2001	-6.4	-0.4	-4.4	1.6	-3.4	2.6	-2.4	3.6
12/4/2001	-10.5	-1.4	-8.5	0.6	-7.5	1.6	-6.5	2.6
12/5/2001	-12.2	0.8	-10.2	2.8	-9.2	3.8	-8.2	4.8
12/6/2001	-7.9	-1.8	-5.9	0.2	-4.9	1.2	-3.9	2.2
12/7/2001	-2.1	4.9	-0.1	6.9	0.9	7.9	1.9	8.9

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/8/2001	-4.5	3.6	-2.5	5.6	-1.5	6.6	-0.5	7.6
12/9/2001	-2.3	6.9	-0.3	8.9	0.7	9.9	1.7	10.9
12/10/2001	-7	-2.4	-5	-0.4	-4	0.6	-3	1.6
12/11/2001	-9.1	-5.3	-7.1	-3.3	-6.1	-2.3	-5.1	-1.3
12/12/2001	-9.4	1.6	-7.4	3.6	-6.4	4.6	-5.4	5.6
12/13/2001	-8.4	5.4	-6.4	7.4	-5.4	8.4	-4.4	9.4
12/14/2001	-4.7	4.5	-2.7	6.5	-1.7	7.5	-0.7	8.5
12/15/2001	-13.9	-0.6	-11.9	1.4	-10.9	2.4	-9.9	3.4
12/16/2001	-14.3	-0.3	-12.3	1.7	-11.3	2.7	-10.3	3.7
12/17/2001	-3.5	3.8	-1.5	5.8	-0.5	6.8	0.5	7.8
12/18/2001	-6.4	-0.2	-4.4	1.8	-3.4	2.8	-2.4	3.8
12/19/2001	-5.3	0.4	-3.3	2.4	-2.3	3.4	-1.3	4.4
12/20/2001	-1.5	4.3	0.5	6.3	1.5	7.3	2.5	8.3
12/21/2001	-8.3	-0.5	-6.3	1.5	-5.3	2.5	-4.3	3.5
12/22/2001	-9.5	0.6	-7.5	2.6	-6.5	3.6	-5.5	4.6
12/23/2001	-6.7	-3.4	-4.7	-1.4	-3.7	-0.4	-2.7	0.6
12/24/2001	-8.3	-3.1	-6.3	-1.1	-5.3	-0.1	-4.3	0.9
12/25/2001	-12.1	6.6	-10.1	8.6	-9.1	9.6	-8.1	10.6
12/26/2001	-1.8	3.6	0.2	5.6	1.2	6.6	2.2	7.6
12/27/2001	-1.8	3.9	0.2	5.9	1.2	6.9	2.2	7.9
12/28/2001	-1.6	4.8	0.4	6.8	1.4	7.8	2.4	8.8
12/29/2001	-0.9	2.3	1.1	4.3	2.1	5.3	3.1	6.3
12/30/2001	-0.5	1.7	1.5	3.7	2.5	4.7	3.5	5.7
12/31/2001	-0.9	3.3	1.1	5.3	2.1	6.3	3.1	7.3
1/1/2002	-2.6	7	-0.6	9	0.4	10	1.4	11
1/2/2002	0.1	3.7	2.1	5.7	3.1	6.7	4.1	7.7
1/3/2002	-1.6	2.2	0.4	4.2	1.4	5.2	2.4	6.2
1/4/2002	-7.7	0.5	-5.7	2.5	-4.7	3.5	-3.7	4.5
1/5/2002	-8.9	11.5	-6.9	13.5	-5.9	14.5	-4.9	15.5
1/6/2002	-1.2	4	0.8	6	1.8	7	2.8	8
1/7/2002	0.9	3.7	2.9	5.7	3.9	6.7	4.9	7.7
1/8/2002	3	8.1	5	10.1	6	11.1	7	12.1
1/9/2002	0	6.3	2	8.3	3	9.3	4	10.3
1/10/2002	-4.5	3	-2.5	5	-1.5	6	-0.5	7
1/11/2002	-6.4	13.4	-4.4	15.4	-3.4	16.4	-2.4	17.4
1/12/2002	3.9	16	5.9	18	6.9	19	7.9	20
1/13/2002	-1.3	8.7	0.7	10.7	1.7	11.7	2.7	12.7
1/14/2002	-3	12.3	-1	14.3	0	15.3	1	16.3
1/15/2002	-12.3	4	-10.3	6	-9.3	7	-8.3	8
1/16/2002	-12.6	-2.4	-10.6	-0.4	-9.6	0.6	-8.6	1.6
1/17/2002	-13.6	0.3	-11.6	2.3	-10.6	3.3	-9.6	4.3
1/18/2002	-12	-3	-10	-1	-9	0	-8	1
1/19/2002	-9	2	-7	4	-6	5	-5	6
1/20/2002	-11.9	-0.8	-9.9	1.2	-8.9	2.2	-7.9	3.2
1/21/2002	-11.5	5.7	-9.5	7.7	-8.5	8.7	-7.5	9.7
1/22/2002	-8.9	0.2	-6.9	2.2	-5.9	3.2	-4.9	4.2
1/23/2002	-15.4	-3.8	-13.4	-1.8	-12.4	-0.8	-11.4	0.2

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/24/2002	-15.3	-2.1	-13.3	-0.1	-12.3	0.9	-11.3	1.9
1/25/2002	-6.6	10.3	-4.6	12.3	-3.6	13.3	-2.6	14.3
1/26/2002	-1.3	4.6	0.7	6.6	1.7	7.6	2.7	8.6
1/27/2002	-4.8	-0.4	-2.8	1.6	-1.8	2.6	-0.8	3.6
1/28/2002	-13.1	-4.5	-11.1	-2.5	-10.1	-1.5	-9.1	-0.5
1/29/2002	-17.4	-9.6	-15.4	-7.6	-14.4	-6.6	-13.4	-5.6
1/30/2002	-18.2	-7.7	-16.2	-5.7	-15.2	-4.7	-14.2	-3.7
1/31/2002	-17.7	-4.3	-15.7	-2.3	-14.7	-1.3	-13.7	-0.3
2/1/2002	-12.1	3.4	-10.1	5.4	-9.1	6.4	-8.1	7.4
2/2/2002	-10.3	1.7	-8.3	3.7	-7.3	4.7	-6.3	5.7
2/3/2002	-11.8	7.1	-9.8	9.1	-8.8	10.1	-7.8	11.1
2/4/2002	-5	7.8	-3	9.8	-2	10.8	-1	11.8
2/5/2002	-3.9	8.7	-1.9	10.7	-0.9	11.7	0.1	12.7
2/6/2002	-0.4	8.2	1.6	10.2	2.6	11.2	3.6	12.2
2/7/2002	-1.8	6.7	0.2	8.7	1.2	9.7	2.2	10.7
2/8/2002	-3.1	2.5	-1.1	4.5	-0.1	5.5	0.9	6.5
2/9/2002	-8.8	4.6	-6.8	6.6	-5.8	7.6	-4.8	8.6
2/10/2002	-10.8	3.5	-8.8	5.5	-7.8	6.5	-6.8	7.5
2/11/2002	-1.7	12	0.3	14	1.3	15	2.3	16
2/12/2002	-0.9	13.5	1.1	15.5	2.1	16.5	3.1	17.5
2/13/2002	-4.6	6.7	-2.6	8.7	-1.6	9.7	-0.6	10.7
2/14/2002	-2.4	4.5	-0.4	6.5	0.6	7.5	1.6	8.5
2/15/2002	-4.8	7.2	-2.8	9.2	-1.8	10.2	-0.8	11.2
2/16/2002	-4.8	4.8	-2.8	6.8	-1.8	7.8	-0.8	8.8
2/17/2002	-3.2	4.4	-1.2	6.4	-0.2	7.4	0.8	8.4
2/18/2002	-8.3	-1.1	-6.3	0.9	-5.3	1.9	-4.3	2.9
2/19/2002	-9.2	4.6	-7.2	6.6	-6.2	7.6	-5.2	8.6
2/20/2002	-4.4	1.1	-2.4	3.1	-1.4	4.1	-0.4	5.1
2/21/2002	-1.2	10.1	0.8	12.1	1.8	13.1	2.8	14.1
2/22/2002	-0.8	11.2	1.2	13.2	2.2	14.2	3.2	15.2
2/23/2002	2	11	4	13	5	14	6	15
2/24/2002	-4	2.3	-2	4.3	-1	5.3	0	6.3
2/25/2002	-4.2	10.4	-2.2	12.4	-1.2	13.4	-0.2	14.4
2/26/2002	-4.6	11	-2.6	13	-1.6	14	-0.6	15
2/27/2002	-1.6	13.2	0.4	15.2	1.4	16.2	2.4	17.2
2/28/2002	-2.8	8.3	-0.8	10.3	0.2	11.3	1.2	12.3
3/1/2002	-9	8.7	-7	10.7	-6	11.7	-5	12.7
3/2/2002	-13.9	3	-11.9	5	-10.9	6	-9.9	7
3/3/2002	-12.8	5.3	-10.8	7.3	-9.8	8.3	-8.8	9.3
3/4/2002	-4.4	9	-2.4	11	-1.4	12	-0.4	13
3/5/2002	-2.4	6.1	-0.4	8.1	0.6	9.1	1.6	10.1
3/6/2002	-2.3	4.9	-0.3	6.9	0.7	7.9	1.7	8.9
3/7/2002	-4.7	0.3	-2.7	2.3	-1.7	3.3	-0.7	4.3
3/8/2002	-11	-3	-9	-1	-8	0	-7	1
3/9/2002	-14.9	6.2	-12.9	8.2	-11.9	9.2	-10.9	10.2
3/10/2002	-3.4	3.3	-1.4	5.3	-0.4	6.3	0.6	7.3
3/11/2002	-4.8	1	-2.8	3	-1.8	4	-0.8	5

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/12/2002	-2.6	8.7	-0.6	10.7	0.4	11.7	1.4	12.7
3/13/2002	-5.6	3.6	-3.6	5.6	-2.6	6.6	-1.6	7.6
3/14/2002	-12	-0.6	-10	1.4	-9	2.4	-8	3.4
3/15/2002	-13.7	-1.7	-11.7	0.3	-10.7	1.3	-9.7	2.3
3/16/2002	-14	-5.4	-12	-3.4	-11	-2.4	-10	-1.4
3/17/2002	-12.6	-6.2	-10.6	-4.2	-9.6	-3.2	-8.6	-2.2
3/18/2002	-11.3	-4.7	-9.3	-2.7	-8.3	-1.7	-7.3	-0.7
3/19/2002	-13.6	1.5	-11.6	3.5	-10.6	4.5	-9.6	5.5
3/20/2002	-3.8	12.6	-1.8	14.6	-0.8	15.6	0.2	16.6
3/21/2002	-1.6	9.2	0.4	11.2	1.4	12.2	2.4	13.2
3/22/2002	1.4	11.5	3.4	13.5	4.4	14.5	5.4	15.5
3/23/2002	-3.3	5.3	-1.3	7.3	-0.3	8.3	0.7	9.3
3/24/2002	-5.5	-1.5	-3.5	0.5	-2.5	1.5	-1.5	2.5
3/25/2002	-6.8	4.8	-4.8	6.8	-3.8	7.8	-2.8	8.8
3/26/2002	-8.2	5	-6.2	7	-5.2	8	-4.2	9
3/27/2002	-4.9	7.6	-2.9	9.6	-1.9	10.6	-0.9	11.6
3/28/2002	-1.4	12.8	0.6	14.8	1.6	15.8	2.6	16.8
3/29/2002	-2.2	10.4	-0.2	12.4	0.8	13.4	1.8	14.4
3/30/2002	-0.2	13.6	1.8	15.6	2.8	16.6	3.8	17.6
3/31/2002	2.3	15	4.3	17	5.3	18	6.3	19
4/1/2002	1.5	16.1	3.5	18.1	4.5	19.1	5.5	20.1
4/2/2002	3.2	16	5.2	18	6.2	19	7.2	20
4/3/2002	2.3	15.9	4.3	17.9	5.3	18.9	6.3	19.9
4/4/2002	3.8	17.2	5.8	19.2	6.8	20.2	7.8	21.2
4/5/2002	3.2	15.8	5.2	17.8	6.2	18.8	7.2	19.8
4/6/2002	0.3	9.9	2.3	11.9	3.3	12.9	4.3	13.9
4/7/2002	-2.6	11.3	-0.6	13.3	0.4	14.3	1.4	15.3
4/8/2002	-1.5	12.9	0.5	14.9	1.5	15.9	2.5	16.9
4/9/2002	0.7	11.6	2.7	13.6	3.7	14.6	4.7	15.6
4/10/2002	0.4	4.5	2.4	6.5	3.4	7.5	4.4	8.5
4/11/2002	0.9	8.2	2.9	10.2	3.9	11.2	4.9	12.2
4/12/2002	2.8	9.8	4.8	11.8	5.8	12.8	6.8	13.8
4/13/2002	2.8	15.1	4.8	17.1	5.8	18.1	6.8	19.1
4/14/2002	4.5	16.6	6.5	18.6	7.5	19.6	8.5	20.6
4/15/2002	0	11.3	2	13.3	3	14.3	4	15.3
4/16/2002	-9	2.1	-7	4.1	-6	5.1	-5	6.1
4/17/2002	-7.7	0.8	-5.7	2.8	-4.7	3.8	-3.7	4.8
4/18/2002	-8.7	-3.2	-6.7	-1.2	-5.7	-0.2	-4.7	0.8
4/19/2002	-10	2.5	-8	4.5	-7	5.5	-6	6.5
4/20/2002	-7	1.6	-5	3.6	-4	4.6	-3	5.6
4/21/2002	-7.1	6.3	-5.1	8.3	-4.1	9.3	-3.1	10.3
4/22/2002	-4.8	9.2	-2.8	11.2	-1.8	12.2	-0.8	13.2
4/23/2002	1.7	11.6	3.7	13.6	4.7	14.6	5.7	15.6
4/24/2002	3.3	14.2	5.3	16.2	6.3	17.2	7.3	18.2
4/25/2002	-0.3	13.6	1.7	15.6	2.7	16.6	3.7	17.6
4/26/2002	1	13.5	3	15.5	4	16.5	5	17.5
4/27/2002	-1.9	4.3	0.1	6.3	1.1	7.3	2.1	8.3

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/28/2002	-5.4	0.7	-3.4	2.7	-2.4	3.7	-1.4	4.7
4/29/2002	-7.8	7.5	-5.8	9.5	-4.8	10.5	-3.8	11.5
4/30/2002	-4.3	1.4	-2.3	3.4	-1.3	4.4	-0.3	5.4
5/1/2002	-7.4	-0.3	-5.4	1.7	-4.4	2.7	-3.4	3.7
5/2/2002	-7.8	8.6	-5.8	10.6	-4.8	11.6	-3.8	12.6
5/3/2002	-2.4	12.9	-0.4	14.9	0.6	15.9	1.6	16.9
5/4/2002	0.5	10.1	2.5	12.1	3.5	13.1	4.5	14.1
5/5/2002	1.1	11.4	3.1	13.4	4.1	14.4	5.1	15.4
5/6/2002	0.8	12	2.8	14	3.8	15	4.8	16
5/7/2002	1.9	10.7	3.9	12.7	4.9	13.7	5.9	14.7
5/8/2002	-4.2	8.8	-2.2	10.8	-1.2	11.8	-0.2	12.8
5/9/2002	-6.4	10.6	-4.4	12.6	-3.4	13.6	-2.4	14.6
5/10/2002	-0.8	8.2	1.2	10.2	2.2	11.2	3.2	12.2
5/11/2002	-2.3	4	-0.3	6	0.7	7	1.7	8
5/12/2002	-2.2	9.7	-0.2	11.7	0.8	12.7	1.8	13.7
5/13/2002	0.1	13	2.1	15	3.1	16	4.1	17
5/14/2002	4.3	12.5	6.3	14.5	7.3	15.5	8.3	16.5
5/15/2002	3.9	16.1	5.9	18.1	6.9	19.1	7.9	20.1
5/16/2002	3.1	12.9	5.1	14.9	6.1	15.9	7.1	16.9
5/17/2002	1.8	17.2	3.8	19.2	4.8	20.2	5.8	21.2
5/18/2002	5.2	15.6	7.2	17.6	8.2	18.6	9.2	19.6
5/19/2002	4.9	12.6	6.9	14.6	7.9	15.6	8.9	16.6
5/20/2002	-0.9	7.6	1.1	9.6	2.1	10.6	3.1	11.6
5/21/2002	-5.8	-0.8	-3.8	1.2	-2.8	2.2	-1.8	3.2
5/22/2002	-6.4	2.5	-4.4	4.5	-3.4	5.5	-2.4	6.5
5/23/2002	-6.6	6.2	-4.6	8.2	-3.6	9.2	-2.6	10.2
5/24/2002	-2.4	11	-0.4	13	0.6	14	1.6	15
5/25/2002	0.5	12.6	2.5	14.6	3.5	15.6	4.5	16.6
5/26/2002	4.6	12.6	6.6	14.6	7.6	15.6	8.6	16.6
5/27/2002	4.8	12.9	6.8	14.9	7.8	15.9	8.8	16.9
5/28/2002	4	12	6	14	7	15	8	16
5/29/2002	4	15.3	6	17.3	7	18.3	8	19.3
5/30/2002	7.9	19.7	9.9	21.7	10.9	22.7	11.9	23.7
5/31/2002	10.1	18.6	12.1	20.6	13.1	21.6	14.1	22.6
6/1/2002	9.1	19.1	11.1	21.1	12.1	22.1	13.1	23.1
6/2/2002	3.8	11.2	5.8	13.2	6.8	14.2	7.8	15.2
6/3/2002	4	14	6	16	7	17	8	18
6/4/2002	3.4	16.7	5.4	18.7	6.4	19.7	7.4	20.7
6/5/2002	5.5	19.8	7.5	21.8	8.5	22.8	9.5	23.8
6/6/2002	7.9	21.8	9.9	23.8	10.9	24.8	11.9	25.8
6/7/2002	10.1	18.5	12.1	20.5	13.1	21.5	14.1	22.5
6/8/2002	7.3	16.3	9.3	18.3	10.3	19.3	11.3	20.3
6/9/2002	-2.2	11.5	-0.2	13.5	0.8	14.5	1.8	15.5
6/10/2002	-4.9	9.6	-2.9	11.6	-1.9	12.6	-0.9	13.6
6/11/2002	-1.9	13	0.1	15	1.1	16	2.1	17
6/12/2002	1	16.2	3	18.2	4	19.2	5	20.2
6/13/2002	6.9	17.8	8.9	19.8	9.9	20.8	10.9	21.8

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/14/2002	8.6	18.4	10.6	20.4	11.6	21.4	12.6	22.4
6/15/2002	8	17.4	10	19.4	11	20.4	12	21.4
6/16/2002	8.7	19.2	10.7	21.2	11.7	22.2	12.7	23.2
6/17/2002	9.1	18.7	11.1	20.7	12.1	21.7	13.1	22.7
6/18/2002	9.7	17.2	11.7	19.2	12.7	20.2	13.7	21.2
6/19/2002	7.1	15.6	9.1	17.6	10.1	18.6	11.1	19.6
6/20/2002	4.4	17.9	6.4	19.9	7.4	20.9	8.4	21.9
6/21/2002	7.8	16.6	9.8	18.6	10.8	19.6	11.8	20.6
6/22/2002	5.3	15.8	7.3	17.8	8.3	18.8	9.3	19.8
6/23/2002	4.8	18	6.8	20	7.8	21	8.8	22
6/24/2002	8.7	17.4	10.7	19.4	11.7	20.4	12.7	21.4
6/25/2002	9.3	18.6	11.3	20.6	12.3	21.6	13.3	22.6
6/26/2002	9.6	20.9	11.6	22.9	12.6	23.9	13.6	24.9
6/27/2002	10.1	20	12.1	22	13.1	23	14.1	24
6/28/2002	10.1	20.4	12.1	22.4	13.1	23.4	14.1	24.4
6/29/2002	9.7	20.5	11.7	22.5	12.7	23.5	13.7	24.5
6/30/2002	10.4	19.9	12.4	21.9	13.4	22.9	14.4	23.9
7/1/2002	12.3	23.6	14.3	25.6	15.3	26.6	16.3	27.6
7/2/2002	13.3	22.4	15.3	24.4	16.3	25.4	17.3	26.4
7/3/2002	11.4	22	13.4	24	14.4	25	15.4	26
7/4/2002	10.2	17.7	12.2	19.7	13.2	20.7	14.2	21.7
7/5/2002	10.4	18.9	12.4	20.9	13.4	21.9	14.4	22.9
7/6/2002	11.1	19.3	13.1	21.3	14.1	22.3	15.1	23.3
7/7/2002	11.5	20.9	13.5	22.9	14.5	23.9	15.5	24.9
7/8/2002	10	18.2	12	20.2	13	21.2	14	22.2
7/9/2002	9.4	24	11.4	26	12.4	27	13.4	28
7/10/2002	11.4	25.7	13.4	27.7	14.4	28.7	15.4	29.7
7/11/2002	16.5	28.7	18.5	30.7	19.5	31.7	20.5	32.7
7/12/2002	16.6	27.4	18.6	29.4	19.6	30.4	20.6	31.4
7/13/2002	13.1	24.2	15.1	26.2	16.1	27.2	17.1	28.2
7/14/2002	13.9	22.4	15.9	24.4	16.9	25.4	17.9	26.4
7/15/2002	12	21.9	14	23.9	15	24.9	16	25.9
7/16/2002	11.8	18.8	13.8	20.8	14.8	21.8	15.8	22.8
7/17/2002	9.9	19.8	11.9	21.8	12.9	22.8	13.9	23.8
7/18/2002	10.2	19.4	12.2	21.4	13.2	22.4	14.2	23.4
7/19/2002	7.2	15.6	9.2	17.6	10.2	18.6	11.2	19.6
7/20/2002	7.2	20.3	9.2	22.3	10.2	23.3	11.2	24.3
7/21/2002	9.1	22.6	11.1	24.6	12.1	25.6	13.1	26.6
7/22/2002	11.7	20.9	13.7	22.9	14.7	23.9	15.7	24.9
7/23/2002	11.2	18.6	13.2	20.6	14.2	21.6	15.2	22.6
7/24/2002	9.6	19.8	11.6	21.8	12.6	22.8	13.6	23.8
7/25/2002	12.3	19.9	14.3	21.9	15.3	22.9	16.3	23.9
7/26/2002	9.3	19.1	11.3	21.1	12.3	22.1	13.3	23.1
7/27/2002	8.1	22.6	10.1	24.6	11.1	25.6	12.1	26.6
7/28/2002	10.9	22.9	12.9	24.9	13.9	25.9	14.9	26.9
7/29/2002	10.6	24	12.6	26	13.6	27	14.6	28
7/30/2002	13.3	25	15.3	27	16.3	28	17.3	29

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/31/2002	13.7	24	15.7	26	16.7	27	17.7	28
8/1/2002	11.6	22.7	13.6	24.7	14.6	25.7	15.6	26.7
8/2/2002	11.9	22	13.9	24	14.9	25	15.9	26
8/3/2002	10.9	20.3	12.9	22.3	13.9	23.3	14.9	24.3
8/4/2002	8.5	17.1	10.5	19.1	11.5	20.1	12.5	21.1
8/5/2002	7.2	14.3	9.2	16.3	10.2	17.3	11.2	18.3
8/6/2002	6.3	13.3	8.3	15.3	9.3	16.3	10.3	17.3
8/7/2002	5.8	14.3	7.8	16.3	8.8	17.3	9.8	18.3
8/8/2002	5	17.7	7	19.7	8	20.7	9	21.7
8/9/2002	5.5	21.8	7.5	23.8	8.5	24.8	9.5	25.8
8/10/2002	9.2	22.9	11.2	24.9	12.2	25.9	13.2	26.9
8/11/2002	11.5	23.3	13.5	25.3	14.5	26.3	15.5	27.3
8/12/2002	13.4	23.6	15.4	25.6	16.4	26.6	17.4	27.6
8/13/2002	13.2	26.3	15.2	28.3	16.2	29.3	17.2	30.3
8/14/2002	12.5	27.2	14.5	29.2	15.5	30.2	16.5	31.2
8/15/2002	14.4	25.7	16.4	27.7	17.4	28.7	18.4	29.7
8/16/2002	13.8	26	15.8	28	16.8	29	17.8	30
8/17/2002	13.8	23.7	15.8	25.7	16.8	26.7	17.8	27.7
8/18/2002	13.9	23.1	15.9	25.1	16.9	26.1	17.9	27.1
8/19/2002	11.3	22.5	13.3	24.5	14.3	25.5	15.3	26.5
8/20/2002	9.3	19.4	11.3	21.4	12.3	22.4	13.3	23.4
8/21/2002	6.1	15.1	8.1	17.1	9.1	18.1	10.1	19.1
8/22/2002	2.8	16.9	4.8	18.9	5.8	19.9	6.8	20.9
8/23/2002	5.5	15.3	7.5	17.3	8.5	18.3	9.5	19.3
8/24/2002	6.3	17.1	8.3	19.1	9.3	20.1	10.3	21.1
8/25/2002	6.5	18.2	8.5	20.2	9.5	21.2	10.5	22.2
8/26/2002	7.2	20.1	9.2	22.1	10.2	23.1	11.2	24.1
8/27/2002	6.7	20	8.7	22	9.7	23	10.7	24
8/28/2002	6.3	19.3	8.3	21.3	9.3	22.3	10.3	23.3
8/29/2002	6.6	20.5	8.6	22.5	9.6	23.5	10.6	24.5
8/30/2002	8.1	19.2	10.1	21.2	11.1	22.2	12.1	23.2
8/31/2002	9.4	18.2	11.4	20.2	12.4	21.2	13.4	22.2
9/1/2002	8.4	21.7	10.4	23.7	11.4	24.7	12.4	25.7
9/2/2002	10.3	22.3	12.3	24.3	13.3	25.3	14.3	26.3
9/3/2002	11	23.5	13	25.5	14	26.5	15	27.5
9/4/2002	10.9	18	12.9	20	13.9	21	14.9	22
9/5/2002	7.7	11.6	9.7	13.6	10.7	14.6	11.7	15.6
9/6/2002	6.7	12.9	8.7	14.9	9.7	15.9	10.7	16.9
9/7/2002	1.6	7.3	3.6	9.3	4.6	10.3	5.6	11.3
9/8/2002	0.5	9.6	2.5	11.6	3.5	12.6	4.5	13.6
9/9/2002	1.6	14.7	3.6	16.7	4.6	17.7	5.6	18.7
9/10/2002	4.4	17.6	6.4	19.6	7.4	20.6	8.4	21.6
9/11/2002	6.4	20.5	8.4	22.5	9.4	23.5	10.4	24.5
9/12/2002	8.6	20.9	10.6	22.9	11.6	23.9	12.6	24.9
9/13/2002	9.1	21.3	11.1	23.3	12.1	24.3	13.1	25.3
9/14/2002	9.5	22.6	11.5	24.6	12.5	25.6	13.5	26.6
9/15/2002	11.1	20.1	13.1	22.1	14.1	23.1	15.1	24.1

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/16/2002	4.8	16.6	6.8	18.6	7.8	19.6	8.8	20.6
9/17/2002	3.6	16.1	5.6	18.1	6.6	19.1	7.6	20.1
9/18/2002	4.7	15.7	6.7	17.7	7.7	18.7	8.7	19.7
9/19/2002	3.1	14.9	5.1	16.9	6.1	17.9	7.1	18.9
9/20/2002	3.6	19.3	5.6	21.3	6.6	22.3	7.6	23.3
9/21/2002	7.5	20.7	9.5	22.7	10.5	23.7	11.5	24.7
9/22/2002	9.3	21.8	11.3	23.8	12.3	24.8	13.3	25.8
9/23/2002	9.8	22.2	11.8	24.2	12.8	25.2	13.8	26.2
9/24/2002	10.2	21.4	12.2	23.4	13.2	24.4	14.2	25.4
9/25/2002	10.5	19.4	12.5	21.4	13.5	22.4	14.5	23.4
9/26/2002	6.7	19.3	8.7	21.3	9.7	22.3	10.7	23.3
9/27/2002	5.3	18.8	7.3	20.8	8.3	21.8	9.3	22.8
9/28/2002	5.8	12.2	7.8	14.2	8.8	15.2	9.8	16.2
9/29/2002	2.5	12.4	4.5	14.4	5.5	15.4	6.5	16.4
9/30/2002	1.7	11	3.7	13	4.7	14	5.7	15
10/1/2002	0.8	9.7	2.8	11.7	3.8	12.7	4.8	13.7
10/2/2002	-3.7	1.9	-1.7	3.9	-0.7	4.9	0.3	5.9
10/3/2002	-4.4	4.6	-2.4	6.6	-1.4	7.6	-0.4	8.6
10/4/2002	-2.4	13.1	-0.4	15.1	0.6	16.1	1.6	17.1
10/5/2002	0.8	9.3	2.8	11.3	3.8	12.3	4.8	13.3
10/6/2002	3	14.1	5	16.1	6	17.1	7	18.1
10/7/2002	2.9	15.6	4.9	17.6	5.9	18.6	6.9	19.6
10/8/2002	4.1	17.2	6.1	19.2	7.1	20.2	8.1	21.2
10/9/2002	6.3	19.7	8.3	21.7	9.3	22.7	10.3	23.7
10/10/2002	7	17.2	9	19.2	10	20.2	11	21.2
10/11/2002	4.7	11.2	6.7	13.2	7.7	14.2	8.7	15.2
10/12/2002	0.5	13.6	2.5	15.6	3.5	16.6	4.5	17.6
10/13/2002	-1	13	1	15	2	16	3	17
10/14/2002	2.9	16.4	4.9	18.4	5.9	19.4	6.9	20.4
10/15/2002	5	16.6	7	18.6	8	19.6	9	20.6
10/16/2002	3.8	15.6	5.8	17.6	6.8	18.6	7.8	19.6
10/17/2002	2.3	13.5	4.3	15.5	5.3	16.5	6.3	17.5
10/18/2002	3.4	15.7	5.4	17.7	6.4	18.7	7.4	19.7
10/19/2002	5.6	16.5	7.6	18.5	8.6	19.5	9.6	20.5
10/20/2002	4.4	13.5	6.4	15.5	7.4	16.5	8.4	17.5
10/21/2002	3.3	12.5	5.3	14.5	6.3	15.5	7.3	16.5
10/22/2002	-0.9	9.1	1.1	11.1	2.1	12.1	3.1	13.1
10/23/2002	-1.4	11.2	0.6	13.2	1.6	14.2	2.6	15.2
10/24/2002	-0.9	10.1	1.1	12.1	2.1	13.1	3.1	14.1
10/25/2002	-0.5	9.1	1.5	11.1	2.5	12.1	3.5	13.1
10/26/2002	-1	8.8	1	10.8	2	11.8	3	12.8
10/27/2002	-1.7	9	0.3	11	1.3	12	2.3	13
10/28/2002	-2.1	9.9	-0.1	11.9	0.9	12.9	1.9	13.9
10/29/2002	0.2	11.2	2.2	13.2	3.2	14.2	4.2	15.2
10/30/2002	-1.1	8.7	0.9	10.7	1.9	11.7	2.9	12.7
10/31/2002	-1.2	7.2	0.8	9.2	1.8	10.2	2.8	11.2
11/1/2002	-8.5	9.4	-6.5	11.4	-5.5	12.4	-4.5	13.4

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/2/2002	-10.6	8.4	-8.6	10.4	-7.6	11.4	-6.6	12.4
11/3/2002	-1.4	9.6	0.6	11.6	1.6	12.6	2.6	13.6
11/4/2002	-1.4	8.3	0.6	10.3	1.6	11.3	2.6	12.3
11/5/2002	-0.9	10.5	1.1	12.5	2.1	13.5	3.1	14.5
11/6/2002	0.8	11	2.8	13	3.8	14	4.8	15
11/7/2002	1.9	9.9	3.9	11.9	4.9	12.9	5.9	13.9
11/8/2002	-2.4	3.4	-0.4	5.4	0.6	6.4	1.6	7.4
11/9/2002	-0.8	1.8	1.2	3.8	2.2	4.8	3.2	5.8
11/10/2002	-4.1	-1	-2.1	1	-1.1	2	-0.1	3
11/11/2002	-3.7	-0.4	-1.7	1.6	-0.7	2.6	0.3	3.6
11/12/2002	-4.1	11.4	-2.1	13.4	-1.1	14.4	-0.1	15.4
11/13/2002	2.5	8.3	4.5	10.3	5.5	11.3	6.5	12.3
11/14/2002	0.6	8.3	2.6	10.3	3.6	11.3	4.6	12.3
11/15/2002	-2.4	8.2	-0.4	10.2	0.6	11.2	1.6	12.2
11/16/2002	-2.7	10.3	-0.7	12.3	0.3	13.3	1.3	14.3
11/17/2002	1.9	8.1	3.9	10.1	4.9	11.1	5.9	12.1
11/18/2002	-4.5	8.3	-2.5	10.3	-1.5	11.3	-0.5	12.3
11/19/2002	-1.2	11	0.8	13	1.8	14	2.8	15
11/20/2002	0.7	11.4	2.7	13.4	3.7	14.4	4.7	15.4
11/21/2002	0.3	14.6	2.3	16.6	3.3	17.6	4.3	18.6
11/22/2002	4.8	12.9	6.8	14.9	7.8	15.9	8.8	16.9
11/23/2002	2.1	9.9	4.1	11.9	5.1	12.9	6.1	13.9
11/24/2002	-1.4	7.7	0.6	9.7	1.6	10.7	2.6	11.7
11/25/2002	-2.2	9.9	-0.2	11.9	0.8	12.9	1.8	13.9
11/26/2002	-8	0.8	-6	2.8	-5	3.8	-4	4.8
11/27/2002	-6.1	5	-4.1	7	-3.1	8	-2.1	9
11/28/2002	-4.6	5.8	-2.6	7.8	-1.6	8.8	-0.6	9.8
11/29/2002	-4.9	7.8	-2.9	9.8	-1.9	10.8	-0.9	11.8
11/30/2002	-3.6	7.1	-1.6	9.1	-0.6	10.1	0.4	11.1
12/1/2002	-5.3	2.5	-3.3	4.5	-2.3	5.5	-1.3	6.5
12/2/2002	-4.8	6.3	-2.8	8.3	-1.8	9.3	-0.8	10.3
12/3/2002	-4.9	5.2	-2.9	7.2	-1.9	8.2	-0.9	9.2
12/4/2002	-4	8.4	-2	10.4	-1	11.4	0	12.4
12/5/2002	-1.7	9.7	0.3	11.7	1.3	12.7	2.3	13.7
12/6/2002	-2.4	6.4	-0.4	8.4	0.6	9.4	1.6	10.4
12/7/2002	-2.4	5.2	-0.4	7.2	0.6	8.2	1.6	9.2
12/8/2002	-4.7	5.7	-2.7	7.7	-1.7	8.7	-0.7	9.7
12/9/2002	-4.3	9.2	-2.3	11.2	-1.3	12.2	-0.3	13.2
12/10/2002	-3	2	-1	4	0	5	1	6
12/11/2002	-6.2	0.2	-4.2	2.2	-3.2	3.2	-2.2	4.2
12/12/2002	-5.7	5.8	-3.7	7.8	-2.7	8.8	-1.7	9.8
12/13/2002	-1.1	5.2	0.9	7.2	1.9	8.2	2.9	9.2
12/14/2002	-2.1	0.9	-0.1	2.9	0.9	3.9	1.9	4.9
12/15/2002	-4.4	1.9	-2.4	3.9	-1.4	4.9	-0.4	5.9
12/16/2002	-5.2	-2.4	-3.2	-0.4	-2.2	0.6	-1.2	1.6
12/17/2002	-5.9	-2.7	-3.9	-0.7	-2.9	0.3	-1.9	1.3
12/18/2002	-9.5	-5.2	-7.5	-3.2	-6.5	-2.2	-5.5	-1.2

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/19/2002	-11.7	-3.3	-9.7	-1.3	-8.7	-0.3	-7.7	0.7
12/20/2002	-7.9	-2.2	-5.9	-0.2	-4.9	0.8	-3.9	1.8
12/21/2002	-8.7	-5.5	-6.7	-3.5	-5.7	-2.5	-4.7	-1.5
12/22/2002	-8	-2.9	-6	-0.9	-5	0.1	-4	1.1
12/23/2002	-9.3	-5.5	-7.3	-3.5	-6.3	-2.5	-5.3	-1.5
12/24/2002	-11.4	-3.5	-9.4	-1.5	-8.4	-0.5	-7.4	0.5
12/25/2002	-9.2	-5	-7.2	-3	-6.2	-2	-5.2	-1
12/26/2002	-8.1	-1.1	-6.1	0.9	-5.1	1.9	-4.1	2.9
12/27/2002	-5.4	-0.4	-3.4	1.6	-2.4	2.6	-1.4	3.6
12/28/2002	-1.1	0.6	0.9	2.6	1.9	3.6	2.9	4.6
12/29/2002	-7.5	1.3	-5.5	3.3	-4.5	4.3	-3.5	5.3
12/30/2002	-7.8	-4.2	-5.8	-2.2	-4.8	-1.2	-3.8	-0.2
12/31/2002	-6.4	-1	-4.4	1	-3.4	2	-2.4	3
1/1/2003	-9.2	-2.1	-7.2	-0.1	-6.2	0.9	-5.2	1.9
1/2/2003	-8.9	9.6	-6.9	11.6	-5.9	12.6	-4.9	13.6
1/3/2003	3	7.2	5	9.2	6	10.2	7	11.2
1/4/2003	3.5	10.9	5.5	12.9	6.5	13.9	7.5	14.9
1/5/2003	1.9	8.2	3.9	10.2	4.9	11.2	5.9	12.2
1/6/2003	-2.3	8	-0.3	10	0.7	11	1.7	12
1/7/2003	-3.3	6.9	-1.3	8.9	-0.3	9.9	0.7	10.9
1/8/2003	-0.6	10.2	1.4	12.2	2.4	13.2	3.4	14.2
1/9/2003	-0.7	7.2	1.3	9.2	2.3	10.2	3.3	11.2
1/10/2003	-2.2	0.3	-0.2	2.3	0.8	3.3	1.8	4.3
1/11/2003	-2.7	0.5	-0.7	2.5	0.3	3.5	1.3	4.5
1/12/2003	-4.9	3.8	-2.9	5.8	-1.9	6.8	-0.9	7.8
1/13/2003	-0.5	4.4	1.5	6.4	2.5	7.4	3.5	8.4
1/14/2003	1.3	8	3.3	10	4.3	11	5.3	12
1/15/2003	-2	5	0	7	1	8	2	9
1/16/2003	-5.8	14.8	-3.8	16.8	-2.8	17.8	-1.8	18.8
1/17/2003	2.6	14.9	4.6	16.9	5.6	17.9	6.6	18.9
1/18/2003	-0.3	11.9	1.7	13.9	2.7	14.9	3.7	15.9
1/19/2003	-0.3	11.6	1.7	13.6	2.7	14.6	3.7	15.6
1/20/2003	1.7	11.6	3.7	13.6	4.7	14.6	5.7	15.6
1/21/2003	-0.4	7.9	1.6	9.9	2.6	10.9	3.6	11.9
1/22/2003	-2.5	2.2	-0.5	4.2	0.5	5.2	1.5	6.2
1/23/2003	0.2	5.8	2.2	7.8	3.2	8.8	4.2	9.8
1/24/2003	0	3	2	5	3	6	4	7
1/25/2003	-1.6	8	0.4	10	1.4	11	2.4	12
1/26/2003	0.1	9.8	2.1	11.8	3.1	12.8	4.1	13.8
1/27/2003	5.2	12.1	7.2	14.1	8.2	15.1	9.2	16.1
1/28/2003	-1	7	1	9	2	10	3	11
1/29/2003	-4.6	8.5	-2.6	10.5	-1.6	11.5	-0.6	12.5
1/30/2003	0	12.1	2	14.1	3	15.1	4	16.1
1/31/2003	0.2	13.2	2.2	15.2	3.2	16.2	4.2	17.2
2/1/2003	5.4	13	7.4	15	8.4	16	9.4	17
2/2/2003	-7.8	5.6	-5.8	7.6	-4.8	8.6	-3.8	9.6
2/3/2003	-10.3	1.3	-8.3	3.3	-7.3	4.3	-6.3	5.3

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/4/2003	-9.3	8.5	-7.3	10.5	-6.3	11.5	-5.3	12.5
2/5/2003	-10.6	5.9	-8.6	7.9	-7.6	8.9	-6.6	9.9
2/6/2003	-13.3	2.9	-11.3	4.9	-10.3	5.9	-9.3	6.9
2/7/2003	-12.9	-1.7	-10.9	0.3	-9.9	1.3	-8.9	2.3
2/8/2003	-13.6	-2	-11.6	0	-10.6	1	-9.6	2
2/9/2003	-14	2.7	-12	4.7	-11	5.7	-10	6.7
2/10/2003	-7.7	6.2	-5.7	8.2	-4.7	9.2	-3.7	10.2
2/11/2003	-2.5	9.6	-0.5	11.6	0.5	12.6	1.5	13.6
2/12/2003	-4.2	5	-2.2	7	-1.2	8	-0.2	9
2/13/2003	-3.3	4.4	-1.3	6.4	-0.3	7.4	0.7	8.4
2/14/2003	-1.2	1.7	0.8	3.7	1.8	4.7	2.8	5.7
2/15/2003	-3.9	10	-1.9	12	-0.9	13	0.1	14
2/16/2003	-2.4	3.9	-0.4	5.9	0.6	6.9	1.6	7.9
2/17/2003	-6.3	-1	-4.3	1	-3.3	2	-2.3	3
2/18/2003	-6.5	2.1	-4.5	4.1	-3.5	5.1	-2.5	6.1
2/19/2003	-7.1	4.7	-5.1	6.7	-4.1	7.7	-3.1	8.7
2/20/2003	-8.9	-2.2	-6.9	-0.2	-5.9	0.8	-4.9	1.8
2/21/2003	-5.8	5.3	-3.8	7.3	-2.8	8.3	-1.8	9.3
2/22/2003	-2.8	10.4	-0.8	12.4	0.2	13.4	1.2	14.4
2/23/2003	-3.6	8.7	-1.6	10.7	-0.6	11.7	0.4	12.7
2/24/2003	-2.6	8.9	-0.6	10.9	0.4	11.9	1.4	12.9
2/25/2003	-4	2.9	-2	4.9	-1	5.9	0	6.9
2/26/2003	-7.6	-1.5	-5.6	0.5	-4.6	1.5	-3.6	2.5
2/27/2003	-9.5	0.2	-7.5	2.2	-6.5	3.2	-5.5	4.2
2/28/2003	-8.8	1.6	-6.8	3.6	-5.8	4.6	-4.8	5.6
3/1/2003	-10.6	2	-8.6	4	-7.6	5	-6.6	6
3/2/2003	-7.6	1.7	-5.6	3.7	-4.6	4.7	-3.6	5.7
3/3/2003	-10.2	10.7	-8.2	12.7	-7.2	13.7	-6.2	14.7
3/4/2003	-5.6	1.2	-3.6	3.2	-2.6	4.2	-1.6	5.2
3/5/2003	-7.3	0.4	-5.3	2.4	-4.3	3.4	-3.3	4.4
3/6/2003	-7	8.7	-5	10.7	-4	11.7	-3	12.7
3/7/2003	-2.5	8	-0.5	10	0.5	11	1.5	12
3/8/2003	-2.4	7.3	-0.4	9.3	0.6	10.3	1.6	11.3
3/9/2003	-0.3	10.4	1.7	12.4	2.7	13.4	3.7	14.4
3/10/2003	0.4	8.4	2.4	10.4	3.4	11.4	4.4	12.4
3/11/2003	-0.3	8.6	1.7	10.6	2.7	11.6	3.7	12.6
3/12/2003	-1.2	13.3	0.8	15.3	1.8	16.3	2.8	17.3
3/13/2003	-0.2	10.4	1.8	12.4	2.8	13.4	3.8	14.4
3/14/2003	0	8	2	10	3	11	4	12
3/15/2003	-1.6	4.5	0.4	6.5	1.4	7.5	2.4	8.5
3/16/2003	-5.6	0.2	-3.6	2.2	-2.6	3.2	-1.6	4.2
3/17/2003	-6.4	1.6	-4.4	3.6	-3.4	4.6	-2.4	5.6
3/18/2003	-8.1	1.3	-6.1	3.3	-5.1	4.3	-4.1	5.3
3/19/2003	-7.5	3.7	-5.5	5.7	-4.5	6.7	-3.5	7.7
3/20/2003	-7.3	11.5	-5.3	13.5	-4.3	14.5	-3.3	15.5
3/21/2003	-4.3	6.9	-2.3	8.9	-1.3	9.9	-0.3	10.9
3/22/2003	-1.5	12.5	0.5	14.5	1.5	15.5	2.5	16.5

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/23/2003	0.3	6.9	2.3	8.9	3.3	9.9	4.3	10.9
3/24/2003	-1	2	1	4	2	5	3	6
3/25/2003	-2.1	8.2	-0.1	10.2	0.9	11.2	1.9	12.2
3/26/2003	0.2	10.2	2.2	12.2	3.2	13.2	4.2	14.2
3/27/2003	-3.9	3.3	-1.9	5.3	-0.9	6.3	0.1	7.3
3/28/2003	-6	4.6	-4	6.6	-3	7.6	-2	8.6
3/29/2003	-7.4	6.1	-5.4	8.1	-4.4	9.1	-3.4	10.1
3/30/2003	-4.9	12	-2.9	14	-1.9	15	-0.9	16
3/31/2003	0.5	16.1	2.5	18.1	3.5	19.1	4.5	20.1
4/1/2003	2.4	10.9	4.4	12.9	5.4	13.9	6.4	14.9
4/2/2003	-7.7	2.6	-5.7	4.6	-4.7	5.6	-3.7	6.6
4/3/2003	-9.2	-4.1	-7.2	-2.1	-6.2	-1.1	-5.2	-0.1
4/4/2003	-11.2	-3.3	-9.2	-1.3	-8.2	-0.3	-7.2	0.7
4/5/2003	-10.8	-3	-8.8	-1	-7.8	0	-6.8	1
4/6/2003	-12.1	1.9	-10.1	3.9	-9.1	4.9	-8.1	5.9
4/7/2003	-8.6	5.2	-6.6	7.2	-5.6	8.2	-4.6	9.2
4/8/2003	-7	11.7	-5	13.7	-4	14.7	-3	15.7
4/9/2003	0.6	11.1	2.6	13.1	3.6	14.1	4.6	15.1
4/10/2003	1.4	11.1	3.4	13.1	4.4	14.1	5.4	15.1
4/11/2003	0.3	7.9	2.3	9.9	3.3	10.9	4.3	11.9
4/12/2003	-0.8	8.4	1.2	10.4	2.2	11.4	3.2	12.4
4/13/2003	-2.1	0.5	-0.1	2.5	0.9	3.5	1.9	4.5
4/14/2003	-5.9	-2	-3.9	0	-2.9	1	-1.9	2
4/15/2003	-6.7	2.7	-4.7	4.7	-3.7	5.7	-2.7	6.7
4/16/2003	-9.8	1.2	-7.8	3.2	-6.8	4.2	-5.8	5.2
4/17/2003	-5.6	2	-3.6	4	-2.6	5	-1.6	6
4/18/2003	-4.9	3.4	-2.9	5.4	-1.9	6.4	-0.9	7.4
4/19/2003	-7.2	5	-5.2	7	-4.2	8	-3.2	9
4/20/2003	-8.1	9.9	-6.1	11.9	-5.1	12.9	-4.1	13.9
4/21/2003	-1.8	4.9	0.2	6.9	1.2	7.9	2.2	8.9
4/22/2003	-8.5	-1.2	-6.5	0.8	-5.5	1.8	-4.5	2.8
4/23/2003	-8.3	4.3	-6.3	6.3	-5.3	7.3	-4.3	8.3
4/24/2003	-4.9	6.5	-2.9	8.5	-1.9	9.5	-0.9	10.5
4/25/2003	-3.3	0.3	-1.3	2.3	-0.3	3.3	0.7	4.3
4/26/2003	-4.2	-1	-2.2	1	-1.2	2	-0.2	3
4/27/2003	-5.2	2.7	-3.2	4.7	-2.2	5.7	-1.2	6.7
4/28/2003	-3.9	4.3	-1.9	6.3	-0.9	7.3	0.1	8.3
4/29/2003	-6	0.4	-4	2.4	-3	3.4	-2	4.4
4/30/2003	-6.4	0.3	-4.4	2.3	-3.4	3.3	-2.4	4.3
5/1/2003	-8.1	6.1	-6.1	8.1	-5.1	9.1	-4.1	10.1
5/2/2003	-5.2	7.9	-3.2	9.9	-2.2	10.9	-1.2	11.9
5/3/2003	-1.2	4.4	0.8	6.4	1.8	7.4	2.8	8.4
5/4/2003	-1.9	3.4	0.1	5.4	1.1	6.4	2.1	7.4
5/5/2003	-5.2	1.8	-3.2	3.8	-2.2	4.8	-1.2	5.8
5/6/2003	-5.5	8.1	-3.5	10.1	-2.5	11.1	-1.5	12.1
5/7/2003	-2.5	5.9	-0.5	7.9	0.5	8.9	1.5	9.9
5/8/2003	-2.7	1.5	-0.7	3.5	0.3	4.5	1.3	5.5

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/9/2003	-8.4	-2.3	-6.4	-0.3	-5.4	0.7	-4.4	1.7
5/10/2003	-10	3.7	-8	5.7	-7	6.7	-6	7.7
5/11/2003	-4.8	7.8	-2.8	9.8	-1.8	10.8	-0.8	11.8
5/12/2003	-0.9	9.3	1.1	11.3	2.1	12.3	3.1	13.3
5/13/2003	2.6	12.2	4.6	14.2	5.6	15.2	6.6	16.2
5/14/2003	2.9	15.8	4.9	17.8	5.9	18.8	6.9	19.8
5/15/2003	2.8	11.7	4.8	13.7	5.8	14.7	6.8	15.7
5/16/2003	3.2	12.2	5.2	14.2	6.2	15.2	7.2	16.2
5/17/2003	4.7	13.3	6.7	15.3	7.7	16.3	8.7	17.3
5/18/2003	3.2	13.4	5.2	15.4	6.2	16.4	7.2	17.4
5/19/2003	-0.8	13.5	1.2	15.5	2.2	16.5	3.2	17.5
5/20/2003	-3.4	15.8	-1.4	17.8	-0.4	18.8	0.6	19.8
5/21/2003	3.2	17.3	5.2	19.3	6.2	20.3	7.2	21.3
5/22/2003	6.3	17.8	8.3	19.8	9.3	20.8	10.3	21.8
5/23/2003	8.7	20.1	10.7	22.1	11.7	23.1	12.7	24.1
5/24/2003	8.3	21.1	10.3	23.1	11.3	24.1	12.3	25.1
5/25/2003	7.4	17.1	9.4	19.1	10.4	20.1	11.4	21.1
5/26/2003	4.4	12.5	6.4	14.5	7.4	15.5	8.4	16.5
5/27/2003	5.2	16.7	7.2	18.7	8.2	19.7	9.2	20.7
5/28/2003	6.7	23.7	8.7	25.7	9.7	26.7	10.7	27.7
5/29/2003	10.3	20.9	12.3	22.9	13.3	23.9	14.3	24.9
5/30/2003	8.4	19.9	10.4	21.9	11.4	22.9	12.4	23.9
5/31/2003	6.5	14.8	8.5	16.8	9.5	17.8	10.5	18.8
6/1/2003	6.7	16.8	8.7	18.8	9.7	19.8	10.7	20.8
6/2/2003	5.7	21.5	7.7	23.5	8.7	24.5	9.7	25.5
6/3/2003	9.3	21.4	11.3	23.4	12.3	24.4	13.3	25.4
6/4/2003	8	22.4	10	24.4	11	25.4	12	26.4
6/5/2003	8.6	22.3	10.6	24.3	11.6	25.3	12.6	26.3
6/6/2003	7.5	20.5	9.5	22.5	10.5	23.5	11.5	24.5
6/7/2003	9.5	21.3	11.5	23.3	12.5	24.3	13.5	25.3
6/8/2003	10.3	22.1	12.3	24.1	13.3	25.1	14.3	26.1
6/9/2003	9	19.5	11	21.5	12	22.5	13	23.5
6/10/2003	7.9	15.8	9.9	17.8	10.9	18.8	11.9	19.8
6/11/2003	6.7	15.6	8.7	17.6	9.7	18.6	10.7	19.6
6/12/2003	5.3	15.5	7.3	17.5	8.3	18.5	9.3	19.5
6/13/2003	3.9	14.3	5.9	16.3	6.9	17.3	7.9	18.3
6/14/2003	5.7	15.2	7.7	17.2	8.7	18.2	9.7	19.2
6/15/2003	7.6	17.7	9.6	19.7	10.6	20.7	11.6	21.7
6/16/2003	7	19.2	9	21.2	10	22.2	11	23.2
6/17/2003	8.4	20.7	10.4	22.7	11.4	23.7	12.4	24.7
6/18/2003	10.9	22.1	12.9	24.1	13.9	25.1	14.9	26.1
6/19/2003	7.9	17.4	9.9	19.4	10.9	20.4	11.9	21.4
6/20/2003	5.3	13.7	7.3	15.7	8.3	16.7	9.3	17.7
6/21/2003	3.4	12.9	5.4	14.9	6.4	15.9	7.4	16.9
6/22/2003	3.5	13.2	5.5	15.2	6.5	16.2	7.5	17.2
6/23/2003	3.1	12.2	5.1	14.2	6.1	15.2	7.1	16.2
6/24/2003	-0.2	9.1	1.8	11.1	2.8	12.1	3.8	13.1

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/25/2003	0.2	13	2.2	15	3.2	16	4.2	17
6/26/2003	4.5	17.4	6.5	19.4	7.5	20.4	8.5	21.4
6/27/2003	7.4	20.1	9.4	22.1	10.4	23.1	11.4	24.1
6/28/2003	10.6	22.1	12.6	24.1	13.6	25.1	14.6	26.1
6/29/2003	11.4	21.5	13.4	23.5	14.4	24.5	15.4	25.5
6/30/2003	8.5	16.7	10.5	18.7	11.5	19.7	12.5	20.7
7/1/2003	7.5	17.3	9.5	19.3	10.5	20.3	11.5	21.3
7/2/2003	7.5	15	9.5	17	10.5	18	11.5	19
7/3/2003	8	15.7	10	17.7	11	18.7	12	19.7
7/4/2003	9	16.5	11	18.5	12	19.5	13	20.5
7/5/2003	9.4	21.2	11.4	23.2	12.4	24.2	13.4	25.2
7/6/2003	10.4	21.2	12.4	23.2	13.4	24.2	14.4	25.2
7/7/2003	9.5	19.3	11.5	21.3	12.5	22.3	13.5	23.3
7/8/2003	8.6	16.7	10.6	18.7	11.6	19.7	12.6	20.7
7/9/2003	7.5	20.2	9.5	22.2	10.5	23.2	11.5	24.2
7/10/2003	10.8	24.1	12.8	26.1	13.8	27.1	14.8	28.1
7/11/2003	11.5	20.8	13.5	22.8	14.5	23.8	15.5	24.8
7/12/2003	12.2	22.3	14.2	24.3	15.2	25.3	16.2	26.3
7/13/2003	11.3	19.7	13.3	21.7	14.3	22.7	15.3	23.7
7/14/2003	10.3	20.5	12.3	22.5	13.3	23.5	14.3	24.5
7/15/2003	11.7	21.7	13.7	23.7	14.7	24.7	15.7	25.7
7/16/2003	10.9	20.2	12.9	22.2	13.9	23.2	14.9	24.2
7/17/2003	13.2	20.7	15.2	22.7	16.2	23.7	17.2	24.7
7/18/2003	14.4	22.2	16.4	24.2	17.4	25.2	18.4	26.2
7/19/2003	11.2	22.9	13.2	24.9	14.2	25.9	15.2	26.9
7/20/2003	12.7	23.6	14.7	25.6	15.7	26.6	16.7	27.6
7/21/2003	13.5	23.2	15.5	25.2	16.5	26.2	17.5	27.2
7/22/2003	13	24.4	15	26.4	16	27.4	17	28.4
7/23/2003	13.5	25.5	15.5	27.5	16.5	28.5	17.5	29.5
7/24/2003	12.8	22.4	14.8	24.4	15.8	25.4	16.8	26.4
7/25/2003	11.3	20.3	13.3	22.3	14.3	23.3	15.3	24.3
7/26/2003	10.9	19.6	12.9	21.6	13.9	22.6	14.9	23.6
7/27/2003	10.1	20.5	12.1	22.5	13.1	23.5	14.1	24.5
7/28/2003	11.5	20.6	13.5	22.6	14.5	23.6	15.5	24.6
7/29/2003	11.2	23.5	13.2	25.5	14.2	26.5	15.2	27.5
7/30/2003	13.3	24.2	15.3	26.2	16.3	27.2	17.3	28.2
7/31/2003	13.8	25.1	15.8	27.1	16.8	28.1	17.8	29.1
8/1/2003	9.4	21.5	11.4	23.5	12.4	24.5	13.4	25.5
8/2/2003	9.2	17.2	11.2	19.2	12.2	20.2	13.2	21.2
8/3/2003	8.4	10.8	10.4	12.8	11.4	13.8	12.4	14.8
8/4/2003	7.1	16.9	9.1	18.9	10.1	19.9	11.1	20.9
8/5/2003	7.7	16.9	9.7	18.9	10.7	19.9	11.7	20.9
8/6/2003	6	14.9	8	16.9	9	17.9	10	18.9
8/7/2003	5.2	14.1	7.2	16.1	8.2	17.1	9.2	18.1
8/8/2003	6	15.8	8	17.8	9	18.8	10	19.8
8/9/2003	5.2	16.7	7.2	18.7	8.2	19.7	9.2	20.7
8/10/2003	8.6	17.8	10.6	19.8	11.6	20.8	12.6	21.8

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/11/2003	11	18.9	13	20.9	14	21.9	15	22.9
8/12/2003	11.4	18.6	13.4	20.6	14.4	21.6	15.4	22.6
8/13/2003	8.7	17.9	10.7	19.9	11.7	20.9	12.7	21.9
8/14/2003	7.5	19.2	9.5	21.2	10.5	22.2	11.5	23.2
8/15/2003	10.5	19.6	12.5	21.6	13.5	22.6	14.5	23.6
8/16/2003	12.4	21.2	14.4	23.2	15.4	24.2	16.4	25.2
8/17/2003	12.1	20.1	14.1	22.1	15.1	23.1	16.1	24.1
8/18/2003	11	22.6	13	24.6	14	25.6	15	26.6
8/19/2003	12.9	24.8	14.9	26.8	15.9	27.8	16.9	28.8
8/20/2003	12.8	21.1	14.8	23.1	15.8	24.1	16.8	25.1
8/21/2003	11.3	20.5	13.3	22.5	14.3	23.5	15.3	24.5
8/22/2003	9.4	14.8	11.4	16.8	12.4	17.8	13.4	18.8
8/23/2003	6.5	14.7	8.5	16.7	9.5	17.7	10.5	18.7
8/24/2003	5.3	17.6	7.3	19.6	8.3	20.6	9.3	21.6
8/25/2003	9.9	19.3	11.9	21.3	12.9	22.3	13.9	23.3
8/26/2003	11.7	21.3	13.7	23.3	14.7	24.3	15.7	25.3
8/27/2003	6.3	17.8	8.3	19.8	9.3	20.8	10.3	21.8
8/28/2003	10.6	17.7	12.6	19.7	13.6	20.7	14.6	21.7
8/29/2003	9.7	17.4	11.7	19.4	12.7	20.4	13.7	21.4
8/30/2003	8.6	21	10.6	23	11.6	24	12.6	25
8/31/2003	8.7	22.9	10.7	24.9	11.7	25.9	12.7	26.9
9/1/2003	8.6	15.6	10.6	17.6	11.6	18.6	12.6	19.6
9/2/2003	8.7	19.1	10.7	21.1	11.7	22.1	12.7	23.1
9/3/2003	10.7	20.5	12.7	22.5	13.7	23.5	14.7	24.5
9/4/2003	8.6	19.4	10.6	21.4	11.6	22.4	12.6	23.4
9/5/2003	10.8	19.6	12.8	21.6	13.8	22.6	14.8	23.6
9/6/2003	10.3	17.9	12.3	19.9	13.3	20.9	14.3	21.9
9/7/2003	9.2	16.7	11.2	18.7	12.2	19.7	13.2	20.7
9/8/2003	6	14.8	8	16.8	9	17.8	10	18.8
9/9/2003	4.6	12.3	6.6	14.3	7.6	15.3	8.6	16.3
9/10/2003	1.6	8.9	3.6	10.9	4.6	11.9	5.6	12.9
9/11/2003	1.1	15.3	3.1	17.3	4.1	18.3	5.1	19.3
9/12/2003	9.3	21.3	11.3	23.3	12.3	24.3	13.3	25.3
9/13/2003	7.1	20.8	9.1	22.8	10.1	23.8	11.1	24.8
9/14/2003	2.8	16.2	4.8	18.2	5.8	19.2	6.8	20.2
9/15/2003	6.6	17.6	8.6	19.6	9.6	20.6	10.6	21.6
9/16/2003	8.2	15.3	10.2	17.3	11.2	18.3	12.2	19.3
9/17/2003	6.6	13.3	8.6	15.3	9.6	16.3	10.6	17.3
9/18/2003	1.6	12.9	3.6	14.9	4.6	15.9	5.6	16.9
9/19/2003	0.6	18	2.6	20	3.6	21	4.6	22
9/20/2003	8	17.3	10	19.3	11	20.3	12	21.3
9/21/2003	7.3	20.7	9.3	22.7	10.3	23.7	11.3	24.7
9/22/2003	8.5	21.2	10.5	23.2	11.5	24.2	12.5	25.2
9/23/2003	9.7	22.2	11.7	24.2	12.7	25.2	13.7	26.2
9/24/2003	11.2	23.5	13.2	25.5	14.2	26.5	15.2	27.5
9/25/2003	10.4	22.1	12.4	24.1	13.4	25.1	14.4	26.1
9/26/2003	9.6	21	11.6	23	12.6	24	13.6	25

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/27/2003	10.9	21.6	12.9	23.6	13.9	24.6	14.9	25.6
9/28/2003	10	22.8	12	24.8	13	25.8	14	26.8
9/29/2003	11.6	21.4	13.6	23.4	14.6	24.4	15.6	25.4
9/30/2003	10.2	16.4	12.2	18.4	13.2	19.4	14.2	20.4
10/1/2003	10	17	12	19	13	20	14	21
10/2/2003	7.4	15.6	9.4	17.6	10.4	18.6	11.4	19.6
10/3/2003	4.8	17	6.8	19	7.8	20	8.8	21
10/4/2003	4.2	15.9	6.2	17.9	7.2	18.9	8.2	19.9
10/5/2003	6.8	14.8	8.8	16.8	9.8	17.8	10.8	18.8
10/6/2003	7.2	17.5	9.2	19.5	10.2	20.5	11.2	21.5
10/7/2003	6.4	19.7	8.4	21.7	9.4	22.7	10.4	23.7
10/8/2003	6.8	17.2	8.8	19.2	9.8	20.2	10.8	21.2
10/9/2003	8.1	18.2	10.1	20.2	11.1	21.2	12.1	22.2
10/10/2003	5.1	14.6	7.1	16.6	8.1	17.6	9.1	18.6
10/11/2003	-3	10.1	-1	12.1	0	13.1	1	14.1
10/12/2003	5.7	15.2	7.7	17.2	8.7	18.2	9.7	19.2
10/13/2003	2.5	17	4.5	19	5.5	20	6.5	21
10/14/2003	0.2	16.6	2.2	18.6	3.2	19.6	4.2	20.6
10/15/2003	7.5	14.8	9.5	16.8	10.5	17.8	11.5	18.8
10/16/2003	5.5	12.8	7.5	14.8	8.5	15.8	9.5	16.8
10/17/2003	6.5	16.1	8.5	18.1	9.5	19.1	10.5	20.1
10/18/2003	7.6	18.4	9.6	20.4	10.6	21.4	11.6	22.4
10/19/2003	7.9	15.1	9.9	17.1	10.9	18.1	11.9	19.1
10/20/2003	8.1	15.8	10.1	17.8	11.1	18.8	12.1	19.8
10/21/2003	8.9	19.1	10.9	21.1	11.9	22.1	12.9	23.1
10/22/2003	8	19.5	10	21.5	11	22.5	12	23.5
10/23/2003	8.4	16.1	10.4	18.1	11.4	19.1	12.4	20.1
10/24/2003	2.1	13.9	4.1	15.9	5.1	16.9	6.1	17.9
10/25/2003	2.1	18.9	4.1	20.9	5.1	21.9	6.1	22.9
10/26/2003	2.5	13.3	4.5	15.3	5.5	16.3	6.5	17.3
10/27/2003	3.4	15.4	5.4	17.4	6.4	18.4	7.4	19.4
10/28/2003	5.4	17.2	7.4	19.2	8.4	20.2	9.4	21.2
10/29/2003	6.4	20.5	8.4	22.5	9.4	23.5	10.4	24.5
10/30/2003	-0.4	10.7	1.6	12.7	2.6	13.7	3.6	14.7
10/31/2003	-7.6	0.6	-5.6	2.6	-4.6	3.6	-3.6	4.6
11/1/2003	-7.7	-3.4	-5.7	-1.4	-4.7	-0.4	-3.7	0.6
11/2/2003	-9.2	1.4	-7.2	3.4	-6.2	4.4	-5.2	5.4
11/3/2003	-7.5	-2.3	-5.5	-0.3	-4.5	0.7	-3.5	1.7
11/4/2003	-9.6	-2.8	-7.6	-0.8	-6.6	0.2	-5.6	1.2
11/5/2003	-10.2	2.4	-8.2	4.4	-7.2	5.4	-6.2	6.4
11/6/2003	-6.6	3.4	-4.6	5.4	-3.6	6.4	-2.6	7.4
11/7/2003	-6.2	6.3	-4.2	8.3	-3.2	9.3	-2.2	10.3
11/8/2003	-2.2	1	-0.2	3	0.8	4	1.8	5
11/9/2003	-3.1	2.3	-1.1	4.3	-0.1	5.3	0.9	6.3
11/10/2003	-3.7	-1.4	-1.7	0.6	-0.7	1.6	0.3	2.6
11/11/2003	-6.6	4.8	-4.6	6.8	-3.6	7.8	-2.6	8.8
11/12/2003	-7	5.6	-5	7.6	-4	8.6	-3	9.6

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/13/2003	-4.5	2.5	-2.5	4.5	-1.5	5.5	-0.5	6.5
11/14/2003	-3.4	-0.7	-1.4	1.3	-0.4	2.3	0.6	3.3
11/15/2003	-3.5	3.1	-1.5	5.1	-0.5	6.1	0.5	7.1
11/16/2003	-6.1	-2	-4.1	0	-3.1	1	-2.1	2
11/17/2003	-7	3.9	-5	5.9	-4	6.9	-3	7.9
11/18/2003	-1.4	8.7	0.6	10.7	1.6	11.7	2.6	12.7
11/19/2003	1.3	15.4	3.3	17.4	4.3	18.4	5.3	19.4
11/20/2003	2.7	9.6	4.7	11.6	5.7	12.6	6.7	13.6
11/21/2003	-1.4	6.5	0.6	8.5	1.6	9.5	2.6	10.5
11/22/2003	-10.7	-1.4	-8.7	0.6	-7.7	1.6	-6.7	2.6
11/23/2003	-13.8	-2.1	-11.8	-0.1	-10.8	0.9	-9.8	1.9
11/24/2003	-9.9	9.3	-7.9	11.3	-6.9	12.3	-5.9	13.3
11/25/2003	-3.8	3.2	-1.8	5.2	-0.8	6.2	0.2	7.2
11/26/2003	-5.5	2.5	-3.5	4.5	-2.5	5.5	-1.5	6.5
11/27/2003	-7.3	5.6	-5.3	7.6	-4.3	8.6	-3.3	9.6
11/28/2003	-7.1	10.4	-5.1	12.4	-4.1	13.4	-3.1	14.4
11/29/2003	0.6	8.5	2.6	10.5	3.6	11.5	4.6	12.5
11/30/2003	1.1	7.8	3.1	9.8	4.1	10.8	5.1	11.8
12/1/2003	-1.1	5.6	0.9	7.6	1.9	8.6	2.9	9.6
12/2/2003	-1.3	2.8	0.7	4.8	1.7	5.8	2.7	6.8
12/3/2003	-2.4	7.9	-0.4	9.9	0.6	10.9	1.6	11.9
12/4/2003	-0.5	11	1.5	13	2.5	14	3.5	15
12/5/2003	0.2	7.7	2.2	9.7	3.2	10.7	4.2	11.7
12/6/2003	0.1	4.4	2.1	6.4	3.1	7.4	4.1	8.4
12/7/2003	-0.9	2.1	1.1	4.1	2.1	5.1	3.1	6.1
12/8/2003	-7.8	-0.4	-5.8	1.6	-4.8	2.6	-3.8	3.6
12/9/2003	-10.5	1.1	-8.5	3.1	-7.5	4.1	-6.5	5.1
12/10/2003	-6	1.6	-4	3.6	-3	4.6	-2	5.6
12/11/2003	-5.4	-2.8	-3.4	-0.8	-2.4	0.2	-1.4	1.2
12/12/2003	-8.8	0.6	-6.8	2.6	-5.8	3.6	-4.8	4.6
12/13/2003	-7.2	-0.4	-5.2	1.6	-4.2	2.6	-3.2	3.6
12/14/2003	-3.3	-0.1	-1.3	1.9	-0.3	2.9	0.7	3.9
12/15/2003	-12	-0.8	-10	1.2	-9	2.2	-8	3.2
12/16/2003	-11.9	3	-9.9	5	-8.9	6	-7.9	7
12/17/2003	-1.8	6.5	0.2	8.5	1.2	9.5	2.2	10.5
12/18/2003	0.3	11.1	2.3	13.1	3.3	14.1	4.3	15.1
12/19/2003	4.3	11.5	6.3	13.5	7.3	14.5	8.3	15.5
12/20/2003	-1.9	9.5	0.1	11.5	1.1	12.5	2.1	13.5
12/21/2003	-2.2	2.4	-0.2	4.4	0.8	5.4	1.8	6.4
12/22/2003	-5.7	6.4	-3.7	8.4	-2.7	9.4	-1.7	10.4
12/23/2003	-2.2	8.8	-0.2	10.8	0.8	11.8	1.8	12.8
12/24/2003	-2.4	2.3	-0.4	4.3	0.6	5.3	1.6	6.3
12/25/2003	-5.2	0.3	-3.2	2.3	-2.2	3.3	-1.2	4.3
12/26/2003	-9.8	-3.8	-7.8	-1.8	-6.8	-0.8	-5.8	0.2
12/27/2003	-15	-6.2	-13	-4.2	-12	-3.2	-11	-2.2
12/28/2003	-15	-2.4	-13	-0.4	-12	0.6	-11	1.6
12/29/2003	-10.9	-1.9	-8.9	0.1	-7.9	1.1	-6.9	2.1

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/30/2003	-6.2	-3.5	-4.2	-1.5	-3.2	-0.5	-2.2	0.5
12/31/2003	-5.1	1.9	-3.1	3.9	-2.1	4.9	-1.1	5.9
1/1/2004	-5.1	-3.1	-3.1	-1.1	-2.1	-0.1	-1.1	0.9
1/2/2004	-7.9	-4.2	-5.9	-2.2	-4.9	-1.2	-3.9	-0.2
1/3/2004	-11.6	-7.4	-9.6	-5.4	-8.6	-4.4	-7.6	-3.4
1/4/2004	-15.8	-4.1	-13.8	-2.1	-12.8	-1.1	-11.8	-0.1
1/5/2004	-13.6	-1.4	-11.6	0.6	-10.6	1.6	-9.6	2.6
1/6/2004	-10.3	5.8	-8.3	7.8	-7.3	8.8	-6.3	9.8
1/7/2004	-4.4	2	-2.4	4	-1.4	5	-0.4	6
1/8/2004	-4.2	1.6	-2.2	3.6	-1.2	4.6	-0.2	5.6
1/9/2004	-0.7	6.1	1.3	8.1	2.3	9.1	3.3	10.1
1/10/2004	0.6	5.9	2.6	7.9	3.6	8.9	4.6	9.9
1/11/2004	0.6	8.5	2.6	10.5	3.6	11.5	4.6	12.5
1/12/2004	1.1	10.2	3.1	12.2	4.1	13.2	5.1	14.2
1/13/2004	0	7.5	2	9.5	3	10.5	4	11.5
1/14/2004	-1.2	10.1	0.8	12.1	1.8	13.1	2.8	14.1
1/15/2004	-1.1	7.2	0.9	9.2	1.9	10.2	2.9	11.2
1/16/2004	-4.3	7	-2.3	9	-1.3	10	-0.3	11
1/17/2004	-3	9.2	-1	11.2	0	12.2	1	13.2
1/18/2004	-1	11	1	13	2	14	3	15
1/19/2004	-4.6	5.2	-2.6	7.2	-1.6	8.2	-0.6	9.2
1/20/2004	-5.5	6.4	-3.5	8.4	-2.5	9.4	-1.5	10.4
1/21/2004	-6.1	-1.3	-4.1	0.7	-3.1	1.7	-2.1	2.7
1/22/2004	-9.6	0.2	-7.6	2.2	-6.6	3.2	-5.6	4.2
1/23/2004	-8.7	7.7	-6.7	9.7	-5.7	10.7	-4.7	11.7
1/24/2004	-2.4	10.4	-0.4	12.4	0.6	13.4	1.6	14.4
1/25/2004	-6.7	0.2	-4.7	2.2	-3.7	3.2	-2.7	4.2
1/26/2004	-9.2	1.9	-7.2	3.9	-6.2	4.9	-5.2	5.9
1/27/2004	-7.2	-2.2	-5.2	-0.2	-4.2	0.8	-3.2	1.8
1/28/2004	-6.6	-1.4	-4.6	0.6	-3.6	1.6	-2.6	2.6
1/29/2004	-7.6	5	-5.6	7	-4.6	8	-3.6	9
1/30/2004	-2.3	9.3	-0.3	11.3	0.7	12.3	1.7	13.3
1/31/2004	-8.8	0.6	-6.8	2.6	-5.8	3.6	-4.8	4.6
2/1/2004	-9.3	2.9	-7.3	4.9	-6.3	5.9	-5.3	6.9
2/2/2004	-6.1	-1.4	-4.1	0.6	-3.1	1.6	-2.1	2.6
2/3/2004	-8.5	-1.7	-6.5	0.3	-5.5	1.3	-4.5	2.3
2/4/2004	-9.4	-3.9	-7.4	-1.9	-6.4	-0.9	-5.4	0.1
2/5/2004	-10.5	-1	-8.5	1	-7.5	2	-6.5	3
2/6/2004	-8.2	0.2	-6.2	2.2	-5.2	3.2	-4.2	4.2
2/7/2004	-6.3	7.6	-4.3	9.6	-3.3	10.6	-2.3	11.6
2/8/2004	-11.2	0.8	-9.2	2.8	-8.2	3.8	-7.2	4.8
2/9/2004	-12.2	3.4	-10.2	5.4	-9.2	6.4	-8.2	7.4
2/10/2004	-10.4	-0.7	-8.4	1.3	-7.4	2.3	-6.4	3.3
2/11/2004	-13.6	5.4	-11.6	7.4	-10.6	8.4	-9.6	9.4
2/12/2004	-8.8	7.2	-6.8	9.2	-5.8	10.2	-4.8	11.2
2/13/2004	-10.3	7.6	-8.3	9.6	-7.3	10.6	-6.3	11.6
2/14/2004	-5.7	3.2	-3.7	5.2	-2.7	6.2	-1.7	7.2

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/15/2004	-5.7	2.6	-3.7	4.6	-2.7	5.6	-1.7	6.6
2/16/2004	-4.3	3.5	-2.3	5.5	-1.3	6.5	-0.3	7.5
2/17/2004	-2.9	1.5	-0.9	3.5	0.1	4.5	1.1	5.5
2/18/2004	-1.9	1.8	0.1	3.8	1.1	4.8	2.1	5.8
2/19/2004	-5.6	-0.9	-3.6	1.1	-2.6	2.1	-1.6	3.1
2/20/2004	-7.1	2.6	-5.1	4.6	-4.1	5.6	-3.1	6.6
2/21/2004	-7.6	-0.4	-5.6	1.6	-4.6	2.6	-3.6	3.6
2/22/2004	-8	1.4	-6	3.4	-5	4.4	-4	5.4
2/23/2004	-5.5	1.1	-3.5	3.1	-2.5	4.1	-1.5	5.1
2/24/2004	-7	3.8	-5	5.8	-4	6.8	-3	7.8
2/25/2004	-6.2	-1.2	-4.2	0.8	-3.2	1.8	-2.2	2.8
2/26/2004	-6.4	-0.6	-4.4	1.4	-3.4	2.4	-2.4	3.4
2/27/2004	-8.2	-3.5	-6.2	-1.5	-5.2	-0.5	-4.2	0.5
2/28/2004	-12.1	2.3	-10.1	4.3	-9.1	5.3	-8.1	6.3
2/29/2004	-9.1	1.8	-7.1	3.8	-6.1	4.8	-5.1	5.8
3/1/2004	-9.6	2.9	-7.6	4.9	-6.6	5.9	-5.6	6.9
3/2/2004	-7.6	-1.6	-5.6	0.4	-4.6	1.4	-3.6	2.4
3/3/2004	-6.9	-2.1	-4.9	-0.1	-3.9	0.9	-2.9	1.9
3/4/2004	-6.9	10	-4.9	12	-3.9	13	-2.9	14
3/5/2004	-8.2	6.5	-6.2	8.5	-5.2	9.5	-4.2	10.5
3/6/2004	-4.8	7.1	-2.8	9.1	-1.8	10.1	-0.8	11.1
3/7/2004	-2.1	11.2	-0.1	13.2	0.9	14.2	1.9	15.2
3/8/2004	-2.2	11	-0.2	13	0.8	14	1.8	15
3/9/2004	-0.5	13.6	1.5	15.6	2.5	16.6	3.5	17.6
3/10/2004	2.9	15.3	4.9	17.3	5.9	18.3	6.9	19.3
3/11/2004	-1.9	10.1	0.1	12.1	1.1	13.1	2.1	14.1
3/12/2004	-3.3	14.4	-1.3	16.4	-0.3	17.4	0.7	18.4
3/13/2004	0.8	11.7	2.8	13.7	3.8	14.7	4.8	15.7
3/14/2004	-0.5	17	1.5	19	2.5	20	3.5	21
3/15/2004	2.5	16.1	4.5	18.1	5.5	19.1	6.5	20.1
3/16/2004	0.1	11.8	2.1	13.8	3.1	14.8	4.1	15.8
3/17/2004	1	12.9	3	14.9	4	15.9	5	16.9
3/18/2004	1	15.6	3	17.6	4	18.6	5	19.6
3/19/2004	4.3	12.4	6.3	14.4	7.3	15.4	8.3	16.4
3/20/2004	3.3	12.1	5.3	14.1	6.3	15.1	7.3	16.1
3/21/2004	6.1	20	8.1	22	9.1	23	10.1	24
3/22/2004	5.7	16.2	7.7	18.2	8.7	19.2	9.7	20.2
3/23/2004	4.4	13.4	6.4	15.4	7.4	16.4	8.4	17.4
3/24/2004	2.6	12	4.6	14	5.6	15	6.6	16
3/25/2004	-0.9	7.5	1.1	9.5	2.1	10.5	3.1	11.5
3/26/2004	-3	3.4	-1	5.4	0	6.4	1	7.4
3/27/2004	-7	0.6	-5	2.6	-4	3.6	-3	4.6
3/28/2004	-4.5	10.8	-2.5	12.8	-1.5	13.8	-0.5	14.8
3/29/2004	-3.4	12.7	-1.4	14.7	-0.4	15.7	0.6	16.7
3/30/2004	4	13.3	6	15.3	7	16.3	8	17.3
3/31/2004	2.1	8.7	4.1	10.7	5.1	11.7	6.1	12.7
4/1/2004	-0.4	7.8	1.6	9.8	2.6	10.8	3.6	11.8

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/2/2004	-5.6	0.8	-3.6	2.8	-2.6	3.8	-1.6	4.8
4/3/2004	-6.7	6.8	-4.7	8.8	-3.7	9.8	-2.7	10.8
4/4/2004	0.3	14.3	2.3	16.3	3.3	17.3	4.3	18.3
4/5/2004	1.7	13.7	3.7	15.7	4.7	16.7	5.7	17.7
4/6/2004	1.2	9.3	3.2	11.3	4.2	12.3	5.2	13.3
4/7/2004	-0.5	8.5	1.5	10.5	2.5	11.5	3.5	12.5
4/8/2004	-0.7	13.1	1.3	15.1	2.3	16.1	3.3	17.1
4/9/2004	1	13.1	3	15.1	4	16.1	5	17.1
4/10/2004	0.6	13	2.6	15	3.6	16	4.6	17
4/11/2004	0.4	11.1	2.4	13.1	3.4	14.1	4.4	15.1
4/12/2004	-1.5	15.1	0.5	17.1	1.5	18.1	2.5	19.1
4/13/2004	1.7	10.5	3.7	12.5	4.7	13.5	5.7	14.5
4/14/2004	-2	4.9	0	6.9	1	7.9	2	8.9
4/15/2004	-3	5.4	-1	7.4	0	8.4	1	9.4
4/16/2004	-2.4	2.5	-0.4	4.5	0.6	5.5	1.6	6.5
4/17/2004	-3.4	2.4	-1.4	4.4	-0.4	5.4	0.6	6.4
4/18/2004	-6.3	-0.2	-4.3	1.8	-3.3	2.8	-2.3	3.8
4/19/2004	-7.2	1.6	-5.2	3.6	-4.2	4.6	-3.2	5.6
4/20/2004	-5.2	-0.4	-3.2	1.6	-2.2	2.6	-1.2	3.6
4/21/2004	-2.4	3.1	-0.4	5.1	0.6	6.1	1.6	7.1
4/22/2004	-4.3	4.2	-2.3	6.2	-1.3	7.2	-0.3	8.2
4/23/2004	-6.4	5.1	-4.4	7.1	-3.4	8.1	-2.4	9.1
4/24/2004	-3.3	13.8	-1.3	15.8	-0.3	16.8	0.7	17.8
4/25/2004	0.1	14.8	2.1	16.8	3.1	17.8	4.1	18.8
4/26/2004	1.7	15.9	3.7	17.9	4.7	18.9	5.7	19.9
4/27/2004	4.1	18.7	6.1	20.7	7.1	21.7	8.1	22.7
4/28/2004	5.6	16.3	7.6	18.3	8.6	19.3	9.6	20.3
4/29/2004	-2	11.7	0	13.7	1	14.7	2	15.7
4/30/2004	-4.6	9.2	-2.6	11.2	-1.6	12.2	-0.6	13.2
5/1/2004	-1.4	15.3	0.6	17.3	1.6	18.3	2.6	19.3
5/2/2004	3.6	16.2	5.6	18.2	6.6	19.2	7.6	20.2
5/3/2004	6.3	17.4	8.3	19.4	9.3	20.4	10.3	21.4
5/4/2004	8.1	17.8	10.1	19.8	11.1	20.8	12.1	21.8
5/5/2004	7.1	14.7	9.1	16.7	10.1	17.7	11.1	18.7
5/6/2004	5	12.5	7	14.5	8	15.5	9	16.5
5/7/2004	3.8	11.1	5.8	13.1	6.8	14.1	7.8	15.1
5/8/2004	3.1	10	5.1	12	6.1	13	7.1	14
5/9/2004	2.2	10.1	4.2	12.1	5.2	13.1	6.2	14.1
5/10/2004	3.2	12.6	5.2	14.6	6.2	15.6	7.2	16.6
5/11/2004	-4.5	5.5	-2.5	7.5	-1.5	8.5	-0.5	9.5
5/12/2004	-2.9	5.4	-0.9	7.4	0.1	8.4	1.1	9.4
5/13/2004	-4.4	11.6	-2.4	13.6	-1.4	14.6	-0.4	15.6
5/14/2004	0.1	13.7	2.1	15.7	3.1	16.7	4.1	17.7
5/15/2004	3.7	13.4	5.7	15.4	6.7	16.4	7.7	17.4
5/16/2004	4.7	11.7	6.7	13.7	7.7	14.7	8.7	15.7
5/17/2004	3.2	12	5.2	14	6.2	15	7.2	16
5/18/2004	-0.3	8.5	1.7	10.5	2.7	11.5	3.7	12.5

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/19/2004	-1.7	6.6	0.3	8.6	1.3	9.6	2.3	10.6
5/20/2004	-1.7	10.4	0.3	12.4	1.3	13.4	2.3	14.4
5/21/2004	-0.5	7.9	1.5	9.9	2.5	10.9	3.5	11.9
5/22/2004	-0.3	7.9	1.7	9.9	2.7	10.9	3.7	11.9
5/23/2004	-0.6	8.5	1.4	10.5	2.4	11.5	3.4	12.5
5/24/2004	0.8	9	2.8	11	3.8	12	4.8	13
5/25/2004	0.6	11.1	2.6	13.1	3.6	14.1	4.6	15.1
5/26/2004	0.3	12.1	2.3	14.1	3.3	15.1	4.3	16.1
5/27/2004	1.8	14.9	3.8	16.9	4.8	17.9	5.8	18.9
5/28/2004	4.9	12.4	6.9	14.4	7.9	15.4	8.9	16.4
5/29/2004	-0.5	5.5	1.5	7.5	2.5	8.5	3.5	9.5
5/30/2004	-1.5	12.7	0.5	14.7	1.5	15.7	2.5	16.7
5/31/2004	3.5	15.6	5.5	17.6	6.5	18.6	7.5	19.6
6/1/2004	7.1	17.5	9.1	19.5	10.1	20.5	11.1	21.5
6/2/2004	6.9	16.9	8.9	18.9	9.9	19.9	10.9	20.9
6/3/2004	9.3	18.4	11.3	20.4	12.3	21.4	13.3	22.4
6/4/2004	8.2	17.2	10.2	19.2	11.2	20.2	12.2	21.2
6/5/2004	9.4	19.6	11.4	21.6	12.4	22.6	13.4	23.6
6/6/2004	8.9	18.9	10.9	20.9	11.9	21.9	12.9	22.9
6/7/2004	7.8	16.7	9.8	18.7	10.8	19.7	11.8	20.7
6/8/2004	2.5	11.9	4.5	13.9	5.5	14.9	6.5	15.9
6/9/2004	-1.3	6.9	0.7	8.9	1.7	9.9	2.7	10.9
6/10/2004	-2.9	5.1	-0.9	7.1	0.1	8.1	1.1	9.1
6/11/2004	0.4	11.6	2.4	13.6	3.4	14.6	4.4	15.6
6/12/2004	3.7	12.8	5.7	14.8	6.7	15.8	7.7	16.8
6/13/2004	4.9	16.4	6.9	18.4	7.9	19.4	8.9	20.4
6/14/2004	9.2	18.4	11.2	20.4	12.2	21.4	13.2	22.4
6/15/2004	7.1	20.5	9.1	22.5	10.1	23.5	11.1	24.5
6/16/2004	8	19.7	10	21.7	11	22.7	12	23.7
6/17/2004	6.2	19.3	8.2	21.3	9.2	22.3	10.2	23.3
6/18/2004	6.9	17	8.9	19	9.9	20	10.9	21
6/19/2004	6.6	16.7	8.6	18.7	9.6	19.7	10.6	20.7
6/20/2004	6.8	18.3	8.8	20.3	9.8	21.3	10.8	22.3
6/21/2004	8.6	18.7	10.6	20.7	11.6	21.7	12.6	22.7
6/22/2004	7.4	19.8	9.4	21.8	10.4	22.8	11.4	23.8
6/23/2004	9.4	18.5	11.4	20.5	12.4	21.5	13.4	22.5
6/24/2004	9.8	18.4	11.8	20.4	12.8	21.4	13.8	22.4
6/25/2004	9.1	17.9	11.1	19.9	12.1	20.9	13.1	21.9
6/26/2004	8	19.2	10	21.2	11	22.2	12	23.2
6/27/2004	8.5	19.1	10.5	21.1	11.5	22.1	12.5	23.1
6/28/2004	8	19.5	10	21.5	11	22.5	12	23.5
6/29/2004	8.2	17.3	10.2	19.3	11.2	20.3	12.2	21.3
6/30/2004	7.1	17.6	9.1	19.6	10.1	20.6	11.1	21.6
7/1/2004	6.3	15.7	8.3	17.7	9.3	18.7	10.3	19.7
7/2/2004	6	16.2	8	18.2	9	19.2	10	20.2
7/3/2004	6.8	16.3	8.8	18.3	9.8	19.3	10.8	20.3
7/4/2004	8.2	18.6	10.2	20.6	11.2	21.6	12.2	22.6

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/5/2004	7.7	19.8	9.7	21.8	10.7	22.8	11.7	23.8
7/6/2004	10.8	22.5	12.8	24.5	13.8	25.5	14.8	26.5
7/7/2004	11.7	21.6	13.7	23.6	14.7	24.6	15.7	25.6
7/8/2004	10.7	18.5	12.7	20.5	13.7	21.5	14.7	22.5
7/9/2004	8.2	17.6	10.2	19.6	11.2	20.6	12.2	21.6
7/10/2004	7.5	14.9	9.5	16.9	10.5	17.9	11.5	18.9
7/11/2004	8.2	16.6	10.2	18.6	11.2	19.6	12.2	20.6
7/12/2004	9.3	18.6	11.3	20.6	12.3	21.6	13.3	22.6
7/13/2004	10.1	19.3	12.1	21.3	13.1	22.3	14.1	23.3
7/14/2004	10.8	19.3	12.8	21.3	13.8	22.3	14.8	23.3
7/15/2004	10	19.7	12	21.7	13	22.7	14	23.7
7/16/2004	11.4	21.1	13.4	23.1	14.4	24.1	15.4	25.1
7/17/2004	12.4	21.3	14.4	23.3	15.4	24.3	16.4	25.3
7/18/2004	11.7	20.4	13.7	22.4	14.7	23.4	15.7	24.4
7/19/2004	10.1	19.2	12.1	21.2	13.1	22.2	14.1	23.2
7/20/2004	9.9	18.6	11.9	20.6	12.9	21.6	13.9	22.6
7/21/2004	9.3	19.7	11.3	21.7	12.3	22.7	13.3	23.7
7/22/2004	10.9	21.4	12.9	23.4	13.9	24.4	14.9	25.4
7/23/2004	11.2	23.1	13.2	25.1	14.2	26.1	15.2	27.1
7/24/2004	12.3	22.5	14.3	24.5	15.3	25.5	16.3	26.5
7/25/2004	11.5	22.8	13.5	24.8	14.5	25.8	15.5	26.8
7/26/2004	11.2	22	13.2	24	14.2	25	15.2	26
7/27/2004	11	19.5	13	21.5	14	22.5	15	23.5
7/28/2004	9	21.6	11	23.6	12	24.6	13	25.6
7/29/2004	12.1	22.6	14.1	24.6	15.1	25.6	16.1	26.6
7/30/2004	10.4	19.6	12.4	21.6	13.4	22.6	14.4	23.6
7/31/2004	9.8	19.6	11.8	21.6	12.8	22.6	13.8	23.6
8/1/2004	10.3	18.6	12.3	20.6	13.3	21.6	14.3	22.6
8/2/2004	10.1	18.4	12.1	20.4	13.1	21.4	14.1	22.4
8/3/2004	7.1	16	9.1	18	10.1	19	11.1	20
8/4/2004	5.4	18.5	7.4	20.5	8.4	21.5	9.4	22.5
8/5/2004	7.7	16.5	9.7	18.5	10.7	19.5	11.7	20.5
8/6/2004	7.3	15.8	9.3	17.8	10.3	18.8	11.3	19.8
8/7/2004	7	16.5	9	18.5	10	19.5	11	20.5
8/8/2004	7.8	21.2	9.8	23.2	10.8	24.2	11.8	25.2
8/9/2004	11.4	22.3	13.4	24.3	14.4	25.3	15.4	26.3
8/10/2004	14	21.9	16	23.9	17	24.9	18	25.9
8/11/2004	13.3	23	15.3	25	16.3	26	17.3	27
8/12/2004	13.5	24.3	15.5	26.3	16.5	27.3	17.5	28.3
8/13/2004	13.8	23	15.8	25	16.8	26	17.8	27
8/14/2004	11.9	21.9	13.9	23.9	14.9	24.9	15.9	25.9
8/15/2004	10.9	21.8	12.9	23.8	13.9	24.8	14.9	25.8
8/16/2004	8	18.7	10	20.7	11	21.7	12	22.7
8/17/2004	9.4	17.9	11.4	19.9	12.4	20.9	13.4	21.9
8/18/2004	8.5	21.4	10.5	23.4	11.5	24.4	12.5	25.4
8/19/2004	10	21.5	12	23.5	13	24.5	14	25.5
8/20/2004	11.3	20.3	13.3	22.3	14.3	23.3	15.3	24.3

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/21/2004	9.2	22.6	11.2	24.6	12.2	25.6	13.2	26.6
8/22/2004	10	20.3	12	22.3	13	23.3	14	24.3
8/23/2004	7.5	12.8	9.5	14.8	10.5	15.8	11.5	16.8
8/24/2004	6.3	12.9	8.3	14.9	9.3	15.9	10.3	16.9
8/25/2004	5.4	16.4	7.4	18.4	8.4	19.4	9.4	20.4
8/26/2004	7.5	15.7	9.5	17.7	10.5	18.7	11.5	19.7
8/27/2004	5.7	15.6	7.7	17.6	8.7	18.6	9.7	19.6
8/28/2004	2.1	17.9	4.1	19.9	5.1	20.9	6.1	21.9
8/29/2004	6.5	22.3	8.5	24.3	9.5	25.3	10.5	26.3
8/30/2004	9.5	21.1	11.5	23.1	12.5	24.1	13.5	25.1
8/31/2004	10.8	21.7	12.8	23.7	13.8	24.7	14.8	25.7
9/1/2004	12	21.9	14	23.9	15	24.9	16	25.9
9/2/2004	11	21.2	13	23.2	14	24.2	15	25.2
9/3/2004	4.3	16.3	6.3	18.3	7.3	19.3	8.3	20.3
9/4/2004	0.2	10.4	2.2	12.4	3.2	13.4	4.2	14.4
9/5/2004	1.7	16.1	3.7	18.1	4.7	19.1	5.7	20.1
9/6/2004	6.8	21.5	8.8	23.5	9.8	24.5	10.8	25.5
9/7/2004	9.2	21.7	11.2	23.7	12.2	24.7	13.2	25.7
9/8/2004	11	22.2	13	24.2	14	25.2	15	26.2
9/9/2004	10.4	21	12.4	23	13.4	24	14.4	25
9/10/2004	8.3	19.9	10.3	21.9	11.3	22.9	12.3	23.9
9/11/2004	10.8	19.6	12.8	21.6	13.8	22.6	14.8	23.6
9/12/2004	10.6	21.6	12.6	23.6	13.6	24.6	14.6	25.6
9/13/2004	8.6	16.2	10.6	18.2	11.6	19.2	12.6	20.2
9/14/2004	7.5	16.4	9.5	18.4	10.5	19.4	11.5	20.4
9/15/2004	3.2	18.6	5.2	20.6	6.2	21.6	7.2	22.6
9/16/2004	3.7	20.2	5.7	22.2	6.7	23.2	7.7	24.2
9/17/2004	8.8	18.7	10.8	20.7	11.8	21.7	12.8	22.7
9/18/2004	5.4	15.3	7.4	17.3	8.4	18.3	9.4	19.3
9/19/2004	0.6	6.1	2.6	8.1	3.6	9.1	4.6	10.1
9/20/2004	-3.4	0.8	-1.4	2.8	-0.4	3.8	0.6	4.8
9/21/2004	-5.3	4.7	-3.3	6.7	-2.3	7.7	-1.3	8.7
9/22/2004	-3.4	12.5	-1.4	14.5	-0.4	15.5	0.6	16.5
9/23/2004	2	18.6	4	20.6	5	21.6	6	22.6
9/24/2004	7	17.4	9	19.4	10	20.4	11	21.4
9/25/2004	7.5	19.5	9.5	21.5	10.5	22.5	11.5	23.5
9/26/2004	9	18.4	11	20.4	12	21.4	13	22.4
9/27/2004	7.3	18.1	9.3	20.1	10.3	21.1	11.3	22.1
9/28/2004	7.7	17.3	9.7	19.3	10.7	20.3	11.7	21.3
9/29/2004	5.4	16.4	7.4	18.4	8.4	19.4	9.4	20.4
9/30/2004	6	15.6	8	17.6	9	18.6	10	19.6
10/1/2004	4.9	13.1	6.9	15.1	7.9	16.1	8.9	17.1
10/2/2004	4.5	15.4	6.5	17.4	7.5	18.4	8.5	19.4
10/3/2004	5.2	14.2	7.2	16.2	8.2	17.2	9.2	18.2
10/4/2004	4.6	16.6	6.6	18.6	7.6	19.6	8.6	20.6
10/5/2004	6	15.6	8	17.6	9	18.6	10	19.6
10/6/2004	5.3	17.6	7.3	19.6	8.3	20.6	9.3	21.6

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/7/2004	6.6	17.3	8.6	19.3	9.6	20.3	10.6	21.3
10/8/2004	5.4	18.2	7.4	20.2	8.4	21.2	9.4	22.2
10/9/2004	5.3	15	7.3	17	8.3	18	9.3	19
10/10/2004	1.5	10.6	3.5	12.6	4.5	13.6	5.5	14.6
10/11/2004	-1.2	8.6	0.8	10.6	1.8	11.6	2.8	12.6
10/12/2004	-1.4	8.6	0.6	10.6	1.6	11.6	2.6	12.6
10/13/2004	1	13.8	3	15.8	4	16.8	5	17.8
10/14/2004	3.9	15.5	5.9	17.5	6.9	18.5	7.9	19.5
10/15/2004	3.6	19.3	5.6	21.3	6.6	22.3	7.6	23.3
10/16/2004	7	20.7	9	22.7	10	23.7	11	24.7
10/17/2004	1.4	13	3.4	15	4.4	16	5.4	17
10/18/2004	-0.8	2.6	1.2	4.6	2.2	5.6	3.2	6.6
10/19/2004	-2.1	-0.2	-0.1	1.8	0.9	2.8	1.9	3.8
10/20/2004	-2.1	0.5	-0.1	2.5	0.9	3.5	1.9	4.5
10/21/2004	-7.1	0.9	-5.1	2.9	-4.1	3.9	-3.1	4.9
10/22/2004	-7.1	6.3	-5.1	8.3	-4.1	9.3	-3.1	10.3
10/23/2004	-3.8	10.6	-1.8	12.6	-0.8	13.6	0.2	14.6
10/24/2004	-0.8	2.1	1.2	4.1	2.2	5.1	3.2	6.1
10/25/2004	-1.4	5.7	0.6	7.7	1.6	8.7	2.6	9.7
10/26/2004	-2.3	0	-0.3	2	0.7	3	1.7	4
10/27/2004	-5.1	-2	-3.1	0	-2.1	1	-1.1	2
10/28/2004	-8	2.2	-6	4.2	-5	5.2	-4	6.2
10/29/2004	-7.2	-3.1	-5.2	-1.1	-4.2	-0.1	-3.2	0.9
10/30/2004	-4.7	8	-2.7	10	-1.7	11	-0.7	12
10/31/2004	-3	8.2	-1	10.2	0	11.2	1	12.2
11/1/2004	-7.7	3.5	-5.7	5.5	-4.7	6.5	-3.7	7.5
11/2/2004	-8.1	4.9	-6.1	6.9	-5.1	7.9	-4.1	8.9
11/3/2004	1	10.6	3	12.6	4	13.6	5	14.6
11/4/2004	-4.3	1.8	-2.3	3.8	-1.3	4.8	-0.3	5.8
11/5/2004	-4.9	1.9	-2.9	3.9	-1.9	4.9	-0.9	5.9
11/6/2004	-5.2	6.2	-3.2	8.2	-2.2	9.2	-1.2	10.2
11/7/2004	-2.3	9.7	-0.3	11.7	0.7	12.7	1.7	13.7
11/8/2004	2.2	9.1	4.2	11.1	5.2	12.1	6.2	13.1
11/9/2004	0.3	5	2.3	7	3.3	8	4.3	9
11/10/2004	-0.6	10.7	1.4	12.7	2.4	13.7	3.4	14.7
11/11/2004	-2	6.4	0	8.4	1	9.4	2	10.4
11/12/2004	-2.4	0.7	-0.4	2.7	0.6	3.7	1.6	4.7
11/13/2004	-2.5	4.1	-0.5	6.1	0.5	7.1	1.5	8.1
11/14/2004	-3.6	3.2	-1.6	5.2	-0.6	6.2	0.4	7.2
11/15/2004	-5	5.5	-3	7.5	-2	8.5	-1	9.5
11/16/2004	2.9	8.2	4.9	10.2	5.9	11.2	6.9	12.2
11/17/2004	0	10.6	2	12.6	3	13.6	4	14.6
11/18/2004	-0.1	10.2	1.9	12.2	2.9	13.2	3.9	14.2
11/19/2004	0	11.8	2	13.8	3	14.8	4	15.8
11/20/2004	-6.8	1.8	-4.8	3.8	-3.8	4.8	-2.8	5.8
11/21/2004	-10.1	3.6	-8.1	5.6	-7.1	6.6	-6.1	7.6
11/22/2004	-11.1	-4.1	-9.1	-2.1	-8.1	-1.1	-7.1	-0.1

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/23/2004	-9.8	7.3	-7.8	9.3	-6.8	10.3	-5.8	11.3
11/24/2004	-5.2	4.7	-3.2	6.7	-2.2	7.7	-1.2	8.7
11/25/2004	-6.1	11.6	-4.1	13.6	-3.1	14.6	-2.1	15.6
11/26/2004	-3	5	-1	7	0	8	1	9
11/27/2004	-4.8	5.4	-2.8	7.4	-1.8	8.4	-0.8	9.4
11/28/2004	-10.4	-0.3	-8.4	1.7	-7.4	2.7	-6.4	3.7
11/29/2004	-15.8	-6.3	-13.8	-4.3	-12.8	-3.3	-11.8	-2.3
11/30/2004	-16.5	5.2	-14.5	7.2	-13.5	8.2	-12.5	9.2
12/1/2004	-10.6	3.6	-8.6	5.6	-7.6	6.6	-6.6	7.6
12/2/2004	-10.3	-4.7	-8.3	-2.7	-7.3	-1.7	-6.3	-0.7
12/3/2004	-12	-4.9	-10	-2.9	-9	-1.9	-8	-0.9
12/4/2004	-14.6	2	-12.6	4	-11.6	5	-10.6	6
12/5/2004	-7.2	2	-5.2	4	-4.2	5	-3.2	6
12/6/2004	-10.4	1.6	-8.4	3.6	-7.4	4.6	-6.4	5.6
12/7/2004	-7.1	-2	-5.1	0	-4.1	1	-3.1	2
12/8/2004	-4.4	-1.5	-2.4	0.5	-1.4	1.5	-0.4	2.5
12/9/2004	-3.4	0.8	-1.4	2.8	-0.4	3.8	0.6	4.8
12/10/2004	-1.2	10.9	0.8	12.9	1.8	13.9	2.8	14.9
12/11/2004	5.4	12.2	7.4	14.2	8.4	15.2	9.4	16.2
12/12/2004	5.8	12.7	7.8	14.7	8.8	15.7	9.8	16.7
12/13/2004	2.3	10.3	4.3	12.3	5.3	13.3	6.3	14.3
12/14/2004	1.8	9.2	3.8	11.2	4.8	12.2	5.8	13.2
12/15/2004	0.8	10.5	2.8	12.5	3.8	13.5	4.8	14.5
12/16/2004	-3.9	7.4	-1.9	9.4	-0.9	10.4	0.1	11.4
12/17/2004	-5.3	4.2	-3.3	6.2	-2.3	7.2	-1.3	8.2
12/18/2004	0.8	13.1	2.8	15.1	3.8	16.1	4.8	17.1
12/19/2004	-0.8	11.9	1.2	13.9	2.2	14.9	3.2	15.9
12/20/2004	2.6	11.1	4.6	13.1	5.6	14.1	6.6	15.1
12/21/2004	-4.5	9.2	-2.5	11.2	-1.5	12.2	-0.5	13.2
12/22/2004	-8.7	2.5	-6.7	4.5	-5.7	5.5	-4.7	6.5
12/23/2004	-9.4	1	-7.4	3	-6.4	4	-5.4	5
12/24/2004	-10.7	1.1	-8.7	3.1	-7.7	4.1	-6.7	5.1
12/25/2004	-5.9	12.8	-3.9	14.8	-2.9	15.8	-1.9	16.8
12/26/2004	-0.7	5	1.3	7	2.3	8	3.3	9
12/27/2004	-3.2	2.1	-1.2	4.1	-0.2	5.1	0.8	6.1
12/28/2004	-3.9	1.3	-1.9	3.3	-0.9	4.3	0.1	5.3
12/29/2004	-5.5	-1.9	-3.5	0.1	-2.5	1.1	-1.5	2.1
12/30/2004	-7.5	-4	-5.5	-2	-4.5	-1	-3.5	0
12/31/2004	-5.6	-2.3	-3.6	-0.3	-2.6	0.7	-1.6	1.7
1/1/2005	-9.1	-2.4	-7.1	-0.4	-6.1	0.6	-5.1	1.6
1/2/2005	-7.6	-5.6	-5.6	-3.6	-4.6	-2.6	-3.6	-1.6
1/3/2005	-9.7	-5.5	-7.7	-3.5	-6.7	-2.5	-5.7	-1.5
1/4/2005	-9.8	-5.8	-7.8	-3.8	-6.8	-2.8	-5.8	-1.8
1/5/2005	-8.4	-4.5	-6.4	-2.5	-5.4	-1.5	-4.4	-0.5
1/6/2005	-8.1	-3.7	-6.1	-1.7	-5.1	-0.7	-4.1	0.3
1/7/2005	-8.7	-3	-6.7	-1	-5.7	0	-4.7	1
1/8/2005	-6.1	-1.7	-4.1	0.3	-3.1	1.3	-2.1	2.3

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/9/2005	-5.6	-3.9	-3.6	-1.9	-2.6	-0.9	-1.6	0.1
1/10/2005	-4.9	-0.2	-2.9	1.8	-1.9	2.8	-0.9	3.8
1/11/2005	-3.8	-0.5	-1.8	1.5	-0.8	2.5	0.2	3.5
1/12/2005	-9.5	-3.8	-7.5	-1.8	-6.5	-0.8	-5.5	0.2
1/13/2005	-10.1	4.7	-8.1	6.7	-7.1	7.7	-6.1	8.7
1/14/2005	-3.9	6.3	-1.9	8.3	-0.9	9.3	0.1	10.3
1/15/2005	-2.6	7.1	-0.6	9.1	0.4	10.1	1.4	11.1
1/16/2005	0.4	8.1	2.4	10.1	3.4	11.1	4.4	12.1
1/17/2005	0	7.8	2	9.8	3	10.8	4	11.8
1/18/2005	0.4	11.1	2.4	13.1	3.4	14.1	4.4	15.1
1/19/2005	2.2	13	4.2	15	5.2	16	6.2	17
1/20/2005	5	17.9	7	19.9	8	20.9	9	21.9
1/21/2005	2.5	11.6	4.5	13.6	5.5	14.6	6.5	15.6
1/22/2005	1.4	14.8	3.4	16.8	4.4	17.8	5.4	18.8
1/23/2005	2.2	14.6	4.2	16.6	5.2	17.6	6.2	18.6
1/24/2005	0.1	11.4	2.1	13.4	3.1	14.4	4.1	15.4
1/25/2005	-0.1	7.3	1.9	9.3	2.9	10.3	3.9	11.3
1/26/2005	-0.3	2.8	1.7	4.8	2.7	5.8	3.7	6.8
1/27/2005	-4.1	1.3	-2.1	3.3	-1.1	4.3	-0.1	5.3
1/28/2005	-5.2	1.2	-3.2	3.2	-2.2	4.2	-1.2	5.2
1/29/2005	-9.1	-2.5	-7.1	-0.5	-6.1	0.5	-5.1	1.5
1/30/2005	-9.9	-0.9	-7.9	1.1	-6.9	2.1	-5.9	3.1
1/31/2005	-9.9	3.1	-7.9	5.1	-6.9	6.1	-5.9	7.1
2/1/2005	-7.7	6.1	-5.7	8.1	-4.7	9.1	-3.7	10.1
2/2/2005	-4.6	4.3	-2.6	6.3	-1.6	7.3	-0.6	8.3
2/3/2005	-7.7	2.8	-5.7	4.8	-4.7	5.8	-3.7	6.8
2/4/2005	-4.8	5.8	-2.8	7.8	-1.8	8.8	-0.8	9.8
2/5/2005	-0.9	9.7	1.1	11.7	2.1	12.7	3.1	13.7
2/6/2005	-2.7	9.2	-0.7	11.2	0.3	12.2	1.3	13.2
2/7/2005	-4.7	2.1	-2.7	4.1	-1.7	5.1	-0.7	6.1
2/8/2005	-6.1	0.3	-4.1	2.3	-3.1	3.3	-2.1	4.3
2/9/2005	-10.4	4.2	-8.4	6.2	-7.4	7.2	-6.4	8.2
2/10/2005	-5.9	7.8	-3.9	9.8	-2.9	10.8	-1.9	11.8
2/11/2005	-6.8	3.7	-4.8	5.7	-3.8	6.7	-2.8	7.7
2/12/2005	-4.2	3.3	-2.2	5.3	-1.2	6.3	-0.2	7.3
2/13/2005	-2.3	3.9	-0.3	5.9	0.7	6.9	1.7	7.9
2/14/2005	-2.9	3.4	-0.9	5.4	0.1	6.4	1.1	7.4
2/15/2005	-3.4	2.8	-1.4	4.8	-0.4	5.8	0.6	6.8
2/16/2005	-4.1	0.8	-2.1	2.8	-1.1	3.8	-0.1	4.8
2/17/2005	-4.2	5.9	-2.2	7.9	-1.2	8.9	-0.2	9.9
2/18/2005	-9.6	1.6	-7.6	3.6	-6.6	4.6	-5.6	5.6
2/19/2005	-5	0.3	-3	2.3	-2	3.3	-1	4.3
2/20/2005	-6.2	5.2	-4.2	7.2	-3.2	8.2	-2.2	9.2
2/21/2005	-3.6	1.2	-1.6	3.2	-0.6	4.2	0.4	5.2
2/22/2005	-3.1	2	-1.1	4	-0.1	5	0.9	6
2/23/2005	-3.5	1	-1.5	3	-0.5	4	0.5	5
2/24/2005	-4.3	4.2	-2.3	6.2	-1.3	7.2	-0.3	8.2

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/25/2005	-6.8	6	-4.8	8	-3.8	9	-2.8	10
2/26/2005	-5.7	6.3	-3.7	8.3	-2.7	9.3	-1.7	10.3
2/27/2005	-6.2	5.5	-4.2	7.5	-3.2	8.5	-2.2	9.5
2/28/2005	-4.3	3.1	-2.3	5.1	-1.3	6.1	-0.3	7.1
3/1/2005	-5.6	4.5	-3.6	6.5	-2.6	7.5	-1.6	8.5
3/2/2005	-4.2	4.4	-2.2	6.4	-1.2	7.4	-0.2	8.4
3/3/2005	-6.8	5.2	-4.8	7.2	-3.8	8.2	-2.8	9.2
3/4/2005	-6.7	5.6	-4.7	7.6	-3.7	8.6	-2.7	9.6
3/5/2005	-3.1	4	-1.1	6	-0.1	7	0.9	8
3/6/2005	-4.2	7.2	-2.2	9.2	-1.2	10.2	-0.2	11.2
3/7/2005	-4.3	9.3	-2.3	11.3	-1.3	12.3	-0.3	13.3
3/8/2005	-1.7	12.9	0.3	14.9	1.3	15.9	2.3	16.9
3/9/2005	1.4	14.8	3.4	16.8	4.4	17.8	5.4	18.8
3/10/2005	3.5	17.2	5.5	19.2	6.5	20.2	7.5	21.2
3/11/2005	0.5	10.1	2.5	12.1	3.5	13.1	4.5	14.1
3/12/2005	0.1	15.6	2.1	17.6	3.1	18.6	4.1	19.6
3/13/2005	1.9	14.3	3.9	16.3	4.9	17.3	5.9	18.3
3/14/2005	-4.4	9.1	-2.4	11.1	-1.4	12.1	-0.4	13.1
3/15/2005	-6.7	2.6	-4.7	4.6	-3.7	5.6	-2.7	6.6
3/16/2005	-7.1	8.6	-5.1	10.6	-4.1	11.6	-3.1	12.6
3/17/2005	-2.9	6.5	-0.9	8.5	0.1	9.5	1.1	10.5
3/18/2005	-3.3	3.9	-1.3	5.9	-0.3	6.9	0.7	7.9
3/19/2005	-3	3.6	-1	5.6	0	6.6	1	7.6
3/20/2005	-4.5	0.5	-2.5	2.5	-1.5	3.5	-0.5	4.5
3/21/2005	-5.3	-2	-3.3	0	-2.3	1	-1.3	2
3/22/2005	-5.8	1.9	-3.8	3.9	-2.8	4.9	-1.8	5.9
3/23/2005	-5.2	-0.4	-3.2	1.6	-2.2	2.6	-1.2	3.6
3/24/2005	-5.9	-2.6	-3.9	-0.6	-2.9	0.4	-1.9	1.4
3/25/2005	-9.2	-0.5	-7.2	1.5	-6.2	2.5	-5.2	3.5
3/26/2005	-10.8	4.2	-8.8	6.2	-7.8	7.2	-6.8	8.2
3/27/2005	-6.2	10.5	-4.2	12.5	-3.2	13.5	-2.2	14.5
3/28/2005	-2.8	4.9	-0.8	6.9	0.2	7.9	1.2	8.9
3/29/2005	-6.8	2	-4.8	4	-3.8	5	-2.8	6
3/30/2005	-6.8	0.5	-4.8	2.5	-3.8	3.5	-2.8	4.5
3/31/2005	-9.3	5.8	-7.3	7.8	-6.3	8.8	-5.3	9.8
4/1/2005	-7.4	12.6	-5.4	14.6	-4.4	15.6	-3.4	16.6
4/2/2005	0.8	8.9	2.8	10.9	3.8	11.9	4.8	12.9
4/3/2005	-1.1	6.6	0.9	8.6	1.9	9.6	2.9	10.6
4/4/2005	-6.1	-0.8	-4.1	1.2	-3.1	2.2	-2.1	3.2
4/5/2005	-7.3	5.4	-5.3	7.4	-4.3	8.4	-3.3	9.4
4/6/2005	-2.1	14.2	-0.1	16.2	0.9	17.2	1.9	18.2
4/7/2005	2.7	11.8	4.7	13.8	5.7	14.8	6.7	15.8
4/8/2005	-8.3	3.6	-6.3	5.6	-5.3	6.6	-4.3	7.6
4/9/2005	-8.6	-2.4	-6.6	-0.4	-5.6	0.6	-4.6	1.6
4/10/2005	-7.6	4	-5.6	6	-4.6	7	-3.6	8
4/11/2005	-7.2	8.9	-5.2	10.9	-4.2	11.9	-3.2	12.9
4/12/2005	-0.6	7.6	1.4	9.6	2.4	10.6	3.4	11.6

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/13/2005	-1.4	6.9	0.6	8.9	1.6	9.9	2.6	10.9
4/14/2005	-9.2	1.3	-7.2	3.3	-6.2	4.3	-5.2	5.3
4/15/2005	-9.9	8.8	-7.9	10.8	-6.9	11.8	-5.9	12.8
4/16/2005	-4.4	13	-2.4	15	-1.4	16	-0.4	17
4/17/2005	3	12.1	5	14.1	6	15.1	7	16.1
4/18/2005	-1.2	7.1	0.8	9.1	1.8	10.1	2.8	11.1
4/19/2005	-6	5.3	-4	7.3	-3	8.3	-2	9.3
4/20/2005	-6.6	3.5	-4.6	5.5	-3.6	6.5	-2.6	7.5
4/21/2005	-6.3	6.2	-4.3	8.2	-3.3	9.2	-2.3	10.2
4/22/2005	-4.3	10.8	-2.3	12.8	-1.3	13.8	-0.3	14.8
4/23/2005	-0.5	11.6	1.5	13.6	2.5	14.6	3.5	15.6
4/24/2005	-2.4	5.8	-0.4	7.8	0.6	8.8	1.6	9.8
4/25/2005	-4.6	3.6	-2.6	5.6	-1.6	6.6	-0.6	7.6
4/26/2005	-4.8	11.1	-2.8	13.1	-1.8	14.1	-0.8	15.1
4/27/2005	-1.1	11.7	0.9	13.7	1.9	14.7	2.9	15.7
4/28/2005	-2.1	7.3	-0.1	9.3	0.9	10.3	1.9	11.3
4/29/2005	-2.7	5.2	-0.7	7.2	0.3	8.2	1.3	9.2
4/30/2005	-3.4	11.6	-1.4	13.6	-0.4	14.6	0.6	15.6
5/1/2005	-2.1	7.2	-0.1	9.2	0.9	10.2	1.9	11.2
5/2/2005	-0.8	5.3	1.2	7.3	2.2	8.3	3.2	9.3
5/3/2005	-1	10.2	1	12.2	2	13.2	3	14.2
5/4/2005	-0.7	12.5	1.3	14.5	2.3	15.5	3.3	16.5
5/5/2005	1.9	9.7	3.9	11.7	4.9	12.7	5.9	13.7
5/6/2005	-1.1	4.4	0.9	6.4	1.9	7.4	2.9	8.4
5/7/2005	-2.2	3.1	-0.2	5.1	0.8	6.1	1.8	7.1
5/8/2005	-4.3	7.8	-2.3	9.8	-1.3	10.8	-0.3	11.8
5/9/2005	0.3	2.7	2.3	4.7	3.3	5.7	4.3	6.7
5/10/2005	-5.4	0.4	-3.4	2.4	-2.4	3.4	-1.4	4.4
5/11/2005	-8.3	6.6	-6.3	8.6	-5.3	9.6	-4.3	10.6
5/12/2005	-5.4	11.5	-3.4	13.5	-2.4	14.5	-1.4	15.5
5/13/2005	-1.5	14.4	0.5	16.4	1.5	17.4	2.5	18.4
5/14/2005	2.4	15.4	4.4	17.4	5.4	18.4	6.4	19.4
5/15/2005	4.4	17.4	6.4	19.4	7.4	20.4	8.4	21.4
5/16/2005	4.6	12.3	6.6	14.3	7.6	15.3	8.6	16.3
5/17/2005	-2.1	5.4	-0.1	7.4	0.9	8.4	1.9	9.4
5/18/2005	-2.7	6.1	-0.7	8.1	0.3	9.1	1.3	10.1
5/19/2005	1.9	6.3	3.9	8.3	4.9	9.3	5.9	10.3
5/20/2005	3.8	9.2	5.8	11.2	6.8	12.2	7.8	13.2
5/21/2005	3.6	8.9	5.6	10.9	6.6	11.9	7.6	12.9
5/22/2005	1.9	17.3	3.9	19.3	4.9	20.3	5.9	21.3
5/23/2005	6.9	16.6	8.9	18.6	9.9	19.6	10.9	20.6
5/24/2005	7.2	16.7	9.2	18.7	10.2	19.7	11.2	20.7
5/25/2005	6.5	18.8	8.5	20.8	9.5	21.8	10.5	22.8
5/26/2005	3.7	19	5.7	21	6.7	22	7.7	23
5/27/2005	6.7	19.7	8.7	21.7	9.7	22.7	10.7	23.7
5/28/2005	8.4	19.2	10.4	21.2	11.4	22.2	12.4	23.2
5/29/2005	2.4	13.4	4.4	15.4	5.4	16.4	6.4	17.4

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/30/2005	0.4	8.2	2.4	10.2	3.4	11.2	4.4	12.2
5/31/2005	0.6	15.9	2.6	17.9	3.6	18.9	4.6	19.9
6/1/2005	5.4	16	7.4	18	8.4	19	9.4	20
6/2/2005	3.6	15.1	5.6	17.1	6.6	18.1	7.6	19.1
6/3/2005	1.3	12.9	3.3	14.9	4.3	15.9	5.3	16.9
6/4/2005	-0.1	13.9	1.9	15.9	2.9	16.9	3.9	17.9
6/5/2005	4.4	13.6	6.4	15.6	7.4	16.6	8.4	17.6
6/6/2005	-1.4	7.9	0.6	9.9	1.6	10.9	2.6	11.9
6/7/2005	-4.2	4.2	-2.2	6.2	-1.2	7.2	-0.2	8.2
6/8/2005	-4.9	7	-2.9	9	-1.9	10	-0.9	11
6/9/2005	-1.5	4.4	0.5	6.4	1.5	7.4	2.5	8.4
6/10/2005	2.3	8.3	4.3	10.3	5.3	11.3	6.3	12.3
6/11/2005	1.4	13.9	3.4	15.9	4.4	16.9	5.4	17.9
6/12/2005	1.8	13.5	3.8	15.5	4.8	16.5	5.8	17.5
6/13/2005	2.9	17.3	4.9	19.3	5.9	20.3	6.9	21.3
6/14/2005	4.6	18.5	6.6	20.5	7.6	21.5	8.6	22.5
6/15/2005	8	15.1	10	17.1	11	18.1	12	19.1
6/16/2005	6.7	14.8	8.7	16.8	9.7	17.8	10.7	18.8
6/17/2005	0.4	9.7	2.4	11.7	3.4	12.7	4.4	13.7
6/18/2005	-1.3	2.1	0.7	4.1	1.7	5.1	2.7	6.1
6/19/2005	-1.8	6.4	0.2	8.4	1.2	9.4	2.2	10.4
6/20/2005	0	10.3	2	12.3	3	13.3	4	14.3
6/21/2005	4.5	14.6	6.5	16.6	7.5	17.6	8.5	18.6
6/22/2005	7.8	13.6	9.8	15.6	10.8	16.6	11.8	17.6
6/23/2005	7.3	15.7	9.3	17.7	10.3	18.7	11.3	19.7
6/24/2005	6.3	15.9	8.3	17.9	9.3	18.9	10.3	19.9
6/25/2005	6.9	14.6	8.9	16.6	9.9	17.6	10.9	18.6
6/26/2005	4.8	13.5	6.8	15.5	7.8	16.5	8.8	17.5
6/27/2005	4	13.4	6	15.4	7	16.4	8	17.4
6/28/2005	5.4	13.5	7.4	15.5	8.4	16.5	9.4	17.5
6/29/2005	6	15.3	8	17.3	9	18.3	10	19.3
6/30/2005	5.5	19.2	7.5	21.2	8.5	22.2	9.5	23.2
7/1/2005	9	20.4	11	22.4	12	23.4	13	24.4
7/2/2005	11.4	21.4	13.4	23.4	14.4	24.4	15.4	25.4
7/3/2005	10.3	19.6	12.3	21.6	13.3	22.6	14.3	23.6
7/4/2005	10.1	19.5	12.1	21.5	13.1	22.5	14.1	23.5
7/5/2005	9.4	20.6	11.4	22.6	12.4	23.6	13.4	24.6
7/6/2005	10.1	20.2	12.1	22.2	13.1	23.2	14.1	24.2
7/7/2005	10.9	21.4	12.9	23.4	13.9	24.4	14.9	25.4
7/8/2005	10.3	20.2	12.3	22.2	13.3	23.2	14.3	24.2
7/9/2005	10.4	18.6	12.4	20.6	13.4	21.6	14.4	22.6
7/10/2005	8.7	14.8	10.7	16.8	11.7	17.8	12.7	18.8
7/11/2005	8.4	18.1	10.4	20.1	11.4	21.1	12.4	22.1
7/12/2005	10	22.4	12	24.4	13	25.4	14	26.4
7/13/2005	13	23.9	15	25.9	16	26.9	17	27.9
7/14/2005	13.2	22.5	15.2	24.5	16.2	25.5	17.2	26.5
7/15/2005	12.7	23.8	14.7	25.8	15.7	26.8	16.7	27.8

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: EBBETS							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/16/2005	14.5	23.6	16.5	25.6	17.5	26.6	18.5	27.6
7/17/2005	14.4	25.3	16.4	27.3	17.4	28.3	18.4	29.3
7/18/2005	13.9	25.7	15.9	27.7	16.9	28.7	17.9	29.7
7/19/2005	14.1	24.9	16.1	26.9	17.1	27.9	18.1	28.9
7/20/2005	12.8	22.9	14.8	24.9	15.8	25.9	16.8	26.9
7/21/2005	12	23.1	14	25.1	15	26.1	16	27.1
7/22/2005	12.8	22	14.8	24	15.8	25	16.8	26
7/23/2005	12.3	19.4	14.3	21.4	15.3	22.4	16.3	23.4
7/24/2005	9.8	22.3	11.8	24.3	12.8	25.3	13.8	26.3
7/25/2005	11.4	22.3	13.4	24.3	14.4	25.3	15.4	26.3
7/26/2005	10.1	21.4	12.1	23.4	13.1	24.4	14.1	25.4
7/27/2005	9.2	22.6	11.2	24.6	12.2	25.6	13.2	26.6
7/28/2005	13.7	22.5	15.7	24.5	16.7	25.5	17.7	26.5
7/29/2005	12.7	21.1	14.7	23.1	15.7	24.1	16.7	25.1
7/30/2005	10.1	19	12.1	21	13.1	22	14.1	23
7/31/2005	10.2	20	12.2	22	13.2	23	14.2	24
8/1/2005	11.4	19.1	13.4	21.1	14.4	22.1	15.4	23.1

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/1/1999	15.18	35.02	17.18	37.02	18.18	38.02	19.18	39.02
10/2/1999	11.88	30.02	13.88	32.02	14.88	33.02	15.88	34.02
10/3/1999	8.478	30.52	10.478	32.52	11.478	33.52	12.478	34.52
10/4/1999	7.378	26.72	9.378	28.72	10.378	29.72	11.378	30.72
10/5/1999	7.378	25.02	9.378	27.02	10.378	28.02	11.378	29.02
10/6/1999	10.18	23.92	12.18	25.92	13.18	26.92	14.18	27.92
10/7/1999	5.678	28.32	7.678	30.32	8.678	31.32	9.678	32.32
10/8/1999	10.18	32.22	12.18	34.22	13.18	35.22	14.18	36.22
10/9/1999	12.98	33.92	14.98	35.92	15.98	36.92	16.98	37.92
10/10/1999	13.48	37.22	15.48	39.22	16.48	40.22	17.48	41.22
10/11/1999	13.48	35.02	15.48	37.02	16.48	38.02	17.48	39.02
10/12/1999	13.48	34.42	15.48	36.42	16.48	37.42	17.48	38.42
10/13/1999	14.58	33.92	16.58	35.92	17.58	36.92	18.58	37.92
10/14/1999	11.88	33.32	13.88	35.32	14.88	36.32	15.88	37.32
10/15/1999	11.88	34.42	13.88	36.42	14.88	37.42	15.88	38.42
10/16/1999	9.578	35.52	11.578	37.52	12.578	38.52	13.578	39.52
10/17/1999	7.378	30.02	9.378	32.02	10.378	33.02	11.378	34.02
10/18/1999	9.578	28.92	11.578	30.92	12.578	31.92	13.578	32.92
10/19/1999	9.578	28.92	11.578	30.92	12.578	31.92	13.578	32.92
10/20/1999	9.578	31.12	11.578	33.12	12.578	34.12	13.578	35.12
10/21/1999	10.68	32.22	12.68	34.22	13.68	35.22	14.68	36.22
10/22/1999	11.28	31.72	13.28	33.72	14.28	34.72	15.28	35.72
10/23/1999	9.578	25.52	11.578	27.52	12.578	28.52	13.578	29.52
10/24/1999	4.578	26.72	6.578	28.72	7.578	29.72	8.578	30.72
10/25/1999	7.378	26.12	9.378	28.12	10.378	29.12	11.378	30.12
10/26/1999	6.878	26.72	8.878	28.72	9.878	29.72	10.878	30.72
10/27/1999	6.278	27.82	8.278	29.82	9.278	30.82	10.278	31.82
10/28/1999	9.578	20.52	11.578	22.52	12.578	23.52	13.578	24.52
10/29/1999	2.378	21.72	4.378	23.72	5.378	24.72	6.378	25.72
10/30/1999	2.978	26.72	4.978	28.72	5.978	29.72	6.978	30.72
10/31/1999	6.278	26.72	8.278	28.72	9.278	29.72	10.278	30.72
11/1/1999	9.578	28.92	11.578	30.92	12.578	31.92	13.578	32.92
11/2/1999	8.478	27.82	10.478	29.82	11.478	30.82	12.478	31.82
11/3/1999	4.078	22.22	6.078	24.22	7.078	25.22	8.078	26.22
11/4/1999	5.178	25.52	7.178	27.52	8.178	28.52	9.178	29.52
11/5/1999	8.478	22.22	10.478	24.22	11.478	25.22	12.478	26.22
11/6/1999	6.278	21.12	8.278	23.12	9.278	24.12	10.278	25.12
11/7/1999	4.578	21.72	6.578	23.72	7.578	24.72	8.578	25.72
11/8/1999	7.378	17.82	9.378	19.82	10.378	20.82	11.378	21.82
11/9/1999	5.178	18.92	7.178	20.92	8.178	21.92	9.178	22.92
11/10/1999	6.878	20.02	8.878	22.02	9.878	23.02	10.878	24.02
11/11/1999	7.378	23.32	9.378	25.32	10.378	26.32	11.378	27.32
11/12/1999	6.878	25.52	8.878	27.52	9.878	28.52	10.878	29.52
11/13/1999	7.378	26.12	9.378	28.12	10.378	29.12	11.378	30.12
11/14/1999	8.478	22.22	10.478	24.22	11.478	25.22	12.478	26.22
11/15/1999	8.478	22.82	10.478	24.82	11.478	25.82	12.478	26.82
11/16/1999	7.978	21.12	9.978	23.12	10.978	24.12	11.978	25.12

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/17/1999	4.578	15.52	6.578	17.52	7.578	18.52	8.578	19.52
11/18/1999	2.378	17.82	4.378	19.82	5.378	20.82	6.378	21.82
11/19/1999	4.078	16.72	6.078	18.72	7.078	19.72	8.078	20.72
11/20/1999	5.178	16.72	7.178	18.72	8.178	19.72	9.178	20.72
11/21/1999	2.978	13.32	4.978	15.32	5.978	16.32	6.978	17.32
11/22/1999	-2.622	13.32	-0.622	15.32	0.378	16.32	1.378	17.32
11/23/1999	-0.9219	15.52	1.0781	17.52	2.0781	18.52	3.0781	19.52
11/24/1999	-0.4219	13.92	1.5781	15.92	2.5781	16.92	3.5781	17.92
11/25/1999	1.878	15.52	3.878	17.52	4.878	18.52	5.878	19.52
11/26/1999	1.878	15.52	3.878	17.52	4.878	18.52	5.878	19.52
11/27/1999	2.378	17.22	4.378	19.22	5.378	20.22	6.378	21.22
11/28/1999	2.978	16.72	4.978	18.72	5.978	19.72	6.978	20.72
11/29/1999	5.178	16.72	7.178	18.72	8.178	19.72	9.178	20.72
11/30/1999	6.278	13.32	8.278	15.32	9.278	16.32	10.278	17.32
12/1/1999	2.978	13.92	4.978	15.92	5.978	16.92	6.978	17.92
12/2/1999	0.6781	12.82	2.6781	14.82	3.6781	15.82	4.6781	16.82
12/3/1999	-2.622	12.22	-0.622	14.22	0.378	15.22	1.378	16.22
12/4/1999	-0.9219	13.92	1.0781	15.92	2.0781	16.92	3.0781	17.92
12/5/1999	0.1781	16.12	2.1781	18.12	3.1781	19.12	4.1781	20.12
12/6/1999	-0.4219	14.42	1.5781	16.42	2.5781	17.42	3.5781	18.42
12/7/1999	0.6781	12.82	2.6781	14.82	3.6781	15.82	4.6781	16.82
12/8/1999	-3.722	12.82	-1.722	14.82	-0.722	15.82	0.278	16.82
12/9/1999	-3.722	12.22	-1.722	14.22	-0.722	15.22	0.278	16.22
12/10/1999	-1.522	11.12	0.478	13.12	1.478	14.12	2.478	15.12
12/11/1999	-2.622	12.22	-0.622	14.22	0.378	15.22	1.378	16.22
12/12/1999	-0.4219	13.32	1.5781	15.32	2.5781	16.32	3.5781	17.32
12/13/1999	1.878	11.72	3.878	13.72	4.878	14.72	5.878	15.72
12/14/1999	-3.122	12.82	-1.122	14.82	-0.122	15.82	0.878	16.82
12/15/1999	-1.522	12.82	0.478	14.82	1.478	15.82	2.478	16.82
12/16/1999	-0.9219	14.42	1.0781	16.42	2.0781	17.42	3.0781	18.42
12/17/1999	-0.9219	15.02	1.0781	17.02	2.0781	18.02	3.0781	19.02
12/18/1999	1.878	12.82	3.878	14.82	4.878	15.82	5.878	16.82
12/19/1999	0.1781	14.42	2.1781	16.42	3.1781	17.42	4.1781	18.42
12/20/1999	0.6781	16.12	2.6781	18.12	3.6781	19.12	4.6781	20.12
12/21/1999	-0.4219	16.72	1.5781	18.72	2.5781	19.72	3.5781	20.72
12/22/1999	0.6781	17.82	2.6781	19.82	3.6781	20.82	4.6781	21.82
12/23/1999	2.378	17.82	4.378	19.82	5.378	20.82	6.378	21.82
12/24/1999	0.6781	15.52	2.6781	17.52	3.6781	18.52	4.6781	19.52
12/25/1999	-0.4219	16.72	1.5781	18.72	2.5781	19.72	3.5781	20.72
12/26/1999	0.6781	16.72	2.6781	18.72	3.6781	19.72	4.6781	20.72
12/27/1999	-0.4219	17.82	1.5781	19.82	2.5781	20.82	3.5781	21.82
12/28/1999	1.278	16.72	3.278	18.72	4.278	19.72	5.278	20.72
12/29/1999	-0.4219	14.42	1.5781	16.42	2.5781	17.42	3.5781	18.42
12/30/1999	-0.4219	16.12	1.5781	18.12	2.5781	19.12	3.5781	20.12
12/31/1999	-0.4219	12.22	1.5781	14.22	2.5781	15.22	3.5781	16.22
1/1/2000	0.6781	12.22	2.6781	14.22	3.6781	15.22	4.6781	16.22
1/2/2000	-2.622	10.02	-0.622	12.02	0.378	13.02	1.378	14.02

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/3/2000	-3.122	11.72	-1.122	13.72	-0.122	14.72	0.878	15.72
1/4/2000	-0.9219	13.92	1.0781	15.92	2.0781	16.92	3.0781	17.92
1/5/2000	-4.822	12.82	-2.822	14.82	-1.822	15.82	-0.822	16.82
1/6/2000	-5.422	12.82	-3.422	14.82	-2.422	15.82	-1.422	16.82
1/7/2000	-0.9219	11.72	1.0781	13.72	2.0781	14.72	3.0781	15.72
1/8/2000	-0.9219	13.32	1.0781	15.32	2.0781	16.32	3.0781	17.32
1/9/2000	0.1781	13.32	2.1781	15.32	3.1781	16.32	4.1781	17.32
1/10/2000	1.278	16.72	3.278	18.72	4.278	19.72	5.278	20.72
1/11/2000	2.978	14.42	4.978	16.42	5.978	17.42	6.978	18.42
1/12/2000	1.878	12.22	3.878	14.22	4.878	15.22	5.878	16.22
1/13/2000	1.878	17.82	3.878	19.82	4.878	20.82	5.878	21.82
1/14/2000	1.878	15.52	3.878	17.52	4.878	18.52	5.878	19.52
1/15/2000	4.078	18.92	6.078	20.92	7.078	21.92	8.078	22.92
1/16/2000	5.178	13.92	7.178	15.92	8.178	16.92	9.178	17.92
1/17/2000	4.078	15.52	6.078	17.52	7.078	18.52	8.078	19.52
1/18/2000	5.178	15.52	7.178	17.52	8.178	18.52	9.178	19.52
1/19/2000	5.678	17.82	7.678	19.82	8.678	20.82	9.678	21.82
1/20/2000	7.378	12.22	9.378	14.22	10.378	15.22	11.378	16.22
1/21/2000	0.6781	14.42	2.6781	16.42	3.6781	17.42	4.6781	18.42
1/22/2000	0.6781	15.02	2.6781	17.02	3.6781	18.02	4.6781	19.02
1/23/2000	3.478	14.42	5.478	16.42	6.478	17.42	7.478	18.42
1/24/2000	5.678	16.12	7.678	18.12	8.678	19.12	9.678	20.12
1/25/2000	5.178	13.92	7.178	15.92	8.178	16.92	9.178	17.92
1/26/2000	4.078	13.32	6.078	15.32	7.078	16.32	8.078	17.32
1/27/2000	2.978	14.42	4.978	16.42	5.978	17.42	6.978	18.42
1/28/2000	0.6781	15.52	2.6781	17.52	3.6781	18.52	4.6781	19.52
1/29/2000	0.6781	17.82	2.6781	19.82	3.6781	20.82	4.6781	21.82
1/30/2000	5.178	16.72	7.178	18.72	8.178	19.72	9.178	20.72
1/31/2000	3.478	13.32	5.478	15.32	6.478	16.32	7.478	17.32
2/1/2000	2.978	16.72	4.978	18.72	5.978	19.72	6.978	20.72
2/2/2000	2.378	20.02	4.378	22.02	5.378	23.02	6.378	24.02
2/3/2000	2.978	20.52	4.978	22.52	5.978	23.52	6.978	24.52
2/4/2000	5.178	17.22	7.178	19.22	8.178	20.22	9.178	21.22
2/5/2000	5.678	17.82	7.678	19.82	8.678	20.82	9.678	21.82
2/6/2000	4.078	18.92	6.078	20.92	7.078	21.92	8.078	22.92
2/7/2000	2.978	21.72	4.978	23.72	5.978	24.72	6.978	25.72
2/8/2000	3.478	21.12	5.478	23.12	6.478	24.12	7.478	25.12
2/9/2000	7.378	16.72	9.378	18.72	10.378	19.72	11.378	20.72
2/10/2000	6.878	17.22	8.878	19.22	9.878	20.22	10.878	21.22
2/11/2000	3.478	12.82	5.478	14.82	6.478	15.82	7.478	16.82
2/12/2000	1.278	11.72	3.278	13.72	4.278	14.72	5.278	15.72
2/13/2000	2.978	15.52	4.978	17.52	5.978	18.52	6.978	19.52
2/14/2000	5.678	17.82	7.678	19.82	8.678	20.82	9.678	21.82
2/15/2000	0.6781	18.92	2.6781	20.92	3.6781	21.92	4.6781	22.92
2/16/2000	1.878	11.12	3.878	13.12	4.878	14.12	5.878	15.12
2/17/2000	2.978	13.92	4.978	15.92	5.978	16.92	6.978	17.92
2/18/2000	1.878	16.72	3.878	18.72	4.878	19.72	5.878	20.72

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/19/2000	2.978	18.92	4.978	20.92	5.978	21.92	6.978	22.92
2/20/2000	2.978	18.92	4.978	20.92	5.978	21.92	6.978	22.92
2/21/2000	4.078	19.42	6.078	21.42	7.078	22.42	8.078	23.42
2/22/2000	1.278	19.42	3.278	21.42	4.278	22.42	5.278	23.42
2/23/2000	1.878	13.92	3.878	15.92	4.878	16.92	5.878	17.92
2/24/2000	-2.022	12.22	-0.022	14.22	0.978	15.22	1.978	16.22
2/25/2000	-0.4219	15.52	1.5781	17.52	2.5781	18.52	3.5781	19.52
2/26/2000	5.178	18.92	7.178	20.92	8.178	21.92	9.178	22.92
2/27/2000	5.178	14.42	7.178	16.42	8.178	17.42	9.178	18.42
2/28/2000	2.978	13.92	4.978	15.92	5.978	16.92	6.978	17.92
2/29/2000	3.478	13.32	5.478	15.32	6.478	16.32	7.478	17.32
3/1/2000	-0.4219	15.52	1.5781	17.52	2.5781	18.52	3.5781	19.52
3/2/2000	1.878	11.12	3.878	13.12	4.878	14.12	5.878	15.12
3/3/2000	-0.9219	17.82	1.0781	19.82	2.0781	20.82	3.0781	21.82
3/4/2000	1.878	18.92	3.878	20.92	4.878	21.92	5.878	22.92
3/5/2000	2.978	11.72	4.978	13.72	5.978	14.72	6.978	15.72
3/6/2000	1.278	14.42	3.278	16.42	4.278	17.42	5.278	18.42
3/7/2000	0.6781	13.32	2.6781	15.32	3.6781	16.32	4.6781	17.32
3/8/2000	2.978	14.42	4.978	16.42	5.978	17.42	6.978	18.42
3/9/2000	2.978	15.02	4.978	17.02	5.978	18.02	6.978	19.02
3/10/2000	0.1781	18.32	2.1781	20.32	3.1781	21.32	4.1781	22.32
3/11/2000	2.978	17.22	4.978	19.22	5.978	20.22	6.978	21.22
3/12/2000	2.378	19.42	4.378	21.42	5.378	22.42	6.378	23.42
3/13/2000	2.978	21.12	4.978	23.12	5.978	24.12	6.978	25.12
3/14/2000	4.078	22.82	6.078	24.82	7.078	25.82	8.078	26.82
3/15/2000	4.078	22.82	6.078	24.82	7.078	25.82	8.078	26.82
3/16/2000	5.678	22.22	7.678	24.22	8.678	25.22	9.678	26.22
3/17/2000	0.6781	21.12	2.6781	23.12	3.6781	24.12	4.6781	25.12
3/18/2000	5.178	23.32	7.178	25.32	8.178	26.32	9.178	27.32
3/19/2000	7.378	25.52	9.378	27.52	10.378	28.52	11.378	29.52
3/20/2000	-0.4219	18.32	1.5781	20.32	2.5781	21.32	3.5781	22.32
3/21/2000	0.6781	23.32	2.6781	25.32	3.6781	26.32	4.6781	27.32
3/22/2000	6.878	25.02	8.878	27.02	9.878	28.02	10.878	29.02
3/23/2000	5.178	21.12	7.178	23.12	8.178	24.12	9.178	25.12
3/24/2000	2.978	25.52	4.978	27.52	5.978	28.52	6.978	29.52
3/25/2000	6.278	22.22	8.278	24.22	9.278	25.22	10.278	26.22
3/26/2000	1.878	23.32	3.878	25.32	4.878	26.32	5.878	27.32
3/27/2000	2.978	16.12	4.978	18.12	5.978	19.12	6.978	20.12
3/28/2000	1.878	17.82	3.878	19.82	4.878	20.82	5.878	21.82
3/29/2000	1.878	20.02	3.878	22.02	4.878	23.02	5.878	24.02
3/30/2000	4.078	24.42	6.078	26.42	7.078	27.42	8.078	28.42
3/31/2000	6.878	28.92	8.878	30.92	9.878	31.92	10.878	32.92
4/1/2000	10.18	29.42	12.18	31.42	13.18	32.42	14.18	33.42
4/2/2000	9.578	31.12	11.578	33.12	12.578	34.12	13.578	35.12
4/3/2000	11.88	33.32	13.88	35.32	14.88	36.32	15.88	37.32
4/4/2000	5.178	25.52	7.178	27.52	8.178	28.52	9.178	29.52
4/5/2000	4.078	24.42	6.078	26.42	7.078	27.42	8.078	28.42

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/6/2000	4.078	24.42	6.078	26.42	7.078	27.42	8.078	28.42
4/7/2000	3.478	27.82	5.478	29.82	6.478	30.82	7.478	31.82
4/8/2000	5.178	22.22	7.178	24.22	8.178	25.22	9.178	26.22
4/9/2000	3.478	22.82	5.478	24.82	6.478	25.82	7.478	26.82
4/10/2000	3.478	25.52	5.478	27.52	6.478	28.52	7.478	29.52
4/11/2000	5.678	30.52	7.678	32.52	8.678	33.52	9.678	34.52
4/12/2000	10.18	31.12	12.18	33.12	13.18	34.12	14.18	35.12
4/13/2000	8.478	20.52	10.478	22.52	11.478	23.52	12.478	24.52
4/14/2000	6.278	21.12	8.278	23.12	9.278	24.12	10.278	25.12
4/15/2000	6.278	19.42	8.278	21.42	9.278	22.42	10.278	23.42
4/16/2000	1.878	19.42	3.878	21.42	4.878	22.42	5.878	23.42
4/17/2000	2.978	12.22	4.978	14.22	5.978	15.22	6.978	16.22
4/18/2000	2.978	18.32	4.978	20.32	5.978	21.32	6.978	22.32
4/19/2000	2.378	20.52	4.378	22.52	5.378	23.52	6.378	24.52
4/20/2000	5.678	24.42	7.678	26.42	8.678	27.42	9.678	28.42
4/21/2000	6.278	26.72	8.278	28.72	9.278	29.72	10.278	30.72
4/22/2000	4.078	20.02	6.078	22.02	7.078	23.02	8.078	24.02
4/23/2000	1.878	20.02	3.878	22.02	4.878	23.02	5.878	24.02
4/24/2000	2.978	24.42	4.978	26.42	5.978	27.42	6.978	28.42
4/25/2000	4.078	25.02	6.078	27.02	7.078	28.02	8.078	29.02
4/26/2000	6.278	28.92	8.278	30.92	9.278	31.92	10.278	32.92
4/27/2000	8.478	25.02	10.478	27.02	11.478	28.02	12.478	29.02
4/28/2000	4.078	19.42	6.078	21.42	7.078	22.42	8.078	23.42
4/29/2000	1.878	24.42	3.878	26.42	4.878	27.42	5.878	28.42
4/30/2000	7.378	29.42	9.378	31.42	10.378	32.42	11.378	33.42
5/1/2000	8.478	30.02	10.478	32.02	11.478	33.02	12.478	34.02
5/2/2000	7.378	30.02	9.378	32.02	10.378	33.02	11.378	34.02
5/3/2000	4.578	30.02	6.578	32.02	7.578	33.02	8.578	34.02
5/4/2000	4.578	28.32	6.578	30.32	7.578	31.32	8.578	32.32
5/5/2000	6.878	23.32	8.878	25.32	9.878	26.32	10.878	27.32
5/6/2000	4.578	20.02	6.578	22.02	7.578	23.02	8.578	24.02
5/7/2000	4.578	17.22	6.578	19.22	7.578	20.22	8.578	21.22
5/8/2000	7.978	22.22	9.978	24.22	10.978	25.22	11.978	26.22
5/9/2000	6.278	22.82	8.278	24.82	9.278	25.82	10.278	26.82
5/10/2000	3.478	20.52	5.478	22.52	6.478	23.52	7.478	24.52
5/11/2000	0.6781	21.12	2.6781	23.12	3.6781	24.12	4.6781	25.12
5/12/2000	2.378	24.42	4.378	26.42	5.378	27.42	6.378	28.42
5/13/2000	6.278	25.52	8.278	27.52	9.278	28.52	10.278	29.52
5/14/2000	4.078	23.92	6.078	25.92	7.078	26.92	8.078	27.92
5/15/2000	7.378	28.32	9.378	30.32	10.378	31.32	11.378	32.32
5/16/2000	5.678	14.42	7.678	16.42	8.678	17.42	9.678	18.42
5/17/2000	5.678	22.82	7.678	24.82	8.678	25.82	9.678	26.82
5/18/2000	6.878	28.32	8.878	30.32	9.878	31.32	10.878	32.32
5/19/2000	9.578	32.22	11.578	34.22	12.578	35.22	13.578	36.22
5/20/2000	12.98	35.52	14.98	37.52	15.98	38.52	16.98	39.52
5/21/2000	15.18	38.92	17.18	40.92	18.18	41.92	19.18	42.92
5/22/2000	17.38	40.02	19.38	42.02	20.38	43.02	21.38	44.02

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/23/2000	19.08	36.72	21.08	38.72	22.08	39.72	23.08	40.72
5/24/2000	7.378	29.42	9.378	31.42	10.378	32.42	11.378	33.42
5/25/2000	9.578	28.92	11.578	30.92	12.578	31.92	13.578	32.92
5/26/2000	10.18	31.12	12.18	33.12	13.18	34.12	14.18	35.12
5/27/2000	9.578	33.92	11.578	35.92	12.578	36.92	13.578	37.92
5/28/2000	10.18	34.42	12.18	36.42	13.18	37.42	14.18	38.42
5/29/2000	7.378	31.12	9.378	33.12	10.378	34.12	11.378	35.12
5/30/2000	5.178	28.92	7.178	30.92	8.178	31.92	9.178	32.92
5/31/2000	7.378	30.02	9.378	32.02	10.378	33.02	11.378	34.02
6/1/2000	8.478	34.42	10.478	36.42	11.478	37.42	12.478	38.42
6/2/2000	10.18	33.92	12.18	35.92	13.18	36.92	14.18	37.92
6/3/2000	9.078	35.02	11.078	37.02	12.078	38.02	13.078	39.02
6/4/2000	10.68	34.42	12.68	36.42	13.68	37.42	14.68	38.42
6/5/2000	6.878	30.02	8.878	32.02	9.878	33.02	10.878	34.02
6/6/2000	9.078	31.72	11.078	33.72	12.078	34.72	13.078	35.72
6/7/2000	9.578	27.82	11.578	29.82	12.578	30.82	13.578	31.82
6/8/2000	8.478	21.72	10.478	23.72	11.478	24.72	12.478	25.72
6/9/2000	7.378	25.02	9.378	27.02	10.378	28.02	11.378	29.02
6/10/2000	9.078	26.72	11.078	28.72	12.078	29.72	13.078	30.72
6/11/2000	7.378	30.02	9.378	32.02	10.378	33.02	11.378	34.02
6/12/2000	7.378	34.42	9.378	36.42	10.378	37.42	11.378	38.42
6/13/2000	12.98	40.02	14.98	42.02	15.98	43.02	16.98	44.02
6/14/2000	14.58	43.32	16.58	45.32	17.58	46.32	18.58	47.32
6/15/2000	17.98	42.22	19.98	44.22	20.98	45.22	21.98	46.22
6/16/2000	17.38	41.72	19.38	43.72	20.38	44.72	21.38	45.72
6/17/2000	13.48	35.52	15.48	37.52	16.48	38.52	17.48	39.52
6/18/2000	9.578	30.02	11.578	32.02	12.578	33.02	13.578	34.02
6/19/2000	8.478	35.52	10.478	37.52	11.478	38.52	12.478	39.52
6/20/2000	11.88	38.92	13.88	40.92	14.88	41.92	15.88	42.92
6/21/2000	16.28	40.52	18.28	42.52	19.28	43.52	20.28	44.52
6/22/2000	16.88	41.12	18.88	43.12	19.88	44.12	20.88	45.12
6/23/2000	9.578	35.52	11.578	37.52	12.578	38.52	13.578	39.52
6/24/2000	10.68	35.52	12.68	37.52	13.68	38.52	14.68	39.52
6/25/2000	9.578	37.22	11.578	39.22	12.578	40.22	13.578	41.22
6/26/2000	15.18	39.42	17.18	41.42	18.18	42.42	19.18	43.42
6/27/2000	16.88	40.52	18.88	42.52	19.88	43.52	20.88	44.52
6/28/2000	18.48	40.52	20.48	42.52	21.48	43.52	22.48	44.52
6/29/2000	17.38	40.52	19.38	42.52	20.38	43.52	21.38	44.52
6/30/2000	12.98	34.42	14.98	36.42	15.98	37.42	16.98	38.42
7/1/2000	9.578	32.22	11.578	34.22	12.578	35.22	13.578	36.22
7/2/2000	10.68	31.12	12.68	33.12	13.68	34.12	14.68	35.12
7/3/2000	7.978	30.02	9.978	32.02	10.978	33.02	11.978	34.02
7/4/2000	9.578	32.22	11.578	34.22	12.578	35.22	13.578	36.22
7/5/2000	8.478	28.92	10.478	30.92	11.478	31.92	12.478	32.92
7/6/2000	8.478	31.12	10.478	33.12	11.478	34.12	12.478	35.12
7/7/2000	9.078	28.32	11.078	30.32	12.078	31.32	13.078	32.32
7/8/2000	8.478	31.12	10.478	33.12	11.478	34.12	12.478	35.12

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/9/2000	11.88	34.42	13.88	36.42	14.88	37.42	15.88	38.42
7/10/2000	15.18	35.02	17.18	37.02	18.18	38.02	19.18	39.02
7/11/2000	14.08	36.12	16.08	38.12	17.08	39.12	18.08	40.12
7/12/2000	10.68	32.82	12.68	34.82	13.68	35.82	14.68	36.82
7/13/2000	9.578	31.72	11.578	33.72	12.578	34.72	13.578	35.72
7/14/2000	10.68	36.72	12.68	38.72	13.68	39.72	14.68	40.72
7/15/2000	14.08	36.12	16.08	38.12	17.08	39.12	18.08	40.12
7/16/2000	6.878	36.12	8.878	38.12	9.878	39.12	10.878	40.12
7/17/2000	9.578	32.22	11.578	34.22	12.578	35.22	13.578	36.22
7/18/2000	10.18	31.72	12.18	33.72	13.18	34.72	14.18	35.72
7/19/2000	10.18	37.22	12.18	39.22	13.18	40.22	14.18	41.22
7/20/2000	12.38	39.42	14.38	41.42	15.38	42.42	16.38	43.42
7/21/2000	10.68	36.72	12.68	38.72	13.68	39.72	14.68	40.72
7/22/2000	12.98	36.72	14.98	38.72	15.98	39.72	16.98	40.72
7/23/2000	14.08	40.02	16.08	42.02	17.08	43.02	18.08	44.02
7/24/2000	15.18	40.52	17.18	42.52	18.18	43.52	19.18	44.52
7/25/2000	15.18	38.92	17.18	40.92	18.18	41.92	19.18	42.92
7/26/2000	14.08	33.92	16.08	35.92	17.08	36.92	18.08	37.92
7/27/2000	11.28	35.02	13.28	37.02	14.28	38.02	15.28	39.02
7/28/2000	11.88	39.42	13.88	41.42	14.88	42.42	15.88	43.42
7/29/2000	14.58	41.12	16.58	43.12	17.58	44.12	18.58	45.12
7/30/2000	18.48	41.72	20.48	43.72	21.48	44.72	22.48	45.72
7/31/2000	17.38	42.82	19.38	44.82	20.38	45.82	21.38	46.82
8/1/2000	22.38	43.32	24.38	45.32	25.38	46.32	26.38	47.32
8/2/2000	19.58	41.72	21.58	43.72	22.58	44.72	23.58	45.72
8/3/2000	17.98	40.52	19.98	42.52	20.98	43.52	21.98	44.52
8/4/2000	12.38	38.32	14.38	40.32	15.38	41.32	16.38	42.32
8/5/2000	13.48	40.02	15.48	42.02	16.48	43.02	17.48	44.02
8/6/2000	16.28	38.32	18.28	40.32	19.28	41.32	20.28	42.32
8/7/2000	11.28	35.02	13.28	37.02	14.28	38.02	15.28	39.02
8/8/2000	8.478	35.52	10.478	37.52	11.478	38.52	12.478	39.52
8/9/2000	9.578	36.12	11.578	38.12	12.578	39.12	13.578	40.12
8/10/2000	9.578	31.12	11.578	33.12	12.578	34.12	13.578	35.12
8/11/2000	9.578	37.82	11.578	39.82	12.578	40.82	13.578	41.82
8/12/2000	18.48	40.02	20.48	42.02	21.48	43.02	22.48	44.02
8/13/2000	15.18	38.32	17.18	40.32	18.18	41.32	19.18	42.32
8/14/2000	13.48	39.42	15.48	41.42	16.48	42.42	17.48	43.42
8/15/2000	14.08	39.42	16.08	41.42	17.08	42.42	18.08	43.42
8/16/2000	15.18	41.12	17.18	43.12	18.18	44.12	19.18	45.12
8/17/2000	14.58	38.92	16.58	40.92	17.58	41.92	18.58	42.92
8/18/2000	12.98	35.52	14.98	37.52	15.98	38.52	16.98	39.52
8/19/2000	11.28	35.52	13.28	37.52	14.28	38.52	15.28	39.52
8/20/2000	10.18	33.32	12.18	35.32	13.18	36.32	14.18	37.32
8/21/2000	11.88	35.52	13.88	37.52	14.88	38.52	15.88	39.52
8/22/2000	11.88	36.72	13.88	38.72	14.88	39.72	15.88	40.72
8/23/2000	11.28	32.82	13.28	34.82	14.28	35.82	15.28	36.82
8/24/2000	11.28	36.72	13.28	38.72	14.28	39.72	15.28	40.72

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/25/2000	11.88	38.92	13.88	40.92	14.88	41.92	15.88	42.92
8/26/2000	14.08	37.22	16.08	39.22	17.08	40.22	18.08	41.22
8/27/2000	15.18	37.82	17.18	39.82	18.18	40.82	19.18	41.82
8/28/2000	14.58	35.02	16.58	37.02	17.58	38.02	18.58	39.02
8/29/2000	12.98	33.32	14.98	35.32	15.98	36.32	16.98	37.32
8/30/2000	11.28	20.02	13.28	22.02	14.28	23.02	15.28	24.02
8/31/2000	10.18	27.82	12.18	29.82	13.18	30.82	14.18	31.82
9/1/2000	10.18	23.32	12.18	25.32	13.18	26.32	14.18	27.32
9/2/2000	9.578	23.92	11.578	25.92	12.578	26.92	13.578	27.92
9/3/2000	8.478	25.52	10.478	27.52	11.478	28.52	12.478	29.52
9/4/2000	6.278	25.52	8.278	27.52	9.278	28.52	10.278	29.52
9/5/2000	6.878	27.82	8.878	29.82	9.878	30.82	10.878	31.82
9/6/2000	6.878	31.12	8.878	33.12	9.878	34.12	10.878	35.12
9/7/2000	11.28	36.12	13.28	38.12	14.28	39.12	15.28	40.12
9/8/2000	14.08	36.12	16.08	38.12	17.08	39.12	18.08	40.12
9/9/2000	11.88	33.92	13.88	35.92	14.88	36.92	15.88	37.92
9/10/2000	10.18	35.02	12.18	37.02	13.18	38.02	14.18	39.02
9/11/2000	11.28	37.82	13.28	39.82	14.28	40.82	15.28	41.82
9/12/2000	12.38	36.72	14.38	38.72	15.38	39.72	16.38	40.72
9/13/2000	15.18	38.92	17.18	40.92	18.18	41.92	19.18	42.92
9/14/2000	14.08	32.22	16.08	34.22	17.08	35.22	18.08	36.22
9/15/2000	10.68	32.22	12.68	34.22	13.68	35.22	14.68	36.22
9/16/2000	9.578	33.32	11.578	35.32	12.578	36.32	13.578	37.32
9/17/2000	12.98	37.22	14.98	39.22	15.98	40.22	16.98	41.22
9/18/2000	16.88	40.02	18.88	42.02	19.88	43.02	20.88	44.02
9/19/2000	16.88	40.52	18.88	42.52	19.88	43.52	20.88	44.52
9/20/2000	19.58	41.72	21.58	43.72	22.58	44.72	23.58	45.72
9/21/2000	10.68	27.82	12.68	29.82	13.68	30.82	14.68	31.82
9/22/2000	11.88	25.52	13.88	27.52	14.88	28.52	15.88	29.52
9/23/2000	8.478	28.32	10.478	30.32	11.478	31.32	12.478	32.32
9/24/2000	10.68	31.72	12.68	33.72	13.68	34.72	14.68	35.72
9/25/2000	11.88	35.52	13.88	37.52	14.88	38.52	15.88	39.52
9/26/2000	12.38	35.02	14.38	37.02	15.38	38.02	16.38	39.02
9/27/2000	10.68	29.42	12.68	31.42	13.68	32.42	14.68	33.42
9/28/2000	8.478	25.52	10.478	27.52	11.478	28.52	12.478	29.52
9/29/2000	8.478	25.02	10.478	27.02	11.478	28.02	12.478	29.02
9/30/2000	8.478	34.42	10.478	36.42	11.478	37.42	12.478	38.42
10/1/2000	14.08	36.12	16.08	38.12	17.08	39.12	18.08	40.12
10/2/2000	13.48	31.72	15.48	33.72	16.48	34.72	17.48	35.72
10/3/2000	9.078	32.22	11.078	34.22	12.078	35.22	13.078	36.22
10/4/2000	8.478	28.92	10.478	30.92	11.478	31.92	12.478	32.92
10/5/2000	8.478	31.12	10.478	33.12	11.478	34.12	12.478	35.12
10/6/2000	9.078	32.22	11.078	34.22	12.078	35.22	13.078	36.22
10/7/2000	8.478	26.12	10.478	28.12	11.478	29.12	12.478	30.12
10/8/2000	7.978	30.02	9.978	32.02	10.978	33.02	11.978	34.02
10/9/2000	8.478	23.32	10.478	25.32	11.478	26.32	12.478	27.32
10/10/2000	7.378	14.42	9.378	16.42	10.378	17.42	11.378	18.42

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/11/2000	6.278	15.02	8.278	17.02	9.278	18.02	10.278	19.02
10/12/2000	6.278	18.92	8.278	20.92	9.278	21.92	10.278	22.92
10/13/2000	5.178	22.22	7.178	24.22	8.178	25.22	9.178	26.22
10/14/2000	7.378	24.42	9.378	26.42	10.378	27.42	11.378	28.42
10/15/2000	7.978	25.52	9.978	27.52	10.978	28.52	11.978	29.52
10/16/2000	8.478	28.32	10.478	30.32	11.478	31.32	12.478	32.32
10/17/2000	10.18	28.92	12.18	30.92	13.18	31.92	14.18	32.92
10/18/2000	8.478	28.92	10.478	30.92	11.478	31.92	12.478	32.92
10/19/2000	7.378	26.72	9.378	28.72	10.378	29.72	11.378	30.72
10/20/2000	7.378	24.42	9.378	26.42	10.378	27.42	11.378	28.42
10/21/2000	5.678	22.22	7.678	24.22	8.678	25.22	9.678	26.22
10/22/2000	6.278	26.12	8.278	28.12	9.278	29.12	10.278	30.12
10/23/2000	6.878	26.72	8.878	28.72	9.878	29.72	10.878	30.72
10/24/2000	6.278	27.22	8.278	29.22	9.278	30.22	10.278	31.22
10/25/2000	6.878	20.02	8.878	22.02	9.878	23.02	10.878	24.02
10/26/2000	7.378	15.52	9.378	17.52	10.378	18.52	11.378	19.52
10/27/2000	4.078	20.52	6.078	22.52	7.078	23.52	8.078	24.52
10/28/2000	4.578	16.72	6.578	18.72	7.578	19.72	8.578	20.72
10/29/2000	5.178	14.42	7.178	16.42	8.178	17.42	9.178	18.42
10/30/2000	4.078	17.22	6.078	19.22	7.078	20.22	8.078	21.22
10/31/2000	0.1781	17.22	2.1781	19.22	3.1781	20.22	4.1781	21.22
11/1/2000	0.1781	18.32	2.1781	20.32	3.1781	21.32	4.1781	22.32
11/2/2000	3.478	18.92	5.478	20.92	6.478	21.92	7.478	22.92
11/3/2000	4.078	21.12	6.078	23.12	7.078	24.12	8.078	25.12
11/4/2000	4.578	22.22	6.578	24.22	7.578	25.22	8.578	26.22
11/5/2000	4.578	20.02	6.578	22.02	7.578	23.02	8.578	24.02
11/6/2000	4.078	17.82	6.078	19.82	7.078	20.82	8.078	21.82
11/7/2000	1.878	18.92	3.878	20.92	4.878	21.92	5.878	22.92
11/8/2000	6.278	18.92	8.278	20.92	9.278	21.92	10.278	22.92
11/9/2000	0.1781	14.42	2.1781	16.42	3.1781	17.42	4.1781	18.42
11/10/2000	0.6781	12.22	2.6781	14.22	3.6781	15.22	4.6781	16.22
11/11/2000	-0.4219	12.22	1.5781	14.22	2.5781	15.22	3.5781	16.22
11/12/2000	-1.522	14.42	0.478	16.42	1.478	17.42	2.478	18.42
11/13/2000	-1.522	12.22	0.478	14.22	1.478	15.22	2.478	16.22
11/14/2000	-0.4219	12.22	1.5781	14.22	2.5781	15.22	3.5781	16.22
11/15/2000	-2.622	10.02	-0.622	12.02	0.378	13.02	1.378	14.02
11/16/2000	-1.522	13.32	0.478	15.32	1.478	16.32	2.478	17.32
11/17/2000	-0.9219	15.02	1.0781	17.02	2.0781	18.02	3.0781	19.02
11/18/2000	0.1781	16.12	2.1781	18.12	3.1781	19.12	4.1781	20.12
11/19/2000	1.278	16.72	3.278	18.72	4.278	19.72	5.278	20.72
11/20/2000	0.6781	18.92	2.6781	20.92	3.6781	21.92	4.6781	22.92
11/21/2000	0.6781	15.52	2.6781	17.52	3.6781	18.52	4.6781	19.52
11/22/2000	0.6781	11.12	2.6781	13.12	3.6781	14.12	4.6781	15.12
11/23/2000	0.6781	13.32	2.6781	15.32	3.6781	16.32	4.6781	17.32
11/24/2000	0.6781	12.22	2.6781	14.22	3.6781	15.22	4.6781	16.22
11/25/2000	0.6781	12.22	2.6781	14.22	3.6781	15.22	4.6781	16.22
11/26/2000	0.6781	14.42	2.6781	16.42	3.6781	17.42	4.6781	18.42

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/27/2000	1.878	9.417	3.878	11.417	4.878	12.417	5.878	13.417
11/28/2000	0.6781	11.12	2.6781	13.12	3.6781	14.12	4.6781	15.12
11/29/2000	0.6781	14.42	2.6781	16.42	3.6781	17.42	4.6781	18.42
11/30/2000	0.6781	15.02	2.6781	17.02	3.6781	18.02	4.6781	19.02
12/1/2000	0.6781	13.32	2.6781	15.32	3.6781	16.32	4.6781	17.32
12/2/2000	-0.9219	14.42	1.0781	16.42	2.0781	17.42	3.0781	18.42
12/3/2000	-0.4219	12.82	1.5781	14.82	2.5781	15.82	3.5781	16.82
12/4/2000	-2.622	13.32	-0.622	15.32	0.378	16.32	1.378	17.32
12/5/2000	-2.622	11.12	-0.622	13.12	0.378	14.12	1.378	15.12
12/6/2000	-3.122	16.72	-1.122	18.72	-0.122	19.72	0.878	20.72
12/7/2000	-2.622	15.02	-0.622	17.02	0.378	18.02	1.378	19.02
12/8/2000	4.578	17.82	6.578	19.82	7.578	20.82	8.578	21.82
12/9/2000	2.978	16.72	4.978	18.72	5.978	19.72	6.978	20.72
12/10/2000	5.178	14.42	7.178	16.42	8.178	17.42	9.178	18.42
12/11/2000	4.078	12.22	6.078	14.22	7.078	15.22	8.078	16.22
12/12/2000	1.878	12.82	3.878	14.82	4.878	15.82	5.878	16.82
12/13/2000	1.878	13.32	3.878	15.32	4.878	16.32	5.878	17.32
12/14/2000	2.978	13.32	4.978	15.32	5.978	16.32	6.978	17.32
12/15/2000	3.478	16.12	5.478	18.12	6.478	19.12	7.478	20.12
12/16/2000	0.6781	16.12	2.6781	18.12	3.6781	19.12	4.6781	20.12
12/17/2000	1.278	13.92	3.278	15.92	4.278	16.92	5.278	17.92
12/18/2000	0.1781	15.02	2.1781	17.02	3.1781	18.02	4.1781	19.02
12/19/2000	0.1781	15.52	2.1781	17.52	3.1781	18.52	4.1781	19.52
12/20/2000	0.6781	15.52	2.6781	17.52	3.6781	18.52	4.6781	19.52
12/21/2000	1.278	16.72	3.278	18.72	4.278	19.72	5.278	20.72
12/22/2000	2.978	15.02	4.978	17.02	5.978	18.02	6.978	19.02
12/23/2000	0.6781	13.32	2.6781	15.32	3.6781	16.32	4.6781	17.32
12/24/2000	-0.4219	8.317	1.5781	10.317	2.5781	11.317	3.5781	12.317
12/25/2000	-0.9219	12.22	1.0781	14.22	2.0781	15.22	3.0781	16.22
12/26/2000	-1.522	15.02	0.478	17.02	1.478	18.02	2.478	19.02
12/27/2000	-1.522	16.72	0.478	18.72	1.478	19.72	2.478	20.72
12/28/2000	-1.522	15.52	0.478	17.52	1.478	18.52	2.478	19.52
12/29/2000	-1.522	14.42	0.478	16.42	1.478	17.42	2.478	18.42
12/30/2000	-1.522	15.52	0.478	17.52	1.478	18.52	2.478	19.52
12/31/2000	-1.522	13.92	0.478	15.92	1.478	16.92	2.478	17.92
1/1/2001	0.6781	16.72	2.6781	18.72	3.6781	19.72	4.6781	20.72
1/2/2001	-0.4219	15.52	1.5781	17.52	2.5781	18.52	3.5781	19.52
1/3/2001	-0.4219	16.72	1.5781	18.72	2.5781	19.72	3.5781	20.72
1/4/2001	0.6781	17.82	2.6781	19.82	3.6781	20.82	4.6781	21.82
1/5/2001	-0.4219	16.72	1.5781	18.72	2.5781	19.72	3.5781	20.72
1/6/2001	0.6781	16.72	2.6781	18.72	3.6781	19.72	4.6781	20.72
1/7/2001	1.878	18.92	3.878	20.92	4.878	21.92	5.878	22.92
1/8/2001	2.978	11.12	4.978	13.12	5.978	14.12	6.978	15.12
1/9/2001	1.878	12.22	3.878	14.22	4.878	15.22	5.878	16.22
1/10/2001	2.978	14.42	4.978	16.42	5.978	17.42	6.978	18.42
1/11/2001	2.978	11.12	4.978	13.12	5.978	14.12	6.978	15.12
1/12/2001	2.378	12.82	4.378	14.82	5.378	15.82	6.378	16.82

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/13/2001	0.1781	12.82	2.1781	14.82	3.1781	15.82	4.1781	16.82
1/14/2001	-0.4219	11.12	1.5781	13.12	2.5781	14.12	3.5781	15.12
1/15/2001	-3.722	11.12	-1.722	13.12	-0.722	14.12	0.278	15.12
1/16/2001	-3.722	11.72	-1.722	13.72	-0.722	14.72	0.278	15.72
1/17/2001	-4.822	12.22	-2.822	14.22	-1.822	15.22	-0.822	16.22
1/18/2001	-2.622	11.72	-0.622	13.72	0.378	14.72	1.378	15.72
1/19/2001	1.878	14.42	3.878	16.42	4.878	17.42	5.878	18.42
1/20/2001	-1.522	15.52	0.478	17.52	1.478	18.52	2.478	19.52
1/21/2001	-0.4219	15.02	1.5781	17.02	2.5781	18.02	3.5781	19.02
1/22/2001	2.978	18.32	4.978	20.32	5.978	21.32	6.978	22.32
1/23/2001	2.378	17.82	4.378	19.82	5.378	20.82	6.378	21.82
1/24/2001	1.878	8.317	3.878	10.317	4.878	11.317	5.878	12.317
1/25/2001	0.6781	10.02	2.6781	12.02	3.6781	13.02	4.6781	14.02
1/26/2001	-0.4219	10.52	1.5781	12.52	2.5781	13.52	3.5781	14.52
1/27/2001	-4.822	11.12	-2.822	13.12	-1.822	14.12	-0.822	15.12
1/28/2001	-4.822	13.92	-2.822	15.92	-1.822	16.92	-0.822	17.92
1/29/2001	-0.4219	11.12	1.5781	13.12	2.5781	14.12	3.5781	15.12
1/30/2001	-4.822	11.12	-2.822	13.12	-1.822	14.12	-0.822	15.12
1/31/2001	-5.422	13.92	-3.422	15.92	-2.422	16.92	-1.422	17.92
2/1/2001	-1.522	15.52	0.478	17.52	1.478	18.52	2.478	19.52
2/2/2001	0.1781	15.52	2.1781	17.52	3.1781	18.52	4.1781	19.52
2/3/2001	0.6781	17.82	2.6781	19.82	3.6781	20.82	4.6781	21.82
2/4/2001	2.978	21.72	4.978	23.72	5.978	24.72	6.978	25.72
2/5/2001	4.578	20.02	6.578	22.02	7.578	23.02	8.578	24.02
2/6/2001	1.278	12.22	3.278	14.22	4.278	15.22	5.278	16.22
2/7/2001	-3.122	12.22	-1.122	14.22	-0.122	15.22	0.878	16.22
2/8/2001	-4.822	12.22	-2.822	14.22	-1.822	15.22	-0.822	16.22
2/9/2001	-4.822	10.02	-2.822	12.02	-1.822	13.02	-0.822	14.02
2/10/2001	0.1781	8.917	2.1781	10.917	3.1781	11.917	4.1781	12.917
2/11/2001	-0.4219	8.917	1.5781	10.917	2.5781	11.917	3.5781	12.917
2/12/2001	-1.522	8.917	0.478	10.917	1.478	11.917	2.478	12.917
2/13/2001	-3.722	14.42	-1.722	16.42	-0.722	17.42	0.278	18.42
2/14/2001	-1.522	15.52	0.478	17.52	1.478	18.52	2.478	19.52
2/15/2001	-0.4219	15.02	1.5781	17.02	2.5781	18.02	3.5781	19.02
2/16/2001	-0.4219	16.12	1.5781	18.12	2.5781	19.12	3.5781	20.12
2/17/2001	2.978	17.22	4.978	19.22	5.978	20.22	6.978	21.22
2/18/2001	4.578	16.12	6.578	18.12	7.578	19.12	8.578	20.12
2/19/2001	4.078	14.42	6.078	16.42	7.078	17.42	8.078	18.42
2/20/2001	4.078	14.42	6.078	16.42	7.078	17.42	8.078	18.42
2/21/2001	4.578	15.52	6.578	17.52	7.578	18.52	8.578	19.52
2/22/2001	5.178	12.22	7.178	14.22	8.178	15.22	9.178	16.22
2/23/2001	-0.4219	12.22	1.5781	14.22	2.5781	15.22	3.5781	16.22
2/24/2001	0.6781	14.42	2.6781	16.42	3.6781	17.42	4.6781	18.42
2/25/2001	0.6781	16.72	2.6781	18.72	3.6781	19.72	4.6781	20.72
2/26/2001	0.6781	13.32	2.6781	15.32	3.6781	16.32	4.6781	17.32
2/27/2001	0.6781	19.42	2.6781	21.42	3.6781	22.42	4.6781	23.42
2/28/2001	1.878	15.02	3.878	17.02	4.878	18.02	5.878	19.02

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/1/2001	0.1781	16.72	2.1781	18.72	3.1781	19.72	4.1781	20.72
3/2/2001	2.378	11.12	4.378	13.12	5.378	14.12	6.378	15.12
3/3/2001	-0.9219	14.42	1.0781	16.42	2.0781	17.42	3.0781	18.42
3/4/2001	4.578	15.52	6.578	17.52	7.578	18.52	8.578	19.52
3/5/2001	4.078	16.12	6.078	18.12	7.078	19.12	8.078	20.12
3/6/2001	2.378	16.72	4.378	18.72	5.378	19.72	6.378	20.72
3/7/2001	2.978	19.42	4.978	21.42	5.978	22.42	6.978	23.42
3/8/2001	3.478	17.82	5.478	19.82	6.478	20.82	7.478	21.82
3/9/2001	1.878	13.32	3.878	15.32	4.878	16.32	5.878	17.32
3/10/2001	-1.522	17.82	0.478	19.82	1.478	20.82	2.478	21.82
3/11/2001	1.878	17.82	3.878	19.82	4.878	20.82	5.878	21.82
3/12/2001	1.878	21.12	3.878	23.12	4.878	24.12	5.878	25.12
3/13/2001	2.978	21.12	4.978	23.12	5.978	24.12	6.978	25.12
3/14/2001	4.078	21.12	6.078	23.12	7.078	24.12	8.078	25.12
3/15/2001	3.478	17.22	5.478	19.22	6.478	20.22	7.478	21.22
3/16/2001	0.6781	18.92	2.6781	20.92	3.6781	21.92	4.6781	22.92
3/17/2001	1.878	22.22	3.878	24.22	4.878	25.22	5.878	26.22
3/18/2001	4.578	24.42	6.578	26.42	7.578	27.42	8.578	28.42
3/19/2001	8.478	26.72	10.478	28.72	11.478	29.72	12.478	30.72
3/20/2001	9.578	28.92	11.578	30.92	12.578	31.92	13.578	32.92
3/21/2001	8.478	26.72	10.478	28.72	11.478	29.72	12.478	30.72
3/22/2001	5.178	21.72	7.178	23.72	8.178	24.72	9.178	25.72
3/23/2001	5.678	22.22	7.678	24.22	8.678	25.22	9.678	26.22
3/24/2001	5.678	25.02	7.678	27.02	8.678	28.02	9.678	29.02
3/25/2001	7.978	20.02	9.978	22.02	10.978	23.02	11.978	24.02
3/26/2001	2.378	21.12	4.378	23.12	5.378	24.12	6.378	25.12
3/27/2001	2.978	23.32	4.978	25.32	5.978	26.32	6.978	27.32
3/28/2001	6.278	25.52	8.278	27.52	9.278	28.52	10.278	29.52
3/29/2001	5.678	25.52	7.678	27.52	8.678	28.52	9.678	29.52
3/30/2001	7.378	26.72	9.378	28.72	10.378	29.72	11.378	30.72
3/31/2001	9.078	27.82	11.078	29.82	12.078	30.82	13.078	31.82
4/1/2001	6.278	24.42	8.278	26.42	9.278	27.42	10.278	28.42
4/2/2001	0.6781	15.52	2.6781	17.52	3.6781	18.52	4.6781	19.52
4/3/2001	-2.622	15.02	-0.622	17.02	0.378	18.02	1.378	19.02
4/4/2001	-1.522	17.82	0.478	19.82	1.478	20.82	2.478	21.82
4/5/2001	0.1781	20.02	2.1781	22.02	3.1781	23.02	4.1781	24.02
4/6/2001	0.1781	11.72	2.1781	13.72	3.1781	14.72	4.1781	15.72
4/7/2001	0.1781	11.12	2.1781	13.12	3.1781	14.12	4.1781	15.12
4/8/2001	-0.4219	15.02	1.5781	17.02	2.5781	18.02	3.5781	19.02
4/9/2001	-1.522	17.22	0.478	19.22	1.478	20.22	2.478	21.22
4/10/2001	-0.9219	20.02	1.0781	22.02	2.0781	23.02	3.0781	24.02
4/11/2001	-1.522	13.32	0.478	15.32	1.478	16.32	2.478	17.32
4/12/2001	0.1781	18.92	2.1781	20.92	3.1781	21.92	4.1781	22.92
4/13/2001	1.278	18.92	3.278	20.92	4.278	21.92	5.278	22.92
4/14/2001	0.1781	20.02	2.1781	22.02	3.1781	23.02	4.1781	24.02
4/15/2001	0.1781	23.32	2.1781	25.32	3.1781	26.32	4.1781	27.32
4/16/2001	3.478	23.32	5.478	25.32	6.478	26.32	7.478	27.32

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/17/2001	3.478	23.32	5.478	25.32	6.478	26.32	7.478	27.32
4/18/2001	3.478	25.52	5.478	27.52	6.478	28.52	7.478	29.52
4/19/2001	4.078	14.42	6.078	16.42	7.078	17.42	8.078	18.42
4/20/2001	2.978	11.12	4.978	13.12	5.978	14.12	6.978	15.12
4/21/2001	-0.4219	17.22	1.5781	19.22	2.5781	20.22	3.5781	21.22
4/22/2001	2.978	21.72	4.978	23.72	5.978	24.72	6.978	25.72
4/23/2001	4.578	24.42	6.578	26.42	7.578	27.42	8.578	28.42
4/24/2001	8.478	28.92	10.478	30.92	11.478	31.92	12.478	32.92
4/25/2001	9.578	28.32	11.578	30.32	12.578	31.32	13.578	32.32
4/26/2001	9.578	28.92	11.578	30.92	12.578	31.92	13.578	32.92
4/27/2001	9.578	26.12	11.578	28.12	12.578	29.12	13.578	30.12
4/28/2001	7.378	26.72	9.378	28.72	10.378	29.72	11.378	30.72
4/29/2001	5.178	25.02	7.178	27.02	8.178	28.02	9.178	29.02
4/30/2001	6.878	30.02	8.878	32.02	9.878	33.02	10.878	34.02
5/1/2001	7.378	26.72	9.378	28.72	10.378	29.72	11.378	30.72
5/2/2001	5.178	27.22	7.178	29.22	8.178	30.22	9.178	31.22
5/3/2001	4.078	27.82	6.078	29.82	7.078	30.82	8.078	31.82
5/4/2001	5.678	31.72	7.678	33.72	8.678	34.72	9.678	35.72
5/5/2001	9.078	31.72	11.078	33.72	12.078	34.72	13.078	35.72
5/6/2001	8.478	33.32	10.478	35.32	11.478	36.32	12.478	37.32
5/7/2001	12.38	36.12	14.38	38.12	15.38	39.12	16.38	40.12
5/8/2001	12.98	38.92	14.98	40.92	15.98	41.92	16.98	42.92
5/9/2001	15.68	38.32	17.68	40.32	18.68	41.32	19.68	42.32
5/10/2001	10.68	37.82	12.68	39.82	13.68	40.82	14.68	41.82
5/11/2001	14.58	37.82	16.58	39.82	17.58	40.82	18.58	41.82
5/12/2001	10.68	26.72	12.68	28.72	13.68	29.72	14.68	30.72
5/13/2001	6.278	25.52	8.278	27.52	9.278	28.52	10.278	29.52
5/14/2001	6.278	29.42	8.278	31.42	9.278	32.42	10.278	33.42
5/15/2001	6.878	30.02	8.878	32.02	9.878	33.02	10.878	34.02
5/16/2001	10.18	30.52	12.18	32.52	13.18	33.52	14.18	34.52
5/17/2001	7.978	33.92	9.978	35.92	10.978	36.92	11.978	37.92
5/18/2001	9.578	34.42	11.578	36.42	12.578	37.42	13.578	38.42
5/19/2001	12.98	37.82	14.98	39.82	15.98	40.82	16.98	41.82
5/20/2001	13.48	40.02	15.48	42.02	16.48	43.02	17.48	44.02
5/21/2001	14.08	40.02	16.08	42.02	17.08	43.02	18.08	44.02
5/22/2001	15.18	38.92	17.18	40.92	18.18	41.92	19.18	42.92
5/23/2001	13.48	37.82	15.48	39.82	16.48	40.82	17.48	41.82
5/24/2001	12.98	38.92	14.98	40.92	15.98	41.92	16.98	42.92
5/25/2001	13.48	37.22	15.48	39.22	16.48	40.22	17.48	41.22
5/26/2001	11.28	34.42	13.28	36.42	14.28	37.42	15.28	38.42
5/27/2001	6.278	27.82	8.278	29.82	9.278	30.82	10.278	31.82
5/28/2001	6.278	29.42	8.278	31.42	9.278	32.42	10.278	33.42
5/29/2001	8.478	34.42	10.478	36.42	11.478	37.42	12.478	38.42
5/30/2001	9.578	40.02	11.578	42.02	12.578	43.02	13.578	44.02
5/31/2001	18.48	42.82	20.48	44.82	21.48	45.82	22.48	46.82
6/1/2001	16.28	36.12	18.28	38.12	19.28	39.12	20.28	40.12
6/2/2001	9.078	30.02	11.078	32.02	12.078	33.02	13.078	34.02

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/3/2001	6.878	30.02	8.878	32.02	9.878	33.02	10.878	34.02
6/4/2001	8.478	33.32	10.478	35.32	11.478	36.32	12.478	37.32
6/5/2001	8.478	31.12	10.478	33.12	11.478	34.12	12.478	35.12
6/6/2001	9.578	35.52	11.578	37.52	12.578	38.52	13.578	39.52
6/7/2001	9.578	37.82	11.578	39.82	12.578	40.82	13.578	41.82
6/8/2001	15.18	35.52	17.18	37.52	18.18	38.52	19.18	39.52
6/9/2001	9.578	34.42	11.578	36.42	12.578	37.42	13.578	38.42
6/10/2001	10.68	31.72	12.68	33.72	13.68	34.72	14.68	35.72
6/11/2001	11.88	31.72	13.88	33.72	14.88	34.72	15.88	35.72
6/12/2001	9.578	31.12	11.578	33.12	12.578	34.12	13.578	35.12
6/13/2001	9.578	33.32	11.578	35.32	12.578	36.32	13.578	37.32
6/14/2001	14.08	38.92	16.08	40.92	17.08	41.92	18.08	42.92
6/15/2001	17.38	40.02	19.38	42.02	20.38	43.02	21.38	44.02
6/16/2001	16.28	40.52	18.28	42.52	19.28	43.52	20.28	44.52
6/17/2001	17.38	38.92	19.38	40.92	20.38	41.92	21.38	42.92
6/18/2001	15.18	40.02	17.18	42.02	18.18	43.02	19.18	44.02
6/19/2001	17.98	41.72	19.98	43.72	20.98	44.72	21.98	45.72
6/20/2001	17.98	42.82	19.98	44.82	20.98	45.82	21.98	46.82
6/21/2001	17.98	43.32	19.98	45.32	20.98	46.32	21.98	47.32
6/22/2001	18.48	42.22	20.48	44.22	21.48	45.22	22.48	46.22
6/23/2001	14.08	37.22	16.08	39.22	17.08	40.22	18.08	41.22
6/24/2001	10.68	37.82	12.68	39.82	13.68	40.82	14.68	41.82
6/25/2001	10.18	28.92	12.18	30.92	13.18	31.92	14.18	32.92
6/26/2001	9.578	31.12	11.578	33.12	12.578	34.12	13.578	35.12
6/27/2001	9.578	24.42	11.578	26.42	12.578	27.42	13.578	28.42
6/28/2001	10.18	32.22	12.18	34.22	13.18	35.22	14.18	36.22
6/29/2001	11.28	36.72	13.28	38.72	14.28	39.72	15.28	40.72
6/30/2001	15.18	40.52	17.18	42.52	18.18	43.52	19.18	44.52
7/1/2001	14.08	41.12	16.08	43.12	17.08	44.12	18.08	45.12
7/2/2001	16.88	44.42	18.88	46.42	19.88	47.42	20.88	48.42
7/3/2001	21.88	45.52	23.88	47.52	24.88	48.52	25.88	49.52
7/4/2001	21.88	43.32	23.88	45.32	24.88	46.32	25.88	47.32
7/5/2001	20.68	42.82	22.68	44.82	23.68	45.82	24.68	46.82
7/6/2001	16.28	37.82	18.28	39.82	19.28	40.82	20.28	41.82
7/7/2001	17.38	37.22	19.38	39.22	20.38	40.22	21.38	41.22
7/8/2001	15.68	38.92	17.68	40.92	18.68	41.92	19.68	42.92
7/9/2001	14.58	36.12	16.58	38.12	17.58	39.12	18.58	40.12
7/10/2001	9.578	33.32	11.578	35.32	12.578	36.32	13.578	37.32
7/11/2001	8.478	31.12	10.478	33.12	11.478	34.12	12.478	35.12
7/12/2001	8.478	33.32	10.478	35.32	11.478	36.32	12.478	37.32
7/13/2001	9.578	37.82	11.578	39.82	12.578	40.82	13.578	41.82
7/14/2001	12.98	35.52	14.98	37.52	15.98	38.52	16.98	39.52
7/15/2001	8.478	33.92	10.478	35.92	11.478	36.92	12.478	37.92
7/16/2001	9.578	29.42	11.578	31.42	12.578	32.42	13.578	33.42
7/17/2001	7.978	31.72	9.978	33.72	10.978	34.72	11.978	35.72
7/18/2001	10.68	34.42	12.68	36.42	13.68	37.42	14.68	38.42
7/19/2001	12.38	33.92	14.38	35.92	15.38	36.92	16.38	37.92

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/20/2001	9.578	32.22	11.578	34.22	12.578	35.22	13.578	36.22
7/21/2001	8.478	31.12	10.478	33.12	11.478	34.12	12.478	35.12
7/22/2001	9.578	36.12	11.578	38.12	12.578	39.12	13.578	40.12
7/23/2001	10.68	37.22	12.68	39.22	13.68	40.22	14.68	41.22
7/24/2001	15.18	38.92	17.18	40.92	18.18	41.92	19.18	42.92
7/25/2001	11.28	37.22	13.28	39.22	14.28	40.22	15.28	41.22
7/26/2001	10.68	38.92	12.68	40.92	13.68	41.92	14.68	42.92
7/27/2001	12.38	39.42	14.38	41.42	15.38	42.42	16.38	43.42
7/28/2001	14.58	38.32	16.58	40.32	17.58	41.32	18.58	42.32
7/29/2001	15.68	37.22	17.68	39.22	18.68	40.22	19.68	41.22
7/30/2001	10.68	29.42	12.68	31.42	13.68	32.42	14.68	33.42
7/31/2001	10.68	35.52	12.68	37.52	13.68	38.52	14.68	39.52
8/1/2001	11.88	37.22	13.88	39.22	14.88	40.22	15.88	41.22
8/2/2001	12.98	37.82	14.98	39.82	15.98	40.82	16.98	41.82
8/3/2001	13.48	35.02	15.48	37.02	16.48	38.02	17.48	39.02
8/4/2001	11.28	33.92	13.28	35.92	14.28	36.92	15.28	37.92
8/5/2001	11.88	36.12	13.88	38.12	14.88	39.12	15.88	40.12
8/6/2001	12.98	40.02	14.98	42.02	15.98	43.02	16.98	44.02
8/7/2001	16.28	43.32	18.28	45.32	19.28	46.32	20.28	47.32
8/8/2001	17.98	43.32	19.98	45.32	20.98	46.32	21.98	47.32
8/9/2001	18.48	36.72	20.48	38.72	21.48	39.72	22.48	40.72
8/10/2001	10.18	34.42	12.18	36.42	13.18	37.42	14.18	38.42
8/11/2001	10.18	37.22	12.18	39.22	13.18	40.22	14.18	41.22
8/12/2001	11.28	33.32	13.28	35.32	14.28	36.32	15.28	37.32
8/13/2001	9.578	34.42	11.578	36.42	12.578	37.42	13.578	38.42
8/14/2001	10.68	38.92	12.68	40.92	13.68	41.92	14.68	42.92
8/15/2001	11.28	38.92	13.28	40.92	14.28	41.92	15.28	42.92
8/16/2001	13.48	41.12	15.48	43.12	16.48	44.12	17.48	45.12
8/17/2001	17.38	41.12	19.38	43.12	20.38	44.12	21.38	45.12
8/18/2001	15.18	40.02	17.18	42.02	18.18	43.02	19.18	44.02
8/19/2001	16.28	39.42	18.28	41.42	19.28	42.42	20.28	43.42
8/20/2001	9.578	33.32	11.578	35.32	12.578	36.32	13.578	37.32
8/21/2001	9.078	30.52	11.078	32.52	12.078	33.52	13.078	34.52
8/22/2001	9.578	30.52	11.578	32.52	12.578	33.52	13.578	34.52
8/23/2001	9.578	32.22	11.578	34.22	12.578	35.22	13.578	36.22
8/24/2001	11.88	35.02	13.88	37.02	14.88	38.02	15.88	39.02
8/25/2001	14.58	38.92	16.58	40.92	17.58	41.92	18.58	42.92
8/26/2001	16.28	40.52	18.28	42.52	19.28	43.52	20.28	44.52
8/27/2001	16.28	41.12	18.28	43.12	19.28	44.12	20.28	45.12
8/28/2001	17.38	42.22	19.38	44.22	20.38	45.22	21.38	46.22
8/29/2001	15.18	37.22	17.18	39.22	18.18	40.22	19.18	41.22
8/30/2001	9.578	33.32	11.578	35.32	12.578	36.32	13.578	37.32
8/31/2001	9.578	35.52	11.578	37.52	12.578	38.52	13.578	39.52
9/1/2001	10.18	37.82	12.18	39.82	13.18	40.82	14.18	41.82
9/2/2001	16.28	38.92	18.28	40.92	19.28	41.92	20.28	42.92
9/3/2001	16.28	38.92	18.28	40.92	19.28	41.92	20.28	42.92
9/4/2001	16.28	38.92	18.28	40.92	19.28	41.92	20.28	42.92

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/5/2001	9.578	34.42	11.578	36.42	12.578	37.42	13.578	38.42
9/6/2001	10.68	34.42	12.68	36.42	13.68	37.42	14.68	38.42
9/7/2001	14.08	36.72	16.08	38.72	17.08	39.72	18.08	40.72
9/8/2001	11.88	34.42	13.88	36.42	14.88	37.42	15.88	38.42
9/9/2001	8.478	30.02	10.478	32.02	11.478	33.02	12.478	34.02
9/10/2001	9.578	31.12	11.578	33.12	12.578	34.12	13.578	35.12
9/11/2001	11.88	31.12	13.88	33.12	14.88	34.12	15.88	35.12
9/12/2001	10.68	31.12	12.68	33.12	13.68	34.12	14.68	35.12
9/13/2001	9.578	31.72	11.578	33.72	12.578	34.72	13.578	35.72
9/14/2001	9.078	36.12	11.078	38.12	12.078	39.12	13.078	40.12
9/15/2001	14.08	36.12	16.08	38.12	17.08	39.12	18.08	40.12
9/16/2001	11.28	31.72	13.28	33.72	14.28	34.72	15.28	35.72
9/17/2001	8.478	32.22	10.478	34.22	11.478	35.22	12.478	36.22
9/18/2001	9.578	34.42	11.578	36.42	12.578	37.42	13.578	38.42
9/19/2001	10.68	35.52	12.68	37.52	13.68	38.52	14.68	39.52
9/20/2001	10.18	34.42	12.18	36.42	13.18	37.42	14.18	38.42
9/21/2001	12.98	34.42	14.98	36.42	15.98	37.42	16.98	38.42
9/22/2001	9.578	35.52	11.578	37.52	12.578	38.52	13.578	39.52
9/23/2001	14.08	33.32	16.08	35.32	17.08	36.32	18.08	37.32
9/24/2001	10.18	31.12	12.18	33.12	13.18	34.12	14.18	35.12
9/25/2001	10.18	25.52	12.18	27.52	13.18	28.52	14.18	29.52
9/26/2001	9.578	30.02	11.578	32.02	12.578	33.02	13.578	34.02
9/27/2001	10.68	29.42	12.68	31.42	13.68	32.42	14.68	33.42
9/28/2001	7.378	27.82	9.378	29.82	10.378	30.82	11.378	31.82
9/29/2001	7.378	31.12	9.378	33.12	10.378	34.12	11.378	35.12
9/30/2001	8.478	37.82	10.478	39.82	11.478	40.82	12.478	41.82
10/1/2001	12.98	39.42	14.98	41.42	15.98	42.42	16.98	43.42
10/2/2001	13.48	40.02	15.48	42.02	16.48	43.02	17.48	44.02
10/3/2001	17.38	38.92	19.38	40.92	20.38	41.92	21.38	42.92
10/4/2001	11.88	28.32	13.88	30.32	14.88	31.32	15.88	32.32
10/5/2001	9.078	25.52	11.078	27.52	12.078	28.52	13.078	29.52
10/6/2001	7.378	25.52	9.378	27.52	10.378	28.52	11.378	29.52
10/7/2001	7.378	27.82	9.378	29.82	10.378	30.82	11.378	31.82
10/8/2001	8.478	26.72	10.478	28.72	11.478	29.72	12.478	30.72
10/9/2001	7.378	27.82	9.378	29.82	10.378	30.82	11.378	31.82
10/10/2001	7.378	30.52	9.378	32.52	10.378	33.52	11.378	34.52
10/11/2001	10.68	28.92	12.68	30.92	13.68	31.92	14.68	32.92
10/12/2001	7.378	30.02	9.378	32.02	10.378	33.02	11.378	34.02
10/13/2001	7.378	32.22	9.378	34.22	10.378	35.22	11.378	36.22
10/14/2001	11.28	33.32	13.28	35.32	14.28	36.32	15.28	37.32
10/15/2001	14.08	36.72	16.08	38.72	17.08	39.72	18.08	40.72
10/16/2001	11.88	30.02	13.88	32.02	14.88	33.02	15.88	34.02
10/17/2001	8.478	31.72	10.478	33.72	11.478	34.72	12.478	35.72
10/18/2001	8.478	32.22	10.478	34.22	11.478	35.22	12.478	36.22
10/19/2001	10.18	30.52	12.18	32.52	13.18	33.52	14.18	34.52
10/20/2001	10.68	31.72	12.68	33.72	13.68	34.72	14.68	35.72
10/21/2001	6.278	23.32	8.278	25.32	9.278	26.32	10.278	27.32

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/22/2001	4.578	26.12	6.578	28.12	7.578	29.12	8.578	30.12
10/23/2001	4.578	25.52	6.578	27.52	7.578	28.52	8.578	29.52
10/24/2001	4.078	25.52	6.078	27.52	7.078	28.52	8.078	29.52
10/25/2001	4.078	27.82	6.078	29.82	7.078	30.82	8.078	31.82
10/26/2001	7.378	30.52	9.378	32.52	10.378	33.52	11.378	34.52
10/27/2001	7.378	22.82	9.378	24.82	10.378	25.82	11.378	26.82
10/28/2001	6.278	22.82	8.278	24.82	9.278	25.82	10.278	26.82
10/29/2001	7.978	22.22	9.978	24.22	10.978	25.22	11.978	26.22
10/30/2001	9.078	18.32	11.078	20.32	12.078	21.32	13.078	22.32
10/31/2001	7.378	21.12	9.378	23.12	10.378	24.12	11.378	25.12
11/1/2001	5.678	21.12	7.678	23.12	8.678	24.12	9.678	25.12
11/2/2001	6.278	22.22	8.278	24.22	9.278	25.22	10.278	26.22
11/3/2001	7.378	24.42	9.378	26.42	10.378	27.42	11.378	28.42
11/4/2001	7.378	25.52	9.378	27.52	10.378	28.52	11.378	29.52
11/5/2001	9.578	25.52	11.578	27.52	12.578	28.52	13.578	29.52
11/6/2001	8.478	21.12	10.478	23.12	11.478	24.12	12.478	25.12
11/7/2001	4.078	21.12	6.078	23.12	7.078	24.12	8.078	25.12
11/8/2001	5.678	24.42	7.678	26.42	8.678	27.42	9.678	28.42
11/9/2001	7.978	27.82	9.978	29.82	10.978	30.82	11.978	31.82
11/10/2001	8.478	26.72	10.478	28.72	11.478	29.72	12.478	30.72
11/11/2001	10.68	22.22	12.68	24.22	13.68	25.22	14.68	26.22
11/12/2001	11.88	21.12	13.88	23.12	14.88	24.12	15.88	25.12
11/13/2001	6.278	17.82	8.278	19.82	9.278	20.82	10.278	21.82
11/14/2001	6.278	18.92	8.278	20.92	9.278	21.92	10.278	22.92
11/15/2001	6.278	18.92	8.278	20.92	9.278	21.92	10.278	22.92
11/16/2001	6.278	20.02	8.278	22.02	9.278	23.02	10.278	24.02
11/17/2001	7.378	18.92	9.378	20.92	10.378	21.92	11.378	22.92
11/18/2001	4.078	18.32	6.078	20.32	7.078	21.32	8.078	22.32
11/19/2001	5.678	22.22	7.678	24.22	8.678	25.22	9.678	26.22
11/20/2001	7.378	18.92	9.378	20.92	10.378	21.92	11.378	22.92
11/21/2001	7.378	17.82	9.378	19.82	10.378	20.82	11.378	21.82
11/22/2001	8.478	17.22	10.478	19.22	11.478	20.22	12.478	21.22
11/23/2001	4.578	15.52	6.578	17.52	7.578	18.52	8.578	19.52
11/24/2001	1.878	16.72	3.878	18.72	4.878	19.72	5.878	20.72
11/25/2001	2.378	12.22	4.378	14.22	5.378	15.22	6.378	16.22
11/26/2001	-0.4219	12.82	1.5781	14.82	2.5781	15.82	3.5781	16.82
11/27/2001	-2.622	12.22	-0.622	14.22	0.378	15.22	1.378	16.22
11/28/2001	-1.522	13.32	0.478	15.32	1.478	16.32	2.478	17.32
11/29/2001	1.878	12.22	3.878	14.22	4.878	15.22	5.878	16.22
11/30/2001	-1.522	14.42	0.478	16.42	1.478	17.42	2.478	18.42
12/1/2001	-0.4219	13.32	1.5781	15.32	2.5781	16.32	3.5781	17.32
12/2/2001	4.078	13.32	6.078	15.32	7.078	16.32	8.078	17.32
12/3/2001	1.878	13.32	3.878	15.32	4.878	16.32	5.878	17.32
12/4/2001	-2.622	11.12	-0.622	13.12	0.378	14.12	1.378	15.12
12/5/2001	-2.622	11.12	-0.622	13.12	0.378	14.12	1.378	15.12
12/6/2001	2.978	16.72	4.978	18.72	5.978	19.72	6.978	20.72
12/7/2001	3.478	15.52	5.478	17.52	6.478	18.52	7.478	19.52

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/8/2001	0.6781	14.42	2.6781	16.42	3.6781	17.42	4.6781	18.42
12/9/2001	1.878	11.12	3.878	13.12	4.878	14.12	5.878	15.12
12/10/2001	-3.122	10.52	-1.122	12.52	-0.122	13.52	0.878	14.52
12/11/2001	-2.622	10.52	-0.622	12.52	0.378	13.52	1.378	14.52
12/12/2001	-2.022	12.82	-0.022	14.82	0.978	15.82	1.978	16.82
12/13/2001	-0.4219	13.32	1.5781	15.32	2.5781	16.32	3.5781	17.32
12/14/2001	0.6781	11.12	2.6781	13.12	3.6781	14.12	4.6781	15.12
12/15/2001	-4.822	11.12	-2.822	13.12	-1.822	14.12	-0.822	15.12
12/16/2001	-2.622	12.22	-0.622	14.22	0.378	15.22	1.378	16.22
12/17/2001	2.978	11.12	4.978	13.12	5.978	14.12	6.978	15.12
12/18/2001	0.6781	14.42	2.6781	16.42	3.6781	17.42	4.6781	18.42
12/19/2001	0.6781	12.22	2.6781	14.22	3.6781	15.22	4.6781	16.22
12/20/2001	1.878	12.22	3.878	14.22	4.878	15.22	5.878	16.22
12/21/2001	0.6781	12.22	2.6781	14.22	3.6781	15.22	4.6781	16.22
12/22/2001	2.978	12.22	4.978	14.22	5.978	15.22	6.978	16.22
12/23/2001	2.378	13.32	4.378	15.32	5.378	16.32	6.378	17.32
12/24/2001	-1.522	13.32	0.478	15.32	1.478	16.32	2.478	17.32
12/25/2001	-0.9219	11.12	1.0781	13.12	2.0781	14.12	3.0781	15.12
12/26/2001	2.978	12.22	4.978	14.22	5.978	15.22	6.978	16.22
12/27/2001	1.878	17.82	3.878	19.82	4.878	20.82	5.878	21.82
12/28/2001	1.878	12.82	3.878	14.82	4.878	15.82	5.878	16.82
12/29/2001	5.678	13.32	7.678	15.32	8.678	16.32	9.678	17.32
12/30/2001	6.278	15.02	8.278	17.02	9.278	18.02	10.278	19.02
12/31/2001	7.378	16.72	9.378	18.72	10.378	19.72	11.378	20.72
1/1/2002	7.378	17.82	9.378	19.82	10.378	20.82	11.378	21.82
1/2/2002	8.478	15.02	10.478	17.02	11.478	18.02	12.478	19.02
1/3/2002	5.178	14.42	7.178	16.42	8.178	17.42	9.178	18.42
1/4/2002	-0.4219	12.22	1.5781	14.22	2.5781	15.22	3.5781	16.22
1/5/2002	2.978	12.22	4.978	14.22	5.978	15.22	6.978	16.22
1/6/2002	5.178	15.52	7.178	17.52	8.178	18.52	9.178	19.52
1/7/2002	4.078	13.32	6.078	15.32	7.078	16.32	8.078	17.32
1/8/2002	2.978	14.42	4.978	16.42	5.978	17.42	6.978	18.42
1/9/2002	4.078	12.22	6.078	14.22	7.078	15.22	8.078	16.22
1/10/2002	1.878	16.72	3.878	18.72	4.878	19.72	5.878	20.72
1/11/2002	0.6781	17.82	2.6781	19.82	3.6781	20.82	4.6781	21.82
1/12/2002	-0.4219	15.52	1.5781	17.52	2.5781	18.52	3.5781	19.52
1/13/2002	0.6781	8.917	2.6781	10.917	3.6781	11.917	4.6781	12.917
1/14/2002	-1.522	6.717	0.478	8.717	1.478	9.717	2.478	10.717
1/15/2002	-3.722	10.52	-1.722	12.52	-0.722	13.52	0.278	14.52
1/16/2002	-4.822	10.52	-2.822	12.52	-1.822	13.52	-0.822	14.52
1/17/2002	-3.122	10.02	-1.122	12.02	-0.122	13.02	0.878	14.02
1/18/2002	-2.622	11.12	-0.622	13.12	0.378	14.12	1.378	15.12
1/19/2002	-1.522	10.02	0.478	12.02	1.478	13.02	2.478	14.02
1/20/2002	-3.722	12.22	-1.722	14.22	-0.722	15.22	0.278	16.22
1/21/2002	-1.522	13.32	0.478	15.32	1.478	16.32	2.478	17.32
1/22/2002	-4.822	8.917	-2.822	10.917	-1.822	11.917	-0.822	12.917
1/23/2002	-5.922	10.02	-3.922	12.02	-2.922	13.02	-1.922	14.02

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/24/2002	-5.922	12.82	-3.922	14.82	-2.922	15.82	-1.922	16.82
1/25/2002	-2.622	12.22	-0.622	14.22	0.378	15.22	1.378	16.22
1/26/2002	2.378	9.417	4.378	11.417	5.378	12.417	6.378	13.417
1/27/2002	-0.9219	8.917	1.0781	10.917	2.0781	11.917	3.0781	12.917
1/28/2002	-3.122	8.317	-1.122	10.317	-0.122	11.317	0.878	12.317
1/29/2002	-5.922	6.717	-3.922	8.717	-2.922	9.717	-1.922	10.717
1/30/2002	-5.922	11.12	-3.922	13.12	-2.922	14.12	-1.922	15.12
1/31/2002	-5.922	8.317	-3.922	10.317	-2.922	11.317	-1.922	12.317
2/1/2002	-2.022	12.22	-0.022	14.22	0.978	15.22	1.978	16.22
2/2/2002	-3.122	13.32	-1.122	15.32	-0.122	16.32	0.878	17.32
2/3/2002	-1.522	15.02	0.478	17.02	1.478	18.02	2.478	19.02
2/4/2002	-2.022	16.72	-0.022	18.72	0.978	19.72	1.978	20.72
2/5/2002	-1.522	16.72	0.478	18.72	1.478	19.72	2.478	20.72
2/6/2002	-0.9219	16.72	1.0781	18.72	2.0781	19.72	3.0781	20.72
2/7/2002	-0.4219	15.52	1.5781	17.52	2.5781	18.52	3.5781	19.52
2/8/2002	0.6781	14.42	2.6781	16.42	3.6781	17.42	4.6781	18.42
2/9/2002	-0.4219	15.52	1.5781	17.52	2.5781	18.52	3.5781	19.52
2/10/2002	0.6781	20.02	2.6781	22.02	3.6781	23.02	4.6781	24.02
2/11/2002	-0.4219	18.92	1.5781	20.92	2.5781	21.92	3.5781	22.92
2/12/2002	1.878	18.92	3.878	20.92	4.878	21.92	5.878	22.92
2/13/2002	4.578	15.02	6.578	17.02	7.578	18.02	8.578	19.02
2/14/2002	1.878	18.92	3.878	20.92	4.878	21.92	5.878	22.92
2/15/2002	1.878	14.42	3.878	16.42	4.878	17.42	5.878	18.42
2/16/2002	2.978	16.12	4.978	18.12	5.978	19.12	6.978	20.12
2/17/2002	1.878	10.02	3.878	12.02	4.878	13.02	5.878	14.02
2/18/2002	0.6781	12.22	2.6781	14.22	3.6781	15.22	4.6781	16.22
2/19/2002	5.678	11.72	7.678	13.72	8.678	14.72	9.678	15.72
2/20/2002	4.578	20.02	6.578	22.02	7.578	23.02	8.578	24.02
2/21/2002	4.578	21.72	6.578	23.72	7.578	24.72	8.578	25.72
2/22/2002	5.178	24.42	7.178	26.42	8.178	27.42	9.178	28.42
2/23/2002	5.178	17.82	7.178	19.82	8.178	20.82	9.178	21.82
2/24/2002	-0.9219	18.92	1.0781	20.92	2.0781	21.92	3.0781	22.92
2/25/2002	0.6781	20.02	2.6781	22.02	3.6781	23.02	4.6781	24.02
2/26/2002	2.978	21.12	4.978	23.12	5.978	24.12	6.978	25.12
2/27/2002	5.178	22.22	7.178	24.22	8.178	25.22	9.178	26.22
2/28/2002	5.178	21.12	7.178	23.12	8.178	24.12	9.178	25.12
3/1/2002	-1.522	18.92	0.478	20.92	1.478	21.92	2.478	22.92
3/2/2002	0.6781	18.92	2.6781	20.92	3.6781	21.92	4.6781	22.92
3/3/2002	3.478	20.52	5.478	22.52	6.478	23.52	7.478	24.52
3/4/2002	3.478	21.12	5.478	23.12	6.478	24.12	7.478	25.12
3/5/2002	1.278	18.92	3.278	20.92	4.278	21.92	5.278	22.92
3/6/2002	7.978	15.52	9.978	17.52	10.978	18.52	11.978	19.52
3/7/2002	4.078	12.82	6.078	14.82	7.078	15.82	8.078	16.82
3/8/2002	-3.722	13.92	-1.722	15.92	-0.722	16.92	0.278	17.92
3/9/2002	-2.622	16.12	-0.622	18.12	0.378	19.12	1.378	20.12
3/10/2002	4.078	16.12	6.078	18.12	7.078	19.12	8.078	20.12
3/11/2002	2.378	18.92	4.378	20.92	5.378	21.92	6.378	22.92

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/12/2002	2.978	17.82	4.978	19.82	5.978	20.82	6.978	21.82
3/13/2002	-2.022	14.42	-0.022	16.42	0.978	17.42	1.978	18.42
3/14/2002	-2.622	14.42	-0.622	16.42	0.378	17.42	1.378	18.42
3/15/2002	-1.522	14.42	0.478	16.42	1.478	17.42	2.478	18.42
3/16/2002	0.6781	12.22	2.6781	14.22	3.6781	15.22	4.6781	16.22
3/17/2002	0.6781	11.12	2.6781	13.12	3.6781	14.12	4.6781	15.12
3/18/2002	-4.822	16.72	-2.822	18.72	-1.822	19.72	-0.822	20.72
3/19/2002	-3.122	17.82	-1.122	19.82	-0.122	20.82	0.878	21.82
3/20/2002	2.978	22.22	4.978	24.22	5.978	25.22	6.978	26.22
3/21/2002	5.178	25.52	7.178	27.52	8.178	28.52	9.178	29.52
3/22/2002	4.078	17.82	6.078	19.82	7.078	20.82	8.078	21.82
3/23/2002	2.978	15.52	4.978	17.52	5.978	18.52	6.978	19.52
3/24/2002	2.978	15.52	4.978	17.52	5.978	18.52	6.978	19.52
3/25/2002	0.6781	17.22	2.6781	19.22	3.6781	20.22	4.6781	21.22
3/26/2002	2.978	21.12	4.978	23.12	5.978	24.12	6.978	25.12
3/27/2002	4.578	23.92	6.578	25.92	7.578	26.92	8.578	27.92
3/28/2002	4.078	26.72	6.078	28.72	7.078	29.72	8.078	30.72
3/29/2002	7.378	26.72	9.378	28.72	10.378	29.72	11.378	30.72
3/30/2002	7.378	26.72	9.378	28.72	10.378	29.72	11.378	30.72
3/31/2002	4.578	27.82	6.578	29.82	7.578	30.82	8.578	31.82
4/1/2002	9.578	28.32	11.578	30.32	12.578	31.32	13.578	32.32
4/2/2002	8.478	26.72	10.478	28.72	11.478	29.72	12.478	30.72
4/3/2002	5.678	21.12	7.678	23.12	8.678	24.12	9.678	25.12
4/4/2002	6.278	15.52	8.278	17.52	9.278	18.52	10.278	19.52
4/5/2002	6.278	20.02	8.278	22.02	9.278	23.02	10.278	24.02
4/6/2002	5.178	21.12	7.178	23.12	8.178	24.12	9.178	25.12
4/7/2002	4.578	22.22	6.578	24.22	7.578	25.22	8.578	26.22
4/8/2002	7.378	25.52	9.378	27.52	10.378	28.52	11.378	29.52
4/9/2002	5.178	17.22	7.178	19.22	8.178	20.22	9.178	21.22
4/10/2002	7.378	22.22	9.378	24.22	10.378	25.22	11.378	26.22
4/11/2002	6.278	26.12	8.278	28.12	9.278	29.12	10.278	30.12
4/12/2002	7.378	26.12	9.378	28.12	10.378	29.12	11.378	30.12
4/13/2002	8.478	29.42	10.478	31.42	11.478	32.42	12.478	33.42
4/14/2002	11.28	29.42	13.28	31.42	14.28	32.42	15.28	33.42
4/15/2002	-0.9219	15.52	1.0781	17.52	2.0781	18.52	3.0781	19.52
4/16/2002	-0.4219	16.72	1.5781	18.72	2.5781	19.72	3.5781	20.72
4/17/2002	-0.4219	16.72	1.5781	18.72	2.5781	19.72	3.5781	20.72
4/18/2002	-1.522	16.72	0.478	18.72	1.478	19.72	2.478	20.72
4/19/2002	0.1781	21.12	2.1781	23.12	3.1781	24.12	4.1781	25.12
4/20/2002	4.578	24.42	6.578	26.42	7.578	27.42	8.578	28.42
4/21/2002	2.978	25.02	4.978	27.02	5.978	28.02	6.978	29.02
4/22/2002	7.378	28.92	9.378	30.92	10.378	31.92	11.378	32.92
4/23/2002	8.478	30.52	10.478	32.52	11.478	33.52	12.478	34.52
4/24/2002	5.678	25.52	7.678	27.52	8.678	28.52	9.678	29.52
4/25/2002	6.278	25.52	8.278	27.52	9.278	28.52	10.278	29.52
4/26/2002	7.378	15.52	9.378	17.52	10.378	18.52	11.378	19.52
4/27/2002	5.178	16.72	7.178	18.72	8.178	19.72	9.178	20.72

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/28/2002	2.978	19.42	4.978	21.42	5.978	22.42	6.978	23.42
4/29/2002	5.178	16.12	7.178	18.12	8.178	19.12	9.178	20.12
4/30/2002	1.878	17.82	3.878	19.82	4.878	20.82	5.878	21.82
5/1/2002	2.378	20.52	4.378	22.52	5.378	23.52	6.378	24.52
5/2/2002	3.478	25.02	5.478	27.02	6.478	28.02	7.478	29.02
5/3/2002	4.078	25.52	6.078	27.52	7.078	28.52	8.078	29.52
5/4/2002	4.078	27.82	6.078	29.82	7.078	30.82	8.078	31.82
5/5/2002	7.378	30.02	9.378	32.02	10.378	33.02	11.378	34.02
5/6/2002	6.278	30.02	8.278	32.02	9.278	33.02	10.278	34.02
5/7/2002	5.178	25.52	7.178	27.52	8.178	28.52	9.178	29.52
5/8/2002	4.078	27.82	6.078	29.82	7.078	30.82	8.078	31.82
5/9/2002	5.178	26.72	7.178	28.72	8.178	29.72	9.178	30.72
5/10/2002	2.978	23.32	4.978	25.32	5.978	26.32	6.978	27.32
5/11/2002	4.078	30.02	6.078	32.02	7.078	33.02	8.078	34.02
5/12/2002	9.578	31.72	11.578	33.72	12.578	34.72	13.578	35.72
5/13/2002	6.878	30.02	8.878	32.02	9.878	33.02	10.878	34.02
5/14/2002	5.178	30.52	7.178	32.52	8.178	33.52	9.178	34.52
5/15/2002	7.378	31.12	9.378	33.12	10.378	34.12	11.378	35.12
5/16/2002	7.378	32.82	9.378	34.82	10.378	35.82	11.378	36.82
5/17/2002	8.478	31.72	10.478	33.72	11.478	34.72	12.478	35.72
5/18/2002	7.378	27.22	9.378	29.22	10.378	30.22	11.378	31.22
5/19/2002	5.178	22.82	7.178	24.82	8.178	25.82	9.178	26.82
5/20/2002	6.278	14.42	8.278	16.42	9.278	17.42	10.278	18.42
5/21/2002	4.078	20.02	6.078	22.02	7.078	23.02	8.078	24.02
5/22/2002	2.978	23.32	4.978	25.32	5.978	26.32	6.978	27.32
5/23/2002	2.978	27.82	4.978	29.82	5.978	30.82	6.978	31.82
5/24/2002	5.678	32.22	7.678	34.22	8.678	35.22	9.678	36.22
5/25/2002	11.88	32.22	13.88	34.22	14.88	35.22	15.88	36.22
5/26/2002	8.478	29.42	10.478	31.42	11.478	32.42	12.478	33.42
5/27/2002	8.478	28.92	10.478	30.92	11.478	31.92	12.478	32.92
5/28/2002	9.078	30.52	11.078	32.52	12.078	33.52	13.078	34.52
5/29/2002	9.578	35.02	11.578	37.02	12.578	38.02	13.578	39.02
5/30/2002	16.28	37.82	18.28	39.82	19.28	40.82	20.28	41.82
5/31/2002	16.28	36.72	18.28	38.72	19.28	39.72	20.28	40.72
6/1/2002	10.68	32.22	12.68	34.22	13.68	35.22	14.68	36.22
6/2/2002	6.278	28.92	8.278	30.92	9.278	31.92	10.278	32.92
6/3/2002	8.478	32.82	10.478	34.82	11.478	35.82	12.478	36.82
6/4/2002	10.18	36.72	12.18	38.72	13.18	39.72	14.18	40.72
6/5/2002	15.18	40.52	17.18	42.52	18.18	43.52	19.18	44.52
6/6/2002	16.28	38.92	18.28	40.92	19.28	41.92	20.28	42.92
6/7/2002	11.88	35.52	13.88	37.52	14.88	38.52	15.88	39.52
6/8/2002	11.88	27.82	13.88	29.82	14.88	30.82	15.88	31.82
6/9/2002	10.68	28.92	12.68	30.92	13.68	31.92	14.68	32.92
6/10/2002	9.578	34.42	11.578	36.42	12.578	37.42	13.578	38.42
6/11/2002	14.08	37.82	16.08	39.82	17.08	40.82	18.08	41.82
6/12/2002	10.68	33.32	12.68	35.32	13.68	36.32	14.68	37.32
6/13/2002	10.68	31.12	12.68	33.12	13.68	34.12	14.68	35.12

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/14/2002	6.278	31.72	8.278	33.72	9.278	34.72	10.278	35.72
6/15/2002	8.478	34.42	10.478	36.42	11.478	37.42	12.478	38.42
6/16/2002	9.578	33.92	11.578	35.92	12.578	36.92	13.578	37.92
6/17/2002	10.68	33.32	12.68	35.32	13.68	36.32	14.68	37.32
6/18/2002	12.98	34.42	14.98	36.42	15.98	37.42	16.98	38.42
6/19/2002	14.08	36.72	16.08	38.72	17.08	39.72	18.08	40.72
6/20/2002	12.98	35.02	14.98	37.02	15.98	38.02	16.98	39.02
6/21/2002	7.378	30.02	9.378	32.02	10.378	33.02	11.378	34.02
6/22/2002	7.378	31.72	9.378	33.72	10.378	34.72	11.378	35.72
6/23/2002	9.578	33.92	11.578	35.92	12.578	36.92	13.578	37.92
6/24/2002	10.68	36.72	12.68	38.72	13.68	39.72	14.68	40.72
6/25/2002	12.98	40.02	14.98	42.02	15.98	43.02	16.98	44.02
6/26/2002	12.98	37.82	14.98	39.82	15.98	40.82	16.98	41.82
6/27/2002	9.578	35.52	11.578	37.52	12.578	38.52	13.578	39.52
6/28/2002	11.88	33.32	13.88	35.32	14.88	36.32	15.88	37.32
6/29/2002	12.98	36.72	14.98	38.72	15.98	39.72	16.98	40.72
6/30/2002	15.18	40.02	17.18	42.02	18.18	43.02	19.18	44.02
7/1/2002	16.88	42.82	18.88	44.82	19.88	45.82	20.88	46.82
7/2/2002	17.98	38.32	19.98	40.32	20.98	41.32	21.98	42.32
7/3/2002	11.28	35.52	13.28	37.52	14.28	38.52	15.28	39.52
7/4/2002	12.38	35.52	14.38	37.52	15.38	38.52	16.38	39.52
7/5/2002	12.98	36.72	14.98	38.72	15.98	39.72	16.98	40.72
7/6/2002	12.98	37.82	14.98	39.82	15.98	40.82	16.98	41.82
7/7/2002	13.48	35.52	15.48	37.52	16.48	38.52	17.48	39.52
7/8/2002	10.68	38.92	12.68	40.92	13.68	41.92	14.68	42.92
7/9/2002	12.98	43.92	14.98	45.92	15.98	46.92	16.98	47.92
7/10/2002	19.58	46.12	21.58	48.12	22.58	49.12	23.58	50.12
7/11/2002	21.88	43.92	23.88	45.92	24.88	46.92	25.88	47.92
7/12/2002	21.28	43.32	23.28	45.32	24.28	46.32	25.28	47.32
7/13/2002	20.18	41.12	22.18	43.12	23.18	44.12	24.18	45.12
7/14/2002	16.28	41.12	18.28	43.12	19.28	44.12	20.28	45.12
7/15/2002	14.08	35.52	16.08	37.52	17.08	38.52	18.08	39.52
7/16/2002	9.578	34.42	11.578	36.42	12.578	37.42	13.578	38.42
7/17/2002	10.68	35.52	12.68	37.52	13.68	38.52	14.68	39.52
7/18/2002	12.98	36.72	14.98	38.72	15.98	39.72	16.98	40.72
7/19/2002	14.08	38.92	16.08	40.92	17.08	41.92	18.08	42.92
7/20/2002	15.18	41.12	17.18	43.12	18.18	44.12	19.18	45.12
7/21/2002	12.98	33.32	14.98	35.32	15.98	36.32	16.98	37.32
7/22/2002	9.578	33.32	11.578	35.32	12.578	36.32	13.578	37.32
7/23/2002	10.68	34.42	12.68	36.42	13.68	37.42	14.68	38.42
7/24/2002	11.88	36.72	13.88	38.72	14.88	39.72	15.88	40.72
7/25/2002	12.98	37.22	14.98	39.22	15.98	40.22	16.98	41.22
7/26/2002	10.18	38.32	12.18	40.32	13.18	41.32	14.18	42.32
7/27/2002	13.48	38.92	15.48	40.92	16.48	41.92	17.48	42.92
7/28/2002	12.38	33.92	14.38	35.92	15.38	36.92	16.38	37.92
7/29/2002	10.18	34.42	12.18	36.42	13.18	37.42	14.18	38.42
7/30/2002	10.68	37.82	12.68	39.82	13.68	40.82	14.68	41.82

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/31/2002	11.88	36.72	13.88	38.72	14.88	39.72	15.88	40.72
8/1/2002	11.28	36.72	13.28	38.72	14.28	39.72	15.28	40.72
8/2/2002	10.68	35.02	12.68	37.02	13.68	38.02	14.68	39.02
8/3/2002	9.078	32.22	11.078	34.22	12.078	35.22	13.078	36.22
8/4/2002	7.378	31.72	9.378	33.72	10.378	34.72	11.378	35.72
8/5/2002	10.68	33.32	12.68	35.32	13.68	36.32	14.68	37.32
8/6/2002	8.478	32.22	10.478	34.22	11.478	35.22	12.478	36.22
8/7/2002	10.18	35.52	12.18	37.52	13.18	38.52	14.18	39.52
8/8/2002	10.68	38.92	12.68	40.92	13.68	41.92	14.68	42.92
8/9/2002	12.38	41.12	14.38	43.12	15.38	44.12	16.38	45.12
8/10/2002	17.38	41.12	19.38	43.12	20.38	44.12	21.38	45.12
8/11/2002	15.68	41.12	17.68	43.12	18.68	44.12	19.68	45.12
8/12/2002	16.28	42.22	18.28	44.22	19.28	45.22	20.28	46.22
8/13/2002	15.68	41.12	17.68	43.12	18.68	44.12	19.68	45.12
8/14/2002	16.28	38.92	18.28	40.92	19.28	41.92	20.28	42.92
8/15/2002	14.08	38.92	16.08	40.92	17.08	41.92	18.08	42.92
8/16/2002	11.88	37.82	13.88	39.82	14.88	40.82	15.88	41.82
8/17/2002	11.88	35.52	13.88	37.52	14.88	38.52	15.88	39.52
8/18/2002	9.578	36.12	11.578	38.12	12.578	39.12	13.578	40.12
8/19/2002	9.578	31.12	11.578	33.12	12.578	34.12	13.578	35.12
8/20/2002	8.478	32.22	10.478	34.22	11.478	35.22	12.478	36.22
8/21/2002	9.578	33.32	11.578	35.32	12.578	36.32	13.578	37.32
8/22/2002	8.478	32.22	10.478	34.22	11.478	35.22	12.478	36.22
8/23/2002	6.278	30.02	8.278	32.02	9.278	33.02	10.278	34.02
8/24/2002	6.278	33.32	8.278	35.32	9.278	36.32	10.278	37.32
8/25/2002	10.18	34.42	12.18	36.42	13.18	37.42	14.18	38.42
8/26/2002	11.28	37.22	13.28	39.22	14.28	40.22	15.28	41.22
8/27/2002	15.18	38.92	17.18	40.92	18.18	41.92	19.18	42.92
8/28/2002	14.08	39.42	16.08	41.42	17.08	42.42	18.08	43.42
8/29/2002	10.68	33.32	12.68	35.32	13.68	36.32	14.68	37.32
8/30/2002	10.18	35.02	12.18	37.02	13.18	38.02	14.18	39.02
8/31/2002	10.18	38.92	12.18	40.92	13.18	41.92	14.18	42.92
9/1/2002	10.68	41.12	12.68	43.12	13.68	44.12	14.68	45.12
9/2/2002	15.18	42.22	17.18	44.22	18.18	45.22	19.18	46.22
9/3/2002	16.28	40.02	18.28	42.02	19.28	43.02	20.28	44.02
9/4/2002	16.28	35.52	18.28	37.52	19.28	38.52	20.28	39.52
9/5/2002	9.578	28.92	11.578	30.92	12.578	31.92	13.578	32.92
9/6/2002	10.68	26.72	12.68	28.72	13.68	29.72	14.68	30.72
9/7/2002	5.678	27.82	7.678	29.82	8.678	30.82	9.678	31.82
9/8/2002	8.478	30.52	10.478	32.52	11.478	33.52	12.478	34.52
9/9/2002	10.18	35.52	12.18	37.52	13.18	38.52	14.18	39.52
9/10/2002	15.18	37.82	17.18	39.82	18.18	40.82	19.18	41.82
9/11/2002	15.18	38.32	17.18	40.32	18.18	41.32	19.18	42.32
9/12/2002	13.48	36.72	15.48	38.72	16.48	39.72	17.48	40.72
9/13/2002	12.98	36.12	14.98	38.12	15.98	39.12	16.98	40.12
9/14/2002	12.98	38.92	14.98	40.92	15.98	41.92	16.98	42.92
9/15/2002	13.48	30.52	15.48	32.52	16.48	33.52	17.48	34.52

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/16/2002	8.478	30.02	10.478	32.02	11.478	33.02	12.478	34.02
9/17/2002	9.578	32.82	11.578	34.82	12.578	35.82	13.578	36.82
9/18/2002	10.18	35.52	12.18	37.52	13.18	38.52	14.18	39.52
9/19/2002	11.28	38.92	13.28	40.92	14.28	41.92	15.28	42.92
9/20/2002	10.18	40.02	12.18	42.02	13.18	43.02	14.18	44.02
9/21/2002	14.08	38.92	16.08	40.92	17.08	41.92	18.08	42.92
9/22/2002	14.08	40.02	16.08	42.02	17.08	43.02	18.08	44.02
9/23/2002	17.38	40.02	19.38	42.02	20.38	43.02	21.38	44.02
9/24/2002	15.18	38.92	17.18	40.92	18.18	41.92	19.18	42.92
9/25/2002	15.18	38.92	17.18	40.92	18.18	41.92	19.18	42.92
9/26/2002	11.88	33.32	13.88	35.32	14.88	36.32	15.88	37.32
9/27/2002	8.478	24.42	10.478	26.42	11.478	27.42	12.478	28.42
9/28/2002	7.378	23.32	9.378	25.32	10.378	26.32	11.378	27.32
9/29/2002	10.68	26.72	12.68	28.72	13.68	29.72	14.68	30.72
9/30/2002	6.878	25.52	8.878	27.52	9.878	28.52	10.878	29.52
10/1/2002	6.278	24.42	8.278	26.42	9.278	27.42	10.278	28.42
10/2/2002	6.878	24.42	8.878	26.42	9.878	27.42	10.878	28.42
10/3/2002	6.278	28.32	8.278	30.32	9.278	31.32	10.278	32.32
10/4/2002	11.28	30.02	13.28	32.02	14.28	33.02	15.28	34.02
10/5/2002	12.38	32.22	14.38	34.22	15.38	35.22	16.38	36.22
10/6/2002	12.98	34.42	14.98	36.42	15.98	37.42	16.98	38.42
10/7/2002	14.58	35.52	16.58	37.52	17.58	38.52	18.58	39.52
10/8/2002	15.18	35.52	17.18	37.52	18.18	38.52	19.18	39.52
10/9/2002	15.18	34.42	17.18	36.42	18.18	37.42	19.18	38.42
10/10/2002	10.68	25.02	12.68	27.02	13.68	28.02	14.68	29.02
10/11/2002	5.178	25.52	7.178	27.52	8.178	28.52	9.178	29.52
10/12/2002	9.578	28.92	11.578	30.92	12.578	31.92	13.578	32.92
10/13/2002	10.68	31.12	12.68	33.12	13.68	34.12	14.68	35.12
10/14/2002	10.68	31.12	12.68	33.12	13.68	34.12	14.68	35.12
10/15/2002	7.378	26.72	9.378	28.72	10.378	29.72	11.378	30.72
10/16/2002	6.278	23.32	8.278	25.32	9.278	26.32	10.278	27.32
10/17/2002	4.578	23.92	6.578	25.92	7.578	26.92	8.578	27.92
10/18/2002	4.578	22.22	6.578	24.22	7.578	25.22	8.578	26.22
10/19/2002	5.178	25.02	7.178	27.02	8.178	28.02	9.178	29.02
10/20/2002	6.278	25.52	8.278	27.52	9.278	28.52	10.278	29.52
10/21/2002	7.378	26.72	9.378	28.72	10.378	29.72	11.378	30.72
10/22/2002	5.178	23.32	7.178	25.32	8.178	26.32	9.178	27.32
10/23/2002	4.578	18.92	6.578	20.92	7.578	21.92	8.578	22.92
10/24/2002	5.178	18.92	7.178	20.92	8.178	21.92	9.178	22.92
10/25/2002	5.178	22.22	7.178	24.22	8.178	25.22	9.178	26.22
10/26/2002	5.178	23.32	7.178	25.32	8.178	26.32	9.178	27.32
10/27/2002	5.178	24.42	7.178	26.42	8.178	27.42	9.178	28.42
10/28/2002	7.378	25.02	9.378	27.02	10.378	28.02	11.378	29.02
10/29/2002	5.178	25.52	7.178	27.52	8.178	28.52	9.178	29.52
10/30/2002	4.078	22.22	6.078	24.22	7.078	25.22	8.078	26.22
10/31/2002	2.978	21.72	4.978	23.72	5.978	24.72	6.978	25.72
11/1/2002	1.878	20.02	3.878	22.02	4.878	23.02	5.878	24.02

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/2/2002	2.978	21.12	4.978	23.12	5.978	24.12	6.978	25.12
11/3/2002	4.578	23.32	6.578	25.32	7.578	26.32	8.578	27.32
11/4/2002	4.078	22.82	6.078	24.82	7.078	25.82	8.078	26.82
11/5/2002	4.078	24.42	6.078	26.42	7.078	27.42	8.078	28.42
11/6/2002	4.078	21.12	6.078	23.12	7.078	24.12	8.078	25.12
11/7/2002	9.078	18.92	11.078	20.92	12.078	21.92	13.078	22.92
11/8/2002	5.178	18.92	7.178	20.92	8.178	21.92	9.178	22.92
11/9/2002	6.278	18.92	8.278	20.92	9.278	21.92	10.278	22.92
11/10/2002	7.378	14.42	9.378	16.42	10.378	17.42	11.378	18.42
11/11/2002	4.578	20.02	6.578	22.02	7.578	23.02	8.578	24.02
11/12/2002	7.378	22.22	9.378	24.22	10.378	25.22	11.378	26.22
11/13/2002	7.378	22.22	9.378	24.22	10.378	25.22	11.378	26.22
11/14/2002	4.078	16.72	6.078	18.72	7.078	19.72	8.078	20.72
11/15/2002	4.078	21.12	6.078	23.12	7.078	24.12	8.078	25.12
11/16/2002	4.078	21.12	6.078	23.12	7.078	24.12	8.078	25.12
11/17/2002	2.978	21.12	4.978	23.12	5.978	24.12	6.978	25.12
11/18/2002	2.978	18.92	4.978	20.92	5.978	21.92	6.978	22.92
11/19/2002	2.978	18.92	4.978	20.92	5.978	21.92	6.978	22.92
11/20/2002	4.078	22.22	6.078	24.22	7.078	25.22	8.078	26.22
11/21/2002	6.278	22.22	8.278	24.22	9.278	25.22	10.278	26.22
11/22/2002	8.478	18.92	10.478	20.92	11.478	21.92	12.478	22.92
11/23/2002	5.178	14.42	7.178	16.42	8.178	17.42	9.178	18.42
11/24/2002	5.178	13.92	7.178	15.92	8.178	16.92	9.178	17.92
11/25/2002	4.578	18.92	6.578	20.92	7.578	21.92	8.578	22.92
11/26/2002	2.378	16.72	4.378	18.72	5.378	19.72	6.378	20.72
11/27/2002	0.6781	17.82	2.6781	19.82	3.6781	20.82	4.6781	21.82
11/28/2002	0.6781	18.92	2.6781	20.92	3.6781	21.92	4.6781	22.92
11/29/2002	2.978	20.02	4.978	22.02	5.978	23.02	6.978	24.02
11/30/2002	4.078	18.92	6.078	20.92	7.078	21.92	8.078	22.92
12/1/2002	4.078	18.32	6.078	20.32	7.078	21.32	8.078	22.32
12/2/2002	3.478	17.82	5.478	19.82	6.478	20.82	7.478	21.82
12/3/2002	2.978	18.32	4.978	20.32	5.978	21.32	6.978	22.32
12/4/2002	3.478	17.82	5.478	19.82	6.478	20.82	7.478	21.82
12/5/2002	3.478	16.72	5.478	18.72	6.478	19.72	7.478	20.72
12/6/2002	2.978	18.32	4.978	20.32	5.978	21.32	6.978	22.32
12/7/2002	2.978	17.82	4.978	19.82	5.978	20.82	6.978	21.82
12/8/2002	2.978	17.22	4.978	19.22	5.978	20.22	6.978	21.22
12/9/2002	3.478	14.42	5.478	16.42	6.478	17.42	7.478	18.42
12/10/2002	4.078	14.42	6.078	16.42	7.078	17.42	8.078	18.42
12/11/2002	0.6781	14.42	2.6781	16.42	3.6781	17.42	4.6781	18.42
12/12/2002	-0.4219	14.42	1.5781	16.42	2.5781	17.42	3.5781	18.42
12/13/2002	0.6781	16.72	2.6781	18.72	3.6781	19.72	4.6781	20.72
12/14/2002	6.278	16.72	8.278	18.72	9.278	19.72	10.278	20.72
12/15/2002	5.178	14.42	7.178	16.42	8.178	17.42	9.178	18.42
12/16/2002	6.278	13.32	8.278	15.32	9.278	16.32	10.278	17.32
12/17/2002	2.378	11.72	4.378	13.72	5.378	14.72	6.378	15.72
12/18/2002	0.6781	12.22	2.6781	14.22	3.6781	15.22	4.6781	16.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/19/2002	1.278	12.82	3.278	14.82	4.278	15.82	5.278	16.82
12/20/2002	1.878	11.12	3.878	13.12	4.878	14.12	5.878	15.12
12/21/2002	1.878	12.82	3.878	14.82	4.878	15.82	5.878	16.82
12/22/2002	-3.722	10.02	-1.722	12.02	-0.722	13.02	0.278	14.02
12/23/2002	-3.722	11.12	-1.722	13.12	-0.722	14.12	0.278	15.12
12/24/2002	-3.122	8.917	-1.122	10.917	-0.122	11.917	0.878	12.917
12/25/2002	-1.522	11.12	0.478	13.12	1.478	14.12	2.478	15.12
12/26/2002	1.278	15.52	3.278	17.52	4.278	18.52	5.278	19.52
12/27/2002	6.278	17.82	8.278	19.82	9.278	20.82	10.278	21.82
12/28/2002	8.478	17.82	10.478	19.82	11.478	20.82	12.478	21.82
12/29/2002	1.878	11.12	3.878	13.12	4.878	14.12	5.878	15.12
12/30/2002	1.878	11.12	3.878	13.12	4.878	14.12	5.878	15.12
12/31/2002	2.378	12.22	4.378	14.22	5.378	15.22	6.378	16.22
1/1/2003	-0.4219	12.82	1.5781	14.82	2.5781	15.82	3.5781	16.82
1/2/2003	2.978	12.82	4.978	14.82	5.978	15.82	6.978	16.82
1/3/2003	2.378	15.02	4.378	17.02	5.378	18.02	6.378	19.02
1/4/2003	2.378	17.22	4.378	19.22	5.378	20.22	6.378	21.22
1/5/2003	0.1781	15.52	2.1781	17.52	3.1781	18.52	4.1781	19.52
1/6/2003	1.878	10.52	3.878	12.52	4.878	13.52	5.878	14.52
1/7/2003	-0.9219	12.22	1.0781	14.22	2.0781	15.22	3.0781	16.22
1/8/2003	-2.622	11.72	-0.622	13.72	0.378	14.72	1.378	15.72
1/9/2003	-2.022	12.22	-0.022	14.22	0.978	15.22	1.978	16.22
1/10/2003	1.878	14.42	3.878	16.42	4.878	17.42	5.878	18.42
1/11/2003	6.278	17.82	8.278	19.82	9.278	20.82	10.278	21.82
1/12/2003	5.178	18.32	7.178	20.32	8.178	21.32	9.178	22.32
1/13/2003	6.278	18.32	8.278	20.32	9.278	21.32	10.278	22.32
1/14/2003	3.478	14.42	5.478	16.42	6.478	17.42	7.478	18.42
1/15/2003	3.478	15.02	5.478	17.02	6.478	18.02	7.478	19.02
1/16/2003	-0.9219	16.12	1.0781	18.12	2.0781	19.12	3.0781	20.12
1/17/2003	-0.9219	12.22	1.0781	14.22	2.0781	15.22	3.0781	16.22
1/18/2003	-1.522	8.317	0.478	10.317	1.478	11.317	2.478	12.317
1/19/2003	-2.622	6.717	-0.622	8.717	0.378	9.717	1.378	10.717
1/20/2003	-1.522	11.72	0.478	13.72	1.478	14.72	2.478	15.72
1/21/2003	0.6781	13.92	2.6781	15.92	3.6781	16.92	4.6781	17.92
1/22/2003	2.378	18.32	4.378	20.32	5.378	21.32	6.378	22.32
1/23/2003	6.878	18.92	8.878	20.92	9.878	21.92	10.878	22.92
1/24/2003	4.078	13.32	6.078	15.32	7.078	16.32	8.078	17.32
1/25/2003	4.078	15.52	6.078	17.52	7.078	18.52	8.078	19.52
1/26/2003	6.278	16.12	8.278	18.12	9.278	19.12	10.278	20.12
1/27/2003	6.278	17.22	8.278	19.22	9.278	20.22	10.278	21.22
1/28/2003	5.178	13.92	7.178	15.92	8.178	16.92	9.178	17.92
1/29/2003	2.378	16.72	4.378	18.72	5.378	19.72	6.378	20.72
1/30/2003	2.378	12.82	4.378	14.82	5.378	15.82	6.378	16.82
1/31/2003	2.378	15.52	4.378	17.52	5.378	18.52	6.378	19.52
2/1/2003	6.878	15.52	8.878	17.52	9.878	18.52	10.878	19.52
2/2/2003	-0.4219	17.22	1.5781	19.22	2.5781	20.22	3.5781	21.22
2/3/2003	0.1781	16.12	2.1781	18.12	3.1781	19.12	4.1781	20.12

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/4/2003	-0.4219	14.42	1.5781	16.42	2.5781	17.42	3.5781	18.42
2/5/2003	-0.9219	15.52	1.0781	17.52	2.0781	18.52	3.0781	19.52
2/6/2003	-1.522	15.52	0.478	17.52	1.478	18.52	2.478	19.52
2/7/2003	-0.9219	14.42	1.0781	16.42	2.0781	17.42	3.0781	18.42
2/8/2003	-4.822	14.42	-2.822	16.42	-1.822	17.42	-0.822	18.42
2/9/2003	-0.4219	16.12	1.5781	18.12	2.5781	19.12	3.5781	20.12
2/10/2003	0.6781	16.72	2.6781	18.72	3.6781	19.72	4.6781	20.72
2/11/2003	0.6781	17.82	2.6781	19.82	3.6781	20.82	4.6781	21.82
2/12/2003	4.078	13.32	6.078	15.32	7.078	16.32	8.078	17.32
2/13/2003	4.078	16.72	6.078	18.72	7.078	19.72	8.078	20.72
2/14/2003	5.178	15.52	7.178	17.52	8.178	18.52	9.178	19.52
2/15/2003	5.178	15.52	7.178	17.52	8.178	18.52	9.178	19.52
2/16/2003	4.078	16.72	6.078	18.72	7.078	19.72	8.078	20.72
2/17/2003	0.6781	15.02	2.6781	17.02	3.6781	18.02	4.6781	19.02
2/18/2003	-0.4219	16.72	1.5781	18.72	2.5781	19.72	3.5781	20.72
2/19/2003	0.1781	11.72	2.1781	13.72	3.1781	14.72	4.1781	15.72
2/20/2003	2.978	14.42	4.978	16.42	5.978	17.42	6.978	18.42
2/21/2003	-1.522	17.82	0.478	19.82	1.478	20.82	2.478	21.82
2/22/2003	0.6781	17.82	2.6781	19.82	3.6781	20.82	4.6781	21.82
2/23/2003	2.978	18.32	4.978	20.32	5.978	21.32	6.978	22.32
2/24/2003	4.578	15.52	6.578	17.52	7.578	18.52	8.578	19.52
2/25/2003	5.178	15.52	7.178	17.52	8.178	18.52	9.178	19.52
2/26/2003	-0.4219	15.52	1.5781	17.52	2.5781	18.52	3.5781	19.52
2/27/2003	1.878	12.22	3.878	14.22	4.878	15.22	5.878	16.22
2/28/2003	-1.522	14.42	0.478	16.42	1.478	17.42	2.478	18.42
3/1/2003	0.1781	16.72	2.1781	18.72	3.1781	19.72	4.1781	20.72
3/2/2003	0.1781	18.92	2.1781	20.92	3.1781	21.92	4.1781	22.92
3/3/2003	0.6781	14.42	2.6781	16.42	3.6781	17.42	4.6781	18.42
3/4/2003	-1.522	16.72	0.478	18.72	1.478	19.72	2.478	20.72
3/5/2003	-1.522	18.92	0.478	20.92	1.478	21.92	2.478	22.92
3/6/2003	2.978	20.02	4.978	22.02	5.978	23.02	6.978	24.02
3/7/2003	1.278	18.32	3.278	20.32	4.278	21.32	5.278	22.32
3/8/2003	0.6781	20.02	2.6781	22.02	3.6781	23.02	4.6781	24.02
3/9/2003	0.6781	19.42	2.6781	21.42	3.6781	22.42	4.6781	23.42
3/10/2003	2.378	21.12	4.378	23.12	5.378	24.12	6.378	25.12
3/11/2003	2.978	21.12	4.978	23.12	5.978	24.12	6.978	25.12
3/12/2003	5.178	24.42	7.178	26.42	8.178	27.42	9.178	28.42
3/13/2003	5.178	21.12	7.178	23.12	8.178	24.12	9.178	25.12
3/14/2003	9.578	21.12	11.578	23.12	12.578	24.12	13.578	25.12
3/15/2003	6.278	18.92	8.278	20.92	9.278	21.92	10.278	22.92
3/16/2003	1.878	13.32	3.878	15.32	4.878	16.32	5.878	17.32
3/17/2003	1.878	17.82	3.878	19.82	4.878	20.82	5.878	21.82
3/18/2003	-1.522	18.92	0.478	20.92	1.478	21.92	2.478	22.92
3/19/2003	0.6781	18.92	2.6781	20.92	3.6781	21.92	4.6781	22.92
3/20/2003	5.178	17.82	7.178	19.82	8.178	20.82	9.178	21.82
3/21/2003	1.878	23.32	3.878	25.32	4.878	26.32	5.878	27.32
3/22/2003	5.178	23.32	7.178	25.32	8.178	26.32	9.178	27.32

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/23/2003	7.378	16.72	9.378	18.72	10.378	19.72	11.378	20.72
3/24/2003	4.078	20.52	6.078	22.52	7.078	23.52	8.078	24.52
3/25/2003	3.478	22.82	5.478	24.82	6.478	25.82	7.478	26.82
3/26/2003	6.278	21.72	8.278	23.72	9.278	24.72	10.278	25.72
3/27/2003	1.278	20.02	3.278	22.02	4.278	23.02	5.278	24.02
3/28/2003	1.878	24.42	3.878	26.42	4.878	27.42	5.878	28.42
3/29/2003	4.078	25.52	6.078	27.52	7.078	28.52	8.078	29.52
3/30/2003	8.478	26.72	10.478	28.72	11.478	29.72	12.478	30.72
3/31/2003	3.478	26.12	5.478	28.12	6.478	29.12	7.478	30.12
4/1/2003	2.978	13.32	4.978	15.32	5.978	16.32	6.978	17.32
4/2/2003	0.6781	13.32	2.6781	15.32	3.6781	16.32	4.6781	17.32
4/3/2003	-0.4219	16.12	1.5781	18.12	2.5781	19.12	3.5781	20.12
4/4/2003	1.278	14.42	3.278	16.42	4.278	17.42	5.278	18.42
4/5/2003	-1.522	15.52	0.478	17.52	1.478	18.52	2.478	19.52
4/6/2003	-0.4219	18.32	1.5781	20.32	2.5781	21.32	3.5781	22.32
4/7/2003	0.6781	22.22	2.6781	24.22	3.6781	25.22	4.6781	26.22
4/8/2003	5.178	23.32	7.178	25.32	8.178	26.32	9.178	27.32
4/9/2003	7.378	26.72	9.378	28.72	10.378	29.72	11.378	30.72
4/10/2003	5.678	23.92	7.678	25.92	8.678	26.92	9.678	27.92
4/11/2003	5.178	19.42	7.178	21.42	8.178	22.42	9.178	23.42
4/12/2003	5.678	18.32	7.678	20.32	8.678	21.32	9.678	22.32
4/13/2003	5.678	17.22	7.678	19.22	8.678	20.22	9.678	21.22
4/14/2003	1.878	17.22	3.878	19.22	4.878	20.22	5.878	21.22
4/15/2003	-0.9219	17.22	1.0781	19.22	2.0781	20.22	3.0781	21.22
4/16/2003	5.178	18.92	7.178	20.92	8.178	21.92	9.178	22.92
4/17/2003	5.178	18.92	7.178	20.92	8.178	21.92	9.178	22.92
4/18/2003	1.878	18.92	3.878	20.92	4.878	21.92	5.878	22.92
4/19/2003	1.878	23.32	3.878	25.32	4.878	26.32	5.878	27.32
4/20/2003	2.378	20.02	4.378	22.02	5.378	23.02	6.378	24.02
4/21/2003	4.078	12.22	6.078	14.22	7.078	15.22	8.078	16.22
4/22/2003	1.878	16.72	3.878	18.72	4.878	19.72	5.878	20.72
4/23/2003	3.478	20.02	5.478	22.02	6.478	23.02	7.478	24.02
4/24/2003	3.478	13.32	5.478	15.32	6.478	16.32	7.478	17.32
4/25/2003	4.078	15.52	6.078	17.52	7.078	18.52	8.078	19.52
4/26/2003	1.878	17.82	3.878	19.82	4.878	20.82	5.878	21.82
4/27/2003	1.878	21.12	3.878	23.12	4.878	24.12	5.878	25.12
4/28/2003	0.6781	17.82	2.6781	19.82	3.6781	20.82	4.6781	21.82
4/29/2003	2.978	18.92	4.978	20.92	5.978	21.92	6.978	22.92
4/30/2003	2.978	20.02	4.978	22.02	5.978	23.02	6.978	24.02
5/1/2003	4.078	22.22	6.078	24.22	7.078	25.22	8.078	26.22
5/2/2003	4.078	19.42	6.078	21.42	7.078	22.42	8.078	23.42
5/3/2003	7.378	20.02	9.378	22.02	10.378	23.02	11.378	24.02
5/4/2003	5.178	18.92	7.178	20.92	8.178	21.92	9.178	22.92
5/5/2003	4.078	21.12	6.078	23.12	7.078	24.12	8.078	25.12
5/6/2003	2.978	21.12	4.978	23.12	5.978	24.12	6.978	25.12
5/7/2003	5.178	21.12	7.178	23.12	8.178	24.12	9.178	25.12
5/8/2003	4.078	17.82	6.078	19.82	7.078	20.82	8.078	21.82

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/9/2003	1.878	18.32	3.878	20.32	4.878	21.32	5.878	22.32
5/10/2003	1.278	21.72	3.278	23.72	4.278	24.72	5.278	25.72
5/11/2003	3.478	25.52	5.478	27.52	6.478	28.52	7.478	29.52
5/12/2003	6.278	27.82	8.278	29.82	9.278	30.82	10.278	31.82
5/13/2003	7.978	29.42	9.978	31.42	10.978	32.42	11.978	33.42
5/14/2003	6.878	27.82	8.878	29.82	9.878	30.82	10.878	31.82
5/15/2003	5.178	25.52	7.178	27.52	8.178	28.52	9.178	29.52
5/16/2003	4.078	26.72	6.078	28.72	7.078	29.72	8.078	30.72
5/17/2003	6.278	26.72	8.278	28.72	9.278	29.72	10.278	30.72
5/18/2003	4.078	25.52	6.078	27.52	7.078	28.52	8.078	29.52
5/19/2003	4.078	29.42	6.078	31.42	7.078	32.42	8.078	33.42
5/20/2003	6.878	33.32	8.878	35.32	9.878	36.32	10.878	37.32
5/21/2003	10.68	34.42	12.68	36.42	13.68	37.42	14.68	38.42
5/22/2003	10.68	35.52	12.68	37.52	13.68	38.52	14.68	39.52
5/23/2003	13.48	36.72	15.48	38.72	16.48	39.72	17.48	40.72
5/24/2003	9.578	27.82	11.578	29.82	12.578	30.82	13.578	31.82
5/25/2003	7.378	27.82	9.378	29.82	10.378	30.82	11.378	31.82
5/26/2003	8.478	30.02	10.478	32.02	11.478	33.02	12.478	34.02
5/27/2003	9.578	36.72	11.578	38.72	12.578	39.72	13.578	40.72
5/28/2003	12.98	40.02	14.98	42.02	15.98	43.02	16.98	44.02
5/29/2003	18.48	37.82	20.48	39.82	21.48	40.82	22.48	41.82
5/30/2003	12.98	28.92	14.98	30.92	15.98	31.92	16.98	32.92
5/31/2003	9.578	34.42	11.578	36.42	12.578	37.42	13.578	38.42
6/1/2003	11.88	36.72	13.88	38.72	14.88	39.72	15.88	40.72
6/2/2003	15.18	38.92	17.18	40.92	18.18	41.92	19.18	42.92
6/3/2003	17.38	38.92	19.38	40.92	20.38	41.92	21.38	42.92
6/4/2003	17.38	31.12	19.38	33.12	20.38	34.12	21.38	35.12
6/5/2003	8.478	33.32	10.478	35.32	11.478	36.32	12.478	37.32
6/6/2003	8.478	31.12	10.478	33.12	11.478	34.12	12.478	35.12
6/7/2003	8.478	30.02	10.478	32.02	11.478	33.02	12.478	34.02
6/8/2003	8.478	33.32	10.478	35.32	11.478	36.32	12.478	37.32
6/9/2003	7.978	32.22	9.978	34.22	10.978	35.22	11.978	36.22
6/10/2003	8.478	28.92	10.478	30.92	11.478	31.92	12.478	32.92
6/11/2003	7.378	27.82	9.378	29.82	10.378	30.82	11.378	31.82
6/12/2003	7.978	28.92	9.978	30.92	10.978	31.92	11.978	32.92
6/13/2003	7.378	30.02	9.378	32.02	10.378	33.02	11.378	34.02
6/14/2003	8.478	32.22	10.478	34.22	11.478	35.22	12.478	36.22
6/15/2003	9.578	34.42	11.578	36.42	12.578	37.42	13.578	38.42
6/16/2003	10.68	37.82	12.68	39.82	13.68	40.82	14.68	41.82
6/17/2003	14.58	37.22	16.58	39.22	17.58	40.22	18.58	41.22
6/18/2003	12.38	32.22	14.38	34.22	15.38	35.22	16.38	36.22
6/19/2003	8.478	30.52	10.478	32.52	11.478	33.52	12.478	34.52
6/20/2003	8.478	31.12	10.478	33.12	11.478	34.12	12.478	35.12
6/21/2003	6.278	30.02	8.278	32.02	9.278	33.02	10.278	34.02
6/22/2003	8.478	32.22	10.478	34.22	11.478	35.22	12.478	36.22
6/23/2003	9.078	31.12	11.078	33.12	12.078	34.12	13.078	35.12
6/24/2003	9.078	34.42	11.078	36.42	12.078	37.42	13.078	38.42

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/25/2003	11.28	40.02	13.28	42.02	14.28	43.02	15.28	44.02
6/26/2003	16.28	42.22	18.28	44.22	19.28	45.22	20.28	46.22
6/27/2003	17.38	43.32	19.38	45.32	20.38	46.32	21.38	47.32
6/28/2003	17.38	43.32	19.38	45.32	20.38	46.32	21.38	47.32
6/29/2003	14.08	37.82	16.08	39.82	17.08	40.82	18.08	41.82
6/30/2003	9.578	35.52	11.578	37.52	12.578	38.52	13.578	39.52
7/1/2003	9.578	36.12	11.578	38.12	12.578	39.12	13.578	40.12
7/2/2003	10.68	36.72	12.68	38.72	13.68	39.72	14.68	40.72
7/3/2003	12.98	37.22	14.98	39.22	15.98	40.22	16.98	41.22
7/4/2003	12.38	39.42	14.38	41.42	15.38	42.42	16.38	43.42
7/5/2003	15.18	39.42	17.18	41.42	18.18	42.42	19.18	43.42
7/6/2003	11.88	35.52	13.88	37.52	14.88	38.52	15.88	39.52
7/7/2003	10.68	34.42	12.68	36.42	13.68	37.42	14.68	38.42
7/8/2003	9.578	36.72	11.578	38.72	12.578	39.72	13.578	40.72
7/9/2003	12.98	40.02	14.98	42.02	15.98	43.02	16.98	44.02
7/10/2003	15.18	40.52	17.18	42.52	18.18	43.52	19.18	44.52
7/11/2003	14.58	40.02	16.58	42.02	17.58	43.02	18.58	44.02
7/12/2003	14.08	40.02	16.08	42.02	17.08	43.02	18.08	44.02
7/13/2003	12.98	37.22	14.98	39.22	15.98	40.22	16.98	41.22
7/14/2003	13.48	42.22	15.48	44.22	16.48	45.22	17.48	46.22
7/15/2003	14.08	40.02	16.08	42.02	17.08	43.02	18.08	44.02
7/16/2003	14.08	41.12	16.08	43.12	17.08	44.12	18.08	45.12
7/17/2003	15.18	44.42	17.18	46.42	18.18	47.42	19.18	48.42
7/18/2003	19.58	44.42	21.58	46.42	22.58	47.42	23.58	48.42
7/19/2003	20.68	42.22	22.68	44.22	23.68	45.22	24.68	46.22
7/20/2003	20.68	43.92	22.68	45.92	23.68	46.92	24.68	47.92
7/21/2003	20.68	42.82	22.68	44.82	23.68	45.82	24.68	46.82
7/22/2003	19.08	42.82	21.08	44.82	22.08	45.82	23.08	46.82
7/23/2003	20.68	38.32	22.68	40.32	23.68	41.32	24.68	42.32
7/24/2003	19.08	41.12	21.08	43.12	22.08	44.12	23.08	45.12
7/25/2003	17.38	37.82	19.38	39.82	20.38	40.82	21.38	41.82
7/26/2003	17.38	41.12	19.38	43.12	20.38	44.12	21.38	45.12
7/27/2003	18.48	42.22	20.48	44.22	21.48	45.22	22.48	46.22
7/28/2003	18.48	42.82	20.48	44.82	21.48	45.82	22.48	46.82
7/29/2003	19.08	44.42	21.08	46.42	22.08	47.42	23.08	48.42
7/30/2003	19.58	36.72	21.58	38.72	22.58	39.72	23.58	40.72
7/31/2003	16.28	36.72	18.28	38.72	19.28	39.72	20.28	40.72
8/1/2003	16.28	35.52	18.28	37.52	19.28	38.52	20.28	39.52
8/2/2003	14.08	32.22	16.08	34.22	17.08	35.22	18.08	36.22
8/3/2003	12.98	35.52	14.98	37.52	15.98	38.52	16.98	39.52
8/4/2003	11.88	32.22	13.88	34.22	14.88	35.22	15.88	36.22
8/5/2003	11.88	31.12	13.88	33.12	14.88	34.12	15.88	35.12
8/6/2003	11.28	31.12	13.28	33.12	14.28	34.12	15.28	35.12
8/7/2003	9.578	32.22	11.578	34.22	12.578	35.22	13.578	36.22
8/8/2003	9.578	34.42	11.578	36.42	12.578	37.42	13.578	38.42
8/9/2003	11.88	36.12	13.88	38.12	14.88	39.12	15.88	40.12
8/10/2003	12.38	35.52	14.38	37.52	15.38	38.52	16.38	39.52

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/11/2003	10.68	35.52	12.68	37.52	13.68	38.52	14.68	39.52
8/12/2003	10.68	37.82	12.68	39.82	13.68	40.82	14.68	41.82
8/13/2003	11.88	36.72	13.88	38.72	14.88	39.72	15.88	40.72
8/14/2003	12.98	34.42	14.98	36.42	15.98	37.42	16.98	38.42
8/15/2003	12.38	37.22	14.38	39.22	15.38	40.22	16.38	41.22
8/16/2003	14.58	40.02	16.58	42.02	17.58	43.02	18.58	44.02
8/17/2003	15.18	40.52	17.18	42.52	18.18	43.52	19.18	44.52
8/18/2003	13.48	40.02	15.48	42.02	16.48	43.02	17.48	44.02
8/19/2003	11.88	36.72	13.88	38.72	14.88	39.72	15.88	40.72
8/20/2003	12.98	38.92	14.98	40.92	15.98	41.92	16.98	42.92
8/21/2003	14.08	31.12	16.08	33.12	17.08	34.12	18.08	35.12
8/22/2003	12.98	27.82	14.98	29.82	15.98	30.82	16.98	31.82
8/23/2003	11.88	34.42	13.88	36.42	14.88	37.42	15.88	38.42
8/24/2003	14.08	39.42	16.08	41.42	17.08	42.42	18.08	43.42
8/25/2003	17.98	41.12	19.98	43.12	20.98	44.12	21.98	45.12
8/26/2003	19.58	40.02	21.58	42.02	22.58	43.02	23.58	44.02
8/27/2003	14.58	36.72	16.58	38.72	17.58	39.72	18.58	40.72
8/28/2003	11.88	36.72	13.88	38.72	14.88	39.72	15.88	40.72
8/29/2003	9.578	35.52	11.578	37.52	12.578	38.52	13.578	39.52
8/30/2003	12.98	37.82	14.98	39.82	15.98	40.82	16.98	41.82
8/31/2003	14.08	37.82	16.08	39.82	17.08	40.82	18.08	41.82
9/1/2003	17.38	40.52	19.38	42.52	20.38	43.52	21.38	44.52
9/2/2003	18.48	42.22	20.48	44.22	21.48	45.22	22.48	46.22
9/3/2003	19.08	39.42	21.08	41.42	22.08	42.42	23.08	43.42
9/4/2003	14.58	34.42	16.58	36.42	17.58	37.42	18.58	38.42
9/5/2003	12.98	35.52	14.98	37.52	15.98	38.52	16.98	39.52
9/6/2003	9.578	31.12	11.578	33.12	12.578	34.12	13.578	35.12
9/7/2003	13.48	30.02	15.48	32.02	16.48	33.02	17.48	34.02
9/8/2003	10.68	31.12	12.68	33.12	13.68	34.12	14.68	35.12
9/9/2003	10.68	26.72	12.68	28.72	13.68	29.72	14.68	30.72
9/10/2003	10.68	32.22	12.68	34.22	13.68	35.22	14.68	36.22
9/11/2003	12.98	37.82	14.98	39.82	15.98	40.82	16.98	41.82
9/12/2003	16.88	38.92	18.88	40.92	19.88	41.92	20.88	42.92
9/13/2003	15.18	38.92	17.18	40.92	18.18	41.92	19.18	42.92
9/14/2003	16.88	40.02	18.88	42.02	19.88	43.02	20.88	44.02
9/15/2003	14.08	40.02	16.08	42.02	17.08	43.02	18.08	44.02
9/16/2003	11.88	32.22	13.88	34.22	14.88	35.22	15.88	36.22
9/17/2003	8.478	31.12	10.478	33.12	11.478	34.12	12.478	35.12
9/18/2003	8.478	34.42	10.478	36.42	11.478	37.42	12.478	38.42
9/19/2003	12.98	37.22	14.98	39.22	15.98	40.22	16.98	41.22
9/20/2003	13.48	39.42	15.48	41.42	16.48	42.42	17.48	43.42
9/21/2003	16.88	40.52	18.88	42.52	19.88	43.52	20.88	44.52
9/22/2003	17.38	41.12	19.38	43.12	20.38	44.12	21.38	45.12
9/23/2003	16.28	37.82	18.28	39.82	19.28	40.82	20.28	41.82
9/24/2003	10.68	37.82	12.68	39.82	13.68	40.82	14.68	41.82
9/25/2003	9.578	31.12	11.578	33.12	12.578	34.12	13.578	35.12
9/26/2003	8.478	32.22	10.478	34.22	11.478	35.22	12.478	36.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/27/2003	8.478	32.22	10.478	34.22	11.478	35.22	12.478	36.22
9/28/2003	10.68	32.82	12.68	34.82	13.68	35.82	14.68	36.82
9/29/2003	9.578	30.02	11.578	32.02	12.578	33.02	13.578	34.02
9/30/2003	9.578	33.32	11.578	35.32	12.578	36.32	13.578	37.32
10/1/2003	9.578	30.02	11.578	32.02	12.578	33.02	13.578	34.02
10/2/2003	7.378	30.52	9.378	32.52	10.378	33.52	11.378	34.52
10/3/2003	9.578	30.52	11.578	32.52	12.578	33.52	13.578	34.52
10/4/2003	10.18	29.42	12.18	31.42	13.18	32.42	14.18	33.42
10/5/2003	10.18	31.12	12.18	33.12	13.18	34.12	14.18	35.12
10/6/2003	10.68	33.92	12.68	35.92	13.68	36.92	14.68	37.92
10/7/2003	11.28	33.32	13.28	35.32	14.28	36.32	15.28	37.32
10/8/2003	11.28	31.72	13.28	33.72	14.28	34.72	15.28	35.72
10/9/2003	10.18	27.82	12.18	29.82	13.18	30.82	14.18	31.82
10/10/2003	11.28	27.82	13.28	29.82	14.28	30.82	15.28	31.82
10/11/2003	5.178	30.02	7.178	32.02	8.178	33.02	9.178	34.02
10/12/2003	5.178	30.02	7.178	32.02	8.178	33.02	9.178	34.02
10/13/2003	5.178	30.02	7.178	32.02	8.178	33.02	9.178	34.02
10/14/2003	6.278	30.02	8.278	32.02	9.278	33.02	10.278	34.02
10/15/2003	8.478	30.02	10.478	32.02	11.478	33.02	12.478	34.02
10/16/2003	7.378	31.12	9.378	33.12	10.378	34.12	11.378	35.12
10/17/2003	8.478	31.12	10.478	33.12	11.478	34.12	12.478	35.12
10/18/2003	9.578	33.92	11.578	35.92	12.578	36.92	13.578	37.92
10/19/2003	10.18	31.72	12.18	33.72	13.18	34.72	14.18	35.72
10/20/2003	10.68	33.32	12.68	35.32	13.68	36.32	14.68	37.32
10/21/2003	7.378	25.52	9.378	27.52	10.378	28.52	11.378	29.52
10/22/2003	7.378	25.52	9.378	27.52	10.378	28.52	11.378	29.52
10/23/2003	8.478	29.42	10.478	31.42	11.478	32.42	12.478	33.42
10/24/2003	9.578	31.72	11.578	33.72	12.578	34.72	13.578	35.72
10/25/2003	8.478	33.32	10.478	35.32	11.478	36.32	12.478	37.32
10/26/2003	6.278	23.92	8.278	25.92	9.278	26.92	10.278	27.92
10/27/2003	9.078	32.22	11.078	34.22	12.078	35.22	13.078	36.22
10/28/2003	5.678	21.72	7.678	23.72	8.678	24.72	9.678	25.72
10/29/2003	10.18	30.02	12.18	32.02	13.18	33.02	14.18	34.02
10/30/2003	5.178	21.72	7.178	23.72	8.178	24.72	9.178	25.72
10/31/2003	1.878	13.32	3.878	15.32	4.878	16.32	5.878	17.32
11/1/2003	0.6781	15.52	2.6781	17.52	3.6781	18.52	4.6781	19.52
11/2/2003	0.6781	16.12	2.6781	18.12	3.6781	19.12	4.6781	20.12
11/3/2003	2.978	14.42	4.978	16.42	5.978	17.42	6.978	18.42
11/4/2003	-0.4219	15.02	1.5781	17.02	2.5781	18.02	3.5781	19.02
11/5/2003	2.978	17.22	4.978	19.22	5.978	20.22	6.978	21.22
11/6/2003	4.078	18.92	6.078	20.92	7.078	21.92	8.078	22.92
11/7/2003	6.278	21.12	8.278	23.12	9.278	24.12	10.278	25.12
11/8/2003	7.378	19.42	9.378	21.42	10.378	22.42	11.378	23.42
11/9/2003	7.378	15.52	9.378	17.52	10.378	18.52	11.378	19.52
11/10/2003	2.978	18.92	4.978	20.92	5.978	21.92	6.978	22.92
11/11/2003	3.478	19.42	5.478	21.42	6.478	22.42	7.478	23.42
11/12/2003	3.478	20.52	5.478	22.52	6.478	23.52	7.478	24.52

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/13/2003	6.878	21.12	8.878	23.12	9.878	24.12	10.878	25.12
11/14/2003	4.078	17.82	6.078	19.82	7.078	20.82	8.078	21.82
11/15/2003	5.178	17.82	7.178	19.82	8.178	20.82	9.178	21.82
11/16/2003	0.6781	15.52	2.6781	17.52	3.6781	18.52	4.6781	19.52
11/17/2003	5.178	15.52	7.178	17.52	8.178	18.52	9.178	19.52
11/18/2003	2.978	20.02	4.978	22.02	5.978	23.02	6.978	24.02
11/19/2003	5.178	20.02	7.178	22.02	8.178	23.02	9.178	24.02
11/20/2003	4.078	18.92	6.078	20.92	7.078	21.92	8.078	22.92
11/21/2003	5.678	13.32	7.678	15.32	8.678	16.32	9.678	17.32
11/22/2003	-1.522	13.32	0.478	15.32	1.478	16.32	2.478	17.32
11/23/2003	-3.722	16.72	-1.722	18.72	-0.722	19.72	0.278	20.72
11/24/2003	0.1781	14.42	2.1781	16.42	3.1781	17.42	4.1781	18.42
11/25/2003	-2.622	13.32	-0.622	15.32	0.378	16.32	1.378	17.32
11/26/2003	-0.4219	15.52	1.5781	17.52	2.5781	18.52	3.5781	19.52
11/27/2003	-0.4219	17.22	1.5781	19.22	2.5781	20.22	3.5781	21.22
11/28/2003	3.478	16.72	5.478	18.72	6.478	19.72	7.478	20.72
11/29/2003	3.478	14.42	5.478	16.42	6.478	17.42	7.478	18.42
11/30/2003	4.578	16.72	6.578	18.72	7.578	19.72	8.578	20.72
12/1/2003	5.178	21.12	7.178	23.12	8.178	24.12	9.178	25.12
12/2/2003	5.178	18.92	7.178	20.92	8.178	21.92	9.178	22.92
12/3/2003	2.978	16.72	4.978	18.72	5.978	19.72	6.978	20.72
12/4/2003	1.878	14.42	3.878	16.42	4.878	17.42	5.878	18.42
12/5/2003	2.978	17.22	4.978	19.22	5.978	20.22	6.978	21.22
12/6/2003	7.378	17.82	9.378	19.82	10.378	20.82	11.378	21.82
12/7/2003	5.178	14.42	7.178	16.42	8.178	17.42	9.178	18.42
12/8/2003	-0.4219	12.22	1.5781	14.22	2.5781	15.22	3.5781	16.22
12/9/2003	0.6781	14.42	2.6781	16.42	3.6781	17.42	4.6781	18.42
12/10/2003	4.078	14.42	6.078	16.42	7.078	17.42	8.078	18.42
12/11/2003	1.878	11.12	3.878	13.12	4.878	14.12	5.878	15.12
12/12/2003	-0.4219	12.22	1.5781	14.22	2.5781	15.22	3.5781	16.22
12/13/2003	2.378	13.32	4.378	15.32	5.378	16.32	6.378	17.32
12/14/2003	2.978	12.22	4.978	14.22	5.978	15.22	6.978	16.22
12/15/2003	-0.4219	12.82	1.5781	14.82	2.5781	15.82	3.5781	16.82
12/16/2003	-0.9219	12.82	1.0781	14.82	2.0781	15.82	3.0781	16.82
12/17/2003	-1.522	15.02	0.478	17.02	1.478	18.02	2.478	19.02
12/18/2003	1.278	15.52	3.278	17.52	4.278	18.52	5.278	19.52
12/19/2003	-1.522	17.82	0.478	19.82	1.478	20.82	2.478	21.82
12/20/2003	2.978	14.42	4.978	16.42	5.978	17.42	6.978	18.42
12/21/2003	4.078	16.72	6.078	18.72	7.078	19.72	8.078	20.72
12/22/2003	2.978	14.42	4.978	16.42	5.978	17.42	6.978	18.42
12/23/2003	2.978	14.42	4.978	16.42	5.978	17.42	6.978	18.42
12/24/2003	5.178	12.22	7.178	14.22	8.178	15.22	9.178	16.22
12/25/2003	5.178	10.02	7.178	12.02	8.178	13.02	9.178	14.02
12/26/2003	-2.622	10.02	-0.622	12.02	0.378	13.02	1.378	14.02
12/27/2003	-3.722	10.02	-1.722	12.02	-0.722	13.02	0.278	14.02
12/28/2003	-3.122	10.02	-1.122	12.02	-0.122	13.02	0.878	14.02
12/29/2003	-4.322	11.12	-2.322	13.12	-1.322	14.12	-0.322	15.12

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/30/2003	1.878	13.32	3.878	15.32	4.878	16.32	5.878	17.32
12/31/2003	0.6781	13.32	2.6781	15.32	3.6781	16.32	4.6781	17.32
1/1/2004	2.978	12.82	4.978	14.82	5.978	15.82	6.978	16.82
1/2/2004	0.6781	11.72	2.6781	13.72	3.6781	14.72	4.6781	15.72
1/3/2004	-4.322	9.417	-2.322	11.417	-1.322	12.417	-0.322	13.417
1/4/2004	-3.122	9.417	-1.122	11.417	-0.122	12.417	0.878	13.417
1/5/2004	-3.722	12.22	-1.722	14.22	-0.722	15.22	0.278	16.22
1/6/2004	-0.4219	12.22	1.5781	14.22	2.5781	15.22	3.5781	16.22
1/7/2004	1.878	16.72	3.878	18.72	4.878	19.72	5.878	20.72
1/8/2004	5.178	21.12	7.178	23.12	8.178	24.12	9.178	25.12
1/9/2004	2.978	20.02	4.978	22.02	5.978	23.02	6.978	24.02
1/10/2004	1.878	15.52	3.878	17.52	4.878	18.52	5.878	19.52
1/11/2004	2.978	16.12	4.978	18.12	5.978	19.12	6.978	20.12
1/12/2004	3.478	10.52	5.478	12.52	6.478	13.52	7.478	14.52
1/13/2004	-1.522	10.02	0.478	12.02	1.478	13.02	2.478	14.02
1/14/2004	-1.522	7.817	0.478	9.817	1.478	10.817	2.478	11.817
1/15/2004	-0.4219	8.917	1.5781	10.917	2.5781	11.917	3.5781	12.917
1/16/2004	1.878	8.917	3.878	10.917	4.878	11.917	5.878	12.917
1/17/2004	1.878	8.917	3.878	10.917	4.878	11.917	5.878	12.917
1/18/2004	-0.4219	8.917	1.5781	10.917	2.5781	11.917	3.5781	12.917
1/19/2004	0.6781	7.217	2.6781	9.217	3.6781	10.217	4.6781	11.217
1/20/2004	1.278	9.417	3.278	11.417	4.278	12.417	5.278	13.417
1/21/2004	-0.9219	13.92	1.0781	15.92	2.0781	16.92	3.0781	17.92
1/22/2004	0.1781	14.42	2.1781	16.42	3.1781	17.42	4.1781	18.42
1/23/2004	-0.4219	11.72	1.5781	13.72	2.5781	14.72	3.5781	15.72
1/24/2004	0.6781	11.12	2.6781	13.12	3.6781	14.12	4.6781	15.12
1/25/2004	0.6781	11.12	2.6781	13.12	3.6781	14.12	4.6781	15.12
1/26/2004	-1.522	10.02	0.478	12.02	1.478	13.02	2.478	14.02
1/27/2004	-1.522	12.22	0.478	14.22	1.478	15.22	2.478	16.22
1/28/2004	-0.4219	10.02	1.5781	12.02	2.5781	13.02	3.5781	14.02
1/29/2004	-1.522	11.12	0.478	13.12	1.478	14.12	2.478	15.12
1/30/2004	0.1781	11.12	2.1781	13.12	3.1781	14.12	4.1781	15.12
1/31/2004	-1.522	11.72	0.478	13.72	1.478	14.72	2.478	15.72
2/1/2004	-0.4219	12.22	1.5781	14.22	2.5781	15.22	3.5781	16.22
2/2/2004	2.978	13.32	4.978	15.32	5.978	16.32	6.978	17.32
2/3/2004	0.6781	10.02	2.6781	12.02	3.6781	13.02	4.6781	14.02
2/4/2004	-0.4219	12.22	1.5781	14.22	2.5781	15.22	3.5781	16.22
2/5/2004	-2.022	13.32	-0.022	15.32	0.978	16.32	1.978	17.32
2/6/2004	1.278	16.72	3.278	18.72	4.278	19.72	5.278	20.72
2/7/2004	-0.9219	13.32	1.0781	15.32	2.0781	16.32	3.0781	17.32
2/8/2004	-1.522	15.02	0.478	17.02	1.478	18.02	2.478	19.02
2/9/2004	-0.9219	17.82	1.0781	19.82	2.0781	20.82	3.0781	21.82
2/10/2004	-1.522	17.82	0.478	19.82	1.478	20.82	2.478	21.82
2/11/2004	-0.4219	17.82	1.5781	19.82	2.5781	20.82	3.5781	21.82
2/12/2004	-0.4219	20.02	1.5781	22.02	2.5781	23.02	3.5781	24.02
2/13/2004	-2.022	17.82	-0.022	19.82	0.978	20.82	1.978	21.82
2/14/2004	2.978	20.02	4.978	22.02	5.978	23.02	6.978	24.02

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/15/2004	0.1781	20.52	2.1781	22.52	3.1781	23.52	4.1781	24.52
2/16/2004	4.578	17.82	6.578	19.82	7.578	20.82	8.578	21.82
2/17/2004	9.578	21.12	11.578	23.12	12.578	24.12	13.578	25.12
2/18/2004	4.078	15.52	6.078	17.52	7.078	18.52	8.078	19.52
2/19/2004	-0.4219	15.52	1.5781	17.52	2.5781	18.52	3.5781	19.52
2/20/2004	1.878	14.42	3.878	16.42	4.878	17.42	5.878	18.42
2/21/2004	2.978	15.02	4.978	17.02	5.978	18.02	6.978	19.02
2/22/2004	4.078	13.32	6.078	15.32	7.078	16.32	8.078	17.32
2/23/2004	4.078	16.12	6.078	18.12	7.078	19.12	8.078	20.12
2/24/2004	4.078	14.42	6.078	16.42	7.078	17.42	8.078	18.42
2/25/2004	3.478	11.72	5.478	13.72	6.478	14.72	7.478	15.72
2/26/2004	2.378	11.12	4.378	13.12	5.378	14.12	6.378	15.12
2/27/2004	-0.4219	13.32	1.5781	15.32	2.5781	16.32	3.5781	17.32
2/28/2004	-2.622	16.72	-0.622	18.72	0.378	19.72	1.378	20.72
2/29/2004	0.6781	15.52	2.6781	17.52	3.6781	18.52	4.6781	19.52
3/1/2004	2.978	12.22	4.978	14.22	5.978	15.22	6.978	16.22
3/2/2004	5.178	18.92	7.178	20.92	8.178	21.92	9.178	22.92
3/3/2004	-0.4219	16.72	1.5781	18.72	2.5781	19.72	3.5781	20.72
3/4/2004	-1.522	18.92	0.478	20.92	1.478	21.92	2.478	22.92
3/5/2004	-0.4219	18.92	1.5781	20.92	2.5781	21.92	3.5781	22.92
3/6/2004	2.978	21.12	4.978	23.12	5.978	24.12	6.978	25.12
3/7/2004	4.078	22.82	6.078	24.82	7.078	25.82	8.078	26.82
3/8/2004	4.078	25.52	6.078	27.52	7.078	28.52	8.078	29.52
3/9/2004	7.378	27.82	9.378	29.82	10.378	30.82	11.378	31.82
3/10/2004	8.478	28.32	10.478	30.32	11.478	31.32	12.478	32.32
3/11/2004	7.378	26.12	9.378	28.12	10.378	29.12	11.378	30.12
3/12/2004	7.378	25.02	9.378	27.02	10.378	28.02	11.378	29.02
3/13/2004	7.378	27.82	9.378	29.82	10.378	30.82	11.378	31.82
3/14/2004	9.078	26.12	11.078	28.12	12.078	29.12	13.078	30.12
3/15/2004	8.478	27.82	10.478	29.82	11.478	30.82	12.478	31.82
3/16/2004	7.378	27.82	9.378	29.82	10.378	30.82	11.378	31.82
3/17/2004	8.478	28.92	10.478	30.92	11.478	31.92	12.478	32.92
3/18/2004	9.578	30.02	11.578	32.02	12.578	33.02	13.578	34.02
3/19/2004	7.378	27.82	9.378	29.82	10.378	30.82	11.378	31.82
3/20/2004	7.378	28.92	9.378	30.92	10.378	31.92	11.378	32.92
3/21/2004	7.378	27.22	9.378	29.22	10.378	30.22	11.378	31.22
3/22/2004	8.478	26.72	10.478	28.72	11.478	29.72	12.478	30.72
3/23/2004	4.578	22.22	6.578	24.22	7.578	25.22	8.578	26.22
3/24/2004	2.978	22.22	4.978	24.22	5.978	25.22	6.978	26.22
3/25/2004	4.078	16.72	6.078	18.72	7.078	19.72	8.078	20.72
3/26/2004	0.6781	16.72	2.6781	18.72	3.6781	19.72	4.6781	20.72
3/27/2004	2.978	20.02	4.978	22.02	5.978	23.02	6.978	24.02
3/28/2004	4.078	25.52	6.078	27.52	7.078	28.52	8.078	29.52
3/29/2004	7.378	30.02	9.378	32.02	10.378	33.02	11.378	34.02
3/30/2004	4.578	16.12	6.578	18.12	7.578	19.12	8.578	20.12
3/31/2004	4.078	20.52	6.078	22.52	7.078	23.52	8.078	24.52
4/1/2004	2.378	21.12	4.378	23.12	5.378	24.12	6.378	25.12

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/2/2004	3.478	25.52	5.478	27.52	6.478	28.52	7.478	29.52
4/3/2004	7.378	26.72	9.378	28.72	10.378	29.72	11.378	30.72
4/4/2004	5.178	27.82	7.178	29.82	8.178	30.82	9.178	31.82
4/5/2004	2.978	20.02	4.978	22.02	5.978	23.02	6.978	24.02
4/6/2004	1.878	19.42	3.878	21.42	4.878	22.42	5.878	23.42
4/7/2004	2.978	24.42	4.978	26.42	5.978	27.42	6.978	28.42
4/8/2004	4.078	26.72	6.078	28.72	7.078	29.72	8.078	30.72
4/9/2004	4.078	28.92	6.078	30.92	7.078	31.92	8.078	32.92
4/10/2004	8.478	31.12	10.478	33.12	11.478	34.12	12.478	35.12
4/11/2004	6.278	30.02	8.278	32.02	9.278	33.02	10.278	34.02
4/12/2004	5.178	27.22	7.178	29.22	8.178	30.22	9.178	31.22
4/13/2004	3.478	23.32	5.478	25.32	6.478	26.32	7.478	27.32
4/14/2004	3.478	21.12	5.478	23.12	6.478	24.12	7.478	25.12
4/15/2004	4.078	17.82	6.078	19.82	7.078	20.82	8.078	21.82
4/16/2004	3.478	20.52	5.478	22.52	6.478	23.52	7.478	24.52
4/17/2004	4.078	20.02	6.078	22.02	7.078	23.02	8.078	24.02
4/18/2004	2.378	18.92	4.378	20.92	5.378	21.92	6.378	22.92
4/19/2004	4.578	21.12	6.578	23.12	7.578	24.12	8.578	25.12
4/20/2004	4.078	24.42	6.078	26.42	7.078	27.42	8.078	28.42
4/21/2004	4.078	23.32	6.078	25.32	7.078	26.32	8.078	27.32
4/22/2004	1.878	26.72	3.878	28.72	4.878	29.72	5.878	30.72
4/23/2004	5.178	27.82	7.178	29.82	8.178	30.82	9.178	31.82
4/24/2004	9.578	31.12	11.578	33.12	12.578	34.12	13.578	35.12
4/25/2004	11.88	34.42	13.88	36.42	14.88	37.42	15.88	38.42
4/26/2004	12.38	36.72	14.38	38.72	15.38	39.72	16.38	40.72
4/27/2004	9.078	36.72	11.078	38.72	12.078	39.72	13.078	40.72
4/28/2004	11.28	30.52	13.28	32.52	14.28	33.52	15.28	34.52
4/29/2004	7.378	30.02	9.378	32.02	10.378	33.02	11.378	34.02
4/30/2004	7.378	31.12	9.378	33.12	10.378	34.12	11.378	35.12
5/1/2004	9.578	33.32	11.578	35.32	12.578	36.32	13.578	37.32
5/2/2004	11.88	36.72	13.88	38.72	14.88	39.72	15.88	40.72
5/3/2004	12.98	38.32	14.98	40.32	15.98	41.32	16.98	42.32
5/4/2004	12.38	35.02	14.38	37.02	15.38	38.02	16.38	39.02
5/5/2004	7.378	30.02	9.378	32.02	10.378	33.02	11.378	34.02
5/6/2004	6.878	30.02	8.878	32.02	9.878	33.02	10.878	34.02
5/7/2004	7.378	27.82	9.378	29.82	10.378	30.82	11.378	31.82
5/8/2004	9.578	25.52	11.578	27.52	12.578	28.52	13.578	29.52
5/9/2004	5.178	26.72	7.178	28.72	8.178	29.72	9.178	30.72
5/10/2004	2.978	28.92	4.978	30.92	5.978	31.92	6.978	32.92
5/11/2004	4.078	24.42	6.078	26.42	7.078	27.42	8.078	28.42
5/12/2004	5.178	27.82	7.178	29.82	8.178	30.82	9.178	31.82
5/13/2004	7.378	31.12	9.378	33.12	10.378	34.12	11.378	35.12
5/14/2004	8.478	33.32	10.478	35.32	11.478	36.32	12.478	37.32
5/15/2004	9.578	30.02	11.578	32.02	12.578	33.02	13.578	34.02
5/16/2004	8.478	30.02	10.478	32.02	11.478	33.02	12.478	34.02
5/17/2004	5.178	31.12	7.178	33.12	8.178	34.12	9.178	35.12
5/18/2004	5.178	26.72	7.178	28.72	8.178	29.72	9.178	30.72

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/19/2004	4.078	27.82	6.078	29.82	7.078	30.82	8.078	31.82
5/20/2004	6.278	28.32	8.278	30.32	9.278	31.32	10.278	32.32
5/21/2004	6.278	26.12	8.278	28.12	9.278	29.12	10.278	30.12
5/22/2004	6.278	25.52	8.278	27.52	9.278	28.52	10.278	29.52
5/23/2004	5.178	26.12	7.178	28.12	8.178	29.12	9.178	30.12
5/24/2004	6.278	28.92	8.278	30.92	9.278	31.92	10.278	32.92
5/25/2004	7.378	28.92	9.378	30.92	10.378	31.92	11.378	32.92
5/26/2004	7.378	32.22	9.378	34.22	10.378	35.22	11.378	36.22
5/27/2004	9.578	31.12	11.578	33.12	12.578	34.12	13.578	35.12
5/28/2004	9.578	25.52	11.578	27.52	12.578	28.52	13.578	29.52
5/29/2004	6.278	28.92	8.278	30.92	9.278	31.92	10.278	32.92
5/30/2004	9.578	34.42	11.578	36.42	12.578	37.42	13.578	38.42
5/31/2004	12.38	36.12	14.38	38.12	15.38	39.12	16.38	40.12
6/1/2004	12.38	37.82	14.38	39.82	15.38	40.82	16.38	41.82
6/2/2004	12.38	37.82	14.38	39.82	15.38	40.82	16.38	41.82
6/3/2004	10.68	35.52	12.68	37.52	13.68	38.52	14.68	39.52
6/4/2004	10.68	34.42	12.68	36.42	13.68	37.42	14.68	38.42
6/5/2004	9.578	34.42	11.578	36.42	12.578	37.42	13.578	38.42
6/6/2004	11.88	35.52	13.88	37.52	14.88	38.52	15.88	39.52
6/7/2004	8.478	28.92	10.478	30.92	11.478	31.92	12.478	32.92
6/8/2004	6.278	26.72	8.278	28.72	9.278	29.72	10.278	30.72
6/9/2004	7.378	28.92	9.378	30.92	10.378	31.92	11.378	32.92
6/10/2004	6.878	30.02	8.878	32.02	9.878	33.02	10.878	34.02
6/11/2004	8.478	32.22	10.478	34.22	11.478	35.22	12.478	36.22
6/12/2004	9.578	34.42	11.578	36.42	12.578	37.42	13.578	38.42
6/13/2004	11.88	36.72	13.88	38.72	14.88	39.72	15.88	40.72
6/14/2004	8.478	36.72	10.478	38.72	11.478	39.72	12.478	40.72
6/15/2004	17.38	40.02	19.38	42.02	20.38	43.02	21.38	44.02
6/16/2004	12.98	38.92	14.98	40.92	15.98	41.92	16.98	42.92
6/17/2004	9.578	31.12	11.578	33.12	12.578	34.12	13.578	35.12
6/18/2004	9.078	31.12	11.078	33.12	12.078	34.12	13.078	35.12
6/19/2004	9.078	33.32	11.078	35.32	12.078	36.32	13.078	37.32
6/20/2004	8.478	33.92	10.478	35.92	11.478	36.92	12.478	37.92
6/21/2004	10.68	35.52	12.68	37.52	13.68	38.52	14.68	39.52
6/22/2004	10.68	35.52	12.68	37.52	13.68	38.52	14.68	39.52
6/23/2004	10.68	34.42	12.68	36.42	13.68	37.42	14.68	38.42
6/24/2004	10.68	34.42	12.68	36.42	13.68	37.42	14.68	38.42
6/25/2004	10.18	35.52	12.18	37.52	13.18	38.52	14.18	39.52
6/26/2004	11.88	35.52	13.88	37.52	14.88	38.52	15.88	39.52
6/27/2004	11.28	37.22	13.28	39.22	14.28	40.22	15.28	41.22
6/28/2004	15.68	36.72	17.68	38.72	18.68	39.72	19.68	40.72
6/29/2004	9.578	31.12	11.578	33.12	12.578	34.12	13.578	35.12
6/30/2004	9.578	31.72	11.578	33.72	12.578	34.72	13.578	35.72
7/1/2004	9.078	35.02	11.078	37.02	12.078	38.02	13.078	39.02
7/2/2004	12.98	36.12	14.98	38.12	15.98	39.12	16.98	40.12
7/3/2004	14.58	36.12	16.58	38.12	17.58	39.12	18.58	40.12
7/4/2004	12.38	38.32	14.38	40.32	15.38	41.32	16.38	42.32

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/5/2004	16.28	37.22	18.28	39.22	19.28	40.22	20.28	41.22
7/6/2004	16.28	37.22	18.28	39.22	19.28	40.22	20.28	41.22
7/7/2004	11.28	31.72	13.28	33.72	14.28	34.72	15.28	35.72
7/8/2004	9.578	30.02	11.578	32.02	12.578	33.02	13.578	34.02
7/9/2004	9.078	33.32	11.078	35.32	12.078	36.32	13.078	37.32
7/10/2004	10.18	36.72	12.18	38.72	13.18	39.72	14.18	40.72
7/11/2004	11.88	37.22	13.88	39.22	14.88	40.22	15.88	41.22
7/12/2004	15.18	34.42	17.18	36.42	18.18	37.42	19.18	38.42
7/13/2004	12.98	35.52	14.98	37.52	15.98	38.52	16.98	39.52
7/14/2004	12.38	36.12	14.38	38.12	15.38	39.12	16.38	40.12
7/15/2004	12.38	37.22	14.38	39.22	15.38	40.22	16.38	41.22
7/16/2004	14.58	36.12	16.58	38.12	17.58	39.12	18.58	40.12
7/17/2004	16.28	36.72	18.28	38.72	19.28	39.72	20.28	40.72
7/18/2004	15.18	35.52	17.18	37.52	18.18	38.52	19.18	39.52
7/19/2004	15.18	36.12	17.18	38.12	18.18	39.12	19.18	40.12
7/20/2004	14.58	38.92	16.58	40.92	17.58	41.92	18.58	42.92
7/21/2004	16.28	38.32	18.28	40.32	19.28	41.32	20.28	42.32
7/22/2004	16.88	35.52	18.88	37.52	19.88	38.52	20.88	39.52
7/23/2004	14.08	36.12	16.08	38.12	17.08	39.12	18.08	40.12
7/24/2004	12.38	38.92	14.38	40.92	15.38	41.92	16.38	42.92
7/25/2004	12.38	39.42	14.38	41.42	15.38	42.42	16.38	43.42
7/26/2004	16.88	37.22	18.88	39.22	19.88	40.22	20.88	41.22
7/27/2004	15.68	34.42	17.68	36.42	18.68	37.42	19.68	38.42
7/28/2004	11.28	33.92	13.28	35.92	14.28	36.92	15.28	37.92
7/29/2004	9.078	34.42	11.078	36.42	12.078	37.42	13.078	38.42
7/30/2004	10.18	33.32	12.18	35.32	13.18	36.32	14.18	37.32
7/31/2004	9.578	31.72	11.578	33.72	12.578	34.72	13.578	35.72
8/1/2004	10.18	28.32	12.18	30.32	13.18	31.32	14.18	32.32
8/2/2004	9.078	28.32	11.078	30.32	12.078	31.32	13.078	32.32
8/3/2004	10.68	33.92	12.68	35.92	13.68	36.92	14.68	37.92
8/4/2004	12.98	32.82	14.98	34.82	15.98	35.82	16.98	36.82
8/5/2004	12.38	32.82	14.38	34.82	15.38	35.82	16.38	36.82
8/6/2004	11.28	36.72	13.28	38.72	14.28	39.72	15.28	40.72
8/7/2004	12.98	38.92	14.98	40.92	15.98	41.92	16.98	42.92
8/8/2004	11.88	37.22	13.88	39.22	14.88	40.22	15.88	41.22
8/9/2004	15.18	39.42	17.18	41.42	18.18	42.42	19.18	43.42
8/10/2004	14.08	42.82	16.08	44.82	17.08	45.82	18.08	46.82
8/11/2004	16.88	38.92	18.88	40.92	19.88	41.92	20.88	42.92
8/12/2004	16.88	36.12	18.88	38.12	19.88	39.12	20.88	40.12
8/13/2004	12.38	31.12	14.38	33.12	15.38	34.12	16.38	35.12
8/14/2004	10.68	31.12	12.68	33.12	13.68	34.12	14.68	35.12
8/15/2004	11.28	35.02	13.28	37.02	14.28	38.02	15.28	39.02
8/16/2004	13.48	37.22	15.48	39.22	16.48	40.22	17.48	41.22
8/17/2004	14.08	39.42	16.08	41.42	17.08	42.42	18.08	43.42
8/18/2004	16.28	36.72	18.28	38.72	19.28	39.72	20.28	40.72
8/19/2004	15.18	35.52	17.18	37.52	18.18	38.52	19.18	39.52
8/20/2004	12.38	32.22	14.38	34.22	15.38	35.22	16.38	36.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/21/2004	12.38	32.82	14.38	34.82	15.38	35.82	16.38	36.82
8/22/2004	10.68	29.42	12.68	31.42	13.68	32.42	14.68	33.42
8/23/2004	12.38	32.22	14.38	34.22	15.38	35.22	16.38	36.22
8/24/2004	12.38	31.12	14.38	33.12	15.38	34.12	16.38	35.12
8/25/2004	10.68	31.12	12.68	33.12	13.68	34.12	14.68	35.12
8/26/2004	11.88	35.52	13.88	37.52	14.88	38.52	15.88	39.52
8/27/2004	12.98	38.92	14.98	40.92	15.98	41.92	16.98	42.92
8/28/2004	16.28	38.92	18.28	40.92	19.28	41.92	20.28	42.92
8/29/2004	16.28	37.22	18.28	39.22	19.28	40.22	20.28	41.22
8/30/2004	13.48	36.72	15.48	38.72	16.48	39.72	17.48	40.72
8/31/2004	13.48	36.72	15.48	38.72	16.48	39.72	17.48	40.72
9/1/2004	12.98	35.02	14.98	37.02	15.98	38.02	16.98	39.02
9/2/2004	14.08	32.82	16.08	34.82	17.08	35.82	18.08	36.82
9/3/2004	16.28	31.72	18.28	33.72	19.28	34.72	20.28	35.72
9/4/2004	15.18	33.92	17.18	35.92	18.18	36.92	19.18	37.92
9/5/2004	16.88	37.82	18.88	39.82	19.88	40.82	20.88	41.82
9/6/2004	17.98	38.32	19.98	40.32	20.98	41.32	21.98	42.32
9/7/2004	16.88	39.42	18.88	41.42	19.88	42.42	20.88	43.42
9/8/2004	15.18	40.02	17.18	42.02	18.18	43.02	19.18	44.02
9/9/2004	17.38	38.92	19.38	40.92	20.38	41.92	21.38	42.92
9/10/2004	14.08	36.72	16.08	38.72	17.08	39.72	18.08	40.72
9/11/2004	14.08	36.12	16.08	38.12	17.08	39.12	18.08	40.12
9/12/2004	12.98	32.82	14.98	34.82	15.98	35.82	16.98	36.82
9/13/2004	10.68	30.52	12.68	32.52	13.68	33.52	14.68	34.52
9/14/2004	10.68	31.12	12.68	33.12	13.68	34.12	14.68	35.12
9/15/2004	14.08	34.42	16.08	36.42	17.08	37.42	18.08	38.42
9/16/2004	14.08	35.52	16.08	37.52	17.08	38.52	18.08	39.52
9/17/2004	11.88	32.82	13.88	34.82	14.88	35.82	15.88	36.82
9/18/2004	12.98	20.52	14.98	22.52	15.98	23.52	16.98	24.52
9/19/2004	6.278	15.52	8.278	17.52	9.278	18.52	10.278	19.52
9/20/2004	5.178	22.82	7.178	24.82	8.178	25.82	9.178	26.82
9/21/2004	9.578	26.72	11.578	28.72	12.578	29.72	13.578	30.72
9/22/2004	11.88	31.12	13.88	33.12	14.88	34.12	15.88	35.12
9/23/2004	12.38	33.32	14.38	35.32	15.38	36.32	16.38	37.32
9/24/2004	13.48	33.92	15.48	35.92	16.48	36.92	17.48	37.92
9/25/2004	13.48	33.92	15.48	35.92	16.48	36.92	17.48	37.92
9/26/2004	11.88	33.32	13.88	35.32	14.88	36.32	15.88	37.32
9/27/2004	9.578	30.52	11.578	32.52	12.578	33.52	13.578	34.52
9/28/2004	9.578	25.52	11.578	27.52	12.578	28.52	13.578	29.52
9/29/2004	7.378	25.52	9.378	27.52	10.378	28.52	11.378	29.52
9/30/2004	7.978	25.52	9.978	27.52	10.978	28.52	11.978	29.52
10/1/2004	7.978	29.42	9.978	31.42	10.978	32.42	11.978	33.42
10/2/2004	10.18	31.12	12.18	33.12	13.18	34.12	14.18	35.12
10/3/2004	10.68	27.82	12.68	29.82	13.68	30.82	14.68	31.82
10/4/2004	9.078	28.92	11.078	30.92	12.078	31.92	13.078	32.92
10/5/2004	9.078	31.72	11.078	33.72	12.078	34.72	13.078	35.72
10/6/2004	11.28	30.02	13.28	32.02	14.28	33.02	15.28	34.02

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/7/2004	11.28	31.12	13.28	33.12	14.28	34.12	15.28	35.12
10/8/2004	10.68	29.42	12.68	31.42	13.68	32.42	14.68	33.42
10/9/2004	10.18	28.92	12.18	30.92	13.18	31.92	14.18	32.92
10/10/2004	11.88	28.92	13.88	30.92	14.88	31.92	15.88	32.92
10/11/2004	8.478	32.82	10.478	34.82	11.478	35.82	12.478	36.82
10/12/2004	11.28	32.22	13.28	34.22	14.28	35.22	15.28	36.22
10/13/2004	11.88	30.52	13.88	32.52	14.88	33.52	15.88	34.52
10/14/2004	12.38	28.32	14.38	30.32	15.38	31.32	16.38	32.32
10/15/2004	11.88	28.32	13.88	30.32	14.88	31.32	15.88	32.32
10/16/2004	7.978	19.42	9.978	21.42	10.978	22.42	11.978	23.42
10/17/2004	7.978	17.82	9.978	19.82	10.978	20.82	11.978	21.82
10/18/2004	6.878	16.12	8.878	18.12	9.878	19.12	10.878	20.12
10/19/2004	6.878	13.32	8.878	15.32	9.878	16.32	10.878	17.32
10/20/2004	5.678	18.32	7.678	20.32	8.678	21.32	9.678	22.32
10/21/2004	2.978	20.52	4.978	22.52	5.978	23.52	6.978	24.52
10/22/2004	5.678	17.22	7.678	19.22	8.678	20.22	9.678	21.22
10/23/2004	8.478	16.72	10.478	18.72	11.478	19.72	12.478	20.72
10/24/2004	7.378	19.42	9.378	21.42	10.378	22.42	11.378	23.42
10/25/2004	6.278	15.02	8.278	17.02	9.278	18.02	10.278	19.02
10/26/2004	5.178	16.12	7.178	18.12	8.178	19.12	9.178	20.12
10/27/2004	3.478	16.72	5.478	18.72	6.478	19.72	7.478	20.72
10/28/2004	2.978	18.32	4.978	20.32	5.978	21.32	6.978	22.32
10/29/2004	4.578	19.42	6.578	21.42	7.578	22.42	8.578	23.42
10/30/2004	4.578	18.92	6.578	20.92	7.578	21.92	8.578	22.92
10/31/2004	3.478	19.42	5.478	21.42	6.478	22.42	7.478	23.42
11/1/2004	2.378	22.22	4.378	24.22	5.378	25.22	6.378	26.22
11/2/2004	4.578	20.52	6.578	22.52	7.578	23.52	8.578	24.52
11/3/2004	4.078	11.12	6.078	13.12	7.078	14.12	8.078	15.12
11/4/2004	3.478	18.92	5.478	20.92	6.478	21.92	7.478	22.92
11/5/2004	1.878	18.92	3.878	20.92	4.878	21.92	5.878	22.92
11/6/2004	2.978	18.92	4.978	20.92	5.978	21.92	6.978	22.92
11/7/2004	4.578	15.52	6.578	17.52	7.578	18.52	8.578	19.52
11/8/2004	6.278	17.22	8.278	19.22	9.278	20.22	10.278	21.22
11/9/2004	7.978	15.52	9.978	17.52	10.978	18.52	11.978	19.52
11/10/2004	6.878	14.42	8.878	16.42	9.878	17.42	10.878	18.42
11/11/2004	7.378	16.12	9.378	18.12	10.378	19.12	11.378	20.12
11/12/2004	4.578	17.82	6.578	19.82	7.578	20.82	8.578	21.82
11/13/2004	6.878	18.92	8.878	20.92	9.878	21.92	10.878	22.92
11/14/2004	6.278	15.02	8.278	17.02	9.278	18.02	10.278	19.02
11/15/2004	6.278	18.32	8.278	20.32	9.278	21.32	10.278	22.32
11/16/2004	4.578	16.12	6.578	18.12	7.578	19.12	8.578	20.12
11/17/2004	4.078	11.12	6.078	13.12	7.078	14.12	8.078	15.12
11/18/2004	2.978	12.82	4.978	14.82	5.978	15.82	6.978	16.82
11/19/2004	3.478	15.52	5.478	17.52	6.478	18.52	7.478	19.52
11/20/2004	2.378	16.12	4.378	18.12	5.378	19.12	6.378	20.12
11/21/2004	-0.4219	15.52	1.5781	17.52	2.5781	18.52	3.5781	19.52
11/22/2004	0.6781	15.52	2.6781	17.52	3.6781	18.52	4.6781	19.52

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/23/2004	1.878	17.82	3.878	19.82	4.878	20.82	5.878	21.82
11/24/2004	1.878	15.02	3.878	17.02	4.878	18.02	5.878	19.02
11/25/2004	2.378	11.72	4.378	13.72	5.378	14.72	6.378	15.72
11/26/2004	2.378	13.32	4.378	15.32	5.378	16.32	6.378	17.32
11/27/2004	2.378	12.82	4.378	14.82	5.378	15.82	6.378	16.82
11/28/2004	-2.022	12.22	-0.022	14.22	0.978	15.22	1.978	16.22
11/29/2004	-2.022	11.72	-0.022	13.72	0.978	14.72	1.978	15.72
11/30/2004	-1.522	12.22	0.478	14.22	1.478	15.22	2.478	16.22
12/1/2004	-2.022	12.22	-0.022	14.22	0.978	15.22	1.978	16.22
12/2/2004	-2.022	13.32	-0.022	15.32	0.978	16.32	1.978	17.32
12/3/2004	-2.622	15.02	-0.622	17.02	0.378	18.02	1.378	19.02
12/4/2004	-1.522	13.92	0.478	15.92	1.478	16.92	2.478	17.92
12/5/2004	-0.9219	13.32	1.0781	15.32	2.0781	16.32	3.0781	17.32
12/6/2004	1.878	11.72	3.878	13.72	4.878	14.72	5.878	15.72
12/7/2004	4.078	15.52	6.078	17.52	7.078	18.52	8.078	19.52
12/8/2004	6.278	13.32	8.278	15.32	9.278	16.32	10.278	17.32
12/9/2004	8.478	19.42	10.478	21.42	11.478	22.42	12.478	23.42
12/10/2004	5.678	15.52	7.678	17.52	8.678	18.52	9.678	19.52
12/11/2004	2.978	14.42	4.978	16.42	5.978	17.42	6.978	18.42
12/12/2004	2.378	16.72	4.378	18.72	5.378	19.72	6.378	20.72
12/13/2004	3.478	12.82	5.478	14.82	6.478	15.82	7.478	16.82
12/14/2004	5.178	14.42	7.178	16.42	8.178	17.42	9.178	18.42
12/15/2004	2.978	14.42	4.978	16.42	5.978	17.42	6.978	18.42
12/16/2004	0.1781	15.52	2.1781	17.52	3.1781	18.52	4.1781	19.52
12/17/2004	1.878	13.32	3.878	15.32	4.878	16.32	5.878	17.32
12/18/2004	-0.4219	10.52	1.5781	12.52	2.5781	13.52	3.5781	14.52
12/19/2004	-2.022	7.217	-0.022	9.217	0.978	10.217	1.978	11.217
12/20/2004	-2.622	10.02	-0.622	12.02	0.378	13.02	1.378	14.02
12/21/2004	-1.522	11.72	0.478	13.72	1.478	14.72	2.478	15.72
12/22/2004	-2.022	12.82	-0.022	14.82	0.978	15.82	1.978	16.82
12/23/2004	-2.022	10.52	-0.022	12.52	0.978	13.52	1.978	14.52
12/24/2004	-2.622	10.02	-0.622	12.02	0.378	13.02	1.378	14.02
12/25/2004	-4.322	14.42	-2.322	16.42	-1.322	17.42	-0.322	18.42
12/26/2004	-0.9219	15.52	1.0781	17.52	2.0781	18.52	3.0781	19.52
12/27/2004	1.878	12.82	3.878	14.82	4.878	15.82	5.878	16.82
12/28/2004	5.178	11.72	7.178	13.72	8.178	14.72	9.178	15.72
12/29/2004	3.478	12.22	5.478	14.22	6.478	15.22	7.478	16.22
12/30/2004	3.478	12.22	5.478	14.22	6.478	15.22	7.478	16.22
12/31/2004	2.978	12.22	4.978	14.22	5.978	15.22	6.978	16.22
1/1/2005	1.278	11.12	3.278	13.12	4.278	14.12	5.278	15.12
1/2/2005	3.478	9.417	5.478	11.417	6.478	12.417	7.478	13.417
1/3/2005	1.878	7.817	3.878	9.817	4.878	10.817	5.878	11.817
1/4/2005	-0.4219	12.82	1.5781	14.82	2.5781	15.82	3.5781	16.82
1/5/2005	0.6781	12.22	2.6781	14.22	3.6781	15.22	4.6781	16.22
1/6/2005	1.278	14.42	3.278	16.42	4.278	17.42	5.278	18.42
1/7/2005	1.878	11.72	3.878	13.72	4.878	14.72	5.878	15.72
1/8/2005	2.978	11.72	4.978	13.72	5.978	14.72	6.978	15.72

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/9/2005	4.078	13.32	6.078	15.32	7.078	16.32	8.078	17.32
1/10/2005	2.978	8.917	4.978	10.917	5.978	11.917	6.978	12.917
1/11/2005	-0.9219	10.02	1.0781	12.02	2.0781	13.02	3.0781	14.02
1/12/2005	-2.622	7.217	-0.622	9.217	0.378	10.217	1.378	11.217
1/13/2005	-1.522	5.517	0.478	7.517	1.478	8.517	2.478	9.517
1/14/2005	-2.622	8.317	-0.622	10.317	0.378	11.317	1.378	12.317
1/15/2005	-0.9219	7.217	1.0781	9.217	2.0781	10.217	3.0781	11.217
1/16/2005	-0.4219	8.317	1.5781	10.317	2.5781	11.317	3.5781	12.317
1/17/2005	0.1781	8.917	2.1781	10.917	3.1781	11.917	4.1781	12.917
1/18/2005	0.6781	7.817	2.6781	9.817	3.6781	10.817	4.6781	11.817
1/19/2005	0.6781	9.417	2.6781	11.417	3.6781	12.417	4.6781	13.417
1/20/2005	-0.9219	7.817	1.0781	9.817	2.0781	10.817	3.0781	11.817
1/21/2005	-0.9219	7.817	1.0781	9.817	2.0781	10.817	3.0781	11.817
1/22/2005	-0.4219	8.917	1.5781	10.917	2.5781	11.917	3.5781	12.917
1/23/2005	0.1781	11.72	2.1781	13.72	3.1781	14.72	4.1781	15.72
1/24/2005	-0.9219	8.917	1.0781	10.917	2.0781	11.917	3.0781	12.917
1/25/2005	4.078	15.02	6.078	17.02	7.078	18.02	8.078	19.02
1/26/2005	5.178	15.02	7.178	17.02	8.178	18.02	9.178	19.02
1/27/2005	2.978	13.32	4.978	15.32	5.978	16.32	6.978	17.32
1/28/2005	0.6781	11.72	2.6781	13.72	3.6781	14.72	4.6781	15.72
1/29/2005	-0.9219	13.92	1.0781	15.92	2.0781	16.92	3.0781	17.92
1/30/2005	-5.422	15.52	-3.422	17.52	-2.422	18.52	-1.422	19.52
1/31/2005	-5.422	17.22	-3.422	19.22	-2.422	20.22	-1.422	21.22
2/1/2005	0.1781	17.22	2.1781	19.22	3.1781	20.22	4.1781	21.22
2/2/2005	2.378	15.52	4.378	17.52	5.378	18.52	6.378	19.52
2/3/2005	2.378	18.92	4.378	20.92	5.378	21.92	6.378	22.92
2/4/2005	2.378	16.72	4.378	18.72	5.378	19.72	6.378	20.72
2/5/2005	2.378	16.72	4.378	18.72	5.378	19.72	6.378	20.72
2/6/2005	1.878	13.32	3.878	15.32	4.878	16.32	5.878	17.32
2/7/2005	1.878	15.52	3.878	17.52	4.878	18.52	5.878	19.52
2/8/2005	1.878	17.22	3.878	19.22	4.878	20.22	5.878	21.22
2/9/2005	2.978	18.32	4.978	20.32	5.978	21.32	6.978	22.32
2/10/2005	3.478	15.52	5.478	17.52	6.478	18.52	7.478	19.52
2/11/2005	2.378	18.92	4.378	20.92	5.378	21.92	6.378	22.92
2/12/2005	4.078	17.22	6.078	19.22	7.078	20.22	8.078	21.22
2/13/2005	5.178	16.12	7.178	18.12	8.178	19.12	9.178	20.12
2/14/2005	6.278	14.42	8.278	16.42	9.278	17.42	10.278	18.42
2/15/2005	5.678	16.72	7.678	18.72	8.678	19.72	9.678	20.72
2/16/2005	6.278	16.72	8.278	18.72	9.278	19.72	10.278	20.72
2/17/2005	6.278	17.22	8.278	19.22	9.278	20.22	10.278	21.22
2/18/2005	6.878	17.22	8.878	19.22	9.878	20.22	10.878	21.22
2/19/2005	5.178	16.72	7.178	18.72	8.178	19.72	9.178	20.72
2/20/2005	6.278	19.42	8.278	21.42	9.278	22.42	10.278	23.42
2/21/2005	6.878	18.32	8.878	20.32	9.878	21.32	10.878	22.32
2/22/2005	4.078	18.32	6.078	20.32	7.078	21.32	8.078	22.32
2/23/2005	4.578	15.02	6.578	17.02	7.578	18.02	8.578	19.02
2/24/2005	4.578	14.42	6.578	16.42	7.578	17.42	8.578	18.42

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/25/2005	4.578	18.32	6.578	20.32	7.578	21.32	8.578	22.32
2/26/2005	3.478	18.32	5.478	20.32	6.478	21.32	7.478	22.32
2/27/2005	4.578	17.22	6.578	19.22	7.578	20.22	8.578	21.22
2/28/2005	3.478	17.82	5.478	19.82	6.478	20.82	7.478	21.82
3/1/2005	3.478	17.82	5.478	19.82	6.478	20.82	7.478	21.82
3/2/2005	4.078	18.92	6.078	20.92	7.078	21.92	8.078	22.92
3/3/2005	3.478	14.42	5.478	16.42	6.478	17.42	7.478	18.42
3/4/2005	4.578	18.92	6.578	20.92	7.578	21.92	8.578	22.92
3/5/2005	3.478	20.52	5.478	22.52	6.478	23.52	7.478	24.52
3/6/2005	4.078	21.72	6.078	23.72	7.078	24.72	8.078	25.72
3/7/2005	5.678	23.32	7.678	25.32	8.678	26.32	9.678	27.32
3/8/2005	6.878	23.92	8.878	25.92	9.878	26.92	10.878	27.92
3/9/2005	7.378	25.52	9.378	27.52	10.378	28.52	11.378	29.52
3/10/2005	6.278	27.82	8.278	29.82	9.278	30.82	10.278	31.82
3/11/2005	8.478	22.22	10.478	24.22	11.478	25.22	12.478	26.22
3/12/2005	8.478	27.22	10.478	29.22	11.478	30.22	12.478	31.22
3/13/2005	6.278	22.82	8.278	24.82	9.278	25.82	10.278	26.82
3/14/2005	3.478	22.82	5.478	24.82	6.478	25.82	7.478	26.82
3/15/2005	3.478	22.22	5.478	24.22	6.478	25.22	7.478	26.22
3/16/2005	6.278	20.52	8.278	22.52	9.278	23.52	10.278	24.52
3/17/2005	4.578	19.42	6.578	21.42	7.578	22.42	8.578	23.42
3/18/2005	6.878	15.52	8.878	17.52	9.878	18.52	10.878	19.52
3/19/2005	6.278	15.52	8.278	17.52	9.278	18.52	10.278	19.52
3/20/2005	5.178	17.82	7.178	19.82	8.178	20.82	9.178	21.82
3/21/2005	5.178	16.12	7.178	18.12	8.178	19.12	9.178	20.12
3/22/2005	2.978	12.82	4.978	14.82	5.978	15.82	6.978	16.82
3/23/2005	3.478	16.72	5.478	18.72	6.478	19.72	7.478	20.72
3/24/2005	1.878	17.22	3.878	19.22	4.878	20.22	5.878	21.22
3/25/2005	0.1781	19.42	2.1781	21.42	3.1781	22.42	4.1781	23.42
3/26/2005	1.878	19.42	3.878	21.42	4.878	22.42	5.878	23.42
3/27/2005	6.878	17.82	8.878	19.82	9.878	20.82	10.878	21.82
3/28/2005	2.978	14.42	4.978	16.42	5.978	17.42	6.978	18.42
3/29/2005	2.978	14.42	4.978	16.42	5.978	17.42	6.978	18.42
3/30/2005	0.1781	22.22	2.1781	24.22	3.1781	25.22	4.1781	26.22
3/31/2005	2.378	18.92	4.378	20.92	5.378	21.92	6.378	22.92
4/1/2005	7.378	24.42	9.378	26.42	10.378	27.42	11.378	28.42
4/2/2005	5.178	21.12	7.178	23.12	8.178	24.12	9.178	25.12
4/3/2005	3.478	18.92	5.478	20.92	6.478	21.92	7.478	22.92
4/4/2005	2.978	17.22	4.978	19.22	5.978	20.22	6.978	21.22
4/5/2005	2.378	21.72	4.378	23.72	5.378	24.72	6.378	25.72
4/6/2005	6.878	25.02	8.878	27.02	9.878	28.02	10.878	29.02
4/7/2005	3.478	15.52	5.478	17.52	6.478	18.52	7.478	19.52
4/8/2005	1.878	11.72	3.878	13.72	4.878	14.72	5.878	15.72
4/9/2005	2.978	17.82	4.978	19.82	5.978	20.82	6.978	21.82
4/10/2005	2.978	20.52	4.978	22.52	5.978	23.52	6.978	24.52
4/11/2005	4.578	21.12	6.578	23.12	7.578	24.12	8.578	25.12
4/12/2005	2.978	19.42	4.978	21.42	5.978	22.42	6.978	23.42

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/13/2005	0.6781	16.72	2.6781	18.72	3.6781	19.72	4.6781	20.72
4/14/2005	0.6781	18.92	2.6781	20.92	3.6781	21.92	4.6781	22.92
4/15/2005	2.978	22.22	4.978	24.22	5.978	25.22	6.978	26.22
4/16/2005	5.178	26.12	7.178	28.12	8.178	29.12	9.178	30.12
4/17/2005	6.278	22.22	8.278	24.22	9.278	25.22	10.278	26.22
4/18/2005	2.978	20.52	4.978	22.52	5.978	23.52	6.978	24.52
4/19/2005	1.878	21.72	3.878	23.72	4.878	24.72	5.878	25.72
4/20/2005	4.578	23.32	6.578	25.32	7.578	26.32	8.578	27.32
4/21/2005	2.978	24.42	4.978	26.42	5.978	27.42	6.978	28.42
4/22/2005	7.978	24.42	9.978	26.42	10.978	27.42	11.978	28.42
4/23/2005	6.878	17.22	8.878	19.22	9.878	20.22	10.878	21.22
4/24/2005	5.678	16.72	7.678	18.72	8.678	19.72	9.678	20.72
4/25/2005	2.978	22.22	4.978	24.22	5.978	25.22	6.978	26.22
4/26/2005	4.578	23.92	6.578	25.92	7.578	26.92	8.578	27.92
4/27/2005	6.278	22.82	8.278	24.82	9.278	25.82	10.278	26.82
4/28/2005	7.378	17.82	9.378	19.82	10.378	20.82	11.378	21.82
4/29/2005	5.678	23.32	7.678	25.32	8.678	26.32	9.678	27.32
4/30/2005	6.278	21.72	8.278	23.72	9.278	24.72	10.278	25.72
5/1/2005	6.878	24.42	8.878	26.42	9.878	27.42	10.878	28.42
5/2/2005	6.878	25.52	8.878	27.52	9.878	28.52	10.878	29.52
5/3/2005	5.678	26.12	7.678	28.12	8.678	29.12	9.678	30.12
5/4/2005	7.978	22.82	9.978	24.82	10.978	25.82	11.978	26.82
5/5/2005	7.978	16.12	9.978	18.12	10.978	19.12	11.978	20.12
5/6/2005	7.978	22.22	9.978	24.22	10.978	25.22	11.978	26.22
5/7/2005	5.678	22.22	7.678	24.22	8.678	25.22	9.678	26.22
5/8/2005	7.978	17.22	9.978	19.22	10.978	20.22	11.978	21.22
5/9/2005	4.078	18.32	6.078	20.32	7.078	21.32	8.078	22.32
5/10/2005	3.478	20.02	5.478	22.02	6.478	23.02	7.478	24.02
5/11/2005	3.478	23.92	5.478	25.92	6.478	26.92	7.478	27.92
5/12/2005	5.678	26.12	7.678	28.12	8.678	29.12	9.678	30.12
5/13/2005	9.078	28.32	11.078	30.32	12.078	31.32	13.078	32.32
5/14/2005	9.078	29.42	11.078	31.42	12.078	32.42	13.078	33.42
5/15/2005	10.68	26.12	12.68	28.12	13.68	29.12	14.68	30.12
5/16/2005	7.378	23.32	9.378	25.32	10.378	26.32	11.378	27.32
5/17/2005	5.178	18.32	7.178	20.32	8.178	21.32	9.178	22.32
5/18/2005	10.18	23.32	12.18	25.32	13.18	26.32	14.18	27.32
5/19/2005	11.28	23.92	13.28	25.92	14.28	26.92	15.28	27.92
5/20/2005	9.078	24.42	11.078	26.42	12.078	27.42	13.078	28.42
5/21/2005	5.678	27.82	7.678	29.82	8.678	30.82	9.678	31.82
5/22/2005	8.478	32.22	10.478	34.22	11.478	35.22	12.478	36.22
5/23/2005	7.378	30.52	9.378	32.52	10.378	33.52	11.378	34.52
5/24/2005	9.578	32.22	11.578	34.22	12.578	35.22	13.578	36.22
5/25/2005	12.38	34.42	14.38	36.42	15.38	37.42	16.38	38.42
5/26/2005	11.28	32.82	13.28	34.82	14.28	35.82	15.28	36.82
5/27/2005	9.578	33.32	11.578	35.32	12.578	36.32	13.578	37.32
5/28/2005	7.978	24.42	9.978	26.42	10.978	27.42	11.978	28.42
5/29/2005	6.278	24.42	8.278	26.42	9.278	27.42	10.278	28.42

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/30/2005	7.978	28.92	9.978	30.92	10.978	31.92	11.978	32.92
5/31/2005	11.88	30.52	13.88	32.52	14.88	33.52	15.88	34.52
6/1/2005	11.88	30.02	13.88	32.02	14.88	33.02	15.88	34.02
6/2/2005	8.478	32.22	10.478	34.22	11.478	35.22	12.478	36.22
6/3/2005	8.478	31.72	10.478	33.72	11.478	34.72	12.478	35.72
6/4/2005	9.578	25.52	11.578	27.52	12.578	28.52	13.578	29.52
6/5/2005	6.278	23.92	8.278	25.92	9.278	26.92	10.278	27.92
6/6/2005	5.178	25.02	7.178	27.02	8.178	28.02	9.178	29.02
6/7/2005	3.478	20.52	5.478	22.52	6.478	23.52	7.478	24.52
6/8/2005	7.378	20.52	9.378	22.52	10.378	23.52	11.378	24.52
6/9/2005	10.18	29.42	12.18	31.42	13.18	32.42	14.18	33.42
6/10/2005	8.478	31.12	10.478	33.12	11.478	34.12	12.478	35.12
6/11/2005	9.078	32.22	11.078	34.22	12.078	35.22	13.078	36.22
6/12/2005	9.578	35.52	11.578	37.52	12.578	38.52	13.578	39.52
6/13/2005	11.88	35.02	13.88	37.02	14.88	38.02	15.88	39.02
6/14/2005	13.48	32.82	15.48	34.82	16.48	35.82	17.48	36.82
6/15/2005	8.478	32.22	10.478	34.22	11.478	35.22	12.478	36.22
6/16/2005	7.978	22.82	9.978	24.82	10.978	25.82	11.978	26.82
6/17/2005	7.978	25.02	9.978	27.02	10.978	28.02	11.978	29.02
6/18/2005	7.378	23.32	9.378	25.32	10.378	26.32	11.378	27.32
6/19/2005	6.878	30.02	8.878	32.02	9.878	33.02	10.878	34.02
6/20/2005	7.978	28.32	9.978	30.32	10.978	31.32	11.978	32.32
6/21/2005	8.478	31.72	10.478	33.72	11.478	34.72	12.478	35.72
6/22/2005	7.978	32.22	9.978	34.22	10.978	35.22	11.978	36.22
6/23/2005	10.18	30.02	12.18	32.02	13.18	33.02	14.18	34.02
6/24/2005	8.478	28.92	10.478	30.92	11.478	31.92	12.478	32.92
6/25/2005	8.478	30.52	10.478	32.52	11.478	33.52	12.478	34.52
6/26/2005	7.978	28.32	9.978	30.32	10.978	31.32	11.978	32.32
6/27/2005	8.478	31.12	10.478	33.12	11.478	34.12	12.478	35.12
6/28/2005	9.578	30.02	11.578	32.02	12.578	33.02	13.578	34.02
6/29/2005	12.38	38.32	14.38	40.32	15.38	41.32	16.38	42.32
6/30/2005	15.18	39.42	17.18	41.42	18.18	42.42	19.18	43.42
7/1/2005	13.29	39.64	15.29	41.64	16.29	42.64	17.29	43.64
7/2/2005	13.9	39.64	15.9	41.64	16.9	42.64	17.9	43.64
7/3/2005	12.79	36.86	14.79	38.86	15.79	39.86	16.79	40.86
7/4/2005	12.79	37.97	14.79	39.97	15.79	40.97	16.79	41.97
7/5/2005	12.79	37.97	14.79	39.97	15.79	40.97	16.79	41.97
7/6/2005	12.79	36.86	14.79	38.86	15.79	39.86	16.79	40.86
7/7/2005	13.29	36.86	15.29	38.86	16.29	39.86	17.29	40.86
7/8/2005	12.79	35.14	14.79	37.14	15.79	38.14	16.79	39.14
7/9/2005	12.79	32.47	14.79	34.47	15.79	35.47	16.79	36.47
7/10/2005	11.57	33.53	13.57	35.53	14.57	36.53	15.57	37.53
7/11/2005	14.18	36.75	16.18	38.75	17.18	39.75	18.18	40.75
7/12/2005	13.9	40.75	15.9	42.75	16.9	43.75	17.9	44.75
7/13/2005	15.46	41.36	17.46	43.36	18.46	44.36	19.46	45.36
7/14/2005	17.18	41.36	19.18	43.36	20.18	44.36	21.18	45.36
7/15/2005	17.18	42.47	19.18	44.47	20.18	45.47	21.18	46.47

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: ELECTRA							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/16/2005	17.18	42.97	19.18	44.97	20.18	45.97	21.18	46.97
7/17/2005	17.18	42.97	19.18	44.97	20.18	45.97	21.18	46.97
7/18/2005	17.18	41.86	19.18	43.86	20.18	44.86	21.18	45.86
7/19/2005	14.96	38.53	16.96	40.53	17.96	41.53	18.96	42.53
7/20/2005	14.18	39.75	16.18	41.75	17.18	42.75	18.18	43.75
7/21/2005	14.4	40.14	16.4	42.14	17.4	43.14	18.4	44.14
7/22/2005	13.29	35.14	15.29	37.14	16.29	38.14	17.29	39.14
7/23/2005	12.18	41.86	14.18	43.86	15.18	44.86	16.18	45.86
7/24/2005	12.18	41.86	14.18	43.86	15.18	44.86	16.18	45.86
7/25/2005	13.18	40.75	15.18	42.75	16.18	43.75	17.18	44.75
7/26/2005	13.29	40.75	15.29	42.75	16.29	43.75	17.29	44.75
7/27/2005	13.9	40.75	15.9	42.75	16.9	43.75	17.9	44.75
7/28/2005	13.9	38.53	15.9	40.53	16.9	41.53	17.9	42.53
7/29/2005	14.96	37.97	16.96	39.97	17.96	40.97	18.96	41.97
7/30/2005	14.96	39.64	16.96	41.64	17.96	42.64	18.96	43.64
7/31/2005	14.96	39.64	16.96	41.64	17.96	42.64	18.96	43.64
8/1/2005	14.96	40.75	16.96	42.75	17.96	43.75	18.96	44.75

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/1/1999	11.15	22.23	13.15	24.23	14.15	25.23	15.15	26.23
10/2/1999	9.745	20.93	11.745	22.93	12.745	23.93	13.745	24.93
10/3/1999	9.145	18.23	11.145	20.23	12.145	21.23	13.145	22.23
10/4/1999	7.445	20.53	9.445	22.53	10.445	23.53	11.445	24.53
10/5/1999	8.745	17.43	10.745	19.43	11.745	20.43	12.745	21.43
10/6/1999	3.445	13.63	5.445	15.63	6.445	16.63	7.445	17.63
10/7/1999	0.6455	8.628	2.6455	10.628	3.6455	11.628	4.6455	12.628
10/8/1999	-0.4545	15.33	1.5455	17.33	2.5455	18.33	3.5455	19.33
10/9/1999	6.645	22.23	8.645	24.23	9.645	25.23	10.645	26.23
10/10/1999	9.045	21.43	11.045	23.43	12.045	24.43	13.045	25.43
10/11/1999	9.145	19.83	11.145	21.83	12.145	22.83	13.145	23.83
10/12/1999	8.845	18.83	10.845	20.83	11.845	21.83	12.845	22.83
10/13/1999	7.845	22.33	9.845	24.33	10.845	25.33	11.845	26.33
10/14/1999	9.645	21.43	11.645	23.43	12.645	24.43	13.645	25.43
10/15/1999	8.945	19.63	10.945	21.63	11.945	22.63	12.945	23.63
10/16/1999	2.645	13.33	4.645	15.33	5.645	16.33	6.645	17.33
10/17/1999	-2.455	10.53	-0.455	12.53	0.545	13.53	1.545	14.53
10/18/1999	-0.9545	15.43	1.0455	17.43	2.0455	18.43	3.0455	19.43
10/19/1999	5.445	17.93	7.445	19.93	8.445	20.93	9.445	21.93
10/20/1999	4.245	18.63	6.245	20.63	7.245	21.63	8.245	22.63
10/21/1999	7.545	18.83	9.545	20.83	10.545	21.83	11.545	22.83
10/22/1999	7.545	20.23	9.545	22.23	10.545	23.23	11.545	24.23
10/23/1999	7.445	18.33	9.445	20.33	10.445	21.33	11.445	22.33
10/24/1999	7.845	15.43	9.845	17.43	10.845	18.43	11.845	19.43
10/25/1999	7.445	17.43	9.445	19.43	10.445	20.43	11.445	21.43
10/26/1999	7.445	18.13	9.445	20.13	10.445	21.13	11.445	22.13
10/27/1999	7.245	15.33	9.245	17.33	10.245	18.33	11.245	19.33
10/28/1999	5.345	13.63	7.345	15.63	8.345	16.63	9.345	17.63
10/29/1999	1.245	7.628	3.245	9.628	4.245	10.628	5.245	11.628
10/30/1999	-1.055	11.13	0.945	13.13	1.945	14.13	2.945	15.13
10/31/1999	5.445	17.23	7.445	19.23	8.445	20.23	9.445	21.23
11/1/1999	5.645	17.03	7.645	19.03	8.645	20.03	9.645	21.03
11/2/1999	4.145	18.53	6.145	20.53	7.145	21.53	8.145	22.53
11/3/1999	7.745	17.53	9.745	19.53	10.745	20.53	11.745	21.53
11/4/1999	5.845	17.73	7.845	19.73	8.845	20.73	9.845	21.73
11/5/1999	6.445	17.33	8.445	19.33	9.445	20.33	10.445	21.33
11/6/1999	6.445	16.23	8.445	18.23	9.445	19.23	10.445	20.23
11/7/1999	5.345	16.33	7.345	18.33	8.345	19.33	9.345	20.33
11/8/1999	-1.055	11.73	0.945	13.73	1.945	14.73	2.945	15.73
11/9/1999	-2.955	2.028	-0.955	4.028	0.045	5.028	1.045	6.028
11/10/1999	0.6455	9.728	2.6455	11.728	3.6455	12.728	4.6455	13.728
11/11/1999	2.045	9.428	4.045	11.428	5.045	12.428	6.045	13.428
11/12/1999	3.345	13.33	5.345	15.33	6.345	16.33	7.345	17.33
11/13/1999	6.945	15.03	8.945	17.03	9.945	18.03	10.945	19.03
11/14/1999	6.045	15.23	8.045	17.23	9.045	18.23	10.045	19.23
11/15/1999	7.245	17.63	9.245	19.63	10.245	20.63	11.245	21.63
11/16/1999	2.645	7.828	4.645	9.828	5.645	10.828	6.645	11.828

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/17/1999	-1.855	8.628	0.145	10.628	1.145	11.628	2.145	12.628
11/18/1999	-5.955	1.028	-3.955	3.028	-2.955	4.028	-1.955	5.028
11/19/1999	-5.855	11.73	-3.855	13.73	-2.855	14.73	-1.855	15.73
11/20/1999	-0.5545	5.528	1.4455	7.528	2.4455	8.528	3.4455	9.528
11/21/1999	-4.155	2.928	-2.155	4.928	-1.155	5.928	-0.155	6.928
11/22/1999	-8.855	-0.3721	-6.855	1.6279	-5.855	2.6279	-4.855	3.6279
11/23/1999	-11.15	6.028	-9.15	8.028	-8.15	9.028	-7.15	10.028
11/24/1999	-5.255	3.428	-3.255	5.428	-2.255	6.428	-1.255	7.428
11/25/1999	-4.155	9.728	-2.155	11.728	-1.155	12.728	-0.155	13.728
11/26/1999	1.745	12.73	3.745	14.73	4.745	15.73	5.745	16.73
11/27/1999	3.145	12.33	5.145	14.33	6.145	15.33	7.145	16.33
11/28/1999	1.145	8.928	3.145	10.928	4.145	11.928	5.145	12.928
11/29/1999	2.045	10.33	4.045	12.33	5.045	13.33	6.045	14.33
11/30/1999	3.745	9.728	5.745	11.728	6.745	12.728	7.745	13.728
12/1/1999	-5.055	4.828	-3.055	6.828	-2.055	7.828	-1.055	8.828
12/2/1999	-7.255	5.028	-5.255	7.028	-4.255	8.028	-3.255	9.028
12/3/1999	-8.655	2.528	-6.655	4.528	-5.655	5.528	-4.655	6.528
12/4/1999	-9.255	0.2279	-7.255	2.2279	-6.255	3.2279	-5.255	4.2279
12/5/1999	-6.655	13.63	-4.655	15.63	-3.655	16.63	-2.655	17.63
12/6/1999	-0.5545	6.328	1.4455	8.328	2.4455	9.328	3.4455	10.328
12/7/1999	-1.755	5.828	0.245	7.828	1.245	8.828	2.245	9.828
12/8/1999	-9.855	-1.972	-7.855	0.028	-6.855	1.028	-5.855	2.028
12/9/1999	-11.45	6.728	-9.45	8.728	-8.45	9.728	-7.45	10.728
12/10/1999	-7.855	0.1279	-5.855	2.1279	-4.855	3.1279	-3.855	4.1279
12/11/1999	-8.855	-3.972	-6.855	-1.972	-5.855	-0.972	-4.855	0.028
12/12/1999	-7.055	4.428	-5.055	6.428	-4.055	7.428	-3.055	8.428
12/13/1999	-1.655	8.928	0.345	10.928	1.345	11.928	2.345	12.928
12/14/1999	-8.055	0.5279	-6.055	2.5279	-5.055	3.5279	-4.055	4.5279
12/15/1999	-8.855	1.528	-6.855	3.528	-5.855	4.528	-4.855	5.528
12/16/1999	-1.355	10.63	0.645	12.63	1.645	13.63	2.645	14.63
12/17/1999	1.845	14.33	3.845	16.33	4.845	17.33	5.845	18.33
12/18/1999	1.345	13.53	3.345	15.53	4.345	16.53	5.345	17.53
12/19/1999	2.045	9.028	4.045	11.028	5.045	12.028	6.045	13.028
12/20/1999	-1.355	7.728	0.645	9.728	1.645	10.728	2.645	11.728
12/21/1999	-1.555	6.328	0.445	8.328	1.445	9.328	2.445	10.328
12/22/1999	-2.555	6.328	-0.555	8.328	0.445	9.328	1.445	10.328
12/23/1999	-4.455	6.528	-2.455	8.528	-1.455	9.528	-0.455	10.528
12/24/1999	-2.855	6.128	-0.855	8.128	0.145	9.128	1.145	10.128
12/25/1999	-3.255	6.128	-1.255	8.128	-0.255	9.128	0.745	10.128
12/26/1999	-5.055	3.528	-3.055	5.528	-2.055	6.528	-1.055	7.528
12/27/1999	-4.655	8.528	-2.655	10.528	-1.655	11.528	-0.655	12.528
12/28/1999	-5.655	4.128	-3.655	6.128	-2.655	7.128	-1.655	8.128
12/29/1999	-3.455	9.728	-1.455	11.728	-0.455	12.728	0.545	13.728
12/30/1999	-1.055	9.228	0.945	11.228	1.945	12.228	2.945	13.228
12/31/1999	-1.755	9.728	0.245	11.728	1.245	12.728	2.245	13.728
1/1/2000	-2.655	7.028	-0.655	9.028	0.345	10.028	1.345	11.028
1/2/2000	-7.855	1.928	-5.855	3.928	-4.855	4.928	-3.855	5.928

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/3/2000	-12.15	-1.972	-10.15	0.028	-9.15	1.028	-8.15	2.028
1/4/2000	-6.255	5.128	-4.255	7.128	-3.255	8.128	-2.255	9.128
1/5/2000	-3.455	4.028	-1.455	6.028	-0.455	7.028	0.545	8.028
1/6/2000	-8.355	-1.272	-6.355	0.728	-5.355	1.728	-4.355	2.728
1/7/2000	-4.855	9.628	-2.855	11.628	-1.855	12.628	-0.855	13.628
1/8/2000	-3.755	5.828	-1.755	7.828	-0.755	8.828	0.245	9.828
1/9/2000	-0.8545	8.528	1.1455	10.528	2.1455	11.528	3.1455	12.528
1/10/2000	-1.155	1.628	0.845	3.628	1.845	4.628	2.845	5.628
1/11/2000	-1.155	2.528	0.845	4.528	1.845	5.528	2.845	6.528
1/12/2000	-2.155	0.3279	-0.155	2.3279	0.845	3.3279	1.845	4.3279
1/13/2000	-3.955	-0.6721	-1.955	1.3279	-0.955	2.3279	0.045	3.3279
1/14/2000	-2.155	5.428	-0.155	7.428	0.845	8.428	1.845	9.428
1/15/2000	0.6455	5.928	2.6455	7.928	3.6455	8.928	4.6455	9.928
1/16/2000	-0.6545	1.528	1.3455	3.528	2.3455	4.528	3.3455	5.528
1/17/2000	-2.855	0.4279	-0.855	2.4279	0.145	3.4279	1.145	4.4279
1/18/2000	0.3455	2.028	2.3455	4.028	3.3455	5.028	4.3455	6.028
1/19/2000	1.245	3.028	3.245	5.028	4.245	6.028	5.245	7.028
1/20/2000	0.2455	4.328	2.2455	6.328	3.2455	7.328	4.2455	8.328
1/21/2000	-0.6545	2.928	1.3455	4.928	2.3455	5.928	3.3455	6.928
1/22/2000	-3.455	0.5279	-1.455	2.5279	-0.455	3.5279	0.545	4.5279
1/23/2000	-4.855	2.128	-2.855	4.128	-1.855	5.128	-0.855	6.128
1/24/2000	-2.955	1.128	-0.955	3.128	0.045	4.128	1.045	5.128
1/25/2000	-0.2545	1.028	1.7455	3.028	2.7455	4.028	3.7455	5.028
1/26/2000	-4.055	2.028	-2.055	4.028	-1.055	5.028	-0.055	6.028
1/27/2000	-7.455	2.928	-5.455	4.928	-4.455	5.928	-3.455	6.928
1/28/2000	-6.555	6.328	-4.555	8.328	-3.555	9.328	-2.555	10.328
1/29/2000	-10.85	6.528	-8.85	8.528	-7.85	9.528	-6.85	10.528
1/30/2000	-4.055	6.928	-2.055	8.928	-1.055	9.928	-0.055	10.928
1/31/2000	-5.755	-0.6721	-3.755	1.3279	-2.755	2.3279	-1.755	3.3279
2/1/2000	-6.755	2.228	-4.755	4.228	-3.755	5.228	-2.755	6.228
2/2/2000	1.645	12.43	3.645	14.43	4.645	15.43	5.645	16.43
2/3/2000	3.145	13.43	5.145	15.43	6.145	16.43	7.145	17.43
2/4/2000	-1.255	8.628	0.745	10.628	1.745	11.628	2.745	12.628
2/5/2000	-1.755	2.928	0.245	4.928	1.245	5.928	2.245	6.928
2/6/2000	-1.855	6.528	0.145	8.528	1.145	9.528	2.145	10.528
2/7/2000	-1.655	9.328	0.345	11.328	1.345	12.328	2.345	13.328
2/8/2000	1.245	9.428	3.245	11.428	4.245	12.428	5.245	13.428
2/9/2000	1.545	9.628	3.545	11.628	4.545	12.628	5.545	13.628
2/10/2000	0.04548	5.328	2.04548	7.328	3.04548	8.328	4.04548	9.328
2/11/2000	-3.955	1.428	-1.955	3.428	-0.955	4.428	0.045	5.428
2/12/2000	-4.055	0.3279	-2.055	2.3279	-1.055	3.3279	-0.055	4.3279
2/13/2000	-5.255	-1.872	-3.255	0.128	-2.255	1.128	-1.255	2.128
2/14/2000	-3.355	1.828	-1.355	3.828	-0.355	4.828	0.645	5.828
2/15/2000	-5.855	1.528	-3.855	3.528	-2.855	4.528	-1.855	5.528
2/16/2000	-5.855	4.928	-3.855	6.928	-2.855	7.928	-1.855	8.928
2/17/2000	-6.455	-0.1721	-4.455	1.8279	-3.455	2.8279	-2.455	3.8279
2/18/2000	-6.455	0.7279	-4.455	2.7279	-3.455	3.7279	-2.455	4.7279

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/19/2000	-7.655	2.728	-5.655	4.728	-4.655	5.728	-3.655	6.728
2/20/2000	-6.355	8.028	-4.355	10.028	-3.355	11.028	-2.355	12.028
2/21/2000	-2.355	4.428	-0.355	6.428	0.645	7.428	1.645	8.428
2/22/2000	-5.355	3.828	-3.355	5.828	-2.355	6.828	-1.355	7.828
2/23/2000	-4.855	0.6279	-2.855	2.6279	-1.855	3.6279	-0.855	4.6279
2/24/2000	-10.25	-3.772	-8.25	-1.772	-7.25	-0.772	-6.25	0.228
2/25/2000	-13.35	-2.872	-11.35	-0.872	-10.35	0.128	-9.35	1.128
2/26/2000	-7.655	4.628	-5.655	6.628	-4.655	7.628	-3.655	8.628
2/27/2000	-3.255	2.828	-1.255	4.828	-0.255	5.828	0.745	6.828
2/28/2000	-5.955	0.1279	-3.955	2.1279	-2.955	3.1279	-1.955	4.1279
2/29/2000	-6.855	3.828	-4.855	5.828	-3.855	6.828	-2.855	7.828
3/1/2000	-8.555	-1.072	-6.555	0.928	-5.555	1.928	-4.555	2.928
3/2/2000	-9.655	3.028	-7.655	5.028	-6.655	6.028	-5.655	7.028
3/3/2000	-2.855	2.328	-0.855	4.328	0.145	5.328	1.145	6.328
3/4/2000	-2.955	2.528	-0.955	4.528	0.045	5.528	1.045	6.528
3/5/2000	-1.255	9.628	0.745	11.628	1.745	12.628	2.745	13.628
3/6/2000	-5.655	1.228	-3.655	3.228	-2.655	4.228	-1.655	5.228
3/7/2000	-6.955	-1.372	-4.955	0.628	-3.955	1.628	-2.955	2.628
3/8/2000	-7.855	1.928	-5.855	3.928	-4.855	4.928	-3.855	5.928
3/9/2000	-7.055	-2.372	-5.055	-0.372	-4.055	0.628	-3.055	1.628
3/10/2000	-6.855	-2.272	-4.855	-0.272	-3.855	0.728	-2.855	1.728
3/11/2000	-5.455	6.928	-3.455	8.928	-2.455	9.928	-1.455	10.928
3/12/2000	-2.455	6.728	-0.455	8.728	0.545	9.728	1.545	10.728
3/13/2000	-4.255	12.63	-2.255	14.63	-1.255	15.63	-0.255	16.63
3/14/2000	-0.2545	11.63	1.7455	13.63	2.7455	14.63	3.7455	15.63
3/15/2000	0.9455	13.13	2.9455	15.13	3.9455	16.13	4.9455	17.13
3/16/2000	-1.155	9.528	0.845	11.528	1.845	12.528	2.845	13.528
3/17/2000	-3.655	9.228	-1.655	11.228	-0.655	12.228	0.345	13.228
3/18/2000	-4.355	9.928	-2.355	11.928	-1.355	12.928	-0.355	13.928
3/19/2000	-0.9545	14.43	1.0455	16.43	2.0455	17.43	3.0455	18.43
3/20/2000	-6.455	7.928	-4.455	9.928	-3.455	10.928	-2.455	11.928
3/21/2000	-9.655	-2.872	-7.655	-0.872	-6.655	0.128	-5.655	1.128
3/22/2000	-7.755	4.828	-5.755	6.828	-4.755	7.828	-3.755	8.828
3/23/2000	-3.255	10.83	-1.255	12.83	-0.255	13.83	0.745	14.83
3/24/2000	0.2455	8.328	2.2455	10.328	3.2455	11.328	4.2455	12.328
3/25/2000	-0.7545	9.328	1.2455	11.328	2.2455	12.328	3.2455	13.328
3/26/2000	1.345	10.83	3.345	12.83	4.345	13.83	5.345	14.83
3/27/2000	0.2455	13.53	2.2455	15.53	3.2455	16.53	4.2455	17.53
3/28/2000	-1.055	9.028	0.945	11.028	1.945	12.028	2.945	13.028
3/29/2000	-1.955	8.228	0.045	10.228	1.045	11.228	2.045	12.228
3/30/2000	-3.255	8.928	-1.255	10.928	-0.255	11.928	0.745	12.928
3/31/2000	-6.155	5.028	-4.155	7.028	-3.155	8.028	-2.155	9.028
4/1/2000	-2.955	4.828	-0.955	6.828	0.045	7.828	1.045	8.828
4/2/2000	0.7455	9.628	2.7455	11.628	3.7455	12.628	4.7455	13.628
4/3/2000	3.245	14.03	5.245	16.03	6.245	17.03	7.245	18.03
4/4/2000	4.145	18.13	6.145	20.13	7.145	21.13	8.145	22.13
4/5/2000	4.945	12.33	6.945	14.33	7.945	15.33	8.945	16.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/6/2000	4.045	13.63	6.045	15.63	7.045	16.63	8.045	17.63
4/7/2000	3.745	12.33	5.745	14.33	6.745	15.33	7.745	16.33
4/8/2000	2.845	15.33	4.845	17.33	5.845	18.33	6.845	19.33
4/9/2000	0.04548	10.23	2.04548	12.23	3.04548	13.23	4.04548	14.23
4/10/2000	-0.6545	7.528	1.3455	9.528	2.3455	10.528	3.3455	11.528
4/11/2000	-0.3545	9.628	1.6455	11.628	2.6455	12.628	3.6455	13.628
4/12/2000	1.445	13.03	3.445	15.03	4.445	16.03	5.445	17.03
4/13/2000	2.645	13.63	4.645	15.63	5.645	16.63	6.645	17.63
4/14/2000	-2.055	3.428	-0.055	5.428	0.945	6.428	1.945	7.428
4/15/2000	-3.855	3.528	-1.855	5.528	-0.855	6.528	0.145	7.528
4/16/2000	-3.055	5.628	-1.055	7.628	-0.055	8.628	0.945	9.628
4/17/2000	-1.355	5.128	0.645	7.128	1.645	8.128	2.645	9.128
4/18/2000	-4.655	2.628	-2.655	4.628	-1.655	5.628	-0.655	6.628
4/19/2000	-5.755	0.3279	-3.755	2.3279	-2.755	3.3279	-1.755	4.3279
4/20/2000	-4.355	10.53	-2.355	12.53	-1.355	13.53	-0.355	14.53
4/21/2000	-0.05452	11.23	1.94548	13.23	2.94548	14.23	3.94548	15.23
4/22/2000	1.945	14.13	3.945	16.13	4.945	17.13	5.945	18.13
4/23/2000	-0.05452	7.728	1.94548	9.728	2.94548	10.728	3.94548	11.728
4/24/2000	-1.555	8.028	0.445	10.028	1.445	11.028	2.445	12.028
4/25/2000	-1.355	14.53	0.645	16.53	1.645	17.53	2.645	18.53
4/26/2000	3.845	12.13	5.845	14.13	6.845	15.13	7.845	16.13
4/27/2000	6.945	18.73	8.945	20.73	9.945	21.73	10.945	22.73
4/28/2000	3.445	14.73	5.445	16.73	6.445	17.73	7.445	18.73
4/29/2000	-1.755	3.928	0.245	5.928	1.245	6.928	2.245	7.928
4/30/2000	-4.655	11.03	-2.655	13.03	-1.655	14.03	-0.655	15.03
5/1/2000	2.045	19.23	4.045	21.23	5.045	22.23	6.045	23.23
5/2/2000	5.345	16.83	7.345	18.83	8.345	19.83	9.345	20.83
5/3/2000	5.045	14.33	7.045	16.33	8.045	17.33	9.045	18.33
5/4/2000	5.645	15.03	7.645	17.03	8.645	18.03	9.645	19.03
5/5/2000	4.545	13.13	6.545	15.13	7.545	16.13	8.545	17.13
5/6/2000	1.645	9.328	3.645	11.328	4.645	12.328	5.645	13.328
5/7/2000	0.7455	9.228	2.7455	11.228	3.7455	12.228	4.7455	13.228
5/8/2000	1.445	4.428	3.445	6.428	4.445	7.428	5.445	8.428
5/9/2000	2.945	9.628	4.945	11.628	5.945	12.628	6.945	13.628
5/10/2000	3.145	8.328	5.145	10.328	6.145	11.328	7.145	12.328
5/11/2000	-9.255	2.928	-7.255	4.928	-6.255	5.928	-5.255	6.928
5/12/2000	-9.455	5.228	-7.455	7.228	-6.455	8.228	-5.455	9.228
5/13/2000	-4.755	9.428	-2.755	11.428	-1.755	12.428	-0.755	13.428
5/14/2000	1.445	10.83	3.445	12.83	4.445	13.83	5.445	14.83
5/15/2000	1.145	9.228	3.145	11.228	4.145	12.228	5.145	13.228
5/16/2000	-1.555	7.728	0.445	9.728	1.445	10.728	2.445	11.728
5/17/2000	-2.755	2.028	-0.755	4.028	0.245	5.028	1.245	6.028
5/18/2000	-0.05452	10.73	1.94548	12.73	2.94548	13.73	3.94548	14.73
5/19/2000	2.145	14.03	4.145	16.03	5.145	17.03	6.145	18.03
5/20/2000	4.945	17.33	6.945	19.33	7.945	20.33	8.945	21.33
5/21/2000	7.745	20.03	9.745	22.03	10.745	23.03	11.745	24.03
5/22/2000	9.345	22.53	11.345	24.53	12.345	25.53	13.345	26.53

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/23/2000	11.35	21.73	13.35	23.73	14.35	24.73	15.35	25.73
5/24/2000	8.645	21.43	10.645	23.43	11.645	24.43	12.645	25.43
5/25/2000	7.945	18.73	9.945	20.73	10.945	21.73	11.945	22.73
5/26/2000	6.645	14.63	8.645	16.63	9.645	17.63	10.645	18.63
5/27/2000	4.745	16.83	6.745	18.83	7.745	19.83	8.745	20.83
5/28/2000	10.25	19.03	12.25	21.03	13.25	22.03	14.25	23.03
5/29/2000	9.445	18.23	11.445	20.23	12.445	21.23	13.445	22.23
5/30/2000	7.445	14.83	9.445	16.83	10.445	17.83	11.445	18.83
5/31/2000	6.145	14.03	8.145	16.03	9.145	17.03	10.145	18.03
6/1/2000	4.245	14.43	6.245	16.43	7.245	17.43	8.245	18.43
6/2/2000	2.245	19.03	4.245	21.03	5.245	22.03	6.245	23.03
6/3/2000	8.345	17.93	10.345	19.93	11.345	20.93	12.345	21.93
6/4/2000	8.845	21.53	10.845	23.53	11.845	24.53	12.845	25.53
6/5/2000	10.75	20.03	12.75	22.03	13.75	23.03	14.75	24.03
6/6/2000	8.245	15.33	10.245	17.33	11.245	18.33	12.245	19.33
6/7/2000	7.545	20.23	9.545	22.23	10.545	23.23	11.545	24.23
6/8/2000	4.745	14.93	6.745	16.93	7.745	17.93	8.745	18.93
6/9/2000	-0.05452	4.828	1.94548	6.828	2.94548	7.828	3.94548	8.828
6/10/2000	-0.7545	9.828	1.2455	11.828	2.2455	12.828	3.2455	13.828
6/11/2000	4.145	13.13	6.145	15.13	7.145	16.13	8.145	17.13
6/12/2000	6.645	17.93	8.645	19.93	9.645	20.93	10.645	21.93
6/13/2000	9.145	19.33	11.145	21.33	12.145	22.33	13.145	23.33
6/14/2000	7.645	21.93	9.645	23.93	10.645	24.93	11.645	25.93
6/15/2000	11.35	26.43	13.35	28.43	14.35	29.43	15.35	30.43
6/16/2000	13.55	27.13	15.55	29.13	16.55	30.13	17.55	31.13
6/17/2000	10.05	21.43	12.05	23.43	13.05	24.43	14.05	25.43
6/18/2000	7.445	22.33	9.445	24.33	10.445	25.33	11.445	26.33
6/19/2000	10.25	18.83	12.25	20.83	13.25	21.83	14.25	22.83
6/20/2000	7.845	21.43	9.845	23.43	10.845	24.43	11.845	25.43
6/21/2000	8.045	22.73	10.045	24.73	11.045	25.73	12.045	26.73
6/22/2000	12.35	22.83	14.35	24.83	15.35	25.83	16.35	26.83
6/23/2000	13.05	21.93	15.05	23.93	16.05	24.93	17.05	25.93
6/24/2000	12.45	22.13	14.45	24.13	15.45	25.13	16.45	26.13
6/25/2000	12.35	22.63	14.35	24.63	15.35	25.63	16.35	26.63
6/26/2000	9.245	23.73	11.245	25.73	12.245	26.73	13.245	27.73
6/27/2000	9.145	21.93	11.145	23.93	12.145	24.93	13.145	25.93
6/28/2000	12.75	24.13	14.75	26.13	15.75	27.13	16.75	28.13
6/29/2000	11.05	24.63	13.05	26.63	14.05	27.63	15.05	28.63
6/30/2000	11.45	24.63	13.45	26.63	14.45	27.63	15.45	28.63
7/1/2000	11.85	20.13	13.85	22.13	14.85	23.13	15.85	24.13
7/2/2000	9.945	18.23	11.945	20.23	12.945	21.23	13.945	22.23
7/3/2000	6.745	16.33	8.745	18.33	9.745	19.33	10.745	20.33
7/4/2000	5.645	12.63	7.645	14.63	8.645	15.63	9.645	16.63
7/5/2000	3.845	14.63	5.845	16.63	6.845	17.63	7.845	18.63
7/6/2000	3.745	12.23	5.745	14.23	6.745	15.23	7.745	16.23
7/7/2000	4.545	15.43	6.545	17.43	7.545	18.43	8.545	19.43
7/8/2000	5.445	15.73	7.445	17.73	8.445	18.73	9.445	19.73

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/9/2000	5.245	16.43	7.245	18.43	8.245	19.43	9.245	20.43
7/10/2000	6.945	20.83	8.945	22.83	9.945	23.83	10.945	24.83
7/11/2000	9.645	20.93	11.645	22.93	12.645	23.93	13.645	24.93
7/12/2000	10.45	23.33	12.45	25.33	13.45	26.33	14.45	27.33
7/13/2000	13.55	23.63	15.55	25.63	16.55	26.63	17.55	27.63
7/14/2000	12.85	21.33	14.85	23.33	15.85	24.33	16.85	25.33
7/15/2000	12.65	22.33	14.65	24.33	15.65	25.33	16.65	26.33
7/16/2000	12.65	21.53	14.65	23.53	15.65	24.53	16.65	25.53
7/17/2000	10.35	20.43	12.35	22.43	13.35	23.43	14.35	24.43
7/18/2000	9.945	19.13	11.945	21.13	12.945	22.13	13.945	23.13
7/19/2000	7.745	19.63	9.745	21.63	10.745	22.63	11.745	23.63
7/20/2000	10.45	22.23	12.45	24.23	13.45	25.23	14.45	26.23
7/21/2000	12.05	24.73	14.05	26.73	15.05	27.73	16.05	28.73
7/22/2000	12.95	25.53	14.95	27.53	15.95	28.53	16.95	29.53
7/23/2000	10.15	21.93	12.15	23.93	13.15	24.93	14.15	25.93
7/24/2000	11.75	23.23	13.75	25.23	14.75	26.23	15.75	27.23
7/25/2000	11.75	24.23	13.75	26.23	14.75	27.23	15.75	28.23
7/26/2000	14.35	24.73	16.35	26.73	17.35	27.73	18.35	28.73
7/27/2000	13.15	21.93	15.15	23.93	16.15	24.93	17.15	25.93
7/28/2000	9.445	22.73	11.445	24.73	12.445	25.73	13.445	26.73
7/29/2000	15.15	24.43	17.15	26.43	18.15	27.43	19.15	28.43
7/30/2000	14.35	25.43	16.35	27.43	17.35	28.43	18.35	29.43
7/31/2000	17.35	26.53	19.35	28.53	20.35	29.53	21.35	30.53
8/1/2000	17.65	29.13	19.65	31.13	20.65	32.13	21.65	33.13
8/2/2000	16.65	27.73	18.65	29.73	19.65	30.73	20.65	31.73
8/3/2000	16.05	27.83	18.05	29.83	19.05	30.83	20.05	31.83
8/4/2000	12.05	23.63	14.05	25.63	15.05	26.63	16.05	27.63
8/5/2000	12.75	21.83	14.75	23.83	15.75	24.83	16.75	25.83
8/6/2000	13.35	24.53	15.35	26.53	16.35	27.53	17.35	28.53
8/7/2000	11.85	23.73	13.85	25.73	14.85	26.73	15.85	27.73
8/8/2000	11.95	23.23	13.95	25.23	14.95	26.23	15.95	27.23
8/9/2000	11.75	22.23	13.75	24.23	14.75	25.23	15.75	26.23
8/10/2000	9.045	20.83	11.045	22.83	12.045	23.83	13.045	24.83
8/11/2000	9.445	18.43	11.445	20.43	12.445	21.43	13.445	22.43
8/12/2000	8.845	23.43	10.845	25.43	11.845	26.43	12.845	27.43
8/13/2000	13.05	24.03	15.05	26.03	16.05	27.03	17.05	28.03
8/14/2000	11.85	22.53	13.85	24.53	14.85	25.53	15.85	26.53
8/15/2000	11.25	23.83	13.25	25.83	14.25	26.83	15.25	27.83
8/16/2000	10.21	24.53	12.21	26.53	13.21	27.53	14.21	28.53
8/17/2000	11.91	26.03	13.91	28.03	14.91	29.03	15.91	30.03
8/18/2000	11.51	23.93	13.51	25.93	14.51	26.93	15.51	27.93
8/19/2000	12.81	20.93	14.81	22.93	15.81	23.93	16.81	24.93
8/20/2000	10.51	20.43	12.51	22.43	13.51	23.43	14.51	24.43
8/21/2000	8.309	20.63	10.309	22.63	11.309	23.63	12.309	24.63
8/22/2000	9.209	22.23	11.209	24.23	12.209	25.23	13.209	26.23
8/23/2000	10.21	22.73	12.21	24.73	13.21	25.73	14.21	26.73
8/24/2000	11.41	22.13	13.41	24.13	14.41	25.13	15.41	26.13

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/25/2000	9.809	23.03	11.809	25.03	12.809	26.03	13.809	27.03
8/26/2000	12.41	23.13	14.41	25.13	15.41	26.13	16.41	27.13
8/27/2000	13.01	22.23	15.01	24.23	16.01	25.23	17.01	26.23
8/28/2000	12.01	23.03	14.01	25.03	15.01	26.03	16.01	27.03
8/29/2000	12.41	24.63	14.41	26.63	15.41	27.63	16.41	28.63
8/30/2000	12.31	15.93	14.31	17.93	15.31	18.93	16.31	19.93
8/31/2000	10.31	11.03	12.31	13.03	13.31	14.03	14.31	15.03
9/1/2000	8.709	14.33	10.709	16.33	11.709	17.33	12.709	18.33
9/2/2000	4.809	5.729	6.809	7.729	7.809	8.729	8.809	9.729
9/3/2000	4.909	5.429	6.909	7.429	7.909	8.429	8.909	9.429
9/4/2000	6.609	10.03	8.609	12.03	9.609	13.03	10.609	14.03
9/5/2000	5.009	10.43	7.009	12.43	8.009	13.43	9.009	14.43
9/6/2000	1.91	11.03	3.91	13.03	4.91	14.03	5.91	15.03
9/7/2000	4.709	13.33	6.709	15.33	7.709	16.33	8.709	17.33
9/8/2000	4.809	19.33	6.809	21.33	7.809	22.33	8.809	23.33
9/9/2000	8.009	18.03	10.009	20.03	11.009	21.03	12.009	22.03
9/10/2000	8.209	19.53	10.209	21.53	11.209	22.53	12.209	23.53
9/11/2000	7.609	19.73	9.609	21.73	10.609	22.73	11.609	23.73
9/12/2000	8.009	23.53	10.009	25.53	11.009	26.53	12.009	27.53
9/13/2000	9.009	22.73	11.009	24.73	12.009	25.73	13.009	26.73
9/14/2000	13.21	23.93	15.21	25.93	16.21	26.93	17.21	27.93
9/15/2000	12.25	21.43	14.25	23.43	15.25	24.43	16.25	25.43
9/16/2000	10.15	19.73	12.15	21.73	13.15	22.73	14.15	23.73
9/17/2000	12.45	19.53	14.45	21.53	15.45	22.53	16.45	23.53
9/18/2000	12.55	23.63	14.55	25.63	15.55	26.63	16.55	27.63
9/19/2000	10.15	23.43	12.15	25.43	13.15	26.43	14.15	27.43
9/20/2000	11.75	26.43	13.75	28.43	14.75	29.43	15.75	30.43
9/21/2000	10.35	25.23	12.35	27.23	13.35	28.23	14.35	29.23
9/22/2000	8.645	17.13	10.645	19.13	11.645	20.13	12.645	21.13
9/23/2000	3.345	10.93	5.345	12.93	6.345	13.93	7.345	14.93
9/24/2000	1.745	16.63	3.745	18.63	4.745	19.63	5.745	20.63
9/25/2000	2.845	19.33	4.845	21.33	5.845	22.33	6.845	23.33
9/26/2000	9.045	18.13	11.045	20.13	12.045	21.13	13.045	22.13
9/27/2000	8.145	20.43	10.145	22.43	11.145	23.43	12.145	24.43
9/28/2000	9.345	18.03	11.345	20.03	12.345	21.03	13.345	22.03
9/29/2000	8.245	18.23	10.245	20.23	11.245	21.23	12.245	22.23
9/30/2000	7.745	19.43	9.745	21.43	10.745	22.43	11.745	23.43
10/1/2000	9.145	23.13	11.145	25.13	12.145	26.13	13.145	27.13
10/2/2000	11.55	21.43	13.55	23.43	14.55	24.43	15.55	25.43
10/3/2000	10.85	17.43	12.85	19.43	13.85	20.43	14.85	21.43
10/4/2000	6.545	18.33	8.545	20.33	9.545	21.33	10.545	22.33
10/5/2000	7.845	20.73	9.845	22.73	10.845	23.73	11.845	24.73
10/6/2000	7.945	19.93	9.945	21.93	10.945	22.93	11.945	23.93
10/7/2000	8.145	19.63	10.145	21.63	11.145	22.63	12.145	23.63
10/8/2000	8.845	19.63	10.845	21.63	11.845	22.63	12.845	23.63
10/9/2000	10.35	20.33	12.35	22.33	13.35	23.33	14.35	24.33
10/10/2000	0.1455	11.63	2.1455	13.63	3.1455	14.63	4.1455	15.63

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/11/2000	-0.8545	4.428	1.1455	6.428	2.1455	7.428	3.1455	8.428
10/12/2000	-1.255	2.328	0.745	4.328	1.745	5.328	2.745	6.328
10/13/2000	-2.555	8.228	-0.555	10.228	0.445	11.228	1.445	12.228
10/14/2000	0.04548	13.23	2.04548	15.23	3.04548	16.23	4.04548	17.23
10/15/2000	2.345	14.73	4.345	16.73	5.345	17.73	6.345	18.73
10/16/2000	4.445	14.93	6.445	16.93	7.445	17.93	8.445	18.93
10/17/2000	6.445	16.53	8.445	18.53	9.445	19.53	10.445	20.53
10/18/2000	7.945	15.63	9.945	17.63	10.945	18.63	11.945	19.63
10/19/2000	6.945	16.53	8.945	18.53	9.945	19.53	10.945	20.53
10/20/2000	5.645	18.13	7.645	20.13	8.645	21.13	9.645	22.13
10/21/2000	4.945	13.13	6.945	15.13	7.945	16.13	8.945	17.13
10/22/2000	-2.055	5.028	-0.055	7.028	0.945	8.028	1.945	9.028
10/23/2000	-4.255	3.928	-2.255	5.928	-1.255	6.928	-0.255	7.928
10/24/2000	-2.855	10.43	-0.855	12.43	0.145	13.43	1.145	14.43
10/25/2000	3.945	13.13	5.945	15.13	6.945	16.13	7.945	17.13
10/26/2000	1.345	6.228	3.345	8.228	4.345	9.228	5.345	10.228
10/27/2000	-0.7545	5.328	1.2455	7.328	2.2455	8.328	3.2455	9.328
10/28/2000	-0.3545	9.328	1.6455	11.328	2.6455	12.328	3.6455	13.328
10/29/2000	0.6455	2.728	2.6455	4.728	3.6455	5.728	4.6455	6.728
10/30/2000	-2.955	1.928	-0.955	3.928	0.045	4.928	1.045	5.928
10/31/2000	-3.455	3.828	-1.455	5.828	-0.455	6.828	0.545	7.828
11/1/2000	-2.655	5.328	-0.655	7.328	0.345	8.328	1.345	9.328
11/2/2000	-2.055	11.63	-0.055	13.63	0.945	14.63	1.945	15.63
11/3/2000	-1.655	9.728	0.345	11.728	1.345	12.728	2.345	13.728
11/4/2000	-2.055	7.228	-0.055	9.228	0.945	10.228	1.945	11.228
11/5/2000	-2.655	13.33	-0.655	15.33	0.345	16.33	1.345	17.33
11/6/2000	1.745	12.53	3.745	14.53	4.745	15.53	5.745	16.53
11/7/2000	-2.955	4.628	-0.955	6.628	0.045	7.628	1.045	8.628
11/8/2000	-4.755	7.728	-2.755	9.728	-1.755	10.728	-0.755	11.728
11/9/2000	-1.055	5.828	0.945	7.828	1.945	8.828	2.945	9.828
11/10/2000	-6.055	-0.8721	-4.055	1.1279	-3.055	2.1279	-2.055	3.1279
11/11/2000	-8.155	-2.972	-6.155	-0.972	-5.155	0.028	-4.155	1.028
11/12/2000	-11.05	-1.172	-9.05	0.828	-8.05	1.828	-7.05	2.828
11/13/2000	-10.65	6.528	-8.65	8.528	-7.65	9.528	-6.65	10.528
11/14/2000	-6.255	2.728	-4.255	4.728	-3.255	5.728	-2.255	6.728
11/15/2000	-8.855	-1.972	-6.855	0.028	-5.855	1.028	-4.855	2.028
11/16/2000	-7.955	2.028	-5.955	4.028	-4.955	5.028	-3.955	6.028
11/17/2000	-8.855	0.6279	-6.855	2.6279	-5.855	3.6279	-4.855	4.6279
11/18/2000	-8.955	5.728	-6.955	7.728	-5.955	8.728	-4.955	9.728
11/19/2000	-2.555	14.43	-0.555	16.43	0.445	17.43	1.445	18.43
11/20/2000	3.245	12.23	5.245	14.23	6.245	15.23	7.245	16.23
11/21/2000	3.245	12.93	5.245	14.93	6.245	15.93	7.245	16.93
11/22/2000	-1.655	8.328	0.345	10.328	1.345	11.328	2.345	12.328
11/23/2000	-4.155	6.428	-2.155	8.428	-1.155	9.428	-0.155	10.428
11/24/2000	-0.4545	12.23	1.5455	14.23	2.5455	15.23	3.5455	16.23
11/25/2000	0.3455	11.43	2.3455	13.43	3.3455	14.43	4.3455	15.43
11/26/2000	3.845	11.23	5.845	13.23	6.845	14.23	7.845	15.23

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/27/2000	2.945	10.53	4.945	12.53	5.945	13.53	6.945	14.53
11/28/2000	3.245	6.728	5.245	8.728	6.245	9.728	7.245	10.728
11/29/2000	4.845	12.83	6.845	14.83	7.845	15.83	8.845	16.83
11/30/2000	-1.255	5.428	0.745	7.428	1.745	8.428	2.745	9.428
12/1/2000	-1.855	10.83	0.145	12.83	1.145	13.83	2.145	14.83
12/2/2000	4.445	10.83	6.445	12.83	7.445	13.83	8.445	14.83
12/3/2000	2.045	12.93	4.045	14.93	5.045	15.93	6.045	16.93
12/4/2000	4.445	13.03	6.445	15.03	7.445	16.03	8.445	17.03
12/5/2000	3.445	11.93	5.445	13.93	6.445	14.93	7.445	15.93
12/6/2000	1.745	14.93	3.745	16.93	4.745	17.93	5.745	18.93
12/7/2000	3.345	12.13	5.345	14.13	6.345	15.13	7.345	16.13
12/8/2000	2.045	9.328	4.045	11.328	5.045	12.328	6.045	13.328
12/9/2000	0.2455	8.628	2.2455	10.628	3.2455	11.628	4.2455	12.628
12/10/2000	0.4455	3.428	2.4455	5.428	3.4455	6.428	4.4455	7.428
12/11/2000	-1.855	4.128	0.145	6.128	1.145	7.128	2.145	8.128
12/12/2000	-2.055	5.528	-0.055	7.528	0.945	8.528	1.945	9.528
12/13/2000	-5.655	3.428	-3.655	5.428	-2.655	6.428	-1.655	7.428
12/14/2000	-4.255	-0.8721	-2.255	1.1279	-1.255	2.1279	-0.255	3.1279
12/15/2000	-1.855	1.228	0.145	3.228	1.145	4.228	2.145	5.228
12/16/2000	-3.155	6.628	-1.155	8.628	-0.155	9.628	0.845	10.628
12/17/2000	-3.555	12.53	-1.555	14.53	-0.555	15.53	0.445	16.53
12/18/2000	-5.655	8.928	-3.655	10.928	-2.655	11.928	-1.655	12.928
12/19/2000	-1.855	15.13	0.145	17.13	1.145	18.13	2.145	19.13
12/20/2000	3.645	9.128	5.645	11.128	6.645	12.128	7.645	13.128
12/21/2000	2.845	11.33	4.845	13.33	5.845	14.33	6.845	15.33
12/22/2000	0.8455	8.028	2.8455	10.028	3.8455	11.028	4.8455	12.028
12/23/2000	0.3455	6.828	2.3455	8.828	3.3455	9.828	4.3455	10.828
12/24/2000	1.045	7.528	3.045	9.528	4.045	10.528	5.045	11.528
12/25/2000	-5.355	9.628	-3.355	11.628	-2.355	12.628	-1.355	13.628
12/26/2000	-6.355	5.228	-4.355	7.228	-3.355	8.228	-2.355	9.228
12/27/2000	-6.055	12.33	-4.055	14.33	-3.055	15.33	-2.055	16.33
12/28/2000	4.345	10.93	6.345	12.93	7.345	13.93	8.345	14.93
12/29/2000	2.745	15.03	4.745	17.03	5.745	18.03	6.745	19.03
12/30/2000	5.345	13.83	7.345	15.83	8.345	16.83	9.345	17.83
12/31/2000	3.445	13.53	5.445	15.53	6.445	16.53	7.445	17.53
1/1/2001	1.145	12.33	3.145	14.33	4.145	15.33	5.145	16.33
1/2/2001	-1.155	11.63	0.845	13.63	1.845	14.63	2.845	15.63
1/3/2001	-0.9545	13.33	1.0455	15.33	2.0455	16.33	3.0455	17.33
1/4/2001	5.445	17.13	7.445	19.13	8.445	20.13	9.445	21.13
1/5/2001	5.845	16.43	7.845	18.43	8.845	19.43	9.845	20.43
1/6/2001	3.945	14.33	5.945	16.33	6.945	17.33	7.945	18.33
1/7/2001	1.945	15.13	3.945	17.13	4.945	18.13	5.945	19.13
1/8/2001	2.945	12.13	4.945	14.13	5.945	15.13	6.945	16.13
1/9/2001	-1.855	2.728	0.145	4.728	1.145	5.728	2.145	6.728
1/10/2001	-4.155	3.428	-2.155	5.428	-1.155	6.428	-0.155	7.428
1/11/2001	-2.555	2.628	-0.555	4.628	0.445	5.628	1.445	6.628
1/12/2001	-5.555	-2.272	-3.555	-0.272	-2.555	0.728	-1.555	1.728

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/13/2001	-6.855	2.728	-4.855	4.728	-3.855	5.728	-2.855	6.728
1/14/2001	-4.755	-1.272	-2.755	0.728	-1.755	1.728	-0.755	2.728
1/15/2001	-7.855	1.428	-5.855	3.428	-4.855	4.428	-3.855	5.428
1/16/2001	-9.855	-5.772	-7.855	-3.772	-6.855	-2.772	-5.855	-1.772
1/17/2001	-12.05	-5.972	-10.05	-3.972	-9.05	-2.972	-8.05	-1.972
1/18/2001	-13.05	1.528	-11.05	3.528	-10.05	4.528	-9.05	5.528
1/19/2001	-4.155	9.328	-2.155	11.328	-1.155	12.328	-0.155	13.328
1/20/2001	-2.055	7.428	-0.055	9.428	0.945	10.428	1.945	11.428
1/21/2001	-0.1545	7.628	1.8455	9.628	2.8455	10.628	3.8455	11.628
1/22/2001	1.845	10.53	3.845	12.53	4.845	13.53	5.845	14.53
1/23/2001	-1.355	7.828	0.645	9.828	1.645	10.828	2.645	11.828
1/24/2001	-2.155	5.028	-0.155	7.028	0.845	8.028	1.845	9.028
1/25/2001	-7.955	-1.872	-5.955	0.128	-4.955	1.128	-3.955	2.128
1/26/2001	-8.355	-2.472	-6.355	-0.472	-5.355	0.528	-4.355	1.528
1/27/2001	-6.655	0.6279	-4.655	2.6279	-3.655	3.6279	-2.655	4.6279
1/28/2001	-7.155	-2.572	-5.155	-0.572	-4.155	0.428	-3.155	1.428
1/29/2001	-9.855	11.23	-7.855	13.23	-6.855	14.23	-5.855	15.23
1/30/2001	-9.555	1.628	-7.555	3.628	-6.555	4.628	-5.555	5.628
1/31/2001	-11.55	2.428	-9.55	4.428	-8.55	5.428	-7.55	6.428
2/1/2001	-11.35	3.828	-9.35	5.828	-8.35	6.828	-7.35	7.828
2/2/2001	-4.655	12.13	-2.655	14.13	-1.655	15.13	-0.655	16.13
2/3/2001	2.445	8.328	4.445	10.328	5.445	11.328	6.445	12.328
2/4/2001	3.845	14.33	5.845	16.33	6.845	17.33	7.845	18.33
2/5/2001	4.745	15.83	6.745	17.83	7.745	18.83	8.745	19.83
2/6/2001	2.645	11.93	4.645	13.93	5.645	14.93	6.645	15.93
2/7/2001	-8.555	2.428	-6.555	4.428	-5.555	5.428	-4.555	6.428
2/8/2001	-11.55	-7.072	-9.55	-5.072	-8.55	-4.072	-7.55	-3.072
2/9/2001	-13.95	6.028	-11.95	8.028	-10.95	9.028	-9.95	10.028
2/10/2001	-6.955	-3.972	-4.955	-1.972	-3.955	-0.972	-2.955	0.028
2/11/2001	-7.755	-5.372	-5.755	-3.372	-4.755	-2.372	-3.755	-1.372
2/12/2001	-9.655	-5.172	-7.655	-3.172	-6.655	-2.172	-5.655	-1.172
2/13/2001	-12.65	-2.272	-10.65	-0.272	-9.65	0.728	-8.65	1.728
2/14/2001	-7.255	-1.972	-5.255	0.028	-4.255	1.028	-3.255	2.028
2/15/2001	-7.555	5.328	-5.555	7.328	-4.555	8.328	-3.555	9.328
2/16/2001	-6.755	7.328	-4.755	9.328	-3.755	10.328	-2.755	11.328
2/17/2001	-3.155	7.128	-1.155	9.128	-0.155	10.128	0.845	11.128
2/18/2001	-2.055	3.928	-0.055	5.928	0.945	6.928	1.945	7.928
2/19/2001	-1.955	2.128	0.045	4.128	1.045	5.128	2.045	6.128
2/20/2001	-3.055	0.2279	-1.055	2.2279	-0.055	3.2279	0.945	4.2279
2/21/2001	-3.255	0.3279	-1.255	2.3279	-0.255	3.3279	0.745	4.3279
2/22/2001	-2.355	2.628	-0.355	4.628	0.645	5.628	1.645	6.628
2/23/2001	-8.755	-1.772	-6.755	0.228	-5.755	1.228	-4.755	2.228
2/24/2001	-10.95	2.728	-8.95	4.728	-7.95	5.728	-6.95	6.728
2/25/2001	-5.255	-0.3721	-3.255	1.6279	-2.255	2.6279	-1.255	3.6279
2/26/2001	-4.255	5.228	-2.255	7.228	-1.255	8.228	-0.255	9.228
2/27/2001	-3.255	-0.4721	-1.255	1.5279	-0.255	2.5279	0.745	3.5279
2/28/2001	-8.655	4.228	-6.655	6.228	-5.655	7.228	-4.655	8.228

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/1/2001	-12.05	0.6279	-10.05	2.6279	-9.05	3.6279	-8.05	4.6279
3/2/2001	-8.355	8.728	-6.355	10.728	-5.355	11.728	-4.355	12.728
3/3/2001	-8.055	1.528	-6.055	3.528	-5.055	4.528	-4.055	5.528
3/4/2001	-8.655	5.128	-6.655	7.128	-5.655	8.128	-4.655	9.128
3/5/2001	-0.2545	1.928	1.7455	3.928	2.7455	4.928	3.7455	5.928
3/6/2001	-0.4545	4.928	1.5455	6.928	2.5455	7.928	3.5455	8.928
3/7/2001	1.045	7.628	3.045	9.628	4.045	10.628	5.045	11.628
3/8/2001	0.7455	11.33	2.7455	13.33	3.7455	14.33	4.7455	15.33
3/9/2001	0.7455	8.928	2.7455	10.928	3.7455	11.928	4.7455	12.928
3/10/2001	-4.455	2.328	-2.455	4.328	-1.455	5.328	-0.455	6.328
3/11/2001	-4.655	1.328	-2.655	3.328	-1.655	4.328	-0.655	5.328
3/12/2001	-4.155	6.528	-2.155	8.528	-1.155	9.528	-0.155	10.528
3/13/2001	-4.255	9.528	-2.255	11.528	-1.255	12.528	-0.255	13.528
3/14/2001	-0.9545	14.73	1.0455	16.73	2.0455	17.73	3.0455	18.73
3/15/2001	0.3455	14.23	2.3455	16.23	3.3455	17.23	4.3455	18.23
3/16/2001	0.04548	9.928	2.04548	11.928	3.04548	12.928	4.04548	13.928
3/17/2001	-0.8545	11.23	1.1455	13.23	2.1455	14.23	3.1455	15.23
3/18/2001	2.545	14.73	4.545	16.73	5.545	17.73	6.545	18.73
3/19/2001	2.445	16.43	4.445	18.43	5.445	19.43	6.445	20.43
3/20/2001	5.845	16.93	7.845	18.93	8.845	19.93	9.845	20.93
3/21/2001	4.645	12.73	6.645	14.73	7.645	15.73	8.645	16.73
3/22/2001	5.845	14.23	7.845	16.23	8.845	17.23	9.845	18.23
3/23/2001	2.845	13.43	4.845	15.43	5.845	16.43	6.845	17.43
3/24/2001	2.445	14.03	4.445	16.03	5.445	17.03	6.445	18.03
3/25/2001	3.545	10.73	5.545	12.73	6.545	13.73	7.545	14.73
3/26/2001	1.345	10.93	3.345	12.93	4.345	13.93	5.345	14.93
3/27/2001	1.545	14.73	3.545	16.73	4.545	17.73	5.545	18.73
3/28/2001	0.4455	16.33	2.4455	18.33	3.4455	19.33	4.4455	20.33
3/29/2001	4.745	16.93	6.745	18.93	7.745	19.93	8.745	20.93
3/30/2001	2.245	13.23	4.245	15.23	5.245	16.23	6.245	17.23
3/31/2001	2.545	17.43	4.545	19.43	5.545	20.43	6.545	21.43
4/1/2001	3.845	18.23	5.845	20.23	6.845	21.23	7.845	22.23
4/2/2001	1.145	10.43	3.145	12.43	4.145	13.43	5.145	14.43
4/3/2001	-4.655	4.228	-2.655	6.228	-1.655	7.228	-0.655	8.228
4/4/2001	-7.055	-1.572	-5.055	0.428	-4.055	1.428	-3.055	2.428
4/5/2001	-6.455	4.528	-4.455	6.528	-3.455	7.528	-2.455	8.528
4/6/2001	-4.255	7.328	-2.255	9.328	-1.255	10.328	-0.255	11.328
4/7/2001	-3.555	0.6279	-1.555	2.6279	-0.555	3.6279	0.445	4.6279
4/8/2001	-8.855	0.7279	-6.855	2.7279	-5.855	3.7279	-4.855	4.7279
4/9/2001	-10.05	-0.8721	-8.05	1.1279	-7.05	2.1279	-6.05	3.1279
4/10/2001	-9.555	1.228	-7.555	3.228	-6.555	4.228	-5.555	5.228
4/11/2001	-8.955	7.728	-6.955	9.728	-5.955	10.728	-4.955	11.728
4/12/2001	-4.555	0.1279	-2.555	2.1279	-1.555	3.1279	-0.555	4.1279
4/13/2001	-7.955	10.33	-5.955	12.33	-4.955	13.33	-3.955	14.33
4/14/2001	-3.855	4.628	-1.855	6.628	-0.855	7.628	0.145	8.628
4/15/2001	-3.055	8.928	-1.055	10.928	-0.055	11.928	0.945	12.928
4/16/2001	0.5455	12.33	2.5455	14.33	3.5455	15.33	4.5455	16.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/17/2001	4.045	13.33	6.045	15.33	7.045	16.33	8.045	17.33
4/18/2001	3.145	12.63	5.145	14.63	6.145	15.63	7.145	16.63
4/19/2001	0.2455	9.728	2.2455	11.728	3.2455	12.728	4.2455	13.728
4/20/2001	-4.555	1.628	-2.555	3.628	-1.555	4.628	-0.555	5.628
4/21/2001	-5.055	-0.5721	-3.055	1.4279	-2.055	2.4279	-1.055	3.4279
4/22/2001	-4.355	4.928	-2.355	6.928	-1.355	7.928	-0.355	8.928
4/23/2001	-2.955	12.13	-0.955	14.13	0.045	15.13	1.045	16.13
4/24/2001	2.145	16.73	4.145	18.73	5.145	19.73	6.145	20.73
4/25/2001	3.545	19.43	5.545	21.43	6.545	22.43	7.545	23.43
4/26/2001	6.445	17.83	8.445	19.83	9.445	20.83	10.445	21.83
4/27/2001	6.645	15.93	8.645	17.93	9.645	18.93	10.645	19.93
4/28/2001	4.645	13.83	6.645	15.83	7.645	16.83	8.645	17.83
4/29/2001	1.745	8.828	3.745	10.828	4.745	11.828	5.745	12.828
4/30/2001	1.845	17.93	3.845	19.93	4.845	20.93	5.845	21.93
5/1/2001	8.245	18.73	10.245	20.73	11.245	21.73	12.245	22.73
5/2/2001	2.245	18.03	4.245	20.03	5.245	21.03	6.245	22.03
5/3/2001	-2.955	4.728	-0.955	6.728	0.045	7.728	1.045	8.728
5/4/2001	-3.155	9.828	-1.155	11.828	-0.155	12.828	0.845	13.828
5/5/2001	1.845	16.83	3.845	18.83	4.845	19.83	5.845	20.83
5/6/2001	5.345	17.43	7.345	19.43	8.345	20.43	9.345	21.43
5/7/2001	5.645	19.23	7.645	21.23	8.645	22.23	9.645	23.23
5/8/2001	7.045	22.63	9.045	24.63	10.045	25.63	11.045	26.63
5/9/2001	10.55	19.43	12.55	21.43	13.55	22.43	14.55	23.43
5/10/2001	9.345	18.93	11.345	20.93	12.345	21.93	13.345	22.93
5/11/2001	8.045	21.13	10.045	23.13	11.045	24.13	12.045	25.13
5/12/2001	10.75	20.53	12.75	22.53	13.75	23.53	14.75	24.53
5/13/2001	8.245	16.83	10.245	18.83	11.245	19.83	12.245	20.83
5/14/2001	7.645	14.73	9.645	16.73	10.645	17.73	11.645	18.73
5/15/2001	7.345	14.33	9.345	16.33	10.345	17.33	11.345	18.33
5/16/2001	7.645	11.13	9.645	13.13	10.645	14.13	11.645	15.13
5/17/2001	7.945	16.73	9.945	18.73	10.945	19.73	11.945	20.73
5/18/2001	7.045	17.43	9.045	19.43	10.045	20.43	11.045	21.43
5/19/2001	7.445	18.83	9.445	20.83	10.445	21.83	11.445	22.83
5/20/2001	8.145	19.83	10.145	21.83	11.145	22.83	12.145	23.83
5/21/2001	8.945	20.23	10.945	22.23	11.945	23.23	12.945	24.23
5/22/2001	8.245	20.43	10.245	22.43	11.245	23.43	12.245	24.43
5/23/2001	8.245	21.53	10.245	23.53	11.245	24.53	12.245	25.53
5/24/2001	12.85	21.83	14.85	23.83	15.85	24.83	16.85	25.83
5/25/2001	11.35	21.63	13.35	23.63	14.35	24.63	15.35	25.63
5/26/2001	10.75	21.23	12.75	23.23	13.75	24.23	14.75	25.23
5/27/2001	11.15	17.83	13.15	19.83	14.15	20.83	15.15	21.83
5/28/2001	9.445	16.23	11.445	18.23	12.445	19.23	13.445	20.23
5/29/2001	7.245	17.43	9.245	19.43	10.245	20.43	11.245	21.43
5/30/2001	8.845	22.03	10.845	24.03	11.845	25.03	12.845	26.03
5/31/2001	8.145	22.73	10.145	24.73	11.145	25.73	12.145	26.73
6/1/2001	10.55	23.43	12.55	25.43	13.55	26.43	14.55	27.43
6/2/2001	9.545	18.23	11.545	20.23	12.545	21.23	13.545	22.23

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/3/2001	6.645	12.73	8.645	14.73	9.645	15.73	10.645	16.73
6/4/2001	3.245	14.83	5.245	16.83	6.245	17.83	7.245	18.83
6/5/2001	0.5455	16.23	2.5455	18.23	3.5455	19.23	4.5455	20.23
6/6/2001	6.945	13.43	8.945	15.43	9.945	16.43	10.945	17.43
6/7/2001	8.845	19.83	10.845	21.83	11.845	22.83	12.845	23.83
6/8/2001	11.05	20.23	13.05	22.23	14.05	23.23	15.05	24.23
6/9/2001	10.85	18.23	12.85	20.23	13.85	21.23	14.85	22.23
6/10/2001	10.85	18.73	12.85	20.73	13.85	21.73	14.85	22.73
6/11/2001	9.845	17.33	11.845	19.33	12.845	20.33	13.845	21.33
6/12/2001	8.245	16.03	10.245	18.03	11.245	19.03	12.245	20.03
6/13/2001	5.145	15.83	7.145	17.83	8.145	18.83	9.145	19.83
6/14/2001	1.345	15.43	3.345	17.43	4.345	18.43	5.345	19.43
6/15/2001	5.345	19.43	7.345	21.43	8.345	22.43	9.345	23.43
6/16/2001	10.35	20.43	12.35	22.43	13.35	23.43	14.35	24.43
6/17/2001	13.05	23.13	15.05	25.13	16.05	26.13	17.05	27.13
6/18/2001	11.95	19.23	13.95	21.23	14.95	22.23	15.95	23.23
6/19/2001	10.85	20.53	12.85	22.53	13.85	23.53	14.85	24.53
6/20/2001	11.95	22.13	13.95	24.13	14.95	25.13	15.95	26.13
6/21/2001	12.85	24.63	14.85	26.63	15.85	27.63	16.85	28.63
6/22/2001	13.85	24.33	15.85	26.33	16.85	27.33	17.85	28.33
6/23/2001	14.35	22.43	16.35	24.43	17.35	25.43	18.35	26.43
6/24/2001	12.25	19.63	14.25	21.63	15.25	22.63	16.25	23.63
6/25/2001	10.25	16.13	12.25	18.13	13.25	19.13	14.25	20.13
6/26/2001	7.445	16.23	9.445	18.23	10.445	19.23	11.445	20.23
6/27/2001	7.845	14.93	9.845	16.93	10.845	17.93	11.845	18.93
6/28/2001	9.045	11.63	11.045	13.63	12.045	14.63	13.045	15.63
6/29/2001	9.245	19.73	11.245	21.73	12.245	22.73	13.245	23.73
6/30/2001	13.55	23.23	15.55	25.23	16.55	26.23	17.55	27.23
7/1/2001	13.95	22.43	15.95	24.43	16.95	25.43	17.95	26.43
7/2/2001	12.05	24.23	14.05	26.23	15.05	27.23	16.05	28.23
7/3/2001	16.85	27.13	18.85	29.13	19.85	30.13	20.85	31.13
7/4/2001	16.75	26.23	18.75	28.23	19.75	29.23	20.75	30.23
7/5/2001	14.05	22.83	16.05	24.83	17.05	25.83	18.05	26.83
7/6/2001	13.85	22.63	15.85	24.63	16.85	25.63	17.85	26.63
7/7/2001	11.35	18.83	13.35	20.83	14.35	21.83	15.35	22.83
7/8/2001	11.45	18.43	13.45	20.43	14.45	21.43	15.45	22.43
7/9/2001	11.05	21.93	13.05	23.93	14.05	24.93	15.05	25.93
7/10/2001	10.35	21.43	12.35	23.43	13.35	24.43	14.35	25.43
7/11/2001	10.35	21.13	12.35	23.13	13.35	24.13	14.35	25.13
7/12/2001	9.945	19.13	11.945	21.13	12.945	22.13	13.945	23.13
7/13/2001	9.045	21.43	11.045	23.43	12.045	24.43	13.045	25.43
7/14/2001	11.95	21.23	13.95	23.23	14.95	24.23	15.95	25.23
7/15/2001	9.745	18.73	11.745	20.73	12.745	21.73	13.745	22.73
7/16/2001	9.445	17.83	11.445	19.83	12.445	20.83	13.445	21.83
7/17/2001	8.145	15.43	10.145	17.43	11.145	18.43	12.145	19.43
7/18/2001	7.245	16.03	9.245	18.03	10.245	19.03	11.245	20.03
7/19/2001	8.445	18.63	10.445	20.63	11.445	21.63	12.445	22.63

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/20/2001	9.845	17.33	11.845	19.33	12.845	20.33	13.845	21.33
7/21/2001	9.245	16.93	11.245	18.93	12.245	19.93	13.245	20.93
7/22/2001	6.345	17.53	8.345	19.53	9.345	20.53	10.345	21.53
7/23/2001	9.045	20.43	11.045	22.43	12.045	23.43	13.045	24.43
7/24/2001	10.55	22.03	12.55	24.03	13.55	25.03	14.55	26.03
7/25/2001	12.35	24.43	14.35	26.43	15.35	27.43	16.35	28.43
7/26/2001	15.05	26.03	17.05	28.03	18.05	29.03	19.05	30.03
7/27/2001	14.05	24.83	16.05	26.83	17.05	27.83	18.05	28.83
7/28/2001	15.25	23.73	17.25	25.73	18.25	26.73	19.25	27.73
7/29/2001	13.95	22.63	15.95	24.63	16.95	25.63	17.95	26.63
7/30/2001	12.65	21.13	14.65	23.13	15.65	24.13	16.65	25.13
7/31/2001	8.345	15.63	10.345	17.63	11.345	18.63	12.345	19.63
8/1/2001	7.145	22.13	9.145	24.13	10.145	25.13	11.145	26.13
8/2/2001	12.05	22.13	14.05	24.13	15.05	25.13	16.05	26.13
8/3/2001	14.65	23.13	16.65	25.13	17.65	26.13	18.65	27.13
8/4/2001	11.55	20.13	13.55	22.13	14.55	23.13	15.55	24.13
8/5/2001	10.25	18.33	12.25	20.33	13.25	21.33	14.25	22.33
8/6/2001	12.55	24.23	14.55	26.23	15.55	27.23	16.55	28.23
8/7/2001	14.75	26.13	16.75	28.13	17.75	29.13	18.75	30.13
8/8/2001	15.15	26.73	17.15	28.73	18.15	29.73	19.15	30.73
8/9/2001	16.25	26.13	18.25	28.13	19.25	29.13	20.25	30.13
8/10/2001	15.05	25.33	17.05	27.33	18.05	28.33	19.05	29.33
8/11/2001	14.45	24.03	16.45	26.03	17.45	27.03	18.45	28.03
8/12/2001	13.55	26.03	15.55	28.03	16.55	29.03	17.55	30.03
8/13/2001	15.95	23.53	17.95	25.53	18.95	26.53	19.95	27.53
8/14/2001	15.25	23.43	17.25	25.43	18.25	26.43	19.25	27.43
8/15/2001	14.65	24.73	16.65	26.73	17.65	27.73	18.65	28.73
8/16/2001	16.15	25.33	18.15	27.33	19.15	28.33	20.15	29.33
8/17/2001	16.85	26.83	18.85	28.83	19.85	29.83	20.85	30.83
8/18/2001	16.45	24.63	18.45	26.63	19.45	27.63	20.45	28.63
8/19/2001	15.65	24.43	17.65	26.43	18.65	27.43	19.65	28.43
8/20/2001	13.45	23.23	15.45	25.23	16.45	26.23	17.45	27.23
8/21/2001	10.95	19.93	12.95	21.93	13.95	22.93	14.95	23.93
8/22/2001	9.445	19.23	11.445	21.23	12.445	22.23	13.445	23.23
8/23/2001	9.545	17.73	11.545	19.73	12.545	20.73	13.545	21.73
8/24/2001	9.645	20.53	11.645	22.53	12.645	23.53	13.645	24.53
8/25/2001	11.05	25.33	13.05	27.33	14.05	28.33	15.05	29.33
8/26/2001	13.05	25.33	15.05	27.33	16.05	28.33	17.05	29.33
8/27/2001	16.65	25.33	18.65	27.33	19.65	28.33	20.65	29.33
8/28/2001	14.35	28.33	16.35	30.33	17.35	31.33	18.35	32.33
8/29/2001	15.65	27.63	17.65	29.63	18.65	30.63	19.65	31.63
8/30/2001	13.85	25.43	15.85	27.43	16.85	28.43	17.85	29.43
8/31/2001	13.45	23.63	15.45	25.63	16.45	26.63	17.45	27.63
9/1/2001	12.35	24.63	14.35	26.63	15.35	27.63	16.35	28.63
9/2/2001	13.65	24.13	15.65	26.13	16.65	27.13	17.65	28.13
9/3/2001	12.65	21.53	14.65	23.53	15.65	24.53	16.65	25.53
9/4/2001	12.75	22.53	14.75	24.53	15.75	25.53	16.75	26.53

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/5/2001	12.55	22.63	14.55	24.63	15.55	25.63	16.55	26.63
9/6/2001	17.78	28.89	19.78	30.89	20.78	31.89	21.78	32.89
9/7/2001	16.67	30	18.67	32	19.67	33	20.67	34
9/8/2001	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
9/9/2001	15	29.44	17	31.44	18	32.44	19	33.44
9/10/2001	15.56	27.22	17.56	29.22	18.56	30.22	19.56	31.22
9/11/2001	15	24.44	17	26.44	18	27.44	19	28.44
9/12/2001	12.78	23.89	14.78	25.89	15.78	26.89	16.78	27.89
9/13/2001	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
9/14/2001	12.78	28.33	14.78	30.33	15.78	31.33	16.78	32.33
9/15/2001	12.22	27.78	14.22	29.78	15.22	30.78	16.22	31.78
9/16/2001	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
9/17/2001	13.89	26.67	15.89	28.67	16.89	29.67	17.89	30.67
9/18/2001	16.11	28.33	18.11	30.33	19.11	31.33	20.11	32.33
9/19/2001	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
9/20/2001	16.11	28.89	18.11	30.89	19.11	31.89	20.11	32.89
9/21/2001	16.11	30	18.11	32	19.11	33	20.11	34
9/22/2001	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
9/23/2001	13.89	26.67	15.89	28.67	16.89	29.67	17.89	30.67
9/24/2001	13.89	28.89	15.89	30.89	16.89	31.89	17.89	32.89
9/25/2001	15.56	22.78	17.56	24.78	18.56	25.78	19.56	26.78
9/26/2001	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11
9/27/2001	11.11	24.44	13.11	26.44	14.11	27.44	15.11	28.44
9/28/2001	10	23.33	12	25.33	13	26.33	14	27.33
9/29/2001	12.78	29.44	14.78	31.44	15.78	32.44	16.78	33.44
9/30/2001	15.56	30.56	17.56	32.56	18.56	33.56	19.56	34.56
10/1/2001	18.33	30.56	20.33	32.56	21.33	33.56	22.33	34.56
10/2/2001	17.22	33.33	19.22	35.33	20.22	36.33	21.22	37.33
10/3/2001	17.78	30	19.78	32	20.78	33	21.78	34
10/4/2001	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
10/5/2001	12.78	25	14.78	27	15.78	28	16.78	29
10/6/2001	11.11	23.89	13.11	25.89	14.11	26.89	15.11	27.89
10/7/2001	13.33	25	15.33	27	16.33	28	17.33	29
10/8/2001	10	21.67	12	23.67	13	24.67	14	25.67
10/9/2001	7.78	21.11	9.78	23.11	10.78	24.11	11.78	25.11
10/10/2001	10.56	22.78	12.56	24.78	13.56	25.78	14.56	26.78
10/11/2001	11.67	18.89	13.67	20.89	14.67	21.89	15.67	22.89
10/12/2001	15.56	24.44	17.56	26.44	18.56	27.44	19.56	28.44
10/13/2001	16.11	30	18.11	32	19.11	33	20.11	34
10/14/2001	16.67	28.89	18.67	30.89	19.67	31.89	20.67	32.89
10/15/2001	15	27.22	17	29.22	18	30.22	19	31.22
10/16/2001	12.78	25.56	14.78	27.56	15.78	28.56	16.78	29.56
10/17/2001	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
10/18/2001	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11
10/19/2001	5.045	19.43	7.045	21.43	8.045	22.43	9.045	23.43
10/20/2001	7.345	17.03	9.345	19.03	10.345	20.03	11.345	21.03
10/21/2001	8.445	16.33	10.445	18.33	11.445	19.33	12.445	20.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/22/2001	7.245	14.63	9.245	16.63	10.245	17.63	11.245	18.63
10/23/2001	5.645	14.43	7.645	16.43	8.645	17.43	9.645	18.43
10/24/2001	2.645	17.13	4.645	19.13	5.645	20.13	6.645	21.13
10/25/2001	3.345	18.63	5.345	20.63	6.345	21.63	7.345	22.63
10/26/2001	7.845	17.73	9.845	19.73	10.845	20.73	11.845	21.73
10/27/2001	8.445	16.03	10.445	18.03	11.445	19.03	12.445	20.03
10/28/2001	6.145	13.33	8.145	15.33	9.145	16.33	10.145	17.33
10/29/2001	6.245	12.53	8.245	14.53	9.245	15.53	10.245	16.53
10/30/2001	7.045	12.63	9.045	14.63	10.045	15.63	11.045	16.63
10/31/2001	1.545	8.328	3.545	10.328	4.545	11.328	5.545	12.328
11/1/2001	1.445	7.428	3.445	9.428	4.445	10.428	5.445	11.428
11/2/2001	4.845	15.53	6.845	17.53	7.845	18.53	8.845	19.53
11/3/2001	4.145	13.83	6.145	15.83	7.145	16.83	8.145	17.83
11/4/2001	2.145	13.53	4.145	15.53	5.145	16.53	6.145	17.53
11/5/2001	5.345	17.23	7.345	19.23	8.345	20.23	9.345	21.23
11/6/2001	6.045	14.43	8.045	16.43	9.045	17.43	10.045	18.43
11/7/2001	4.945	10.73	6.945	12.73	7.945	13.73	8.945	14.73
11/8/2001	0.5455	11.23	2.5455	13.23	3.5455	14.23	4.5455	15.23
11/9/2001	0.5455	13.73	2.5455	15.73	3.5455	16.73	4.5455	17.73
11/10/2001	3.045	12.03	5.045	14.03	6.045	15.03	7.045	16.03
11/11/2001	2.345	11.03	4.345	13.03	5.345	14.03	6.345	15.03
11/12/2001	3.645	5.928	5.645	7.928	6.645	8.928	7.645	9.928
11/13/2001	-0.4545	8.228	1.5455	10.228	2.5455	11.228	3.5455	12.228
11/14/2001	-1.255	5.128	0.745	7.128	1.745	8.128	2.745	9.128
11/15/2001	0.7455	14.93	2.7455	16.93	3.7455	17.93	4.7455	18.93
11/16/2001	5.645	12.03	7.645	14.03	8.645	15.03	9.645	16.03
11/17/2001	3.545	10.33	5.545	12.33	6.545	13.33	7.545	14.33
11/18/2001	3.045	7.528	5.045	9.528	6.045	10.528	7.045	11.528
11/19/2001	3.745	13.23	5.745	15.23	6.745	16.23	7.745	17.23
11/20/2001	4.645	10.93	6.645	12.93	7.645	13.93	8.645	14.93
11/21/2001	3.645	9.228	5.645	11.228	6.645	12.228	7.645	13.228
11/22/2001	1.745	5.028	3.745	7.028	4.745	8.028	5.745	9.028
11/23/2001	-3.455	3.628	-1.455	5.628	-0.455	6.628	0.545	7.628
11/24/2001	-3.955	5.528	-1.955	7.528	-0.955	8.528	0.045	9.528
11/25/2001	-4.755	3.528	-2.755	5.528	-1.755	6.528	-0.755	7.528
11/26/2001	-6.755	-2.172	-4.755	-0.172	-3.755	0.828	-2.755	1.828
11/27/2001	-9.455	-0.6721	-7.455	1.3279	-6.455	2.3279	-5.455	3.3279
11/28/2001	-8.755	-0.6721	-6.755	1.3279	-5.755	2.3279	-4.755	3.3279
11/29/2001	-3.455	1.728	-1.455	3.728	-0.455	4.728	0.545	5.728
11/30/2001	-4.855	-0.4721	-2.855	1.5279	-1.855	2.5279	-0.855	3.5279
12/1/2001	-5.155	0.5279	-3.155	2.5279	-2.155	3.5279	-1.155	4.5279
12/2/2001	-3.055	1.728	-1.055	3.728	-0.055	4.728	0.945	5.728
12/3/2001	-3.855	2.028	-1.855	4.028	-0.855	5.028	0.145	6.028
12/4/2001	-7.955	1.028	-5.955	3.028	-4.955	4.028	-3.955	5.028
12/5/2001	-9.655	3.228	-7.655	5.228	-6.655	6.228	-5.655	7.228
12/6/2001	-5.355	0.6279	-3.355	2.6279	-2.355	3.6279	-1.355	4.6279
12/7/2001	0.4455	7.328	2.4455	9.328	3.4455	10.328	4.4455	11.328

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/8/2001	-1.955	6.028	0.045	8.028	1.045	9.028	2.045	10.028
12/9/2001	0.2455	9.328	2.2455	11.328	3.2455	12.328	4.2455	13.328
12/10/2001	-4.455	0.02794	-2.455	2.02794	-1.455	3.02794	-0.455	4.02794
12/11/2001	-6.555	-2.872	-4.555	-0.872	-3.555	0.128	-2.555	1.128
12/12/2001	-6.855	4.028	-4.855	6.028	-3.855	7.028	-2.855	8.028
12/13/2001	-5.855	7.828	-3.855	9.828	-2.855	10.828	-1.855	11.828
12/14/2001	-2.155	6.928	-0.155	8.928	0.845	9.928	1.845	10.928
12/15/2001	-11.35	1.828	-9.35	3.828	-8.35	4.828	-7.35	5.828
12/16/2001	-11.75	2.128	-9.75	4.128	-8.75	5.128	-7.75	6.128
12/17/2001	-0.9545	6.228	1.0455	8.228	2.0455	9.228	3.0455	10.228
12/18/2001	-3.855	2.228	-1.855	4.228	-0.855	5.228	0.145	6.228
12/19/2001	-2.755	2.828	-0.755	4.828	0.245	5.828	1.245	6.828
12/20/2001	1.045	6.728	3.045	8.728	4.045	9.728	5.045	10.728
12/21/2001	-5.755	1.928	-3.755	3.928	-2.755	4.928	-1.755	5.928
12/22/2001	-6.955	3.028	-4.955	5.028	-3.955	6.028	-2.955	7.028
12/23/2001	-4.155	-0.9721	-2.155	1.0279	-1.155	2.0279	-0.155	3.0279
12/24/2001	-5.755	-0.6721	-3.755	1.3279	-2.755	2.3279	-1.755	3.3279
12/25/2001	-9.555	9.028	-7.555	11.028	-6.555	12.028	-5.555	13.028
12/26/2001	0.7455	6.028	2.7455	8.028	3.7455	9.028	4.7455	10.028
12/27/2001	0.7455	6.328	2.7455	8.328	3.7455	9.328	4.7455	10.328
12/28/2001	0.9455	7.228	2.9455	9.228	3.9455	10.228	4.9455	11.228
12/29/2001	1.645	4.728	3.645	6.728	4.645	7.728	5.645	8.728
12/30/2001	2.045	4.128	4.045	6.128	5.045	7.128	6.045	8.128
12/31/2001	1.645	5.728	3.645	7.728	4.645	8.728	5.645	9.728
1/1/2002	-0.05452	9.428	1.94548	11.428	2.94548	12.428	3.94548	13.428
1/2/2002	2.645	6.128	4.645	8.128	5.645	9.128	6.645	10.128
1/3/2002	0.9455	4.628	2.9455	6.628	3.9455	7.628	4.9455	8.628
1/4/2002	-5.155	2.928	-3.155	4.928	-2.155	5.928	-1.155	6.928
1/5/2002	-6.355	13.93	-4.355	15.93	-3.355	16.93	-2.355	17.93
1/6/2002	1.345	6.428	3.345	8.428	4.345	9.428	5.345	10.428
1/7/2002	3.445	6.128	5.445	8.128	6.445	9.128	7.445	10.128
1/8/2002	5.545	10.53	7.545	12.53	8.545	13.53	9.545	14.53
1/9/2002	2.545	8.728	4.545	10.728	5.545	11.728	6.545	12.728
1/10/2002	-1.955	5.428	0.045	7.428	1.045	8.428	2.045	9.428
1/11/2002	-3.855	15.83	-1.855	17.83	-0.855	18.83	0.145	19.83
1/12/2002	6.445	18.43	8.445	20.43	9.445	21.43	10.445	22.43
1/13/2002	1.245	11.13	3.245	13.13	4.245	14.13	5.245	15.13
1/14/2002	-0.4545	14.73	1.5455	16.73	2.5455	17.73	3.5455	18.73
1/15/2002	-9.755	6.428	-7.755	8.428	-6.755	9.428	-5.755	10.428
1/16/2002	-10.05	0.02794	-8.05	2.02794	-7.05	3.02794	-6.05	4.02794
1/17/2002	-11.05	2.728	-9.05	4.728	-8.05	5.728	-7.05	6.728
1/18/2002	-9.455	-0.5721	-7.455	1.4279	-6.455	2.4279	-5.455	3.4279
1/19/2002	-6.455	4.428	-4.455	6.428	-3.455	7.428	-2.455	8.428
1/20/2002	-9.355	1.628	-7.355	3.628	-6.355	4.628	-5.355	5.628
1/21/2002	-8.955	8.128	-6.955	10.128	-5.955	11.128	-4.955	12.128
1/22/2002	-6.355	2.628	-4.355	4.628	-3.355	5.628	-2.355	6.628
1/23/2002	-12.85	-1.372	-10.85	0.628	-9.85	1.628	-8.85	2.628

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/24/2002	-12.75	0.3279	-10.75	2.3279	-9.75	3.3279	-8.75	4.3279
1/25/2002	-4.055	12.73	-2.055	14.73	-1.055	15.73	-0.055	16.73
1/26/2002	1.245	7.028	3.245	9.028	4.245	10.028	5.245	11.028
1/27/2002	-2.255	2.028	-0.255	4.028	0.745	5.028	1.745	6.028
1/28/2002	-10.55	-2.072	-8.55	-0.072	-7.55	0.928	-6.55	1.928
1/29/2002	-14.85	-7.172	-12.85	-5.172	-11.85	-4.172	-10.85	-3.172
1/30/2002	-15.65	-5.272	-13.65	-3.272	-12.65	-2.272	-11.65	-1.272
1/31/2002	-15.15	-1.872	-13.15	0.128	-12.15	1.128	-11.15	2.128
2/1/2002	-9.555	5.828	-7.555	7.828	-6.555	8.828	-5.555	9.828
2/2/2002	-7.755	4.128	-5.755	6.128	-4.755	7.128	-3.755	8.128
2/3/2002	-9.255	9.528	-7.255	11.528	-6.255	12.528	-5.255	13.528
2/4/2002	-2.455	10.23	-0.455	12.23	0.545	13.23	1.545	14.23
2/5/2002	-1.355	11.13	0.645	13.13	1.645	14.13	2.645	15.13
2/6/2002	-1.67	6.11	0.33	8.11	1.33	9.11	2.33	10.11
2/7/2002	-2.78	1.67	-0.78	3.67	0.22	4.67	1.22	5.67
2/8/2002	-8.33	1.11	-6.33	3.11	-5.33	4.11	-4.33	5.11
2/9/2002	1.11	7.22	3.11	9.22	4.11	10.22	5.11	11.22
2/10/2002	4.44	13.33	6.44	15.33	7.44	16.33	8.44	17.33
2/11/2002	3.33	10	5.33	12	6.33	13	7.33	14
2/12/2002	5	7.22	7	9.22	8	10.22	9	11.22
2/13/2002	2.22	7.22	4.22	9.22	5.22	10.22	6.22	11.22
2/14/2002	0	6.67	2	8.67	3	9.67	4	10.67
2/15/2002	-0.56	6.67	1.44	8.67	2.44	9.67	3.44	10.67
2/16/2002	-0.56	2.22	1.44	4.22	2.44	5.22	3.44	6.22
2/17/2002	-6.11	1.67	-4.11	3.67	-3.11	4.67	-2.11	5.67
2/18/2002	-5	-0.56	-3	1.44	-2	2.44	-1	3.44
2/19/2002	-4.44	0.56	-2.44	2.56	-1.44	3.56	-0.44	4.56
2/20/2002	-0.56	3.33	1.44	5.33	2.44	6.33	3.44	7.33
2/21/2002	6.67	6.67	8.67	8.67	9.67	9.67	10.67	10.67
2/22/2002	6.67	6.67	8.67	8.67	9.67	9.67	10.67	10.67
2/23/2002	-2.78	2.22	-0.78	4.22	0.22	5.22	1.22	6.22
2/24/2002	-3.89	-2.78	-1.89	-0.78	-0.89	0.22	0.11	1.22
2/25/2002	-3.89	-3.89	-1.89	-1.89	-0.89	-0.89	0.11	0.11
2/26/2002	-3.89	3.33	-1.89	5.33	-0.89	6.33	0.11	7.33
2/27/2002	3.33	10.56	5.33	12.56	6.33	13.56	7.33	14.56
2/28/2002	-1.11	7.22	0.89	9.22	1.89	10.22	2.89	11.22
3/1/2002	-6.67	0.56	-4.67	2.56	-3.67	3.56	-2.67	4.56
3/2/2002	-3.33	7.22	-1.33	9.22	-0.33	10.22	0.67	11.22
3/3/2002	-3.33	5	-1.33	7	-0.33	8	0.67	9
3/4/2002	-3.89	5	-1.89	7	-0.89	8	0.11	9
3/5/2002	-4.44	5	-2.44	7	-1.44	8	-0.44	9
3/6/2002	-4.44	-0.56	-2.44	1.44	-1.44	2.44	-0.44	3.44
3/7/2002	-5.56	-3.89	-3.56	-1.89	-2.56	-0.89	-1.56	0.11
3/8/2002	-4.44	-3.89	-2.44	-1.89	-1.44	-0.89	-0.44	0.11
3/9/2002	-3.89	1.67	-1.89	3.67	-0.89	4.67	0.11	5.67
3/10/2002	-5.56	-1.11	-3.56	0.89	-2.56	1.89	-1.56	2.89
3/11/2002	-5.56	7.78	-3.56	9.78	-2.56	10.78	-1.56	11.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/12/2002	2.78	2.78	4.78	4.78	5.78	5.78	6.78	6.78
3/13/2002	-11.11	2.78	-9.11	4.78	-8.11	5.78	-7.11	6.78
3/14/2002	-12.22	-4.44	-10.22	-2.44	-9.22	-1.44	-8.22	-0.44
3/15/2002	-11.11	-4.44	-9.11	-2.44	-8.11	-1.44	-7.11	-0.44
3/16/2002	-12.22	-7.22	-10.22	-5.22	-9.22	-4.22	-8.22	-3.22
3/17/2002	-10	-7.22	-8	-5.22	-7	-4.22	-6	-3.22
3/18/2002	-11.67	2.22	-9.67	4.22	-8.67	5.22	-7.67	6.22
3/19/2002	-1.67	2.22	0.33	4.22	1.33	5.22	2.33	6.22
3/20/2002	0.56	0.56	2.56	2.56	3.56	3.56	4.56	4.56
3/21/2002	3.33	5	5.33	7	6.33	8	7.33	9
3/22/2002	-2.955	0.9279	-0.955	2.9279	0.045	3.9279	1.045	4.9279
3/23/2002	-2.955	0.9279	-0.955	2.9279	0.045	3.9279	1.045	4.9279
3/24/2002	-2.955	0.9279	-0.955	2.9279	0.045	3.9279	1.045	4.9279
3/25/2002	-6.11	2.78	-4.11	4.78	-3.11	5.78	-2.11	6.78
3/26/2002	-4.44	1.11	-2.44	3.11	-1.44	4.11	-0.44	5.11
3/27/2002	-0.56	11.67	1.44	13.67	2.44	14.67	3.44	15.67
3/28/2002	1.11	10.56	3.11	12.56	4.11	13.56	5.11	14.56
3/29/2002	3.33	12.78	5.33	14.78	6.33	15.78	7.33	16.78
3/30/2002	5.56	15.56	7.56	17.56	8.56	18.56	9.56	19.56
3/31/2002	5.56	16.67	7.56	18.67	8.56	19.67	9.56	20.67
4/1/2002	5.56	16.11	7.56	18.11	8.56	19.11	9.56	20.11
4/2/2002	6.67	13.89	8.67	15.89	9.67	16.89	10.67	17.89
4/3/2002	5.56	15	7.56	17	8.56	18	9.56	19
4/4/2002	3.33	15	5.33	17	6.33	18	7.33	19
4/5/2002	0	7.22	2	9.22	3	10.22	4	11.22
4/6/2002	-3.89	8.33	-1.89	10.33	-0.89	11.33	0.11	12.33
4/7/2002	1.11	11.11	3.11	13.11	4.11	14.11	5.11	15.11
4/8/2002	2.22	10	4.22	12	5.22	13	6.22	14
4/9/2002	1.11	8.33	3.11	10.33	4.11	11.33	5.11	12.33
4/10/2002	0	8.33	2	10.33	3	11.33	4	12.33
4/11/2002	2.78	10	4.78	12	5.78	13	6.78	14
4/12/2002	2.22	15	4.22	17	5.22	18	6.22	19
4/13/2002	6.67	17.22	8.67	19.22	9.67	20.22	10.67	21.22
4/14/2002	2.78	11.11	4.78	13.11	5.78	14.11	6.78	15.11
4/15/2002	-9.44	1.11	-7.44	3.11	-6.44	4.11	-5.44	5.11
4/16/2002	-7.22	-1.67	-5.22	0.33	-4.22	1.33	-3.22	2.33
4/17/2002	-8.89	-5	-6.89	-3	-5.89	-2	-4.89	-1
4/18/2002	-11.11	-2.22	-9.11	-0.22	-8.11	0.78	-7.11	1.78
4/19/2002	-7.22	0.56	-5.22	2.56	-4.22	3.56	-3.22	4.56
4/20/2002	-6.11	3.89	-4.11	5.89	-3.11	6.89	-2.11	7.89
4/21/2002	-3.89	7.78	-1.89	9.78	-0.89	10.78	0.11	11.78
4/22/2002	0.56	11.11	2.56	13.11	3.56	14.11	4.56	15.11
4/23/2002	3.33	13.33	5.33	15.33	6.33	16.33	7.33	17.33
4/24/2002	5.56	13.33	7.56	15.33	8.56	16.33	9.56	17.33
4/25/2002	3.33	10	5.33	12	6.33	13	7.33	14
4/26/2002	-0.56	3.33	1.44	5.33	2.44	6.33	3.44	7.33
4/27/2002	-3.33	-0.56	-1.33	1.44	-0.33	2.44	0.67	3.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/28/2002	-5	2.78	-3	4.78	-2	5.78	-1	6.78
4/29/2002	-4.44	1.11	-2.44	3.11	-1.44	4.11	-0.44	5.11
4/30/2002	-7.22	-1.67	-5.22	0.33	-4.22	1.33	-3.22	2.33
5/1/2002	-7.78	3.89	-5.78	5.89	-4.78	6.89	-3.78	7.89
5/2/2002	-1.11	7.78	0.89	9.78	1.89	10.78	2.89	11.78
5/3/2002	0	10	2	12	3	13	4	14
5/4/2002	2.22	11.11	4.22	13.11	5.22	14.11	6.22	15.11
5/5/2002	2.22	11.67	4.22	13.67	5.22	14.67	6.22	15.67
5/6/2002	2.22	9.44	4.22	11.44	5.22	12.44	6.22	13.44
5/7/2002	1.11	7.78	3.11	9.78	4.11	10.78	5.11	11.78
5/8/2002	-0.56	8.89	1.44	10.89	2.44	11.89	3.44	12.89
5/9/2002	-0.56	6.67	1.44	8.67	2.44	9.67	3.44	10.67
5/10/2002	-2.78	3.33	-0.78	5.33	0.22	6.33	1.22	7.33
5/11/2002	-1.11	11.11	0.89	13.11	1.89	14.11	2.89	15.11
5/12/2002	3.33	13.33	5.33	15.33	6.33	16.33	7.33	17.33
5/13/2002	3.33	12.78	5.33	14.78	6.33	15.78	7.33	16.78
5/14/2002	3.89	13.89	5.89	15.89	6.89	16.89	7.89	17.89
5/15/2002	3.89	12.78	5.89	14.78	6.89	15.78	7.89	16.78
5/16/2002	3.89	16.67	5.89	18.67	6.89	19.67	7.89	20.67
5/17/2002	5.56	15	7.56	17	8.56	18	9.56	19
5/18/2002	4.44	12.22	6.44	14.22	7.44	15.22	8.44	16.22
5/19/2002	-0.56	5.56	1.44	7.56	2.44	8.56	3.44	9.56
5/20/2002	-5.56	-1.11	-3.56	0.89	-2.56	1.89	-1.56	2.89
5/21/2002	-5.56	1.67	-3.56	3.67	-2.56	4.67	-1.56	5.67
5/22/2002	-7.22	5	-5.22	7	-4.22	8	-3.22	9
5/23/2002	-2.78	10.56	-0.78	12.56	0.22	13.56	1.22	14.56
5/24/2002	2.22	13.33	4.22	15.33	5.22	16.33	6.22	17.33
5/25/2002	5	13.33	7	15.33	8	16.33	9	17.33
5/26/2002	5.56	12.78	7.56	14.78	8.56	15.78	9.56	16.78
5/27/2002	3.33	11.67	5.33	13.67	6.33	14.67	7.33	15.67
5/28/2002	3.33	16.11	5.33	18.11	6.33	19.11	7.33	20.11
5/29/2002	10	20.56	12	22.56	13	23.56	14	24.56
5/30/2002	10.56	18.89	12.56	20.89	13.56	21.89	14.56	22.89
5/31/2002	8.89	19.44	10.89	21.44	11.89	22.44	12.89	23.44
6/1/2002	3.89	11.67	5.89	13.67	6.89	14.67	7.89	15.67
6/2/2002	3.33	13.33	5.33	15.33	6.33	16.33	7.33	17.33
6/3/2002	5.56	16.11	7.56	18.11	8.56	19.11	9.56	20.11
6/4/2002	8.33	18.89	10.33	20.89	11.33	21.89	12.33	22.89
6/5/2002	10.56	21.67	12.56	23.67	13.56	24.67	14.56	25.67
6/6/2002	11.67	18.89	13.67	20.89	14.67	21.89	15.67	22.89
6/7/2002	7.78	17.22	9.78	19.22	10.78	20.22	11.78	21.22
6/8/2002	0.56	11.11	2.56	13.11	3.56	14.11	4.56	15.11
6/9/2002	-2.78	11.11	-0.78	13.11	0.22	14.11	1.22	15.11
6/10/2002	1.67	15	3.67	17	4.67	18	5.67	19
6/11/2002	5.56	16.67	7.56	18.67	8.56	19.67	9.56	20.67
6/12/2002	8.33	18.33	10.33	20.33	11.33	21.33	12.33	22.33
6/13/2002	8.33	18.89	10.33	20.89	11.33	21.89	12.33	22.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/14/2002	6.67	17.78	8.67	19.78	9.67	20.78	10.67	21.78
6/15/2002	9.44	19.44	11.44	21.44	12.44	22.44	13.44	23.44
6/16/2002	8.89	18.89	10.89	20.89	11.89	21.89	12.89	22.89
6/17/2002	10	17.78	12	19.78	13	20.78	14	21.78
6/18/2002	8.33	16.11	10.33	18.11	11.33	19.11	12.33	20.11
6/19/2002	8.33	18.89	10.33	20.89	11.33	21.89	12.33	22.89
6/20/2002	8.33	16.67	10.33	18.67	11.33	19.67	12.33	20.67
6/21/2002	7.22	15.56	9.22	17.56	10.22	18.56	11.22	19.56
6/22/2002	6.67	16.11	8.67	18.11	9.67	19.11	10.67	20.11
6/23/2002	8.33	17.22	10.33	19.22	11.33	20.22	12.33	21.22
6/24/2002	8.89	18.89	10.89	20.89	11.89	21.89	12.89	22.89
6/25/2002	12.22	20	14.22	22	15.22	23	16.22	24
6/26/2002	11.11	19.44	13.11	21.44	14.11	22.44	15.11	23.44
6/27/2002	9.44	19.44	11.44	21.44	12.44	22.44	13.44	23.44
6/28/2002	10.56	20	12.56	22	13.56	23	14.56	24
6/29/2002	11.11	20	13.11	22	14.11	23	15.11	24
6/30/2002	14.44	22.78	16.44	24.78	17.44	25.78	18.44	26.78
7/1/2002	13.89	23.33	15.89	25.33	16.89	26.33	17.89	27.33
7/2/2002	12.78	20.56	14.78	22.56	15.78	23.56	16.78	24.56
7/3/2002	10.56	18.89	12.56	20.89	13.56	21.89	14.56	22.89
7/4/2002	9.44	19.44	11.44	21.44	12.44	22.44	13.44	23.44
7/5/2002	10.56	19.44	12.56	21.44	13.56	22.44	14.56	23.44
7/6/2002	11.67	20.56	13.67	22.56	14.67	23.56	15.67	24.56
7/7/2002	11.11	18.33	13.11	20.33	14.11	21.33	15.11	22.33
7/8/2002	9.44	23.89	11.44	25.89	12.44	26.89	13.44	27.89
7/9/2002	15.56	26.11	17.56	28.11	18.56	29.11	19.56	30.11
7/10/2002	18.89	28.33	20.89	30.33	21.89	31.33	22.89	32.33
7/11/2002	18.33	26.11	20.33	28.11	21.33	29.11	22.33	30.11
7/12/2002	17.78	24.44	19.78	26.44	20.78	27.44	21.78	28.44
7/13/2002	15.65	26.63	17.65	28.63	18.65	29.63	19.65	30.63
7/14/2002	15.56	21.67	17.56	23.67	18.56	24.67	19.56	25.67
7/15/2002	12.78	20.56	14.78	22.56	15.78	23.56	16.78	24.56
7/16/2002	11.11	21.11	13.11	23.11	14.11	24.11	15.11	25.11
7/17/2002	11.11	21.11	13.11	23.11	14.11	24.11	15.11	25.11
7/18/2002	10.56	17.22	12.56	19.22	13.56	20.22	14.56	21.22
7/19/2002	10.56	20	12.56	22	13.56	23	14.56	24
7/20/2002	13.89	22.22	15.89	24.22	16.89	25.22	17.89	26.22
7/21/2002	13.89	21.11	15.89	23.11	16.89	24.11	17.89	25.11
7/22/2002	11.67	19.44	13.67	21.44	14.67	22.44	15.67	23.44
7/23/2002	10	20.56	12	22.56	13	23.56	14	24.56
7/24/2002	11.67	21.11	13.67	23.11	14.67	24.11	15.67	25.11
7/25/2002	10	20	12	22	13	23	14	24
7/26/2002	11.67	21.67	13.67	23.67	14.67	24.67	15.67	25.67
7/27/2002	13.89	22.78	15.89	24.78	16.89	25.78	17.89	26.78
7/28/2002	13.33	23.89	15.33	25.89	16.33	26.89	17.33	27.89
7/29/2002	15.56	25	17.56	27	18.56	28	19.56	29
7/30/2002	16.11	23.89	18.11	25.89	19.11	26.89	20.11	27.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/31/2002	14.44	22.22	16.44	24.22	17.44	25.22	18.44	26.22
8/1/2002	12.78	21.67	14.78	23.67	15.78	24.67	16.78	25.67
8/2/2002	12.22	20.56	14.22	22.56	15.22	23.56	16.22	24.56
8/3/2002	8.33	17.78	10.33	19.78	11.33	20.78	12.33	21.78
8/4/2002	7.78	15.56	9.78	17.56	10.78	18.56	11.78	19.56
8/5/2002	6.67	15.56	8.67	17.56	9.67	18.56	10.67	19.56
8/6/2002	6.11	15	8.11	17	9.11	18	10.11	19
8/7/2002	5	17.22	7	19.22	8	20.22	9	21.22
8/8/2002	10.56	21.11	12.56	23.11	13.56	24.11	14.56	25.11
8/9/2002	14.44	23.33	16.44	25.33	17.44	26.33	18.44	27.33
8/10/2002	15.56	23.89	17.56	25.89	18.56	26.89	19.56	27.89
8/11/2002	15	24.44	17	26.44	18	27.44	19	28.44
8/12/2002	16.67	26.67	18.67	28.67	19.67	29.67	20.67	30.67
8/13/2002	17.78	26.11	19.78	28.11	20.78	29.11	21.78	30.11
8/14/2002	16.67	25.56	18.67	27.56	19.67	28.56	20.67	29.56
8/15/2002	16.67	25	18.67	27	19.67	28	20.67	29
8/16/2002	15.56	23.33	17.56	25.33	18.56	26.33	19.56	27.33
8/17/2002	16.11	23.89	18.11	25.89	19.11	26.89	20.11	27.89
8/18/2002	12.78	22.78	14.78	24.78	15.78	25.78	16.78	26.78
8/19/2002	10	19.44	12	21.44	13	22.44	14	23.44
8/20/2002	6.11	14.44	8.11	16.44	9.11	17.44	10.11	18.44
8/21/2002	5	16.11	7	18.11	8	19.11	9	20.11
8/22/2002	6.11	16.67	8.11	18.67	9.11	19.67	10.11	20.67
8/23/2002	5.56	16.67	7.56	18.67	8.56	19.67	9.56	20.67
8/24/2002	8.33	18.89	10.33	20.89	11.33	21.89	12.33	22.89
8/25/2002	7.78	18.89	9.78	20.89	10.78	21.89	11.78	22.89
8/26/2002	11.11	20.56	13.11	22.56	14.11	23.56	15.11	24.56
8/27/2002	10.56	21.11	12.56	23.11	13.56	24.11	14.56	25.11
8/28/2002	12.22	20.56	14.22	22.56	15.22	23.56	16.22	24.56
8/29/2002	11.11	19.44	13.11	21.44	14.11	22.44	15.11	23.44
8/30/2002	10	18.89	12	20.89	13	21.89	14	22.89
8/31/2002	10	20.56	12	22.56	13	23.56	14	24.56
9/1/2002	13.33	22.78	15.33	24.78	16.33	25.78	17.33	26.78
9/2/2002	13.89	23.33	15.89	25.33	16.89	26.33	17.89	27.33
9/3/2002	12.22	20.56	14.22	22.56	15.22	23.56	16.22	24.56
9/4/2002	8.33	13.33	10.33	15.33	11.33	16.33	12.33	17.33
9/5/2002	8.33	13.89	10.33	15.89	11.33	16.89	12.33	17.89
9/6/2002	1.67	8.33	3.67	10.33	4.67	11.33	5.67	12.33
9/7/2002	-1.11	10	0.89	12	1.89	13	2.89	14
9/8/2002	2.78	15	4.78	17	5.78	18	6.78	19
9/9/2002	8.89	20	10.89	22	11.89	23	12.89	24
9/10/2002	10.56	19.44	12.56	21.44	13.56	22.44	14.56	23.44
9/11/2002	11.67	20	13.67	22	14.67	23	15.67	24
9/12/2002	12.22	20	14.22	22	15.22	23	16.22	24
9/13/2002	13.33	21.11	15.33	23.11	16.33	24.11	17.33	25.11
9/14/2002	12.22	22.22	14.22	24.22	15.22	25.22	16.22	26.22
9/15/2002	6.67	17.78	8.67	19.78	9.67	20.78	10.67	21.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/16/2002	3.89	14.44	5.89	16.44	6.89	17.44	7.89	18.44
9/17/2002	6.11	15.56	8.11	17.56	9.11	18.56	10.11	19.56
9/18/2002	5.56	17.22	7.56	19.22	8.56	20.22	9.56	21.22
9/19/2002	10.56	21.11	12.56	23.11	13.56	24.11	14.56	25.11
9/20/2002	12.22	21.11	14.22	23.11	15.22	24.11	16.22	25.11
9/21/2002	12.22	22.22	14.22	24.22	15.22	25.22	16.22	26.22
9/22/2002	13.33	22.78	15.33	24.78	16.33	25.78	17.33	26.78
9/23/2002	13.33	22.22	15.33	24.22	16.33	25.22	17.33	26.22
9/24/2002	11.67	20.56	13.67	22.56	14.67	23.56	15.67	24.56
9/25/2002	12.22	20	14.22	22	15.22	23	16.22	24
9/26/2002	10	18.89	12	20.89	13	21.89	14	22.89
9/27/2002	6.67	14.44	8.67	16.44	9.67	17.44	10.67	18.44
9/28/2002	2.78	10	4.78	12	5.78	13	6.78	14
9/29/2002	2.78	9.44	4.78	11.44	5.78	12.44	6.78	13.44
9/30/2002	1.11	9.44	3.11	11.44	4.11	12.44	5.11	13.44
10/1/2002	-2.78	4.44	-0.78	6.44	0.22	7.44	1.22	8.44
10/2/2002	-3.89	6.67	-1.89	8.67	-0.89	9.67	0.11	10.67
10/3/2002	-0.56	12.78	1.44	14.78	2.44	15.78	3.44	16.78
10/4/2002	3.33	11.11	5.33	13.11	6.33	14.11	7.33	15.11
10/5/2002	4.44	16.11	6.44	18.11	7.44	19.11	8.44	20.11
10/6/2002	7.78	18.33	9.78	20.33	10.78	21.33	11.78	22.33
10/7/2002	9.44	21.11	11.44	23.11	12.44	24.11	13.44	25.11
10/8/2002	11.11	19.44	13.11	21.44	14.11	22.44	15.11	23.44
10/9/2002	9.44	18.33	11.44	20.33	12.44	21.33	13.44	22.33
10/10/2002	6.11	12.22	8.11	14.22	9.11	15.22	10.11	16.22
10/11/2002	2.78	15	4.78	17	5.78	18	6.78	19
10/12/2002	6.67	16.67	8.67	18.67	9.67	19.67	10.67	20.67
10/13/2002	7.22	16.11	9.22	18.11	10.22	19.11	11.22	20.11
10/14/2002	8.89	16.67	10.89	18.67	11.89	19.67	12.89	20.67
10/15/2002	6.67	16.11	8.67	18.11	9.67	19.11	10.67	20.11
10/16/2002	7.78	15	9.78	17	10.78	18	11.78	19
10/17/2002	6.11	17.22	8.11	19.22	9.11	20.22	10.11	21.22
10/18/2002	8.33	16.11	10.33	18.11	11.33	19.11	12.33	20.11
10/19/2002	5.56	13.89	7.56	15.89	8.56	16.89	9.56	17.89
10/20/2002	3.89	12.78	5.89	14.78	6.89	15.78	7.89	16.78
10/21/2002	1.11	8.89	3.11	10.89	4.11	11.89	5.11	12.89
10/22/2002	1.67	8.33	3.67	10.33	4.67	11.33	5.67	12.33
10/23/2002	0.56	9.44	2.56	11.44	3.56	12.44	4.56	13.44
10/24/2002	0	8.33	2	10.33	3	11.33	4	12.33
10/25/2002	-2.22	7.78	-0.22	9.78	0.78	10.78	1.78	11.78
10/26/2002	0.56	9.44	2.56	11.44	3.56	12.44	4.56	13.44
10/27/2002	-0.56	10.56	1.44	12.56	2.44	13.56	3.44	14.56
10/28/2002	1.11	9.44	3.11	11.44	4.11	12.44	5.11	13.44
10/29/2002	-0.56	6.67	1.44	8.67	2.44	9.67	3.44	10.67
10/30/2002	-1.11	7.22	0.89	9.22	1.89	10.22	2.89	11.22
10/31/2002	0	8.33	2	10.33	3	11.33	4	12.33
11/1/2002	-1.67	7.22	0.33	9.22	1.33	10.22	2.33	11.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/2/2002	0	8.33	2	10.33	3	11.33	4	12.33
11/3/2002	2.22	9.44	4.22	11.44	5.22	12.44	6.22	13.44
11/4/2002	1.11	9.44	3.11	11.44	4.11	12.44	5.11	13.44
11/5/2002	0.56	11.67	2.56	13.67	3.56	14.67	4.56	15.67
11/6/2002	0.56	10	2.56	12	3.56	13	4.56	14
11/7/2002	-2.78	3.89	-0.78	5.89	0.22	6.89	1.22	7.89
11/8/2002	0	2.22	2	4.22	3	5.22	4	6.22
11/9/2002	-4.44	0.56	-2.44	2.56	-1.44	3.56	-0.44	4.56
11/10/2002	-3.33	-1.11	-1.33	0.89	-0.33	1.89	0.67	2.89
11/11/2002	-3.89	4.44	-1.89	6.44	-0.89	7.44	0.11	8.44
11/12/2002	2.78	8.89	4.78	10.89	5.78	11.89	6.78	12.89
11/13/2002	0	8.33	2	10.33	3	11.33	4	12.33
11/14/2002	1.67	8.33	3.67	10.33	4.67	11.33	5.67	12.33
11/15/2002	2.22	7.22	4.22	9.22	5.22	10.22	6.22	11.22
11/16/2002	0.56	8.33	2.56	10.33	3.56	11.33	4.56	12.33
11/17/2002	-1.67	6.11	0.33	8.11	1.33	9.11	2.33	10.11
11/18/2002	1.11	8.33	3.11	10.33	4.11	11.33	5.11	12.33
11/19/2002	6.11	13.33	8.11	15.33	9.11	16.33	10.11	17.33
11/20/2002	7.22	15	9.22	17	10.22	18	11.22	19
11/21/2002	4.44	12.78	6.44	14.78	7.44	15.78	8.44	16.78
11/22/2002	1.67	9.44	3.67	11.44	4.67	12.44	5.67	13.44
11/23/2002	0.56	7.22	2.56	9.22	3.56	10.22	4.56	11.22
11/24/2002	0	6.67	2	8.67	3	9.67	4	10.67
11/25/2002	-3.33	2.78	-1.33	4.78	-0.33	5.78	0.67	6.78
11/26/2002	-1.11	6.67	0.89	8.67	1.89	9.67	2.89	10.67
11/27/2002	-1.67	5.56	0.33	7.56	1.33	8.56	2.33	9.56
11/28/2002	0	9.44	2	11.44	3	12.44	4	13.44
11/29/2002	0	10	2	12	3	13	4	14
11/30/2002	-4.44	3.33	-2.44	5.33	-1.44	6.33	-0.44	7.33
12/1/2002	-4.44	3.89	-2.44	5.89	-1.44	6.89	-0.44	7.89
12/2/2002	-2.22	5	-0.22	7	0.78	8	1.78	9
12/3/2002	-1.67	6.67	0.33	8.67	1.33	9.67	2.33	10.67
12/4/2002	-1.11	8.33	0.89	10.33	1.89	11.33	2.89	12.33
12/5/2002	0.56	6.67	2.56	8.67	3.56	9.67	4.56	10.67
12/6/2002	-2.22	4.44	-0.22	6.44	0.78	7.44	1.78	8.44
12/7/2002	-2.78	6.11	-0.78	8.11	0.22	9.11	1.22	10.11
12/8/2002	-1.11	7.22	0.89	9.22	1.89	10.22	2.89	11.22
12/9/2002	-2.78	2.22	-0.78	4.22	0.22	5.22	1.22	6.22
12/10/2002	-6.11	0	-4.11	2	-3.11	3	-2.11	4
12/11/2002	-5.56	3.33	-3.56	5.33	-2.56	6.33	-1.56	7.33
12/12/2002	-0.56	5	1.44	7	2.44	8	3.44	9
12/13/2002	-2.22	0	-0.22	2	0.78	3	1.78	4
12/14/2002	-4.44	2.22	-2.44	4.22	-1.44	5.22	-0.44	6.22
12/15/2002	-5.56	-3.33	-3.56	-1.33	-2.56	-0.33	-1.56	0.67
12/16/2002	-5.56	-2.78	-3.56	-0.78	-2.56	0.22	-1.56	1.22
12/17/2002	-10	-5.56	-8	-3.56	-7	-2.56	-6	-1.56
12/18/2002	-11.67	-3.33	-9.67	-1.33	-8.67	-0.33	-7.67	0.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/19/2002	-10.56	-3.89	-8.56	-1.89	-7.56	-0.89	-6.56	0.11
12/20/2002	-8.33	-6.11	-6.33	-4.11	-5.33	-3.11	-4.33	-2.11
12/21/2002	-8.33	-3.33	-6.33	-1.33	-5.33	-0.33	-4.33	0.67
12/22/2002	-10	-5.56	-8	-3.56	-7	-2.56	-6	-1.56
12/23/2002	-10.56	-4.44	-8.56	-2.44	-7.56	-1.44	-6.56	-0.44
12/24/2002	-10	-5	-8	-3	-7	-2	-6	-1
12/25/2002	-8.89	-2.22	-6.89	-0.22	-5.89	0.78	-4.89	1.78
12/26/2002	-5.56	-0.56	-3.56	1.44	-2.56	2.44	-1.56	3.44
12/27/2002	-1.11	0.56	0.89	2.56	1.89	3.56	2.89	4.56
12/28/2002	-7.22	0.56	-5.22	2.56	-4.22	3.56	-3.22	4.56
12/29/2002	-8.33	-4.44	-6.33	-2.44	-5.33	-1.44	-4.33	-0.44
12/30/2002	-7.78	-1.67	-5.78	0.33	-4.78	1.33	-3.78	2.33
12/31/2002	-8.89	-2.78	-6.89	-0.78	-5.89	0.22	-4.89	1.22
1/1/2003	-7.22	4.44	-5.22	6.44	-4.22	7.44	-3.22	8.44
1/2/2003	1.67	6.11	3.67	8.11	4.67	9.11	5.67	10.11
1/3/2003	2.78	10.56	4.78	12.56	5.78	13.56	6.78	14.56
1/4/2003	2.78	9.44	4.78	11.44	5.78	12.44	6.78	13.44
1/5/2003	2.78	10	4.78	12	5.78	13	6.78	14
1/6/2003	0	8.89	2	10.89	3	11.89	4	12.89
1/7/2003	3.33	12.78	5.33	14.78	6.33	15.78	7.33	16.78
1/8/2003	0	6.67	2	8.67	3	9.67	4	10.67
1/9/2003	-2.22	0	-0.22	2	0.78	3	1.78	4
1/10/2003	-2.22	0	-0.22	2	0.78	3	1.78	4
1/11/2003	-5	0.56	-3	2.56	-2	3.56	-1	4.56
1/12/2003	-1.11	3.89	0.89	5.89	1.89	6.89	2.89	7.89
1/13/2003	-1.11	6.67	0.89	8.67	1.89	9.67	2.89	10.67
1/14/2003	-2.22	3.89	-0.22	5.89	0.78	6.89	1.78	7.89
1/15/2003	-2.78	11.67	-0.78	13.67	0.22	14.67	1.22	15.67
1/16/2003	5.56	14.44	7.56	16.44	8.56	17.44	9.56	18.44
1/17/2003	5	12.78	7	14.78	8	15.78	9	16.78
1/18/2003	3.89	12.22	5.89	14.22	6.89	15.22	7.89	16.22
1/19/2003	1.11	9.44	3.11	11.44	4.11	12.44	5.11	13.44
1/20/2003	-1.67	8.33	0.33	10.33	1.33	11.33	2.33	12.33
1/21/2003	-2.22	0.56	-0.22	2.56	0.78	3.56	1.78	4.56
1/22/2003	-0.56	5	1.44	7	2.44	8	3.44	9
1/23/2003	0	2.78	2	4.78	3	5.78	4	6.78
1/24/2003	-0.56	4.44	1.44	6.44	2.44	7.44	3.44	8.44
1/25/2003	1.11	9.44	3.11	11.44	4.11	12.44	5.11	13.44
1/26/2003	5	10.56	7	12.56	8	13.56	9	14.56
1/27/2003	0	6.11	2	8.11	3	9.11	4	10.11
1/28/2003	-2.78	8.89	-0.78	10.89	0.22	11.89	1.22	12.89
1/29/2003	0.56	9.44	2.56	11.44	3.56	12.44	4.56	13.44
1/30/2003	2.22	11.67	4.22	13.67	5.22	14.67	6.22	15.67
1/31/2003	5.56	12.78	7.56	14.78	8.56	15.78	9.56	16.78
2/1/2003	-7.22	5.56	-5.22	7.56	-4.22	8.56	-3.22	9.56
2/2/2003	-8.89	2.22	-6.89	4.22	-5.89	5.22	-4.89	6.22
2/3/2003	-2.22	7.22	-0.22	9.22	0.78	10.22	1.78	11.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/4/2003	-8.89	3.89	-6.89	5.89	-5.89	6.89	-4.89	7.89
2/5/2003	-8.33	4.44	-6.33	6.44	-5.33	7.44	-4.33	8.44
2/6/2003	-8.33	-1.67	-6.33	0.33	-5.33	1.33	-4.33	2.33
2/7/2003	-11.67	-2.78	-9.67	-0.78	-8.67	0.22	-7.67	1.22
2/8/2003	-8.33	2.22	-6.33	4.22	-5.33	5.22	-4.33	6.22
2/9/2003	-5.56	6.67	-3.56	8.67	-2.56	9.67	-1.56	10.67
2/10/2003	-1.67	10.56	0.33	12.56	1.33	13.56	2.33	14.56
2/11/2003	-1.11	5	0.89	7	1.89	8	2.89	9
2/12/2003	-1.67	6.11	0.33	8.11	1.33	9.11	2.33	10.11
2/13/2003	-1.11	1.67	0.89	3.67	1.89	4.67	2.89	5.67
2/14/2003	-3.33	6.11	-1.33	8.11	-0.33	9.11	0.67	10.11
2/15/2003	-2.78	3.33	-0.78	5.33	0.22	6.33	1.22	7.33
2/16/2003	-3.89	-2.22	-1.89	-0.22	-0.89	0.78	0.11	1.78
2/17/2003	-3.755	1.428	-1.755	3.428	-0.755	4.428	0.245	5.428
2/18/2003	-6.11	3.33	-4.11	5.33	-3.11	6.33	-2.11	7.33
2/19/2003	-8.89	-2.78	-6.89	-0.78	-5.89	0.22	-4.89	1.22
2/20/2003	-7.22	6.11	-5.22	8.11	-4.22	9.11	-3.22	10.11
2/21/2003	-0.56	8.33	1.44	10.33	2.44	11.33	3.44	12.33
2/22/2003	-2.22	6.67	-0.22	8.67	0.78	9.67	1.78	10.67
2/23/2003	-1.67	6.11	0.33	8.11	1.33	9.11	2.33	10.11
2/24/2003	-3.33	1.11	-1.33	3.11	-0.33	4.11	0.67	5.11
2/25/2003	-7.22	0.56	-5.22	2.56	-4.22	3.56	-3.22	4.56
2/26/2003	-7.78	-1.11	-5.78	0.89	-4.78	1.89	-3.78	2.89
2/27/2003	-8.89	-2.78	-6.89	-0.78	-5.89	0.22	-4.89	1.22
2/28/2003	-11.11	0	-9.11	2	-8.11	3	-7.11	4
3/1/2003	-7.22	0	-5.22	2	-4.22	3	-3.22	4
3/2/2003	-8.33	5	-6.33	7	-5.33	8	-4.33	9
3/3/2003	-5.56	0	-3.56	2	-2.56	3	-1.56	4
3/4/2003	-8.33	-1.67	-6.33	0.33	-5.33	1.33	-4.33	2.33
3/5/2003	-6.67	5.56	-4.67	7.56	-3.67	8.56	-2.67	9.56
3/6/2003	-2.78	5.56	-0.78	7.56	0.22	8.56	1.22	9.56
3/7/2003	-3.33	6.11	-1.33	8.11	-0.33	9.11	0.67	10.11
3/8/2003	-1.11	8.89	0.89	10.89	1.89	11.89	2.89	12.89
3/9/2003	0	7.22	2	9.22	3	10.22	4	11.22
3/10/2003	0	6.67	2	8.67	3	9.67	4	10.67
3/11/2003	-0.56	8.89	1.44	10.89	2.44	11.89	3.44	12.89
3/12/2003	1.11	10	3.11	12	4.11	13	5.11	14
3/13/2003	0	6.67	2	8.67	3	9.67	4	10.67
3/14/2003	-2.22	5	-0.22	7	0.78	8	1.78	9
3/15/2003	-7.22	0	-5.22	2	-4.22	3	-3.22	4
3/16/2003	-7.78	0	-5.78	2	-4.78	3	-3.78	4
3/17/2003	-8.33	-0.56	-6.33	1.44	-5.33	2.44	-4.33	3.44
3/18/2003	-8.33	3.33	-6.33	5.33	-5.33	6.33	-4.33	7.33
3/19/2003	-3.89	10.56	-1.89	12.56	-0.89	13.56	0.11	14.56
3/20/2003	-4.44	3.33	-2.44	5.33	-1.44	6.33	-0.44	7.33
3/21/2003	-3.33	8.33	-1.33	10.33	-0.33	11.33	0.67	12.33
3/22/2003	0	6.11	2	8.11	3	9.11	4	10.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/23/2003	-1.11	1.67	0.89	3.67	1.89	4.67	2.89	5.67
3/24/2003	-2.22	6.11	-0.22	8.11	0.78	9.11	1.78	10.11
3/25/2003	-0.56	8.89	1.44	10.89	2.44	11.89	3.44	12.89
3/26/2003	-2.78	2.22	-0.78	4.22	0.22	5.22	1.22	6.22
3/27/2003	-5	5	-3	7	-2	8	-1	9
3/28/2003	-1.11	7.22	0.89	9.22	1.89	10.22	2.89	11.22
3/29/2003	2.78	11.67	4.78	13.67	5.78	14.67	6.78	15.67
3/30/2003	5	15	7	17	8	18	9	19
3/31/2003	2.78	10	4.78	12	5.78	13	6.78	14
4/1/2003	-7.78	2.78	-5.78	4.78	-4.78	5.78	-3.78	6.78
4/2/2003	-9.44	-7.22	-7.44	-5.22	-6.44	-4.22	-5.44	-3.22
4/3/2003	-11.67	-5	-9.67	-3	-8.67	-2	-7.67	-1
4/4/2003	-8.89	-5	-6.89	-3	-5.89	-2	-4.89	-1
4/5/2003	-11.67	-2.78	-9.67	-0.78	-8.67	0.22	-7.67	1.22
4/6/2003	-8.33	-2.22	-6.33	-0.22	-5.33	0.78	-4.33	1.78
4/7/2003	-4.44	8.89	-2.44	10.89	-1.44	11.89	-0.44	12.89
4/8/2003	-1.11	10	0.89	12	1.89	13	2.89	14
4/9/2003	0	10.56	2	12.56	3	13.56	4	14.56
4/10/2003	0.56	7.22	2.56	9.22	3.56	10.22	4.56	11.22
4/11/2003	-0.56	6.67	1.44	8.67	2.44	9.67	3.44	10.67
4/12/2003	-3.33	0	-1.33	2	-0.33	3	0.67	4
4/13/2003	-6.11	-2.78	-4.11	-0.78	-3.11	0.22	-2.11	1.22
4/14/2003	-7.78	0.56	-5.78	2.56	-4.78	3.56	-3.78	4.56
4/15/2003	-8.89	-1.11	-6.89	0.89	-5.89	1.89	-4.89	2.89
4/16/2003	-6.11	-1.11	-4.11	0.89	-3.11	1.89	-2.11	2.89
4/17/2003	-5.56	-0.56	-3.56	1.44	-2.56	2.44	-1.56	3.44
4/18/2003	-6.11	0	-4.11	2	-3.11	3	-2.11	4
4/19/2003	-6.67	7.78	-4.67	9.78	-3.67	10.78	-2.67	11.78
4/20/2003	-2.78	6.11	-0.78	8.11	0.22	9.11	1.22	10.11
4/21/2003	-8.89	-1.67	-6.89	0.33	-5.89	1.33	-4.89	2.33
4/22/2003	-8.33	1.67	-6.33	3.67	-5.33	4.67	-4.33	5.67
4/23/2003	-5	3.33	-3	5.33	-2	6.33	-1	7.33
4/24/2003	-5	-1.11	-3	0.89	-2	1.89	-1	2.89
4/25/2003	-5	-2.78	-3	-0.78	-2	0.22	-1	1.22
4/26/2003	-7.78	1.11	-5.78	3.11	-4.78	4.11	-3.78	5.11
4/27/2003	-5	1.67	-3	3.67	-2	4.67	-1	5.67
4/28/2003	-6.11	-1.11	-4.11	0.89	-3.11	1.89	-2.11	2.89
4/29/2003	-6.11	-1.11	-4.11	0.89	-3.11	1.89	-2.11	2.89
4/30/2003	-7.78	3.33	-5.78	5.33	-4.78	6.33	-3.78	7.33
5/1/2003	-3.89	6.11	-1.89	8.11	-0.89	9.11	0.11	10.11
5/2/2003	-1.11	2.22	0.89	4.22	1.89	5.22	2.89	6.22
5/3/2003	-1.67	2.22	0.33	4.22	1.33	5.22	2.33	6.22
5/4/2003	-4.44	2.22	-2.44	4.22	-1.44	5.22	-0.44	6.22
5/5/2003	-4.44	6.11	-2.44	8.11	-1.44	9.11	-0.44	10.11
5/6/2003	-3.89	4.44	-1.89	6.44	-0.89	7.44	0.11	8.44
5/7/2003	-2.78	0.56	-0.78	2.56	0.22	3.56	1.22	4.56
5/8/2003	-7.78	-2.22	-5.78	-0.22	-4.78	0.78	-3.78	1.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/9/2003	-9.44	-1.11	-7.44	0.89	-6.44	1.89	-5.44	2.89
5/10/2003	-5.56	5.56	-3.56	7.56	-2.56	8.56	-1.56	9.56
5/11/2003	-3.33	8.33	-1.33	10.33	-0.33	11.33	0.67	12.33
5/12/2003	1.11	12.22	3.11	14.22	4.11	15.22	5.11	16.22
5/13/2003	3.89	14.44	5.89	16.44	6.89	17.44	7.89	18.44
5/14/2003	2.22	12.78	4.22	14.78	5.22	15.78	6.22	16.78
5/15/2003	2.22	11.11	4.22	13.11	5.22	14.11	6.22	15.11
5/16/2003	3.33	12.22	5.33	14.22	6.33	15.22	7.33	16.22
5/17/2003	2.78	11.67	4.78	13.67	5.78	14.67	6.78	15.67
5/18/2003	3.33	12.22	5.33	14.22	6.33	15.22	7.33	16.22
5/19/2003	3.89	15.56	5.89	17.56	6.89	18.56	7.89	19.56
5/20/2003	5.56	16.11	7.56	18.11	8.56	19.11	9.56	20.11
5/21/2003	7.22	18.33	9.22	20.33	10.22	21.33	11.22	22.33
5/22/2003	8.33	19.44	10.33	21.44	11.33	22.44	12.33	23.44
5/23/2003	9.44	20	11.44	22	12.44	23	13.44	24
5/24/2003	6.67	17.78	8.67	19.78	9.67	20.78	10.67	21.78
5/25/2003	3.33	12.22	5.33	14.22	6.33	15.22	7.33	16.22
5/26/2003	2.78	17.22	4.78	19.22	5.78	20.22	6.78	21.22
5/27/2003	9.44	21.67	11.44	23.67	12.44	24.67	13.44	25.67
5/28/2003	9.44	20.56	11.44	22.56	12.44	23.56	13.44	24.56
5/29/2003	9.44	18.89	11.44	20.89	12.44	21.89	13.44	22.89
5/30/2003	7.22	15.56	9.22	17.56	10.22	18.56	11.22	19.56
5/31/2003	7.78	17.22	9.78	19.22	10.78	20.22	11.78	21.22
6/1/2003	8.89	21.11	10.89	23.11	11.89	24.11	12.89	25.11
6/2/2003	11.67	21.11	13.67	23.11	14.67	24.11	15.67	25.11
6/3/2003	12.22	22.78	14.22	24.78	15.22	25.78	16.22	26.78
6/4/2003	12.22	21.11	14.22	23.11	15.22	24.11	16.22	25.11
6/5/2003	11.11	21.11	13.11	23.11	14.11	24.11	15.11	25.11
6/6/2003	12.22	21.11	14.22	23.11	15.22	24.11	16.22	25.11
6/7/2003	8.89	22.22	10.89	24.22	11.89	25.22	12.89	26.22
6/8/2003	9.44	19.44	11.44	21.44	12.44	22.44	13.44	23.44
6/9/2003	7.78	16.11	9.78	18.11	10.78	19.11	11.78	20.11
6/10/2003	6.11	15.56	8.11	17.56	9.11	18.56	10.11	19.56
6/11/2003	5.56	13.89	7.56	15.89	8.56	16.89	9.56	17.89
6/12/2003	5	14.44	7	16.44	8	17.44	9	18.44
6/13/2003	5.56	15	7.56	17	8.56	18	9.56	19
6/14/2003	8.89	17.78	10.89	19.78	11.89	20.78	12.89	21.78
6/15/2003	8.33	18.33	10.33	20.33	11.33	21.33	12.33	22.33
6/16/2003	10	21.11	12	23.11	13	24.11	14	25.11
6/17/2003	12.78	22.22	14.78	24.22	15.78	25.22	16.78	26.22
6/18/2003	7.22	17.78	9.22	19.78	10.22	20.78	11.22	21.78
6/19/2003	5.56	13.89	7.56	15.89	8.56	16.89	9.56	17.89
6/20/2003	4.44	12.22	6.44	14.22	7.44	15.22	8.44	16.22
6/21/2003	2.78	12.22	4.78	14.22	5.78	15.22	6.78	16.22
6/22/2003	3.89	13.33	5.89	15.33	6.89	16.33	7.89	17.33
6/23/2003	2.22	8.89	4.22	10.89	5.22	11.89	6.22	12.89
6/24/2003	1.11	14.44	3.11	16.44	4.11	17.44	5.11	18.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/25/2003	8.33	17.78	10.33	19.78	11.33	20.78	12.33	21.78
6/26/2003	12.22	20.56	14.22	22.56	15.22	23.56	16.22	24.56
6/27/2003	12.78	21.67	14.78	23.67	15.78	24.67	16.78	25.67
6/28/2003	12.22	22.78	14.22	24.78	15.22	25.78	16.22	26.78
6/29/2003	7.78	17.78	9.78	19.78	10.78	20.78	11.78	21.78
6/30/2003	7.22	18.33	9.22	20.33	10.22	21.33	11.22	22.33
7/1/2003	8.33	16.67	10.33	18.67	11.33	19.67	12.33	20.67
7/2/2003	7.22	17.22	9.22	19.22	10.22	20.22	11.22	21.22
7/3/2003	8.33	17.78	10.33	19.78	11.33	20.78	12.33	21.78
7/4/2003	10.56	21.11	12.56	23.11	13.56	24.11	14.56	25.11
7/5/2003	12.22	20.56	14.22	22.56	15.22	23.56	16.22	24.56
7/6/2003	11.11	19.44	13.11	21.44	14.11	22.44	15.11	23.44
7/7/2003	10	17.78	12	19.78	13	20.78	14	21.78
7/8/2003	8.33	21.11	10.33	23.11	11.33	24.11	12.33	25.11
7/9/2003	13.33	23.89	15.33	25.89	16.33	26.89	17.33	27.89
7/10/2003	12.22	21.67	14.22	23.67	15.22	24.67	16.22	25.67
7/11/2003	12.78	22.78	14.78	24.78	15.78	25.78	16.78	26.78
7/12/2003	11.67	20.56	13.67	22.56	14.67	23.56	15.67	24.56
7/13/2003	11.11	21.11	13.11	23.11	14.11	24.11	15.11	25.11
7/14/2003	12.78	22.78	14.78	24.78	15.78	25.78	16.78	26.78
7/15/2003	11.67	21.67	13.67	23.67	14.67	24.67	15.67	25.67
7/16/2003	12.22	22.22	14.22	24.22	15.22	25.22	16.22	26.22
7/17/2003	14.44	23.89	16.44	25.89	17.44	26.89	18.44	27.89
7/18/2003	16.11	23.89	18.11	25.89	19.11	26.89	20.11	27.89
7/19/2003	16.11	23.33	18.11	25.33	19.11	26.33	20.11	27.33
7/20/2003	15.56	22.78	17.56	24.78	18.56	25.78	19.56	26.78
7/21/2003	15	24.44	17	26.44	18	27.44	19	28.44
7/22/2003	18.33	25	20.33	27	21.33	28	22.33	29
7/23/2003	16.67	22.78	18.67	24.78	19.67	25.78	20.67	26.78
7/24/2003	14.44	22.22	16.44	24.22	17.44	25.22	18.44	26.22
7/25/2003	13.89	20.56	15.89	22.56	16.89	23.56	17.89	24.56
7/26/2003	11.67	21.67	13.67	23.67	14.67	24.67	15.67	25.67
7/27/2003	15.56	22.22	17.56	24.22	18.56	25.22	19.56	26.22
7/28/2003	15	25	17	27	18	28	19	29
7/29/2003	16.67	25	18.67	27	19.67	28	20.67	29
7/30/2003	15.56	24.44	17.56	26.44	18.56	27.44	19.56	28.44
7/31/2003	10.56	20	12.56	22	13.56	23	14.56	24
8/1/2003	11.11	17.22	13.11	19.22	14.11	20.22	15.11	21.22
8/2/2003	8.89	12.78	10.89	14.78	11.89	15.78	12.89	16.78
8/3/2003	8.33	17.22	10.33	19.22	11.33	20.22	12.33	21.22
8/4/2003	9.44	17.22	11.44	19.22	12.44	20.22	13.44	21.22
8/5/2003	6.67	15	8.67	17	9.67	18	10.67	19
8/6/2003	5	14.44	7	16.44	8	17.44	9	18.44
8/7/2003	5.56	17.22	7.56	19.22	8.56	20.22	9.56	21.22
8/8/2003	6.11	17.22	8.11	19.22	9.11	20.22	10.11	21.22
8/9/2003	6.67	19.44	8.67	21.44	9.67	22.44	10.67	23.44
8/10/2003	10	20	12	22	13	23	14	24

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/11/2003	10	20	12	22	13	23	14	24
8/12/2003	8.33	18.89	10.33	20.89	11.33	21.89	12.33	22.89
8/13/2003	7.22	20	9.22	22	10.22	23	11.22	24
8/14/2003	11.11	21.11	13.11	23.11	14.11	24.11	15.11	25.11
8/15/2003	12.22	21.67	14.22	23.67	15.22	24.67	16.22	25.67
8/16/2003	12.22	21.11	14.22	23.11	15.22	24.11	16.22	25.11
8/17/2003	12.22	22.78	14.22	24.78	15.22	25.78	16.22	26.78
8/18/2003	15.56	24.44	17.56	26.44	18.56	27.44	19.56	28.44
8/19/2003	13.89	22.22	15.89	24.22	16.89	25.22	17.89	26.22
8/20/2003	13.33	21.67	15.33	23.67	16.33	24.67	17.33	25.67
8/21/2003	11.11	15.56	13.11	17.56	14.11	18.56	15.11	19.56
8/22/2003	8.33	15	10.33	17	11.33	18	12.33	19
8/23/2003	6.67	18.89	8.67	20.89	9.67	21.89	10.67	22.89
8/24/2003	9.44	21.11	11.44	23.11	12.44	24.11	13.44	25.11
8/25/2003	11.67	23.33	13.67	25.33	14.67	26.33	15.67	27.33
8/26/2003	8.89	18.89	10.89	20.89	11.89	21.89	12.89	22.89
8/27/2003	10.56	19.44	12.56	21.44	13.56	22.44	14.56	23.44
8/28/2003	10	18.89	12	20.89	13	21.89	14	22.89
8/29/2003	8.33	20	10.33	22	11.33	23	12.33	24
8/30/2003	12.78	22.78	14.78	24.78	15.78	25.78	16.78	26.78
8/31/2003	12.22	17.78	14.22	19.78	15.22	20.78	16.22	21.78
9/1/2003	12.22	21.67	14.22	23.67	15.22	24.67	16.22	25.67
9/2/2003	12.78	23.33	14.78	25.33	15.78	26.33	16.78	27.33
9/3/2003	11.67	22.22	13.67	24.22	14.67	25.22	15.67	26.22
9/4/2003	12.78	20.56	14.78	22.56	15.78	23.56	16.78	24.56
9/5/2003	10.56	20	12.56	22	13.56	23	14.56	24
9/6/2003	10.56	18.33	12.56	20.33	13.56	21.33	14.56	22.33
9/7/2003	8.89	16.11	10.89	18.11	11.89	19.11	12.89	20.11
9/8/2003	5.56	13.33	7.56	15.33	8.56	16.33	9.56	17.33
9/9/2003	3.33	9.44	5.33	11.44	6.33	12.44	7.33	13.44
9/10/2003	3.33	18.33	5.33	20.33	6.33	21.33	7.33	22.33
9/11/2003	11.11	20.56	13.11	22.56	14.11	23.56	15.11	24.56
9/12/2003	12.22	22.22	14.22	24.22	15.22	25.22	16.22	26.22
9/13/2003	11.67	21.67	13.67	23.67	14.67	24.67	15.67	25.67
9/14/2003	10.56	20	12.56	22	13.56	23	14.56	24
9/15/2003	8.89	17.22	10.89	19.22	11.89	20.22	12.89	21.22
9/16/2003	6.67	14.44	8.67	16.44	9.67	17.44	10.67	18.44
9/17/2003	5.56	16.67	7.56	18.67	8.56	19.67	9.56	20.67
9/18/2003	9.44	18.89	11.44	20.89	12.44	21.89	13.44	22.89
9/19/2003	9.44	18.33	11.44	20.33	12.44	21.33	13.44	22.33
9/20/2003	12.22	22.22	14.22	24.22	15.22	25.22	16.22	26.22
9/21/2003	14.44	23.33	16.44	25.33	17.44	26.33	18.44	27.33
9/22/2003	15	23.89	17	25.89	18	26.89	19	27.89
9/23/2003	13.89	23.33	15.89	25.33	16.89	26.33	17.89	27.33
9/24/2003	13.89	23.89	15.89	25.89	16.89	26.89	17.89	27.89
9/25/2003	14.44	23.33	16.44	25.33	17.44	26.33	18.44	27.33
9/26/2003	14.44	23.33	16.44	25.33	17.44	26.33	18.44	27.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/27/2003	15.56	23.89	17.56	25.89	18.56	26.89	19.56	27.89
9/28/2003	11.67	22.78	13.67	24.78	14.67	25.78	15.67	26.78
9/29/2003	10	18.89	12	20.89	13	21.89	14	22.89
9/30/2003	9.44	19.44	11.44	21.44	12.44	22.44	13.44	23.44
10/1/2003	7.78	16.11	9.78	18.11	10.78	19.11	11.78	20.11
10/2/2003	7.78	15.56	9.78	17.56	10.78	18.56	11.78	19.56
10/3/2003	8.33	16.67	10.33	18.67	11.33	19.67	12.33	20.67
10/4/2003	7.22	16.11	9.22	18.11	10.22	19.11	11.22	20.11
10/5/2003	6.11	16.67	8.11	18.67	9.11	19.67	10.11	20.67
10/6/2003	9.44	18.89	11.44	20.89	12.44	21.89	13.44	22.89
10/7/2003	10	17.78	12	19.78	13	20.78	14	21.78
10/8/2003	9.44	18.33	11.44	20.33	12.44	21.33	13.44	22.33
10/9/2003	4.44	15.56	6.44	17.56	7.44	18.56	8.44	19.56
10/10/2003	3.33	15.56	5.33	17.56	6.33	18.56	7.33	19.56
10/11/2003	7.22	16.11	9.22	18.11	10.22	19.11	11.22	20.11
10/12/2003	7.22	16.11	9.22	18.11	10.22	19.11	11.22	20.11
10/13/2003	7.78	18.89	9.78	20.89	10.78	21.89	11.78	22.89
10/14/2003	7.22	16.11	9.22	18.11	10.22	19.11	11.22	20.11
10/15/2003	6.67	13.33	8.67	15.33	9.67	16.33	10.67	17.33
10/16/2003	7.22	16.67	9.22	18.67	10.22	19.67	11.22	20.67
10/17/2003	9.44	18.89	11.44	20.89	12.44	21.89	13.44	22.89
10/18/2003	7.78	17.22	9.78	19.22	10.78	20.22	11.78	21.22
10/19/2003	6.11	17.78	8.11	19.78	9.11	20.78	10.11	21.78
10/20/2003	8.33	20	10.33	22	11.33	23	12.33	24
10/21/2003	10	20.56	12	22.56	13	23.56	14	24.56
10/22/2003	7.78	18.33	9.78	20.33	10.78	21.33	11.78	22.33
10/23/2003	8.89	17.78	10.89	19.78	11.89	20.78	12.89	21.78
10/24/2003	11.11	20	13.11	22	14.11	23	15.11	24
10/25/2003	11.11	19.44	13.11	21.44	14.11	22.44	15.11	23.44
10/26/2003	11.67	19.44	13.67	21.44	14.67	22.44	15.67	23.44
10/27/2003	12.78	20.56	14.78	22.56	15.78	23.56	16.78	24.56
10/28/2003	11.11	22.22	13.11	24.22	14.11	25.22	15.11	26.22
10/29/2003	0.56	12.22	2.56	14.22	3.56	15.22	4.56	16.22
10/30/2003	-8.33	0	-6.33	2	-5.33	3	-4.33	4
10/31/2003	-7.78	-4.44	-5.78	-2.44	-4.78	-1.44	-3.78	-0.44
11/1/2003	-8.89	0.56	-6.89	2.56	-5.89	3.56	-4.89	4.56
11/2/2003	-7.78	-3.33	-5.78	-1.33	-4.78	-0.33	-3.78	0.67
11/3/2003	-8.89	-3.89	-6.89	-1.89	-5.89	-0.89	-4.89	0.11
11/4/2003	-9.44	1.11	-7.44	3.11	-6.44	4.11	-5.44	5.11
11/5/2003	-6.11	2.78	-4.11	4.78	-3.11	5.78	-2.11	6.78
11/6/2003	-3.89	5	-1.89	7	-0.89	8	0.11	9
11/7/2003	-2.22	0.56	-0.22	2.56	0.78	3.56	1.78	4.56
11/8/2003	-1.67	1.11	0.33	3.11	1.33	4.11	2.33	5.11
11/9/2003	-5.56	-1.11	-3.56	0.89	-2.56	1.89	-1.56	2.89
11/10/2003	-5.56	1.11	-3.56	3.11	-2.56	4.11	-1.56	5.11
11/11/2003	-4.44	5	-2.44	7	-1.44	8	-0.44	9
11/12/2003	-2.78	1.67	-0.78	3.67	0.22	4.67	1.22	5.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/13/2003	-3.33	0	-1.33	2	-0.33	3	0.67	4
11/14/2003	-4.44	2.78	-2.44	4.78	-1.44	5.78	-0.44	6.78
11/15/2003	-5.56	-2.78	-3.56	-0.78	-2.56	0.22	-1.56	1.22
11/16/2003	-6.11	0.56	-4.11	2.56	-3.11	3.56	-2.11	4.56
11/17/2003	-2.22	4.44	-0.22	6.44	0.78	7.44	1.78	8.44
11/18/2003	2.22	11.67	4.22	13.67	5.22	14.67	6.22	15.67
11/19/2003	2.22	8.89	4.22	10.89	5.22	11.89	6.22	12.89
11/20/2003	-1.11	6.11	0.89	8.11	1.89	9.11	2.89	10.11
11/21/2003	-10.56	-1.67	-8.56	0.33	-7.56	1.33	-6.56	2.33
11/22/2003	-11.67	1.11	-9.67	3.11	-8.67	4.11	-7.67	5.11
11/23/2003	-5	5.56	-3	7.56	-2	8.56	-1	9.56
11/24/2003	-5	2.22	-3	4.22	-2	5.22	-1	6.22
11/25/2003	-7.22	0.56	-5.22	2.56	-4.22	3.56	-3.22	4.56
11/26/2003	-7.22	2.78	-5.22	4.78	-4.22	5.78	-3.22	6.78
11/27/2003	0.56	10	2.56	12	3.56	13	4.56	14
11/28/2003	0.56	6.67	2.56	8.67	3.56	9.67	4.56	10.67
11/29/2003	1.11	7.22	3.11	9.22	4.11	10.22	5.11	11.22
11/30/2003	-0.56	5.56	1.44	7.56	2.44	8.56	3.44	9.56
12/1/2003	-1.67	2.22	0.33	4.22	1.33	5.22	2.33	6.22
12/2/2003	-3.33	3.89	-1.33	5.89	-0.33	6.89	0.67	7.89
12/3/2003	-1.67	8.89	0.33	10.89	1.33	11.89	2.33	12.89
12/4/2003	0.56	6.67	2.56	8.67	3.56	9.67	4.56	10.67
12/5/2003	1.11	5	3.11	7	4.11	8	5.11	9
12/6/2003	-1.11	2.22	0.89	4.22	1.89	5.22	2.89	6.22
12/7/2003	-6.67	0	-4.67	2	-3.67	3	-2.67	4
12/8/2003	-10	-1.67	-8	0.33	-7	1.33	-6	2.33
12/9/2003	-6.11	0	-4.11	2	-3.11	3	-2.11	4
12/10/2003	-5.56	-3.89	-3.56	-1.89	-2.56	-0.89	-1.56	0.11
12/11/2003	-8.33	-0.56	-6.33	1.44	-5.33	2.44	-4.33	3.44
12/12/2003	-7.78	0	-5.78	2	-4.78	3	-3.78	4
12/13/2003	-3.33	0	-1.33	2	-0.33	3	0.67	4
12/14/2003	-11.11	-2.78	-9.11	-0.78	-8.11	0.22	-7.11	1.22
12/15/2003	-10.56	-2.22	-8.56	-0.22	-7.56	0.78	-6.56	1.78
12/16/2003	-4.44	2.78	-2.44	4.78	-1.44	5.78	-0.44	6.78
12/17/2003	0.56	5.56	2.56	7.56	3.56	8.56	4.56	9.56
12/18/2003	1.67	10	3.67	12	4.67	13	5.67	14
12/19/2003	-2.22	7.78	-0.22	9.78	0.78	10.78	1.78	11.78
12/20/2003	-2.22	0.56	-0.22	2.56	0.78	3.56	1.78	4.56
12/21/2003	-4.44	2.22	-2.44	4.22	-1.44	5.22	-0.44	6.22
12/22/2003	-2.22	4.44	-0.22	6.44	0.78	7.44	1.78	8.44
12/23/2003	-2.22	0.56	-0.22	2.56	0.78	3.56	1.78	4.56
12/24/2003	-5	-0.56	-3	1.44	-2	2.44	-1	3.44
12/25/2003	-8.89	-4.44	-6.89	-2.44	-5.89	-1.44	-4.89	-0.44
12/26/2003	-13.89	-6.11	-11.89	-4.11	-10.89	-3.11	-9.89	-2.11
12/27/2003	-13.89	-4.44	-11.89	-2.44	-10.89	-1.44	-9.89	-0.44
12/28/2003	-11.11	-3.89	-9.11	-1.89	-8.11	-0.89	-7.11	0.11
12/29/2003	-7.22	-4.44	-5.22	-2.44	-4.22	-1.44	-3.22	-0.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/30/2003	-5	0	-3	2	-2	3	-1	4
12/31/2003	-5	-3.33	-3	-1.33	-2	-0.33	-1	0.67
1/1/2004	-7.78	-5	-5.78	-3	-4.78	-2	-3.78	-1
1/2/2004	-11.11	-7.22	-9.11	-5.22	-8.11	-4.22	-7.11	-3.22
1/3/2004	-15	-6.67	-13	-4.67	-12	-3.67	-11	-2.67
1/4/2004	-13.89	-4.44	-11.89	-2.44	-10.89	-1.44	-9.89	-0.44
1/5/2004	-8.33	1.67	-6.33	3.67	-5.33	4.67	-4.33	5.67
1/6/2004	-5	0.56	-3	2.56	-2	3.56	-1	4.56
1/7/2004	-4.44	0	-2.44	2	-1.44	3	-0.44	4
1/8/2004	-0.56	3.33	1.44	5.33	2.44	6.33	3.44	7.33
1/9/2004	0.56	5	2.56	7	3.56	8	4.56	9
1/10/2004	-0.56	6.67	1.44	8.67	2.44	9.67	3.44	10.67
1/11/2004	-1.11	8.89	0.89	10.89	1.89	11.89	2.89	12.89
1/12/2004	-2.22	6.11	-0.22	8.11	0.78	9.11	1.78	10.11
1/13/2004	-1.67	8.89	0.33	10.89	1.33	11.89	2.33	12.89
1/14/2004	-1.67	7.78	0.33	9.78	1.33	10.78	2.33	11.78
1/15/2004	-1.67	6.11	0.33	8.11	1.33	9.11	2.33	10.11
1/16/2004	0	7.78	2	9.78	3	10.78	4	11.78
1/17/2004	-1.67	9.44	0.33	11.44	1.33	12.44	2.33	13.44
1/18/2004	-2.22	4.44	-0.22	6.44	0.78	7.44	1.78	8.44
1/19/2004	-4.44	3.33	-2.44	5.33	-1.44	6.33	-0.44	7.33
1/20/2004	-5.56	-1.11	-3.56	0.89	-2.56	1.89	-1.56	2.89
1/21/2004	-8.89	2.22	-6.89	4.22	-5.89	5.22	-4.89	6.22
1/22/2004	-1.11	11.67	0.89	13.67	1.89	14.67	2.89	15.67
1/23/2004	-2.22	7.22	-0.22	9.22	0.78	10.22	1.78	11.22
1/24/2004	-7.22	0	-5.22	2	-4.22	3	-3.22	4
1/25/2004	-9.44	-0.56	-7.44	1.44	-6.44	2.44	-5.44	3.44
1/26/2004	-7.22	-3.33	-5.22	-1.33	-4.22	-0.33	-3.22	0.67
1/27/2004	-5.56	-2.22	-3.56	-0.22	-2.56	0.78	-1.56	1.78
1/28/2004	-6.11	0	-4.11	2	-3.11	3	-2.11	4
1/29/2004	-1.67	6.11	0.33	8.11	1.33	9.11	2.33	10.11
1/30/2004	-8.33	-1.11	-6.33	0.89	-5.33	1.89	-4.33	2.89
1/31/2004	-10	-1.11	-8	0.89	-7	1.89	-6	2.89
2/1/2004	-6.67	-1.67	-4.67	0.33	-3.67	1.33	-2.67	2.33
2/2/2004	-7.78	-2.22	-5.78	-0.22	-4.78	0.78	-3.78	1.78
2/3/2004	-7.78	-3.89	-5.78	-1.89	-4.78	-0.89	-3.78	0.11
2/4/2004	-9.44	-2.78	-7.44	-0.78	-6.44	0.22	-5.44	1.22
2/5/2004	-6.67	1.67	-4.67	3.67	-3.67	4.67	-2.67	5.67
2/6/2004	-5.56	4.44	-3.56	6.44	-2.56	7.44	-1.56	8.44
2/7/2004	-9.44	0	-7.44	2	-6.44	3	-5.44	4
2/8/2004	-6.67	3.89	-4.67	5.89	-3.67	6.89	-2.67	7.89
2/9/2004	-9.44	1.67	-7.44	3.67	-6.44	4.67	-5.44	5.67
2/10/2004	-7.22	8.89	-5.22	10.89	-4.22	11.89	-3.22	12.89
2/11/2004	-3.33	7.22	-1.33	9.22	-0.33	10.22	0.67	11.22
2/12/2004	-3.89	8.33	-1.89	10.33	-0.89	11.33	0.11	12.33
2/13/2004	-6.11	2.78	-4.11	4.78	-3.11	5.78	-2.11	6.78
2/14/2004	-5	-0.56	-3	1.44	-2	2.44	-1	3.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/15/2004	-4.44	2.22	-2.44	4.22	-1.44	5.22	-0.44	6.22
2/16/2004	-2.78	1.11	-0.78	3.11	0.22	4.11	1.22	5.11
2/17/2004	-2.22	2.78	-0.22	4.78	0.78	5.78	1.78	6.78
2/18/2004	-5.56	-1.67	-3.56	0.33	-2.56	1.33	-1.56	2.33
2/19/2004	-7.22	1.67	-5.22	3.67	-4.22	4.67	-3.22	5.67
2/20/2004	-6.67	-0.56	-4.67	1.44	-3.67	2.44	-2.67	3.44
2/21/2004	-6.67	-1.67	-4.67	0.33	-3.67	1.33	-2.67	2.33
2/22/2004	-5.56	-1.11	-3.56	0.89	-2.56	1.89	-1.56	2.89
2/23/2004	-6.67	0.56	-4.67	2.56	-3.67	3.56	-2.67	4.56
2/24/2004	-6.67	-2.78	-4.67	-0.78	-3.67	0.22	-2.67	1.22
2/25/2004	-6.11	-1.11	-4.11	0.89	-3.11	1.89	-2.11	2.89
2/26/2004	-8.33	-4.44	-6.33	-2.44	-5.33	-1.44	-4.33	-0.44
2/27/2004	-12.22	-3.89	-10.22	-1.89	-9.22	-0.89	-8.22	0.11
2/28/2004	-9.44	-1.11	-7.44	0.89	-6.44	1.89	-5.44	2.89
2/29/2004	-8.89	-2.22	-6.89	-0.22	-5.89	0.78	-4.89	1.78
3/1/2004	-8.33	-2.78	-6.33	-0.78	-5.33	0.22	-4.33	1.22
3/2/2004	-7.78	-1.11	-5.78	0.89	-4.78	1.89	-3.78	2.89
3/3/2004	-6.11	4.44	-4.11	6.44	-3.11	7.44	-2.11	8.44
3/4/2004	-3.89	2.22	-1.89	4.22	-0.89	5.22	0.11	6.22
3/5/2004	-3.89	5	-1.89	7	-0.89	8	0.11	9
3/6/2004	-1.11	9.44	0.89	11.44	1.89	12.44	2.89	13.44
3/7/2004	2.78	13.89	4.78	15.89	5.78	16.89	6.78	17.89
3/8/2004	4.44	16.11	6.44	18.11	7.44	19.11	8.44	20.11
3/9/2004	3.89	13.89	5.89	15.89	6.89	16.89	7.89	17.89
3/10/2004	1.67	9.44	3.67	11.44	4.67	12.44	5.67	13.44
3/11/2004	3.89	13.33	5.89	15.33	6.89	16.33	7.89	17.33
3/12/2004	2.78	12.22	4.78	14.22	5.78	15.22	6.78	16.22
3/13/2004	2.22	14.44	4.22	16.44	5.22	17.44	6.22	18.44
3/14/2004	5	13.89	7	15.89	8	16.89	9	17.89
3/15/2004	3.33	11.67	5.33	13.67	6.33	14.67	7.33	15.67
3/16/2004	3.89	12.22	5.89	14.22	6.89	15.22	7.89	16.22
3/17/2004	5.56	15	7.56	17	8.56	18	9.56	19
3/18/2004	5	12.22	7	14.22	8	15.22	9	16.22
3/19/2004	3.33	12.22	5.33	14.22	6.33	15.22	7.33	16.22
3/20/2004	6.67	17.78	8.67	19.78	9.67	20.78	10.67	21.78
3/21/2004	6.67	16.11	8.67	18.11	9.67	19.11	10.67	20.11
3/22/2004	2.22	13.89	4.22	15.89	5.22	16.89	6.22	17.89
3/23/2004	1.11	11.11	3.11	13.11	4.11	14.11	5.11	15.11
3/24/2004	-1.67	7.22	0.33	9.22	1.33	10.22	2.33	11.22
3/25/2004	-3.89	1.67	-1.89	3.67	-0.89	4.67	0.11	5.67
3/26/2004	-10	-1.67	-8	0.33	-7	1.33	-6	2.33
3/27/2004	-5	8.33	-3	10.33	-2	11.33	-1	12.33
3/28/2004	1.67	15	3.67	17	4.67	18	5.67	19
3/29/2004	2.22	13.89	4.22	15.89	5.22	16.89	6.22	17.89
3/30/2004	2.22	8.33	4.22	10.33	5.22	11.33	6.22	12.33
3/31/2004	-0.56	6.11	1.44	8.11	2.44	9.11	3.44	10.11
4/1/2004	-4.44	0.56	-2.44	2.56	-1.44	3.56	-0.44	4.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/2/2004	-5	5.56	-3	7.56	-2	8.56	-1	9.56
4/3/2004	2.22	9.44	4.22	11.44	5.22	12.44	6.22	13.44
4/4/2004	1.67	9.44	3.67	11.44	4.67	12.44	5.67	13.44
4/5/2004	0.56	8.89	2.56	10.89	3.56	11.89	4.56	12.89
4/6/2004	-1.67	6.11	0.33	8.11	1.33	9.11	2.33	10.11
4/7/2004	1.11	10.56	3.11	12.56	4.11	13.56	5.11	14.56
4/8/2004	3.33	11.11	5.33	13.11	6.33	14.11	7.33	15.11
4/9/2004	2.78	12.22	4.78	14.22	5.78	15.22	6.78	16.22
4/10/2004	1.67	11.11	3.67	13.11	4.67	14.11	5.67	15.11
4/11/2004	3.33	13.33	5.33	15.33	6.33	16.33	7.33	17.33
4/12/2004	1.67	10	3.67	12	4.67	13	5.67	14
4/13/2004	-2.78	4.44	-0.78	6.44	0.22	7.44	1.22	8.44
4/14/2004	-3.33	5.56	-1.33	7.56	-0.33	8.56	0.67	9.56
4/15/2004	-2.78	2.22	-0.78	4.22	0.22	5.22	1.22	6.22
4/16/2004	-3.89	0.56	-1.89	2.56	-0.89	3.56	0.11	4.56
4/17/2004	-6.11	-1.11	-4.11	0.89	-3.11	1.89	-2.11	2.89
4/18/2004	-6.67	0	-4.67	2	-3.67	3	-2.67	4
4/19/2004	-5.56	-0.56	-3.56	1.44	-2.56	2.44	-1.56	3.44
4/20/2004	-2.22	1.67	-0.22	3.67	0.78	4.67	1.78	5.67
4/21/2004	-2.78	2.22	-0.78	4.22	0.22	5.22	1.22	6.22
4/22/2004	-6.11	5	-4.11	7	-3.11	8	-2.11	9
4/23/2004	-0.56	12.78	1.44	14.78	2.44	15.78	3.44	16.78
4/24/2004	3.33	13.89	5.33	15.89	6.33	16.89	7.33	17.89
4/25/2004	5.56	15.56	7.56	17.56	8.56	18.56	9.56	19.56
4/26/2004	8.33	17.22	10.33	19.22	11.33	20.22	12.33	21.22
4/27/2004	5.56	15.56	7.56	17.56	8.56	18.56	9.56	19.56
4/28/2004	-0.56	10.56	1.44	12.56	2.44	13.56	3.44	14.56
4/29/2004	-2.78	10.56	-0.78	12.56	0.22	13.56	1.22	14.56
4/30/2004	1.67	15	3.67	17	4.67	18	5.67	19
5/1/2004	6.67	15.56	8.67	17.56	9.67	18.56	10.67	19.56
5/2/2004	7.78	17.78	9.78	19.78	10.78	20.78	11.78	21.78
5/3/2004	8.33	18.33	10.33	20.33	11.33	21.33	12.33	22.33
5/4/2004	7.78	15	9.78	17	10.78	18	11.78	19
5/5/2004	4.44	12.22	6.44	14.22	7.44	15.22	8.44	16.22
5/6/2004	4.44	10.56	6.44	12.56	7.44	13.56	8.44	14.56
5/7/2004	3.33	9.44	5.33	11.44	6.33	12.44	7.33	13.44
5/8/2004	1.67	9.44	3.67	11.44	4.67	12.44	5.67	13.44
5/9/2004	1.67	12.22	3.67	14.22	4.67	15.22	5.67	16.22
5/10/2004	-3.33	2.78	-1.33	4.78	-0.33	5.78	0.67	6.78
5/11/2004	-2.22	3.33	-0.22	5.33	0.78	6.33	1.78	7.33
5/12/2004	-1.67	9.44	0.33	11.44	1.33	12.44	2.33	13.44
5/13/2004	3.33	12.78	5.33	14.78	6.33	15.78	7.33	16.78
5/14/2004	3.89	12.78	5.89	14.78	6.89	15.78	7.89	16.78
5/15/2004	4.44	11.67	6.44	13.67	7.44	14.67	8.44	15.67
5/16/2004	3.33	11.67	5.33	13.67	6.33	14.67	7.33	15.67
5/17/2004	-0.56	7.78	1.44	9.78	2.44	10.78	3.44	11.78
5/18/2004	-1.67	6.67	0.33	8.67	1.33	9.67	2.33	10.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/19/2004	0	8.89	2	10.89	3	11.89	4	12.89
5/20/2004	-0.56	7.22	1.44	9.22	2.44	10.22	3.44	11.22
5/21/2004	-0.56	6.67	1.44	8.67	2.44	9.67	3.44	10.67
5/22/2004	1.11	8.89	3.11	10.89	4.11	11.89	5.11	12.89
5/23/2004	1.11	8.89	3.11	10.89	4.11	11.89	5.11	12.89
5/24/2004	0	10.56	2	12.56	3	13.56	4	14.56
5/25/2004	2.78	10.56	4.78	12.56	5.78	13.56	6.78	14.56
5/26/2004	3.33	13.89	5.33	15.89	6.33	16.89	7.33	17.89
5/27/2004	5	13.33	7	15.33	8	16.33	9	17.33
5/28/2004	0	5.56	2	7.56	3	8.56	4	9.56
5/29/2004	-0.56	11.67	1.44	13.67	2.44	14.67	3.44	15.67
5/30/2004	6.67	16.11	8.67	18.11	9.67	19.11	10.67	20.11
5/31/2004	8.33	16.67	10.33	18.67	11.33	19.67	12.33	20.67
6/1/2004	8.33	17.22	10.33	19.22	11.33	20.22	12.33	21.22
6/2/2004	9.44	19.44	11.44	21.44	12.44	22.44	13.44	23.44
6/3/2004	8.33	18.33	10.33	20.33	11.33	21.33	12.33	22.33
6/4/2004	9.44	20	11.44	22	12.44	23	13.44	24
6/5/2004	11.11	18.89	13.11	20.89	14.11	21.89	15.11	22.89
6/6/2004	8.33	17.22	10.33	19.22	11.33	20.22	12.33	21.22
6/7/2004	1.67	12.22	3.67	14.22	4.67	15.22	5.67	16.22
6/8/2004	0	7.22	2	9.22	3	10.22	4	11.22
6/9/2004	-1.67	4.44	0.33	6.44	1.33	7.44	2.33	8.44
6/10/2004	1.11	11.11	3.11	13.11	4.11	14.11	5.11	15.11
6/11/2004	3.89	12.78	5.89	14.78	6.89	15.78	7.89	16.78
6/12/2004	5	16.67	7	18.67	8	19.67	9	20.67
6/13/2004	9.44	18.89	11.44	20.89	12.44	21.89	13.44	22.89
6/14/2004	10	21.67	12	23.67	13	24.67	14	25.67
6/15/2004	13.33	21.11	15.33	23.11	16.33	24.11	17.33	25.11
6/16/2004	12.22	20	14.22	22	15.22	23	16.22	24
6/17/2004	8.89	17.22	10.89	19.22	11.89	20.22	12.89	21.22
6/18/2004	7.78	16.67	9.78	18.67	10.78	19.67	11.78	20.67
6/19/2004	7.22	17.78	9.22	19.78	10.22	20.78	11.22	21.78
6/20/2004	10.56	18.33	12.56	20.33	13.56	21.33	14.56	22.33
6/21/2004	11.11	19.44	13.11	21.44	14.11	22.44	15.11	23.44
6/22/2004	11.67	20	13.67	22	14.67	23	15.67	24
6/23/2004	10	18.89	12	20.89	13	21.89	14	22.89
6/24/2004	8.89	17.78	10.89	19.78	11.89	20.78	12.89	21.78
6/25/2004	8.89	18.33	10.89	20.33	11.89	21.33	12.89	22.33
6/26/2004	10.56	18.33	12.56	20.33	13.56	21.33	14.56	22.33
6/27/2004	8.89	19.44	10.89	21.44	11.89	22.44	12.89	23.44
6/28/2004	11.11	18.89	13.11	20.89	14.11	21.89	15.11	22.89
6/29/2004	10	17.78	12	19.78	13	20.78	14	21.78
6/30/2004	8.33	17.22	10.33	19.22	11.33	20.22	12.33	21.22
7/1/2004	6.67	15	8.67	17	9.67	18	10.67	19
7/2/2004	8.33	17.22	10.33	19.22	11.33	20.22	12.33	21.22
7/3/2004	10.56	18.33	12.56	20.33	13.56	21.33	14.56	22.33
7/4/2004	10.56	20	12.56	22	13.56	23	14.56	24

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/5/2004	13.33	23.33	15.33	25.33	16.33	26.33	17.33	27.33
7/6/2004	14.44	23.33	16.44	25.33	17.44	26.33	18.44	27.33
7/7/2004	11.11	19.44	13.11	21.44	14.11	22.44	15.11	23.44
7/8/2004	8.33	17.78	10.33	19.78	11.33	20.78	12.33	21.78
7/9/2004	8.33	16.11	10.33	18.11	11.33	19.11	12.33	20.11
7/10/2004	7.78	16.67	9.78	18.67	10.78	19.67	11.78	20.67
7/11/2004	7.78	18.89	9.78	20.89	10.78	21.89	11.78	22.89
7/12/2004	9.44	20	11.44	22	12.44	23	13.44	24
7/13/2004	10	20	12	22	13	23	14	24
7/14/2004	10	20	12	22	13	23	14	24
7/15/2004	10.56	20.56	12.56	22.56	13.56	23.56	14.56	24.56
7/16/2004	12.78	21.67	14.78	23.67	15.78	24.67	16.78	25.67
7/17/2004	12.78	20	14.78	22	15.78	23	16.78	24
7/18/2004	11.67	20	13.67	22	14.67	23	15.67	24
7/19/2004	11.11	20	13.11	22	14.11	23	15.11	24
7/20/2004	10	20.56	12	22.56	13	23.56	14	24.56
7/21/2004	13.33	21.67	15.33	23.67	16.33	24.67	17.33	25.67
7/22/2004	13.89	22.78	15.89	24.78	16.89	25.78	17.89	26.78
7/23/2004	15	23.33	17	25.33	18	26.33	19	27.33
7/24/2004	14.44	21.67	16.44	23.67	17.44	24.67	18.44	25.67
7/25/2004	13.89	21.67	15.89	23.67	16.89	24.67	17.89	25.67
7/26/2004	13.33	21.11	15.33	23.11	16.33	24.11	17.33	25.11
7/27/2004	11.11	21.67	13.11	23.67	14.11	24.67	15.11	25.67
7/28/2004	13.89	22.22	15.89	24.22	16.89	25.22	17.89	26.22
7/29/2004	10.56	20.56	12.56	22.56	13.56	23.56	14.56	24.56
7/30/2004	8.89	20.56	10.89	22.56	11.89	23.56	12.89	24.56
7/31/2004	9.44	19.44	11.44	21.44	12.44	22.44	13.44	23.44
8/1/2004	9.44	19.44	11.44	21.44	12.44	22.44	13.44	23.44
8/2/2004	7.78	16.67	9.78	18.67	10.78	19.67	11.78	20.67
8/3/2004	7.22	18.33	9.22	20.33	10.22	21.33	11.22	22.33
8/4/2004	7.22	17.78	9.22	19.78	10.22	20.78	11.22	21.78
8/5/2004	6.11	16.67	8.11	18.67	9.11	19.67	10.11	20.67
8/6/2004	7.22	17.22	9.22	19.22	10.22	20.22	11.22	21.22
8/7/2004	10.56	22.22	12.56	24.22	13.56	25.22	14.56	26.22
8/8/2004	13.89	22.78	15.89	24.78	16.89	25.78	17.89	26.78
8/9/2004	12.22	23.33	14.22	25.33	15.22	26.33	16.22	27.33
8/10/2004	14.44	24.44	16.44	26.44	17.44	27.44	18.44	28.44
8/11/2004	13.89	26.11	15.89	28.11	16.89	29.11	17.89	30.11
8/12/2004	16.11	22.78	18.11	24.78	19.11	25.78	20.11	26.78
8/13/2004	15	23.89	17	25.89	18	26.89	19	27.89
8/14/2004	12.78	21.67	14.78	23.67	15.78	24.67	16.78	25.67
8/15/2004	11.11	20.56	13.11	22.56	14.11	23.56	15.11	24.56
8/16/2004	11.67	20	13.67	22	14.67	23	15.67	24
8/17/2004	12.78	21.67	14.78	23.67	15.78	24.67	16.78	25.67
8/18/2004	13.33	22.78	15.33	24.78	16.33	25.78	17.33	26.78
8/19/2004	14.44	22.22	16.44	24.22	17.44	25.22	18.44	26.22
8/20/2004	13.33	21.67	15.33	23.67	16.33	24.67	17.33	25.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/21/2004	12.78	21.11	14.78	23.11	15.78	24.11	16.78	25.11
8/22/2004	7.78	13.89	9.78	15.89	10.78	16.89	11.78	17.89
8/23/2004	7.22	13.89	9.22	15.89	10.22	16.89	11.22	17.89
8/24/2004	6.67	16.11	8.67	18.11	9.67	19.11	10.67	20.11
8/25/2004	7.78	17.22	9.78	19.22	10.78	20.22	11.78	21.22
8/26/2004	6.11	16.11	8.11	18.11	9.11	19.11	10.11	20.11
8/27/2004	7.78	21.11	9.78	23.11	10.78	24.11	11.78	25.11
8/28/2004	10.56	21.67	12.56	23.67	13.56	24.67	14.56	25.67
8/29/2004	13.33	22.78	15.33	24.78	16.33	25.78	17.33	26.78
8/30/2004	12.78	23.33	14.78	25.33	15.78	26.33	16.78	27.33
8/31/2004	12.22	22.78	14.22	24.78	15.22	25.78	16.22	26.78
9/1/2004	12.22	21.67	14.22	23.67	15.22	24.67	16.22	25.67
9/2/2004	13.55	23.63	15.55	25.63	16.55	26.63	17.55	27.63
9/3/2004	6.845	18.73	8.845	20.73	9.845	21.73	10.845	22.73
9/4/2004	2.745	12.83	4.745	14.83	5.745	15.83	6.745	16.83
9/5/2004	4.245	18.53	6.245	20.53	7.245	21.53	8.245	22.53
9/6/2004	9.345	23.93	11.345	25.93	12.345	26.93	13.345	27.93
9/7/2004	11.75	24.13	13.75	26.13	14.75	27.13	15.75	28.13
9/8/2004	13.55	24.63	15.55	26.63	16.55	27.63	17.55	28.63
9/9/2004	12.95	23.43	14.95	25.43	15.95	26.43	16.95	27.43
9/10/2004	10.85	22.33	12.85	24.33	13.85	25.33	14.85	26.33
9/11/2004	13.35	22.03	15.35	24.03	16.35	25.03	17.35	26.03
9/12/2004	13.15	24.03	15.15	26.03	16.15	27.03	17.15	28.03
9/13/2004	11.15	18.63	13.15	20.63	14.15	21.63	15.15	22.63
9/14/2004	10.05	18.83	12.05	20.83	13.05	21.83	14.05	22.83
9/15/2004	5.745	21.03	7.745	23.03	8.745	24.03	9.745	25.03
9/16/2004	6.245	22.63	8.245	24.63	9.245	25.63	10.245	26.63
9/17/2004	11.35	21.13	13.35	23.13	14.35	24.13	15.35	25.13
9/18/2004	7.945	17.73	9.945	19.73	10.945	20.73	11.945	21.73
9/19/2004	3.145	8.528	5.145	10.528	6.145	11.528	7.145	12.528
9/20/2004	-0.8545	3.228	1.1455	5.228	2.1455	6.228	3.1455	7.228
9/21/2004	-2.755	7.128	-0.755	9.128	0.245	10.128	1.245	11.128
9/22/2004	-0.8545	14.93	1.1455	16.93	2.1455	17.93	3.1455	18.93
9/23/2004	4.545	21.03	6.545	23.03	7.545	24.03	8.545	25.03
9/24/2004	9.545	19.83	11.545	21.83	12.545	22.83	13.545	23.83
9/25/2004	10.05	21.93	12.05	23.93	13.05	24.93	14.05	25.93
9/26/2004	11.55	20.83	13.55	22.83	14.55	23.83	15.55	24.83
9/27/2004	9.845	20.53	11.845	22.53	12.845	23.53	13.845	24.53
9/28/2004	10.25	19.73	12.25	21.73	13.25	22.73	14.25	23.73
9/29/2004	7.945	18.83	9.945	20.83	10.945	21.83	11.945	22.83
9/30/2004	8.545	18.03	10.545	20.03	11.545	21.03	12.545	22.03
10/1/2004	7.445	15.53	9.445	17.53	10.445	18.53	11.445	19.53
10/2/2004	7.045	17.83	9.045	19.83	10.045	20.83	11.045	21.83
10/3/2004	7.745	16.63	9.745	18.63	10.745	19.63	11.745	20.63
10/4/2004	7.145	19.03	9.145	21.03	10.145	22.03	11.145	23.03
10/5/2004	8.545	18.03	10.545	20.03	11.545	21.03	12.545	22.03
10/6/2004	7.845	20.03	9.845	22.03	10.845	23.03	11.845	24.03

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/7/2004	9.145	19.73	11.145	21.73	12.145	22.73	13.145	23.73
10/8/2004	7.945	20.63	9.945	22.63	10.945	23.63	11.945	24.63
10/9/2004	7.845	17.43	9.845	19.43	10.845	20.43	11.845	21.43
10/10/2004	4.045	13.03	6.045	15.03	7.045	16.03	8.045	17.03
10/11/2004	1.345	11.03	3.345	13.03	4.345	14.03	5.345	15.03
10/12/2004	1.145	11.03	3.145	13.03	4.145	14.03	5.145	15.03
10/13/2004	3.545	16.23	5.545	18.23	6.545	19.23	7.545	20.23
10/14/2004	6.445	17.93	8.445	19.93	9.445	20.93	10.445	21.93
10/15/2004	6.145	21.73	8.145	23.73	9.145	24.73	10.145	25.73
10/16/2004	9.545	23.13	11.545	25.13	12.545	26.13	13.545	27.13
10/17/2004	3.945	15.43	5.945	17.43	6.945	18.43	7.945	19.43
10/18/2004	1.745	5.028	3.745	7.028	4.745	8.028	5.745	9.028
10/19/2004	0.4455	2.228	2.4455	4.228	3.4455	5.228	4.4455	6.228
10/20/2004	0.4455	2.928	2.4455	4.928	3.4455	5.928	4.4455	6.928
10/21/2004	-4.555	3.328	-2.555	5.328	-1.555	6.328	-0.555	7.328
10/22/2004	-4.555	8.728	-2.555	10.728	-1.555	11.728	-0.555	12.728
10/23/2004	-1.255	13.03	0.745	15.03	1.745	16.03	2.745	17.03
10/24/2004	1.745	4.528	3.745	6.528	4.745	7.528	5.745	8.528
10/25/2004	1.145	8.128	3.145	10.128	4.145	11.128	5.145	12.128
10/26/2004	0.2455	2.428	2.2455	4.428	3.2455	5.428	4.2455	6.428
10/27/2004	-2.555	0.4279	-0.555	2.4279	0.445	3.4279	1.445	4.4279
10/28/2004	-5.455	4.628	-3.455	6.628	-2.455	7.628	-1.455	8.628
10/29/2004	-4.655	-0.6721	-2.655	1.3279	-1.655	2.3279	-0.655	3.3279
10/30/2004	-2.155	10.43	-0.155	12.43	0.845	13.43	1.845	14.43
10/31/2004	-0.4545	10.63	1.5455	12.63	2.5455	13.63	3.5455	14.63
11/1/2004	-5.155	5.928	-3.155	7.928	-2.155	8.928	-1.155	9.928
11/2/2004	-5.555	7.328	-3.555	9.328	-2.555	10.328	-1.555	11.328
11/3/2004	3.545	13.03	5.545	15.03	6.545	16.03	7.545	17.03
11/4/2004	-1.755	4.228	0.245	6.228	1.245	7.228	2.245	8.228
11/5/2004	-2.355	4.328	-0.355	6.328	0.645	7.328	1.645	8.328
11/6/2004	-2.655	8.628	-0.655	10.628	0.345	11.628	1.345	12.628
11/7/2004	0.2455	12.13	2.2455	14.13	3.2455	15.13	4.2455	16.13
11/8/2004	4.745	11.53	6.745	13.53	7.745	14.53	8.745	15.53
11/9/2004	2.845	7.428	4.845	9.428	5.845	10.428	6.845	11.428
11/10/2004	1.945	13.13	3.945	15.13	4.945	16.13	5.945	17.13
11/11/2004	0.5455	8.828	2.5455	10.828	3.5455	11.828	4.5455	12.828
11/12/2004	0.1455	3.128	2.1455	5.128	3.1455	6.128	4.1455	7.128
11/13/2004	0.04548	6.528	2.04548	8.528	3.04548	9.528	4.04548	10.528
11/14/2004	-1.055	5.628	0.945	7.628	1.945	8.628	2.945	9.628
11/15/2004	-2.455	7.928	-0.455	9.928	0.545	10.928	1.545	11.928
11/16/2004	3.33	9.44	5.33	11.44	6.33	12.44	7.33	13.44
11/17/2004	2.78	9.44	4.78	11.44	5.78	12.44	6.78	13.44
11/18/2004	1.67	8.89	3.67	10.89	4.67	11.89	5.67	12.89
11/19/2004	-1.67	5	0.33	7	1.33	8	2.33	9
11/20/2004	-9.44	3.89	-7.44	5.89	-6.44	6.89	-5.44	7.89
11/21/2004	-9.44	-2.22	-7.44	-0.22	-6.44	0.78	-5.44	1.78
11/22/2004	-5	8.33	-3	10.33	-2	11.33	-1	12.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/23/2004	-1.11	5.56	0.89	7.56	1.89	8.56	2.89	9.56
11/24/2004	-2.22	10	-0.22	12	0.78	13	1.78	14
11/25/2004	-1.11	5	0.89	7	1.89	8	2.89	9
11/26/2004	-4.44	3.89	-2.44	5.89	-1.44	6.89	-0.44	7.89
11/27/2004	-10.56	-1.11	-8.56	0.89	-7.56	1.89	-6.56	2.89
11/28/2004	-11.11	-2.22	-9.11	-0.22	-8.11	0.78	-7.11	1.78
11/29/2004	-9.44	4.44	-7.44	6.44	-6.44	7.44	-5.44	8.44
11/30/2004	-7.78	0.56	-5.78	2.56	-4.78	3.56	-3.78	4.56
12/1/2004	-8.89	0.56	-6.89	2.56	-5.89	3.56	-4.89	4.56
12/2/2004	-10	-2.22	-8	-0.22	-7	0.78	-6	1.78
12/3/2004	-8.33	5	-6.33	7	-5.33	8	-4.33	9
12/4/2004	-7.22	1.11	-5.22	3.11	-4.22	4.11	-3.22	5.11
12/5/2004	-8.89	-1.11	-6.89	0.89	-5.89	1.89	-4.89	2.89
12/6/2004	-7.22	-2.78	-5.22	-0.78	-4.22	0.22	-3.22	1.22
12/7/2004	-5.56	-1.67	-3.56	0.33	-2.56	1.33	-1.56	2.33
12/8/2004	-3.89	0	-1.89	2	-0.89	3	0.11	4
12/9/2004	-0.56	3.89	1.44	5.89	2.44	6.89	3.44	7.89
12/10/2004	3.33	11.67	5.33	13.67	6.33	14.67	7.33	15.67
12/11/2004	5.56	12.22	7.56	14.22	8.56	15.22	9.56	16.22
12/12/2004	2.78	10	4.78	12	5.78	13	6.78	14
12/13/2004	0	8.33	2	10.33	3	11.33	4	12.33
12/14/2004	2.22	8.33	4.22	10.33	5.22	11.33	6.22	12.33
12/15/2004	2.78	11.11	4.78	13.11	5.78	14.11	6.78	15.11
12/16/2004	3.33	9.44	5.33	11.44	6.33	12.44	7.33	13.44
12/17/2004	2.22	11.11	4.22	13.11	5.22	14.11	6.22	15.11
12/18/2004	6.11	12.78	8.11	14.78	9.11	15.78	10.11	16.78
12/19/2004	3.33	9.44	5.33	11.44	6.33	12.44	7.33	13.44
12/20/2004	0	7.22	2	9.22	3	10.22	4	11.22
12/21/2004	-3.33	4.44	-1.33	6.44	-0.33	7.44	0.67	8.44
12/22/2004	-4.44	5	-2.44	7	-1.44	8	-0.44	9
12/23/2004	-6.67	3.89	-4.67	5.89	-3.67	6.89	-2.67	7.89
12/24/2004	1.67	11.67	3.67	13.67	4.67	14.67	5.67	15.67
12/25/2004	-1.67	5.56	0.33	7.56	1.33	8.56	2.33	9.56
12/26/2004	-3.33	0.56	-1.33	2.56	-0.33	3.56	0.67	4.56
12/27/2004	-2.78	0	-0.78	2	0.22	3	1.22	4
12/28/2004	-5	-1.11	-3	0.89	-2	1.89	-1	2.89
12/29/2004	-7.78	-4.44	-5.78	-2.44	-4.78	-1.44	-3.78	-0.44
12/30/2004	-6.11	-2.78	-4.11	-0.78	-3.11	0.22	-2.11	1.22
12/31/2004	-8.89	-2.78	-6.89	-0.78	-5.89	0.22	-4.89	1.22
1/1/2005	-7.78	-5.56	-5.78	-3.56	-4.78	-2.56	-3.78	-1.56
1/2/2005	-8.33	-6.11	-6.33	-4.11	-5.33	-3.11	-4.33	-2.11
1/3/2005	-7.22	-5	-5.22	-3	-4.22	-2	-3.22	-1
1/4/2005	-8.89	-3.33	-6.89	-1.33	-5.89	-0.33	-4.89	0.67
1/5/2005	-8.33	-5	-6.33	-3	-5.33	-2	-4.33	-1
1/6/2005	-9.44	-5	-7.44	-3	-6.44	-2	-5.44	-1
1/7/2005	-7.78	-2.22	-5.78	-0.22	-4.78	0.78	-3.78	1.78
1/8/2005	-7.22	-5	-5.22	-3	-4.22	-2	-3.22	-1

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/9/2005	-5	-0.56	-3	1.44	-2	2.44	-1	3.44
1/10/2005	-3.89	-1.11	-1.89	0.89	-0.89	1.89	0.11	2.89
1/11/2005	-9.44	-3.33	-7.44	-1.33	-6.44	-0.33	-5.44	0.67
1/12/2005	-9.44	-0.56	-7.44	1.44	-6.44	2.44	-5.44	3.44
1/13/2005	-6.11	0	-4.11	2	-3.11	3	-2.11	4
1/14/2005	-3.89	2.22	-1.89	4.22	-0.89	5.22	0.11	6.22
1/15/2005	-1.11	4.44	0.89	6.44	1.89	7.44	2.89	8.44
1/16/2005	0.56	6.67	2.56	8.67	3.56	9.67	4.56	10.67
1/17/2005	2.22	11.11	4.22	13.11	5.22	14.11	6.22	15.11
1/18/2005	5.56	12.78	7.56	14.78	8.56	15.78	9.56	16.78
1/19/2005	5.56	15	7.56	17	8.56	18	9.56	19
1/20/2005	3.89	11.11	5.89	13.11	6.89	14.11	7.89	15.11
1/21/2005	3.33	12.78	5.33	14.78	6.33	15.78	7.33	16.78
1/22/2005	3.33	12.22	5.33	14.22	6.33	15.22	7.33	16.22
1/23/2005	2.22	10	4.22	12	5.22	13	6.22	14
1/24/2005	0	7.22	2	9.22	3	10.22	4	11.22
1/25/2005	0	1.67	2	3.67	3	4.67	4	5.67
1/26/2005	-4.44	0	-2.44	2	-1.44	3	-0.44	4
1/27/2005	-5.56	0	-3.56	2	-2.56	3	-1.56	4
1/28/2005	-8.33	-3.33	-6.33	-1.33	-5.33	-0.33	-4.33	0.67
1/29/2005	-8.89	-1.67	-6.89	0.33	-5.89	1.33	-4.89	2.33
1/30/2005	-7.22	5.56	-5.22	7.56	-4.22	8.56	-3.22	9.56
1/31/2005	-2.78	8.89	-0.78	10.89	0.22	11.89	1.22	12.89
2/1/2005	-2.78	5	-0.78	7	0.22	8	1.22	9
2/2/2005	-3.89	4.44	-1.89	6.44	-0.89	7.44	0.11	8.44
2/3/2005	0.56	8.89	2.56	10.89	3.56	11.89	4.56	12.89
2/4/2005	-0.56	8.33	1.44	10.33	2.44	11.33	3.44	12.33
2/5/2005	-2.22	7.22	-0.22	9.22	0.78	10.22	1.78	11.22
2/6/2005	-5	-1.11	-3	0.89	-2	1.89	-1	2.89
2/7/2005	-6.67	-0.56	-4.67	1.44	-3.67	2.44	-2.67	3.44
2/8/2005	-9.44	2.22	-7.44	4.22	-6.44	5.22	-5.44	6.22
2/9/2005	-6.67	3.33	-4.67	5.33	-3.67	6.33	-2.67	7.33
2/10/2005	-1.67	8.89	0.33	10.89	1.33	11.89	2.33	12.89
2/11/2005	-0.56	2.22	1.44	4.22	2.44	5.22	3.44	6.22
2/12/2005	-3.33	5.56	-1.33	7.56	-0.33	8.56	0.67	9.56
2/13/2005	-3.33	1.67	-1.33	3.67	-0.33	4.67	0.67	5.67
2/14/2005	-2.78	-0.56	-0.78	1.44	0.22	2.44	1.22	3.44
2/15/2005	-2.22	1.11	-0.22	3.11	0.78	4.11	1.78	5.11
2/16/2005	-1.11	3.33	0.89	5.33	1.89	6.33	2.89	7.33
2/17/2005	-3.89	5	-1.89	7	-0.89	8	0.11	9
2/18/2005	-3.33	0	-1.33	2	-0.33	3	0.67	4
2/19/2005	-5.56	0.56	-3.56	2.56	-2.56	3.56	-1.56	4.56
2/20/2005	-3.89	-0.56	-1.89	1.44	-0.89	2.44	0.11	3.44
2/21/2005	-2.78	2.22	-0.78	4.22	0.22	5.22	1.22	6.22
2/22/2005	-4.44	1.11	-2.44	3.11	-1.44	4.11	-0.44	5.11
2/23/2005	-4.44	4.44	-2.44	6.44	-1.44	7.44	-0.44	8.44
2/24/2005	-5	5	-3	7	-2	8	-1	9

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/25/2005	-4.44	2.22	-2.44	4.22	-1.44	5.22	-0.44	6.22
2/26/2005	-6.11	3.33	-4.11	5.33	-3.11	6.33	-2.11	7.33
2/27/2005	-6.11	2.22	-4.11	4.22	-3.11	5.22	-2.11	6.22
2/28/2005	-7.22	2.78	-5.22	4.78	-4.22	5.78	-3.22	6.78
3/1/2005	-6.67	2.22	-4.67	4.22	-3.67	5.22	-2.67	6.22
3/2/2005	-5	1.67	-3	3.67	-2	4.67	-1	5.67
3/3/2005	-5	4.44	-3	6.44	-2	7.44	-1	8.44
3/4/2005	-3.33	2.78	-1.33	4.78	-0.33	5.78	0.67	6.78
3/5/2005	-2.22	8.33	-0.22	10.33	0.78	11.33	1.78	12.33
3/6/2005	-2.22	11.11	-0.22	13.11	0.78	14.11	1.78	15.11
3/7/2005	3.33	13.89	5.33	15.89	6.33	16.89	7.33	17.89
3/8/2005	4.44	13.89	6.44	15.89	7.44	16.89	8.44	17.89
3/9/2005	5	15	7	17	8	18	9	19
3/10/2005	2.78	10.56	4.78	12.56	5.78	13.56	6.78	14.56
3/11/2005	3.89	15.56	5.89	17.56	6.89	18.56	7.89	19.56
3/12/2005	4.44	12.78	6.44	14.78	7.44	15.78	8.44	16.78
3/13/2005	-0.56	10	1.44	12	2.44	13	3.44	14
3/14/2005	-3.89	2.22	-1.89	4.22	-0.89	5.22	0.11	6.22
3/15/2005	-3.33	5	-1.33	7	-0.33	8	0.67	9
3/16/2005	-2.78	4.44	-0.78	6.44	0.22	7.44	1.22	8.44
3/17/2005	-4.44	2.22	-2.44	4.22	-1.44	5.22	-0.44	6.22
3/18/2005	-5	1.11	-3	3.11	-2	4.11	-1	5.11
3/19/2005	-5	0	-3	2	-2	3	-1	4
3/20/2005	-5.56	-2.78	-3.56	-0.78	-2.56	0.22	-1.56	1.22
3/21/2005	-6.11	1.11	-4.11	3.11	-3.11	4.11	-2.11	5.11
3/22/2005	-5.56	-1.11	-3.56	0.89	-2.56	1.89	-1.56	2.89
3/23/2005	-6.67	-3.33	-4.67	-1.33	-3.67	-0.33	-2.67	0.67
3/24/2005	-8.33	-1.67	-6.33	0.33	-5.33	1.33	-4.33	2.33
3/25/2005	-10	1.11	-8	3.11	-7	4.11	-6	5.11
3/26/2005	-5.56	7.22	-3.56	9.22	-2.56	10.22	-1.56	11.22
3/27/2005	-2.78	4.44	-0.78	6.44	0.22	7.44	1.22	8.44
3/28/2005	-7.22	-1.67	-5.22	0.33	-4.22	1.33	-3.22	2.33
3/29/2005	-7.22	-1.11	-5.22	0.89	-4.22	1.89	-3.22	2.89
3/30/2005	-10	3.33	-8	5.33	-7	6.33	-6	7.33
3/31/2005	-5	9.44	-3	11.44	-2	12.44	-1	13.44
4/1/2005	-1.11	7.78	0.89	9.78	1.89	10.78	2.89	11.78
4/2/2005	-1.67	6.11	0.33	8.11	1.33	9.11	2.33	10.11
4/3/2005	-6.11	-1.11	-4.11	0.89	-3.11	1.89	-2.11	2.89
4/4/2005	-7.78	1.67	-5.78	3.67	-4.78	4.67	-3.78	5.67
4/5/2005	-2.78	15	-0.78	17	0.22	18	1.22	19
4/6/2005	1.11	11.11	3.11	13.11	4.11	14.11	5.11	15.11
4/7/2005	-10	3.89	-8	5.89	-7	6.89	-6	7.89
4/8/2005	-9.44	-5	-7.44	-3	-6.44	-2	-5.44	-1
4/9/2005	-8.89	0.56	-6.89	2.56	-5.89	3.56	-4.89	4.56
4/10/2005	-5	7.78	-3	9.78	-2	10.78	-1	11.78
4/11/2005	-2.22	6.67	-0.22	8.67	0.78	9.67	1.78	10.67
4/12/2005	-2.22	5.56	-0.22	7.56	0.78	8.56	1.78	9.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/13/2005	-8.89	-1.11	-6.89	0.89	-5.89	1.89	-4.89	2.89
4/14/2005	-8.89	8.33	-6.89	10.33	-5.89	11.33	-4.89	12.33
4/15/2005	0.56	11.67	2.56	13.67	3.56	14.67	4.56	15.67
4/16/2005	1.67	11.67	3.67	13.67	4.67	14.67	5.67	15.67
4/17/2005	-1.11	6.67	0.89	8.67	1.89	9.67	2.89	10.67
4/18/2005	-6.67	3.33	-4.67	5.33	-3.67	6.33	-2.67	7.33
4/19/2005	-6.11	1.11	-4.11	3.11	-3.11	4.11	-2.11	5.11
4/20/2005	-5	2.78	-3	4.78	-2	5.78	-1	6.78
4/21/2005	-3.33	8.89	-1.33	10.89	-0.33	11.89	0.67	12.89
4/22/2005	0	10	2	12	3	13	4	14
4/23/2005	-3.33	2.78	-1.33	4.78	-0.33	5.78	0.67	6.78
4/24/2005	-3.89	1.67	-1.89	3.67	-0.89	4.67	0.11	5.67
4/25/2005	-3.89	7.78	-1.89	9.78	-0.89	10.78	0.11	11.78
4/26/2005	0.56	10	2.56	12	3.56	13	4.56	14
4/27/2005	-2.78	5	-0.78	7	0.22	8	1.22	9
4/28/2005	-2.78	2.22	-0.78	4.22	0.22	5.22	1.22	6.22
4/29/2005	-2.78	8.89	-0.78	10.89	0.22	11.89	1.22	12.89
4/30/2005	-1.11	6.67	0.89	8.67	1.89	9.67	2.89	10.67
5/1/2005	-1.11	5.56	0.89	7.56	1.89	8.56	2.89	9.56
5/2/2005	-0.56	8.33	1.44	10.33	2.44	11.33	3.44	12.33
5/3/2005	0.56	8.89	2.56	10.89	3.56	11.89	4.56	12.89
5/4/2005	1.11	9.44	3.11	11.44	4.11	12.44	5.11	13.44
5/5/2005	-1.67	3.33	0.33	5.33	1.33	6.33	2.33	7.33
5/6/2005	-3.33	2.78	-1.33	4.78	-0.33	5.78	0.67	6.78
5/7/2005	-4.44	6.67	-2.44	8.67	-1.44	9.67	-0.44	10.67
5/8/2005	0	1.11	2	3.11	3	4.11	4	5.11
5/9/2005	-5.56	0	-3.56	2	-2.56	3	-1.56	4
5/10/2005	-8.33	1.67	-6.33	3.67	-5.33	4.67	-4.33	5.67
5/11/2005	-4.44	7.22	-2.44	9.22	-1.44	10.22	-0.44	11.22
5/12/2005	0	11.67	2	13.67	3	14.67	4	15.67
5/13/2005	3.89	12.78	5.89	14.78	6.89	15.78	7.89	16.78
5/14/2005	3.33	15.56	5.33	17.56	6.33	18.56	7.33	19.56
5/15/2005	4.44	10	6.44	12	7.44	13	8.44	14
5/16/2005	-2.22	4.44	-0.22	6.44	0.78	7.44	1.78	8.44
5/17/2005	-3.33	4.44	-1.33	6.44	-0.33	7.44	0.67	8.44
5/18/2005	0	5	2	7	3	8	4	9
5/19/2005	3.89	8.33	5.89	10.33	6.89	11.33	7.89	12.33
5/20/2005	2.78	8.33	4.78	10.33	5.78	11.33	6.78	12.33
5/21/2005	3.33	17.78	5.33	19.78	6.33	20.78	7.33	21.78
5/22/2005	7.22	17.78	9.22	19.78	10.22	20.78	11.22	21.78
5/23/2005	6.67	17.22	8.67	19.22	9.67	20.22	10.67	21.22
5/24/2005	7.78	18.89	9.78	20.89	10.78	21.89	11.78	22.89
5/25/2005	9.44	18.89	11.44	20.89	12.44	21.89	13.44	22.89
5/26/2005	8.33	19.44	10.33	21.44	11.33	22.44	12.33	23.44
5/27/2005	8.89	18.89	10.89	20.89	11.89	21.89	12.89	22.89
5/28/2005	1.11	12.78	3.11	14.78	4.11	15.78	5.11	16.78
5/29/2005	-0.56	7.22	1.44	9.22	2.44	10.22	3.44	11.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/30/2005	1.67	15	3.67	17	4.67	18	5.67	19
5/31/2005	6.67	15	8.67	17	9.67	18	10.67	19
6/1/2005	5.56	13.89	7.56	15.89	8.56	16.89	9.56	17.89
6/2/2005	4.44	11.67	6.44	13.67	7.44	14.67	8.44	15.67
6/3/2005	3.33	13.89	5.33	15.89	6.33	16.89	7.33	17.89
6/4/2005	3.89	13.33	5.89	15.33	6.89	16.33	7.89	17.33
6/5/2005	-1.11	7.22	0.89	9.22	1.89	10.22	2.89	11.22
6/6/2005	-3.89	3.33	-1.89	5.33	-0.89	6.33	0.11	7.33
6/7/2005	-5	5.56	-3	7.56	-2	8.56	-1	9.56
6/8/2005	-2.22	3.89	-0.22	5.89	0.78	6.89	1.78	7.89
6/9/2005	2.78	9.44	4.78	11.44	5.78	12.44	6.78	13.44
6/10/2005	3.33	12.78	5.33	14.78	6.33	15.78	7.33	16.78
6/11/2005	3.89	12.22	5.89	14.22	6.89	15.22	7.89	16.22
6/12/2005	3.89	16.67	5.89	18.67	6.89	19.67	7.89	20.67
6/13/2005	8.33	18.89	10.33	20.89	11.33	21.89	12.33	22.89
6/14/2005	6.67	16.11	8.67	18.11	9.67	19.11	10.67	20.11
6/15/2005	4.44	15.56	6.44	17.56	7.44	18.56	8.44	19.56
6/16/2005	0	10	2	12	3	13	4	14
6/17/2005	-1.67	1.67	0.33	3.67	1.33	4.67	2.33	5.67
6/18/2005	-1.11	5	0.89	7	1.89	8	2.89	9
6/19/2005	-1.11	10	0.89	12	1.89	13	2.89	14
6/20/2005	3.33	15	5.33	17	6.33	18	7.33	19
6/21/2005	6.67	13.89	8.67	15.89	9.67	16.89	10.67	17.89
6/22/2005	5	16.11	7	18.11	8	19.11	9	20.11
6/23/2005	6.11	16.11	8.11	18.11	9.11	19.11	10.11	20.11
6/24/2005	5.56	15.56	7.56	17.56	8.56	18.56	9.56	19.56
6/25/2005	6.11	13.33	8.11	15.33	9.11	16.33	10.11	17.33
6/26/2005	5	13.33	7	15.33	8	16.33	9	17.33
6/27/2005	3.89	14.44	5.89	16.44	6.89	17.44	7.89	18.44
6/28/2005	5	15.56	7	17.56	8	18.56	9	19.56
6/29/2005	9.44	19.44	11.44	21.44	12.44	22.44	13.44	23.44
6/30/2005	12.78	21.11	14.78	23.11	15.78	24.11	16.78	25.11
7/1/2005	12.22	21.11	14.22	23.11	15.22	24.11	16.22	25.11
7/2/2005	11.11	20	13.11	22	14.11	23	15.11	24
7/3/2005	11.67	20.56	13.67	22.56	14.67	23.56	15.67	24.56
7/4/2005	11.11	20	13.11	22	14.11	23	15.11	24
7/5/2005	12.22	20	14.22	22	15.22	23	16.22	24
7/6/2005	12.22	21.11	14.22	23.11	15.22	24.11	16.22	25.11
7/7/2005	12.22	20	14.22	22	15.22	23	16.22	24
7/8/2005	10.56	19.44	12.56	21.44	13.56	22.44	14.56	23.44
7/9/2005	7.78	16.11	9.78	18.11	10.78	19.11	11.78	20.11
7/10/2005	7.78	18.33	9.78	20.33	10.78	21.33	11.78	22.33
7/11/2005	12.22	22.78	14.22	24.78	15.22	25.78	16.22	26.78
7/12/2005	15.56	23.33	17.56	25.33	18.56	26.33	19.56	27.33
7/13/2005	15.56	23.89	17.56	25.89	18.56	26.89	19.56	27.89
7/14/2005	14.44	23.89	16.44	25.89	17.44	26.89	18.44	27.89
7/15/2005	16.11	25	18.11	27	19.11	28	20.11	29

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MDL							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/16/2005	17.22	25	19.22	27	20.22	28	21.22	29
7/17/2005	17.78	26.11	19.78	28.11	20.78	29.11	21.78	30.11
7/18/2005	16.67	24.44	18.67	26.44	19.67	27.44	20.67	28.44
7/19/2005	15.56	23.89	17.56	25.89	18.56	26.89	19.56	27.89
7/20/2005	14.44	25	16.44	27	17.44	28	18.44	29
7/21/2005	14.44	22.22	16.44	24.22	17.44	25.22	18.44	26.22
7/22/2005	13.33	20.56	15.33	22.56	16.33	23.56	17.33	24.56
7/23/2005	12.22	22.78	14.22	24.78	15.22	25.78	16.22	26.78
7/24/2005	14.44	22.22	16.44	24.22	17.44	25.22	18.44	26.22
7/25/2005	12.78	21.11	14.78	23.11	15.78	24.11	16.78	25.11
7/26/2005	15	23.89	17	25.89	18	26.89	19	27.89
7/27/2005	13.89	23.89	15.89	25.89	16.89	26.89	17.89	27.89
7/28/2005	14.44	22.22	16.44	24.22	17.44	25.22	18.44	26.22
7/29/2005	12.78	21.11	14.78	23.11	15.78	24.11	16.78	25.11
7/30/2005	11.67	21.11	13.67	23.11	14.67	24.11	15.67	25.11
7/31/2005	12.78	20.56	14.78	22.56	15.78	23.56	16.78	24.56
8/1/2005	11.11	18.89	13.11	20.89	14.11	21.89	15.11	22.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/1/1999	19.44	32.78	21.44	34.78	22.44	35.78	23.44	36.78
10/2/1999	17.78	28.33	19.78	30.33	20.78	31.33	21.78	32.33
10/3/1999	17.22	27.22	19.22	29.22	20.22	30.22	21.22	31.22
10/4/1999	10	26.11	12	28.11	13	29.11	14	30.11
10/5/1999	8.889	20	10.889	22	11.889	23	12.889	24
10/6/1999	9.444	21.11	11.444	23.11	12.444	24.11	13.444	25.11
10/7/1999	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
10/8/1999	16.11	28.33	18.11	30.33	19.11	31.33	20.11	32.33
10/9/1999	18.33	31.11	20.33	33.11	21.33	34.11	22.33	35.11
10/10/1999	18.89	32.22	20.89	34.22	21.89	35.22	22.89	36.22
10/11/1999	19.44	30	21.44	32	22.44	33	23.44	34
10/12/1999	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
10/13/1999	20	34.44	22	36.44	23	37.44	24	38.44
10/14/1999	18.33	31.11	20.33	33.11	21.33	34.11	22.33	35.11
10/15/1999	17.22	26.67	19.22	28.67	20.22	29.67	21.22	30.67
10/16/1999	17.78	28.89	19.78	30.89	20.78	31.89	21.78	32.89
10/17/1999	15	27.22	17	29.22	18	30.22	19	31.22
10/18/1999	14.44	25	16.44	27	17.44	28	18.44	29
10/19/1999	15	28.33	17	30.33	18	31.33	19	32.33
10/20/1999	17.22	30	19.22	32	20.22	33	21.22	34
10/21/1999	17.78	29.44	19.78	31.44	20.78	32.44	21.78	33.44
10/22/1999	17.78	29.44	19.78	31.44	20.78	32.44	21.78	33.44
10/23/1999	15.56	26.67	17.56	28.67	18.56	29.67	19.56	30.67
10/24/1999	15	26.11	17	28.11	18	29.11	19	30.11
10/25/1999	15	27.22	17	29.22	18	30.22	19	31.22
10/26/1999	13.89	25	15.89	27	16.89	28	17.89	29
10/27/1999	12.78	22.22	14.78	24.22	15.78	25.22	16.78	26.22
10/28/1999	8.333	15	10.333	17	11.333	18	12.333	19
10/29/1999	9.444	20.56	11.444	22.56	12.444	23.56	13.444	24.56
10/30/1999	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
10/31/1999	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
11/1/1999	15	28.33	17	30.33	18	31.33	19	32.33
11/2/1999	15.56	27.22	17.56	29.22	18.56	30.22	19.56	31.22
11/3/1999	13.33	26.11	15.33	28.11	16.33	29.11	17.33	30.11
11/4/1999	12.78	24.44	14.78	26.44	15.78	27.44	16.78	28.44
11/5/1999	13.33	25	15.33	27	16.33	28	17.33	29
11/6/1999	11.67	24.44	13.67	26.44	14.67	27.44	15.67	28.44
11/7/1999	6.667	17.22	8.667	19.22	9.667	20.22	10.667	21.22
11/8/1999	5.556	15	7.556	17	8.556	18	9.556	19
11/9/1999	6.111	17.78	8.111	19.78	9.111	20.78	10.111	21.78
11/10/1999	7.222	16.67	9.222	18.67	10.222	19.67	11.222	20.67
11/11/1999	8.889	23.33	10.889	25.33	11.889	26.33	12.889	27.33
11/12/1999	13.89	25.56	15.89	27.56	16.89	28.56	17.89	29.56
11/13/1999	16.11	28.33	18.11	30.33	19.11	31.33	20.11	32.33
11/14/1999	9.444	24.44	11.444	26.44	12.444	27.44	13.444	28.44
11/15/1999	8.889	18.89	10.889	20.89	11.889	21.89	12.889	22.89
11/16/1999	3.889	14.44	5.889	16.44	6.889	17.44	7.889	18.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/17/1999	3.333	12.78	5.333	14.78	6.333	15.78	7.333	16.78
11/18/1999	4.444	14.44	6.444	16.44	7.444	17.44	8.444	18.44
11/19/1999	6.111	10.56	8.111	12.56	9.111	13.56	10.111	14.56
11/20/1999	6.111	11.11	8.111	13.11	9.111	14.11	10.111	15.11
11/21/1999	2.778	9.444	4.778	11.444	5.778	12.444	6.778	13.444
11/22/1999	2.778	11.67	4.778	13.67	5.778	14.67	6.778	15.67
11/23/1999	2.222	13.33	4.222	15.33	5.222	16.33	6.222	17.33
11/24/1999	5	13.33	7	15.33	8	16.33	9	17.33
11/25/1999	6.111	16.67	8.111	18.67	9.111	19.67	10.111	20.67
11/26/1999	7.222	17.22	9.222	19.22	10.222	20.22	11.222	21.22
11/27/1999	6.667	17.22	8.667	19.22	9.667	20.22	10.667	21.22
11/28/1999	8.333	16.11	10.333	18.11	11.333	19.11	12.333	20.11
11/29/1999	10	15.56	12	17.56	13	18.56	14	19.56
11/30/1999	3.333	11.11	5.333	13.11	6.333	14.11	7.333	15.11
12/1/1999	2.778	10.56	4.778	12.56	5.778	13.56	6.778	14.56
12/2/1999	3.333	8.333	5.333	10.333	6.333	11.333	7.333	12.333
12/3/1999	2.778	11.11	4.778	13.11	5.778	14.11	6.778	15.11
12/4/1999	3.889	15	5.889	17	6.889	18	7.889	19
12/5/1999	6.111	16.67	8.111	18.67	9.111	19.67	10.111	20.67
12/6/1999	5	13.33	7	15.33	8	16.33	9	17.33
12/7/1999	2.222	8.333	4.222	10.333	5.222	11.333	6.222	12.333
12/8/1999	1.667	11.67	3.667	13.67	4.667	14.67	5.667	15.67
12/9/1999	1.111	7.222	3.111	9.222	4.111	10.222	5.111	11.222
12/10/1999	0.5556	12.78	2.5556	14.78	3.5556	15.78	4.5556	16.78
12/11/1999	1.111	11.67	3.111	13.67	4.111	14.67	5.111	15.67
12/12/1999	5.556	17.22	7.556	19.22	8.556	20.22	9.556	21.22
12/13/1999	3.333	9.444	5.333	11.444	6.333	12.444	7.333	13.444
12/14/1999	2.222	11.11	4.222	13.11	5.222	14.11	6.222	15.11
12/15/1999	6.111	13.33	8.111	15.33	9.111	16.33	10.111	17.33
12/16/1999	5	18.33	7	20.33	8	21.33	9	22.33
12/17/1999	7.222	18.89	9.222	20.89	10.222	21.89	11.222	22.89
12/18/1999	8.889	13.89	10.889	15.89	11.889	16.89	12.889	17.89
12/19/1999	9.444	17.22	11.444	19.22	12.444	20.22	13.444	21.22
12/20/1999	11.67	24.44	13.67	26.44	14.67	27.44	15.67	28.44
12/21/1999	10	22.22	12	24.22	13	25.22	14	26.22
12/22/1999	7.778	18.89	9.778	20.89	10.778	21.89	11.778	22.89
12/23/1999	7.222	18.33	9.222	20.33	10.222	21.33	11.222	22.33
12/24/1999	9.444	20.56	11.444	22.56	12.444	23.56	13.444	24.56
12/25/1999	8.333	18.33	10.333	20.33	11.333	21.33	12.333	22.33
12/26/1999	8.889	18.33	10.889	20.33	11.889	21.33	12.889	22.33
12/27/1999	8.889	19.44	10.889	21.44	11.889	22.44	12.889	23.44
12/28/1999	9.444	19.44	11.444	21.44	12.444	22.44	13.444	23.44
12/29/1999	7.778	16.67	9.778	18.67	10.778	19.67	11.778	20.67
12/30/1999	7.222	17.78	9.222	19.78	10.222	20.78	11.222	21.78
12/31/1999	3.333	13.89	5.333	15.89	6.333	16.89	7.333	17.89
1/1/2000	0.5556	6.111	2.5556	8.111	3.5556	9.111	4.5556	10.111
1/2/2000	0.5556	8.889	2.5556	10.889	3.5556	11.889	4.5556	12.889

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/3/2000	2.778	11.67	4.778	13.67	5.778	14.67	6.778	15.67
1/4/2000	5	13.33	7	15.33	8	16.33	9	17.33
1/5/2000	3.333	15	5.333	17	6.333	18	7.333	19
1/6/2000	2.778	12.78	4.778	14.78	5.778	15.78	6.778	16.78
1/7/2000	5	13.89	7	15.89	8	16.89	9	17.89
1/8/2000	4.444	15.56	6.444	17.56	7.444	18.56	8.444	19.56
1/9/2000	5	11.11	7	13.11	8	14.11	9	15.11
1/10/2000	5	13.33	7	15.33	8	16.33	9	17.33
1/11/2000	4.444	6.667	6.444	8.667	7.444	9.667	8.444	10.667
1/12/2000	2.222	6.667	4.222	8.667	5.222	9.667	6.222	10.667
1/13/2000	6.667	13.33	8.667	15.33	9.667	16.33	10.667	17.33
1/14/2000	9.444	13.89	11.444	15.89	12.444	16.89	13.444	17.89
1/15/2000	6.111	12.78	8.111	14.78	9.111	15.78	10.111	16.78
1/16/2000	2.222	12.22	4.222	14.22	5.222	15.22	6.222	16.22
1/17/2000	6.667	10	8.667	12	9.667	13	10.667	14
1/18/2000	8.333	11.67	10.333	13.67	11.333	14.67	12.333	15.67
1/19/2000	10	13.33	12	15.33	13	16.33	14	17.33
1/20/2000	4.444	9.444	6.444	11.444	7.444	12.444	8.444	13.444
1/21/2000	4.444	15	6.444	17	7.444	18	8.444	19
1/22/2000	4.444	13.33	6.444	15.33	7.444	16.33	8.444	17.33
1/23/2000	5.556	8.889	7.556	10.889	8.556	11.889	9.556	12.889
1/24/2000	5.556	9.444	7.556	11.444	8.556	12.444	9.556	13.444
1/25/2000	5.556	8.889	7.556	10.889	8.556	11.889	9.556	12.889
1/26/2000	3.889	12.22	5.889	14.22	6.889	15.22	7.889	16.22
1/27/2000	3.889	11.67	5.889	13.67	6.889	14.67	7.889	15.67
1/28/2000	1.667	14.44	3.667	16.44	4.667	17.44	5.667	18.44
1/29/2000	6.111	16.67	8.111	18.67	9.111	19.67	10.111	20.67
1/30/2000	3.889	8.333	5.889	10.333	6.889	11.333	7.889	12.333
1/31/2000	1.667	8.333	3.667	10.333	4.667	11.333	5.667	12.333
2/1/2000	6.667	15.56	8.667	17.56	9.667	18.56	10.667	19.56
2/2/2000	7.778	23.33	9.778	25.33	10.778	26.33	11.778	27.33
2/3/2000	6.111	15	8.111	17	9.111	18	10.111	19
2/4/2000	6.111	10.56	8.111	12.56	9.111	13.56	10.111	14.56
2/5/2000	6.667	12.78	8.667	14.78	9.667	15.78	10.667	16.78
2/6/2000	7.778	20	9.778	22	10.778	23	11.778	24
2/7/2000	10.56	21.11	12.56	23.11	13.56	24.11	14.56	25.11
2/8/2000	10	20	12	22	13	23	14	24
2/9/2000	7.222	12.78	9.222	14.78	10.222	15.78	11.222	16.78
2/10/2000	2.778	10	4.778	12	5.778	13	6.778	14
2/11/2000	1.667	6.111	3.667	8.111	4.667	9.111	5.667	10.111
2/12/2000	0	5	2	7	3	8	4	9
2/13/2000	3.333	9.444	5.333	11.444	6.333	12.444	7.333	13.444
2/14/2000	3.889	9.444	5.889	11.444	6.889	12.444	7.889	13.444
2/15/2000	3.889	13.89	5.889	15.89	6.889	16.89	7.889	17.89
2/16/2000	2.778	7.222	4.778	9.222	5.778	10.222	6.778	11.222
2/17/2000	2.222	8.333	4.222	10.333	5.222	11.333	6.222	12.333
2/18/2000	2.778	17.22	4.778	19.22	5.778	20.22	6.778	21.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/19/2000	7.222	16.67	9.222	18.67	10.222	19.67	11.222	20.67
2/20/2000	3.333	12.78	5.333	14.78	6.333	15.78	7.333	16.78
2/21/2000	2.778	13.89	4.778	15.89	5.778	16.89	6.778	17.89
2/22/2000	2.222	7.222	4.222	9.222	5.222	10.222	6.222	11.222
2/23/2000	0	6.667	2	8.667	3	9.667	4	10.667
2/24/2000	-1.667	5.556	0.333	7.556	1.333	8.556	2.333	9.556
2/25/2000	1.111	11.67	3.111	13.67	4.111	14.67	5.111	15.67
2/26/2000	6.111	14.44	8.111	16.44	9.111	17.44	10.111	18.44
2/27/2000	3.333	7.778	5.333	9.778	6.333	10.778	7.333	11.778
2/28/2000	2.778	9.444	4.778	11.444	5.778	12.444	6.778	13.444
2/29/2000	2.778	7.222	4.778	9.222	5.778	10.222	6.778	11.222
3/1/2000	2.222	13.33	4.222	15.33	5.222	16.33	6.222	17.33
3/2/2000	3.889	6.111	5.889	8.111	6.889	9.111	7.889	10.111
3/3/2000	3.889	15	5.889	17	6.889	18	7.889	19
3/4/2000	5	15	7	17	8	18	9	19
3/5/2000	2.222	7.222	4.222	9.222	5.222	10.222	6.222	11.222
3/6/2000	0.5556	5.556	2.5556	7.556	3.5556	8.556	4.5556	9.556
3/7/2000	0.5556	7.778	2.5556	9.778	3.5556	10.778	4.5556	11.778
3/8/2000	1.667	8.333	3.667	10.333	4.667	11.333	5.667	12.333
3/9/2000	2.778	8.889	4.778	10.889	5.778	11.889	6.778	12.889
3/10/2000	2.778	16.11	4.778	18.11	5.778	19.11	6.778	20.11
3/11/2000	7.222	15	9.222	17	10.222	18	11.222	19
3/12/2000	7.222	17.22	9.222	19.22	10.222	20.22	11.222	21.22
3/13/2000	8.333	18.89	10.333	20.89	11.333	21.89	12.333	22.89
3/14/2000	11.11	20	13.11	22	14.11	23	15.11	24
3/15/2000	9.444	20	11.444	22	12.444	23	13.444	24
3/16/2000	8.889	17.22	10.889	19.22	11.889	20.22	12.889	21.22
3/17/2000	7.778	18.33	9.778	20.33	10.778	21.33	11.778	22.33
3/18/2000	9.444	20.56	11.444	22.56	12.444	23.56	13.444	24.56
3/19/2000	5.556	16.11	7.556	18.11	8.556	19.11	9.556	20.11
3/20/2000	5	16.67	7	18.67	8	19.67	9	20.67
3/21/2000	6.667	18.89	8.667	20.89	9.667	21.89	10.667	22.89
3/22/2000	7.222	19.44	9.222	21.44	10.222	22.44	11.222	23.44
3/23/2000	8.889	18.89	10.889	20.89	11.889	21.89	12.889	22.89
3/24/2000	8.889	18.33	10.889	20.33	11.889	21.33	12.889	22.33
3/25/2000	7.222	18.89	9.222	20.89	10.222	21.89	11.222	22.89
3/26/2000	8.333	19.44	10.333	21.44	11.333	22.44	12.333	23.44
3/27/2000	5	10.56	7	12.56	8	13.56	9	14.56
3/28/2000	3.333	13.89	5.333	15.89	6.333	16.89	7.333	17.89
3/29/2000	5	15	7	17	8	18	9	19
3/30/2000	8.889	21.67	10.889	23.67	11.889	24.67	12.889	25.67
3/31/2000	11.11	25	13.11	27	14.11	28	15.11	29
4/1/2000	14.44	26.11	16.44	28.11	17.44	29.11	18.44	30.11
4/2/2000	15.56	26.11	17.56	28.11	18.56	29.11	19.56	30.11
4/3/2000	14.44	26.11	16.44	28.11	17.44	29.11	18.44	30.11
4/4/2000	13.33	24.44	15.33	26.44	16.33	27.44	17.33	28.44
4/5/2000	12.22	23.33	14.22	25.33	15.22	26.33	16.22	27.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/6/2000	11.11	22.78	13.11	24.78	14.11	25.78	15.11	26.78
4/7/2000	12.78	23.33	14.78	25.33	15.78	26.33	16.78	27.33
4/8/2000	7.778	20.56	9.778	22.56	10.778	23.56	11.778	24.56
4/9/2000	5	17.78	7	19.78	8	20.78	9	21.78
4/10/2000	9.444	22.22	11.444	24.22	12.444	25.22	13.444	26.22
4/11/2000	11.67	25	13.67	27	14.67	28	15.67	29
4/12/2000	10	24.44	12	26.44	13	27.44	14	28.44
4/13/2000	6.667	13.33	8.667	15.33	9.667	16.33	10.667	17.33
4/14/2000	5	13.89	7	15.89	8	16.89	9	17.89
4/15/2000	5	12.78	7	14.78	8	15.78	9	16.78
4/16/2000	7.222	14.44	9.222	16.44	10.222	17.44	11.222	18.44
4/17/2000	3.333	10	5.333	12	6.333	13	7.333	14
4/18/2000	2.778	13.33	4.778	15.33	5.778	16.33	6.778	17.33
4/19/2000	6.111	16.11	8.111	18.11	9.111	19.11	10.111	20.11
4/20/2000	8.333	20.56	10.333	22.56	11.333	23.56	12.333	24.56
4/21/2000	7.778	20.56	9.778	22.56	10.778	23.56	11.778	24.56
4/22/2000	4.444	12.22	6.444	14.22	7.444	15.22	8.444	16.22
4/23/2000	2.222	15.56	4.222	17.56	5.222	18.56	6.222	19.56
4/24/2000	9.444	21.11	11.444	23.11	12.444	24.11	13.444	25.11
4/25/2000	10	22.22	12	24.22	13	25.22	14	26.22
4/26/2000	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67
4/27/2000	5.556	20	7.556	22	8.556	23	9.556	24
4/28/2000	2.778	15	4.778	17	5.778	18	6.778	19
4/29/2000	7.222	20	9.222	22	10.222	23	11.222	24
4/30/2000	10.56	26.67	12.56	28.67	13.56	29.67	14.56	30.67
5/1/2000	12.78	25.56	14.78	27.56	15.78	28.56	16.78	29.56
5/2/2000	12.22	23.89	14.22	25.89	15.22	26.89	16.22	27.89
5/3/2000	12.78	24.44	14.78	26.44	15.78	27.44	16.78	28.44
5/4/2000	10.56	23.33	12.56	25.33	13.56	26.33	14.56	27.33
5/5/2000	7.222	18.33	9.222	20.33	10.222	21.33	11.222	22.33
5/6/2000	6.111	18.33	8.111	20.33	9.111	21.33	10.111	22.33
5/7/2000	7.222	11.67	9.222	13.67	10.222	14.67	11.222	15.67
5/8/2000	10	16.11	12	18.11	13	19.11	14	20.11
5/9/2000	6.667	17.78	8.667	19.78	9.667	20.78	10.667	21.78
5/10/2000	3.333	10	5.333	12	6.333	13	7.333	14
5/11/2000	3.333	15	5.333	17	6.333	18	7.333	19
5/12/2000	6.667	19.44	8.667	21.44	9.667	22.44	10.667	23.44
5/13/2000	8.333	21.11	10.333	23.11	11.333	24.11	12.333	25.11
5/14/2000	7.222	18.33	9.222	20.33	10.222	21.33	11.222	22.33
5/15/2000	5.556	10	7.556	12	8.556	13	9.556	14
5/16/2000	5	8.889	7	10.889	8	11.889	9	12.889
5/17/2000	6.667	18.89	8.667	20.89	9.667	21.89	10.667	22.89
5/18/2000	11.67	23.33	13.67	25.33	14.67	26.33	15.67	27.33
5/19/2000	16.11	28.89	18.11	30.89	19.11	31.89	20.11	32.89
5/20/2000	18.89	31.67	20.89	33.67	21.89	34.67	22.89	35.67
5/21/2000	21.11	33.89	23.11	35.89	24.11	36.89	25.11	37.89
5/22/2000	22.78	34.44	24.78	36.44	25.78	37.44	26.78	38.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/23/2000	21.11	32.78	23.11	34.78	24.11	35.78	25.11	36.78
5/24/2000	15	28.89	17	30.89	18	31.89	19	32.89
5/25/2000	12.22	25	14.22	27	15.22	28	16.22	29
5/26/2000	15	25.56	17	27.56	18	28.56	19	29.56
5/27/2000	16.11	27.78	18.11	29.78	19.11	30.78	20.11	31.78
5/28/2000	15.56	28.89	17.56	30.89	18.56	31.89	19.56	32.89
5/29/2000	13.89	26.11	15.89	28.11	16.89	29.11	17.89	30.11
5/30/2000	12.78	23.33	14.78	25.33	15.78	26.33	16.78	27.33
5/31/2000	12.78	25	14.78	27	15.78	28	16.78	29
6/1/2000	14.44	27.22	16.44	29.22	17.44	30.22	18.44	31.22
6/2/2000	17.22	28.33	19.22	30.33	20.22	31.33	21.22	32.33
6/3/2000	18.33	30.56	20.33	32.56	21.33	33.56	22.33	34.56
6/4/2000	13.33	30	15.33	32	16.33	33	17.33	34
6/5/2000	7.778	23.89	9.778	25.89	10.778	26.89	11.778	27.89
6/6/2000	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67
6/7/2000	10.56	21.67	12.56	23.67	13.56	24.67	14.56	25.67
6/8/2000	8.333	16.11	10.333	18.11	11.333	19.11	12.333	20.11
6/9/2000	8.333	20	10.333	22	11.333	23	12.333	24
6/10/2000	6.667	21.67	8.667	23.67	9.667	24.67	10.667	25.67
6/11/2000	12.78	23.33	14.78	25.33	15.78	26.33	16.78	27.33
6/12/2000	16.67	27.22	18.67	29.22	19.67	30.22	20.67	31.22
6/13/2000	19.44	35	21.44	37	22.44	38	23.44	39
6/14/2000	27.22	38.33	29.22	40.33	30.22	41.33	31.22	42.33
6/15/2000	25	37.22	27	39.22	28	40.22	29	41.22
6/16/2000	23.33	33.33	25.33	35.33	26.33	36.33	27.33	37.33
6/17/2000	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
6/18/2000	13.89	25.56	15.89	27.56	16.89	28.56	17.89	29.56
6/19/2000	18.89	29.44	20.89	31.44	21.89	32.44	22.89	33.44
6/20/2000	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
6/21/2000	22.22	35	24.22	37	25.22	38	26.22	39
6/22/2000	21.67	32.78	23.67	34.78	24.67	35.78	25.67	36.78
6/23/2000	20	30.56	22	32.56	23	33.56	24	34.56
6/24/2000	20	31.11	22	33.11	23	34.11	24	35.11
6/25/2000	19.44	30.56	21.44	32.56	22.44	33.56	23.44	34.56
6/26/2000	21.11	32.78	23.11	34.78	24.11	35.78	25.11	36.78
6/27/2000	22.22	33.89	24.22	35.89	25.22	36.89	26.22	37.89
6/28/2000	24.44	34.44	26.44	36.44	27.44	37.44	28.44	38.44
6/29/2000	22.22	32.78	24.22	34.78	25.22	35.78	26.22	36.78
6/30/2000	17.22	28.89	19.22	30.89	20.22	31.89	21.22	32.89
7/1/2000	15.56	27.22	17.56	29.22	18.56	30.22	19.56	31.22
7/2/2000	13.89	26.11	15.89	28.11	16.89	29.11	17.89	30.11
7/3/2000	12.78	23.33	14.78	25.33	15.78	26.33	16.78	27.33
7/4/2000	13.89	25.56	15.89	27.56	16.89	28.56	17.89	29.56
7/5/2000	11.67	22.78	13.67	24.78	14.67	25.78	15.67	26.78
7/6/2000	12.22	24.44	14.22	26.44	15.22	27.44	16.22	28.44
7/7/2000	12.78	23.33	14.78	25.33	15.78	26.33	16.78	27.33
7/8/2000	13.89	25.56	15.89	27.56	16.89	28.56	17.89	29.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/9/2000	16.11	30	18.11	32	19.11	33	20.11	34
7/10/2000	17.78	28.33	19.78	30.33	20.78	31.33	21.78	32.33
7/11/2000	19.44	30.56	21.44	32.56	22.44	33.56	23.44	34.56
7/12/2000	17.22	29.44	19.22	31.44	20.22	32.44	21.22	33.44
7/13/2000	16.67	27.78	18.67	29.78	19.67	30.78	20.67	31.78
7/14/2000	18.89	31.11	20.89	33.11	21.89	34.11	22.89	35.11
7/15/2000	19.44	31.11	21.44	33.11	22.44	34.11	23.44	35.11
7/16/2000	17.22	27.22	19.22	29.22	20.22	30.22	21.22	31.22
7/17/2000	15.56	26.11	17.56	28.11	18.56	29.11	19.56	30.11
7/18/2000	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67
7/19/2000	19.44	32.22	21.44	34.22	22.44	35.22	23.44	36.22
7/20/2000	21.11	32.78	23.11	34.78	24.11	35.78	25.11	36.78
7/21/2000	20	32.22	22	34.22	23	35.22	24	36.22
7/22/2000	19.44	31.11	21.44	33.11	22.44	34.11	23.44	35.11
7/23/2000	21.11	33.33	23.11	35.33	24.11	36.33	25.11	37.33
7/24/2000	22.22	33.89	24.22	35.89	25.22	36.89	26.22	37.89
7/25/2000	20	33.89	22	35.89	23	36.89	24	37.89
7/26/2000	18.33	29.44	20.33	31.44	21.33	32.44	22.33	33.44
7/27/2000	17.78	31.11	19.78	33.11	20.78	34.11	21.78	35.11
7/28/2000	21.11	33.33	23.11	35.33	24.11	36.33	25.11	37.33
7/29/2000	22.22	33.89	24.22	35.89	25.22	36.89	26.22	37.89
7/30/2000	24.44	36.67	26.44	38.67	27.44	39.67	28.44	40.67
7/31/2000	25	37.78	27	39.78	28	40.78	29	41.78
8/1/2000	25	38.33	27	40.33	28	41.33	29	42.33
8/2/2000	25.56	36.67	27.56	38.67	28.56	39.67	29.56	40.67
8/3/2000	23.89	35	25.89	37	26.89	38	27.89	39
8/4/2000	22.78	33.33	24.78	35.33	25.78	36.33	26.78	37.33
8/5/2000	22.78	34.44	24.78	36.44	25.78	37.44	26.78	38.44
8/6/2000	21.67	33.89	23.67	35.89	24.67	36.89	25.67	37.89
8/7/2000	20.56	30.56	22.56	32.56	23.56	33.56	24.56	34.56
8/8/2000	18.89	30.56	20.89	32.56	21.89	33.56	22.89	34.56
8/9/2000	16.67	30	18.67	32	19.67	33	20.67	34
8/10/2000	16.11	28.89	18.11	30.89	19.11	31.89	20.11	32.89
8/11/2000	20	31.67	22	33.67	23	34.67	24	35.67
8/12/2000	20.56	33.89	22.56	35.89	23.56	36.89	24.56	37.89
8/13/2000	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
8/14/2000	21.67	33.33	23.67	35.33	24.67	36.33	25.67	37.33
8/15/2000	21.67	34.44	23.67	36.44	24.67	37.44	25.67	38.44
8/16/2000	23.33	35	25.33	37	26.33	38	27.33	39
8/17/2000	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
8/18/2000	17.78	31.11	19.78	33.11	20.78	34.11	21.78	35.11
8/19/2000	16.67	27.22	18.67	29.22	19.67	30.22	20.67	31.22
8/20/2000	16.11	28.89	18.11	30.89	19.11	31.89	20.11	32.89
8/21/2000	18.33	30	20.33	32	21.33	33	22.33	34
8/22/2000	19.44	31.67	21.44	33.67	22.44	34.67	23.44	35.67
8/23/2000	19.44	31.11	21.44	33.11	22.44	34.11	23.44	35.11
8/24/2000	19.44	32.78	21.44	34.78	22.44	35.78	23.44	36.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/25/2000	21.67	33.33	23.67	35.33	24.67	36.33	25.67	37.33
8/26/2000	20.56	32.78	22.56	34.78	23.56	35.78	24.56	36.78
8/27/2000	21.67	32.78	23.67	34.78	24.67	35.78	25.67	36.78
8/28/2000	20.56	31.11	22.56	33.11	23.56	34.11	24.56	35.11
8/29/2000	17.78	23.89	19.78	25.89	20.78	26.89	21.78	27.89
8/30/2000	14.44	19.44	16.44	21.44	17.44	22.44	18.44	23.44
8/31/2000	10	22.78	12	24.78	13	25.78	14	26.78
9/1/2000	8.889	17.22	10.889	19.22	11.889	20.22	12.889	21.22
9/2/2000	8.889	17.22	10.889	19.22	11.889	20.22	12.889	21.22
9/3/2000	8.889	18.89	10.889	20.89	11.889	21.89	12.889	22.89
9/4/2000	8.333	20	10.333	22	11.333	23	12.333	24
9/5/2000	11.67	23.33	13.67	25.33	14.67	26.33	15.67	27.33
9/6/2000	15.56	26.11	17.56	28.11	18.56	29.11	19.56	30.11
9/7/2000	17.22	31.11	19.22	33.11	20.22	34.11	21.22	35.11
9/8/2000	17.22	29.44	19.22	31.44	20.22	32.44	21.22	33.44
9/9/2000	17.22	28.89	19.22	30.89	20.22	31.89	21.22	32.89
9/10/2000	17.78	30	19.78	32	20.78	33	21.78	34
9/11/2000	19.44	31.67	21.44	33.67	22.44	34.67	23.44	35.67
9/12/2000	20.56	32.78	22.56	34.78	23.56	35.78	24.56	36.78
9/13/2000	20	37.22	22	39.22	23	40.22	24	41.22
9/14/2000	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67
9/15/2000	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67
9/16/2000	16.11	28.33	18.11	30.33	19.11	31.33	20.11	32.33
9/17/2000	20	33.89	22	35.89	23	36.89	24	37.89
9/18/2000	23.89	35.56	25.89	37.56	26.89	38.56	27.89	39.56
9/19/2000	24.44	36.67	26.44	38.67	27.44	39.67	28.44	40.67
9/20/2000	21.11	36.11	23.11	38.11	24.11	39.11	25.11	40.11
9/21/2000	11.11	23.89	13.11	25.89	14.11	26.89	15.11	27.89
9/22/2000	11.11	20	13.11	22	14.11	23	15.11	24
9/23/2000	11.11	25	13.11	27	14.11	28	15.11	29
9/24/2000	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
9/25/2000	16.67	29.44	18.67	31.44	19.67	32.44	20.67	33.44
9/26/2000	17.78	30	19.78	32	20.78	33	21.78	34
9/27/2000	15.56	26.67	17.56	28.67	18.56	29.67	19.56	30.67
9/28/2000	14.44	23.33	16.44	25.33	17.44	26.33	18.44	27.33
9/29/2000	13.89	27.22	15.89	29.22	16.89	30.22	17.89	31.22
9/30/2000	17.78	30.56	19.78	32.56	20.78	33.56	21.78	34.56
10/1/2000	20	32.22	22	34.22	23	35.22	24	36.22
10/2/2000	17.22	27.22	19.22	29.22	20.22	30.22	21.22	31.22
10/3/2000	16.67	18.89	18.67	20.89	19.67	21.89	20.67	22.89
10/4/2000	12.75	26.27	14.75	28.27	15.75	29.27	16.75	30.27
10/5/2000	22.22	29.44	24.22	31.44	25.22	32.44	26.22	33.44
10/6/2000	18.89	29.44	20.89	31.44	21.89	32.44	22.89	33.44
10/7/2000	16.11	24.44	18.11	26.44	19.11	27.44	20.11	28.44
10/8/2000	15	25.56	17	27.56	18	28.56	19	29.56
10/9/2000	8.333	16.67	10.333	18.67	11.333	19.67	12.333	20.67
10/10/2000	5.556	10.56	7.556	12.56	8.556	13.56	9.556	14.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/11/2000	5	8.889	7	10.889	8	11.889	9	12.889
10/12/2000	5	13.89	7	15.89	8	16.89	9	17.89
10/13/2000	7.778	17.78	9.778	19.78	10.778	20.78	11.778	21.78
10/14/2000	8.889	20	10.889	22	11.889	23	12.889	24
10/15/2000	11.11	23.89	13.11	25.89	14.11	26.89	15.11	27.89
10/16/2000	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
10/17/2000	14.44	27.22	16.44	29.22	17.44	30.22	18.44	31.22
10/18/2000	16.67	26.11	18.67	28.11	19.67	29.11	20.67	30.11
10/19/2000	14.44	23.89	16.44	25.89	17.44	26.89	18.44	27.89
10/20/2000	11.11	20	13.11	22	14.11	23	15.11	24
10/21/2000	9.444	20	11.444	22	12.444	23	13.444	24
10/22/2000	9.444	18.33	11.444	20.33	12.444	21.33	13.444	22.33
10/23/2000	11.11	21.11	13.11	23.11	14.11	24.11	15.11	25.11
10/24/2000	11.67	22.22	13.67	24.22	14.67	25.22	15.67	26.22
10/25/2000	7.222	13.33	9.222	15.33	10.222	16.33	11.222	17.33
10/26/2000	6.667	10	8.667	12	9.667	13	10.667	14
10/27/2000	6.111	16.11	8.111	18.11	9.111	19.11	10.111	20.11
10/28/2000	5.556	11.11	7.556	13.11	8.556	14.11	9.556	15.11
10/29/2000	4.444	8.333	6.444	10.333	7.444	11.333	8.444	12.333
10/30/2000	2.778	12.22	4.778	14.22	5.778	15.22	6.778	16.22
10/31/2000	5.556	16.11	7.556	18.11	8.556	19.11	9.556	20.11
11/1/2000	5.556	13.89	7.556	15.89	8.556	16.89	9.556	17.89
11/2/2000	8.333	16.67	10.333	18.67	11.333	19.67	12.333	20.67
11/3/2000	11.11	21.11	13.11	23.11	14.11	24.11	15.11	25.11
11/4/2000	8.889	17.22	10.889	19.22	11.889	20.22	12.889	21.22
11/5/2000	8.889	17.22	10.889	19.22	11.889	20.22	12.889	21.22
11/6/2000	8.333	17.22	10.333	19.22	11.333	20.22	12.333	21.22
11/7/2000	7.222	15.56	9.222	17.56	10.222	18.56	11.222	19.56
11/8/2000	4.444	12.22	6.444	14.22	7.444	15.22	8.444	16.22
11/9/2000	0	9.444	2	11.444	3	12.444	4	13.444
11/10/2000	0	3.889	2	5.889	3	6.889	4	7.889
11/11/2000	-0.555	10.56	1.445	12.56	2.445	13.56	3.445	14.56
11/12/2000	0.5556	10.56	2.5556	12.56	3.5556	13.56	4.5556	14.56
11/13/2000	0.5556	7.778	2.5556	9.778	3.5556	10.778	4.5556	11.778
11/14/2000	0	8.889	2	10.889	3	11.889	4	12.889
11/15/2000	1.111	8.889	3.111	10.889	4.111	11.889	5.111	12.889
11/16/2000	0.5556	8.889	2.5556	10.889	3.5556	11.889	4.5556	12.889
11/17/2000	3.889	12.78	5.889	14.78	6.889	15.78	7.889	16.78
11/18/2000	2.778	18.33	4.778	20.33	5.778	21.33	6.778	22.33
11/19/2000	6.111	19.44	8.111	21.44	9.111	22.44	10.111	23.44
11/20/2000	8.333	18.89	10.333	20.89	11.333	21.89	12.333	22.89
11/21/2000	7.778	9.444	9.778	11.444	10.778	12.444	11.778	13.444
11/22/2000	4.953	8.466	6.953	10.466	7.953	11.466	8.953	12.466
11/23/2000	3.333	12.22	5.333	14.22	6.333	15.22	7.333	16.22
11/24/2000	3.889	16.67	5.889	18.67	6.889	19.67	7.889	20.67
11/25/2000	3.889	20	5.889	22	6.889	23	7.889	24
11/26/2000	7.778	17.78	9.778	19.78	10.778	20.78	11.778	21.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/27/2000	8.889	21.11	10.889	23.11	11.889	24.11	12.889	25.11
11/28/2000	8.889	19.44	10.889	21.44	11.889	22.44	12.889	23.44
11/29/2000	4.444	11.11	6.444	13.11	7.444	14.11	8.444	15.11
11/30/2000	5	16.11	7	18.11	8	19.11	9	20.11
12/1/2000	6.111	16.67	8.111	18.67	9.111	19.67	10.111	20.67
12/2/2000	8.333	19.44	10.333	21.44	11.333	22.44	12.333	23.44
12/3/2000	8.889	22.78	10.889	24.78	11.889	25.78	12.889	26.78
12/4/2000	11.67	22.22	13.67	24.22	14.67	25.22	15.67	26.22
12/5/2000	11.67	26.67	13.67	28.67	14.67	29.67	15.67	30.67
12/6/2000	11.67	25.56	13.67	27.56	14.67	28.56	15.67	29.56
12/7/2000	10.56	17.78	12.56	19.78	13.56	20.78	14.56	21.78
12/8/2000	7.778	19.44	9.778	21.44	10.778	22.44	11.778	23.44
12/9/2000	7.222	7.222	9.222	9.222	10.222	10.222	11.222	11.222
12/10/2000	4.444	14.44	6.444	16.44	7.444	17.44	8.444	18.44
12/11/2000	3.333	10	5.333	12	6.333	13	7.333	14
12/12/2000	2.222	11.67	4.222	13.67	5.222	14.67	6.222	15.67
12/13/2000	2.222	9.444	4.222	11.444	5.222	12.444	6.222	13.444
12/14/2000	3.889	6.667	5.889	8.667	6.889	9.667	7.889	10.667
12/15/2000	6.111	16.67	8.111	18.67	9.111	19.67	10.111	20.67
12/16/2000	6.111	18.33	8.111	20.33	9.111	21.33	10.111	22.33
12/17/2000	3.333	18.33	5.333	20.33	6.333	21.33	7.333	22.33
12/18/2000	2.778	21.11	4.778	23.11	5.778	24.11	6.778	25.11
12/19/2000	8.889	22.22	10.889	24.22	11.889	25.22	12.889	26.22
12/20/2000	10	20	12	22	13	23	14	24
12/21/2000	6.111	16.11	8.111	18.11	9.111	19.11	10.111	20.11
12/22/2000	4.444	13.89	6.444	15.89	7.444	16.89	8.444	17.89
12/23/2000	4.444	11.67	6.444	13.67	7.444	14.67	8.444	15.67
12/24/2000	4.444	16.67	6.444	18.67	7.444	19.67	8.444	20.67
12/25/2000	3.889	13.89	5.889	15.89	6.889	16.89	7.889	17.89
12/26/2000	6.667	22.22	8.667	24.22	9.667	25.22	10.667	26.22
12/27/2000	8.889	22.78	10.889	24.78	11.889	25.78	12.889	26.78
12/28/2000	9.444	20.56	11.444	22.56	12.444	23.56	13.444	24.56
12/29/2000	9.444	22.22	11.444	24.22	12.444	25.22	13.444	26.22
12/30/2000	10	22.22	12	24.22	13	25.22	14	26.22
12/31/2000	8.333	18.89	10.333	20.89	11.333	21.89	12.333	22.89
1/1/2001	7.222	24.44	9.222	26.44	10.222	27.44	11.222	28.44
1/2/2001	11.11	26.67	13.11	28.67	14.11	29.67	15.11	30.67
1/3/2001	11.11	23.33	13.11	25.33	14.11	26.33	15.11	27.33
1/4/2001	9.444	26.11	11.444	28.11	12.444	29.11	13.444	30.11
1/5/2001	10	21.67	12	23.67	13	24.67	14	25.67
1/6/2001	8.889	21.11	10.889	23.11	11.889	24.11	12.889	25.11
1/7/2001	8.333	21.11	10.333	23.11	11.333	24.11	12.333	25.11
1/8/2001	3.333	11.67	5.333	13.67	6.333	14.67	7.333	15.67
1/9/2001	1.111	7.222	3.111	9.222	4.111	10.222	5.111	11.222
1/10/2001	2.778	8.333	4.778	10.333	5.778	11.333	6.778	12.333
1/11/2001	2.222	5	4.222	7	5.222	8	6.222	9
1/12/2001	2.222	14.44	4.222	16.44	5.222	17.44	6.222	18.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/13/2001	2.222	10.56	4.222	12.56	5.222	13.56	6.222	14.56
1/14/2001	1.111	13.33	3.111	15.33	4.111	16.33	5.111	17.33
1/15/2001	0.5556	8.889	2.5556	10.889	3.5556	11.889	4.5556	12.889
1/16/2001	0	12.78	2	14.78	3	15.78	4	16.78
1/17/2001	0	13.33	2	15.33	3	16.33	4	17.33
1/18/2001	0	13.89	2	15.89	3	16.89	4	17.89
1/19/2001	3.889	18.33	5.889	20.33	6.889	21.33	7.889	22.33
1/20/2001	4.444	15.56	6.444	17.56	7.444	18.56	8.444	19.56
1/21/2001	8.333	20	10.333	22	11.333	23	12.333	24
1/22/2001	6.111	20.56	8.111	22.56	9.111	23.56	10.111	24.56
1/23/2001	3.333	16.11	5.333	18.11	6.333	19.11	7.333	20.11
1/24/2001	0	2.778	2	4.778	3	5.778	4	6.778
1/25/2001	-0.555	5	1.445	7	2.445	8	3.445	9
1/26/2001	0	7.222	2	9.222	3	10.222	4	11.222
1/27/2001	2.222	14.44	4.222	16.44	5.222	17.44	6.222	18.44
1/28/2001	-0.555	14.44	1.445	16.44	2.445	17.44	3.445	18.44
1/29/2001	1.667	8.333	3.667	10.333	4.667	11.333	5.667	12.333
1/30/2001	1.667	10	3.667	12	4.667	13	5.667	14
1/31/2001	2.222	15	4.222	17	5.222	18	6.222	19
2/1/2001	2.222	14.44	4.222	16.44	5.222	17.44	6.222	18.44
2/2/2001	7.222	18.33	9.222	20.33	10.222	21.33	11.222	22.33
2/3/2001	10.56	22.22	12.56	24.22	13.56	25.22	14.56	26.22
2/4/2001	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
2/5/2001	8.333	22.22	10.333	24.22	11.333	25.22	12.333	26.22
2/6/2001	-1.111	8.333	0.889	10.333	1.889	11.333	2.889	12.333
2/7/2001	-1.667	12.22	0.333	14.22	1.333	15.22	2.333	16.22
2/8/2001	0.5556	12.22	2.5556	14.22	3.5556	15.22	4.5556	16.22
2/9/2001	0	5	2	7	3	8	4	9
2/10/2001	0	1.667	2	3.667	3	4.667	4	5.667
2/11/2001	-0.555	1.111	1.445	3.111	2.445	4.111	3.445	5.111
2/12/2001	-2.222	7.778	-0.222	9.778	0.778	10.778	1.778	11.778
2/13/2001	2.222	18.89	4.222	20.89	5.222	21.89	6.222	22.89
2/14/2001	2.222	13.33	4.222	15.33	5.222	16.33	6.222	17.33
2/15/2001	1.111	14.44	3.111	16.44	4.111	17.44	5.111	18.44
2/16/2001	2.222	16.67	4.222	18.67	5.222	19.67	6.222	20.67
2/17/2001	6.667	11.11	8.667	13.11	9.667	14.11	10.667	15.11
2/18/2001	5	11.11	7	13.11	8	14.11	9	15.11
2/19/2001	3.333	7.778	5.333	9.778	6.333	10.778	7.333	11.778
2/20/2001	4.444	7.778	6.444	9.778	7.444	10.778	8.444	11.778
2/21/2001	4.444	11.11	6.444	13.11	7.444	14.11	8.444	15.11
2/22/2001	0	6.111	2	8.111	3	9.111	4	10.111
2/23/2001	0	10	2	12	3	13	4	14
2/24/2001	0.5556	4.444	2.5556	6.444	3.5556	7.444	4.5556	8.444
2/25/2001	3.333	13.33	5.333	15.33	6.333	16.33	7.333	17.33
2/26/2001	6.111	15	8.111	17	9.111	18	10.111	19
2/27/2001	6.111	20	8.111	22	9.111	23	10.111	24
2/28/2001	2.778	11.67	4.778	13.67	5.778	14.67	6.778	15.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/1/2001	2.778	13.89	4.778	15.89	5.778	16.89	6.778	17.89
3/2/2001	1.667	6.111	3.667	8.111	4.667	9.111	5.667	10.111
3/3/2001	0.5556	13.33	2.5556	15.33	3.5556	16.33	4.5556	17.33
3/4/2001	4.444	8.333	6.444	10.333	7.444	11.333	8.444	12.333
3/5/2001	5	9.444	7	11.444	8	12.444	9	13.444
3/6/2001	7.222	15.56	9.222	17.56	10.222	18.56	11.222	19.56
3/7/2001	5.556	18.33	7.556	20.33	8.556	21.33	9.556	22.33
3/8/2001	5	15	7	17	8	18	9	19
3/9/2001	2.222	11.11	4.222	13.11	5.222	14.11	6.222	15.11
3/10/2001	3.333	15.56	5.333	17.56	6.333	18.56	7.333	19.56
3/11/2001	3.889	17.22	5.889	19.22	6.889	20.22	7.889	21.22
3/12/2001	6.667	18.89	8.667	20.89	9.667	21.89	10.667	22.89
3/13/2001	6.667	20.56	8.667	22.56	9.667	23.56	10.667	24.56
3/14/2001	8.333	21.67	10.333	23.67	11.333	24.67	12.333	25.67
3/15/2001	6.111	19.44	8.111	21.44	9.111	22.44	10.111	23.44
3/16/2001	6.111	18.89	8.111	20.89	9.111	21.89	10.111	22.89
3/17/2001	8.889	21.11	10.889	23.11	11.889	24.11	12.889	25.11
3/18/2001	11.11	25	13.11	27	14.11	28	15.11	29
3/19/2001	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
3/20/2001	14.44	25.56	16.44	27.56	17.44	28.56	18.44	29.56
3/21/2001	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67
3/22/2001	10	22.22	12	24.22	13	25.22	14	26.22
3/23/2001	9.444	22.78	11.444	24.78	12.444	25.78	13.444	26.78
3/24/2001	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
3/25/2001	7.778	16.11	9.778	18.11	10.778	19.11	11.778	20.11
3/26/2001	7.778	20	9.778	22	10.778	23	11.778	24
3/27/2001	10	22.78	12	24.78	13	25.78	14	26.78
3/28/2001	13.33	23.89	15.33	25.89	16.33	26.89	17.33	27.89
3/29/2001	12.22	24.44	14.22	26.44	15.22	27.44	16.22	28.44
3/30/2001	12.78	25.56	14.78	27.56	15.78	28.56	16.78	29.56
3/31/2001	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
4/1/2001	5.556	21.11	7.556	23.11	8.556	24.11	9.556	25.11
4/2/2001	1.111	13.33	3.111	15.33	4.111	16.33	5.111	17.33
4/3/2001	-0.555	13.33	1.445	15.33	2.445	16.33	3.445	17.33
4/4/2001	2.778	14.44	4.778	16.44	5.778	17.44	6.778	18.44
4/5/2001	4.444	17.78	6.444	19.78	7.444	20.78	8.444	21.78
4/6/2001	2.222	10.56	4.222	12.56	5.222	13.56	6.222	14.56
4/7/2001	0.5556	8.333	2.5556	10.333	3.5556	11.333	4.5556	12.333
4/8/2001	7.222	20	9.222	22	10.222	23	11.222	24
4/9/2001	9.444	23.33	11.444	25.33	12.444	26.33	13.444	27.33
4/10/2001	17.78	24.44	19.78	26.44	20.78	27.44	21.78	28.44
4/11/2001	7.222	17.22	9.222	19.22	10.222	20.22	11.222	21.22
4/12/2001	7.222	24.44	9.222	26.44	10.222	27.44	11.222	28.44
4/13/2001	13.89	23.33	15.89	25.33	16.89	26.33	17.89	27.33
4/14/2001	15	26.11	17	28.11	18	29.11	19	30.11
4/15/2001	16.11	27.78	18.11	29.78	19.11	30.78	20.11	31.78
4/16/2001	16.11	28.89	18.11	30.89	19.11	31.89	20.11	32.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/17/2001	15	33.33	17	35.33	18	36.33	19	37.33
4/18/2001	13.89	33.33	15.89	35.33	16.89	36.33	17.89	37.33
4/19/2001	11.11	16.11	13.11	18.11	14.11	19.11	15.11	20.11
4/20/2001	7.222	10.56	9.222	12.56	10.222	13.56	11.222	14.56
4/21/2001	6.667	18.33	8.667	20.33	9.667	21.33	10.667	22.33
4/22/2001	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
4/23/2001	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
4/24/2001	21.11	35	23.11	37	24.11	38	25.11	39
4/25/2001	23.33	37.78	25.33	39.78	26.33	40.78	27.33	41.78
4/26/2001	17.78	38.89	19.78	40.89	20.78	41.89	21.78	42.89
4/27/2001	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
4/28/2001	10.56	22.22	12.56	24.22	13.56	25.22	14.56	26.22
4/29/2001	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
4/30/2001	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
5/1/2001	15	27.22	17	29.22	18	30.22	19	31.22
5/2/2001	10	26.11	12	28.11	13	29.11	14	30.11
5/3/2001	11.11	27.22	13.11	29.22	14.11	30.22	15.11	31.22
5/4/2001	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
5/5/2001	15.56	30	17.56	32	18.56	33	19.56	34
5/6/2001	18.89	31.11	20.89	33.11	21.89	34.11	22.89	35.11
5/7/2001	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
5/8/2001	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
5/9/2001	20.56	34.44	22.56	36.44	23.56	37.44	24.56	38.44
5/10/2001	20.56	34.44	22.56	36.44	23.56	37.44	24.56	38.44
5/11/2001	21.11	34.44	23.11	36.44	24.11	37.44	25.11	38.44
5/12/2001	15	30.56	17	32.56	18	33.56	19	34.56
5/13/2001	14.44	26.11	16.44	28.11	17.44	29.11	18.44	30.11
5/14/2001	14.44	27.78	16.44	29.78	17.44	30.78	18.44	31.78
5/15/2001	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
5/16/2001	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
5/17/2001	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
5/18/2001	18.33	30	20.33	32	21.33	33	22.33	34
5/19/2001	21.67	33.33	23.67	35.33	24.67	36.33	25.67	37.33
5/20/2001	22.78	35	24.78	37	25.78	38	26.78	39
5/21/2001	23.33	36.11	25.33	38.11	26.33	39.11	27.33	40.11
5/22/2001	22.22	34.44	24.22	36.44	25.22	37.44	26.22	38.44
5/23/2001	21.67	34.44	23.67	36.44	24.67	37.44	25.67	38.44
5/24/2001	20	33.33	22	35.33	23	36.33	24	37.33
5/25/2001	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
5/26/2001	15.56	30.56	17.56	32.56	18.56	33.56	19.56	34.56
5/27/2001	10.56	27.78	12.56	29.78	13.56	30.78	14.56	31.78
5/28/2001	9.444	25	11.444	27	12.444	28	13.444	29
5/29/2001	15	31.11	17	33.11	18	34.11	19	35.11
5/30/2001	18.89	37.22	20.89	39.22	21.89	40.22	22.89	41.22
5/31/2001	22.78	38.33	24.78	40.33	25.78	41.33	26.78	42.33
6/1/2001	15	32.22	17	34.22	18	35.22	19	36.22
6/2/2001	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/3/2001	10	25.56	12	27.56	13	28.56	14	29.56
6/4/2001	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
6/5/2001	12.22	26.67	14.22	28.67	15.22	29.67	16.22	30.67
6/6/2001	15	31.11	17	33.11	18	34.11	19	35.11
6/7/2001	20	33.33	22	35.33	23	36.33	24	37.33
6/8/2001	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
6/9/2001	14.44	30	16.44	32	17.44	33	18.44	34
6/10/2001	15	29.44	17	31.44	18	32.44	19	33.44
6/11/2001	13.89	27.22	15.89	29.22	16.89	30.22	17.89	31.22
6/12/2001	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67
6/13/2001	15	28.89	17	30.89	18	31.89	19	32.89
6/14/2001	16.11	33.33	18.11	35.33	19.11	36.33	20.11	37.33
6/15/2001	18.33	35	20.33	37	21.33	38	22.33	39
6/16/2001	20.56	36.11	22.56	38.11	23.56	39.11	24.56	40.11
6/17/2001	20	35	22	37	23	38	24	39
6/18/2001	20	35.56	22	37.56	23	38.56	24	39.56
6/19/2001	21.11	36.67	23.11	38.67	24.11	39.67	25.11	40.67
6/20/2001	22.22	38.33	24.22	40.33	25.22	41.33	26.22	42.33
6/21/2001	22.78	38.33	24.78	40.33	25.78	41.33	26.78	42.33
6/22/2001	21.67	37.78	23.67	39.78	24.67	40.78	25.67	41.78
6/23/2001	17.22	33.89	19.22	35.89	20.22	36.89	21.22	37.89
6/24/2001	13.89	29.44	15.89	31.44	16.89	32.44	17.89	33.44
6/25/2001	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
6/26/2001	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
6/27/2001	14.44	20.56	16.44	22.56	17.44	23.56	18.44	24.56
6/28/2001	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
6/29/2001	16.67	32.78	18.67	34.78	19.67	35.78	20.67	36.78
6/30/2001	19.44	35	21.44	37	22.44	38	23.44	39
7/1/2001	20.56	37.22	22.56	39.22	23.56	40.22	24.56	41.22
7/2/2001	24.44	40	26.44	42	27.44	43	28.44	44
7/3/2001	27.22	42.22	29.22	44.22	30.22	45.22	31.22	46.22
7/4/2001	25.56	40	27.56	42	28.56	43	29.56	44
7/5/2001	23.33	38.33	25.33	40.33	26.33	41.33	27.33	42.33
7/6/2001	21.11	36.11	23.11	38.11	24.11	39.11	25.11	40.11
7/7/2001	19.44	33.33	21.44	35.33	22.44	36.33	23.44	37.33
7/8/2001	20.56	33.33	22.56	35.33	23.56	36.33	24.56	37.33
7/9/2001	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
7/10/2001	18.89	31.67	20.89	33.67	21.89	34.67	22.89	35.67
7/11/2001	14.44	30	16.44	32	17.44	33	18.44	34
7/12/2001	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
7/13/2001	17.78	33.89	19.78	35.89	20.78	36.89	21.78	37.89
7/14/2001	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67
7/15/2001	15	30	17	32	18	33	19	34
7/16/2001	12.22	25.56	14.22	27.56	15.22	28.56	16.22	29.56
7/17/2001	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
7/18/2001	15.56	31.11	17.56	33.11	18.56	34.11	19.56	35.11
7/19/2001	14.44	30	16.44	32	17.44	33	18.44	34

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/20/2001	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
7/21/2001	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
7/22/2001	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
7/23/2001	17.22	33.89	19.22	35.89	20.22	36.89	21.22	37.89
7/24/2001	19.44	35.56	21.44	37.56	22.44	38.56	23.44	39.56
7/25/2001	21.11	35	23.11	37	24.11	38	25.11	39
7/26/2001	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
7/27/2001	21.67	37.78	23.67	39.78	24.67	40.78	25.67	41.78
7/28/2001	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
7/29/2001	16.11	32.78	18.11	34.78	19.11	35.78	20.11	36.78
7/30/2001	12.78	26.67	14.78	28.67	15.78	29.67	16.78	30.67
7/31/2001	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
8/1/2001	17.78	33.89	19.78	35.89	20.78	36.89	21.78	37.89
8/2/2001	18.89	34.44	20.89	36.44	21.89	37.44	22.89	38.44
8/3/2001	15	31.67	17	33.67	18	34.67	19	35.67
8/4/2001	15	30.56	17	32.56	18	33.56	19	34.56
8/5/2001	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
8/6/2001	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
8/7/2001	24.44	39.44	26.44	41.44	27.44	42.44	28.44	43.44
8/8/2001	25	39.44	27	41.44	28	42.44	29	43.44
8/9/2001	21.11	36.11	23.11	38.11	24.11	39.11	25.11	40.11
8/10/2001	20.56	35	22.56	37	23.56	38	24.56	39
8/11/2001	21.67	35.56	23.67	37.56	24.67	38.56	25.67	39.56
8/12/2001	19.44	35	21.44	37	22.44	38	23.44	39
8/13/2001	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
8/14/2001	19.44	35	21.44	37	22.44	38	23.44	39
8/15/2001	21.11	36.11	23.11	38.11	24.11	39.11	25.11	40.11
8/16/2001	22.22	37.78	24.22	39.78	25.22	40.78	26.22	41.78
8/17/2001	22.78	40	24.78	42	25.78	43	26.78	44
8/18/2001	22.22	37.78	24.22	39.78	25.22	40.78	26.22	41.78
8/19/2001	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
8/20/2001	16.11	30.56	18.11	32.56	19.11	33.56	20.11	34.56
8/21/2001	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
8/22/2001	12.22	27.78	14.22	29.78	15.22	30.78	16.22	31.78
8/23/2001	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
8/24/2001	16.11	31.67	18.11	33.67	19.11	34.67	20.11	35.67
8/25/2001	18.33	36.67	20.33	38.67	21.33	39.67	22.33	40.67
8/26/2001	22.22	38.33	24.22	40.33	25.22	41.33	26.22	42.33
8/27/2001	24.44	38.33	26.44	40.33	27.44	41.33	28.44	42.33
8/28/2001	22.78	38.89	24.78	40.89	25.78	41.89	26.78	42.89
8/29/2001	21.11	36.11	23.11	38.11	24.11	39.11	25.11	40.11
8/30/2001	17.22	31.11	19.22	33.11	20.22	34.11	21.22	35.11
8/31/2001	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
9/1/2001	17.78	35	19.78	37	20.78	38	21.78	39
9/2/2001	20.56	35.56	22.56	37.56	23.56	38.56	24.56	39.56
9/3/2001	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
9/4/2001	20.56	35.56	22.56	37.56	23.56	38.56	24.56	39.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/5/2001	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
9/6/2001	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
9/7/2001	17.78	33.89	19.78	35.89	20.78	36.89	21.78	37.89
9/8/2001	18.89	33.89	20.89	35.89	21.89	36.89	22.89	37.89
9/9/2001	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
9/10/2001	11.11	30.56	13.11	32.56	14.11	33.56	15.11	34.56
9/11/2001	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
9/12/2001	13.89	29.44	15.89	31.44	16.89	32.44	17.89	33.44
9/13/2001	16.11	31.67	18.11	33.67	19.11	34.67	20.11	35.67
9/14/2001	17.78	33.89	19.78	35.89	20.78	36.89	21.78	37.89
9/15/2001	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
9/16/2001	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
9/17/2001	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67
9/18/2001	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
9/19/2001	19.44	33.33	21.44	35.33	22.44	36.33	23.44	37.33
9/20/2001	20	34.44	22	36.44	23	37.44	24	38.44
9/21/2001	20	34.44	22	36.44	23	37.44	24	38.44
9/22/2001	19.44	35	21.44	37	22.44	38	23.44	39
9/23/2001	19.44	32.22	21.44	34.22	22.44	35.22	23.44	36.22
9/24/2001	11.67	35	13.67	37	14.67	38	15.67	39
9/25/2001	11.67	25	13.67	27	14.67	28	15.67	29
9/26/2001	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
9/27/2001	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
9/28/2001	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
9/29/2001	16.67	30.56	18.67	32.56	19.67	33.56	20.67	34.56
9/30/2001	21.11	38.89	23.11	40.89	24.11	41.89	25.11	42.89
10/1/2001	24.44	40	26.44	42	27.44	43	28.44	44
10/2/2001	25	38.89	27	40.89	28	41.89	29	42.89
10/3/2001	22.22	37.78	24.22	39.78	25.22	40.78	26.22	41.78
10/4/2001	15.56	33.89	17.56	35.89	18.56	36.89	19.56	37.89
10/5/2001	9.444	25	11.444	27	12.444	28	13.444	29
10/6/2001	11.11	24.44	13.11	26.44	14.11	27.44	15.11	28.44
10/7/2001	12.22	26.67	14.22	28.67	15.22	29.67	16.22	30.67
10/8/2001	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
10/9/2001	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67
10/10/2001	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
10/11/2001	14.44	27.22	16.44	29.22	17.44	30.22	18.44	31.22
10/12/2001	15	30	17	32	18	33	19	34
10/13/2001	15	32.78	17	34.78	18	35.78	19	36.78
10/14/2001	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22
10/15/2001	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
10/16/2001	18.33	31.67	20.33	33.67	21.33	34.67	22.33	35.67
10/17/2001	16.11	27.22	18.11	29.22	19.11	30.22	20.11	31.22
10/18/2001	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
10/19/2001	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
10/20/2001	15	30.56	17	32.56	18	33.56	19	34.56
10/21/2001	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/22/2001	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
10/23/2001	13.89	25.56	15.89	27.56	16.89	28.56	17.89	29.56
10/24/2001	13.89	26.11	15.89	28.11	16.89	29.11	17.89	30.11
10/25/2001	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
10/26/2001	16.11	32.78	18.11	34.78	19.11	35.78	20.11	36.78
10/27/2001	8.333	25	10.333	27	11.333	28	12.333	29
10/28/2001	7.778	21.11	9.778	23.11	10.778	24.11	11.778	25.11
10/29/2001	10	18.89	12	20.89	13	21.89	14	22.89
10/30/2001	9.444	12.22	11.444	14.22	12.444	15.22	13.444	16.22
10/31/2001	7.222	20.56	9.222	22.56	10.222	23.56	11.222	24.56
11/1/2001	8.333	22.22	10.333	24.22	11.333	25.22	12.333	26.22
11/2/2001	9.444	24.44	11.444	26.44	12.444	27.44	13.444	28.44
11/3/2001	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
11/4/2001	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
11/5/2001	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
11/6/2001	8.889	23.89	10.889	25.89	11.889	26.89	12.889	27.89
11/7/2001	10.56	25	12.56	27	13.56	28	14.56	29
11/8/2001	12.78	29.44	14.78	31.44	15.78	32.44	16.78	33.44
11/9/2001	12.78	27.22	14.78	29.22	15.78	30.22	16.78	31.22
11/10/2001	10	26.11	12	28.11	13	29.11	14	30.11
11/11/2001	9.444	15.56	11.444	17.56	12.444	18.56	13.444	19.56
11/12/2001	4.444	15	6.444	17	7.444	18	8.444	19
11/13/2001	5.556	15.56	7.556	17.56	8.556	18.56	9.556	19.56
11/14/2001	8.333	20	10.333	22	11.333	23	12.333	24
11/15/2001	7.778	18.89	9.778	20.89	10.778	21.89	11.778	22.89
11/16/2001	9.444	20	11.444	22	12.444	23	13.444	24
11/17/2001	8.333	20	10.333	22	11.333	23	12.333	24
11/18/2001	8.333	22.78	10.333	24.78	11.333	25.78	12.333	26.78
11/19/2001	7.222	23.33	9.222	25.33	10.222	26.33	11.222	27.33
11/20/2001	10.56	15	12.56	17	13.56	18	14.56	19
11/21/2001	7.778	12.78	9.778	14.78	10.778	15.78	11.778	16.78
11/22/2001	5.556	12.78	7.556	14.78	8.556	15.78	9.556	16.78
11/23/2001	5	14.44	7	16.44	8	17.44	9	18.44
11/24/2001	2.778	8.889	4.778	10.889	5.778	11.889	6.778	12.889
11/25/2001	1.111	9.444	3.111	11.444	4.111	12.444	5.111	13.444
11/26/2001	0.5556	12.78	2.5556	14.78	3.5556	15.78	4.5556	16.78
11/27/2001	1.667	13.33	3.667	15.33	4.667	16.33	5.667	17.33
11/28/2001	0	7.778	2	9.778	3	10.778	4	11.778
11/29/2001	1.667	5	3.667	7	4.667	8	5.667	9
11/30/2001	2.778	11.67	4.778	13.67	5.778	14.67	6.778	15.67
12/1/2001	3.333	6.111	5.333	8.111	6.333	9.111	7.333	10.111
12/2/2001	4.444	7.222	6.444	9.222	7.444	10.222	8.444	11.222
12/3/2001	1.111	9.444	3.111	11.444	4.111	12.444	5.111	13.444
12/4/2001	1.667	11.11	3.667	13.11	4.667	14.11	5.667	15.11
12/5/2001	1.667	5.556	3.667	7.556	4.667	8.556	5.667	9.556
12/6/2001	5	18.89	7	20.89	8	21.89	9	22.89
12/7/2001	7.222	18.89	9.222	20.89	10.222	21.89	11.222	22.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/8/2001	6.111	22.22	8.111	24.22	9.111	25.22	10.111	26.22
12/9/2001	1.667	8.333	3.667	10.333	4.667	11.333	5.667	12.333
12/10/2001	-0.555	12.22	1.445	14.22	2.445	15.22	3.445	16.22
12/11/2001	2.222	12.78	4.222	14.78	5.222	15.78	6.222	16.78
12/12/2001	2.222	14.44	4.222	16.44	5.222	17.44	6.222	18.44
12/13/2001	2.222	13.33	4.222	15.33	5.222	16.33	6.222	17.33
12/14/2001	0	4.444	2	6.444	3	7.444	4	8.444
12/15/2001	-0.555	14.44	1.445	16.44	2.445	17.44	3.445	18.44
12/16/2001	0.5556	12.22	2.5556	14.22	3.5556	15.22	4.5556	16.22
12/17/2001	4.444	7.778	6.444	9.778	7.444	10.778	8.444	11.778
12/18/2001	3.333	11.11	5.333	13.11	6.333	14.11	7.333	15.11
12/19/2001	4.444	16.11	6.444	18.11	7.444	19.11	8.444	20.11
12/20/2001	0.5556	6.667	2.5556	8.667	3.5556	9.667	4.5556	10.667
12/21/2001	5	11.11	7	13.11	8	14.11	9	15.11
12/22/2001	4.444	8.889	6.444	10.889	7.444	11.889	8.444	12.889
12/23/2001	3.889	10.56	5.889	12.56	6.889	13.56	7.889	14.56
12/24/2001	7.222	16.67	9.222	18.67	10.222	19.67	11.222	20.67
12/25/2001	10	13.89	12	15.89	13	16.89	14	17.89
12/26/2001	8.333	15.56	10.333	17.56	11.333	18.56	12.333	19.56
12/27/2001	10	20	12	22	13	23	14	24
12/28/2001	6.667	13.33	8.667	15.33	9.667	16.33	10.667	17.33
12/29/2001	7.222	9.444	9.222	11.444	10.222	12.444	11.222	13.444
12/30/2001	7.778	10	9.778	12	10.778	13	11.778	14
12/31/2001	8.333	13.89	10.333	15.89	11.333	16.89	12.333	17.89
1/1/2002	8.889	13.89	10.889	15.89	11.889	16.89	12.889	17.89
1/2/2002	8.889	9.444	10.889	11.444	11.889	12.444	12.889	13.444
1/3/2002	7.222	15.56	9.222	17.56	10.222	18.56	11.222	19.56
1/4/2002	6.667	17.22	8.667	19.22	9.667	20.22	10.667	21.22
1/5/2002	11.11	16.67	13.11	18.67	14.11	19.67	15.11	20.67
1/6/2002	12.22	20	14.22	22	15.22	23	16.22	24
1/7/2002	11.67	18.33	13.67	20.33	14.67	21.33	15.67	22.33
1/8/2002	8.333	19.44	10.333	21.44	11.333	22.44	12.333	23.44
1/9/2002	3.889	10.56	5.889	12.56	6.889	13.56	7.889	14.56
1/10/2002	2.778	12.78	4.778	14.78	5.778	15.78	6.778	16.78
1/11/2002	5.556	12.78	7.556	14.78	8.556	15.78	9.556	16.78
1/12/2002	3.889	12.78	5.889	14.78	6.889	15.78	7.889	16.78
1/13/2002	-3.889	4.444	-1.889	6.444	-0.889	7.444	0.111	8.444
1/14/2002	-10.56	-3.333	-8.56	-1.333	-7.56	-0.333	-6.56	0.667
1/15/2002	-11.67	-0.555	-9.67	1.445	-8.67	2.445	-7.67	3.445
1/16/2002	-6.111	8.889	-4.111	10.889	-3.111	11.889	-2.111	12.889
1/17/2002	-0.555	8.333	1.445	10.333	2.445	11.333	3.445	12.333
1/18/2002	0	10.56	2	12.56	3	13.56	4	14.56
1/19/2002	0	9.444	2	11.444	3	12.444	4	13.444
1/20/2002	1.111	12.78	3.111	14.78	4.111	15.78	5.111	16.78
1/21/2002	-1.667	7.222	0.333	9.222	1.333	10.222	2.333	11.222
1/22/2002	-2.778	6.111	-0.778	8.111	0.222	9.111	1.222	10.111
1/23/2002	-2.778	10	-0.778	12	0.222	13	1.222	14

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/24/2002	-0.555	12.22	1.445	14.22	2.445	15.22	3.445	16.22
1/25/2002	3.333	9.444	5.333	11.444	6.333	12.444	7.333	13.444
1/26/2002	0.5556	4.444	2.5556	6.444	3.5556	7.444	4.5556	8.444
1/27/2002	-2.222	5.556	-0.222	7.556	0.778	8.556	1.778	9.556
1/28/2002	-2.778	2.222	-0.778	4.222	0.222	5.222	1.222	6.222
1/29/2002	-5	9.444	-3	11.444	-2	12.444	-1	13.444
1/30/2002	-2.222	8.333	-0.222	10.333	0.778	11.333	1.778	12.333
1/31/2002	-1.111	10	0.889	12	1.889	13	2.889	14
2/1/2002	1.667	12.22	3.667	14.22	4.667	15.22	5.667	16.22
2/2/2002	0.5556	12.78	2.5556	14.78	3.5556	15.78	4.5556	16.78
2/3/2002	2.222	16.67	4.222	18.67	5.222	19.67	6.222	20.67
2/4/2002	4.444	18.33	6.444	20.33	7.444	21.33	8.444	22.33
2/5/2002	4.444	18.33	6.444	20.33	7.444	21.33	8.444	22.33
2/6/2002	5	16.67	7	18.67	8	19.67	9	20.67
2/7/2002	6.111	10.56	8.111	12.56	9.111	13.56	10.111	14.56
2/8/2002	4.444	15.56	6.444	17.56	7.444	18.56	8.444	19.56
2/9/2002	6.667	17.78	8.667	19.78	9.667	20.78	10.667	21.78
2/10/2002	8.889	21.11	10.889	23.11	11.889	24.11	12.889	25.11
2/11/2002	9.444	20.56	11.444	22.56	12.444	23.56	13.444	24.56
2/12/2002	7.778	20	9.778	22	10.778	23	11.778	24
2/13/2002	8.889	13.89	10.889	15.89	11.889	16.89	12.889	17.89
2/14/2002	7.778	21.67	9.778	23.67	10.778	24.67	11.778	25.67
2/15/2002	5.556	15	7.556	17	8.556	18	9.556	19
2/16/2002	4.444	16.67	6.444	18.67	7.444	19.67	8.444	20.67
2/17/2002	1.111	7.222	3.111	9.222	4.111	10.222	5.111	11.222
2/18/2002	1.667	8.889	3.667	10.889	4.667	11.889	5.667	12.889
2/19/2002	4.444	8.333	6.444	10.333	7.444	11.333	8.444	12.333
2/20/2002	8.333	17.78	10.333	19.78	11.333	20.78	12.333	21.78
2/21/2002	10	25	12	27	13	28	14	29
2/22/2002	8.889	25	10.889	27	11.889	28	12.889	29
2/23/2002	5	13.89	7	15.89	8	16.89	9	17.89
2/24/2002	6.111	20	8.111	22	9.111	23	10.111	24
2/25/2002	8.333	22.78	10.333	24.78	11.333	25.78	12.333	26.78
2/26/2002	11.67	23.89	13.67	25.89	14.67	26.89	15.67	27.89
2/27/2002	12.78	24.44	14.78	26.44	15.78	27.44	16.78	28.44
2/28/2002	10	23.33	12	25.33	13	26.33	14	27.33
3/1/2002	6.667	21.11	8.667	23.11	9.667	24.11	10.667	25.11
3/2/2002	6.667	18.89	8.667	20.89	9.667	21.89	10.667	22.89
3/3/2002	6.111	19.44	8.111	21.44	9.111	22.44	10.111	23.44
3/4/2002	7.222	20	9.222	22	10.222	23	11.222	24
3/5/2002	6.111	18.89	8.111	20.89	9.111	21.89	10.111	22.89
3/6/2002	5	8.333	7	10.333	8	11.333	9	12.333
3/7/2002	0	7.222	2	9.222	3	10.222	4	11.222
3/8/2002	-1.667	13.33	0.333	15.33	1.333	16.33	2.333	17.33
3/9/2002	2.222	15	4.222	17	5.222	18	6.222	19
3/10/2002	4.444	17.22	6.444	19.22	7.444	20.22	8.444	21.22
3/11/2002	7.778	20.56	9.778	22.56	10.778	23.56	11.778	24.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/12/2002	2.778	15.56	4.778	17.56	5.778	18.56	6.778	19.56
3/13/2002	1.111	11.67	3.111	13.67	4.111	14.67	5.111	15.67
3/14/2002	0	14.44	2	16.44	3	17.44	4	18.44
3/15/2002	0.5556	11.67	2.5556	13.67	3.5556	14.67	4.5556	15.67
3/16/2002	0	7.778	2	9.778	3	10.778	4	11.778
3/17/2002	0	5	2	7	3	8	4	9
3/18/2002	0.5556	16.67	2.5556	18.67	3.5556	19.67	4.5556	20.67
3/19/2002	3.333	18.89	5.333	20.89	6.333	21.89	7.333	22.89
3/20/2002	8.333	24.44	10.333	26.44	11.333	27.44	12.333	28.44
3/21/2002	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
3/22/2002	6.111	18.89	8.111	20.89	9.111	21.89	10.111	22.89
3/23/2002	3.889	8.889	5.889	10.889	6.889	11.889	7.889	12.889
3/24/2002	3.333	13.33	5.333	15.33	6.333	16.33	7.333	17.33
3/25/2002	2.778	16.11	4.778	18.11	5.778	19.11	6.778	20.11
3/26/2002	7.222	22.22	9.222	24.22	10.222	25.22	11.222	26.22
3/27/2002	11.11	25	13.11	27	14.11	28	15.11	29
3/28/2002	15.56	27.22	17.56	29.22	18.56	30.22	19.56	31.22
3/29/2002	13.89	26.11	15.89	28.11	16.89	29.11	17.89	30.11
3/30/2002	14.44	28.33	16.44	30.33	17.44	31.33	18.44	32.33
3/31/2002	15	28.89	17	30.89	18	31.89	19	32.89
4/1/2002	16.11	28.89	18.11	30.89	19.11	31.89	20.11	32.89
4/2/2002	13.33	30	15.33	32	16.33	33	17.33	34
4/3/2002	11.11	25.56	13.11	27.56	14.11	28.56	15.11	29.56
4/4/2002	8.333	20	10.333	22	11.333	23	12.333	24
4/5/2002	6.667	16.11	8.667	18.11	9.667	19.11	10.667	20.11
4/6/2002	6.667	20	8.667	22	9.667	23	10.667	24
4/7/2002	8.333	22.22	10.333	24.22	11.333	25.22	12.333	26.22
4/8/2002	11.11	24.44	13.11	26.44	14.11	27.44	15.11	28.44
4/9/2002	10	16.11	12	18.11	13	19.11	14	20.11
4/10/2002	8.889	22.78	10.889	24.78	11.889	25.78	12.889	26.78
4/11/2002	11.67	25	13.67	27	14.67	28	15.67	29
4/12/2002	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
4/13/2002	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
4/14/2002	3.889	27.22	5.889	29.22	6.889	30.22	7.889	31.22
4/15/2002	1.111	15	3.111	17	4.111	18	5.111	19
4/16/2002	3.333	15	5.333	17	6.333	18	7.333	19
4/17/2002	2.222	11.11	4.222	13.11	5.222	14.11	6.222	15.11
4/18/2002	0.5556	14.44	2.5556	16.44	3.5556	17.44	4.5556	18.44
4/19/2002	5.556	21.11	7.556	23.11	8.556	24.11	9.556	25.11
4/20/2002	7.778	21.67	9.778	23.67	10.778	24.67	11.778	25.67
4/21/2002	10	24.44	12	26.44	13	27.44	14	28.44
4/22/2002	12.78	27.78	14.78	29.78	15.78	30.78	16.78	31.78
4/23/2002	15	28.89	17	30.89	18	31.89	19	32.89
4/24/2002	10	23.89	12	25.89	13	26.89	14	27.89
4/25/2002	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
4/26/2002	7.222	11.67	9.222	13.67	10.222	14.67	11.222	15.67
4/27/2002	3.333	8.889	5.333	10.889	6.333	11.889	7.333	12.889

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/28/2002	2.778	17.22	4.778	19.22	5.778	20.22	6.778	21.22
4/29/2002	5.556	9.444	7.556	11.444	8.556	12.444	9.556	13.444
4/30/2002	3.333	17.22	5.333	19.22	6.333	20.22	7.333	21.22
5/1/2002	5	20	7	22	8	23	9	24
5/2/2002	8.889	23.33	10.889	25.33	11.889	26.33	12.889	27.33
5/3/2002	11.67	30	13.67	32	14.67	33	15.67	34
5/4/2002	19.44	32.22	21.44	34.22	22.44	35.22	23.44	36.22
5/5/2002	19.44	32.22	21.44	34.22	22.44	35.22	23.44	36.22
5/6/2002	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
5/7/2002	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
5/8/2002	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
5/9/2002	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
5/10/2002	6.111	20.56	8.111	22.56	9.111	23.56	10.111	24.56
5/11/2002	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
5/12/2002	13.89	30	15.89	32	16.89	33	17.89	34
5/13/2002	12.22	27.78	14.22	29.78	15.22	30.78	16.22	31.78
5/14/2002	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
5/15/2002	15.56	28.33	17.56	30.33	18.56	31.33	19.56	32.33
5/16/2002	16.67	29.44	18.67	31.44	19.67	32.44	20.67	33.44
5/17/2002	14.44	30	16.44	32	17.44	33	18.44	34
5/18/2002	11.11	25.56	13.11	27.56	14.11	28.56	15.11	29.56
5/19/2002	7.778	21.67	9.778	23.67	10.778	24.67	11.778	25.67
5/20/2002	4.444	9.444	6.444	11.444	7.444	12.444	8.444	13.444
5/21/2002	3.889	14.44	5.889	16.44	6.889	17.44	7.889	18.44
5/22/2002	6.111	21.11	8.111	23.11	9.111	24.11	10.111	25.11
5/23/2002	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
5/24/2002	15	30	17	32	18	33	19	34
5/25/2002	17.22	30	19.22	32	20.22	33	21.22	34
5/26/2002	13.89	28.89	15.89	30.89	16.89	31.89	17.89	32.89
5/27/2002	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
5/28/2002	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
5/29/2002	16.67	31.67	18.67	33.67	19.67	34.67	20.67	35.67
5/30/2002	20.56	34.44	22.56	36.44	23.56	37.44	24.56	38.44
5/31/2002	21.11	34.44	23.11	36.44	24.11	37.44	25.11	38.44
6/1/2002	13.89	27.22	15.89	29.22	16.89	30.22	17.89	31.22
6/2/2002	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
6/3/2002	16.11	28.89	18.11	30.89	19.11	31.89	20.11	32.89
6/4/2002	19.44	32.78	21.44	34.78	22.44	35.78	23.44	36.78
6/5/2002	23.89	36.11	25.89	38.11	26.89	39.11	27.89	40.11
6/6/2002	21.67	35.56	23.67	37.56	24.67	38.56	25.67	39.56
6/7/2002	20	32.22	22	34.22	23	35.22	24	36.22
6/8/2002	13.33	25.56	15.33	27.56	16.33	28.56	17.33	29.56
6/9/2002	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
6/10/2002	16.67	30.56	18.67	32.56	19.67	33.56	20.67	34.56
6/11/2002	20	33.89	22	35.89	23	36.89	24	37.89
6/12/2002	20.56	32.22	22.56	34.22	23.56	35.22	24.56	36.22
6/13/2002	17.22	31.11	19.22	33.11	20.22	34.11	21.22	35.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/14/2002	17.22	30	19.22	32	20.22	33	21.22	34
6/15/2002	17.78	31.11	19.78	33.11	20.78	34.11	21.78	35.11
6/16/2002	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
6/17/2002	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
6/18/2002	18.89	30.56	20.89	32.56	21.89	33.56	22.89	34.56
6/19/2002	19.44	32.22	21.44	34.22	22.44	35.22	23.44	36.22
6/20/2002	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67
6/21/2002	15.56	27.78	17.56	29.78	18.56	30.78	19.56	31.78
6/22/2002	15	28.89	17	30.89	18	31.89	19	32.89
6/23/2002	16.67	30.56	18.67	32.56	19.67	33.56	20.67	34.56
6/24/2002	18.33	33.33	20.33	35.33	21.33	36.33	22.33	37.33
6/25/2002	20.56	35.56	22.56	37.56	23.56	38.56	24.56	39.56
6/26/2002	21.11	34.44	23.11	36.44	24.11	37.44	25.11	38.44
6/27/2002	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
6/28/2002	18.33	31.67	20.33	33.67	21.33	34.67	22.33	35.67
6/29/2002	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
6/30/2002	21.11	35	23.11	37	24.11	38	25.11	39
7/1/2002	22.22	37.78	24.22	39.78	25.22	40.78	26.22	41.78
7/2/2002	21.67	33.89	23.67	35.89	24.67	36.89	25.67	37.89
7/3/2002	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
7/4/2002	17.22	33.33	19.22	35.33	20.22	36.33	21.22	37.33
7/5/2002	18.89	32.22	20.89	34.22	21.89	35.22	22.89	36.22
7/6/2002	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
7/7/2002	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
7/8/2002	17.22	34.44	19.22	36.44	20.22	37.44	21.22	38.44
7/9/2002	22.78	40.56	24.78	42.56	25.78	43.56	26.78	44.56
7/10/2002	26.11	41.67	28.11	43.67	29.11	44.67	30.11	45.67
7/11/2002	25	41.67	27	43.67	28	44.67	29	45.67
7/12/2002	25.56	39.44	27.56	41.44	28.56	42.44	29.56	43.44
7/13/2002	23.89	37.78	25.89	39.78	26.89	40.78	27.89	41.78
7/14/2002	21.67	36.67	23.67	38.67	24.67	39.67	25.67	40.67
7/15/2002	20.56	35	22.56	37	23.56	38	24.56	39
7/16/2002	19.44	33.33	21.44	35.33	22.44	36.33	23.44	37.33
7/17/2002	20	32.78	22	34.78	23	35.78	24	36.78
7/18/2002	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
7/19/2002	20	34.44	22	36.44	23	37.44	24	38.44
7/20/2002	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
7/21/2002	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
7/22/2002	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
7/23/2002	18.33	33.33	20.33	35.33	21.33	36.33	22.33	37.33
7/24/2002	20	33.89	22	35.89	23	36.89	24	37.89
7/25/2002	20	35	22	37	23	38	24	39
7/26/2002	20.56	35	22.56	37	23.56	38	24.56	39
7/27/2002	21.11	36.11	23.11	38.11	24.11	39.11	25.11	40.11
7/28/2002	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
7/29/2002	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
7/30/2002	20	36.11	22	38.11	23	39.11	24	40.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/31/2002	20	34.44	22	36.44	23	37.44	24	38.44
8/1/2002	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
8/2/2002	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
8/3/2002	17.22	30.56	19.22	32.56	20.22	33.56	21.22	34.56
8/4/2002	15.56	27.78	17.56	29.78	18.56	30.78	19.56	31.78
8/5/2002	13.33	28.89	15.33	30.89	16.33	31.89	17.33	32.89
8/6/2002	12.78	28.33	14.78	30.33	15.78	31.33	16.78	32.33
8/7/2002	15	32.22	17	34.22	18	35.22	19	36.22
8/8/2002	18.33	35	20.33	37	21.33	38	22.33	39
8/9/2002	22.22	37.78	24.22	39.78	25.22	40.78	26.22	41.78
8/10/2002	23.33	37.78	25.33	39.78	26.33	40.78	27.33	41.78
8/11/2002	23.33	38.89	25.33	40.89	26.33	41.89	27.33	42.89
8/12/2002	24.44	39.44	26.44	41.44	27.44	42.44	28.44	43.44
8/13/2002	25	38.33	27	40.33	28	41.33	29	42.33
8/14/2002	23.33	38.89	25.33	40.89	26.33	41.89	27.33	42.89
8/15/2002	23.33	38.33	25.33	40.33	26.33	41.33	27.33	42.33
8/16/2002	23.33	38.33	25.33	40.33	26.33	41.33	27.33	42.33
8/17/2002	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
8/18/2002	20	35	22	37	23	38	24	39
8/19/2002	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
8/20/2002	16.11	29.44	18.11	31.44	19.11	32.44	20.11	33.44
8/21/2002	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
8/22/2002	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
8/23/2002	15	28.33	17	30.33	18	31.33	19	32.33
8/24/2002	16.11	30	18.11	32	19.11	33	20.11	34
8/25/2002	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78
8/26/2002	18.89	34.44	20.89	36.44	21.89	37.44	22.89	38.44
8/27/2002	20	34.44	22	36.44	23	37.44	24	38.44
8/28/2002	18.89	35.56	20.89	37.56	21.89	38.56	22.89	39.56
8/29/2002	19.44	33.33	21.44	35.33	22.44	36.33	23.44	37.33
8/30/2002	19.44	32.78	21.44	34.78	22.44	35.78	23.44	36.78
8/31/2002	20	36.11	22	38.11	23	39.11	24	40.11
9/1/2002	22.22	38.33	24.22	40.33	25.22	41.33	26.22	42.33
9/2/2002	23.33	38.89	25.33	40.89	26.33	41.89	27.33	42.89
9/3/2002	20	35.56	22	37.56	23	38.56	24	39.56
9/4/2002	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22
9/5/2002	12.78	28.89	14.78	30.89	15.78	31.89	16.78	32.89
9/6/2002	8.889	23.33	10.889	25.33	11.889	26.33	12.889	27.33
9/7/2002	9.444	25	11.444	27	12.444	28	13.444	29
9/8/2002	12.22	28.33	14.22	30.33	15.22	31.33	16.22	32.33
9/9/2002	15	34.44	17	36.44	18	37.44	19	38.44
9/10/2002	19.44	36.11	21.44	38.11	22.44	39.11	23.44	40.11
9/11/2002	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
9/12/2002	20.56	35	22.56	37	23.56	38	24.56	39
9/13/2002	20	36.67	22	38.67	23	39.67	24	40.67
9/14/2002	21.11	37.22	23.11	39.22	24.11	40.22	25.11	41.22
9/15/2002	10	30.56	12	32.56	13	33.56	14	34.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/16/2002	10.56	28.89	12.56	30.89	13.56	31.89	14.56	32.89
9/17/2002	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
9/18/2002	16.67	32.78	18.67	34.78	19.67	35.78	20.67	36.78
9/19/2002	20.56	36.67	22.56	38.67	23.56	39.67	24.56	40.67
9/20/2002	20.56	37.22	22.56	39.22	23.56	40.22	24.56	41.22
9/21/2002	20.56	37.78	22.56	39.78	23.56	40.78	24.56	41.78
9/22/2002	22.78	38.89	24.78	40.89	25.78	41.89	26.78	42.89
9/23/2002	22.22	39.44	24.22	41.44	25.22	42.44	26.22	43.44
9/24/2002	21.11	36.67	23.11	38.67	24.11	39.67	25.11	40.67
9/25/2002	21.11	37.78	23.11	39.78	24.11	40.78	25.11	41.78
9/26/2002	17.22	34.44	19.22	36.44	20.22	37.44	21.22	38.44
9/27/2002	8.889	24.44	10.889	26.44	11.889	27.44	12.889	28.44
9/28/2002	10	18.89	12	20.89	13	21.89	14	22.89
9/29/2002	10	24.44	12	26.44	13	27.44	14	28.44
9/30/2002	10	24.44	12	26.44	13	27.44	14	28.44
10/1/2002	9.444	22.22	11.444	24.22	12.444	25.22	13.444	26.22
10/2/2002	8.889	22.78	10.889	24.78	11.889	25.78	12.889	26.78
10/3/2002	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
10/4/2002	12.22	28.89	14.22	30.89	15.22	31.89	16.22	32.89
10/5/2002	14.44	30	16.44	32	17.44	33	18.44	34
10/6/2002	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
10/7/2002	17.78	35	19.78	37	20.78	38	21.78	39
10/8/2002	18.33	34.44	20.33	36.44	21.33	37.44	22.33	38.44
10/9/2002	17.78	33.89	19.78	35.89	20.78	36.89	21.78	37.89
10/10/2002	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
10/11/2002	11.67	27.22	13.67	29.22	14.67	30.22	15.67	31.22
10/12/2002	12.22	28.89	14.22	30.89	15.22	31.89	16.22	32.89
10/13/2002	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
10/14/2002	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
10/15/2002	13.33	28.89	15.33	30.89	16.33	31.89	17.33	32.89
10/16/2002	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
10/17/2002	8.333	23.89	10.333	25.89	11.333	26.89	12.333	27.89
10/18/2002	9.444	23.89	11.444	25.89	12.444	26.89	13.444	27.89
10/19/2002	11.11	26.67	13.11	28.67	14.11	29.67	15.11	30.67
10/20/2002	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
10/21/2002	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
10/22/2002	10	24.44	12	26.44	13	27.44	14	28.44
10/23/2002	8.333	20.56	10.333	22.56	11.333	23.56	12.333	24.56
10/24/2002	6.111	19.44	8.111	21.44	9.111	22.44	10.111	23.44
10/25/2002	6.111	21.11	8.111	23.11	9.111	24.11	10.111	25.11
10/26/2002	7.222	23.89	9.222	25.89	10.222	26.89	11.222	27.89
10/27/2002	8.333	25	10.333	27	11.333	28	12.333	29
10/28/2002	9.444	24.44	11.444	26.44	12.444	27.44	13.444	28.44
10/29/2002	9.444	23.33	11.444	25.33	12.444	26.33	13.444	27.33
10/30/2002	8.333	22.78	10.333	24.78	11.333	25.78	12.333	26.78
10/31/2002	8.333	22.78	10.333	24.78	11.333	25.78	12.333	26.78
11/1/2002	6.667	21.67	8.667	23.67	9.667	24.67	10.667	25.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/2/2002	7.778	22.78	9.778	24.78	10.778	25.78	11.778	26.78
11/3/2002	7.778	20	9.778	22	10.778	23	11.778	24
11/4/2002	8.333	23.89	10.333	25.89	11.333	26.89	12.333	27.89
11/5/2002	8.889	25	10.889	27	11.889	28	12.889	29
11/6/2002	10	23.89	12	25.89	13	26.89	14	27.89
11/7/2002	5.556	17.78	7.556	19.78	8.556	20.78	9.556	21.78
11/8/2002	8.889	12.22	10.889	14.22	11.889	15.22	12.889	16.22
11/9/2002	5.556	14.44	7.556	16.44	8.556	17.44	9.556	18.44
11/10/2002	6.111	7.778	8.111	9.778	9.111	10.778	10.111	11.778
11/11/2002	6.667	20	8.667	22	9.667	23	10.667	24
11/12/2002	8.889	22.22	10.889	24.22	11.889	25.22	12.889	26.22
11/13/2002	10	20.56	12	22.56	13	23.56	14	24.56
11/14/2002	10	20	12	22	13	23	14	24
11/15/2002	10.56	25	12.56	27	13.56	28	14.56	29
11/16/2002	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
11/17/2002	8.333	22.22	10.333	24.22	11.333	25.22	12.333	26.22
11/18/2002	7.778	23.33	9.778	25.33	10.778	26.33	11.778	27.33
11/19/2002	11.67	23.33	13.67	25.33	14.67	26.33	15.67	27.33
11/20/2002	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
11/21/2002	15	28.33	17	30.33	18	31.33	19	32.33
11/22/2002	5.556	25	7.556	27	8.556	28	9.556	29
11/23/2002	5.556	21.67	7.556	23.67	8.556	24.67	9.556	25.67
11/24/2002	3.333	16.11	5.333	18.11	6.333	19.11	7.333	20.11
11/25/2002	5	19.44	7	21.44	8	22.44	9	23.44
11/26/2002	12.22	23.89	14.22	25.89	15.22	26.89	16.22	27.89
11/27/2002	8.889	23.89	10.889	25.89	11.889	26.89	12.889	27.89
11/28/2002	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
11/29/2002	8.889	21.11	10.889	23.11	11.889	24.11	12.889	25.11
11/30/2002	6.111	14.44	8.111	16.44	9.111	17.44	10.111	18.44
12/1/2002	6.111	18.33	8.111	20.33	9.111	21.33	10.111	22.33
12/2/2002	6.111	18.33	8.111	20.33	9.111	21.33	10.111	22.33
12/3/2002	6.111	18.33	8.111	20.33	9.111	21.33	10.111	22.33
12/4/2002	7.222	18.89	9.222	20.89	10.222	21.89	11.222	22.89
12/5/2002	7.778	21.67	9.778	23.67	10.778	24.67	11.778	25.67
12/6/2002	7.222	18.89	9.222	20.89	10.222	21.89	11.222	22.89
12/7/2002	6.667	20	8.667	22	9.667	23	10.667	24
12/8/2002	6.111	17.22	8.111	19.22	9.111	20.22	10.111	21.22
12/9/2002	5.556	11.67	7.556	13.67	8.556	14.67	9.556	15.67
12/10/2002	3.333	7.778	5.333	9.778	6.333	10.778	7.333	11.778
12/11/2002	3.889	17.22	5.889	19.22	6.889	20.22	7.889	21.22
12/12/2002	4.444	17.78	6.444	19.78	7.444	20.78	8.444	21.78
12/13/2002	5	9.444	7	11.444	8	12.444	9	13.444
12/14/2002	3.889	11.67	5.889	13.67	6.889	14.67	7.889	15.67
12/15/2002	3.333	8.889	5.333	10.889	6.333	11.889	7.333	12.889
12/16/2002	3.889	6.667	5.889	8.667	6.889	9.667	7.889	10.667
12/17/2002	1.667	5.556	3.667	7.556	4.667	8.556	5.667	9.556
12/18/2002	-0.555	10.56	1.445	12.56	2.445	13.56	3.445	14.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/19/2002	0	7.222	2	9.222	3	10.222	4	11.222
12/20/2002	1.111	5	3.111	7	4.111	8	5.111	9
12/21/2002	2.222	10.56	4.222	12.56	5.222	13.56	6.222	14.56
12/22/2002	1.667	15	3.667	17	4.667	18	5.667	19
12/23/2002	0.5556	11.67	2.5556	13.67	3.5556	14.67	4.5556	15.67
12/24/2002	0	6.667	2	8.667	3	9.667	4	10.667
12/25/2002	1.111	10	3.111	12	4.111	13	5.111	14
12/26/2002	2.778	10	4.778	12	5.778	13	6.778	14
12/27/2002	7.222	12.22	9.222	14.22	10.222	15.22	11.222	16.22
12/28/2002	1.111	10.56	3.111	12.56	4.111	13.56	5.111	14.56
12/29/2002	1.667	5	3.667	7	4.667	8	5.667	9
12/30/2002	1.667	6.667	3.667	8.667	4.667	9.667	5.667	10.667
12/31/2002	2.222	8.333	4.222	10.333	5.222	11.333	6.222	12.333
1/1/2003	2.778	15	4.778	17	5.778	18	6.778	19
1/2/2003	6.111	13.89	8.111	15.89	9.111	16.89	10.111	17.89
1/3/2003	9.444	23.89	11.444	25.89	12.444	26.89	13.444	27.89
1/4/2003	10.56	21.67	12.56	23.67	13.56	24.67	14.56	25.67
1/5/2003	11.67	21.11	13.67	23.11	14.67	24.11	15.67	25.11
1/6/2003	9.444	23.33	11.444	25.33	12.444	26.33	13.444	27.33
1/7/2003	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
1/8/2003	10	22.78	12	24.78	13	25.78	14	26.78
1/9/2003	6.111	10.56	8.111	12.56	9.111	13.56	10.111	14.56
1/10/2003	6.111	8.333	8.111	10.333	9.111	11.333	10.111	12.333
1/11/2003	5.556	11.67	7.556	13.67	8.556	14.67	9.556	15.67
1/12/2003	6.667	16.11	8.667	18.11	9.667	19.11	10.667	20.11
1/13/2003	8.333	20	10.333	22	11.333	23	12.333	24
1/14/2003	6.667	14.44	8.667	16.44	9.667	17.44	10.667	18.44
1/15/2003	6.667	16.67	8.667	18.67	9.667	19.67	10.667	20.67
1/16/2003	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
1/17/2003	11.11	25.56	13.11	27.56	14.11	28.56	15.11	29.56
1/18/2003	11.67	24.44	13.67	26.44	14.67	27.44	15.67	28.44
1/19/2003	10.56	23.33	12.56	25.33	13.56	26.33	14.56	27.33
1/20/2003	7.778	20.56	9.778	22.56	10.778	23.56	11.778	24.56
1/21/2003	6.667	18.89	8.667	20.89	9.667	21.89	10.667	22.89
1/22/2003	7.778	17.78	9.778	19.78	10.778	20.78	11.778	21.78
1/23/2003	8.333	19.44	10.333	21.44	11.333	22.44	12.333	23.44
1/24/2003	8.333	18.33	10.333	20.33	11.333	21.33	12.333	22.33
1/25/2003	8.889	21.11	10.889	23.11	11.889	24.11	12.889	25.11
1/26/2003	7.222	19.44	9.222	21.44	10.222	22.44	11.222	23.44
1/27/2003	7.778	13.89	9.778	15.89	10.778	16.89	11.778	17.89
1/28/2003	6.111	17.78	8.111	19.78	9.111	20.78	10.111	21.78
1/29/2003	5.556	21.11	7.556	23.11	8.556	24.11	9.556	25.11
1/30/2003	9.444	21.67	11.444	23.67	12.444	24.67	13.444	25.67
1/31/2003	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
2/1/2003	2.222	12.78	4.222	14.78	5.222	15.78	6.222	16.78
2/2/2003	2.222	17.22	4.222	19.22	5.222	20.22	6.222	21.22
2/3/2003	2.222	17.78	4.222	19.78	5.222	20.78	6.222	21.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/4/2003	5	18.89	7	20.89	8	21.89	9	22.89
2/5/2003	2.222	16.11	4.222	18.11	5.222	19.11	6.222	20.11
2/6/2003	3.333	15.56	5.333	17.56	6.333	18.56	7.333	19.56
2/7/2003	3.333	16.11	5.333	18.11	6.333	19.11	7.333	20.11
2/8/2003	1.667	16.11	3.667	18.11	4.667	19.11	5.667	20.11
2/9/2003	2.778	17.22	4.778	19.22	5.778	20.22	6.778	21.22
2/10/2003	4.444	20.56	6.444	22.56	7.444	23.56	8.444	24.56
2/11/2003	7.222	14.44	9.222	16.44	10.222	17.44	11.222	18.44
2/12/2003	8.333	13.89	10.333	15.89	11.333	16.89	12.333	17.89
2/13/2003	7.778	14.44	9.778	16.44	10.778	17.44	11.778	18.44
2/14/2003	6.667	16.11	8.667	18.11	9.667	19.11	10.667	20.11
2/15/2003	6.667	15.56	8.667	17.56	9.667	18.56	10.667	19.56
2/16/2003	3.333	13.33	5.333	15.33	6.333	16.33	7.333	17.33
2/17/2003	3.889	16.11	5.889	18.11	6.889	19.11	7.889	20.11
2/18/2003	3.333	16.67	5.333	18.67	6.333	19.67	7.333	20.67
2/19/2003	1.667	5.556	3.667	7.556	4.667	8.556	5.667	9.556
2/20/2003	1.111	15	3.111	17	4.111	18	5.111	19
2/21/2003	3.333	18.89	5.333	20.89	6.333	21.89	7.333	22.89
2/22/2003	6.111	18.33	8.111	20.33	9.111	21.33	10.111	22.33
2/23/2003	6.111	17.78	8.111	19.78	9.111	20.78	10.111	21.78
2/24/2003	5	10	7	12	8	13	9	14
2/25/2003	5	15	7	17	8	18	9	19
2/26/2003	1.667	12.22	3.667	14.22	4.667	15.22	5.667	16.22
2/27/2003	1.667	11.11	3.667	13.11	4.667	14.11	5.667	15.11
2/28/2003	1.111	13.89	3.111	15.89	4.111	16.89	5.111	17.89
3/1/2003	3.889	14.44	5.889	16.44	6.889	17.44	7.889	18.44
3/2/2003	3.889	16.11	5.889	18.11	6.889	19.11	7.889	20.11
3/3/2003	1.667	11.11	3.667	13.11	4.667	14.11	5.667	15.11
3/4/2003	2.222	13.33	4.222	15.33	5.222	16.33	6.222	17.33
3/5/2003	3.333	17.22	5.333	19.22	6.333	20.22	7.333	21.22
3/6/2003	5	18.89	7	20.89	8	21.89	9	22.89
3/7/2003	5	18.89	7	20.89	8	21.89	9	22.89
3/8/2003	6.111	20.56	8.111	22.56	9.111	23.56	10.111	24.56
3/9/2003	7.222	22.22	9.222	24.22	10.222	25.22	11.222	26.22
3/10/2003	9.444	21.67	11.444	23.67	12.444	24.67	13.444	25.67
3/11/2003	8.889	21.11	10.889	23.11	11.889	24.11	12.889	25.11
3/12/2003	8.889	21.11	10.889	23.11	11.889	24.11	12.889	25.11
3/13/2003	9.444	19.44	11.444	21.44	12.444	22.44	13.444	23.44
3/14/2003	6.667	19.44	8.667	21.44	9.667	22.44	10.667	23.44
3/15/2003	4.444	13.89	6.444	15.89	7.444	16.89	8.444	17.89
3/16/2003	3.333	14.44	5.333	16.44	6.333	17.44	7.333	18.44
3/17/2003	2.222	12.78	4.222	14.78	5.222	15.78	6.222	16.78
3/18/2003	4.444	17.22	6.444	19.22	7.444	20.22	8.444	21.22
3/19/2003	5.556	18.33	7.556	20.33	8.556	21.33	9.556	22.33
3/20/2003	5.556	16.11	7.556	18.11	8.556	19.11	9.556	20.11
3/21/2003	6.111	21.11	8.111	23.11	9.111	24.11	10.111	25.11
3/22/2003	7.222	21.11	9.222	23.11	10.222	24.11	11.222	25.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/23/2003	6.111	11.11	8.111	13.11	9.111	14.11	10.111	15.11
3/24/2003	5.556	19.44	7.556	21.44	8.556	22.44	9.556	23.44
3/25/2003	7.778	21.67	9.778	23.67	10.778	24.67	11.778	25.67
3/26/2003	5.556	17.22	7.556	19.22	8.556	20.22	9.556	21.22
3/27/2003	6.111	17.78	8.111	19.78	9.111	20.78	10.111	21.78
3/28/2003	7.778	21.67	9.778	23.67	10.778	24.67	11.778	25.67
3/29/2003	10	23.33	12	25.33	13	26.33	14	27.33
3/30/2003	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
3/31/2003	10	23.89	12	25.89	13	26.89	14	27.89
4/1/2003	1.667	10	3.667	12	4.667	13	5.667	14
4/2/2003	0	6.111	2	8.111	3	9.111	4	10.111
4/3/2003	0	11.67	2	13.67	3	14.67	4	15.67
4/4/2003	0	5	2	7	3	8	4	9
4/5/2003	-0.555	12.22	1.445	14.22	2.445	15.22	3.445	16.22
4/6/2003	2.222	13.89	4.222	15.89	5.222	16.89	6.222	17.89
4/7/2003	5.556	18.33	7.556	20.33	8.556	21.33	9.556	22.33
4/8/2003	8.889	23.89	10.889	25.89	11.889	26.89	12.889	27.89
4/9/2003	11.11	25	13.11	27	14.11	28	15.11	29
4/10/2003	9.953	21.27	11.953	23.27	12.953	24.27	13.953	25.27
4/11/2003	9.453	16.77	11.453	18.77	12.453	19.77	13.453	20.77
4/12/2003	9.953	15.67	11.953	17.67	12.953	18.67	13.953	19.67
4/13/2003	9.953	14.57	11.953	16.57	12.953	17.57	13.953	18.57
4/14/2003	6.153	14.57	8.153	16.57	9.153	17.57	10.153	18.57
4/15/2003	3.353	14.57	5.353	16.57	6.353	17.57	7.353	18.57
4/16/2003	9.453	16.27	11.453	18.27	12.453	19.27	13.453	20.27
4/17/2003	9.453	16.27	11.453	18.27	12.453	19.27	13.453	20.27
4/18/2003	6.153	16.27	8.153	18.27	9.153	19.27	10.153	20.27
4/19/2003	6.153	20.67	8.153	22.67	9.153	23.67	10.153	24.67
4/20/2003	6.653	17.37	8.653	19.37	9.653	20.37	10.653	21.37
4/21/2003	8.353	9.566	10.353	11.566	11.353	12.566	12.353	13.566
4/22/2003	6.153	14.07	8.153	16.07	9.153	17.07	10.153	18.07
4/23/2003	7.753	17.37	9.753	19.37	10.753	20.37	11.753	21.37
4/24/2003	7.753	10.67	9.753	12.67	10.753	13.67	11.753	14.67
4/25/2003	8.353	12.87	10.353	14.87	11.353	15.87	12.353	16.87
4/26/2003	6.153	15.17	8.153	17.17	9.153	18.17	10.153	19.17
4/27/2003	6.153	18.47	8.153	20.47	9.153	21.47	10.153	22.47
4/28/2003	4.953	15.17	6.953	17.17	7.953	18.17	8.953	19.17
4/29/2003	7.253	16.27	9.253	18.27	10.253	19.27	11.253	20.27
4/30/2003	7.253	17.37	9.253	19.37	10.253	20.37	11.253	21.37
5/1/2003	8.353	19.57	10.353	21.57	11.353	22.57	12.353	23.57
5/2/2003	8.353	16.77	10.353	18.77	11.353	19.77	12.353	20.77
5/3/2003	11.65	17.37	13.65	19.37	14.65	20.37	15.65	21.37
5/4/2003	9.453	16.27	11.453	18.27	12.453	19.27	13.453	20.27
5/5/2003	8.353	18.47	10.353	20.47	11.353	21.47	12.353	22.47
5/6/2003	7.253	18.47	9.253	20.47	10.253	21.47	11.253	22.47
5/7/2003	9.453	18.47	11.453	20.47	12.453	21.47	13.453	22.47
5/8/2003	8.353	15.17	10.353	17.17	11.353	18.17	12.353	19.17

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/9/2003	6.153	15.67	8.153	17.67	9.153	18.67	10.153	19.67
5/10/2003	5.553	19.07	7.553	21.07	8.553	22.07	9.553	23.07
5/11/2003	7.753	22.87	9.753	24.87	10.753	25.87	11.753	26.87
5/12/2003	10.55	25.17	12.55	27.17	13.55	28.17	14.55	29.17
5/13/2003	12.25	26.77	14.25	28.77	15.25	29.77	16.25	30.77
5/14/2003	11.15	25.17	13.15	27.17	14.15	28.17	15.15	29.17
5/15/2003	9.453	22.87	11.453	24.87	12.453	25.87	13.453	26.87
5/16/2003	8.353	24.07	10.353	26.07	11.353	27.07	12.353	28.07
5/17/2003	10.55	24.07	12.55	26.07	13.55	27.07	14.55	28.07
5/18/2003	8.353	22.87	10.353	24.87	11.353	25.87	12.353	26.87
5/19/2003	8.353	26.77	10.353	28.77	11.353	29.77	12.353	30.77
5/20/2003	11.15	30.67	13.15	32.67	14.15	33.67	15.15	34.67
5/21/2003	20	31.11	22	33.11	23	34.11	24	35.11
5/22/2003	18.33	33.33	20.33	35.33	21.33	36.33	22.33	37.33
5/23/2003	18.89	32.78	20.89	34.78	21.89	35.78	22.89	36.78
5/24/2003	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
5/25/2003	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
5/26/2003	9.444	25.56	11.444	27.56	12.444	28.56	13.444	29.56
5/27/2003	15.56	33.33	17.56	35.33	18.56	36.33	19.56	37.33
5/28/2003	21.67	36.67	23.67	38.67	24.67	39.67	25.67	40.67
5/29/2003	10.56	32.22	12.56	34.22	13.56	35.22	14.56	36.22
5/30/2003	8.333	26.11	10.333	28.11	11.333	29.11	12.333	30.11
5/31/2003	16.11	30	18.11	32	19.11	33	20.11	34
6/1/2003	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
6/2/2003	20	33.89	22	35.89	23	36.89	24	37.89
6/3/2003	21.67	35	23.67	37	24.67	38	25.67	39
6/4/2003	19.44	31.67	21.44	33.67	22.44	34.67	23.44	35.67
6/5/2003	18.89	32.22	20.89	34.22	21.89	35.22	22.89	36.22
6/6/2003	16.67	30.56	18.67	32.56	19.67	33.56	20.67	34.56
6/7/2003	16.67	30	18.67	32	19.67	33	20.67	34
6/8/2003	18.33	31.67	20.33	33.67	21.33	34.67	22.33	35.67
6/9/2003	16.11	30.56	18.11	32.56	19.11	33.56	20.11	34.56
6/10/2003	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
6/11/2003	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
6/12/2003	11.67	25	13.67	27	14.67	28	15.67	29
6/13/2003	10.56	27.22	12.56	29.22	13.56	30.22	14.56	31.22
6/14/2003	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
6/15/2003	17.22	31.11	19.22	33.11	20.22	34.11	21.22	35.11
6/16/2003	18.89	32.78	20.89	34.78	21.89	35.78	22.89	36.78
6/17/2003	20.56	35	22.56	37	23.56	38	24.56	39
6/18/2003	15.56	30	17.56	32	18.56	33	19.56	34
6/19/2003	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
6/20/2003	11.11	26.67	13.11	28.67	14.11	29.67	15.11	30.67
6/21/2003	9.444	26.67	11.444	28.67	12.444	29.67	13.444	30.67
6/22/2003	12.78	27.78	14.78	29.78	15.78	30.78	16.78	31.78
6/23/2003	13.33	25	15.33	27	16.33	28	17.33	29
6/24/2003	13.89	28.89	15.89	30.89	16.89	31.89	17.89	32.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/25/2003	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
6/26/2003	22.22	37.22	24.22	39.22	25.22	40.22	26.22	41.22
6/27/2003	23.89	37.22	25.89	39.22	26.89	40.22	27.89	41.22
6/28/2003	21.67	36.67	23.67	38.67	24.67	39.67	25.67	40.67
6/29/2003	17.78	33.33	19.78	35.33	20.78	36.33	21.78	37.33
6/30/2003	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
7/1/2003	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
7/2/2003	16.67	32.78	18.67	34.78	19.67	35.78	20.67	36.78
7/3/2003	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
7/4/2003	19.44	35	21.44	37	22.44	38	23.44	39
7/5/2003	17.78	33.33	19.78	35.33	20.78	36.33	21.78	37.33
7/6/2003	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
7/7/2003	15.56	19.44	17.56	21.44	18.56	22.44	19.56	23.44
7/8/2003	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
7/9/2003	31.11	33.89	33.11	35.89	34.11	36.89	35.11	37.89
7/10/2003	32.22	35	34.22	37	35.22	38	36.22	39
7/11/2003	33.89	34.44	35.89	36.44	36.89	37.44	37.89	38.44
7/12/2003	18.89	35.56	20.89	37.56	21.89	38.56	22.89	39.56
7/13/2003	17.78	19.44	19.78	21.44	20.78	22.44	21.78	23.44
7/14/2003	32.22	35.56	34.22	37.56	35.22	38.56	36.22	39.56
7/15/2003	36.11	36.11	38.11	38.11	39.11	39.11	40.11	40.11
7/16/2003	34.44	36.67	36.44	38.67	37.44	39.67	38.44	40.67
7/17/2003	32.78	40	34.78	42	35.78	43	36.78	44
7/18/2003	37.78	40	39.78	42	40.78	43	41.78	44
7/19/2003	36.67	36.67	38.67	38.67	39.67	39.67	40.67	40.67
7/20/2003	37.22	40	39.22	42	40.22	43	41.22	44
7/21/2003	38.33	38.89	40.33	40.89	41.33	41.89	42.33	42.89
7/22/2003	31.67	38.33	33.67	40.33	34.67	41.33	35.67	42.33
7/23/2003	37.22	37.22	39.22	39.22	40.22	40.22	41.22	41.22
7/24/2003	34.44	37.78	36.44	39.78	37.44	40.78	38.44	41.78
7/25/2003	34.44	35	36.44	37	37.44	38	38.44	39
7/26/2003	32.78	36.67	34.78	38.67	35.78	39.67	36.78	40.67
7/27/2003	36.11	38.33	38.11	40.33	39.11	41.33	40.11	42.33
7/28/2003	36.67	38.89	38.67	40.89	39.67	41.89	40.67	42.89
7/29/2003	36.67	39.44	38.67	41.44	39.67	42.44	40.67	43.44
7/30/2003	37.22	37.22	39.22	39.22	40.22	40.22	41.22	41.22
7/31/2003	16.11	19.44	18.11	21.44	19.11	22.44	20.11	23.44
8/1/2003	-9.444	28.33	-7.444	30.33	-6.444	31.33	-5.444	32.33
8/2/2003	11.67	26.67	13.67	28.67	14.67	29.67	15.67	30.67
8/3/2003	8.889	31.11	10.889	33.11	11.889	34.11	12.889	35.11
8/4/2003	-8.333	21.11	-6.333	23.11	-5.333	24.11	-4.333	25.11
8/5/2003	8.333	25	10.333	27	11.333	28	12.333	29
8/6/2003	7.222	25	9.222	27	10.222	28	11.222	29
8/7/2003	13.89	28.89	15.89	30.89	16.89	31.89	17.89	32.89
8/8/2003	14.44	30.56	16.44	32.56	17.44	33.56	18.44	34.56
8/9/2003	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
8/10/2003	18.89	32.78	20.89	34.78	21.89	35.78	22.89	36.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/11/2003	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
8/12/2003	18.89	32.78	20.89	34.78	21.89	35.78	22.89	36.78
8/13/2003	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
8/14/2003	20	34.44	22	36.44	23	37.44	24	38.44
8/15/2003	20.56	34.44	22.56	36.44	23.56	37.44	24.56	38.44
8/16/2003	20.56	35.56	22.56	37.56	23.56	38.56	24.56	39.56
8/17/2003	21.67	37.22	23.67	39.22	24.67	40.22	25.67	41.22
8/18/2003	23.33	36.67	25.33	38.67	26.33	39.67	27.33	40.67
8/19/2003	23.33	35	25.33	37	26.33	38	27.33	39
8/20/2003	21.67	35.56	23.67	37.56	24.67	38.56	25.67	39.56
8/21/2003	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
8/22/2003	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
8/23/2003	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
8/24/2003	18.89	36.11	20.89	38.11	21.89	39.11	22.89	40.11
8/25/2003	22.22	37.78	24.22	39.78	25.22	40.78	26.22	41.78
8/26/2003	18.33	35.56	20.33	37.56	21.33	38.56	22.33	39.56
8/27/2003	20.56	34.44	22.56	36.44	23.56	37.44	24.56	38.44
8/28/2003	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
8/29/2003	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
8/30/2003	19.44	36.11	21.44	38.11	22.44	39.11	23.44	40.11
8/31/2003	22.78	36.67	24.78	38.67	25.78	39.67	26.78	40.67
9/1/2003	22.22	37.22	24.22	39.22	25.22	40.22	26.22	41.22
9/2/2003	24.44	40.56	26.44	42.56	27.44	43.56	28.44	44.56
9/3/2003	25	37.78	27	39.78	28	40.78	29	41.78
9/4/2003	21.67	36.67	23.67	38.67	24.67	39.67	25.67	40.67
9/5/2003	20.56	35	22.56	37	23.56	38	24.56	39
9/6/2003	16.67	30.56	18.67	32.56	19.67	33.56	20.67	34.56
9/7/2003	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
9/8/2003	11.67	27.22	13.67	29.22	14.67	30.22	15.67	31.22
9/9/2003	12.78	22.78	14.78	24.78	15.78	25.78	16.78	26.78
9/10/2003	13.89	30	15.89	32	16.89	33	17.89	34
9/11/2003	16.11	35	18.11	37	19.11	38	20.11	39
9/12/2003	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
9/13/2003	22.22	37.22	24.22	39.22	25.22	40.22	26.22	41.22
9/14/2003	21.67	37.22	23.67	39.22	24.67	40.22	25.67	41.22
9/15/2003	16.67	33.33	18.67	35.33	19.67	36.33	20.67	37.33
9/16/2003	13.89	28.89	15.89	30.89	16.89	31.89	17.89	32.89
9/17/2003	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
9/18/2003	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
9/19/2003	18.89	35	20.89	37	21.89	38	22.89	39
9/20/2003	21.67	36.67	23.67	38.67	24.67	39.67	25.67	40.67
9/21/2003	23.33	38.33	25.33	40.33	26.33	41.33	27.33	42.33
9/22/2003	24.44	39.44	26.44	41.44	27.44	42.44	28.44	43.44
9/23/2003	23.89	38.89	25.89	40.89	26.89	41.89	27.89	42.89
9/24/2003	16.11	34.44	18.11	36.44	19.11	37.44	20.11	38.44
9/25/2003	17.78	32.78	19.78	34.78	20.78	35.78	21.78	36.78
9/26/2003	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/27/2003	20.56	34.44	22.56	36.44	23.56	37.44	24.56	38.44
9/28/2003	17.78	33.33	19.78	35.33	20.78	36.33	21.78	37.33
9/29/2003	15.56	30.56	17.56	32.56	18.56	33.56	19.56	34.56
9/30/2003	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
10/1/2003	16.11	30	18.11	32	19.11	33	20.11	34
10/2/2003	15	27.22	17	29.22	18	30.22	19	31.22
10/3/2003	15	28.89	17	30.89	18	31.89	19	32.89
10/4/2003	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
10/5/2003	16.11	30.56	18.11	32.56	19.11	33.56	20.11	34.56
10/6/2003	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
10/7/2003	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
10/8/2003	15	31.11	17	33.11	18	34.11	19	35.11
10/9/2003	12.22	28.33	14.22	30.33	15.22	31.33	16.22	32.33
10/10/2003	12.22	25.56	14.22	27.56	15.22	28.56	16.22	29.56
10/11/2003	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
10/12/2003	16.11	30.56	18.11	32.56	19.11	33.56	20.11	34.56
10/13/2003	16.11	30	18.11	32	19.11	33	20.11	34
10/14/2003	16.11	30	18.11	32	19.11	33	20.11	34
10/15/2003	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
10/16/2003	15	29.44	17	31.44	18	32.44	19	33.44
10/17/2003	17.22	33.33	19.22	35.33	20.22	36.33	21.22	37.33
10/18/2003	18.33	33.33	20.33	35.33	21.33	36.33	22.33	37.33
10/19/2003	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
10/20/2003	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
10/21/2003	20.56	37.22	22.56	39.22	23.56	40.22	24.56	41.22
10/22/2003	16.67	33.33	18.67	35.33	19.67	36.33	20.67	37.33
10/23/2003	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
10/24/2003	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78
10/25/2003	20	33.33	22	35.33	23	36.33	24	37.33
10/26/2003	20.56	33.33	22.56	35.33	23.56	36.33	24.56	37.33
10/27/2003	18.89	33.89	20.89	35.89	21.89	36.89	22.89	37.89
10/28/2003	19.44	32.78	21.44	34.78	22.44	35.78	23.44	36.78
10/29/2003	5.556	27.22	7.556	29.22	8.556	30.22	9.556	31.22
10/30/2003	2.222	16.11	4.222	18.11	5.222	19.11	6.222	20.11
10/31/2003	2.222	6.111	4.222	8.111	5.222	9.111	6.222	10.111
11/1/2003	1.667	15.56	3.667	17.56	4.667	18.56	5.667	19.56
11/2/2003	2.778	11.11	4.778	13.11	5.778	14.11	6.778	15.11
11/3/2003	0	10	2	12	3	13	4	14
11/4/2003	1.111	15	3.111	17	4.111	18	5.111	19
11/5/2003	4.444	15.56	6.444	17.56	7.444	18.56	8.444	19.56
11/6/2003	5.556	18.89	7.556	20.89	8.556	21.89	9.556	22.89
11/7/2003	5.556	17.78	7.556	19.78	8.556	20.78	9.556	21.78
11/8/2003	6.667	12.22	8.667	14.22	9.667	15.22	10.667	16.22
11/9/2003	5.556	9.444	7.556	11.444	8.556	12.444	9.556	13.444
11/10/2003	6.111	20	8.111	22	9.111	23	10.111	24
11/11/2003	6.111	19.44	8.111	21.44	9.111	22.44	10.111	23.44
11/12/2003	7.778	21.11	9.778	23.11	10.778	24.11	11.778	25.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/13/2003	7.222	15.56	9.222	17.56	10.222	18.56	11.222	19.56
11/14/2003	5.556	12.78	7.556	14.78	8.556	15.78	9.556	16.78
11/15/2003	3.333	6.667	5.333	8.667	6.333	9.667	7.333	10.667
11/16/2003	3.333	15	5.333	17	6.333	18	7.333	19
11/17/2003	6.111	10	8.111	12	9.111	13	10.111	14
11/18/2003	6.667	20.56	8.667	22.56	9.667	23.56	10.667	24.56
11/19/2003	10	25.56	12	27.56	13	28.56	14	29.56
11/20/2003	7.222	16.11	9.222	18.11	10.222	19.11	11.222	20.11
11/21/2003	1.111	12.78	3.111	14.78	4.111	15.78	5.111	16.78
11/22/2003	1.111	13.89	3.111	15.89	4.111	16.89	5.111	17.89
11/23/2003	1.667	17.22	3.667	19.22	4.667	20.22	5.667	21.22
11/24/2003	3.333	16.11	5.333	18.11	6.333	19.11	7.333	20.11
11/25/2003	2.222	14.44	4.222	16.44	5.222	17.44	6.222	18.44
11/26/2003	2.222	16.11	4.222	18.11	5.222	19.11	6.222	20.11
11/27/2003	3.889	16.67	5.889	18.67	6.889	19.67	7.889	20.67
11/28/2003	10	16.11	12	18.11	13	19.11	14	20.11
11/29/2003	10	16.67	12	18.67	13	19.67	14	20.67
11/30/2003	9.444	13.89	11.444	15.89	12.444	16.89	13.444	17.89
12/1/2003	7.778	15	9.778	17	10.778	18	11.778	19
12/2/2003	7.778	19.44	9.778	21.44	10.778	22.44	11.778	23.44
12/3/2003	7.222	21.67	9.222	23.67	10.222	24.67	11.222	25.67
12/4/2003	5.556	16.11	7.556	18.11	8.556	19.11	9.556	20.11
12/5/2003	7.778	12.78	9.778	14.78	10.778	15.78	11.778	16.78
12/6/2003	8.889	11.11	10.889	13.11	11.889	14.11	12.889	15.11
12/7/2003	3.889	13.33	5.889	15.33	6.889	16.33	7.889	17.33
12/8/2003	2.778	16.11	4.778	18.11	5.778	19.11	6.778	20.11
12/9/2003	2.778	13.33	4.778	15.33	5.778	16.33	6.778	17.33
12/10/2003	3.333	8.333	5.333	10.333	6.333	11.333	7.333	12.333
12/11/2003	0.5556	6.667	2.5556	8.667	3.5556	9.667	4.5556	10.667
12/12/2003	1.667	8.889	3.667	10.889	4.667	11.889	5.667	12.889
12/13/2003	6.667	8.333	8.667	10.333	9.667	11.333	10.667	12.333
12/14/2003	1.111	10	3.111	12	4.111	13	5.111	14
12/15/2003	0.5556	11.67	2.5556	13.67	3.5556	14.67	4.5556	15.67
12/16/2003	2.778	14.44	4.778	16.44	5.778	17.44	6.778	18.44
12/17/2003	8.889	20	10.889	22	11.889	23	12.889	24
12/18/2003	9.444	23.33	11.444	25.33	12.444	26.33	13.444	27.33
12/19/2003	6.111	21.67	8.111	23.67	9.111	24.67	10.111	25.67
12/20/2003	9.444	11.67	11.444	13.67	12.444	14.67	13.444	15.67
12/21/2003	8.889	18.89	10.889	20.89	11.889	21.89	12.889	22.89
12/22/2003	7.778	16.67	9.778	18.67	10.778	19.67	11.778	20.67
12/23/2003	6.667	11.11	8.667	13.11	9.667	14.11	10.667	15.11
12/24/2003	6.667	9.444	8.667	11.444	9.667	12.444	10.667	13.444
12/25/2003	3.333	7.778	5.333	9.778	6.333	10.778	7.333	11.778
12/26/2003	0.5556	11.11	2.5556	13.11	3.5556	14.11	4.5556	15.11
12/27/2003	-1.667	26.11	0.333	28.11	1.333	29.11	2.333	30.11
12/28/2003	9.444	18.89	11.444	20.89	12.444	21.89	13.444	22.89
12/29/2003	6.667	11.11	8.667	13.11	9.667	14.11	10.667	15.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/30/2003	10	13.89	12	15.89	13	16.89	14	17.89
12/31/2003	10	14.44	12	16.44	13	17.44	14	18.44
1/1/2004	7.222	10.56	9.222	12.56	10.222	13.56	11.222	14.56
1/2/2004	5.556	12.22	7.556	14.22	8.556	15.22	9.556	16.22
1/3/2004	2.222	14.44	4.222	16.44	5.222	17.44	6.222	18.44
1/4/2004	0.5556	16.67	2.5556	18.67	3.5556	19.67	4.5556	20.67
1/5/2004	5	17.22	7	19.22	8	20.22	9	21.22
1/6/2004	6.667	11.67	8.667	13.67	9.667	14.67	10.667	15.67
1/7/2004	6.111	16.11	8.111	18.11	9.111	19.11	10.111	20.11
1/8/2004	11.67	20.56	13.67	22.56	14.67	23.56	15.67	24.56
1/9/2004	10	17.78	12	19.78	13	20.78	14	21.78
1/10/2004	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
1/11/2004	11.11	22.78	13.11	24.78	14.11	25.78	15.11	26.78
1/12/2004	12.22	21.67	14.22	23.67	15.22	24.67	16.22	25.67
1/13/2004	12.22	23.89	14.22	25.89	15.22	26.89	16.22	27.89
1/14/2004	10	22.78	12	24.78	13	25.78	14	26.78
1/15/2004	4.444	16.11	6.444	18.11	7.444	19.11	8.444	20.11
1/16/2004	2.778	15	4.778	17	5.778	18	6.778	19
1/17/2004	2.778	15	4.778	17	5.778	18	6.778	19
1/18/2004	3.889	16.11	5.889	18.11	6.889	19.11	7.889	20.11
1/19/2004	3.333	17.78	5.333	19.78	6.333	20.78	7.333	21.78
1/20/2004	2.778	11.67	4.778	13.67	5.778	14.67	6.778	15.67
1/21/2004	3.889	19.44	5.889	21.44	6.889	22.44	7.889	23.44
1/22/2004	2.778	18.33	4.778	20.33	5.778	21.33	6.778	22.33
1/23/2004	6.111	19.44	8.111	21.44	9.111	22.44	10.111	23.44
1/24/2004	5	11.11	7	13.11	8	14.11	9	15.11
1/25/2004	3.333	12.22	5.333	14.22	6.333	15.22	7.333	16.22
1/26/2004	3.333	10.56	5.333	12.56	6.333	13.56	7.333	14.56
1/27/2004	5	8.889	7	10.889	8	11.889	9	12.889
1/28/2004	4.444	16.67	6.444	18.67	7.444	19.67	8.444	20.67
1/29/2004	5	17.78	7	19.78	8	20.78	9	21.78
1/30/2004	5	9.444	7	11.444	8	12.444	9	13.444
1/31/2004	2.778	15	4.778	17	5.778	18	6.778	19
2/1/2004	4.444	9.444	6.444	11.444	7.444	12.444	8.444	13.444
2/2/2004	2.222	8.889	4.222	10.889	5.222	11.889	6.222	12.889
2/3/2004	2.778	6.111	4.778	8.111	5.778	9.111	6.778	10.111
2/4/2004	2.222	15	4.222	17	5.222	18	6.222	19
2/5/2004	3.889	17.78	5.889	19.78	6.889	20.78	7.889	21.78
2/6/2004	4.444	17.22	6.444	19.22	7.444	20.22	8.444	21.22
2/7/2004	3.333	17.22	5.333	19.22	6.333	20.22	7.333	21.22
2/8/2004	3.333	17.22	5.333	19.22	6.333	20.22	7.333	21.22
2/9/2004	5.556	18.89	7.556	20.89	8.556	21.89	9.556	22.89
2/10/2004	7.222	20	9.222	22	10.222	23	11.222	24
2/11/2004	6.111	20	8.111	22	9.111	23	10.111	24
2/12/2004	8.889	22.22	10.889	24.22	11.889	25.22	12.889	26.22
2/13/2004	8.889	15.56	10.889	17.56	11.889	18.56	12.889	19.56
2/14/2004	7.222	19.44	9.222	21.44	10.222	22.44	11.222	23.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/15/2004	8.333	18.89	10.333	20.89	11.333	21.89	12.333	22.89
2/16/2004	8.333	12.22	10.333	14.22	11.333	15.22	12.333	16.22
2/17/2004	7.778	16.67	9.778	18.67	10.778	19.67	11.778	20.67
2/18/2004	6.111	10	8.111	12	9.111	13	10.111	14
2/19/2004	6.111	18.89	8.111	20.89	9.111	21.89	10.111	22.89
2/20/2004	6.667	13.89	8.667	15.89	9.667	16.89	10.667	17.89
2/21/2004	6.111	15.56	8.111	17.56	9.111	18.56	10.111	19.56
2/22/2004	7.222	11.11	9.222	13.11	10.222	14.11	11.222	15.11
2/23/2004	7.222	17.22	9.222	19.22	10.222	20.22	11.222	21.22
2/24/2004	7.222	12.78	9.222	14.78	10.222	15.78	11.222	16.78
2/25/2004	7.222	11.11	9.222	13.11	10.222	14.11	11.222	15.11
2/26/2004	5	8.889	7	10.889	8	11.889	9	12.889
2/27/2004	2.222	14.44	4.222	16.44	5.222	17.44	6.222	18.44
2/28/2004	3.889	17.78	5.889	19.78	6.889	20.78	7.889	21.78
2/29/2004	5	16.11	7	18.11	8	19.11	9	20.11
3/1/2004	5.556	7.778	7.556	9.778	8.556	10.778	9.556	11.778
3/2/2004	3.889	20	5.889	22	6.889	23	7.889	24
3/3/2004	7.222	19.44	9.222	21.44	10.222	22.44	11.222	23.44
3/4/2004	2.753	16.27	4.753	18.27	5.753	19.27	6.753	20.27
3/5/2004	3.853	16.27	5.853	18.27	6.853	19.27	7.853	20.27
3/6/2004	7.253	18.47	9.253	20.47	10.253	21.47	11.253	22.47
3/7/2004	8.353	20.17	10.353	22.17	11.353	23.17	12.353	24.17
3/8/2004	8.353	22.87	10.353	24.87	11.353	25.87	12.353	26.87
3/9/2004	11.65	25.17	13.65	27.17	14.65	28.17	15.65	29.17
3/10/2004	12.75	25.67	14.75	27.67	15.75	28.67	16.75	29.67
3/11/2004	11.65	23.47	13.65	25.47	14.65	26.47	15.65	27.47
3/12/2004	11.65	22.37	13.65	24.37	14.65	25.37	15.65	26.37
3/13/2004	11.65	25.17	13.65	27.17	14.65	28.17	15.65	29.17
3/14/2004	13.35	23.47	15.35	25.47	16.35	26.47	17.35	27.47
3/15/2004	12.75	25.17	14.75	27.17	15.75	28.17	16.75	29.17
3/16/2004	11.65	25.17	13.65	27.17	14.65	28.17	15.65	29.17
3/17/2004	12.75	26.27	14.75	28.27	15.75	29.27	16.75	30.27
3/18/2004	13.85	27.37	15.85	29.37	16.85	30.37	17.85	31.37
3/19/2004	11.65	25.17	13.65	27.17	14.65	28.17	15.65	29.17
3/20/2004	11.65	26.27	13.65	28.27	14.65	29.27	15.65	30.27
3/21/2004	11.65	24.57	13.65	26.57	14.65	27.57	15.65	28.57
3/22/2004	12.75	24.07	14.75	26.07	15.75	27.07	16.75	28.07
3/23/2004	8.853	19.57	10.853	21.57	11.853	22.57	12.853	23.57
3/24/2004	7.253	19.57	9.253	21.57	10.253	22.57	11.253	23.57
3/25/2004	8.353	14.07	10.353	16.07	11.353	17.07	12.353	18.07
3/26/2004	4.953	14.07	6.953	16.07	7.953	17.07	8.953	18.07
3/27/2004	7.253	17.37	9.253	19.37	10.253	20.37	11.253	21.37
3/28/2004	8.353	22.87	10.353	24.87	11.353	25.87	12.353	26.87
3/29/2004	11.65	27.37	13.65	29.37	14.65	30.37	15.65	31.37
3/30/2004	8.853	13.47	10.853	15.47	11.853	16.47	12.853	17.47
3/31/2004	8.353	17.87	10.353	19.87	11.353	20.87	12.353	21.87
4/1/2004	6.653	18.47	8.653	20.47	9.653	21.47	10.653	22.47

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/2/2004	7.753	22.87	9.753	24.87	10.753	25.87	11.753	26.87
4/3/2004	11.65	24.07	13.65	26.07	14.65	27.07	15.65	28.07
4/4/2004	9.453	25.17	11.453	27.17	12.453	28.17	13.453	29.17
4/5/2004	7.253	17.37	9.253	19.37	10.253	20.37	11.253	21.37
4/6/2004	6.153	16.77	8.153	18.77	9.153	19.77	10.153	20.77
4/7/2004	7.253	21.77	9.253	23.77	10.253	24.77	11.253	25.77
4/8/2004	16.11	27.22	18.11	29.22	19.11	30.22	20.11	31.22
4/9/2004	16.11	28.89	18.11	30.89	19.11	31.89	20.11	32.89
4/10/2004	17.22	30.56	19.22	32.56	20.22	33.56	21.22	34.56
4/11/2004	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
4/12/2004	11.11	26.67	13.11	28.67	14.11	29.67	15.11	30.67
4/13/2004	6.667	20	8.667	22	9.667	23	10.667	24
4/14/2004	5	19.44	7	21.44	8	22.44	9	23.44
4/15/2004	5.556	15.56	7.556	17.56	8.556	18.56	9.556	19.56
4/16/2004	5	16.11	7	18.11	8	19.11	9	20.11
4/17/2004	4.444	17.22	6.444	19.22	7.444	20.22	8.444	21.22
4/18/2004	4.444	16.11	6.444	18.11	7.444	19.11	8.444	20.11
4/19/2004	5.556	17.78	7.556	19.78	8.556	20.78	9.556	21.78
4/20/2004	8.333	19.44	10.333	21.44	11.333	22.44	12.333	23.44
4/21/2004	6.667	20.56	8.667	22.56	9.667	23.56	10.667	24.56
4/22/2004	8.889	26.67	10.889	28.67	11.889	29.67	12.889	30.67
4/23/2004	15	27.22	17	29.22	18	30.22	19	31.22
4/24/2004	16.11	30	18.11	32	19.11	33	20.11	34
4/25/2004	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67
4/26/2004	20.56	33.89	22.56	35.89	23.56	36.89	24.56	37.89
4/27/2004	17.78	33.89	19.78	35.89	20.78	36.89	21.78	37.89
4/28/2004	14.44	28.33	16.44	30.33	17.44	31.33	18.44	32.33
4/29/2004	11.67	26.67	13.67	28.67	14.67	29.67	15.67	30.67
4/30/2004	15	28.33	17	30.33	18	31.33	19	32.33
5/1/2004	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
5/2/2004	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
5/3/2004	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
5/4/2004	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
5/5/2004	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
5/6/2004	10.56	25	12.56	27	13.56	28	14.56	29
5/7/2004	7.778	25.56	9.778	27.56	10.778	28.56	11.778	29.56
5/8/2004	8.889	25	10.889	27	11.889	28	12.889	29
5/9/2004	10	26.11	12	28.11	13	29.11	14	30.11
5/10/2004	6.667	20	8.667	22	9.667	23	10.667	24
5/11/2004	6.111	21.11	8.111	23.11	9.111	24.11	10.111	25.11
5/12/2004	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
5/13/2004	12.22	28.89	14.22	30.89	15.22	31.89	16.22	32.89
5/14/2004	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
5/15/2004	13.89	27.22	15.89	29.22	16.89	30.22	17.89	31.22
5/16/2004	11.11	27.22	13.11	29.22	14.11	30.22	15.11	31.22
5/17/2004	7.778	22.22	9.778	24.22	10.778	25.22	11.778	26.22
5/18/2004	5.556	22.78	7.556	24.78	8.556	25.78	9.556	26.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/19/2004	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
5/20/2004	8.889	24.44	10.889	26.44	11.889	27.44	12.889	28.44
5/21/2004	7.778	22.78	9.778	24.78	10.778	25.78	11.778	26.78
5/22/2004	7.778	22.78	9.778	24.78	10.778	25.78	11.778	26.78
5/23/2004	7.778	22.78	9.778	24.78	10.778	25.78	11.778	26.78
5/24/2004	9.444	24.44	11.444	26.44	12.444	27.44	13.444	28.44
5/25/2004	10	25	12	27	13	28	14	29
5/26/2004	12.22	28.89	14.22	30.89	15.22	31.89	16.22	32.89
5/27/2004	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
5/28/2004	8.889	21.11	10.889	23.11	11.889	24.11	12.889	25.11
5/29/2004	8.889	25.56	10.889	27.56	11.889	28.56	12.889	29.56
5/30/2004	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
5/31/2004	18.89	31.67	20.89	33.67	21.89	34.67	22.89	35.67
6/1/2004	18.89	32.78	20.89	34.78	21.89	35.78	22.89	36.78
6/2/2004	20	33.89	22	35.89	23	36.89	24	37.89
6/3/2004	18.89	32.78	20.89	34.78	21.89	35.78	22.89	36.78
6/4/2004	17.78	34.44	19.78	36.44	20.78	37.44	21.78	38.44
6/5/2004	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67
6/6/2004	13.33	32.22	15.33	34.22	16.33	35.22	17.33	36.22
6/7/2004	9.444	25	11.444	27	12.444	28	13.444	29
6/8/2004	8.889	22.78	10.889	24.78	11.889	25.78	12.889	26.78
6/9/2004	7.778	23.33	9.778	25.33	10.778	26.33	11.778	27.33
6/10/2004	9.444	26.11	11.444	28.11	12.444	29.11	13.444	30.11
6/11/2004	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
6/12/2004	15	30.56	17	32.56	18	33.56	19	34.56
6/13/2004	17.22	31.11	19.22	33.11	20.22	34.11	21.22	35.11
6/14/2004	20	32.78	22	34.78	23	35.78	24	36.78
6/15/2004	21.11	36.11	23.11	38.11	24.11	39.11	25.11	40.11
6/16/2004	20	35	22	37	23	38	24	39
6/17/2004	16.11	30	18.11	32	19.11	33	20.11	34
6/18/2004	16.67	30	18.67	32	19.67	33	20.67	34
6/19/2004	15.56	31.11	17.56	33.11	18.56	34.11	19.56	35.11
6/20/2004	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
6/21/2004	18.33	31.67	20.33	33.67	21.33	34.67	22.33	35.67
6/22/2004	18.33	31.67	20.33	33.67	21.33	34.67	22.33	35.67
6/23/2004	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
6/24/2004	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22
6/25/2004	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
6/26/2004	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
6/27/2004	18.33	33.33	20.33	35.33	21.33	36.33	22.33	37.33
6/28/2004	18.33	35.56	20.33	37.56	21.33	38.56	22.33	39.56
6/29/2004	12.78	30.56	14.78	32.56	15.78	33.56	16.78	34.56
6/30/2004	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
7/1/2004	15.56	30	17.56	32	18.56	33	19.56	34
7/2/2004	18.33	31.67	20.33	33.67	21.33	34.67	22.33	35.67
7/3/2004	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
7/4/2004	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/5/2004	20.56	36.11	22.56	38.11	23.56	39.11	24.56	40.11
7/6/2004	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
7/7/2004	18.89	34.44	20.89	36.44	21.89	37.44	22.89	38.44
7/8/2004	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
7/9/2004	17.22	30.56	19.22	32.56	20.22	33.56	21.22	34.56
7/10/2004	16.11	31.67	18.11	33.67	19.11	34.67	20.11	35.67
7/11/2004	18.33	35	20.33	37	21.33	38	22.33	39
7/12/2004	20	35	22	37	23	38	24	39
7/13/2004	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
7/14/2004	20	35	22	37	23	38	24	39
7/15/2004	20	35	22	37	23	38	24	39
7/16/2004	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
7/17/2004	20	34.44	22	36.44	23	37.44	24	38.44
7/18/2004	20.56	35	22.56	37	23.56	38	24.56	39
7/19/2004	19.44	33.33	21.44	35.33	22.44	36.33	23.44	37.33
7/20/2004	19.44	35	21.44	37	22.44	38	23.44	39
7/21/2004	22.22	25	24.22	27	25.22	28	26.22	29
7/22/2004	22.22	36.67	24.22	38.67	25.22	39.67	26.22	40.67
7/23/2004	22.22	35.56	24.22	37.56	25.22	38.56	26.22	39.56
7/24/2004	22.78	36.11	24.78	38.11	25.78	39.11	26.78	40.11
7/25/2004	23.33	37.78	25.33	39.78	26.33	40.78	27.33	41.78
7/26/2004	22.78	37.78	24.78	39.78	25.78	40.78	26.78	41.78
7/27/2004	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
7/28/2004	21.11	36.11	23.11	38.11	24.11	39.11	25.11	40.11
7/29/2004	20	35	22	37	23	38	24	39
7/30/2004	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
7/31/2004	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
8/1/2004	16.11	31.67	18.11	33.67	19.11	34.67	20.11	35.67
8/2/2004	16.11	30	18.11	32	19.11	33	20.11	34
8/3/2004	16.67	31.67	18.67	33.67	19.67	34.67	20.67	35.67
8/4/2004	16.11	32.78	18.11	34.78	19.11	35.78	20.11	36.78
8/5/2004	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
8/6/2004	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
8/7/2004	18.89	36.11	20.89	38.11	21.89	39.11	22.89	40.11
8/8/2004	21.67	37.78	23.67	39.78	24.67	40.78	25.67	41.78
8/9/2004	23.33	38.33	25.33	40.33	26.33	41.33	27.33	42.33
8/10/2004	23.33	38.89	25.33	40.89	26.33	41.89	27.33	42.89
8/11/2004	25	42.22	27	44.22	28	45.22	29	46.22
8/12/2004	23.89	38.89	25.89	40.89	26.89	41.89	27.89	42.89
8/13/2004	22.22	38.33	24.22	40.33	25.22	41.33	26.22	42.33
8/14/2004	19.44	35	21.44	37	22.44	38	23.44	39
8/15/2004	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
8/16/2004	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
8/17/2004	20.56	36.11	22.56	38.11	23.56	39.11	24.56	40.11
8/18/2004	22.78	37.22	24.78	39.22	25.78	40.22	26.78	41.22
8/19/2004	22.22	36.67	24.22	38.67	25.22	39.67	26.22	40.67
8/20/2004	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/21/2004	16.11	35.56	18.11	37.56	19.11	38.56	20.11	39.56
8/22/2004	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
8/23/2004	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
8/24/2004	15	31.11	17	33.11	18	34.11	19	35.11
8/25/2004	13.89	29.44	15.89	31.44	16.89	32.44	17.89	33.44
8/26/2004	11.11	30	13.11	32	14.11	33	15.11	34
8/27/2004	19.44	35	21.44	37	22.44	38	23.44	39
8/28/2004	21.67	37.78	23.67	39.78	24.67	40.78	25.67	41.78
8/29/2004	22.78	39.44	24.78	41.44	25.78	42.44	26.78	43.44
8/30/2004	23.33	38.33	25.33	40.33	26.33	41.33	27.33	42.33
8/31/2004	22.78	37.22	24.78	39.22	25.78	40.22	26.78	41.22
9/1/2004	20.56	37.22	22.56	39.22	23.56	40.22	24.56	41.22
9/2/2004	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
9/3/2004	16.67	30.56	18.67	32.56	19.67	33.56	20.67	34.56
9/4/2004	21.11	32.78	23.11	34.78	24.11	35.78	25.11	36.78
9/5/2004	18.33	36.67	20.33	38.67	21.33	39.67	22.33	40.67
9/6/2004	21.67	38.33	23.67	40.33	24.67	41.33	25.67	42.33
9/7/2004	22.22	38.89	24.22	40.89	25.22	41.89	26.22	42.89
9/8/2004	22.22	40	24.22	42	25.22	43	26.22	44
9/9/2004	21.67	37.78	23.67	39.78	24.67	40.78	25.67	41.78
9/10/2004	21.11	37.78	23.11	39.78	24.11	40.78	25.11	41.78
9/11/2004	21.11	38.33	23.11	40.33	24.11	41.33	25.11	42.33
9/12/2004	15.56	32.22	17.56	34.22	18.56	35.22	19.56	36.22
9/13/2004	13.89	30.56	15.89	32.56	16.89	33.56	17.89	34.56
9/14/2004	16.67	31.67	18.67	33.67	19.67	34.67	20.67	35.67
9/15/2004	17.22	33.89	19.22	35.89	20.22	36.89	21.22	37.89
9/16/2004	19.44	35	21.44	37	22.44	38	23.44	39
9/17/2004	12.22	31.67	14.22	33.67	15.22	34.67	16.22	35.67
9/18/2004	7.222	17.22	9.222	19.22	10.222	20.22	11.222	21.22
9/19/2004	5	11.67	7	13.67	8	14.67	9	15.67
9/20/2004	6.111	21.67	8.111	23.67	9.111	24.67	10.111	25.67
9/21/2004	12.22	26.67	14.22	28.67	15.22	29.67	16.22	30.67
9/22/2004	12.22	30.56	14.22	32.56	15.22	33.56	16.22	34.56
9/23/2004	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22
9/24/2004	18.33	33.89	20.33	35.89	21.33	36.89	22.33	37.89
9/25/2004	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
9/26/2004	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
9/27/2004	17.22	33.33	19.22	35.33	20.22	36.33	21.22	37.33
9/28/2004	9.444	26.11	11.444	28.11	12.444	29.11	13.444	30.11
9/29/2004	12.22	25	14.22	27	15.22	28	16.22	29
9/30/2004	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
10/1/2004	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
10/2/2004	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
10/3/2004	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
10/4/2004	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67
10/5/2004	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
10/6/2004	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/7/2004	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
10/8/2004	11.11	31.11	13.11	33.11	14.11	34.11	15.11	35.11
10/9/2004	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
10/10/2004	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
10/11/2004	15	29.44	17	31.44	18	32.44	19	33.44
10/12/2004	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
10/13/2004	20.56	32.78	22.56	34.78	23.56	35.78	24.56	36.78
10/14/2004	20	31.67	22	33.67	23	34.67	24	35.67
10/15/2004	17.22	27.78	19.22	29.78	20.22	30.78	21.22	31.78
10/16/2004	8.889	25.56	10.889	27.56	11.889	28.56	12.889	29.56
10/17/2004	7.778	12.22	9.778	14.22	10.778	15.22	11.778	16.22
10/18/2004	6.667	13.33	8.667	15.33	9.667	16.33	10.667	17.33
10/19/2004	6.111	8.889	8.111	10.889	9.111	11.889	10.111	12.889
10/20/2004	5	16.67	7	18.67	8	19.67	9	20.67
10/21/2004	6.111	20	8.111	22	9.111	23	10.111	24
10/22/2004	7.222	20	9.222	22	10.222	23	11.222	24
10/23/2004	8.333	10	10.333	12	11.333	13	12.333	14
10/24/2004	7.778	11.11	9.778	13.11	10.778	14.11	11.778	15.11
10/25/2004	6.667	18.33	8.667	20.33	9.667	21.33	10.667	22.33
10/26/2004	3.889	10.56	5.889	12.56	6.889	13.56	7.889	14.56
10/27/2004	4.444	16.11	6.444	18.11	7.444	19.11	8.444	20.11
10/28/2004	5	12.78	7	14.78	8	15.78	9	16.78
10/29/2004	6.111	20	8.111	22	9.111	23	10.111	24
10/30/2004	6.667	20	8.667	22	9.667	23	10.667	24
10/31/2004	7.222	20	9.222	22	10.222	23	11.222	24
11/1/2004	6.111	20	8.111	22	9.111	23	10.111	24
11/2/2004	8.333	23.89	10.333	25.89	11.333	26.89	12.333	27.89
11/3/2004	2.778	9.444	4.778	11.444	5.778	12.444	6.778	13.444
11/4/2004	2.222	16.11	4.222	18.11	5.222	19.11	6.222	20.11
11/5/2004	6.667	20.56	8.667	22.56	9.667	23.56	10.667	24.56
11/6/2004	7.222	22.78	9.222	24.78	10.222	25.78	11.222	26.78
11/7/2004	6.667	21.67	8.667	23.67	9.667	24.67	10.667	25.67
11/8/2004	7.222	14.44	9.222	16.44	10.222	17.44	11.222	18.44
11/9/2004	7.222	11.67	9.222	13.67	10.222	14.67	11.222	15.67
11/10/2004	6.667	11.11	8.667	13.11	9.667	14.11	10.667	15.11
11/11/2004	6.111	8.889	8.111	10.889	9.111	11.889	10.111	12.889
11/12/2004	6.111	20	8.111	22	9.111	23	10.111	24
11/13/2004	6.667	20.56	8.667	22.56	9.667	23.56	10.667	24.56
11/14/2004	6.111	19.44	8.111	21.44	9.111	22.44	10.111	23.44
11/15/2004	8.889	21.67	10.889	23.67	11.889	24.67	12.889	25.67
11/16/2004	9.444	22.78	11.444	24.78	12.444	25.78	13.444	26.78
11/17/2004	10	21.11	12	23.11	13	24.11	14	25.11
11/18/2004	7.222	19.44	9.222	21.44	10.222	22.44	11.222	23.44
11/19/2004	3.333	16.67	5.333	18.67	6.333	19.67	7.333	20.67
11/20/2004	2.222	17.22	4.222	19.22	5.222	20.22	6.222	21.22
11/21/2004	1.667	17.78	3.667	19.78	4.667	20.78	5.667	21.78
11/22/2004	4.444	15.56	6.444	17.56	7.444	18.56	8.444	19.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/23/2004	4.444	17.22	6.444	19.22	7.444	20.22	8.444	21.22
11/24/2004	5.556	20	7.556	22	8.556	23	9.556	24
11/25/2004	6.667	16.67	8.667	18.67	9.667	19.67	10.667	20.67
11/26/2004	6.111	18.33	8.111	20.33	9.111	21.33	10.111	22.33
11/27/2004	0.5556	7.222	2.5556	9.222	3.5556	10.222	4.5556	11.222
11/28/2004	0	11.67	2	13.67	3	14.67	4	15.67
11/29/2004	0.5556	12.78	2.5556	14.78	3.5556	15.78	4.5556	16.78
11/30/2004	1.111	13.89	3.111	15.89	4.111	16.89	5.111	17.89
12/1/2004	0.5556	14.44	2.5556	16.44	3.5556	17.44	4.5556	18.44
12/2/2004	1.111	15.56	3.111	17.56	4.111	18.56	5.111	19.56
12/3/2004	2.778	17.22	4.778	19.22	5.778	20.22	6.778	21.22
12/4/2004	2.778	16.67	4.778	18.67	5.778	19.67	6.778	20.67
12/5/2004	2.778	16.11	4.778	18.11	5.778	19.11	6.778	20.11
12/6/2004	2.222	11.67	4.222	13.67	5.222	14.67	6.222	15.67
12/7/2004	2.778	6.111	4.778	8.111	5.778	9.111	6.778	10.111
12/8/2004	4.444	9.444	6.444	11.444	7.444	12.444	8.444	13.444
12/9/2004	8.333	18.33	10.333	20.33	11.333	21.33	12.333	22.33
12/10/2004	6.667	23.89	8.667	25.89	9.667	26.89	10.667	27.89
12/11/2004	12.78	27.22	14.78	29.22	15.78	30.22	16.78	31.22
12/12/2004	9.444	23.33	11.444	25.33	12.444	26.33	13.444	27.33
12/13/2004	6.111	20.56	8.111	22.56	9.111	23.56	10.111	24.56
12/14/2004	5.556	18.33	7.556	20.33	8.556	21.33	9.556	22.33
12/15/2004	5.556	18.89	7.556	20.89	8.556	21.89	9.556	22.89
12/16/2004	8.333	23.33	10.333	25.33	11.333	26.33	12.333	27.33
12/17/2004	8.889	22.22	10.889	24.22	11.889	25.22	12.889	26.22
12/18/2004	8.333	23.33	10.333	25.33	11.333	26.33	12.333	27.33
12/19/2004	11.67	25.56	13.67	27.56	14.67	28.56	15.67	29.56
12/20/2004	8.889	19.44	10.889	21.44	11.889	22.44	12.889	23.44
12/21/2004	9.444	19.44	11.444	21.44	12.444	22.44	13.444	23.44
12/22/2004	5.556	16.11	7.556	18.11	8.556	19.11	9.556	20.11
12/23/2004	5.556	19.44	7.556	21.44	8.556	22.44	9.556	23.44
12/24/2004	4.444	19.44	6.444	21.44	7.444	22.44	8.444	23.44
12/25/2004	5	17.22	7	19.22	8	20.22	9	21.22
12/26/2004	3.333	11.67	5.333	13.67	6.333	14.67	7.333	15.67
12/27/2004	5.556	9.444	7.556	11.444	8.556	12.444	9.556	13.444
12/28/2004	4.444	7.222	6.444	9.222	7.444	10.222	8.444	11.222
12/29/2004	3.333	5	5.333	7	6.333	8	7.333	9
12/30/2004	2.222	6.667	4.222	8.667	5.222	9.667	6.222	10.667
12/31/2004	1.111	8.889	3.111	10.889	4.111	11.889	5.111	12.889
1/1/2005	0.5556	5.556	2.5556	7.556	3.5556	8.556	4.5556	9.556
1/2/2005	1.667	5	3.667	7	4.667	8	5.667	9
1/3/2005	1.111	3.889	3.111	5.889	4.111	6.889	5.111	7.889
1/4/2005	0.5556	4.444	2.5556	6.444	3.5556	7.444	4.5556	8.444
1/5/2005	1.111	8.333	3.111	10.333	4.111	11.333	5.111	12.333
1/6/2005	1.667	13.89	3.667	15.89	4.667	16.89	5.667	17.89
1/7/2005	0.5556	7.222	2.5556	9.222	3.5556	10.222	4.5556	11.222
1/8/2005	2.222	5.556	4.222	7.556	5.222	8.556	6.222	9.556

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/9/2005	5	7.222	7	9.222	8	10.222	9	11.222
1/10/2005	2.222	7.778	4.222	9.778	5.222	10.778	6.222	11.778
1/11/2005	1.111	4.444	3.111	6.444	4.111	7.444	5.111	8.444
1/12/2005	1.667	13.33	3.667	15.33	4.667	16.33	5.667	17.33
1/13/2005	1.111	11.11	3.111	13.11	4.111	14.11	5.111	15.11
1/14/2005	5	23.33	7	25.33	8	26.33	9	27.33
1/15/2005	8.889	20.56	10.889	22.56	11.889	23.56	12.889	24.56
1/16/2005	10.56	21.67	12.56	23.67	13.56	24.67	14.56	25.67
1/17/2005	10	19.44	12	21.44	13	22.44	14	23.44
1/18/2005	9.444	23.89	11.444	25.89	12.444	26.89	13.444	27.89
1/19/2005	12.78	27.22	14.78	29.22	15.78	30.22	16.78	31.22
1/20/2005	12.22	26.67	14.22	28.67	15.22	29.67	16.22	30.67
1/21/2005	11.11	25	13.11	27	14.11	28	15.11	29
1/22/2005	11.11	23.33	13.11	25.33	14.11	26.33	15.11	27.33
1/23/2005	11.67	24.44	13.67	26.44	14.67	27.44	15.67	28.44
1/24/2005	11.11	23.33	13.11	25.33	14.11	26.33	15.11	27.33
1/25/2005	8.889	20	10.889	22	11.889	23	12.889	24
1/26/2005	4.444	8.889	6.444	10.889	7.444	11.889	8.444	12.889
1/27/2005	3.333	13.89	5.333	15.89	6.333	16.89	7.333	17.89
1/28/2005	1.111	7.222	3.111	9.222	4.111	10.222	5.111	11.222
1/29/2005	1.667	13.33	3.667	15.33	4.667	16.33	5.667	17.33
1/30/2005	4.444	16.11	6.444	18.11	7.444	19.11	8.444	20.11
1/31/2005	2.778	18.33	4.778	20.33	5.778	21.33	6.778	22.33
2/1/2005	10.56	25	12.56	27	13.56	28	14.56	29
2/2/2005	7.778	20	9.778	22	10.778	23	11.778	24
2/3/2005	8.333	21.11	10.333	23.11	11.333	24.11	12.333	25.11
2/4/2005	8.333	21.67	10.333	23.67	11.333	24.67	12.333	25.67
2/5/2005	6.667	18.89	8.667	20.89	9.667	21.89	10.667	22.89
2/6/2005	5	17.22	7	19.22	8	20.22	9	21.22
2/7/2005	3.889	11.11	5.889	13.11	6.889	14.11	7.889	15.11
2/8/2005	3.889	15.56	5.889	17.56	6.889	18.56	7.889	19.56
2/9/2005	6.111	18.89	8.111	20.89	9.111	21.89	10.111	22.89
2/10/2005	7.222	21.11	9.222	23.11	10.222	24.11	11.222	25.11
2/11/2005	7.222	16.11	9.222	18.11	10.222	19.11	11.222	20.11
2/12/2005	6.111	18.89	8.111	20.89	9.111	21.89	10.111	22.89
2/13/2005	7.222	13.33	9.222	15.33	10.222	16.33	11.222	17.33
2/14/2005	6.667	10	8.667	12	9.667	13	10.667	14
2/15/2005	6.667	9.444	8.667	11.444	9.667	12.444	10.667	13.444
2/16/2005	7.222	14.44	9.222	16.44	10.222	17.44	11.222	18.44
2/17/2005	8.333	18.33	10.333	20.33	11.333	21.33	12.333	22.33
2/18/2005	6.111	14.44	8.111	16.44	9.111	17.44	10.111	18.44
2/19/2005	5.556	12.78	7.556	14.78	8.556	15.78	9.556	16.78
2/20/2005	6.111	11.67	8.111	13.67	9.111	14.67	10.111	15.67
2/21/2005	6.111	16.67	8.111	18.67	9.111	19.67	10.111	20.67
2/22/2005	7.222	17.78	9.222	19.78	10.222	20.78	11.222	21.78
2/23/2005	6.667	18.89	8.667	20.89	9.667	21.89	10.667	22.89
2/24/2005	5.556	16.67	7.556	18.67	8.556	19.67	9.556	20.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/25/2005	4.444	16.11	6.444	18.11	7.444	19.11	8.444	20.11
2/26/2005	5	17.78	7	19.78	8	20.78	9	21.78
2/27/2005	4.444	15.56	6.444	17.56	7.444	18.56	8.444	19.56
2/28/2005	2.778	17.22	4.778	19.22	5.778	20.22	6.778	21.22
3/1/2005	5.556	15.56	7.556	17.56	8.556	18.56	9.556	19.56
3/2/2005	6.111	17.22	8.111	19.22	9.111	20.22	10.111	21.22
3/3/2005	5.556	16.67	7.556	18.67	8.556	19.67	9.556	20.67
3/4/2005	6.667	11.67	8.667	13.67	9.667	14.67	10.667	15.67
3/5/2005	8.333	20	10.333	22	11.333	23	12.333	24
3/6/2005	8.333	21.11	10.333	23.11	11.333	24.11	12.333	25.11
3/7/2005	9.444	22.22	11.444	24.22	12.444	25.22	13.444	26.22
3/8/2005	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
3/9/2005	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
3/10/2005	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
3/11/2005	17.78	31.11	19.78	33.11	20.78	34.11	21.78	35.11
3/12/2005	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
3/13/2005	9.444	23.33	11.444	25.33	12.444	26.33	13.444	27.33
3/14/2005	8.333	22.78	10.333	24.78	11.333	25.78	12.333	26.78
3/15/2005	8.333	21.67	10.333	23.67	11.333	24.67	12.333	25.67
3/16/2005	8.333	20.56	10.333	22.56	11.333	23.56	12.333	24.56
3/17/2005	7.222	18.33	9.222	20.33	10.222	21.33	11.222	22.33
3/18/2005	7.778	17.78	9.778	19.78	10.778	20.78	11.778	21.78
3/19/2005	5.556	8.889	7.556	10.889	8.556	11.889	9.556	12.889
3/20/2005	3.889	10	5.889	12	6.889	13	7.889	14
3/21/2005	4.444	16.67	6.444	18.67	7.444	19.67	8.444	20.67
3/22/2005	1.111	8.889	3.111	10.889	4.111	11.889	5.111	12.889
3/23/2005	2.778	5.556	4.778	7.556	5.778	8.556	6.778	9.556
3/24/2005	1.111	15	3.111	17	4.111	18	5.111	19
3/25/2005	2.778	18.33	4.778	20.33	5.778	21.33	6.778	22.33
3/26/2005	6.667	20.56	8.667	22.56	9.667	23.56	10.667	24.56
3/27/2005	7.222	20	9.222	22	10.222	23	11.222	24
3/28/2005	3.889	13.33	5.889	15.33	6.889	16.33	7.889	17.33
3/29/2005	3.333	8.333	5.333	10.333	6.333	11.333	7.333	12.333
3/30/2005	3.889	18.33	5.889	20.33	6.889	21.33	7.889	22.33
3/31/2005	6.667	22.22	8.667	24.22	9.667	25.22	10.667	26.22
4/1/2005	9.444	25	11.444	27	12.444	28	13.444	29
4/2/2005	6.111	22.22	8.111	24.22	9.111	25.22	10.111	26.22
4/3/2005	2.778	17.78	4.778	19.78	5.778	20.78	6.778	21.78
4/4/2005	3.333	16.11	5.333	18.11	6.333	19.11	7.333	20.11
4/5/2005	6.667	21.11	8.667	23.11	9.667	24.11	10.667	25.11
4/6/2005	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
4/7/2005	3.333	12.22	5.333	14.22	6.333	15.22	7.333	16.22
4/8/2005	1.111	6.667	3.111	8.667	4.111	9.667	5.111	10.667
4/9/2005	1.667	17.22	3.667	19.22	4.667	20.22	5.667	21.22
4/10/2005	7.222	19.44	9.222	21.44	10.222	22.44	11.222	23.44
4/11/2005	7.778	22.22	9.778	24.22	10.778	25.22	11.778	26.22
4/12/2005	4.444	18.33	6.444	20.33	7.444	21.33	8.444	22.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/13/2005	1.667	16.11	3.667	18.11	4.667	19.11	5.667	20.11
4/14/2005	5	19.44	7	21.44	8	22.44	9	23.44
4/15/2005	8.333	23.33	10.333	25.33	11.333	26.33	12.333	27.33
4/16/2005	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
4/17/2005	8.333	21.67	10.333	23.67	11.333	24.67	12.333	25.67
4/18/2005	7.222	19.44	9.222	21.44	10.222	22.44	11.222	23.44
4/19/2005	6.667	20.56	8.667	22.56	9.667	23.56	10.667	24.56
4/20/2005	6.667	21.67	8.667	23.67	9.667	24.67	10.667	25.67
4/21/2005	10	24.44	12	26.44	13	27.44	14	28.44
4/22/2005	8.333	28.89	10.333	30.89	11.333	31.89	12.333	32.89
4/23/2005	6.667	20	8.667	22	9.667	23	10.667	24
4/24/2005	8.333	15	10.333	17	11.333	18	12.333	19
4/25/2005	7.222	22.78	9.222	24.78	10.222	25.78	11.222	26.78
4/26/2005	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
4/27/2005	10	22.78	12	24.78	13	25.78	14	26.78
4/28/2005	8.333	14.44	10.333	16.44	11.333	17.44	12.333	18.44
4/29/2005	8.333	24.44	10.333	26.44	11.333	27.44	12.333	28.44
4/30/2005	10.56	26.67	12.56	28.67	13.56	29.67	14.56	30.67
5/1/2005	12.22	26.67	14.22	28.67	15.22	29.67	16.22	30.67
5/2/2005	12.78	28.89	14.78	30.89	15.78	31.89	16.78	32.89
5/3/2005	14.44	28.33	16.44	30.33	17.44	31.33	18.44	32.33
5/4/2005	12.78	25.56	14.78	27.56	15.78	28.56	16.78	29.56
5/5/2005	11.11	15	13.11	17	14.11	18	15.11	19
5/6/2005	7.778	19.44	9.778	21.44	10.778	22.44	11.778	23.44
5/7/2005	5.556	21.67	7.556	23.67	8.556	24.67	9.556	25.67
5/8/2005	9.444	12.22	11.444	14.22	12.444	15.22	13.444	16.22
5/9/2005	4.444	10	6.444	12	7.444	13	8.444	14
5/10/2005	4.444	17.78	6.444	19.78	7.444	20.78	8.444	21.78
5/11/2005	8.333	22.22	10.333	24.22	11.333	25.22	12.333	26.22
5/12/2005	12.22	24.44	14.22	26.44	15.22	27.44	16.22	28.44
5/13/2005	15	27.78	17	29.78	18	30.78	19	31.78
5/14/2005	15.56	28.33	17.56	30.33	18.56	31.33	19.56	32.33
5/15/2005	12.78	25.56	14.78	27.56	15.78	28.56	16.78	29.56
5/16/2005	7.222	16.11	9.222	18.11	10.222	19.11	11.222	20.11
5/17/2005	6.667	17.78	8.667	19.78	9.667	20.78	10.667	21.78
5/18/2005	10.56	17.22	12.56	19.22	13.56	20.22	14.56	21.22
5/19/2005	12.78	24.44	14.78	26.44	15.78	27.44	16.78	28.44
5/20/2005	10.56	23.33	12.56	25.33	13.56	26.33	14.56	27.33
5/21/2005	12.78	26.67	14.78	28.67	15.78	29.67	16.78	30.67
5/22/2005	16.67	29.44	18.67	31.44	19.67	32.44	20.67	33.44
5/23/2005	17.22	30	19.22	32	20.22	33	21.22	34
5/24/2005	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
5/25/2005	19.44	32.22	21.44	34.22	22.44	35.22	23.44	36.22
5/26/2005	20	32.22	22	34.22	23	35.22	24	36.22
5/27/2005	18.33	31.67	20.33	33.67	21.33	34.67	22.33	35.67
5/28/2005	8.333	25	10.333	27	11.333	28	12.333	29
5/29/2005	7.778	22.78	9.778	24.78	10.778	25.78	11.778	26.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/30/2005	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
5/31/2005	15.56	30	17.56	32	18.56	33	19.56	34
6/1/2005	17.22	29.44	19.22	31.44	20.22	32.44	21.22	33.44
6/2/2005	16.11	28.33	18.11	30.33	19.11	31.33	20.11	32.33
6/3/2005	17.22	29.44	19.22	31.44	20.22	32.44	21.22	33.44
6/4/2005	12.22	30	14.22	32	15.22	33	16.22	34
6/5/2005	8.333	23.89	10.333	25.89	11.333	26.89	12.333	27.89
6/6/2005	7.222	22.22	9.222	24.22	10.222	25.22	11.222	26.22
6/7/2005	8.333	24.44	10.333	26.44	11.333	27.44	12.333	28.44
6/8/2005	9.444	15	11.444	17	12.444	18	13.444	19
6/9/2005	12.78	22.78	14.78	24.78	15.78	25.78	16.78	26.78
6/10/2005	13.33	27.22	15.33	29.22	16.33	30.22	17.33	31.22
6/11/2005	15.56	28.89	17.56	30.89	18.56	31.89	19.56	32.89
6/12/2005	16.11	29.44	18.11	31.44	19.11	32.44	20.11	33.44
6/13/2005	19.44	33.33	21.44	35.33	22.44	36.33	23.44	37.33
6/14/2005	18.33	34.44	20.33	36.44	21.33	37.44	22.33	38.44
6/15/2005	15.56	31.11	17.56	33.11	18.56	34.11	19.56	35.11
6/16/2005	8.889	22.78	10.889	24.78	11.889	25.78	12.889	26.78
6/17/2005	8.333	18.89	10.333	20.89	11.333	21.89	12.333	22.89
6/18/2005	7.778	23.89	9.778	25.89	10.778	26.89	11.778	27.89
6/19/2005	9.444	26.11	11.444	28.11	12.444	29.11	13.444	30.11
6/20/2005	12.78	29.44	14.78	31.44	15.78	32.44	16.78	33.44
6/21/2005	14.44	27.22	16.44	29.22	17.44	30.22	18.44	31.22
6/22/2005	14.44	30	16.44	32	17.44	33	18.44	34
6/23/2005	17.78	30.56	19.78	32.56	20.78	33.56	21.78	34.56
6/24/2005	16.11	29.44	18.11	31.44	19.11	32.44	20.11	33.44
6/25/2005	14.44	27.78	16.44	29.78	17.44	30.78	18.44	31.78
6/26/2005	15	28.33	17	30.33	18	31.33	19	32.33
6/27/2005	14.44	28.33	16.44	30.33	17.44	31.33	18.44	32.33
6/28/2005	15	30	17	32	18	33	19	34
6/29/2005	18.33	34.44	20.33	36.44	21.33	37.44	22.33	38.44
6/30/2005	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
7/1/2005	22.78	36.67	24.78	38.67	25.78	39.67	26.78	40.67
7/2/2005	21.11	35	23.11	37	24.11	38	25.11	39
7/3/2005	20	34.44	22	36.44	23	37.44	24	38.44
7/4/2005	21.11	35	23.11	37	24.11	38	25.11	39
7/5/2005	21.67	34.44	23.67	36.44	24.67	37.44	25.67	38.44
7/6/2005	20.56	33.89	22.56	35.89	23.56	36.89	24.56	37.89
7/7/2005	18.33	33.89	20.33	35.89	21.33	36.89	22.33	37.89
7/8/2005	13.89	30	15.89	32	16.89	33	17.89	34
7/9/2005	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
7/10/2005	15	31.11	17	33.11	18	34.11	19	35.11
7/11/2005	18.89	35.56	20.89	37.56	21.89	38.56	22.89	39.56
7/12/2005	22.78	37.78	24.78	39.78	25.78	40.78	26.78	41.78
7/13/2005	25	38.89	27	40.89	28	41.89	29	42.89
7/14/2005	25	38.89	27	40.89	28	41.89	29	42.89
7/15/2005	25.56	39.44	27.56	41.44	28.56	42.44	29.56	43.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: MTZ							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/16/2005	25.56	39.44	27.56	41.44	28.56	42.44	29.56	43.44
7/17/2005	26.67	39.44	28.67	41.44	29.67	42.44	30.67	43.44
7/18/2005	23.89	38.89	25.89	40.89	26.89	41.89	27.89	42.89
7/19/2005	23.89	37.22	25.89	39.22	26.89	40.22	27.89	41.22
7/20/2005	24.44	39.44	26.44	41.44	27.44	42.44	28.44	43.44
7/21/2005	20	37.22	22	39.22	23	40.22	24	41.22
7/22/2005	20.56	35.56	22.56	37.56	23.56	38.56	24.56	39.56
7/23/2005	23.89	38.33	25.89	40.33	26.89	41.33	27.89	42.33
7/24/2005	22.78	38.33	24.78	40.33	25.78	41.33	26.78	42.33
7/25/2005	21.67	37.22	23.67	39.22	24.67	40.22	25.67	41.22
7/26/2005	22.78	38.33	24.78	40.33	25.78	41.33	26.78	42.33
7/27/2005	23.33	37.78	25.33	39.78	26.33	40.78	27.33	41.78
7/28/2005	23.33	37.78	25.33	39.78	26.33	40.78	27.33	41.78
7/29/2005	22.78	36.67	24.78	38.67	25.78	39.67	26.78	40.67
7/30/2005	23.33	37.22	25.33	39.22	26.33	40.22	27.33	41.22
7/31/2005	23.89	37.22	25.89	39.22	26.89	40.22	27.89	41.22
8/1/2005	22.22	37.78	24.22	39.78	25.22	40.78	26.22	41.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/1/1999	4.563	20.23	6.563	22.23	7.563	23.23	8.563	24.23
10/2/1999	3.163	18.93	5.163	20.93	6.163	21.93	7.163	22.93
10/3/1999	2.563	16.23	4.563	18.23	5.563	19.23	6.563	20.23
10/4/1999	0.8628	18.53	2.8628	20.53	3.8628	21.53	4.8628	22.53
10/5/1999	2.163	15.43	4.163	17.43	5.163	18.43	6.163	19.43
10/6/1999	-3.137	11.63	-1.137	13.63	-0.137	14.63	0.863	15.63
10/7/1999	-5.937	6.631	-3.937	8.631	-2.937	9.631	-1.937	10.631
10/8/1999	-7.037	13.33	-5.037	15.33	-4.037	16.33	-3.037	17.33
10/9/1999	0.06284	20.23	2.06284	22.23	3.06284	23.23	4.06284	24.23
10/10/1999	2.463	19.43	4.463	21.43	5.463	22.43	6.463	23.43
10/11/1999	-1.111	17.78	0.889	19.78	1.889	20.78	2.889	21.78
10/12/1999	2.263	16.83	4.263	18.83	5.263	19.83	6.263	20.83
10/13/1999	1.263	20.33	3.263	22.33	4.263	23.33	5.263	24.33
10/14/1999	1.667	18.89	3.667	20.89	4.667	21.89	5.667	22.89
10/15/1999	2.363	17.63	4.363	19.63	5.363	20.63	6.363	21.63
10/16/1999	-3.937	11.33	-1.937	13.33	-0.937	14.33	0.063	15.33
10/17/1999	-9.037	8.531	-7.037	10.531	-6.037	11.531	-5.037	12.531
10/18/1999	-7.537	13.43	-5.537	15.43	-4.537	16.43	-3.537	17.43
10/19/1999	-1.137	15.93	0.863	17.93	1.863	18.93	2.863	19.93
10/20/1999	-2.337	16.63	-0.337	18.63	0.663	19.63	1.663	20.63
10/21/1999	0.9628	16.83	2.9628	18.83	3.9628	19.83	4.9628	20.83
10/22/1999	0.9628	18.23	2.9628	20.23	3.9628	21.23	4.9628	22.23
10/23/1999	0.8628	16.33	2.8628	18.33	3.8628	19.33	4.8628	20.33
10/24/1999	1.263	13.43	3.263	15.43	4.263	16.43	5.263	17.43
10/25/1999	0.8628	15.43	2.8628	17.43	3.8628	18.43	4.8628	19.43
10/26/1999	0.8628	16.13	2.8628	18.13	3.8628	19.13	4.8628	20.13
10/27/1999	0.6628	13.33	2.6628	15.33	3.6628	16.33	4.6628	17.33
10/28/1999	-1.237	11.63	0.763	13.63	1.763	14.63	2.763	15.63
10/29/1999	-2.778	12.78	-0.778	14.78	0.222	15.78	1.222	16.78
10/30/1999	-2.778	15	-0.778	17	0.222	18	1.222	19
10/31/1999	-3.889	16.11	-1.889	18.11	-0.889	19.11	0.111	20.11
11/1/1999	-1.667	16.67	0.333	18.67	1.333	19.67	2.333	20.67
11/2/1999	-3.333	16.11	-1.333	18.11	-0.333	19.11	0.667	20.11
11/3/1999	-4.444	16.67	-2.444	18.67	-1.444	19.67	-0.444	20.67
11/4/1999	-3.333	15	-1.333	17	-0.333	18	0.667	19
11/5/1999	-3.889	15	-1.889	17	-0.889	18	0.111	19
11/6/1999	-0.1372	14.23	1.8628	16.23	2.8628	17.23	3.8628	18.23
11/7/1999	-1.237	14.33	0.763	16.33	1.763	17.33	2.763	18.33
11/8/1999	-8.889	0.5556	-6.889	2.5556	-5.889	3.5556	-4.889	4.5556
11/9/1999	-10	5.556	-8	7.556	-7	8.556	-6	9.556
11/10/1999	-3.333	7.222	-1.333	9.222	-0.333	10.222	0.667	11.222
11/11/1999	-4.444	12.22	-2.444	14.22	-1.444	15.22	-0.444	16.22
11/12/1999	-5	14.44	-3	16.44	-2	17.44	-1	18.44
11/13/1999	-4.444	15	-2.444	17	-1.444	18	-0.444	19
11/14/1999	-3.333	14.44	-1.333	16.44	-0.333	17.44	0.667	18.44
11/15/1999	-2.222	7.222	-0.222	9.222	0.778	10.222	1.778	11.222
11/16/1999	-4.444	6.667	-2.444	8.667	-1.444	9.667	-0.444	10.667

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/17/1999	-8.333	-0.555	-6.333	1.445	-5.333	2.445	-4.333	3.445
11/18/1999	-10.56	10	-8.56	12	-7.56	13	-6.56	14
11/19/1999	-7.778	3.333	-5.778	5.333	-4.778	6.333	-3.778	7.333
11/20/1999	-5	2.778	-3	4.778	-2	5.778	-1	6.778
11/21/1999	-8.333	-0.555	-6.333	1.445	-5.333	2.445	-4.333	3.445
11/22/1999	-12.22	4.444	-10.22	6.444	-9.22	7.444	-8.22	8.444
11/23/1999	-14.44	1.111	-12.44	3.111	-11.44	4.111	-10.44	5.111
11/24/1999	-12.22	8.333	-10.22	10.333	-9.22	11.333	-8.22	12.333
11/25/1999	-5	11.11	-3	13.11	-2	14.11	-1	15.11
11/26/1999	-6.111	10.56	-4.111	12.56	-3.111	13.56	-2.111	14.56
11/27/1999	-8.333	8.333	-6.333	10.333	-5.333	11.333	-4.333	12.333
11/28/1999	-8.333	8.889	-6.333	10.889	-5.333	11.889	-4.333	12.889
11/29/1999	-3.333	8.889	-1.333	10.889	-0.333	11.889	0.667	12.889
11/30/1999	-5.556	3.889	-3.556	5.889	-2.556	6.889	-1.556	7.889
12/1/1999	-9.444	5.556	-7.444	7.556	-6.444	8.556	-5.444	9.556
12/2/1999	-8.333	1.111	-6.333	3.111	-5.333	4.111	-4.333	5.111
12/3/1999	-9.444	1.667	-7.444	3.667	-6.444	4.667	-5.444	5.667
12/4/1999	-7.778	12.22	-5.778	14.22	-4.778	15.22	-3.778	16.22
12/5/1999	-9.444	5	-7.444	7	-6.444	8	-5.444	9
12/6/1999	-9.444	5	-7.444	7	-6.444	8	-5.444	9
12/7/1999	-12.22	-2.222	-10.22	-0.222	-9.22	0.778	-8.22	1.778
12/8/1999	-10.56	6.111	-8.56	8.111	-7.56	9.111	-6.56	10.111
12/9/1999	-18.04	4.731	-16.04	6.731	-15.04	7.731	-14.04	8.731
12/10/1999	-8.889	-3.889	-6.889	-1.889	-5.889	-0.889	-4.889	0.111
12/11/1999	-7.222	4.444	-5.222	6.444	-4.222	7.444	-3.222	8.444
12/12/1999	-8.889	7.222	-6.889	9.222	-5.889	10.222	-4.889	11.222
12/13/1999	-7.222	2.222	-5.222	4.222	-4.222	5.222	-3.222	6.222
12/14/1999	-12.22	2.222	-10.22	4.222	-9.22	5.222	-8.22	6.222
12/15/1999	-8.889	10	-6.889	12	-5.889	13	-4.889	14
12/16/1999	-8.333	13.89	-6.333	15.89	-5.333	16.89	-4.333	17.89
12/17/1999	-5	12.22	-3	14.22	-2	15.22	-1	16.22
12/18/1999	-7.222	8.889	-5.222	10.889	-4.222	11.889	-3.222	12.889
12/19/1999	-2.778	8.889	-0.778	10.889	0.222	11.889	1.222	12.889
12/20/1999	-1.111	8.889	0.889	10.889	1.889	11.889	2.889	12.889
12/21/1999	-3.889	5.556	-1.889	7.556	-0.889	8.556	0.111	9.556
12/22/1999	-2.222	7.222	-0.222	9.222	0.778	10.222	1.778	11.222
12/23/1999	-11.04	4.531	-9.04	6.531	-8.04	7.531	-7.04	8.531
12/24/1999	-2.222	6.111	-0.222	8.111	0.778	9.111	1.778	10.111
12/25/1999	-3.333	3.889	-1.333	5.889	-0.333	6.889	0.667	7.889
12/26/1999	-4.444	8.333	-2.444	10.333	-1.444	11.333	-0.444	12.333
12/27/1999	-2.778	5	-0.778	7	0.222	8	1.222	9
12/28/1999	-9.444	8.889	-7.444	10.889	-6.444	11.889	-5.444	12.889
12/29/1999	-10.56	7.222	-8.56	9.222	-7.56	10.222	-6.56	11.222
12/30/1999	-10.56	8.333	-8.56	10.333	-7.56	11.333	-6.56	12.333
12/31/1999	-8.333	7.222	-6.333	9.222	-5.333	10.222	-4.333	11.222
1/1/2000	-12.22	0	-10.22	2	-9.22	3	-8.22	4
1/2/2000	-17.22	-2.78	-15.22	-0.78	-14.22	0.22	-13.22	1.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/3/2000	-6.67	5	-4.67	7	-3.67	8	-2.67	9
1/4/2000	-12.22	2.22	-10.22	4.22	-9.22	5.22	-8.22	6.22
1/5/2000	-13.33	-1.67	-11.33	0.33	-10.33	1.33	-9.33	2.33
1/6/2000	-9.44	8.33	-7.44	10.33	-6.44	11.33	-5.44	12.33
1/7/2000	-8.89	5.56	-6.89	7.56	-5.89	8.56	-4.89	9.56
1/8/2000	-9.44	6.67	-7.44	8.67	-6.44	9.67	-5.44	10.67
1/9/2000	-8.33	0.56	-6.33	2.56	-5.33	3.56	-4.33	4.56
1/10/2000	-5	1.11	-3	3.11	-2	4.11	-1	5.11
1/11/2000	-5	-1.67	-3	0.33	-2	1.33	-1	2.33
1/12/2000	-3.89	-1.11	-1.89	0.89	-0.89	1.89	0.11	2.89
1/13/2000	-8.33	3.89	-6.33	5.89	-5.33	6.89	-4.33	7.89
1/14/2000	-7.78	3.89	-5.78	5.89	-4.78	6.89	-3.78	7.89
1/15/2000	-1.67	0	0.33	2	1.33	3	2.33	4
1/16/2000	-4.44	-0.56	-2.44	1.44	-1.44	2.44	-0.44	3.44
1/17/2000	-0.56	0	1.44	2	2.44	3	3.44	4
1/18/2000	-0.56	2.22	1.44	4.22	2.44	5.22	3.44	6.22
1/19/2000	-3.33	5	-1.33	7	-0.33	8	0.67	9
1/20/2000	-2.78	1.11	-0.78	3.11	0.22	4.11	1.22	5.11
1/21/2000	-7.237	0.9314	-5.237	2.9314	-4.237	3.9314	-3.237	4.9314
1/22/2000	-6.11	1.67	-4.11	3.67	-3.11	4.67	-2.11	5.67
1/23/2000	-3.33	-0.56	-1.33	1.44	-0.33	2.44	0.67	3.44
1/24/2000	-1.67	-0.56	0.33	1.44	1.33	2.44	2.33	3.44
1/25/2000	-7.78	0	-5.78	2	-4.78	3	-3.78	4
1/26/2000	-10.64	0.03138	-8.64	2.03138	-7.64	3.03138	-6.64	4.03138
1/27/2000	-12.22	3.33	-10.22	5.33	-9.22	6.33	-8.22	7.33
1/28/2000	-12.78	6.11	-10.78	8.11	-9.78	9.11	-8.78	10.11
1/29/2000	-13.33	5.56	-11.33	7.56	-10.33	8.56	-9.33	9.56
1/30/2000	-6.11	-2.22	-4.11	-0.22	-3.11	0.78	-2.11	1.78
1/31/2000	-7.22	-0.56	-5.22	1.44	-4.22	2.44	-3.22	3.44
2/1/2000	-7.22	13.33	-5.22	15.33	-4.22	16.33	-3.22	17.33
2/2/2000	-8.33	10.56	-6.33	12.56	-5.33	13.56	-4.33	14.56
2/3/2000	-7.78	6.67	-5.78	8.67	-4.78	9.67	-3.78	10.67
2/4/2000	-6.67	0	-4.67	2	-3.67	3	-2.67	4
2/5/2000	-10	3.89	-8	5.89	-7	6.89	-6	7.89
2/6/2000	-12.22	11.11	-10.22	13.11	-9.22	14.11	-8.22	15.11
2/7/2000	-8.89	8.89	-6.89	10.89	-5.89	11.89	-4.89	12.89
2/8/2000	-5	8.89	-3	10.89	-2	11.89	-1	12.89
2/9/2000	-5	3.33	-3	5.33	-2	6.33	-1	7.33
2/10/2000	-7.22	-0.56	-5.22	1.44	-4.22	2.44	-3.22	3.44
2/11/2000	-11.11	-2.22	-9.11	-0.22	-8.11	0.78	-7.11	1.78
2/12/2000	-6.11	-3.33	-4.11	-1.33	-3.11	-0.33	-2.11	0.67
2/13/2000	-4.44	0	-2.44	2	-1.44	3	-0.44	4
2/14/2000	-11.11	0	-9.11	2	-8.11	3	-7.11	4
2/15/2000	-14.44	3.89	-12.44	5.89	-11.44	6.89	-10.44	7.89
2/16/2000	-8.33	-2.78	-6.33	-0.78	-5.33	0.22	-4.33	1.22
2/17/2000	-8.89	0.56	-6.89	2.56	-5.89	3.56	-4.89	4.56
2/18/2000	-11.11	2.78	-9.11	4.78	-8.11	5.78	-7.11	6.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/19/2000	-9.44	6.11	-7.44	8.11	-6.44	9.11	-5.44	10.11
2/20/2000	-3.89	2.22	-1.89	4.22	-0.89	5.22	0.11	6.22
2/21/2000	-12.22	2.22	-10.22	4.22	-9.22	5.22	-8.22	6.22
2/22/2000	-5.56	-2.22	-3.56	-0.22	-2.56	0.78	-1.56	1.78
2/23/2000	-10	-1.67	-8	0.33	-7	1.33	-6	2.33
2/24/2000	-21.67	-5	-19.67	-3	-18.67	-2	-17.67	-1
2/25/2000	-7.78	1.67	-5.78	3.67	-4.78	4.67	-3.78	5.67
2/26/2000	-4.44	1.11	-2.44	3.11	-1.44	4.11	-0.44	5.11
2/27/2000	-6.11	-1.67	-4.11	0.33	-3.11	1.33	-2.11	2.33
2/28/2000	-7.22	2.22	-5.22	4.22	-4.22	5.22	-3.22	6.22
2/29/2000	-12.22	-2.78	-10.22	-0.78	-9.22	0.22	-8.22	1.22
3/1/2000	-13.89	2.22	-11.89	4.22	-10.89	5.22	-9.89	6.22
3/2/2000	-9.44	0	-7.44	2	-6.44	3	-5.44	4
3/3/2000	-9.437	0.3314	-7.437	2.3314	-6.437	3.3314	-5.437	4.3314
3/4/2000	-9.44	7.22	-7.44	9.22	-6.44	10.22	-5.44	11.22
3/5/2000	-7.22	-1.67	-5.22	0.33	-4.22	1.33	-3.22	2.33
3/6/2000	-7.78	-3.89	-5.78	-1.89	-4.78	-0.89	-3.78	0.11
3/7/2000	-16.67	-1.11	-14.67	0.89	-13.67	1.89	-12.67	2.89
3/8/2000	-14.44	-0.06862	-12.44	1.93138	-11.44	2.93138	-10.44	3.93138
3/9/2000	-13.89	-2.78	-11.89	-0.78	-10.89	0.22	-9.89	1.22
3/10/2000	-15.56	4.44	-13.56	6.44	-12.56	7.44	-11.56	8.44
3/11/2000	-6.11	5.56	-4.11	7.56	-3.11	8.56	-2.11	9.56
3/12/2000	-10.56	14.44	-8.56	16.44	-7.56	17.44	-6.56	18.44
3/13/2000	-9.44	10.56	-7.44	12.56	-6.44	13.56	-5.44	14.56
3/14/2000	-5	12.22	-3	14.22	-2	15.22	-1	16.22
3/15/2000	-8.89	8.89	-6.89	10.89	-5.89	11.89	-4.89	12.89
3/16/2000	-5	6.11	-3	8.11	-2	9.11	-1	10.11
3/17/2000	-7.22	11.67	-5.22	13.67	-4.22	14.67	-3.22	15.67
3/18/2000	-5	13.33	-3	15.33	-2	16.33	-1	17.33
3/19/2000	-6.67	5.56	-4.67	7.56	-3.67	8.56	-2.67	9.56
3/20/2000	-9.44	-2.78	-7.44	-0.78	-6.44	0.22	-5.44	1.22
3/21/2000	-7.22	4.44	-5.22	6.44	-4.22	7.44	-3.22	8.44
3/22/2000	-8.33	8.33	-6.33	10.33	-5.33	11.33	-4.33	12.33
3/23/2000	-4.44	6.11	-2.44	8.11	-1.44	9.11	-0.44	10.11
3/24/2000	-6.67	8.33	-4.67	10.33	-3.67	11.33	-2.67	12.33
3/25/2000	-6.67	8.89	-4.67	10.89	-3.67	11.89	-2.67	12.89
3/26/2000	-6.67	12.22	-4.67	14.22	-3.67	15.22	-2.67	16.22
3/27/2000	-2.78	6.67	-0.78	8.67	0.22	9.67	1.22	10.67
3/28/2000	-9.44	6.11	-7.44	8.11	-6.44	9.11	-5.44	10.11
3/29/2000	-7.78	8.33	-5.78	10.33	-4.78	11.33	-3.78	12.33
3/30/2000	-5	4.44	-3	6.44	-2	7.44	-1	8.44
3/31/2000	-4.44	5.56	-2.44	7.56	-1.44	8.56	-0.44	9.56
4/1/2000	0	9.44	2	11.44	3	12.44	4	13.44
4/2/2000	-1.11	13.33	0.89	15.33	1.89	16.33	2.89	17.33
4/3/2000	-1.67	15.56	0.33	17.56	1.33	18.56	2.33	19.56
4/4/2000	-16.11	11.11	-14.11	13.11	-13.11	14.11	-12.11	15.11
4/5/2000	-5.56	11.67	-3.56	13.67	-2.56	14.67	-1.56	15.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/6/2000	-7.78	11.67	-5.78	13.67	-4.78	14.67	-3.78	15.67
4/7/2000	-5.56	15	-3.56	17	-2.56	18	-1.56	19
4/8/2000	-3.737	13.33	-1.737	15.33	-0.737	16.33	0.263	17.33
4/9/2000	-6.537	8.231	-4.537	10.231	-3.537	11.231	-2.537	12.231
4/10/2000	-7.237	5.531	-5.237	7.531	-4.237	8.531	-3.237	9.531
4/11/2000	-3.33	12.22	-1.33	14.22	-0.33	15.22	0.67	16.22
4/12/2000	-2.22	11.11	-0.22	13.11	0.78	14.11	1.78	15.11
4/13/2000	-2.78	2.78	-0.78	4.78	0.22	5.78	1.22	6.78
4/14/2000	-4.44	3.89	-2.44	5.89	-1.44	6.89	-0.44	7.89
4/15/2000	-5.56	2.22	-3.56	4.22	-2.56	5.22	-1.56	6.22
4/16/2000	-1.67	2.78	0.33	4.78	1.33	5.78	2.33	6.78
4/17/2000	-5	0	-3	2	-2	3	-1	4
4/18/2000	-6.11	-1.11	-4.11	0.89	-3.11	1.89	-2.11	2.89
4/19/2000	-5	4.44	-3	6.44	-2	7.44	-1	8.44
4/20/2000	-4.44	9.44	-2.44	11.44	-1.44	12.44	-0.44	13.44
4/21/2000	-2.22	12.78	-0.22	14.78	0.78	15.78	1.78	16.78
4/22/2000	-5	6.11	-3	8.11	-2	9.11	-1	10.11
4/23/2000	-5	7.22	-3	9.22	-2	10.22	-1	11.22
4/24/2000	-8.33	12.22	-6.33	14.22	-5.33	15.22	-4.33	16.22
4/25/2000	-5.56	11.11	-3.56	13.11	-2.56	14.11	-1.56	15.11
4/26/2000	-3.33	17.78	-1.33	19.78	-0.33	20.78	0.67	21.78
4/27/2000	-3.89	13.33	-1.89	15.33	-0.89	16.33	0.11	17.33
4/28/2000	-2.78	3.89	-0.78	5.89	0.22	6.89	1.22	7.89
4/29/2000	-3.89	11.67	-1.89	13.67	-0.89	14.67	0.11	15.67
4/30/2000	-0.56	16.67	1.44	18.67	2.44	19.67	3.44	20.67
5/1/2000	-2.22	15	-0.22	17	0.78	18	1.78	19
5/2/2000	-4.44	13.33	-2.44	15.33	-1.44	16.33	-0.44	17.33
5/3/2000	-3.33	14.44	-1.33	16.44	-0.33	17.44	0.67	18.44
5/4/2000	-2.22	11.67	-0.22	13.67	0.78	14.67	1.78	15.67
5/5/2000	-1.11	8.33	0.89	10.33	1.89	11.33	2.89	12.33
5/6/2000	-1.67	7.22	0.33	9.22	1.33	10.22	2.33	11.22
5/7/2000	-0.56	3.89	1.44	5.89	2.44	6.89	3.44	7.89
5/8/2000	-0.56	10	1.44	12	2.44	13	3.44	14
5/9/2000	0	8.33	2	10.33	3	11.33	4	12.33
5/10/2000	-10.56	2.22	-8.56	4.22	-7.56	5.22	-6.56	6.22
5/11/2000	-12.22	4.44	-10.22	6.44	-9.22	7.44	-8.22	8.44
5/12/2000	-9.44	8.33	-7.44	10.33	-6.44	11.33	-5.44	12.33
5/13/2000	-3.89	8.89	-1.89	10.89	-0.89	11.89	0.11	12.89
5/14/2000	-5	8.33	-3	10.33	-2	11.33	-1	12.33
5/15/2000	-5.437	7.231	-3.437	9.231	-2.437	10.231	-1.437	11.231
5/16/2000	-3.33	1.11	-1.33	3.11	-0.33	4.11	0.67	5.11
5/17/2000	-3.33	10	-1.33	12	-0.33	13	0.67	14
5/18/2000	1.11	15	3.11	17	4.11	18	5.11	19
5/19/2000	0	18.33	2	20.33	3	21.33	4	22.33
5/20/2000	1.67	21.11	3.67	23.11	4.67	24.11	5.67	25.11
5/21/2000	1.11	22.22	3.11	24.22	4.11	25.22	5.11	26.22
5/22/2000	0	21.11	2	23.11	3	24.11	4	25.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/23/2000	1.11	17.78	3.11	19.78	4.11	20.78	5.11	21.78
5/24/2000	4.44	17.78	6.44	19.78	7.44	20.78	8.44	21.78
5/25/2000	1.11	13.33	3.11	15.33	4.11	16.33	5.11	17.33
5/26/2000	-1.11	16.67	0.89	18.67	1.89	19.67	2.89	20.67
5/27/2000	-0.56	18.33	1.44	20.33	2.44	21.33	3.44	22.33
5/28/2000	-1.11	17.78	0.89	19.78	1.89	20.78	2.89	21.78
5/29/2000	-1.67	15	0.33	17	1.33	18	2.33	19
5/30/2000	-1.11	13.89	0.89	15.89	1.89	16.89	2.89	17.89
5/31/2000	-5	16.67	-3	18.67	-2	19.67	-1	20.67
6/1/2000	-1.11	17.22	0.89	19.22	1.89	20.22	2.89	21.22
6/2/2000	-3.33	17.22	-1.33	19.22	-0.33	20.22	0.67	21.22
6/3/2000	-1.67	20.56	0.33	22.56	1.33	23.56	2.33	24.56
6/4/2000	0	18.33	2	20.33	3	21.33	4	22.33
6/5/2000	0	14.44	2	16.44	3	17.44	4	18.44
6/6/2000	-1.67	17.78	0.33	19.78	1.33	20.78	2.33	21.78
6/7/2000	-0.56	13.33	1.44	15.33	2.44	16.33	3.44	17.33
6/8/2000	-0.56	7.22	1.44	9.22	2.44	10.22	3.44	11.22
6/9/2000	-1.67	8.33	0.33	10.33	1.33	11.33	2.33	12.33
6/10/2000	-2.22	12.22	-0.22	14.22	0.78	15.22	1.78	16.22
6/11/2000	-2.22	15.56	-0.22	17.56	0.78	18.56	1.78	19.56
6/12/2000	2.78	18.33	4.78	20.33	5.78	21.33	6.78	22.33
6/13/2000	8.89	21.67	10.89	23.67	11.89	24.67	12.89	25.67
6/14/2000	8.89	26.67	10.89	28.67	11.89	29.67	12.89	30.67
6/15/2000	5	25.56	7	27.56	8	28.56	9	29.56
6/16/2000	8.33	21.67	10.33	23.67	11.33	24.67	12.33	25.67
6/17/2000	6.11	21.11	8.11	23.11	9.11	24.11	10.11	25.11
6/18/2000	3.33	17.78	5.33	19.78	6.33	20.78	7.33	21.78
6/19/2000	2.78	20.56	4.78	22.56	5.78	23.56	6.78	24.56
6/20/2000	9.44	21.11	11.44	23.11	12.44	24.11	13.44	25.11
6/21/2000	4.44	21.11	6.44	23.11	7.44	24.11	8.44	25.11
6/22/2000	2.78	20.56	4.78	22.56	5.78	23.56	6.78	24.56
6/23/2000	2.78	19.44	4.78	21.44	5.78	22.44	6.78	23.44
6/24/2000	5.56	20.56	7.56	22.56	8.56	23.56	9.56	24.56
6/25/2000	5.763	20.63	7.763	22.63	8.763	23.63	9.763	24.63
6/26/2000	-17.78	20	-15.78	22	-14.78	23	-13.78	24
6/27/2000	6.67	21.11	8.67	23.11	9.67	24.11	10.67	25.11
6/28/2000	8.33	22.22	10.33	24.22	11.33	25.22	12.33	26.22
6/29/2000	7.22	22.78	9.22	24.78	10.22	25.78	11.22	26.78
6/30/2000	2.78	18.89	4.78	20.89	5.78	21.89	6.78	22.89
7/1/2000	0	16.67	2	18.67	3	19.67	4	20.67
7/2/2000	0.56	14.44	2.56	16.44	3.56	17.44	4.56	18.44
7/3/2000	1.11	12.22	3.11	14.22	4.11	15.22	5.11	16.22
7/4/2000	-2.22	13.89	-0.22	15.89	0.78	16.89	1.78	17.89
7/5/2000	-1.11	10.56	0.89	12.56	1.89	13.56	2.89	14.56
7/6/2000	-1.67	13.33	0.33	15.33	1.33	16.33	2.33	17.33
7/7/2000	0	13.33	2	15.33	3	16.33	4	17.33
7/8/2000	-1.11	15	0.89	17	1.89	18	2.89	19

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/9/2000	2.22	17.78	4.22	19.78	5.22	20.78	6.22	21.78
7/10/2000	3.89	18.33	5.89	20.33	6.89	21.33	7.89	22.33
7/11/2000	5.56	20.56	7.56	22.56	8.56	23.56	9.56	24.56
7/12/2000	2.78	20.56	4.78	22.56	5.78	23.56	6.78	24.56
7/13/2000	1.11	20	3.11	22	4.11	23	5.11	24
7/14/2000	1.11	20.56	3.11	22.56	4.11	23.56	5.11	24.56
7/15/2000	3.33	20.56	5.33	22.56	6.33	23.56	7.33	24.56
7/16/2000	5	17.22	7	19.22	8	20.22	9	21.22
7/17/2000	0.56	17.78	2.56	19.78	3.56	20.78	4.56	21.78
7/18/2000	0	18.33	2	20.33	3	21.33	4	22.33
7/19/2000	-0.56	20.56	1.44	22.56	2.44	23.56	3.44	24.56
7/20/2000	1.67	23.33	3.67	25.33	4.67	26.33	5.67	27.33
7/21/2000	2.78	22.22	4.78	24.22	5.78	25.22	6.78	26.22
7/22/2000	2.22	21.11	4.22	23.11	5.22	24.11	6.22	25.11
7/23/2000	1.67	22.78	3.67	24.78	4.67	25.78	5.67	26.78
7/24/2000	2.22	22.78	4.22	24.78	5.22	25.78	6.22	26.78
7/25/2000	3.89	22.78	5.89	24.78	6.89	25.78	7.89	26.78
7/26/2000	3.33	20.56	5.33	22.56	6.33	23.56	7.33	24.56
7/27/2000	-17.78	21.67	-15.78	23.67	-14.78	24.67	-13.78	25.67
7/28/2000	2.22	22.78	4.22	24.78	5.22	25.78	6.22	26.78
7/29/2000	4.44	23.89	6.44	25.89	7.44	26.89	8.44	27.89
7/30/2000	8.33	25	10.33	27	11.33	28	12.33	29
7/31/2000	8.33	26.67	10.33	28.67	11.33	29.67	12.33	30.67
8/1/2000	10	25.56	12	27.56	13	28.56	14	29.56
8/2/2000	7.78	25	9.78	27	10.78	28	11.78	29
8/3/2000	8.33	21.11	10.33	23.11	11.33	24.11	12.33	25.11
8/4/2000	6.67	20.56	8.67	22.56	9.67	23.56	10.67	24.56
8/5/2000	5	21.67	7	23.67	8	24.67	9	25.67
8/6/2000	5	22.22	7	24.22	8	25.22	9	26.22
8/7/2000	5	20.56	7	22.56	8	23.56	9	24.56
8/8/2000	2.78	19.44	4.78	21.44	5.78	22.44	6.78	23.44
8/9/2000	2.22	19.44	4.22	21.44	5.22	22.44	6.22	23.44
8/10/2000	2.22	17.22	4.22	19.22	5.22	20.22	6.22	21.22
8/11/2000	-0.56	22.22	1.44	24.22	2.44	25.22	3.44	26.22
8/12/2000	1.11	22.22	3.11	24.22	4.11	25.22	5.11	26.22
8/13/2000	0	21.67	2	23.67	3	24.67	4	25.67
8/14/2000	1.11	22.78	3.11	24.78	4.11	25.78	5.11	26.78
8/15/2000	1.11	23.33	3.11	25.33	4.11	26.33	5.11	27.33
8/16/2000	2.78	23.89	4.78	25.89	5.78	26.89	6.78	27.89
8/17/2000	2.78	21.67	4.78	23.67	5.78	24.67	6.78	25.67
8/18/2000	1.11	18.89	3.11	20.89	4.11	21.89	5.11	22.89
8/19/2000	-1.67	17.22	0.33	19.22	1.33	20.22	2.33	21.22
8/20/2000	-1.11	18.33	0.89	20.33	1.89	21.33	2.89	22.33
8/21/2000	1.11	20.56	3.11	22.56	4.11	23.56	5.11	24.56
8/22/2000	1.67	20.56	3.67	22.56	4.67	23.56	5.67	24.56
8/23/2000	2.22	18.89	4.22	20.89	5.22	21.89	6.22	22.89
8/24/2000	0	20.56	2	22.56	3	23.56	4	24.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/25/2000	3.89	22.22	5.89	24.22	6.89	25.22	7.89	26.22
8/26/2000	4.44	21.11	6.44	23.11	7.44	24.11	8.44	25.11
8/27/2000	3.89	22.22	5.89	24.22	6.89	25.22	7.89	26.22
8/28/2000	4.44	22.78	6.44	24.78	7.44	25.78	8.44	26.78
8/29/2000	7.78	15.56	9.78	17.56	10.78	18.56	11.78	19.56
8/30/2000	7.22	11.67	9.22	13.67	10.22	14.67	11.22	15.67
8/31/2000	5.56	14.44	7.56	16.44	8.56	17.44	9.56	18.44
9/1/2000	2.22	5.56	4.22	7.56	5.22	8.56	6.22	9.56
9/2/2000	1.11	4.44	3.11	6.44	4.11	7.44	5.11	8.44
9/3/2000	2.22	8.33	4.22	10.33	5.22	11.33	6.22	12.33
9/4/2000	-1.67	7.22	0.33	9.22	1.33	10.22	2.33	11.22
9/5/2000	-5.56	10	-3.56	12	-2.56	13	-1.56	14
9/6/2000	2.78	14.44	4.78	16.44	5.78	17.44	6.78	18.44
9/7/2000	-1.67	17.78	0.33	19.78	1.33	20.78	2.33	21.78
9/8/2000	-2.22	16.67	-0.22	18.67	0.78	19.67	1.78	20.67
9/9/2000	-2.22	18.33	-0.22	20.33	0.78	21.33	1.78	22.33
9/10/2000	-0.56	19.44	1.44	21.44	2.44	22.44	3.44	23.44
9/11/2000	1.027	17.73	3.027	19.73	4.027	20.73	5.027	21.73
9/12/2000	0	20.56	2	22.56	3	23.56	4	24.56
9/13/2000	8.33	23.89	10.33	25.89	11.33	26.89	12.33	27.89
9/14/2000	5.56	20.56	7.56	22.56	8.56	23.56	9.56	24.56
9/15/2000	2.22	18.33	4.22	20.33	5.22	21.33	6.22	22.33
9/16/2000	-0.56	19.44	1.44	21.44	2.44	22.44	3.44	23.44
9/17/2000	-13.89	22.78	-11.89	24.78	-10.89	25.78	-9.89	26.78
9/18/2000	11.11	22.78	13.11	24.78	14.11	25.78	15.11	26.78
9/19/2000	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
9/20/2000	6.11	22.78	8.11	24.78	9.11	25.78	10.11	26.78
9/21/2000	3.89	16.67	5.89	18.67	6.89	19.67	7.89	20.67
9/22/2000	-0.56	7.22	1.44	9.22	2.44	10.22	3.44	11.22
9/23/2000	-1.67	15	0.33	17	1.33	18	2.33	19
9/24/2000	-1.67	16.67	0.33	18.67	1.33	19.67	2.33	20.67
9/25/2000	-1.67	17.22	0.33	19.22	1.33	20.22	2.33	21.22
9/26/2000	-2.22	17.78	-0.22	19.78	0.78	20.78	1.78	21.78
9/27/2000	-0.56	16.67	1.44	18.67	2.44	19.67	3.44	20.67
9/28/2000	-0.56	15.56	1.44	17.56	2.44	18.56	3.44	19.56
9/29/2000	7.78	18.33	9.78	20.33	10.78	21.33	11.78	22.33
9/30/2000	5	23.33	7	25.33	8	26.33	9	27.33
10/1/2000	1.11	20	3.11	22	4.11	23	5.11	24
10/2/2000	1.11	17.78	3.11	19.78	4.11	20.78	5.11	21.78
10/3/2000	0.56	16.67	2.56	18.67	3.56	19.67	4.56	20.67
10/4/2000	-1.11	17.78	0.89	19.78	1.89	20.78	2.89	21.78
10/5/2000	3.33	20	5.33	22	6.33	23	7.33	24
10/6/2000	2.22	18.33	4.22	20.33	5.22	21.33	6.22	22.33
10/7/2000	3.89	18.33	5.89	20.33	6.89	21.33	7.89	22.33
10/8/2000	1.67	19.44	3.67	21.44	4.67	22.44	5.67	23.44
10/9/2000	-1.67	10	0.33	12	1.33	13	2.33	14
10/10/2000	-3.89	1.11	-1.89	3.11	-0.89	4.11	0.11	5.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/11/2000	-4.44	-0.56	-2.44	1.44	-1.44	2.44	-0.44	3.44
10/12/2000	-7.78	4.44	-5.78	6.44	-4.78	7.44	-3.78	8.44
10/13/2000	-16.11	11.11	-14.11	13.11	-13.11	14.11	-12.11	15.11
10/14/2000	-1.67	11.67	0.33	13.67	1.33	14.67	2.33	15.67
10/15/2000	-3.33	11.67	-1.33	13.67	-0.33	14.67	0.67	15.67
10/16/2000	-3.33	15	-1.33	17	-0.33	18	0.67	19
10/17/2000	-2.22	14.44	-0.22	16.44	0.78	17.44	1.78	18.44
10/18/2000	-1.67	14.44	0.33	16.44	1.33	17.44	2.33	18.44
10/19/2000	-2.78	15	-0.78	17	0.22	18	1.22	19
10/20/2000	-1.67	11.67	0.33	13.67	1.33	14.67	2.33	15.67
10/21/2000	-3.33	3.89	-1.33	5.89	-0.33	6.89	0.67	7.89
10/22/2000	-6.11	1.11	-4.11	3.11	-3.11	4.11	-2.11	5.11
10/23/2000	-3.33	8.89	-1.33	10.89	-0.33	11.89	0.67	12.89
10/24/2000	-4.44	10.56	-2.44	12.56	-1.44	13.56	-0.44	14.56
10/25/2000	-3.33	2.78	-1.33	4.78	-0.33	5.78	0.67	6.78
10/26/2000	-4.44	1.11	-2.44	3.11	-1.44	4.11	-0.44	5.11
10/27/2000	-5	4.44	-3	6.44	-2	7.44	-1	8.44
10/28/2000	-1.11	0	0.89	2	1.89	3	2.89	4
10/29/2000	-5.56	-1.67	-3.56	0.33	-2.56	1.33	-1.56	2.33
10/30/2000	-6.67	0.56	-4.67	2.56	-3.67	3.56	-2.67	4.56
10/31/2000	-5.56	0.56	-3.56	2.56	-2.56	3.56	-1.56	4.56
11/1/2000	-7.22	7.78	-5.22	9.78	-4.22	10.78	-3.22	11.78
11/2/2000	-4.44	8.33	-2.44	10.33	-1.44	11.33	-0.44	12.33
11/3/2000	-3.89	5.56	-1.89	7.56	-0.89	8.56	0.11	9.56
11/4/2000	-6.11	9.44	-4.11	11.44	-3.11	12.44	-2.11	13.44
11/5/2000	-6.11	10.56	-4.11	12.56	-3.11	13.56	-2.11	14.56
11/6/2000	-6.11	2.78	-4.11	4.78	-3.11	5.78	-2.11	6.78
11/7/2000	-6.11	7.22	-4.11	9.22	-3.11	10.22	-2.11	11.22
11/8/2000	-5	3.33	-3	5.33	-2	6.33	-1	7.33
11/9/2000	-8.33	-3.33	-6.33	-1.33	-5.33	-0.33	-4.33	0.67
11/10/2000	-11.11	-6.11	-9.11	-4.11	-8.11	-3.11	-7.11	-2.11
11/11/2000	-18.33	-4.44	-16.33	-2.44	-15.33	-1.44	-14.33	-0.44
11/12/2000	-18.89	3.89	-16.89	5.89	-15.89	6.89	-14.89	7.89
11/13/2000	-17.78	-0.56	-15.78	1.44	-14.78	2.44	-13.78	3.44
11/14/2000	-16.67	-4.44	-14.67	-2.44	-13.67	-1.44	-12.67	-0.44
11/15/2000	-18.33	-1.67	-16.33	0.33	-15.33	1.33	-14.33	2.33
11/16/2000	-12.78	-3.89	-10.78	-1.89	-9.78	-0.89	-8.78	0.11
11/17/2000	-11.67	3.33	-9.67	5.33	-8.67	6.33	-7.67	7.33
11/18/2000	-7.78	10.56	-5.78	12.56	-4.78	13.56	-3.78	14.56
11/19/2000	-9.44	10.56	-7.44	12.56	-6.44	13.56	-5.44	14.56
11/20/2000	-10.56	11.11	-8.56	13.11	-7.56	14.11	-6.56	15.11
11/21/2000	-10.56	6.67	-8.56	8.67	-7.56	9.67	-6.56	10.67
11/22/2000	-9.44	2.78	-7.44	4.78	-6.44	5.78	-5.44	6.78
11/23/2000	-9.44	11.67	-7.44	13.67	-6.44	14.67	-5.44	15.67
11/24/2000	-6.11	8.89	-4.11	10.89	-3.11	11.89	-2.11	12.89
11/25/2000	-7.22	8.89	-5.22	10.89	-4.22	11.89	-3.22	12.89
11/26/2000	-6.67	8.33	-4.67	10.33	-3.67	11.33	-2.67	12.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/27/2000	-4.44	5.56	-2.44	7.56	-1.44	8.56	-0.44	9.56
11/28/2000	-5.56	11.67	-3.56	13.67	-2.56	14.67	-1.56	15.67
11/29/2000	-4.44	2.78	-2.44	4.78	-1.44	5.78	-0.44	6.78
11/30/2000	-8.33	10	-6.33	12	-5.33	13	-4.33	14
12/1/2000	-10	8.89	-8	10.89	-7	11.89	-6	12.89
12/2/2000	-8.89	11.67	-6.89	13.67	-5.89	14.67	-4.89	15.67
12/3/2000	-9.44	11.67	-7.44	13.67	-6.44	14.67	-5.44	15.67
12/4/2000	-6.11	10.56	-4.11	12.56	-3.11	13.56	-2.11	14.56
12/5/2000	-6.67	12.78	-4.67	14.78	-3.67	15.78	-2.67	16.78
12/6/2000	-6.67	10.56	-4.67	12.56	-3.67	13.56	-2.67	14.56
12/7/2000	-1.67	5	0.33	7	1.33	8	2.33	9
12/8/2000	-5	3.89	-3	5.89	-2	6.89	-1	7.89
12/9/2000	-6.337	6.631	-4.337	8.631	-3.337	9.631	-2.337	10.631
12/10/2000	-6.137	1.431	-4.137	3.431	-3.137	4.431	-2.137	5.431
12/11/2000	-11.11	3.89	-9.11	5.89	-8.11	6.89	-7.11	7.89
12/12/2000	-11.11	-0.56	-9.11	1.44	-8.11	2.44	-7.11	3.44
12/13/2000	-9.44	-3.33	-7.44	-1.33	-6.44	-0.33	-5.44	0.67
12/14/2000	-4.44	-2.22	-2.44	-0.22	-1.44	0.78	-0.44	1.78
12/15/2000	-5	2.22	-3	4.22	-2	5.22	-1	6.22
12/16/2000	-8.33	7.78	-6.33	9.78	-5.33	10.78	-4.33	11.78
12/17/2000	-10.56	7.78	-8.56	9.78	-7.56	10.78	-6.56	11.78
12/18/2000	-8.33	12.22	-6.33	14.22	-5.33	15.22	-4.33	16.22
12/19/2000	-9.44	8.33	-7.44	10.33	-6.44	11.33	-5.44	12.33
12/20/2000	-9.44	8.33	-7.44	10.33	-6.44	11.33	-5.44	12.33
12/21/2000	-8.33	7.22	-6.33	9.22	-5.33	10.22	-4.33	11.22
12/22/2000	-11.67	4.44	-9.67	6.44	-8.67	7.44	-7.67	8.44
12/23/2000	-11.11	7.22	-9.11	9.22	-8.11	10.22	-7.11	11.22
12/24/2000	-11.11	6.67	-9.11	8.67	-8.11	9.67	-7.11	10.67
12/25/2000	-6.11	2.78	-4.11	4.78	-3.11	5.78	-2.11	6.78
12/26/2000	-8.33	10.56	-6.33	12.56	-5.33	13.56	-4.33	14.56
12/27/2000	-9.44	8.33	-7.44	10.33	-6.44	11.33	-5.44	12.33
12/28/2000	-6.67	13.33	-4.67	15.33	-3.67	16.33	-2.67	17.33
12/29/2000	-7.22	11.67	-5.22	13.67	-4.22	14.67	-3.22	15.67
12/30/2000	-10	10.56	-8	12.56	-7	13.56	-6	14.56
12/31/2000	-10.56	10.56	-8.56	12.56	-7.56	13.56	-6.56	14.56
1/1/2001	-5.56	9.44	-3.56	11.44	-2.56	12.44	-1.56	13.44
1/2/2001	-6.67	11.11	-4.67	13.11	-3.67	14.11	-2.67	15.11
1/3/2001	-8.33	14.44	-6.33	16.44	-5.33	17.44	-4.33	18.44
1/4/2001	-7.78	14.44	-5.78	16.44	-4.78	17.44	-3.78	18.44
1/5/2001	-0.7372	14.43	1.2628	16.43	2.2628	17.43	3.2628	18.43
1/6/2001	-8.89	10	-6.89	12	-5.89	13	-4.89	14
1/7/2001	-8.33	8.89	-6.33	10.89	-5.33	11.89	-4.33	12.89
1/8/2001	-3.637	10.13	-1.637	12.13	-0.637	13.13	0.363	14.13
1/9/2001	-11.67	1.11	-9.67	3.11	-8.67	4.11	-7.67	5.11
1/10/2001	-15	-0.56	-13	1.44	-12	2.44	-11	3.44
1/11/2001	-7.78	-5	-5.78	-3	-4.78	-2	-3.78	-1
1/12/2001	-15.56	-1.11	-13.56	0.89	-12.56	1.89	-11.56	2.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/13/2001	-12.78	-3.33	-10.78	-1.33	-9.78	-0.33	-8.78	0.67
1/14/2001	-14.44	-0.56	-12.44	1.44	-11.44	2.44	-10.44	3.44
1/15/2001	-11.67	-7.78	-9.67	-5.78	-8.67	-4.78	-7.67	-3.78
1/16/2001	-14.44	-9.44	-12.44	-7.44	-11.44	-6.44	-10.44	-5.44
1/17/2001	-15.56	-0.56	-13.56	1.44	-12.56	2.44	-11.56	3.44
1/18/2001	-5	7.22	-3	9.22	-2	10.22	-1	11.22
1/19/2001	-12.78	5	-10.78	7	-9.78	8	-8.78	9
1/20/2001	-14.44	5.56	-12.44	7.56	-11.44	8.56	-10.44	9.56
1/21/2001	-11.11	8.89	-9.11	10.89	-8.11	11.89	-7.11	12.89
1/22/2001	-8.33	6.67	-6.33	8.67	-5.33	9.67	-4.33	10.67
1/23/2001	-9.44	2.78	-7.44	4.78	-6.44	5.78	-5.44	6.78
1/24/2001	-10	-5	-8	-3	-7	-2	-6	-1
1/25/2001	-10.56	-6.11	-8.56	-4.11	-7.56	-3.11	-6.56	-2.11
1/26/2001	-8.89	-1.11	-6.89	0.89	-5.89	1.89	-4.89	2.89
1/27/2001	-9.44	-5	-7.44	-3	-6.44	-2	-5.44	-1
1/28/2001	-14.44	7.22	-12.44	9.22	-11.44	10.22	-10.44	11.22
1/29/2001	-13.89	-2.22	-11.89	-0.22	-10.89	0.78	-9.89	1.78
1/30/2001	-11.11	-0.56	-9.11	1.44	-8.11	2.44	-7.11	3.44
1/31/2001	-12.78	0	-10.78	2	-9.78	3	-8.78	4
2/1/2001	-12.22	8.33	-10.22	10.33	-9.22	11.33	-8.22	12.33
2/2/2001	-9.44	6.67	-7.44	8.67	-6.44	9.67	-5.44	10.67
2/3/2001	-3.33	12.78	-1.33	14.78	-0.33	15.78	0.67	16.78
2/4/2001	-5	12.22	-3	14.22	-2	15.22	-1	16.22
2/5/2001	-10	10	-8	12	-7	13	-6	14
2/6/2001	-11.11	-0.56	-9.11	1.44	-8.11	2.44	-7.11	3.44
2/7/2001	-12.78	-10	-10.78	-8	-9.78	-7	-8.78	-6
2/8/2001	-13.89	1.11	-11.89	3.11	-10.89	4.11	-9.89	5.11
2/9/2001	-9.44	-6.67	-7.44	-4.67	-6.44	-3.67	-5.44	-2.67
2/10/2001	-10.56	-8.33	-8.56	-6.33	-7.56	-5.33	-6.56	-4.33
2/11/2001	-12.22	-7.78	-10.22	-5.78	-9.22	-4.78	-8.22	-3.78
2/12/2001	-23.33	-3.89	-21.33	-1.89	-20.33	-0.89	-19.33	0.11
2/13/2001	-9.44	-4.44	-7.44	-2.44	-6.44	-1.44	-5.44	-0.44
2/14/2001	-13.89	1.11	-11.89	3.11	-10.89	4.11	-9.89	5.11
2/15/2001	-18.33	2.22	-16.33	4.22	-15.33	5.22	-14.33	6.22
2/16/2001	-16.67	3.89	-14.67	5.89	-13.67	6.89	-12.67	7.89
2/17/2001	-12.78	1.67	-10.78	3.67	-9.78	4.67	-8.78	5.67
2/18/2001	-5.56	-1.11	-3.56	0.89	-2.56	1.89	-1.56	2.89
2/19/2001	-5	-2.78	-3	-0.78	-2	0.22	-1	1.22
2/20/2001	-6.67	-2.78	-4.67	-0.78	-3.67	0.22	-2.67	1.22
2/21/2001	-6.11	-1.11	-4.11	0.89	-3.11	1.89	-2.11	2.89
2/22/2001	-14.44	-3.89	-12.44	-1.89	-11.44	-0.89	-10.44	0.11
2/23/2001	-13.33	-0.56	-11.33	1.44	-10.33	2.44	-9.33	3.44
2/24/2001	-7.78	-3.89	-5.78	-1.89	-4.78	-0.89	-3.78	0.11
2/25/2001	-6.67	2.22	-4.67	4.22	-3.67	5.22	-2.67	6.22
2/26/2001	-5	-2.22	-3	-0.22	-2	0.78	-1	1.78
2/27/2001	-9.44	-0.56	-7.44	1.44	-6.44	2.44	-5.44	3.44
2/28/2001	-11.11	-5.56	-9.11	-3.56	-8.11	-2.56	-7.11	-1.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/1/2001	-18.89	3.33	-16.89	5.33	-15.89	6.33	-14.89	7.33
3/2/2001	-18.33	-1.67	-16.33	0.33	-15.33	1.33	-14.33	2.33
3/3/2001	-20	2.22	-18	4.22	-17	5.22	-16	6.22
3/4/2001	-3.33	-0.56	-1.33	1.44	-0.33	2.44	0.67	3.44
3/5/2001	-2.78	2.78	-0.78	4.78	0.22	5.78	1.22	6.78
3/6/2001	-0.56	3.89	1.44	5.89	2.44	6.89	3.44	7.89
3/7/2001	-4.44	8.33	-2.44	10.33	-1.44	11.33	-0.44	12.33
3/8/2001	-6.67	6.11	-4.67	8.11	-3.67	9.11	-2.67	10.11
3/9/2001	-6.11	-0.56	-4.11	1.44	-3.11	2.44	-2.11	3.44
3/10/2001	-6.67	0	-4.67	2	-3.67	3	-2.67	4
3/11/2001	-8.33	2.78	-6.33	4.78	-5.33	5.78	-4.33	6.78
3/12/2001	-5	6.11	-3	8.11	-2	9.11	-1	10.11
3/13/2001	-6.11	12.22	-4.11	14.22	-3.11	15.22	-2.11	16.22
3/14/2001	-10	11.11	-8	13.11	-7	14.11	-6	15.11
3/15/2001	-8.33	6.11	-6.33	8.11	-5.33	9.11	-4.33	10.11
3/16/2001	-6.11	8.33	-4.11	10.33	-3.11	11.33	-2.11	12.33
3/17/2001	-4.44	10.56	-2.44	12.56	-1.44	13.56	-0.44	14.56
3/18/2001	-3.33	14.44	-1.33	16.44	-0.33	17.44	0.67	18.44
3/19/2001	-4.44	14.44	-2.44	16.44	-1.44	17.44	-0.44	18.44
3/20/2001	-2.78	11.67	-0.78	13.67	0.22	14.67	1.22	15.67
3/21/2001	-1.937	10.73	0.063	12.73	1.063	13.73	2.063	14.73
3/22/2001	-2.78	11.67	-0.78	13.67	0.22	14.67	1.22	15.67
3/23/2001	-4.44	10.56	-2.44	12.56	-1.44	13.56	-0.44	14.56
3/24/2001	-5	8.89	-3	10.89	-2	11.89	-1	12.89
3/25/2001	-2.22	7.78	-0.22	9.78	0.78	10.78	1.78	11.78
3/26/2001	-6.67	12.22	-4.67	14.22	-3.67	15.22	-2.67	16.22
3/27/2001	-5	13.33	-3	15.33	-2	16.33	-1	17.33
3/28/2001	-2.22	13.33	-0.22	15.33	0.78	16.33	1.78	17.33
3/29/2001	-2.78	10	-0.78	12	0.22	13	1.22	14
3/30/2001	-4.44	16.11	-2.44	18.11	-1.44	19.11	-0.44	20.11
3/31/2001	-2.78	13.33	-0.78	15.33	0.22	16.33	1.22	17.33
4/1/2001	-1.11	8.89	0.89	10.89	1.89	11.89	2.89	12.89
4/2/2001	-6.11	2.22	-4.11	4.22	-3.11	5.22	-2.11	6.22
4/3/2001	-11.67	-2.78	-9.67	-0.78	-8.67	0.22	-7.67	1.22
4/4/2001	-11.11	0	-9.11	2	-8.11	3	-7.11	4
4/5/2001	-6.11	2.22	-4.11	4.22	-3.11	5.22	-2.11	6.22
4/6/2001	-5.56	-4.44	-3.56	-2.44	-2.56	-1.44	-1.56	-0.44
4/7/2001	-12.78	-5	-10.78	-3	-9.78	-2	-8.78	-1
4/8/2001	-12.22	-4.44	-10.22	-2.44	-9.22	-1.44	-8.22	-0.44
4/9/2001	-15	-4.44	-13	-2.44	-12	-1.44	-11	-0.44
4/10/2001	-10	4.44	-8	6.44	-7	7.44	-6	8.44
4/11/2001	-6.11	-2.78	-4.11	-0.78	-3.11	0.22	-2.11	1.22
4/12/2001	-16.67	2.78	-14.67	4.78	-13.67	5.78	-12.67	6.78
4/13/2001	-6.67	2.78	-4.67	4.78	-3.67	5.78	-2.67	6.78
4/14/2001	-13.89	6.11	-11.89	8.11	-10.89	9.11	-9.89	10.11
4/15/2001	-10.56	10	-8.56	12	-7.56	13	-6.56	14
4/16/2001	-6.67	11.67	-4.67	13.67	-3.67	14.67	-2.67	15.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/17/2001	-3.33	11.67	-1.33	13.67	-0.33	14.67	0.67	15.67
4/18/2001	-9.44	7.22	-7.44	9.22	-6.44	10.22	-5.44	11.22
4/19/2001	-6.67	-1.67	-4.67	0.33	-3.67	1.33	-2.67	2.33
4/20/2001	-7.78	-3.89	-5.78	-1.89	-4.78	-0.89	-3.78	0.11
4/21/2001	-7.22	1.11	-5.22	3.11	-4.22	4.11	-3.22	5.11
4/22/2001	-11.11	8.33	-9.11	10.33	-8.11	11.33	-7.11	12.33
4/23/2001	-5	12.22	-3	14.22	-2	15.22	-1	16.22
4/24/2001	-1.11	16.11	0.89	18.11	1.89	19.11	2.89	20.11
4/25/2001	-2.22	16.11	-0.22	18.11	0.78	19.11	1.78	20.11
4/26/2001	-2.22	14.44	-0.22	16.44	0.78	17.44	1.78	18.44
4/27/2001	-3.33	12.22	-1.33	14.22	-0.33	15.22	0.67	16.22
4/28/2001	-3.33	7.22	-1.33	9.22	-0.33	10.22	0.67	11.22
4/29/2001	-6.11	15	-4.11	17	-3.11	18	-2.11	19
4/30/2001	-1.67	16.67	0.33	18.67	1.33	19.67	2.33	20.67
5/1/2001	-2.78	16.11	-0.78	18.11	0.22	19.11	1.22	20.11
5/2/2001	-3.89	2.78	-1.89	4.78	-0.89	5.78	0.11	6.78
5/3/2001	-5	7.78	-3	9.78	-2	10.78	-1	11.78
5/4/2001	-1.67	13.33	0.33	15.33	1.33	16.33	2.33	17.33
5/5/2001	-4.737	14.83	-2.737	16.83	-1.737	17.83	-0.737	18.83
5/6/2001	-2.22	17.78	-0.22	19.78	0.78	20.78	1.78	21.78
5/7/2001	1.67	20	3.67	22	4.67	23	5.67	24
5/8/2001	-1.11	18.89	0.89	20.89	1.89	21.89	2.89	22.89
5/9/2001	-2.22	17.78	-0.22	19.78	0.78	20.78	1.78	21.78
5/10/2001	-2.22	20.56	-0.22	22.56	0.78	23.56	1.78	24.56
5/11/2001	0	20	2	22	3	23	4	24
5/12/2001	0	15.56	2	17.56	3	18.56	4	19.56
5/13/2001	-1.11	12.78	0.89	14.78	1.89	15.78	2.89	16.78
5/14/2001	-2.22	13.33	-0.22	15.33	0.78	16.33	1.78	17.33
5/15/2001	2.22	8.89	4.22	10.89	5.22	11.89	6.22	12.89
5/16/2001	-0.56	15.56	1.44	17.56	2.44	18.56	3.44	19.56
5/17/2001	-1.11	16.11	0.89	18.11	1.89	19.11	2.89	20.11
5/18/2001	-1.11	17.22	0.89	19.22	1.89	20.22	2.89	21.22
5/19/2001	3.33	18.33	5.33	20.33	6.33	21.33	7.33	22.33
5/20/2001	3.33	19.44	5.33	21.44	6.33	22.44	7.33	23.44
5/21/2001	5.56	19.44	7.56	21.44	8.56	22.44	9.56	23.44
5/22/2001	2.78	21.11	4.78	23.11	5.78	24.11	6.78	25.11
5/23/2001	2.22	20.56	4.22	22.56	5.22	23.56	6.22	24.56
5/24/2001	1.11	20.56	3.11	22.56	4.11	23.56	5.11	24.56
5/25/2001	1.67	19.44	3.67	21.44	4.67	22.44	5.67	23.44
5/26/2001	0.56	16.67	2.56	18.67	3.56	19.67	4.56	20.67
5/27/2001	-0.56	16.11	1.44	18.11	2.44	19.11	3.44	20.11
5/28/2001	-1.67	15	0.33	17	1.33	18	2.33	19
5/29/2001	0	20.56	2	22.56	3	23.56	4	24.56
5/30/2001	7.78	22.78	9.78	24.78	10.78	25.78	11.78	26.78
5/31/2001	6.67	23.33	8.67	25.33	9.67	26.33	10.67	27.33
6/1/2001	3.33	17.78	5.33	19.78	6.33	20.78	7.33	21.78
6/2/2001	1.67	12.22	3.67	14.22	4.67	15.22	5.67	16.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/3/2001	-3.33	12.22	-1.33	14.22	-0.33	15.22	0.67	16.22
6/4/2001	-0.56	14.44	1.44	16.44	2.44	17.44	3.44	18.44
6/5/2001	0	12.22	2	14.22	3	15.22	4	16.22
6/6/2001	-0.56	18.89	1.44	20.89	2.44	21.89	3.44	22.89
6/7/2001	0.56	19.44	2.56	21.44	3.56	22.44	4.56	23.44
6/8/2001	1.11	18.33	3.11	20.33	4.11	21.33	5.11	22.33
6/9/2001	-0.56	17.22	1.44	19.22	2.44	20.22	3.44	21.22
6/10/2001	0	16.11	2	18.11	3	19.11	4	20.11
6/11/2001	-1.11	15	0.89	17	1.89	18	2.89	19
6/12/2001	-0.56	13.33	1.44	15.33	2.44	16.33	3.44	17.33
6/13/2001	0	13.89	2	15.89	3	16.89	4	17.89
6/14/2001	-1.11	16.67	0.89	18.67	1.89	19.67	2.89	20.67
6/15/2001	0	19.44	2	21.44	3	22.44	4	23.44
6/16/2001	0.56	21.67	2.56	23.67	3.56	24.67	4.56	25.67
6/17/2001	1.67	19.44	3.67	21.44	4.67	22.44	5.67	23.44
6/18/2001	0	19.44	2	21.44	3	22.44	4	23.44
6/19/2001	1.11	20.56	3.11	22.56	4.11	23.56	5.11	24.56
6/20/2001	6.11	23.33	8.11	25.33	9.11	26.33	10.11	27.33
6/21/2001	6.11	23.33	8.11	25.33	9.11	26.33	10.11	27.33
6/22/2001	4.44	22.22	6.44	24.22	7.44	25.22	8.44	26.22
6/23/2001	4.44	19.44	6.44	21.44	7.44	22.44	8.44	23.44
6/24/2001	1.11	16.11	3.11	18.11	4.11	19.11	5.11	20.11
6/25/2001	2.22	15	4.22	17	5.22	18	6.22	19
6/26/2001	5.56	13.89	7.56	15.89	8.56	16.89	9.56	17.89
6/27/2001	6.67	8.89	8.67	10.89	9.67	11.89	10.67	12.89
6/28/2001	0	17.78	2	19.78	3	20.78	4	21.78
6/29/2001	1.11	21.11	3.11	23.11	4.11	24.11	5.11	25.11
6/30/2001	4.44	22.22	6.44	24.22	7.44	25.22	8.44	26.22
7/1/2001	2.78	23.33	4.78	25.33	5.78	26.33	6.78	27.33
7/2/2001	7.22	25.56	9.22	27.56	10.22	28.56	11.22	29.56
7/3/2001	9.44	26.11	11.44	28.11	12.44	29.11	13.44	30.11
7/4/2001	10.56	21.11	12.56	23.11	13.56	24.11	14.56	25.11
7/5/2001	7.78	20.56	9.78	22.56	10.78	23.56	11.78	24.56
7/6/2001	8.33	17.22	10.33	19.22	11.33	20.22	12.33	21.22
7/7/2001	8.33	17.78	10.33	19.78	11.33	20.78	12.33	21.78
7/8/2001	5.56	20	7.56	22	8.56	23	9.56	24
7/9/2001	5.56	19.44	7.56	21.44	8.56	22.44	9.56	23.44
7/10/2001	3.89	19.44	5.89	21.44	6.89	22.44	7.89	23.44
7/11/2001	4.44	17.22	6.44	19.22	7.44	20.22	8.44	21.22
7/12/2001	-0.56	19.44	1.44	21.44	2.44	22.44	3.44	23.44
7/13/2001	2.78	20	4.78	22	5.78	23	6.78	24
7/14/2001	0	17.78	2	19.78	3	20.78	4	21.78
7/15/2001	-0.56	16.67	1.44	18.67	2.44	19.67	3.44	20.67
7/16/2001	2.78	14.44	4.78	16.44	5.78	17.44	6.78	18.44
7/17/2001	0	15	2	17	3	18	4	19
7/18/2001	1.11	17.22	3.11	19.22	4.11	20.22	5.11	21.22
7/19/2001	0.56	16.11	2.56	18.11	3.56	19.11	4.56	20.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/20/2001	0	16.11	2	18.11	3	19.11	4	20.11
7/21/2001	0.56	16.67	2.56	18.67	3.56	19.67	4.56	20.67
7/22/2001	0	18.33	2	20.33	3	21.33	4	22.33
7/23/2001	3.33	20	5.33	22	6.33	23	7.33	24
7/24/2001	8.89	23.89	10.89	25.89	11.89	26.89	12.89	27.89
7/25/2001	8.89	25.56	10.89	27.56	11.89	28.56	12.89	29.56
7/26/2001	6.11	23.89	8.11	25.89	9.11	26.89	10.11	27.89
7/27/2001	2.78	22.22	4.78	24.22	5.78	25.22	6.78	26.22
7/28/2001	3.33	22.78	5.33	24.78	6.33	25.78	7.33	26.78
7/29/2001	2.22	21.11	4.22	23.11	5.22	24.11	6.22	25.11
7/30/2001	5.56	16.11	7.56	18.11	8.56	19.11	9.56	20.11
7/31/2001	3.89	20.56	5.89	22.56	6.89	23.56	7.89	24.56
8/1/2001	2.78	21.11	4.78	23.11	5.78	24.11	6.78	25.11
8/2/2001	2.78	21.67	4.78	23.67	5.78	24.67	6.78	25.67
8/3/2001	4.44	19.44	6.44	21.44	7.44	22.44	8.44	23.44
8/4/2001	2.78	17.78	4.78	19.78	5.78	20.78	6.78	21.78
8/5/2001	0.56	22.78	2.56	24.78	3.56	25.78	4.56	26.78
8/6/2001	3.89	25	5.89	27	6.89	28	7.89	29
8/7/2001	8.33	26.67	10.33	28.67	11.33	29.67	12.33	30.67
8/8/2001	8.89	25.56	10.89	27.56	11.89	28.56	12.89	29.56
8/9/2001	7.22	23.89	9.22	25.89	10.22	26.89	11.22	27.89
8/10/2001	6.11	23.89	8.11	25.89	9.11	26.89	10.11	27.89
8/11/2001	3.33	25.56	5.33	27.56	6.33	28.56	7.33	29.56
8/12/2001	7.78	22.78	9.78	24.78	10.78	25.78	11.78	26.78
8/13/2001	4.44	22.22	6.44	24.22	7.44	25.22	8.44	26.22
8/14/2001	4.44	23.33	6.44	25.33	7.44	26.33	8.44	27.33
8/15/2001	3.89	25	5.89	27	6.89	28	7.89	29
8/16/2001	5	25	7	27	8	28	9	29
8/17/2001	6.11	24.44	8.11	26.44	9.11	27.44	10.11	28.44
8/18/2001	4.44	25.56	6.44	27.56	7.44	28.56	8.44	29.56
8/19/2001	3.89	22.78	5.89	24.78	6.89	25.78	7.89	26.78
8/20/2001	3.33	18.33	5.33	20.33	6.33	21.33	7.33	22.33
8/21/2001	0.56	17.78	2.56	19.78	3.56	20.78	4.56	21.78
8/22/2001	-0.56	17.78	1.44	19.78	2.44	20.78	3.44	21.78
8/23/2001	-1.11	19.44	0.89	21.44	1.89	22.44	2.89	23.44
8/24/2001	2.22	22.78	4.22	24.78	5.22	25.78	6.22	26.78
8/25/2001	7.22	24.44	9.22	26.44	10.22	27.44	11.22	28.44
8/26/2001	6.11	24.44	8.11	26.44	9.11	27.44	10.11	28.44
8/27/2001	5.56	26.67	7.56	28.67	8.56	29.67	9.56	30.67
8/28/2001	7.22	26.67	9.22	28.67	10.22	29.67	11.22	30.67
8/29/2001	4.44	22.78	6.44	24.78	7.44	25.78	8.44	26.78
8/30/2001	5.56	22.22	7.56	24.22	8.56	25.22	9.56	26.22
8/31/2001	5	21.67	7	23.67	8	24.67	9	25.67
9/1/2001	3.89	21.67	5.89	23.67	6.89	24.67	7.89	25.67
9/2/2001	2.78	21.11	4.78	23.11	5.78	24.11	6.78	25.11
9/3/2001	4.44	21.67	6.44	23.67	7.44	24.67	8.44	25.67
9/4/2001	3.89	20.56	5.89	22.56	6.89	23.56	7.89	24.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/5/2001	2.22	18.33	4.22	20.33	5.22	21.33	6.22	22.33
9/6/2001	0	21.11	2	23.11	3	24.11	4	25.11
9/7/2001	6.67	23.89	8.67	25.89	9.67	26.89	10.67	27.89
9/8/2001	7.22	22.78	9.22	24.78	10.22	25.78	11.22	26.78
9/9/2001	-17.78	21.11	-15.78	23.11	-14.78	24.11	-13.78	25.11
9/10/2001	-17.78	18.89	-15.78	20.89	-14.78	21.89	-13.78	22.89
9/11/2001	6.163	18.13	8.163	20.13	9.163	21.13	10.163	22.13
9/12/2001	2.78	16.11	4.78	18.11	5.78	19.11	6.78	20.11
9/13/2001	-1.67	17.78	0.33	19.78	1.33	20.78	2.33	21.78
9/14/2001	-0.56	19.44	1.44	21.44	2.44	22.44	3.44	23.44
9/15/2001	-0.56	18.33	1.44	20.33	2.44	21.33	3.44	22.33
9/16/2001	2.22	17.22	4.22	19.22	5.22	20.22	6.22	21.22
9/17/2001	2.22	19.44	4.22	21.44	5.22	22.44	6.22	23.44
9/18/2001	4.44	20.56	6.44	22.56	7.44	23.56	8.44	24.56
9/19/2001	2.78	21.11	4.78	23.11	5.78	24.11	6.78	25.11
9/20/2001	2.78	21.11	4.78	23.11	5.78	24.11	6.78	25.11
9/21/2001	2.22	21.67	4.22	23.67	5.22	24.67	6.22	25.67
9/22/2001	5.56	22.22	7.56	24.22	8.56	25.22	9.56	26.22
9/23/2001	2.78	19.44	4.78	21.44	5.78	22.44	6.78	23.44
9/24/2001	1.11	21.11	3.11	23.11	4.11	24.11	5.11	25.11
9/25/2001	1.11	13.33	3.11	15.33	4.11	16.33	5.11	17.33
9/26/2001	-0.56	18.33	1.44	20.33	2.44	21.33	3.44	22.33
9/27/2001	-0.56	16.67	1.44	18.67	2.44	19.67	3.44	20.67
9/28/2001	0.56	15	2.56	17	3.56	18	4.56	19
9/29/2001	6.67	18.33	8.67	20.33	9.67	21.33	10.67	22.33
9/30/2001	2.78	22.22	4.78	24.22	5.78	25.22	6.78	26.22
10/1/2001	5	21.67	7	23.67	8	24.67	9	25.67
10/2/2001	6.11	22.22	8.11	24.22	9.11	25.22	10.11	26.22
10/3/2001	3.33	22.78	5.33	24.78	6.33	25.78	7.33	26.78
10/4/2001	2.22	20	4.22	22	5.22	23	6.22	24
10/5/2001	1.11	15.56	3.11	17.56	4.11	18.56	5.11	19.56
10/6/2001	-0.56	17.78	1.44	19.78	2.44	20.78	3.44	21.78
10/7/2001	0.56	17.78	2.56	19.78	3.56	20.78	4.56	21.78
10/8/2001	-1.67	12.78	0.33	14.78	1.33	15.78	2.33	16.78
10/9/2001	-3.33	15	-1.33	17	-0.33	18	0.67	19
10/10/2001	-2.22	15.56	-0.22	17.56	0.78	18.56	1.78	19.56
10/11/2001	-2.22	11.11	-0.22	13.11	0.78	14.11	1.78	15.11
10/12/2001	1.11	16.11	3.11	18.11	4.11	19.11	5.11	20.11
10/13/2001	3.89	21.11	5.89	23.11	6.89	24.11	7.89	25.11
10/14/2001	3.33	20.56	5.33	22.56	6.33	23.56	7.33	24.56
10/15/2001	1.11	19.44	3.11	21.44	4.11	22.44	5.11	23.44
10/16/2001	0	17.22	2	19.22	3	20.22	4	21.22
10/17/2001	-2.22	15.56	-0.22	17.56	0.78	18.56	1.78	19.56
10/18/2001	-0.56	17.78	1.44	19.78	2.44	20.78	3.44	21.78
10/19/2001	-1.11	16.67	0.89	18.67	1.89	19.67	2.89	20.67
10/20/2001	-2.22	15.56	-0.22	17.56	0.78	18.56	1.78	19.56
10/21/2001	-2.78	13.33	-0.78	15.33	0.22	16.33	1.22	17.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/22/2001	-3.33	12.22	-1.33	14.22	-0.33	15.22	0.67	16.22
10/23/2001	-2.78	14.44	-0.78	16.44	0.22	17.44	1.22	18.44
10/24/2001	-2.22	17.78	-0.22	19.78	0.78	20.78	1.78	21.78
10/25/2001	-2.22	16.67	-0.22	18.67	0.78	19.67	1.78	20.67
10/26/2001	-2.22	15	-0.22	17	0.78	18	1.78	19
10/27/2001	-3.33	12.22	-1.33	14.22	-0.33	15.22	0.67	16.22
10/28/2001	-2.22	11.67	-0.22	13.67	0.78	14.67	1.78	15.67
10/29/2001	-2.78	11.67	-0.78	13.67	0.22	14.67	1.22	15.67
10/30/2001	-0.56	5.56	1.44	7.56	2.44	8.56	3.44	9.56
10/31/2001	-2.78	5.56	-0.78	7.56	0.22	8.56	1.22	9.56
11/1/2001	-5	13.33	-3	15.33	-2	16.33	-1	17.33
11/2/2001	-3.33	12.22	-1.33	14.22	-0.33	15.22	0.67	16.22
11/3/2001	-1.67	12.22	0.33	14.22	1.33	15.22	2.33	16.22
11/4/2001	-1.67	15	0.33	17	1.33	18	2.33	19
11/5/2001	-2.22	13.33	-0.22	15.33	0.78	16.33	1.78	17.33
11/6/2001	-0.5372	12.43	1.4628	14.43	2.4628	15.43	3.4628	16.43
11/7/2001	-3.89	10	-1.89	12	-0.89	13	0.11	14
11/8/2001	-2.22	14.44	-0.22	16.44	0.78	17.44	1.78	18.44
11/9/2001	-4.44	10	-2.44	12	-1.44	13	-0.44	14
11/10/2001	-5	9.44	-3	11.44	-2	12.44	-1	13.44
11/11/2001	0	3.89	2	5.89	3	6.89	4	7.89
11/12/2001	-2.78	5.56	-0.78	7.56	0.22	8.56	1.22	9.56
11/13/2001	-3.89	2.78	-1.89	4.78	-0.89	5.78	0.11	6.78
11/14/2001	-2.22	10.56	-0.22	12.56	0.78	13.56	1.78	14.56
11/15/2001	-4.44	10	-2.44	12	-1.44	13	-0.44	14
11/16/2001	-4.44	8.33	-2.44	10.33	-1.44	11.33	-0.44	12.33
11/17/2001	-3.33	6.11	-1.33	8.11	-0.33	9.11	0.67	10.11
11/18/2001	-6.67	11.11	-4.67	13.11	-3.67	14.11	-2.67	15.11
11/19/2001	-4.44	8.89	-2.44	10.89	-1.44	11.89	-0.44	12.89
11/20/2001	-3.33	7.22	-1.33	9.22	-0.33	10.22	0.67	11.22
11/21/2001	-0.56	3.89	1.44	5.89	2.44	6.89	3.44	7.89
11/22/2001	-4.837	3.031	-2.837	5.031	-1.837	6.031	-0.837	7.031
11/23/2001	-8.33	3.89	-6.33	5.89	-5.33	6.89	-4.33	7.89
11/24/2001	-7.22	0	-5.22	2	-4.22	3	-3.22	4
11/25/2001	-14.44	-5	-12.44	-3	-11.44	-2	-10.44	-1
11/26/2001	-17.78	-4.44	-15.78	-2.44	-14.78	-1.44	-13.78	-0.44
11/27/2001	-12.22	-5	-10.22	-3	-9.22	-2	-8.22	-1
11/28/2001	-9.44	-3.33	-7.44	-1.33	-6.44	-0.33	-5.44	0.67
11/29/2001	-6.67	-4.44	-4.67	-2.44	-3.67	-1.44	-2.67	-0.44
11/30/2001	-7.78	-1.67	-5.78	0.33	-4.78	1.33	-3.78	2.33
12/1/2001	-6.11	-1.67	-4.11	0.33	-3.11	1.33	-2.11	2.33
12/2/2001	-6.11	-1.67	-4.11	0.33	-3.11	1.33	-2.11	2.33
12/3/2001	-11.11	-4.44	-9.11	-2.44	-8.11	-1.44	-7.11	-0.44
12/4/2001	-17.22	1.67	-15.22	3.67	-14.22	4.67	-13.22	5.67
12/5/2001	-7.78	-3.33	-5.78	-1.33	-4.78	-0.33	-3.78	0.67
12/6/2001	-3.89	6.11	-1.89	8.11	-0.89	9.11	0.11	10.11
12/7/2001	-6.11	3.89	-4.11	5.89	-3.11	6.89	-2.11	7.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/8/2001	-10	7.22	-8	9.22	-7	10.22	-6	11.22
12/9/2001	-6.67	-2.22	-4.67	-0.22	-3.67	0.78	-2.67	1.78
12/10/2001	-9.44	-5.56	-7.44	-3.56	-6.44	-2.56	-5.44	-1.56
12/11/2001	-9.44	-0.56	-7.44	1.44	-6.44	2.44	-5.44	3.44
12/12/2001	-7.78	2.78	-5.78	4.78	-4.78	5.78	-3.78	6.78
12/13/2001	-8.33	4.44	-6.33	6.44	-5.33	7.44	-4.33	8.44
12/14/2001	-12.22	-3.89	-10.22	-1.89	-9.22	-0.89	-8.22	0.11
12/15/2001	-16.11	-1.67	-14.11	0.33	-13.11	1.33	-12.11	2.33
12/16/2001	-11.11	3.33	-9.11	5.33	-8.11	6.33	-7.11	7.33
12/17/2001	-7.537	4.231	-5.537	6.231	-4.537	7.231	-3.537	8.231
12/18/2001	-10.44	0.2314	-8.44	2.2314	-7.44	3.2314	-6.44	4.2314
12/19/2001	-15	3.89	-13	5.89	-12	6.89	-11	7.89
12/20/2001	-9.44	-2.78	-7.44	-0.78	-6.44	0.22	-5.44	1.22
12/21/2001	-12.78	-1.67	-10.78	0.33	-9.78	1.33	-8.78	2.33
12/22/2001	-8.33	-4.44	-6.33	-2.44	-5.33	-1.44	-4.33	-0.44
12/23/2001	-8.33	-1.67	-6.33	0.33	-5.33	1.33	-4.33	2.33
12/24/2001	-14.44	8.33	-12.44	10.33	-11.44	11.33	-10.44	12.33
12/25/2001	-14.44	3.33	-12.44	5.33	-11.44	6.33	-10.44	7.33
12/26/2001	-2.22	6.11	-0.22	8.11	0.78	9.11	1.78	10.11
12/27/2001	-4.44	5.56	-2.44	7.56	-1.44	8.56	-0.44	9.56
12/28/2001	-1.11	1.11	0.89	3.11	1.89	4.11	2.89	5.11
12/29/2001	-0.56	1.11	1.44	3.11	2.44	4.11	3.44	5.11
12/30/2001	-1.67	3.89	0.33	5.89	1.33	6.89	2.33	7.89
12/31/2001	-3.89	7.22	-1.89	9.22	-0.89	10.22	0.11	11.22
1/1/2002	-4.44	4.44	-2.44	6.44	-1.44	7.44	-0.44	8.44
1/2/2002	-3.937	4.131	-1.937	6.131	-0.937	7.131	0.063	8.131
1/3/2002	-12.78	2.78	-10.78	4.78	-9.78	5.78	-8.78	6.78
1/4/2002	-11.11	10.56	-9.11	12.56	-8.11	13.56	-7.11	14.56
1/5/2002	-11.67	4.44	-9.67	6.44	-8.67	7.44	-7.67	8.44
1/6/2002	-2.78	3.89	-0.78	5.89	0.22	6.89	1.22	7.89
1/7/2002	-5	8.33	-3	10.33	-2	11.33	-1	12.33
1/8/2002	-7.78	7.22	-5.78	9.22	-4.78	10.22	-3.78	11.22
1/9/2002	-10	2.22	-8	4.22	-7	5.22	-6	6.22
1/10/2002	-6.67	12.22	-4.67	14.22	-3.67	15.22	-2.67	16.22
1/11/2002	-8.33	16.11	-6.33	18.11	-5.33	19.11	-4.33	20.11
1/12/2002	-9.44	8.89	-7.44	10.89	-6.44	11.89	-5.44	12.89
1/13/2002	-10	13.33	-8	15.33	-7	16.33	-6	17.33
1/14/2002	-13.89	5.56	-11.89	7.56	-10.89	8.56	-9.89	9.56
1/15/2002	-12.22	-3.33	-10.22	-1.33	-9.22	-0.33	-8.22	0.67
1/16/2002	-16.67	-2.22	-14.67	-0.22	-13.67	0.78	-12.67	1.78
1/17/2002	-18.33	-4.44	-16.33	-2.44	-15.33	-1.44	-14.33	-0.44
1/18/2002	-20	0.56	-18	2.56	-17	3.56	-16	4.56
1/19/2002	-17.22	-1.67	-15.22	0.33	-14.22	1.33	-13.22	2.33
1/20/2002	-16.11	6.11	-14.11	8.11	-13.11	9.11	-12.11	10.11
1/21/2002	-11.11	-0.56	-9.11	1.44	-8.11	2.44	-7.11	3.44
1/22/2002	-18.89	-5.56	-16.89	-3.56	-15.89	-2.56	-14.89	-1.56
1/23/2002	-20.56	-2.78	-18.56	-0.78	-17.56	0.22	-16.56	1.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/24/2002	-11.67	9.44	-9.67	11.44	-8.67	12.44	-7.67	13.44
1/25/2002	-12.78	5.56	-10.78	7.56	-9.78	8.56	-8.78	9.56
1/26/2002	-5.56	-1.67	-3.56	0.33	-2.56	1.33	-1.56	2.33
1/27/2002	-14.44	-5.56	-12.44	-3.56	-11.44	-2.56	-10.44	-1.56
1/28/2002	-23.33	-10.56	-21.33	-8.56	-20.33	-7.56	-19.33	-6.56
1/29/2002	-25	-9.44	-23	-7.44	-22	-6.44	-21	-5.44
1/30/2002	-16.67	-5	-14.67	-3	-13.67	-2	-12.67	-1
1/31/2002	-16.67	1.11	-14.67	3.11	-13.67	4.11	-12.67	5.11
2/1/2002	-17.22	1.67	-15.22	3.67	-14.22	4.67	-13.22	5.67
2/2/2002	-13.89	3.89	-11.89	5.89	-10.89	6.89	-9.89	7.89
2/3/2002	-16.67	7.78	-14.67	9.78	-13.67	10.78	-12.67	11.78
2/4/2002	-15.56	8.89	-13.56	10.89	-12.56	11.89	-11.56	12.89
2/5/2002	-15.56	8.33	-13.56	10.33	-12.56	11.33	-11.56	12.33
2/6/2002	-14.44	8.33	-12.44	10.33	-11.44	11.33	-10.44	12.33
2/7/2002	-6.67	2.78	-4.67	4.78	-3.67	5.78	-2.67	6.78
2/8/2002	-6.67	3.33	-4.67	5.33	-3.67	6.33	-2.67	7.33
2/9/2002	-8.33	3.89	-6.33	5.89	-5.33	6.89	-4.33	7.89
2/10/2002	-10.56	12.22	-8.56	14.22	-7.56	15.22	-6.56	16.22
2/11/2002	-8.33	13.33	-6.33	15.33	-5.33	16.33	-4.33	17.33
2/12/2002	-6.67	6.67	-4.67	8.67	-3.67	9.67	-2.67	10.67
2/13/2002	-8.33	4.44	-6.33	6.44	-5.33	7.44	-4.33	8.44
2/14/2002	-4.44	5.56	-2.44	7.56	-1.44	8.56	-0.44	9.56
2/15/2002	-3.89	5.56	-1.89	7.56	-0.89	8.56	0.11	9.56
2/16/2002	-6.67	3.89	-4.67	5.89	-3.67	6.89	-2.67	7.89
2/17/2002	-13.33	-3.33	-11.33	-1.33	-10.33	-0.33	-9.33	0.67
2/18/2002	-12.78	2.78	-10.78	4.78	-9.78	5.78	-8.78	6.78
2/19/2002	-3.89	0	-1.89	2	-0.89	3	0.11	4
2/20/2002	-8.437	1.531	-6.437	3.531	-5.437	4.531	-4.437	5.531
2/21/2002	-6.11	12.78	-4.11	14.78	-3.11	15.78	-2.11	16.78
2/22/2002	-7.78	12.78	-5.78	14.78	-4.78	15.78	-3.78	16.78
2/23/2002	-8.33	2.78	-6.33	4.78	-5.33	5.78	-4.33	6.78
2/24/2002	-9.44	10.56	-7.44	12.56	-6.44	13.56	-5.44	14.56
2/25/2002	-6.67	11.67	-4.67	13.67	-3.67	14.67	-2.67	15.67
2/26/2002	-8.33	11.67	-6.33	13.67	-5.33	14.67	-4.33	15.67
2/27/2002	-6.67	8.89	-4.67	10.89	-3.67	11.89	-2.67	12.89
2/28/2002	-10	8.89	-8	10.89	-7	11.89	-6	12.89
3/1/2002	-11.11	1.11	-9.11	3.11	-8.11	4.11	-7.11	5.11
3/2/2002	-11.11	4.44	-9.11	6.44	-8.11	7.44	-7.11	8.44
3/3/2002	-12.78	6.11	-10.78	8.11	-9.78	9.11	-8.78	10.11
3/4/2002	-12.78	6.11	-10.78	8.11	-9.78	9.11	-8.78	10.11
3/5/2002	-11.11	6.11	-9.11	8.11	-8.11	9.11	-7.11	10.11
3/6/2002	-4.44	-0.56	-2.44	1.44	-1.44	2.44	-0.44	3.44
3/7/2002	-10.56	-3.33	-8.56	-1.33	-7.56	-0.33	-6.56	0.67
3/8/2002	-21.11	2.78	-19.11	4.78	-18.11	5.78	-17.11	6.78
3/9/2002	-13.89	2.78	-11.89	4.78	-10.89	5.78	-9.89	6.78
3/10/2002	-7.22	-0.56	-5.22	1.44	-4.22	2.44	-3.22	3.44
3/11/2002	-11.11	9.44	-9.11	11.44	-8.11	12.44	-7.11	13.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/12/2002	-6.11	3.89	-4.11	5.89	-3.11	6.89	-2.11	7.89
3/13/2002	-12.78	-1.67	-10.78	0.33	-9.78	1.33	-8.78	2.33
3/14/2002	-17.22	-4.44	-15.22	-2.44	-14.22	-1.44	-13.22	-0.44
3/15/2002	-21.67	-6.11	-19.67	-4.11	-18.67	-3.11	-17.67	-2.11
3/16/2002	-12.78	-6.11	-10.78	-4.11	-9.78	-3.11	-8.78	-2.11
3/17/2002	-11.67	-7.78	-9.67	-5.78	-8.67	-4.78	-7.67	-3.78
3/18/2002	-12.78	-0.56	-10.78	1.44	-9.78	2.44	-8.78	3.44
3/19/2002	-12.22	11.67	-10.22	13.67	-9.22	14.67	-8.22	15.67
3/20/2002	-9.44	10.56	-7.44	12.56	-6.44	13.56	-5.44	14.56
3/21/2002	-6.67	10.56	-4.67	12.56	-3.67	13.56	-2.67	14.56
3/22/2002	-6.67	5	-4.67	7	-3.67	8	-2.67	9
3/23/2002	-5.56	-2.22	-3.56	-0.22	-2.56	0.78	-1.56	1.78
3/24/2002	-10	3.33	-8	5.33	-7	6.33	-6	7.33
3/25/2002	-15.56	2.78	-13.56	4.78	-12.56	5.78	-11.56	6.78
3/26/2002	-11.11	7.22	-9.11	9.22	-8.11	10.22	-7.11	11.22
3/27/2002	-10.56	14.44	-8.56	16.44	-7.56	17.44	-6.56	18.44
3/28/2002	-3.89	9.44	-1.89	11.44	-0.89	12.44	0.11	13.44
3/29/2002	-2.78	13.33	-0.78	15.33	0.22	16.33	1.22	17.33
3/30/2002	-5	14.44	-3	16.44	-2	17.44	-1	18.44
3/31/2002	-6.11	16.11	-4.11	18.11	-3.11	19.11	-2.11	20.11
4/1/2002	-4.44	16.67	-2.44	18.67	-1.44	19.67	-0.44	20.67
4/2/2002	-3.33	16.67	-1.33	18.67	-0.33	19.67	0.67	20.67
4/3/2002	-2.22	15.56	-0.22	17.56	0.78	18.56	1.78	19.56
4/4/2002	-3.33	15	-1.33	17	-0.33	18	0.67	19
4/5/2002	-5	8.33	-3	10.33	-2	11.33	-1	12.33
4/6/2002	-3.33	10	-1.33	12	-0.33	13	0.67	14
4/7/2002	-4.44	12.22	-2.44	14.22	-1.44	15.22	-0.44	16.22
4/8/2002	-3.89	11.11	-1.89	13.11	-0.89	14.11	0.11	15.11
4/9/2002	0	4.44	2	6.44	3	7.44	4	8.44
4/10/2002	-1.11	8.33	0.89	10.33	1.89	11.33	2.89	12.33
4/11/2002	-1.67	10	0.33	12	1.33	13	2.33	14
4/12/2002	-3.33	15	-1.33	17	-0.33	18	0.67	19
4/13/2002	-3.33	17.78	-1.33	19.78	-0.33	20.78	0.67	21.78
4/14/2002	-1.67	12.78	0.33	14.78	1.33	15.78	2.33	16.78
4/15/2002	-9.44	0	-7.44	2	-6.44	3	-5.44	4
4/16/2002	-12.22	0	-10.22	2	-9.22	3	-8.22	4
4/17/2002	-8.89	-3.89	-6.89	-1.89	-5.89	-0.89	-4.89	0.11
4/18/2002	-9.44	-0.56	-7.44	1.44	-6.44	2.44	-5.44	3.44
4/19/2002	-6.67	-0.56	-4.67	1.44	-3.67	2.44	-2.67	3.44
4/20/2002	-11.11	6.11	-9.11	8.11	-8.11	9.11	-7.11	10.11
4/21/2002	-8.33	9.44	-6.33	11.44	-5.33	12.44	-4.33	13.44
4/22/2002	-7.78	11.67	-5.78	13.67	-4.78	14.67	-3.78	15.67
4/23/2002	-2.337	12.03	-0.337	14.03	0.663	15.03	1.663	16.03
4/24/2002	-1.67	13.33	0.33	15.33	1.33	16.33	2.33	17.33
4/25/2002	-2.22	10.56	-0.22	12.56	0.78	13.56	1.78	14.56
4/26/2002	-1.67	2.22	0.33	4.22	1.33	5.22	2.33	6.22
4/27/2002	-4.44	-1.11	-2.44	0.89	-1.44	1.89	-0.44	2.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/28/2002	-8.33	5.56	-6.33	7.56	-5.33	8.56	-4.33	9.56
4/29/2002	-3.89	0	-1.89	2	-0.89	3	0.11	4
4/30/2002	-6.67	-2.78	-4.67	-0.78	-3.67	0.22	-2.67	1.22
5/1/2002	-13.89	6.11	-11.89	8.11	-10.89	9.11	-9.89	10.11
5/2/2002	-5	11.67	-3	13.67	-2	14.67	-1	15.67
5/3/2002	-4.44	9.44	-2.44	11.44	-1.44	12.44	-0.44	13.44
5/4/2002	-3.33	12.78	-1.33	14.78	-0.33	15.78	0.67	16.78
5/5/2002	-4.44	13.33	-2.44	15.33	-1.44	16.33	-0.44	17.33
5/6/2002	-5	11.67	-3	13.67	-2	14.67	-1	15.67
5/7/2002	-5	9.44	-3	11.44	-2	12.44	-1	13.44
5/8/2002	-3.89	10.56	-1.89	12.56	-0.89	13.56	0.11	14.56
5/9/2002	-4.44	8.89	-2.44	10.89	-1.44	11.89	-0.44	12.89
5/10/2002	-3.89	4.44	-1.89	6.44	-0.89	7.44	0.11	8.44
5/11/2002	-1.11	10	0.89	12	1.89	13	2.89	14
5/12/2002	-4.44	13.33	-2.44	15.33	-1.44	16.33	-0.44	17.33
5/13/2002	-3.89	13.33	-1.89	15.33	-0.89	16.33	0.11	17.33
5/14/2002	-3.33	15.56	-1.33	17.56	-0.33	18.56	0.67	19.56
5/15/2002	-2.22	13.89	-0.22	15.89	0.78	16.89	1.78	17.89
5/16/2002	-1.67	17.78	0.33	19.78	1.33	20.78	2.33	21.78
5/17/2002	-1.11	16.11	0.89	18.11	1.89	19.11	2.89	20.11
5/18/2002	-1.67	13.33	0.33	15.33	1.33	16.33	2.33	17.33
5/19/2002	-1.11	7.22	0.89	9.22	1.89	10.22	2.89	11.22
5/20/2002	-5	-0.56	-3	1.44	-2	2.44	-1	3.44
5/21/2002	-6.11	1.11	-4.11	3.11	-3.11	4.11	-2.11	5.11
5/22/2002	-12.22	6.11	-10.22	8.11	-9.22	9.11	-8.22	10.11
5/23/2002	-3.33	11.11	-1.33	13.11	-0.33	14.11	0.67	15.11
5/24/2002	-2.78	13.33	-0.78	15.33	0.22	16.33	1.22	17.33
5/25/2002	-1.67	13.33	0.33	15.33	1.33	16.33	2.33	17.33
5/26/2002	-2.78	13.89	-0.78	15.89	0.22	16.89	1.22	17.89
5/27/2002	-1.67	12.78	0.33	14.78	1.33	15.78	2.33	16.78
5/28/2002	-1.67	17.22	0.33	19.22	1.33	20.22	2.33	21.22
5/29/2002	1.11	21.11	3.11	23.11	4.11	24.11	5.11	25.11
5/30/2002	1.11	20.56	3.11	22.56	4.11	23.56	5.11	24.56
5/31/2002	0	20.56	2	22.56	3	23.56	4	24.56
6/1/2002	-1.11	12.22	0.89	14.22	1.89	15.22	2.89	16.22
6/2/2002	-3.33	13.89	-1.33	15.89	-0.33	16.89	0.67	17.89
6/3/2002	2.22	17.22	4.22	19.22	5.22	20.22	6.22	21.22
6/4/2002	2.78	20	4.78	22	5.78	23	6.78	24
6/5/2002	2.78	22.78	4.78	24.78	5.78	25.78	6.78	26.78
6/6/2002	0	20.56	2	22.56	3	23.56	4	24.56
6/7/2002	0.56	18.33	2.56	20.33	3.56	21.33	4.56	22.33
6/8/2002	-1.11	12.78	0.89	14.78	1.89	15.78	2.89	16.78
6/9/2002	-3.33	10	-1.33	12	-0.33	13	0.67	14
6/10/2002	0.56	14.44	2.56	16.44	3.56	17.44	4.56	18.44
6/11/2002	3.33	16.67	5.33	18.67	6.33	19.67	7.33	20.67
6/12/2002	1.11	19.44	3.11	21.44	4.11	22.44	5.11	23.44
6/13/2002	2.78	19.44	4.78	21.44	5.78	22.44	6.78	23.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/14/2002	-0.56	18.33	1.44	20.33	2.44	21.33	3.44	22.33
6/15/2002	-1.67	19.44	0.33	21.44	1.33	22.44	2.33	23.44
6/16/2002	-1.67	19.44	0.33	21.44	1.33	22.44	2.33	23.44
6/17/2002	0	18.89	2	20.89	3	21.89	4	22.89
6/18/2002	2.78	16.67	4.78	18.67	5.78	19.67	6.78	20.67
6/19/2002	4.44	19.44	6.44	21.44	7.44	22.44	8.44	23.44
6/20/2002	3.89	17.78	5.89	19.78	6.89	20.78	7.89	21.78
6/21/2002	2.78	16.67	4.78	18.67	5.78	19.67	6.78	20.67
6/22/2002	0.56	17.78	2.56	19.78	3.56	20.78	4.56	21.78
6/23/2002	3.89	18.33	5.89	20.33	6.89	21.33	7.89	22.33
6/24/2002	1.11	20	3.11	22	4.11	23	5.11	24
6/25/2002	5.56	21.11	7.56	23.11	8.56	24.11	9.56	25.11
6/26/2002	6.67	20	8.67	22	9.67	23	10.67	24
6/27/2002	3.89	20.56	5.89	22.56	6.89	23.56	7.89	24.56
6/28/2002	2.78	20.56	4.78	22.56	5.78	23.56	6.78	24.56
6/29/2002	2.78	20.56	4.78	22.56	5.78	23.56	6.78	24.56
6/30/2002	3.89	23.89	5.89	25.89	6.89	26.89	7.89	27.89
7/1/2002	5.56	24.44	7.56	26.44	8.56	27.44	9.56	28.44
7/2/2002	6.11	22.78	8.11	24.78	9.11	25.78	10.11	26.78
7/3/2002	3.89	19.44	5.89	21.44	6.89	22.44	7.89	23.44
7/4/2002	2.22	20	4.22	22	5.22	23	6.22	24
7/5/2002	3.33	20.56	5.33	22.56	6.33	23.56	7.33	24.56
7/6/2002	3.89	21.67	5.89	23.67	6.89	24.67	7.89	25.67
7/7/2002	4.44	19.44	6.44	21.44	7.44	22.44	8.44	23.44
7/8/2002	2.22	26.11	4.22	28.11	5.22	29.11	6.22	30.11
7/9/2002	10.56	27.22	12.56	29.22	13.56	30.22	14.56	31.22
7/10/2002	10	29.44	12	31.44	13	32.44	14	33.44
7/11/2002	10.56	28.33	12.56	30.33	13.56	31.33	14.56	32.33
7/12/2002	11.11	25.56	13.11	27.56	14.11	28.56	15.11	29.56
7/13/2002	9.44	25	11.44	27	12.44	28	13.44	29
7/14/2002	8.33	22.22	10.33	24.22	11.33	25.22	12.33	26.22
7/15/2002	7.22	21.11	9.22	23.11	10.22	24.11	11.22	25.11
7/16/2002	5	21.11	7	23.11	8	24.11	9	25.11
7/17/2002	5.56	21.11	7.56	23.11	8.56	24.11	9.56	25.11
7/18/2002	5.56	16.67	7.56	18.67	8.56	19.67	9.56	20.67
7/19/2002	3.89	20.56	5.89	22.56	6.89	23.56	7.89	24.56
7/20/2002	-13.89	23.33	-11.89	25.33	-10.89	26.33	-9.89	27.33
7/21/2002	7.22	21.67	9.22	23.67	10.22	24.67	11.22	25.67
7/22/2002	3.89	20.56	5.89	22.56	6.89	23.56	7.89	24.56
7/23/2002	1.11	21.11	3.11	23.11	4.11	24.11	5.11	25.11
7/24/2002	3.89	21.67	5.89	23.67	6.89	24.67	7.89	25.67
7/25/2002	1.67	20.56	3.67	22.56	4.67	23.56	5.67	24.56
7/26/2002	2.22	22.22	4.22	24.22	5.22	25.22	6.22	26.22
7/27/2002	8.33	24.44	10.33	26.44	11.33	27.44	12.33	28.44
7/28/2002	8.89	25.56	10.89	27.56	11.89	28.56	12.89	29.56
7/29/2002	7.78	25.56	9.78	27.56	10.78	28.56	11.78	29.56
7/30/2002	8.33	25	10.33	27	11.33	28	12.33	29

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/31/2002	6.11	22.78	8.11	24.78	9.11	25.78	10.11	26.78
8/1/2002	5.56	22.22	7.56	24.22	8.56	25.22	9.56	26.22
8/2/2002	5.56	20.56	7.56	22.56	8.56	23.56	9.56	24.56
8/3/2002	3.89	17.78	5.89	19.78	6.89	20.78	7.89	21.78
8/4/2002	2.22	15	4.22	17	5.22	18	6.22	19
8/5/2002	0	15	2	17	3	18	4	19
8/6/2002	0.56	16.11	2.56	18.11	3.56	19.11	4.56	20.11
8/7/2002	-2.22	18.33	-0.22	20.33	0.78	21.33	1.78	22.33
8/8/2002	4.44	21.67	6.44	23.67	7.44	24.67	8.44	25.67
8/9/2002	8.33	24.44	10.33	26.44	11.33	27.44	12.33	28.44
8/10/2002	5.56	25.56	7.56	27.56	8.56	28.56	9.56	29.56
8/11/2002	5	24.44	7	26.44	8	27.44	9	28.44
8/12/2002	7.22	27.22	9.22	29.22	10.22	30.22	11.22	31.22
8/13/2002	10	27.22	12	29.22	13	30.22	14	31.22
8/14/2002	7.22	27.22	9.22	29.22	10.22	30.22	11.22	31.22
8/15/2002	7.22	26.11	9.22	28.11	10.22	29.11	11.22	30.11
8/16/2002	6.11	25.56	8.11	27.56	9.11	28.56	10.11	29.56
8/17/2002	5	24.44	7	26.44	8	27.44	9	28.44
8/18/2002	3.89	22.78	5.89	24.78	6.89	25.78	7.89	26.78
8/19/2002	1.11	20	3.11	22	4.11	23	5.11	24
8/20/2002	-1.11	15.56	0.89	17.56	1.89	18.56	2.89	19.56
8/21/2002	-2.78	16.67	-0.78	18.67	0.22	19.67	1.22	20.67
8/22/2002	-0.56	16.67	1.44	18.67	2.44	19.67	3.44	20.67
8/23/2002	-1.67	16.67	0.33	18.67	1.33	19.67	2.33	20.67
8/24/2002	-1.11	19.44	0.89	21.44	1.89	22.44	2.89	23.44
8/25/2002	-1.11	19.44	0.89	21.44	1.89	22.44	2.89	23.44
8/26/2002	0	21.67	2	23.67	3	24.67	4	25.67
8/27/2002	10	20.56	12	22.56	13	23.56	14	24.56
8/28/2002	5.56	21.11	7.56	23.11	8.56	24.11	9.56	25.11
8/29/2002	2.78	21.11	4.78	23.11	5.78	24.11	6.78	25.11
8/30/2002	3.89	19.44	5.89	21.44	6.89	22.44	7.89	23.44
8/31/2002	2.78	21.11	4.78	23.11	5.78	24.11	6.78	25.11
9/1/2002	5	23.33	7	25.33	8	26.33	9	27.33
9/2/2002	5.56	24.44	7.56	26.44	8.56	27.44	9.56	28.44
9/3/2002	3.33	20.56	5.33	22.56	6.33	23.56	7.33	24.56
9/4/2002	8.33	14.44	10.33	16.44	11.33	17.44	12.33	18.44
9/5/2002	7.22	14.44	9.22	16.44	10.22	17.44	11.22	18.44
9/6/2002	1.11	8.33	3.11	10.33	4.11	11.33	5.11	12.33
9/7/2002	-2.22	10	-0.22	12	0.78	13	1.78	14
9/8/2002	-1.67	14.44	0.33	16.44	1.33	17.44	2.33	18.44
9/9/2002	2.22	19.44	4.22	21.44	5.22	22.44	6.22	23.44
9/10/2002	1.67	20.56	3.67	22.56	4.67	23.56	5.67	24.56
9/11/2002	2.22	21.11	4.22	23.11	5.22	24.11	6.22	25.11
9/12/2002	2.78	21.11	4.78	23.11	5.78	24.11	6.78	25.11
9/13/2002	2.78	22.22	4.78	24.22	5.78	25.22	6.78	26.22
9/14/2002	2.22	21.67	4.22	23.67	5.22	24.67	6.22	25.67
9/15/2002	2.78	18.89	4.78	20.89	5.78	21.89	6.78	22.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/16/2002	-2.78	15.56	-0.78	17.56	0.22	18.56	1.22	19.56
9/17/2002	0	16.11	2	18.11	3	19.11	4	20.11
9/18/2002	2.78	16.11	4.78	18.11	5.78	19.11	6.78	20.11
9/19/2002	7.22	21.11	9.22	23.11	10.22	24.11	11.22	25.11
9/20/2002	2.22	21.67	4.22	23.67	5.22	24.67	6.22	25.67
9/21/2002	1.67	22.78	3.67	24.78	4.67	25.78	5.67	26.78
9/22/2002	3.33	22.22	5.33	24.22	6.33	25.22	7.33	26.22
9/23/2002	3.33	22.78	5.33	24.78	6.33	25.78	7.33	26.78
9/24/2002	2.22	21.11	4.22	23.11	5.22	24.11	6.22	25.11
9/25/2002	1.11	20	3.11	22	4.11	23	5.11	24
9/26/2002	1.11	19.44	3.11	21.44	4.11	22.44	5.11	23.44
9/27/2002	-0.56	13.33	1.44	15.33	2.44	16.33	3.44	17.33
9/28/2002	-0.56	12.22	1.44	14.22	2.44	15.22	3.44	16.22
9/29/2002	-2.78	11.67	-0.78	13.67	0.22	14.67	1.22	15.67
9/30/2002	-3.89	10.56	-1.89	12.56	-0.89	13.56	0.11	14.56
10/1/2002	-2.78	2.78	-0.78	4.78	0.22	5.78	1.22	6.78
10/2/2002	-3.33	4.44	-1.33	6.44	-0.33	7.44	0.67	8.44
10/3/2002	-4.44	13.89	-2.44	15.89	-1.44	16.89	-0.44	17.89
10/4/2002	1.11	10	3.11	12	4.11	13	5.11	14
10/5/2002	-2.78	15.56	-0.78	17.56	0.22	18.56	1.22	19.56
10/6/2002	5	16.67	7	18.67	8	19.67	9	20.67
10/7/2002	5	18.89	7	20.89	8	21.89	9	22.89
10/8/2002	0	21.11	2	23.11	3	24.11	4	25.11
10/9/2002	-0.56	18.33	1.44	20.33	2.44	21.33	3.44	22.33
10/10/2002	2.22	13.33	4.22	15.33	5.22	16.33	6.22	17.33
10/11/2002	-3.89	15	-1.89	17	-0.89	18	0.11	19
10/12/2002	1.11	16.11	3.11	18.11	4.11	19.11	5.11	20.11
10/13/2002	-2.22	16.67	-0.22	18.67	0.78	19.67	1.78	20.67
10/14/2002	1.11	17.78	3.11	19.78	4.11	20.78	5.11	21.78
10/15/2002	-0.56	16.67	1.44	18.67	2.44	19.67	3.44	20.67
10/16/2002	2.22	14.44	4.22	16.44	5.22	17.44	6.22	18.44
10/17/2002	-0.56	16.67	1.44	18.67	2.44	19.67	3.44	20.67
10/18/2002	-3.33	17.22	-1.33	19.22	-0.33	20.22	0.67	21.22
10/19/2002	-3.89	14.44	-1.89	16.44	-0.89	17.44	0.11	18.44
10/20/2002	-4.44	15	-2.44	17	-1.44	18	-0.44	19
10/21/2002	-5.56	8.89	-3.56	10.89	-2.56	11.89	-1.56	12.89
10/22/2002	-3.89	9.44	-1.89	11.44	-0.89	12.44	0.11	13.44
10/23/2002	-6.11	10	-4.11	12	-3.11	13	-2.11	14
10/24/2002	-7.78	8.33	-5.78	10.33	-4.78	11.33	-3.78	12.33
10/25/2002	-5	8.89	-3	10.89	-2	11.89	-1	12.89
10/26/2002	-3.33	8.89	-1.33	10.89	-0.33	11.89	0.67	12.89
10/27/2002	-1.67	10.56	0.33	12.56	1.33	13.56	2.33	14.56
10/28/2002	-4.44	11.67	-2.44	13.67	-1.44	14.67	-0.44	15.67
10/29/2002	-6.11	8.89	-4.11	10.89	-3.11	11.89	-2.11	12.89
10/30/2002	-7.78	7.78	-5.78	9.78	-4.78	10.78	-3.78	11.78
10/31/2002	-9.44	8.89	-7.44	10.89	-6.44	11.89	-5.44	12.89
11/1/2002	-10.56	7.78	-8.56	9.78	-7.56	10.78	-6.56	11.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/2/2002	-7.78	10	-5.78	12	-4.78	13	-3.78	14
11/3/2002	-5	11.11	-3	13.11	-2	14.11	-1	15.11
11/4/2002	-7.78	11.67	-5.78	13.67	-4.78	14.67	-3.78	15.67
11/5/2002	-6.67	11.67	-4.67	13.67	-3.67	14.67	-2.67	15.67
11/6/2002	-8.89	10.56	-6.89	12.56	-5.89	13.56	-4.89	14.56
11/7/2002	-16.11	3.33	-14.11	5.33	-13.11	6.33	-12.11	7.33
11/8/2002	0	2.78	2	4.78	3	5.78	4	6.78
11/9/2002	-3.33	-0.56	-1.33	1.44	-0.33	2.44	0.67	3.44
11/10/2002	-6.11	-0.56	-4.11	1.44	-3.11	2.44	-2.11	3.44
11/11/2002	-7.78	9.44	-5.78	11.44	-4.78	12.44	-3.78	13.44
11/12/2002	-3.89	10	-1.89	12	-0.89	13	0.11	14
11/13/2002	-3.89	8.33	-1.89	10.33	-0.89	11.33	0.11	12.33
11/14/2002	-5.56	7.78	-3.56	9.78	-2.56	10.78	-1.56	11.78
11/15/2002	-8.89	10.56	-6.89	12.56	-5.89	13.56	-4.89	14.56
11/16/2002	-7.78	8.89	-5.78	10.89	-4.78	11.89	-3.78	12.89
11/17/2002	-7.78	8.89	-5.78	10.89	-4.78	11.89	-3.78	12.89
11/18/2002	-7.78	11.67	-5.78	13.67	-4.78	14.67	-3.78	15.67
11/19/2002	-2.78	12.78	-0.78	14.78	0.22	15.78	1.22	16.78
11/20/2002	-2.22	15.56	-0.22	17.56	0.78	18.56	1.78	19.56
11/21/2002	-2.78	13.33	-0.78	15.33	0.22	16.33	1.22	17.33
11/22/2002	-3.33	10.56	-1.33	12.56	-0.33	13.56	0.67	14.56
11/23/2002	-4.44	7.22	-2.44	9.22	-1.44	10.22	-0.44	11.22
11/24/2002	-7.22	10.56	-5.22	12.56	-4.22	13.56	-3.22	14.56
11/25/2002	-4.44	0.56	-2.44	2.56	-1.44	3.56	-0.44	4.56
11/26/2002	-3.33	6.11	-1.33	8.11	-0.33	9.11	0.67	10.11
11/27/2002	-3.33	7.22	-1.33	9.22	-0.33	10.22	0.67	11.22
11/28/2002	-3.33	8.33	-1.33	10.33	-0.33	11.33	0.67	12.33
11/29/2002	-5	8.33	-3	10.33	-2	11.33	-1	12.33
11/30/2002	-3.89	3.89	-1.89	5.89	-0.89	6.89	0.11	7.89
12/1/2002	-5	6.11	-3	8.11	-2	9.11	-1	10.11
12/2/2002	-6.11	5.56	-4.11	7.56	-3.11	8.56	-2.11	9.56
12/3/2002	-8.89	7.22	-6.89	9.22	-5.89	10.22	-4.89	11.22
12/4/2002	-7.78	10.56	-5.78	12.56	-4.78	13.56	-3.78	14.56
12/5/2002	-3.33	7.22	-1.33	9.22	-0.33	10.22	0.67	11.22
12/6/2002	-6.11	6.11	-4.11	8.11	-3.11	9.11	-2.11	10.11
12/7/2002	-6.67	5.56	-4.67	7.56	-3.67	8.56	-2.67	9.56
12/8/2002	-7.22	8.89	-5.22	10.89	-4.22	11.89	-3.22	12.89
12/9/2002	-6.67	2.78	-4.67	4.78	-3.67	5.78	-2.67	6.78
12/10/2002	-10.56	-0.56	-8.56	1.44	-7.56	2.44	-6.56	3.44
12/11/2002	-11.67	5.56	-9.67	7.56	-8.67	8.56	-7.67	9.56
12/12/2002	-8.33	5.56	-6.33	7.56	-5.33	8.56	-4.33	9.56
12/13/2002	-2.22	0	-0.22	2	0.78	3	1.78	4
12/14/2002	-5	2.22	-3	4.22	-2	5.22	-1	6.22
12/15/2002	-5	-2.78	-3	-0.78	-2	0.22	-1	1.22
12/16/2002	-6.11	-2.22	-4.11	-0.22	-3.11	0.78	-2.11	1.78
12/17/2002	-8.89	-5	-6.89	-3	-5.89	-2	-4.89	-1
12/18/2002	-18.89	-1.11	-16.89	0.89	-15.89	1.89	-14.89	2.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/19/2002	-19.44	-2.78	-17.44	-0.78	-16.44	0.22	-15.44	1.22
12/20/2002	-7.78	-6.11	-5.78	-4.11	-4.78	-3.11	-3.78	-2.11
12/21/2002	-11.11	-3.89	-9.11	-1.89	-8.11	-0.89	-7.11	0.11
12/22/2002	-9.44	-6.11	-7.44	-4.11	-6.44	-3.11	-5.44	-2.11
12/23/2002	-20	-4.44	-18	-2.44	-17	-1.44	-16	-0.44
12/24/2002	-18.89	-5.56	-16.89	-3.56	-15.89	-2.56	-14.89	-1.56
12/25/2002	-13.24	-4.569	-11.24	-2.569	-10.24	-1.569	-9.24	-0.569
12/26/2002	-5.56	-0.56	-3.56	1.44	-2.56	2.44	-1.56	3.44
12/27/2002	-1.67	1.11	0.33	3.11	1.33	4.11	2.33	5.11
12/28/2002	-6.67	-0.56	-4.67	1.44	-3.67	2.44	-2.67	3.44
12/29/2002	-13.89	-4.44	-11.89	-2.44	-10.89	-1.44	-9.89	-0.44
12/30/2002	-12.78	-2.22	-10.78	-0.22	-9.78	0.78	-8.78	1.78
12/31/2002	-12.78	-2.78	-10.78	-0.78	-9.78	0.22	-8.78	1.22
1/1/2003	-13.89	6.11	-11.89	8.11	-10.89	9.11	-9.89	10.11
1/2/2003	-3.33	8.33	-1.33	10.33	-0.33	11.33	0.67	12.33
1/3/2003	-5	10.56	-3	12.56	-2	13.56	-1	14.56
1/4/2003	-6.67	9.44	-4.67	11.44	-3.67	12.44	-2.67	13.44
1/5/2003	-6.11	8.89	-4.11	10.89	-3.11	11.89	-2.11	12.89
1/6/2003	-3.89	8.89	-1.89	10.89	-0.89	11.89	0.11	12.89
1/7/2003	-8.89	12.22	-6.89	14.22	-5.89	15.22	-4.89	16.22
1/8/2003	-8.33	8.89	-6.33	10.89	-5.33	11.89	-4.33	12.89
1/9/2003	-2.22	-0.56	-0.22	1.44	0.78	2.44	1.78	3.44
1/10/2003	-2.22	-0.56	-0.22	1.44	0.78	2.44	1.78	3.44
1/11/2003	-8.33	5	-6.33	7	-5.33	8	-4.33	9
1/12/2003	-5	3.33	-3	5.33	-2	6.33	-1	7.33
1/13/2003	-10.56	7.22	-8.56	9.22	-7.56	10.22	-6.56	11.22
1/14/2003	-12.78	5.56	-10.78	7.56	-9.78	8.56	-8.78	9.56
1/15/2003	-13.89	14.44	-11.89	16.44	-10.89	17.44	-9.89	18.44
1/16/2003	-8.89	16.11	-6.89	18.11	-5.89	19.11	-4.89	20.11
1/17/2003	-2.78	11.67	-0.78	13.67	0.22	14.67	1.22	15.67
1/18/2003	-6.67	13.33	-4.67	15.33	-3.67	16.33	-2.67	17.33
1/19/2003	-7.78	10.56	-5.78	12.56	-4.78	13.56	-3.78	14.56
1/20/2003	-9.44	8.33	-7.44	10.33	-6.44	11.33	-5.44	12.33
1/21/2003	-6.67	2.22	-4.67	4.22	-3.67	5.22	-2.67	6.22
1/22/2003	-17.78	6.67	-15.78	8.67	-14.78	9.67	-13.78	10.67
1/23/2003	0	3.89	2	5.89	3	6.89	4	7.89
1/24/2003	-2.22	7.78	-0.22	9.78	0.78	10.78	1.78	11.78
1/25/2003	-3.33	8.89	-1.33	10.89	-0.33	11.89	0.67	12.89
1/26/2003	-2.22	12.22	-0.22	14.22	0.78	15.22	1.78	16.22
1/27/2003	-1.11	6.11	0.89	8.11	1.89	9.11	2.89	10.11
1/28/2003	-5.56	8.89	-3.56	10.89	-2.56	11.89	-1.56	12.89
1/29/2003	-7.78	11.11	-5.78	13.11	-4.78	14.11	-3.78	15.11
1/30/2003	-4.44	14.44	-2.44	16.44	-1.44	17.44	-0.44	18.44
1/31/2003	-3.33	13.89	-1.33	15.89	-0.33	16.89	0.67	17.89
2/1/2003	-7.78	4.44	-5.78	6.44	-4.78	7.44	-3.78	8.44
2/2/2003	-9.44	0.56	-7.44	2.56	-6.44	3.56	-5.44	4.56
2/3/2003	-8.33	7.78	-6.33	9.78	-5.33	10.78	-4.33	11.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/4/2003	-13.33	6.11	-11.33	8.11	-10.33	9.11	-9.33	10.11
2/5/2003	-12.22	1.11	-10.22	3.11	-9.22	4.11	-8.22	5.11
2/6/2003	-11.11	-3.33	-9.11	-1.33	-8.11	-0.33	-7.11	0.67
2/7/2003	-12.22	-3.33	-10.22	-1.33	-9.22	-0.33	-8.22	0.67
2/8/2003	-17.78	2.78	-15.78	4.78	-14.78	5.78	-13.78	6.78
2/9/2003	-15	5.56	-13	7.56	-12	8.56	-11	9.56
2/10/2003	-11.67	8.89	-9.67	10.89	-8.67	11.89	-7.67	12.89
2/11/2003	-4.44	3.89	-2.44	5.89	-1.44	6.89	-0.44	7.89
2/12/2003	-6.67	4.44	-4.67	6.44	-3.67	7.44	-2.67	8.44
2/13/2003	-1.11	2.22	0.89	4.22	1.89	5.22	2.89	6.22
2/14/2003	-6.11	6.67	-4.11	8.67	-3.11	9.67	-2.11	10.67
2/15/2003	-5	3.89	-3	5.89	-2	6.89	-1	7.89
2/16/2003	-7.78	-1.67	-5.78	0.33	-4.78	1.33	-3.78	2.33
2/17/2003	-13.89	1.11	-11.89	3.11	-10.89	4.11	-9.89	5.11
2/18/2003	-16.67	3.89	-14.67	5.89	-13.67	6.89	-12.67	7.89
2/19/2003	-11.11	-3.89	-9.11	-1.89	-8.11	-0.89	-7.11	0.11
2/20/2003	-5	2.78	-3	4.78	-2	5.78	-1	6.78
2/21/2003	-12.78	10	-10.78	12	-9.78	13	-8.78	14
2/22/2003	-10.56	7.78	-8.56	9.78	-7.56	10.78	-6.56	11.78
2/23/2003	-11.11	8.33	-9.11	10.33	-8.11	11.33	-7.11	12.33
2/24/2003	-5	1.11	-3	3.11	-2	4.11	-1	5.11
2/25/2003	-7.22	-0.56	-5.22	1.44	-4.22	2.44	-3.22	3.44
2/26/2003	-12.22	-0.56	-10.22	1.44	-9.22	2.44	-8.22	3.44
2/27/2003	-10	-2.22	-8	-0.22	-7	0.78	-6	1.78
2/28/2003	-10.56	0	-8.56	2	-7.56	3	-6.56	4
3/1/2003	-7.22	-0.56	-5.22	1.44	-4.22	2.44	-3.22	3.44
3/2/2003	-9.44	9.44	-7.44	11.44	-6.44	12.44	-5.44	13.44
3/3/2003	-5.56	1.11	-3.56	3.11	-2.56	4.11	-1.56	5.11
3/4/2003	-10.56	-1.67	-8.56	0.33	-7.56	1.33	-6.56	2.33
3/5/2003	-11.11	7.78	-9.11	9.78	-8.11	10.78	-7.11	11.78
3/6/2003	-11.67	7.22	-9.67	9.22	-8.67	10.22	-7.67	11.22
3/7/2003	-12.22	7.22	-10.22	9.22	-9.22	10.22	-8.22	11.22
3/8/2003	-12.22	8.33	-10.22	10.33	-9.22	11.33	-8.22	12.33
3/9/2003	-11.11	8.33	-9.11	10.33	-8.11	11.33	-7.11	12.33
3/10/2003	-6.67	8.33	-4.67	10.33	-3.67	11.33	-2.67	12.33
3/11/2003	-7.22	12.22	-5.22	14.22	-4.22	15.22	-3.22	16.22
3/12/2003	-6.11	11.11	-4.11	13.11	-3.11	14.11	-2.11	15.11
3/13/2003	0	8.33	2	10.33	3	11.33	4	12.33
3/14/2003	-1.67	5.56	0.33	7.56	1.33	8.56	2.33	9.56
3/15/2003	-12.78	0	-10.78	2	-9.78	3	-8.78	4
3/16/2003	-15	0.56	-13	2.56	-12	3.56	-11	4.56
3/17/2003	-7.78	-0.56	-5.78	1.44	-4.78	2.44	-3.78	3.44
3/18/2003	-8.33	2.22	-6.33	4.22	-5.33	5.22	-4.33	6.22
3/19/2003	-11.11	10	-9.11	12	-8.11	13	-7.11	14
3/20/2003	-7.22	5	-5.22	7	-4.22	8	-3.22	9
3/21/2003	-8.33	11.67	-6.33	13.67	-5.33	14.67	-4.33	15.67
3/22/2003	-6.67	8.33	-4.67	10.33	-3.67	11.33	-2.67	12.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/23/2003	-1.11	1.11	0.89	3.11	1.89	4.11	2.89	5.11
3/24/2003	-3.33	7.78	-1.33	9.78	-0.33	10.78	0.67	11.78
3/25/2003	-6.67	10.56	-4.67	12.56	-3.67	13.56	-2.67	14.56
3/26/2003	-3.33	3.33	-1.33	5.33	-0.33	6.33	0.67	7.33
3/27/2003	-6.67	3.33	-4.67	5.33	-3.67	6.33	-2.67	7.33
3/28/2003	-5	6.11	-3	8.11	-2	9.11	-1	10.11
3/29/2003	-11.44	6.531	-9.44	8.531	-8.44	9.531	-7.44	10.531
3/30/2003	-8.937	12.43	-6.937	14.43	-5.937	15.43	-4.937	16.43
3/31/2003	-3.537	16.53	-1.537	18.53	-0.537	19.53	0.463	20.53
4/1/2003	-7.78	2.22	-5.78	4.22	-4.78	5.22	-3.78	6.22
4/2/2003	-9.44	-5.56	-7.44	-3.56	-6.44	-2.56	-5.44	-1.56
4/3/2003	-11.11	-4.44	-9.11	-2.44	-8.11	-1.44	-7.11	-0.44
4/4/2003	-12.22	-3.33	-10.22	-1.33	-9.22	-0.33	-8.22	0.67
4/5/2003	-16.67	1.67	-14.67	3.67	-13.67	4.67	-12.67	5.67
4/6/2003	-12.22	1.11	-10.22	3.11	-9.22	4.11	-8.22	5.11
4/7/2003	-5	10	-3	12	-2	13	-1	14
4/8/2003	-7.22	10.56	-5.22	12.56	-4.22	13.56	-3.22	14.56
4/9/2003	-7.22	11.67	-5.22	13.67	-4.22	14.67	-3.22	15.67
4/10/2003	-6.67	8.33	-4.67	10.33	-3.67	11.33	-2.67	12.33
4/11/2003	0	8.33	2	10.33	3	11.33	4	12.33
4/12/2003	-2.22	0	-0.22	2	0.78	3	1.78	4
4/13/2003	-5.56	-2.22	-3.56	-0.22	-2.56	0.78	-1.56	1.78
4/14/2003	-6.11	2.78	-4.11	4.78	-3.11	5.78	-2.11	6.78
4/15/2003	-14.44	1.11	-12.44	3.11	-11.44	4.11	-10.44	5.11
4/16/2003	-5.56	-0.56	-3.56	1.44	-2.56	2.44	-1.56	3.44
4/17/2003	-4.44	1.11	-2.44	3.11	-1.44	4.11	-0.44	5.11
4/18/2003	-6.11	3.33	-4.11	5.33	-3.11	6.33	-2.11	7.33
4/19/2003	-6.11	6.67	-4.11	8.67	-3.11	9.67	-2.11	10.67
4/20/2003	-6.67	5	-4.67	7	-3.67	8	-2.67	9
4/21/2003	-11.11	-1.67	-9.11	0.33	-8.11	1.33	-7.11	2.33
4/22/2003	-11.67	1.11	-9.67	3.11	-8.67	4.11	-7.67	5.11
4/23/2003	-6.11	4.44	-4.11	6.44	-3.11	7.44	-2.11	8.44
4/24/2003	-3.89	-0.56	-1.89	1.44	-0.89	2.44	0.11	3.44
4/25/2003	-4.44	-2.22	-2.44	-0.22	-1.44	0.78	-0.44	1.78
4/26/2003	-5.56	1.67	-3.56	3.67	-2.56	4.67	-1.56	5.67
4/27/2003	-3.89	2.78	-1.89	4.78	-0.89	5.78	0.11	6.78
4/28/2003	-6.11	0.56	-4.11	2.56	-3.11	3.56	-2.11	4.56
4/29/2003	-6.11	-1.67	-4.11	0.33	-3.11	1.33	-2.11	2.33
4/30/2003	-15.56	3.33	-13.56	5.33	-12.56	6.33	-11.56	7.33
5/1/2003	-5	6.67	-3	8.67	-2	9.67	-1	10.67
5/2/2003	-1.11	2.78	0.89	4.78	1.89	5.78	2.89	6.78
5/3/2003	-1.67	2.22	0.33	4.22	1.33	5.22	2.33	6.22
5/4/2003	-6.11	2.22	-4.11	4.22	-3.11	5.22	-2.11	6.22
5/5/2003	-10.56	7.22	-8.56	9.22	-7.56	10.22	-6.56	11.22
5/6/2003	-7.22	6.11	-5.22	8.11	-4.22	9.11	-3.22	10.11
5/7/2003	-2.22	0	-0.22	2	0.78	3	1.78	4
5/8/2003	-7.78	-2.22	-5.78	-0.22	-4.78	0.78	-3.78	1.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/9/2003	-14.44	2.78	-12.44	4.78	-11.44	5.78	-10.44	6.78
5/10/2003	-6.67	5	-4.67	7	-3.67	8	-2.67	9
5/11/2003	-7.78	10	-5.78	12	-4.78	13	-3.78	14
5/12/2003	-5	13.33	-3	15.33	-2	16.33	-1	17.33
5/13/2003	-2.78	15	-0.78	17	0.22	18	1.22	19
5/14/2003	-2.78	11.67	-0.78	13.67	0.22	14.67	1.22	15.67
5/15/2003	-3.33	12.22	-1.33	14.22	-0.33	15.22	0.67	16.22
5/16/2003	-5	13.33	-3	15.33	-2	16.33	-1	17.33
5/17/2003	-4.44	13.33	-2.44	15.33	-1.44	16.33	-0.44	17.33
5/18/2003	-7.22	13.33	-5.22	15.33	-4.22	16.33	-3.22	17.33
5/19/2003	-1.11	16.67	0.89	18.67	1.89	19.67	2.89	20.67
5/20/2003	-3.89	18.33	-1.89	20.33	-0.89	21.33	0.11	22.33
5/21/2003	-1.67	18.89	0.33	20.89	1.33	21.89	2.33	22.89
5/22/2003	-1.11	20.56	0.89	22.56	1.89	23.56	2.89	24.56
5/23/2003	-0.56	21.67	1.44	23.67	2.44	24.67	3.44	25.67
5/24/2003	-0.56	18.33	1.44	20.33	2.44	21.33	3.44	22.33
5/25/2003	-0.56	13.33	1.44	15.33	2.44	16.33	3.44	17.33
5/26/2003	-2.22	18.33	-0.22	20.33	0.78	21.33	1.78	22.33
5/27/2003	1.67	22.78	3.67	24.78	4.67	25.78	5.67	26.78
5/28/2003	0	22.22	2	24.22	3	25.22	4	26.22
5/29/2003	1.67	21.11	3.67	23.11	4.67	24.11	5.67	25.11
5/30/2003	0	16.67	2	18.67	3	19.67	4	20.67
5/31/2003	-1.67	18.89	0.33	20.89	1.33	21.89	2.33	22.89
6/1/2003	-1.11	22.22	0.89	24.22	1.89	25.22	2.89	26.22
6/2/2003	0	23.33	2	25.33	3	26.33	4	27.33
6/3/2003	3.33	23.33	5.33	25.33	6.33	26.33	7.33	27.33
6/4/2003	3.89	22.22	5.89	24.22	6.89	25.22	7.89	26.22
6/5/2003	3.33	21.11	5.33	23.11	6.33	24.11	7.33	25.11
6/6/2003	0.56	22.22	2.56	24.22	3.56	25.22	4.56	26.22
6/7/2003	2.22	22.22	4.22	24.22	5.22	25.22	6.22	26.22
6/8/2003	1.11	20.56	3.11	22.56	4.11	23.56	5.11	24.56
6/9/2003	1.11	17.22	3.11	19.22	4.11	20.22	5.11	21.22
6/10/2003	-0.56	16.67	1.44	18.67	2.44	19.67	3.44	20.67
6/11/2003	-0.56	15.56	1.44	17.56	2.44	18.56	3.44	19.56
6/12/2003	-2.22	15	-0.22	17	0.78	18	1.78	19
6/13/2003	-1.11	15.56	0.89	17.56	1.89	18.56	2.89	19.56
6/14/2003	-1.67	18.33	0.33	20.33	1.33	21.33	2.33	22.33
6/15/2003	0.56	19.44	2.56	21.44	3.56	22.44	4.56	23.44
6/16/2003	3.89	22.78	5.89	24.78	6.89	25.78	7.89	26.78
6/17/2003	5	23.89	7	25.89	8	26.89	9	27.89
6/18/2003	3.89	19.44	5.89	21.44	6.89	22.44	7.89	23.44
6/19/2003	-0.56	14.44	1.44	16.44	2.44	17.44	3.44	18.44
6/20/2003	-0.56	13.33	1.44	15.33	2.44	16.33	3.44	17.33
6/21/2003	-0.56	12.78	1.44	14.78	2.44	15.78	3.44	16.78
6/22/2003	-2.78	13.33	-0.78	15.33	0.22	16.33	1.22	17.33
6/23/2003	-2.22	8.89	-0.22	10.89	0.78	11.89	1.78	12.89
6/24/2003	2.22	14.44	4.22	16.44	5.22	17.44	6.22	18.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/25/2003	1.11	18.33	3.11	20.33	4.11	21.33	5.11	22.33
6/26/2003	3.89	21.11	5.89	23.11	6.89	24.11	7.89	25.11
6/27/2003	3.89	22.78	5.89	24.78	6.89	25.78	7.89	26.78
6/28/2003	7.22	23.89	9.22	25.89	10.22	26.89	11.22	27.89
6/29/2003	2.78	18.89	4.78	20.89	5.78	21.89	6.78	22.89
6/30/2003	-0.56	18.89	1.44	20.89	2.44	21.89	3.44	22.89
7/1/2003	0.56	16.67	2.56	18.67	3.56	19.67	4.56	20.67
7/2/2003	-0.56	17.78	1.44	19.78	2.44	20.78	3.44	21.78
7/3/2003	1.11	18.33	3.11	20.33	4.11	21.33	5.11	22.33
7/4/2003	-0.56	21.11	1.44	23.11	2.44	24.11	3.44	25.11
7/5/2003	1.67	22.22	3.67	24.22	4.67	25.22	5.67	26.22
7/6/2003	0	20.56	2	22.56	3	23.56	4	24.56
7/7/2003	-0.56	18.33	1.44	20.33	2.44	21.33	3.44	22.33
7/8/2003	0	21.67	2	23.67	3	24.67	4	25.67
7/9/2003	3.89	25	5.89	27	6.89	28	7.89	29
7/10/2003	3.89	22.78	5.89	24.78	6.89	25.78	7.89	26.78
7/11/2003	2.78	23.89	4.78	25.89	5.78	26.89	6.78	27.89
7/12/2003	2.78	21.67	4.78	23.67	5.78	24.67	6.78	25.67
7/13/2003	1.67	21.67	3.67	23.67	4.67	24.67	5.67	25.67
7/14/2003	2.22	23.89	4.22	25.89	5.22	26.89	6.22	27.89
7/15/2003	3.89	22.22	5.89	24.22	6.89	25.22	7.89	26.22
7/16/2003	5.56	23.33	7.56	25.33	8.56	26.33	9.56	27.33
7/17/2003	7.22	23.89	9.22	25.89	10.22	26.89	11.22	27.89
7/18/2003	7.78	24.44	9.78	26.44	10.78	27.44	11.78	28.44
7/19/2003	12.78	24.44	14.78	26.44	15.78	27.44	16.78	28.44
7/20/2003	11.67	23.33	13.67	25.33	14.67	26.33	15.67	27.33
7/21/2003	8.89	24.44	10.89	26.44	11.89	27.44	12.89	28.44
7/22/2003	9.44	27.22	11.44	29.22	12.44	30.22	13.44	31.22
7/23/2003	11.67	22.78	13.67	24.78	14.67	25.78	15.67	26.78
7/24/2003	9.44	22.78	11.44	24.78	12.44	25.78	13.44	26.78
7/25/2003	7.22	21.11	9.22	23.11	10.22	24.11	11.22	25.11
7/26/2003	7.22	22.78	9.22	24.78	10.22	25.78	11.22	26.78
7/27/2003	10	21.67	12	23.67	13	24.67	14	25.67
7/28/2003	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
7/29/2003	11.67	25.56	13.67	27.56	14.67	28.56	15.67	29.56
7/30/2003	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
7/31/2003	10.56	20.56	12.56	22.56	13.56	23.56	14.56	24.56
8/1/2003	7.22	19.44	9.22	21.44	10.22	22.44	11.22	23.44
8/2/2003	7.22	12.22	9.22	14.22	10.22	15.22	11.22	16.22
8/3/2003	3.89	17.78	5.89	19.78	6.89	20.78	7.89	21.78
8/4/2003	7.22	17.22	9.22	19.22	10.22	20.22	11.22	21.22
8/5/2003	2.22	15.56	4.22	17.56	5.22	18.56	6.22	19.56
8/6/2003	1.11	15	3.11	17	4.11	18	5.11	19
8/7/2003	1.11	17.78	3.11	19.78	4.11	20.78	5.11	21.78
8/8/2003	1.963	16.23	3.963	18.23	4.963	19.23	5.963	20.23
8/9/2003	1.11	20	3.11	22	4.11	23	5.11	24
8/10/2003	1.11	21.11	3.11	23.11	4.11	24.11	5.11	25.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/11/2003	3.89	20.56	5.89	22.56	6.89	23.56	7.89	24.56
8/12/2003	1.67	20	3.67	22	4.67	23	5.67	24
8/13/2003	2.22	21.11	4.22	23.11	5.22	24.11	6.22	25.11
8/14/2003	3.89	21.11	5.89	23.11	6.89	24.11	7.89	25.11
8/15/2003	5	21.67	7	23.67	8	24.67	9	25.67
8/16/2003	4.44	21.67	6.44	23.67	7.44	24.67	8.44	25.67
8/17/2003	5.56	22.78	7.56	24.78	8.56	25.78	9.56	26.78
8/18/2003	6.67	26.67	8.67	28.67	9.67	29.67	10.67	30.67
8/19/2003	6.67	22.78	8.67	24.78	9.67	25.78	10.67	26.78
8/20/2003	6.11	22.22	8.11	24.22	9.11	25.22	10.11	26.22
8/21/2003	11.67	16.67	13.67	18.67	14.67	19.67	15.67	20.67
8/22/2003	6.11	16.11	8.11	18.11	9.11	19.11	10.11	20.11
8/23/2003	2.78	18.33	4.78	20.33	5.78	21.33	6.78	22.33
8/24/2003	2.22	21.11	4.22	23.11	5.22	24.11	6.22	25.11
8/25/2003	3.33	22.78	5.33	24.78	6.33	25.78	7.33	26.78
8/26/2003	6.67	19.44	8.67	21.44	9.67	22.44	10.67	23.44
8/27/2003	5	19.44	7	21.44	8	22.44	9	23.44
8/28/2003	3.89	19.44	5.89	21.44	6.89	22.44	7.89	23.44
8/29/2003	1.67	21.11	3.67	23.11	4.67	24.11	5.67	25.11
8/30/2003	7.22	22.78	9.22	24.78	10.22	25.78	11.22	26.78
8/31/2003	4.44	16.67	6.44	18.67	7.44	19.67	8.44	20.67
9/1/2003	3.89	22.22	5.89	24.22	6.89	25.22	7.89	26.22
9/2/2003	4.44	23.89	6.44	25.89	7.44	26.89	8.44	27.89
9/3/2003	8.89	21.11	10.89	23.11	11.89	24.11	12.89	25.11
9/4/2003	6.11	21.11	8.11	23.11	9.11	24.11	10.11	25.11
9/5/2003	4.44	20	6.44	22	7.44	23	8.44	24
9/6/2003	2.22	18.33	4.22	20.33	5.22	21.33	6.22	22.33
9/7/2003	7.22	16.67	9.22	18.67	10.22	19.67	11.22	20.67
9/8/2003	2.78	13.89	4.78	15.89	5.78	16.89	6.78	17.89
9/9/2003	1.11	10.56	3.11	12.56	4.11	13.56	5.11	14.56
9/10/2003	0	16.67	2	18.67	3	19.67	4	20.67
9/11/2003	7.22	20.56	9.22	22.56	10.22	23.56	11.22	24.56
9/12/2003	4.44	22.78	6.44	24.78	7.44	25.78	8.44	26.78
9/13/2003	6.11	18.33	8.11	20.33	9.11	21.33	10.11	22.33
9/14/2003	2.78	20	4.78	22	5.78	23	6.78	24
9/15/2003	1.67	17.78	3.67	19.78	4.67	20.78	5.67	21.78
9/16/2003	2.22	15	4.22	17	5.22	18	6.22	19
9/17/2003	-2.78	16.11	-0.78	18.11	0.22	19.11	1.22	20.11
9/18/2003	2.78	18.89	4.78	20.89	5.78	21.89	6.78	22.89
9/19/2003	-3.437	18.43	-1.437	20.43	-0.437	21.43	0.563	22.43
9/20/2003	3.963	17.73	5.963	19.73	6.963	20.73	7.963	21.73
9/21/2003	6.11	23.33	8.11	25.33	9.11	26.33	10.11	27.33
9/22/2003	5.56	23.89	7.56	25.89	8.56	26.89	9.56	27.89
9/23/2003	3.33	23.89	5.33	25.89	6.33	26.89	7.33	27.89
9/24/2003	5.56	23.89	7.56	25.89	8.56	26.89	9.56	27.89
9/25/2003	7.22	22.78	9.22	24.78	10.22	25.78	11.22	26.78
9/26/2003	8.89	23.33	10.89	25.33	11.89	26.33	12.89	27.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/27/2003	4.44	24.44	6.44	26.44	7.44	27.44	8.44	28.44
9/28/2003	3.89	23.33	5.89	25.33	6.89	26.33	7.89	27.33
9/29/2003	2.22	18.33	4.22	20.33	5.22	21.33	6.22	22.33
9/30/2003	1.67	18.89	3.67	20.89	4.67	21.89	5.67	22.89
10/1/2003	2.22	16.11	4.22	18.11	5.22	19.11	6.22	20.11
10/2/2003	1.11	16.11	3.11	18.11	4.11	19.11	5.11	20.11
10/3/2003	6.11	17.22	8.11	19.22	9.11	20.22	10.11	21.22
10/4/2003	2.22	16.67	4.22	18.67	5.22	19.67	6.22	20.67
10/5/2003	0	18.33	2	20.33	3	21.33	4	22.33
10/6/2003	3.163	17.93	5.163	19.93	6.163	20.93	7.163	21.93
10/7/2003	0	18.33	2	20.33	3	21.33	4	22.33
10/8/2003	0	19.44	2	21.44	3	22.44	4	23.44
10/9/2003	-0.56	16.67	1.44	18.67	2.44	19.67	3.44	20.67
10/10/2003	-1.67	12.22	0.33	14.22	1.33	15.22	2.33	16.22
10/11/2003	-3.33	16.67	-1.33	18.67	-0.33	19.67	0.67	20.67
10/12/2003	-1.67	17.22	0.33	19.22	1.33	20.22	2.33	21.22
10/13/2003	-0.56	19.44	1.44	21.44	2.44	22.44	3.44	23.44
10/14/2003	-3.33	16.67	-1.33	18.67	-0.33	19.67	0.67	20.67
10/15/2003	-4.44	15	-2.44	17	-1.44	18	-0.44	19
10/16/2003	-3.33	17.78	-1.33	19.78	-0.33	20.78	0.67	21.78
10/17/2003	-1.67	19.44	0.33	21.44	1.33	22.44	2.33	23.44
10/18/2003	-2.22	17.78	-0.22	19.78	0.78	20.78	1.78	21.78
10/19/2003	-0.56	17.78	1.44	19.78	2.44	20.78	3.44	21.78
10/20/2003	-1.11	20	0.89	22	1.89	23	2.89	24
10/21/2003	0	21.11	2	23.11	3	24.11	4	25.11
10/22/2003	-0.56	18.33	1.44	20.33	2.44	21.33	3.44	22.33
10/23/2003	0	16.11	2	18.11	3	19.11	4	20.11
10/24/2003	0.56	21.11	2.56	23.11	3.56	24.11	4.56	25.11
10/25/2003	5.56	16.11	7.56	18.11	8.56	19.11	9.56	20.11
10/26/2003	6.11	17.78	8.11	19.78	9.11	20.78	10.11	21.78
10/27/2003	1.11	18.33	3.11	20.33	4.11	21.33	5.11	22.33
10/28/2003	2.22	22.22	4.22	24.22	5.22	25.22	6.22	26.22
10/29/2003	-0.56	13.33	1.44	15.33	2.44	16.33	3.44	17.33
10/30/2003	-10.56	-0.56	-8.56	1.44	-7.56	2.44	-6.56	3.44
10/31/2003	-9.44	-5	-7.44	-3	-6.44	-2	-5.44	-1
11/1/2003	-13.89	-1.67	-11.89	0.33	-10.89	1.33	-9.89	2.33
11/2/2003	-15	-1.67	-13	0.33	-12	1.33	-11	2.33
11/3/2003	-16.67	-1.67	-14.67	0.33	-13.67	1.33	-12.67	2.33
11/4/2003	-18.33	1.11	-16.33	3.11	-15.33	4.11	-14.33	5.11
11/5/2003	-11.11	2.22	-9.11	4.22	-8.11	5.22	-7.11	6.22
11/6/2003	-12.78	5	-10.78	7	-9.78	8	-8.78	9
11/7/2003	-6.11	0.56	-4.11	2.56	-3.11	3.56	-2.11	4.56
11/8/2003	-2.78	2.22	-0.78	4.22	0.22	5.22	1.22	6.22
11/9/2003	-7.78	-1.67	-5.78	0.33	-4.78	1.33	-3.78	2.33
11/10/2003	-9.44	2.78	-7.44	4.78	-6.44	5.78	-5.44	6.78
11/11/2003	-10.56	4.44	-8.56	6.44	-7.56	7.44	-6.56	8.44
11/12/2003	-3.33	1.11	-1.33	3.11	-0.33	4.11	0.67	5.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/13/2003	-5.56	0	-3.56	2	-2.56	3	-1.56	4
11/14/2003	-10.56	4.44	-8.56	6.44	-7.56	7.44	-6.56	8.44
11/15/2003	-8.33	-2.22	-6.33	-0.22	-5.33	0.78	-4.33	1.78
11/16/2003	-11.67	5.56	-9.67	7.56	-8.67	8.56	-7.67	9.56
11/17/2003	-3.33	8.33	-1.33	10.33	-0.33	11.33	0.67	12.33
11/18/2003	-6.11	13.33	-4.11	15.33	-3.11	16.33	-2.11	17.33
11/19/2003	-6.67	10	-4.67	12	-3.67	13	-2.67	14
11/20/2003	-6.67	6.67	-4.67	8.67	-3.67	9.67	-2.67	10.67
11/21/2003	-11.67	-1.11	-9.67	0.89	-8.67	1.89	-7.67	2.89
11/22/2003	-12.78	-3.33	-10.78	-1.33	-9.78	-0.33	-8.78	0.67
11/23/2003	-11.11	6.11	-9.11	8.11	-8.11	9.11	-7.11	10.11
11/24/2003	-12.78	3.89	-10.78	5.89	-9.78	6.89	-8.78	7.89
11/25/2003	-13.33	2.22	-11.33	4.22	-10.33	5.22	-9.33	6.22
11/26/2003	-14.44	5	-12.44	7	-11.44	8	-10.44	9
11/27/2003	-5	10.56	-3	12.56	-2	13.56	-1	14.56
11/28/2003	-5	7.22	-3	9.22	-2	10.22	-1	11.22
11/29/2003	-3.33	8.33	-1.33	10.33	-0.33	11.33	0.67	12.33
11/30/2003	-4.44	5.56	-2.44	7.56	-1.44	8.56	-0.44	9.56
12/1/2003	-5	3.33	-3	5.33	-2	6.33	-1	7.33
12/2/2003	-8.33	8.33	-6.33	10.33	-5.33	11.33	-4.33	12.33
12/3/2003	-9.44	10.56	-7.44	12.56	-6.44	13.56	-5.44	14.56
12/4/2003	-7.78	7.22	-5.78	9.22	-4.78	10.22	-3.78	11.22
12/5/2003	0	3.89	2	5.89	3	6.89	4	7.89
12/6/2003	-1.11	2.78	0.89	4.78	1.89	5.78	2.89	6.78
12/7/2003	-7.78	-0.56	-5.78	1.44	-4.78	2.44	-3.78	3.44
12/8/2003	-11.67	-1.11	-9.67	0.89	-8.67	1.89	-7.67	2.89
12/9/2003	-11.67	1.67	-9.67	3.67	-8.67	4.67	-7.67	5.67
12/10/2003	-5	-3.33	-3	-1.33	-2	-0.33	-1	0.67
12/11/2003	-14.44	0	-12.44	2	-11.44	3	-10.44	4
12/12/2003	-14.44	-0.56	-12.44	1.44	-11.44	2.44	-10.44	3.44
12/13/2003	-11.24	0.03138	-9.24	2.03138	-8.24	3.03138	-7.24	4.03138
12/14/2003	-7.337	0.3314	-5.337	2.3314	-4.337	3.3314	-3.337	4.3314
12/15/2003	-16.04	-0.3686	-14.04	1.6314	-13.04	2.6314	-12.04	3.6314
12/16/2003	-12.78	10	-10.78	12	-9.78	13	-8.78	14
12/17/2003	-7.78	8.33	-5.78	10.33	-4.78	11.33	-3.78	12.33
12/18/2003	-6.11	10	-4.11	12	-3.11	13	-2.11	14
12/19/2003	-5.56	10	-3.56	12	-2.56	13	-1.56	14
12/20/2003	-2.22	1.11	-0.22	3.11	0.78	4.11	1.78	5.11
12/21/2003	-7.22	4.44	-5.22	6.44	-4.22	7.44	-3.22	8.44
12/22/2003	-9.44	7.22	-7.44	9.22	-6.44	10.22	-5.44	11.22
12/23/2003	-9.44	0	-7.44	2	-6.44	3	-5.44	4
12/24/2003	-5	-0.56	-3	1.44	-2	2.44	-1	3.44
12/25/2003	-9.44	-4.44	-7.44	-2.44	-6.44	-1.44	-5.44	-0.44
12/26/2003	-21.67	-6.67	-19.67	-4.67	-18.67	-3.67	-17.67	-2.67
12/27/2003	-23.33	-3.33	-21.33	-1.33	-20.33	-0.33	-19.33	0.67
12/28/2003	-20	-0.56	-18	1.44	-17	2.44	-16	3.44
12/29/2003	-7.22	-4.44	-5.22	-2.44	-4.22	-1.44	-3.22	-0.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/30/2003	-6.11	2.78	-4.11	4.78	-3.11	5.78	-2.11	6.78
12/31/2003	-5	-3.33	-3	-1.33	-2	-0.33	-1	0.67
1/1/2004	-7.78	-4.44	-5.78	-2.44	-4.78	-1.44	-3.78	-0.44
1/2/2004	-11.11	-7.22	-9.11	-5.22	-8.11	-4.22	-7.11	-3.22
1/3/2004	-22.22	-5.56	-20.22	-3.56	-19.22	-2.56	-18.22	-1.56
1/4/2004	-24.44	-2.78	-22.44	-0.78	-21.44	0.22	-20.44	1.22
1/5/2004	-12.78	6.67	-10.78	8.67	-9.78	9.67	-8.78	10.67
1/6/2004	-8.33	1.11	-6.33	3.11	-5.33	4.11	-4.33	5.11
1/7/2004	-4.44	1.11	-2.44	3.11	-1.44	4.11	-0.44	5.11
1/8/2004	-4.44	6.11	-2.44	8.11	-1.44	9.11	-0.44	10.11
1/9/2004	-6.11	6.11	-4.11	8.11	-3.11	9.11	-2.11	10.11
1/10/2004	-8.33	8.33	-6.33	10.33	-5.33	11.33	-4.33	12.33
1/11/2004	-8.89	10	-6.89	12	-5.89	13	-4.89	14
1/12/2004	-8.89	7.78	-6.89	9.78	-5.89	10.78	-4.89	11.78
1/13/2004	-10	10	-8	12	-7	13	-6	14
1/14/2004	-10.56	8.33	-8.56	10.33	-7.56	11.33	-6.56	12.33
1/15/2004	-7.78	5.56	-5.78	7.56	-4.78	8.56	-3.78	9.56
1/16/2004	-11.11	10	-9.11	12	-8.11	13	-7.11	14
1/17/2004	-8.33	11.11	-6.33	13.11	-5.33	14.11	-4.33	15.11
1/18/2004	-7.78	5	-5.78	7	-4.78	8	-3.78	9
1/19/2004	-12.22	6.11	-10.22	8.11	-9.22	9.11	-8.22	10.11
1/20/2004	-12.22	-1.67	-10.22	0.33	-9.22	1.33	-8.22	2.33
1/21/2004	-8.89	0.56	-6.89	2.56	-5.89	3.56	-4.89	4.56
1/22/2004	-12.78	10	-10.78	12	-9.78	13	-8.78	14
1/23/2004	-11.67	8.33	-9.67	10.33	-8.67	11.33	-7.67	12.33
1/24/2004	-6.11	0	-4.11	2	-3.11	3	-2.11	4
1/25/2004	-14.44	1.11	-12.44	3.11	-11.44	4.11	-10.44	5.11
1/26/2004	-16.11	-2.22	-14.11	-0.22	-13.11	0.78	-12.11	1.78
1/27/2004	-5.56	-2.22	-3.56	-0.22	-2.56	0.78	-1.56	1.78
1/28/2004	-13.89	5.56	-11.89	7.56	-10.89	8.56	-9.89	9.56
1/29/2004	-8.33	8.89	-6.33	10.89	-5.33	11.89	-4.33	12.89
1/30/2004	-9.44	0	-7.44	2	-6.44	3	-5.44	4
1/31/2004	-12.78	1.11	-10.78	3.11	-9.78	4.11	-8.78	5.11
2/1/2004	-12.78	-2.22	-10.78	-0.22	-9.78	0.78	-8.78	1.78
2/2/2004	-8.33	-2.22	-6.33	-0.22	-5.33	0.78	-4.33	1.78
2/3/2004	-11.11	-4.44	-9.11	-2.44	-8.11	-1.44	-7.11	-0.44
2/4/2004	-12.78	-3.89	-10.78	-1.89	-9.78	-0.89	-8.78	0.11
2/5/2004	-15.56	-0.56	-13.56	1.44	-12.56	2.44	-11.56	3.44
2/6/2004	-12.78	8.89	-10.78	10.89	-9.78	11.89	-8.78	12.89
2/7/2004	-15.56	-0.56	-13.56	1.44	-12.56	2.44	-11.56	3.44
2/8/2004	-13.33	1.11	-11.33	3.11	-10.33	4.11	-9.33	5.11
2/9/2004	-9.44	-1.11	-7.44	0.89	-6.44	1.89	-5.44	2.89
2/10/2004	-11.67	5.56	-9.67	7.56	-8.67	8.56	-7.67	9.56
2/11/2004	-8.33	6.67	-6.33	8.67	-5.33	9.67	-4.33	10.67
2/12/2004	-12.22	6.67	-10.22	8.67	-9.22	9.67	-8.22	10.67
2/13/2004	-15	2.78	-13	4.78	-12	5.78	-11	6.78
2/14/2004	-7.22	2.78	-5.22	4.78	-4.22	5.78	-3.22	6.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/15/2004	-6.67	2.22	-4.67	4.22	-3.67	5.22	-2.67	6.22
2/16/2004	-8.337	3.931	-6.337	5.931	-5.337	6.931	-4.337	7.931
2/17/2004	-2.22	2.22	-0.22	4.22	0.78	5.22	1.78	6.22
2/18/2004	-6.67	0	-4.67	2	-3.67	3	-2.67	4
2/19/2004	-12.78	2.78	-10.78	4.78	-9.78	5.78	-8.78	6.78
2/20/2004	-17.78	-0.56	-15.78	1.44	-14.78	2.44	-13.78	3.44
2/21/2004	-8.33	0	-6.33	2	-5.33	3	-4.33	4
2/22/2004	-6.11	0	-4.11	2	-3.11	3	-2.11	4
2/23/2004	-11.11	0.56	-9.11	2.56	-8.11	3.56	-7.11	4.56
2/24/2004	-5.56	-2.22	-3.56	-0.22	-2.56	0.78	-1.56	1.78
2/25/2004	-6.11	-0.56	-4.11	1.44	-3.11	2.44	-2.11	3.44
2/26/2004	-7.78	-4.44	-5.78	-2.44	-4.78	-1.44	-3.78	-0.44
2/27/2004	-18.33	-2.22	-16.33	-0.22	-15.33	0.78	-14.33	1.78
2/28/2004	-11.11	0	-9.11	2	-8.11	3	-7.11	4
2/29/2004	-17.22	3.89	-15.22	5.89	-14.22	6.89	-13.22	7.89
3/1/2004	-8.89	-2.78	-6.89	-0.78	-5.89	0.22	-4.89	1.22
3/2/2004	-10.56	-1.67	-8.56	0.33	-7.56	1.33	-6.56	2.33
3/3/2004	-7.78	7.22	-5.78	9.22	-4.78	10.22	-3.78	11.22
3/4/2004	-11.11	4.44	-9.11	6.44	-8.11	7.44	-7.11	8.44
3/5/2004	-6.67	7.78	-4.67	9.78	-3.67	10.78	-2.67	11.78
3/6/2004	-2.22	11.11	-0.22	13.11	0.78	14.11	1.78	15.11
3/7/2004	-0.56	10.56	1.44	12.56	2.44	13.56	3.44	14.56
3/8/2004	-3.33	14.44	-1.33	16.44	-0.33	17.44	0.67	18.44
3/9/2004	-6.11	16.11	-4.11	18.11	-3.11	19.11	-2.11	20.11
3/10/2004	1.67	10	3.67	12	4.67	13	5.67	14
3/11/2004	-3.89	13.33	-1.89	15.33	-0.89	16.33	0.11	17.33
3/12/2004	-7.78	12.22	-5.78	14.22	-4.78	15.22	-3.78	16.22
3/13/2004	-4.44	15	-2.44	17	-1.44	18	-0.44	19
3/14/2004	-3.89	16.11	-1.89	18.11	-0.89	19.11	0.11	20.11
3/15/2004	2.22	10.56	4.22	12.56	5.22	13.56	6.22	14.56
3/16/2004	-1.11	11.67	0.89	13.67	1.89	14.67	2.89	15.67
3/17/2004	-2.78	16.11	-0.78	18.11	0.22	19.11	1.22	20.11
3/18/2004	-4.44	13.33	-2.44	15.33	-1.44	16.33	-0.44	17.33
3/19/2004	-5	13.33	-3	15.33	-2	16.33	-1	17.33
3/20/2004	-3.33	19.44	-1.33	21.44	-0.33	22.44	0.67	23.44
3/21/2004	-3.33	17.22	-1.33	19.22	-0.33	20.22	0.67	21.22
3/22/2004	-2.22	13.33	-0.22	15.33	0.78	16.33	1.78	17.33
3/23/2004	-4.44	12.22	-2.44	14.22	-1.44	15.22	-0.44	16.22
3/24/2004	-0.56	8.33	1.44	10.33	2.44	11.33	3.44	12.33
3/25/2004	-3.33	2.78	-1.33	4.78	-0.33	5.78	0.67	6.78
3/26/2004	-7.78	-0.56	-5.78	1.44	-4.78	2.44	-3.78	3.44
3/27/2004	-10.56	10	-8.56	12	-7.56	13	-6.56	14
3/28/2004	-3.33	11.67	-1.33	13.67	-0.33	14.67	0.67	15.67
3/29/2004	-6.11	13.89	-4.11	15.89	-3.11	16.89	-2.11	17.89
3/30/2004	-3.33	8.89	-1.33	10.89	-0.33	11.89	0.67	12.89
3/31/2004	-5.56	8.33	-3.56	10.33	-2.56	11.33	-1.56	12.33
4/1/2004	-4.44	0	-2.44	2	-1.44	3	-0.44	4

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/2/2004	-9.637	1.231	-7.637	3.231	-6.637	4.231	-5.637	5.231
4/3/2004	-2.22	11.11	-0.22	13.11	0.78	14.11	1.78	15.11
4/4/2004	-2.22	11.67	-0.22	13.67	0.78	14.67	1.78	15.67
4/5/2004	-2.22	10	-0.22	12	0.78	13	1.78	14
4/6/2004	-2.22	8.33	-0.22	10.33	0.78	11.33	1.78	12.33
4/7/2004	-4.537	8.931	-2.537	10.931	-1.537	11.931	-0.537	12.931
4/8/2004	-2.78	12.78	-0.78	14.78	0.22	15.78	1.22	16.78
4/9/2004	-3.89	12.22	-1.89	14.22	-0.89	15.22	0.11	16.22
4/10/2004	-3.33	11.67	-1.33	13.67	-0.33	14.67	0.67	15.67
4/11/2004	-2.22	13.33	-0.22	15.33	0.78	16.33	1.78	17.33
4/12/2004	-2.78	11.11	-0.78	13.11	0.22	14.11	1.22	15.11
4/13/2004	-3.33	5.56	-1.33	7.56	-0.33	8.56	0.67	9.56
4/14/2004	-3.89	5	-1.89	7	-0.89	8	0.11	9
4/15/2004	-2.22	2.78	-0.22	4.78	0.78	5.78	1.78	6.78
4/16/2004	-3.89	1.67	-1.89	3.67	-0.89	4.67	0.11	5.67
4/17/2004	-6.11	-1.11	-4.11	0.89	-3.11	1.89	-2.11	2.89
4/18/2004	-6.67	0.56	-4.67	2.56	-3.67	3.56	-2.67	4.56
4/19/2004	-5	0	-3	2	-2	3	-1	4
4/20/2004	-2.22	3.89	-0.22	5.89	0.78	6.89	1.78	7.89
4/21/2004	-2.22	3.89	-0.22	5.89	0.78	6.89	1.78	7.89
4/22/2004	-8.337	4.631	-6.337	6.631	-5.337	7.631	-4.337	8.631
4/23/2004	-1.67	13.89	0.33	15.89	1.33	16.89	2.33	17.89
4/24/2004	-2.22	16.11	-0.22	18.11	0.78	19.11	1.78	20.11
4/25/2004	-0.56	16.67	1.44	18.67	2.44	19.67	3.44	20.67
4/26/2004	0	18.33	2	20.33	3	21.33	4	22.33
4/27/2004	-2.22	17.22	-0.22	19.22	0.78	20.22	1.78	21.22
4/28/2004	-4.44	13.33	-2.44	15.33	-1.44	16.33	-0.44	17.33
4/29/2004	-2.78	8.89	-0.78	10.89	0.22	11.89	1.22	12.89
4/30/2004	-2.22	16.11	-0.22	18.11	0.78	19.11	1.78	20.11
5/1/2004	-2.22	15.56	-0.22	17.56	0.78	18.56	1.78	19.56
5/2/2004	-1.67	18.33	0.33	20.33	1.33	21.33	2.33	22.33
5/3/2004	-2.22	19.44	-0.22	21.44	0.78	22.44	1.78	23.44
5/4/2004	-2.22	16.67	-0.22	18.67	0.78	19.67	1.78	20.67
5/5/2004	0.56	13.33	2.56	15.33	3.56	16.33	4.56	17.33
5/6/2004	-3.33	11.67	-1.33	13.67	-0.33	14.67	0.67	15.67
5/7/2004	1.67	10.56	3.67	12.56	4.67	13.56	5.67	14.56
5/8/2004	-2.22	11.11	-0.22	13.11	0.78	14.11	1.78	15.11
5/9/2004	-4.44	13.33	-2.44	15.33	-1.44	16.33	-0.44	17.33
5/10/2004	-2.78	4.44	-0.78	6.44	0.22	7.44	1.22	8.44
5/11/2004	-2.78	4.44	-0.78	6.44	0.22	7.44	1.22	8.44
5/12/2004	-2.78	11.67	-0.78	13.67	0.22	14.67	1.22	15.67
5/13/2004	-3.33	14.44	-1.33	16.44	-0.33	17.44	0.67	18.44
5/14/2004	-2.78	13.89	-0.78	15.89	0.22	16.89	1.22	17.89
5/15/2004	-2.22	12.22	-0.22	14.22	0.78	15.22	1.78	16.22
5/16/2004	-3.33	13.33	-1.33	15.33	-0.33	16.33	0.67	17.33
5/17/2004	0.56	8.89	2.56	10.89	3.56	11.89	4.56	12.89
5/18/2004	-2.22	6.11	-0.22	8.11	0.78	9.11	1.78	10.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/19/2004	-3.33	10	-1.33	12	-0.33	13	0.67	14
5/20/2004	-3.33	8.33	-1.33	10.33	-0.33	11.33	0.67	12.33
5/21/2004	-4.44	8.33	-2.44	10.33	-1.44	11.33	-0.44	12.33
5/22/2004	-3.33	9.44	-1.33	11.44	-0.33	12.44	0.67	13.44
5/23/2004	-2.22	10	-0.22	12	0.78	13	1.78	14
5/24/2004	-4.44	11.11	-2.44	13.11	-1.44	14.11	-0.44	15.11
5/25/2004	0	11.67	2	13.67	3	14.67	4	15.67
5/26/2004	-2.22	16.11	-0.22	18.11	0.78	19.11	1.78	20.11
5/27/2004	0	13.33	2	15.33	3	16.33	4	17.33
5/28/2004	-0.56	6.67	1.44	8.67	2.44	9.67	3.44	10.67
5/29/2004	-3.33	13.33	-1.33	15.33	-0.33	16.33	0.67	17.33
5/30/2004	-2.22	16.67	-0.22	18.67	0.78	19.67	1.78	20.67
5/31/2004	-1.11	17.78	0.89	19.78	1.89	20.78	2.89	21.78
6/1/2004	-0.56	17.78	1.44	19.78	2.44	20.78	3.44	21.78
6/2/2004	0	20.56	2	22.56	3	23.56	4	24.56
6/3/2004	0.56	18.33	2.56	20.33	3.56	21.33	4.56	22.33
6/4/2004	-0.56	20.56	1.44	22.56	2.44	23.56	3.44	24.56
6/5/2004	0	19.44	2	21.44	3	22.44	4	23.44
6/6/2004	1.11	18.33	3.11	20.33	4.11	21.33	5.11	22.33
6/7/2004	-0.56	13.33	1.44	15.33	2.44	16.33	3.44	17.33
6/8/2004	-3.89	8.33	-1.89	10.33	-0.89	11.33	0.11	12.33
6/9/2004	-3.33	5.56	-1.33	7.56	-0.33	8.56	0.67	9.56
6/10/2004	0	11.11	2	13.11	3	14.11	4	15.11
6/11/2004	-2.22	13.33	-0.22	15.33	0.78	16.33	1.78	17.33
6/12/2004	-1.67	16.67	0.33	18.67	1.33	19.67	2.33	20.67
6/13/2004	1.67	19.44	3.67	21.44	4.67	22.44	5.67	23.44
6/14/2004	2.22	22.78	4.22	24.78	5.22	25.78	6.22	26.78
6/15/2004	8.33	22.22	10.33	24.22	11.33	25.22	12.33	26.22
6/16/2004	6.67	20.56	8.67	22.56	9.67	23.56	10.67	24.56
6/17/2004	4.44	17.78	6.44	19.78	7.44	20.78	8.44	21.78
6/18/2004	2.78	17.78	4.78	19.78	5.78	20.78	6.78	21.78
6/19/2004	2.22	18.33	4.22	20.33	5.22	21.33	6.22	22.33
6/20/2004	0	19.44	2	21.44	3	22.44	4	23.44
6/21/2004	3.33	20.56	5.33	22.56	6.33	23.56	7.33	24.56
6/22/2004	4.44	20.56	6.44	22.56	7.44	23.56	8.44	24.56
6/23/2004	3.89	20.56	5.89	22.56	6.89	23.56	7.89	24.56
6/24/2004	3.33	19.44	5.33	21.44	6.33	22.44	7.33	23.44
6/25/2004	2.22	19.44	4.22	21.44	5.22	22.44	6.22	23.44
6/26/2004	1.67	19.44	3.67	21.44	4.67	22.44	5.67	23.44
6/27/2004	5.56	20.56	7.56	22.56	8.56	23.56	9.56	24.56
6/28/2004	6.67	21.11	8.67	23.11	9.67	24.11	10.67	25.11
6/29/2004	3.89	17.78	5.89	19.78	6.89	20.78	7.89	21.78
6/30/2004	2.78	16.67	4.78	18.67	5.78	19.67	6.78	20.67
7/1/2004	1.67	15	3.67	17	4.67	18	5.67	19
7/2/2004	3.33	17.78	5.33	19.78	6.33	20.78	7.33	21.78
7/3/2004	4.44	19.44	6.44	21.44	7.44	22.44	8.44	23.44
7/4/2004	3.89	20.56	5.89	22.56	6.89	23.56	7.89	24.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/5/2004	5	23.89	7	25.89	8	26.89	9	27.89
7/6/2004	7.22	23.89	9.22	25.89	10.22	26.89	11.22	27.89
7/7/2004	5.56	20	7.56	22	8.56	23	9.56	24
7/8/2004	2.78	18.89	4.78	20.89	5.78	21.89	6.78	22.89
7/9/2004	4.44	16.67	6.44	18.67	7.44	19.67	8.44	20.67
7/10/2004	0	17.78	2	19.78	3	20.78	4	21.78
7/11/2004	0	20	2	22	3	23	4	24
7/12/2004	2.22	21.11	4.22	23.11	5.22	24.11	6.22	25.11
7/13/2004	2.78	21.11	4.78	23.11	5.78	24.11	6.78	25.11
7/14/2004	1.67	21.11	3.67	23.11	4.67	24.11	5.67	25.11
7/15/2004	3.33	21.11	5.33	23.11	6.33	24.11	7.33	25.11
7/16/2004	6.67	21.67	8.67	23.67	9.67	24.67	10.67	25.67
7/17/2004	7.22	20.56	9.22	22.56	10.22	23.56	11.22	24.56
7/18/2004	6.11	21.11	8.11	23.11	9.11	24.11	10.11	25.11
7/19/2004	5.56	20.56	7.56	22.56	8.56	23.56	9.56	24.56
7/20/2004	4.44	21.11	6.44	23.11	7.44	24.11	8.44	25.11
7/21/2004	6.11	22.78	8.11	24.78	9.11	25.78	10.11	26.78
7/22/2004	6.11	23.89	8.11	25.89	9.11	26.89	10.11	27.89
7/23/2004	7.22	24.44	9.22	26.44	10.22	27.44	11.22	28.44
7/24/2004	6.67	23.33	8.67	25.33	9.67	26.33	10.67	27.33
7/25/2004	6.11	22.78	8.11	24.78	9.11	25.78	10.11	26.78
7/26/2004	5.56	22.22	7.56	24.22	8.56	25.22	9.56	26.22
7/27/2004	2.78	22.78	4.78	24.78	5.78	25.78	6.78	26.78
7/28/2004	5.56	23.33	7.56	25.33	8.56	26.33	9.56	27.33
7/29/2004	3.89	22.22	5.89	24.22	6.89	25.22	7.89	26.22
7/30/2004	1.67	21.11	3.67	23.11	4.67	24.11	5.67	25.11
7/31/2004	2.22	20	4.22	22	5.22	23	6.22	24
8/1/2004	2.22	20.56	4.22	22.56	5.22	23.56	6.22	24.56
8/2/2004	0	17.78	2	19.78	3	20.78	4	21.78
8/3/2004	0	19.44	2	21.44	3	22.44	4	23.44
8/4/2004	1.363	18.93	3.363	20.93	4.363	21.93	5.363	22.93
8/5/2004	-0.56	18.33	1.44	20.33	2.44	21.33	3.44	22.33
8/6/2004	1.11	18.33	3.11	20.33	4.11	21.33	5.11	22.33
8/7/2004	1.11	22.78	3.11	24.78	4.11	25.78	5.11	26.78
8/8/2004	7.78	23.89	9.78	25.89	10.78	26.89	11.78	27.89
8/9/2004	4.44	23.89	6.44	25.89	7.44	26.89	8.44	27.89
8/10/2004	5.56	24.44	7.56	26.44	8.56	27.44	9.56	28.44
8/11/2004	5.56	25.56	7.56	27.56	8.56	28.56	9.56	29.56
8/12/2004	7.78	23.89	9.78	25.89	10.78	26.89	11.78	27.89
8/13/2004	7.78	23.89	9.78	25.89	10.78	26.89	11.78	27.89
8/14/2004	6.11	22.22	8.11	24.22	9.11	25.22	10.11	26.22
8/15/2004	6.67	21.67	8.67	23.67	9.67	24.67	10.67	25.67
8/16/2004	5	20.56	7	22.56	8	23.56	9	24.56
8/17/2004	2.22	21.67	4.22	23.67	5.22	24.67	6.22	25.67
8/18/2004	6.11	22.78	8.11	24.78	9.11	25.78	10.11	26.78
8/19/2004	5.56	23.89	7.56	25.89	8.56	26.89	9.56	27.89
8/20/2004	6.67	22.78	8.67	24.78	9.67	25.78	10.67	26.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/21/2004	5.56	21.11	7.56	23.11	8.56	24.11	9.56	25.11
8/22/2004	4.44	15	6.44	17	7.44	18	8.44	19
8/23/2004	3.89	14.44	5.89	16.44	6.89	17.44	7.89	18.44
8/24/2004	2.22	16.67	4.22	18.67	5.22	19.67	6.22	20.67
8/25/2004	2.78	17.22	4.78	19.22	5.78	20.22	6.78	21.22
8/26/2004	2.78	17.78	4.78	19.78	5.78	20.78	6.78	21.78
8/27/2004	6.11	20	8.11	22	9.11	23	10.11	24
8/28/2004	3.33	22.22	5.33	24.22	6.33	25.22	7.33	26.22
8/29/2004	4.44	22.78	6.44	24.78	7.44	25.78	8.44	26.78
8/30/2004	4.44	22.78	6.44	24.78	7.44	25.78	8.44	26.78
8/31/2004	2.78	23.33	4.78	25.33	5.78	26.33	6.78	27.33
9/1/2004	3.89	22.78	5.89	24.78	6.89	25.78	7.89	26.78
9/2/2004	2.22	17.22	4.22	19.22	5.22	20.22	6.22	21.22
9/3/2004	2.22	11.67	4.22	13.67	5.22	14.67	6.22	15.67
9/4/2004	5	17.78	7	19.78	8	20.78	9	21.78
9/5/2004	2.22	21.11	4.22	23.11	5.22	24.11	6.22	25.11
9/6/2004	3.89	22.22	5.89	24.22	6.89	25.22	7.89	26.22
9/7/2004	4.44	22.78	6.44	24.78	7.44	25.78	8.44	26.78
9/8/2004	2.22	21.67	4.22	23.67	5.22	24.67	6.22	25.67
9/9/2004	1.11	21.11	3.11	23.11	4.11	24.11	5.11	25.11
9/10/2004	2.22	21.11	4.22	23.11	5.22	24.11	6.22	25.11
9/11/2004	2.78	22.22	4.78	24.22	5.78	25.22	6.78	26.22
9/12/2004	3.89	18.89	5.89	20.89	6.89	21.89	7.89	22.89
9/13/2004	0	17.78	2	19.78	3	20.78	4	21.78
9/14/2004	3.463	16.83	5.463	18.83	6.463	19.83	7.463	20.83
9/15/2004	3.33	20	5.33	22	6.33	23	7.33	24
9/16/2004	1.11	20.56	3.11	22.56	4.11	23.56	5.11	24.56
9/17/2004	0	17.22	2	19.22	3	20.22	4	21.22
9/18/2004	1.67	6.67	3.67	8.67	4.67	9.67	5.67	10.67
9/19/2004	-3.33	1.11	-1.33	3.11	-0.33	4.11	0.67	5.11
9/20/2004	-7.78	4.44	-5.78	6.44	-4.78	7.44	-3.78	8.44
9/21/2004	-0.56	12.78	1.44	14.78	2.44	15.78	3.44	16.78
9/22/2004	-7.437	12.93	-5.437	14.93	-4.437	15.93	-3.437	16.93
9/23/2004	-1.67	18.33	0.33	20.33	1.33	21.33	2.33	22.33
9/24/2004	0.56	20.56	2.56	22.56	3.56	23.56	4.56	24.56
9/25/2004	0	20	2	22	3	23	4	24
9/26/2004	-1.67	18.33	0.33	20.33	1.33	21.33	2.33	22.33
9/27/2004	-2.22	19.44	-0.22	21.44	0.78	22.44	1.78	23.44
9/28/2004	-0.56	16.67	1.44	18.67	2.44	19.67	3.44	20.67
9/29/2004	-0.56	16.67	1.44	18.67	2.44	19.67	3.44	20.67
9/30/2004	-1.67	14.44	0.33	16.44	1.33	17.44	2.33	18.44
10/1/2004	-1.67	16.67	0.33	18.67	1.33	19.67	2.33	20.67
10/2/2004	2.22	14.44	4.22	16.44	5.22	17.44	6.22	18.44
10/3/2004	-0.56	18.33	1.44	20.33	2.44	21.33	3.44	22.33
10/4/2004	1.67	15	3.67	17	4.67	18	5.67	19
10/5/2004	0	18.33	2	20.33	3	21.33	4	22.33
10/6/2004	1.263	18.03	3.263	20.03	4.263	21.03	5.263	22.03

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/7/2004	2.563	17.73	4.563	19.73	5.563	20.73	6.563	21.73
10/8/2004	1.363	18.63	3.363	20.63	4.363	21.63	5.363	22.63
10/9/2004	1.263	15.43	3.263	17.43	4.263	18.43	5.263	19.43
10/10/2004	-2.537	11.03	-0.537	13.03	0.463	14.03	1.463	15.03
10/11/2004	1.11	10	3.11	12	4.11	13	5.11	14
10/12/2004	-0.56	15	1.44	17	2.44	18	3.44	19
10/13/2004	3.33	17.78	5.33	19.78	6.33	20.78	7.33	21.78
10/14/2004	2.22	21.11	4.22	23.11	5.22	24.11	6.22	25.11
10/15/2004	1.11	20.56	3.11	22.56	4.11	23.56	5.11	24.56
10/16/2004	-2.22	13.33	-0.22	15.33	0.78	16.33	1.78	17.33
10/17/2004	-0.56	2.78	1.44	4.78	2.44	5.78	3.44	6.78
10/18/2004	-4.837	3.031	-2.837	5.031	-1.837	6.031	-0.837	7.031
10/19/2004	-6.137	0.2314	-4.137	2.2314	-3.137	3.2314	-2.137	4.2314
10/20/2004	-6.137	0.9314	-4.137	2.9314	-3.137	3.9314	-2.137	4.9314
10/21/2004	-12.22	4.44	-10.22	6.44	-9.22	7.44	-8.22	8.44
10/22/2004	-9.44	8.33	-7.44	10.33	-6.44	11.33	-5.44	12.33
10/23/2004	-2.78	0	-0.78	2	0.22	3	1.22	4
10/24/2004	-4.837	2.531	-2.837	4.531	-1.837	5.531	-0.837	6.531
10/25/2004	-1.67	1.67	0.33	3.67	1.33	4.67	2.33	5.67
10/26/2004	-5	-1.67	-3	0.33	-2	1.33	-1	2.33
10/27/2004	-12.78	3.33	-10.78	5.33	-9.78	6.33	-8.78	7.33
10/28/2004	-15.56	-3.33	-13.56	-1.33	-12.56	-0.33	-11.56	0.67
10/29/2004	-12.22	6.67	-10.22	8.67	-9.22	9.67	-8.22	10.67
10/30/2004	-9.44	10	-7.44	12	-6.44	13	-5.44	14
10/31/2004	-10.56	2.78	-8.56	4.78	-7.56	5.78	-6.56	6.78
11/1/2004	-5	6.11	-3	8.11	-2	9.11	-1	10.11
11/2/2004	-6.67	10.56	-4.67	12.56	-3.67	13.56	-2.67	14.56
11/3/2004	-6.67	1.11	-4.67	3.11	-3.67	4.11	-2.67	5.11
11/4/2004	-5.56	2.22	-3.56	4.22	-2.56	5.22	-1.56	6.22
11/5/2004	-2.22	7.22	-0.22	9.22	0.78	10.22	1.78	11.22
11/6/2004	0	9.44	2	11.44	3	12.44	4	13.44
11/7/2004	-3.33	8.89	-1.33	10.89	-0.33	11.89	0.67	12.89
11/8/2004	-0.56	5	1.44	7	2.44	8	3.44	9
11/9/2004	-3.33	10	-1.33	12	-0.33	13	0.67	14
11/10/2004	-5	5.56	-3	7.56	-2	8.56	-1	9.56
11/11/2004	-4.44	-0.56	-2.44	1.44	-1.44	2.44	-0.44	3.44
11/12/2004	-3.33	2.78	-1.33	4.78	-0.33	5.78	0.67	6.78
11/13/2004	-3.33	2.78	-1.33	4.78	-0.33	5.78	0.67	6.78
11/14/2004	-7.22	5	-5.22	7	-4.22	8	-3.22	9
11/15/2004	-7.78	8.33	-5.78	10.33	-4.78	11.33	-3.78	12.33
11/16/2004	-7.78	10.56	-5.78	12.56	-4.78	13.56	-3.78	14.56
11/17/2004	-5	10	-3	12	-2	13	-1	14
11/18/2004	-6.67	12.22	-4.67	14.22	-3.67	15.22	-2.67	16.22
11/19/2004	-7.22	1.11	-5.22	3.11	-4.22	4.11	-3.22	5.11
11/20/2004	-9.44	3.89	-7.44	5.89	-6.44	6.89	-5.44	7.89
11/21/2004	-10.56	-5	-8.56	-3	-7.56	-2	-6.56	-1
11/22/2004	-6.11	6.67	-4.11	8.67	-3.11	9.67	-2.11	10.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/23/2004	-8.33	4.44	-6.33	6.44	-5.33	7.44	-4.33	8.44
11/24/2004	-6.11	11.67	-4.11	13.67	-3.11	14.67	-2.11	15.67
11/25/2004	-7.78	6.11	-5.78	8.11	-4.78	9.11	-3.78	10.11
11/26/2004	-9.44	4.44	-7.44	6.44	-6.44	7.44	-5.44	8.44
11/27/2004	-10.56	-1.11	-8.56	0.89	-7.56	1.89	-6.56	2.89
11/28/2004	-12.78	-8.33	-10.78	-6.33	-9.78	-5.33	-8.78	-4.33
11/29/2004	-15.56	2.78	-13.56	4.78	-12.56	5.78	-11.56	6.78
11/30/2004	-17.22	2.78	-15.22	4.78	-14.22	5.78	-13.22	6.78
12/1/2004	-10.56	-4.44	-8.56	-2.44	-7.56	-1.44	-6.56	-0.44
12/2/2004	-11.11	-6.11	-9.11	-4.11	-8.11	-3.11	-7.11	-2.11
12/3/2004	-12.78	3.89	-10.78	5.89	-9.78	6.89	-8.78	7.89
12/4/2004	-16.67	2.22	-14.67	4.22	-13.67	5.22	-12.67	6.22
12/5/2004	-16.67	2.78	-14.67	4.78	-13.67	5.78	-12.67	6.78
12/6/2004	-7.78	-1.67	-5.78	0.33	-4.78	1.33	-3.78	2.33
12/7/2004	-5	-2.22	-3	-0.22	-2	0.78	-1	1.78
12/8/2004	-3.89	0	-1.89	2	-0.89	3	0.11	4
12/9/2004	-7.437	1.231	-5.437	3.231	-4.437	4.231	-3.437	5.231
12/10/2004	-5	12.22	-3	14.22	-2	15.22	-1	16.22
12/11/2004	-6.11	13.89	-4.11	15.89	-3.11	16.89	-2.11	17.89
12/12/2004	-5.56	11.67	-3.56	13.67	-2.56	14.67	-1.56	15.67
12/13/2004	-7.78	9.44	-5.78	11.44	-4.78	12.44	-3.78	13.44
12/14/2004	-10	10	-8	12	-7	13	-6	14
12/15/2004	-8.33	9.44	-6.33	11.44	-5.33	12.44	-4.33	13.44
12/16/2004	-11.11	2.78	-9.11	4.78	-8.11	5.78	-7.11	6.78
12/17/2004	-12.22	14.44	-10.22	16.44	-9.22	17.44	-8.22	18.44
12/18/2004	-5	12.22	-3	14.22	-2	15.22	-1	16.22
12/19/2004	-7.78	11.67	-5.78	13.67	-4.78	14.67	-3.78	15.67
12/20/2004	-8.33	8.33	-6.33	10.33	-5.33	11.33	-4.33	12.33
12/21/2004	-5	3.89	-3	5.89	-2	6.89	-1	7.89
12/22/2004	-6.67	3.89	-4.67	5.89	-3.67	6.89	-2.67	7.89
12/23/2004	-6.11	1.67	-4.11	3.67	-3.11	4.67	-2.11	5.67
12/24/2004	-8.89	13.33	-6.89	15.33	-5.89	16.33	-4.89	17.33
12/25/2004	-11.11	6.11	-9.11	8.11	-8.11	9.11	-7.11	10.11
12/26/2004	-3.89	1.67	-1.89	3.67	-0.89	4.67	0.11	5.67
12/27/2004	-3.33	1.11	-1.33	3.11	-0.33	4.11	0.67	5.11
12/28/2004	-5.56	0.56	-3.56	2.56	-2.56	3.56	-1.56	4.56
12/29/2004	-7.22	-4.44	-5.22	-2.44	-4.22	-1.44	-3.22	-0.44
12/30/2004	-6.67	-2.22	-4.67	-0.22	-3.67	0.78	-2.67	1.78
12/31/2004	-8.33	-2.22	-6.33	-0.22	-5.33	0.78	-4.33	1.78
1/1/2005	-7.22	-6.11	-5.22	-4.11	-4.22	-3.11	-3.22	-2.11
1/2/2005	-8.33	-6.11	-6.33	-4.11	-5.33	-3.11	-4.33	-2.11
1/3/2005	-8.33	-5	-6.33	-3	-5.33	-2	-4.33	-1
1/4/2005	-8.89	-3.33	-6.89	-1.33	-5.89	-0.33	-4.89	0.67
1/5/2005	-7.78	-3.33	-5.78	-1.33	-4.78	-0.33	-3.78	0.67
1/6/2005	-15.56	-5	-13.56	-3	-12.56	-2	-11.56	-1
1/7/2005	-9.44	-2.22	-7.44	-0.22	-6.44	0.78	-5.44	1.78
1/8/2005	-6.11	-4.44	-4.11	-2.44	-3.11	-1.44	-2.11	-0.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/9/2005	-5	-1.11	-3	0.89	-2	1.89	-1	2.89
1/10/2005	-4.44	-1.11	-2.44	0.89	-1.44	1.89	-0.44	2.89
1/11/2005	-11.67	-6.11	-9.67	-4.11	-8.67	-3.11	-7.67	-2.11
1/12/2005	-13.89	2.22	-11.89	4.22	-10.89	5.22	-9.89	6.22
1/13/2005	-15.56	4.44	-13.56	6.44	-12.56	7.44	-11.56	8.44
1/14/2005	-13.89	10.56	-11.89	12.56	-10.89	13.56	-9.89	14.56
1/15/2005	-10.56	8.89	-8.56	10.89	-7.56	11.89	-6.56	12.89
1/16/2005	-7.78	6.11	-5.78	8.11	-4.78	9.11	-3.78	10.11
1/17/2005	-5	10	-3	12	-2	13	-1	14
1/18/2005	-2.22	12.78	-0.22	14.78	0.78	15.78	1.78	16.78
1/19/2005	-5	17.22	-3	19.22	-2	20.22	-1	21.22
1/20/2005	-6.67	12.22	-4.67	14.22	-3.67	15.22	-2.67	16.22
1/21/2005	-6.67	16.11	-4.67	18.11	-3.67	19.11	-2.67	20.11
1/22/2005	-6.67	14.44	-4.67	16.44	-3.67	17.44	-2.67	18.44
1/23/2005	-7.78	11.11	-5.78	13.11	-4.78	14.11	-3.78	15.11
1/24/2005	-7.22	8.33	-5.22	10.33	-4.22	11.33	-3.22	12.33
1/25/2005	-0.56	2.22	1.44	4.22	2.44	5.22	3.44	6.22
1/26/2005	-3.89	-0.56	-1.89	1.44	-0.89	2.44	0.11	3.44
1/27/2005	-10.56	2.78	-8.56	4.78	-7.56	5.78	-6.56	6.78
1/28/2005	-12.22	-3.89	-10.22	-1.89	-9.22	-0.89	-8.22	0.11
1/29/2005	-16.11	-2.22	-14.11	-0.22	-13.11	0.78	-12.11	1.78
1/30/2005	-8.89	2.22	-6.89	4.22	-5.89	5.22	-4.89	6.22
1/31/2005	-3.89	5.56	-1.89	7.56	-0.89	8.56	0.11	9.56
2/1/2005	-2.78	4.44	-0.78	6.44	0.22	7.44	1.22	8.44
2/2/2005	-3.89	4.44	-1.89	6.44	-0.89	7.44	0.11	8.44
2/3/2005	-6.11	6.11	-4.11	8.11	-3.11	9.11	-2.11	10.11
2/4/2005	-11.11	7.22	-9.11	9.22	-8.11	10.22	-7.11	11.22
2/5/2005	-10	8.33	-8	10.33	-7	11.33	-6	12.33
2/6/2005	-5.56	0.56	-3.56	2.56	-2.56	3.56	-1.56	4.56
2/7/2005	-7.78	0.56	-5.78	2.56	-4.78	3.56	-3.78	4.56
2/8/2005	-13.89	3.89	-11.89	5.89	-10.89	6.89	-9.89	7.89
2/9/2005	-12.78	4.44	-10.78	6.44	-9.78	7.44	-8.78	8.44
2/10/2005	-10.56	2.22	-8.56	4.22	-7.56	5.22	-6.56	6.22
2/11/2005	-2.22	2.78	-0.22	4.78	0.78	5.78	1.78	6.78
2/12/2005	-3.33	4.44	-1.33	6.44	-0.33	7.44	0.67	8.44
2/13/2005	-3.33	3.33	-1.33	5.33	-0.33	6.33	0.67	7.33
2/14/2005	-3.33	0.56	-1.33	2.56	-0.33	3.56	0.67	4.56
2/15/2005	-4.44	0	-2.44	2	-1.44	3	-0.44	4
2/16/2005	-1.67	4.44	0.33	6.44	1.33	7.44	2.33	8.44
2/17/2005	-6.11	1.67	-4.11	3.67	-3.11	4.67	-2.11	5.67
2/18/2005	-6.11	-0.56	-4.11	1.44	-3.11	2.44	-2.11	3.44
2/19/2005	-9.44	2.22	-7.44	4.22	-6.44	5.22	-5.44	6.22
2/20/2005	-3.33	0	-1.33	2	-0.33	3	0.67	4
2/21/2005	-2.78	1.67	-0.78	3.67	0.22	4.67	1.22	5.67
2/22/2005	-4.44	1.11	-2.44	3.11	-1.44	4.11	-0.44	5.11
2/23/2005	-4.44	4.44	-2.44	6.44	-1.44	7.44	-0.44	8.44
2/24/2005	-9.44	4.44	-7.44	6.44	-6.44	7.44	-5.44	8.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/25/2005	-11.11	6.67	-9.11	8.67	-8.11	9.67	-7.11	10.67
2/26/2005	-14.44	4.44	-12.44	6.44	-11.44	7.44	-10.44	8.44
2/27/2005	-10.56	2.22	-8.56	4.22	-7.56	5.22	-6.56	6.22
2/28/2005	-12.78	2.78	-10.78	4.78	-9.78	5.78	-8.78	6.78
3/1/2005	-15	3.33	-13	5.33	-12	6.33	-11	7.33
3/2/2005	-8.33	2.78	-6.33	4.78	-5.33	5.78	-4.33	6.78
3/3/2005	-13.89	5	-11.89	7	-10.89	8	-9.89	9
3/4/2005	-3.33	2.22	-1.33	4.22	-0.33	5.22	0.67	6.22
3/5/2005	-2.78	6.11	-0.78	8.11	0.22	9.11	1.22	10.11
3/6/2005	-2.22	8.89	-0.22	10.89	0.78	11.89	1.78	12.89
3/7/2005	-1.67	12.78	0.33	14.78	1.33	15.78	2.33	16.78
3/8/2005	-6.11	13.89	-4.11	15.89	-3.11	16.89	-2.11	17.89
3/9/2005	-6.67	14.44	-4.67	16.44	-3.67	17.44	-2.67	18.44
3/10/2005	-5	10.56	-3	12.56	-2	13.56	-1	14.56
3/11/2005	-3.33	15	-1.33	17	-0.33	18	0.67	19
3/12/2005	-6.67	15	-4.67	17	-3.67	18	-2.67	19
3/13/2005	-3.33	7.78	-1.33	9.78	-0.33	10.78	0.67	11.78
3/14/2005	-7.78	2.22	-5.78	4.22	-4.78	5.22	-3.78	6.22
3/15/2005	-10	8.89	-8	10.89	-7	11.89	-6	12.89
3/16/2005	-9.44	6.11	-7.44	8.11	-6.44	9.11	-5.44	10.11
3/17/2005	-10	2.78	-8	4.78	-7	5.78	-6	6.78
3/18/2005	-9.44	2.78	-7.44	4.78	-6.44	5.78	-5.44	6.78
3/19/2005	-4.44	-0.56	-2.44	1.44	-1.44	2.44	-0.44	3.44
3/20/2005	-5	-2.22	-3	-0.22	-2	0.78	-1	1.78
3/21/2005	-5.56	2.22	-3.56	4.22	-2.56	5.22	-1.56	6.22
3/22/2005	-5	-0.56	-3	1.44	-2	2.44	-1	3.44
3/23/2005	-6.11	-3.33	-4.11	-1.33	-3.11	-0.33	-2.11	0.67
3/24/2005	-15	-0.56	-13	1.44	-12	2.44	-11	3.44
3/25/2005	-18.89	2.78	-16.89	4.78	-15.89	5.78	-14.89	6.78
3/26/2005	-6.11	12.22	-4.11	14.22	-3.11	15.22	-2.11	16.22
3/27/2005	-3.33	5.56	-1.33	7.56	-0.33	8.56	0.67	9.56
3/28/2005	-10	-0.56	-8	1.44	-7	2.44	-6	3.44
3/29/2005	-10	-1.11	-8	0.89	-7	1.89	-6	2.89
3/30/2005	-12.22	2.78	-10.22	4.78	-9.22	5.78	-8.22	6.78
3/31/2005	-7.22	11.67	-5.22	13.67	-4.22	14.67	-3.22	15.67
4/1/2005	-10.56	9.44	-8.56	11.44	-7.56	12.44	-6.56	13.44
4/2/2005	-9.44	7.22	-7.44	9.22	-6.44	10.22	-5.44	11.22
4/3/2005	-5.56	-0.56	-3.56	1.44	-2.56	2.44	-1.56	3.44
4/4/2005	-7.78	3.89	-5.78	5.89	-4.78	6.89	-3.78	7.89
4/5/2005	-10	15	-8	17	-7	18	-6	19
4/6/2005	-4.44	11.67	-2.44	13.67	-1.44	14.67	-0.44	15.67
4/7/2005	-7.78	3.89	-5.78	5.89	-4.78	6.89	-3.78	7.89
4/8/2005	-13.89	-3.89	-11.89	-1.89	-10.89	-0.89	-9.89	0.11
4/9/2005	-10.56	2.22	-8.56	4.22	-7.56	5.22	-6.56	6.22
4/10/2005	-10	8.89	-8	10.89	-7	11.89	-6	12.89
4/11/2005	-8.33	8.33	-6.33	10.33	-5.33	11.33	-4.33	12.33
4/12/2005	-4.44	6.67	-2.44	8.67	-1.44	9.67	-0.44	10.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/13/2005	-13.33	0	-11.33	2	-10.33	3	-9.33	4
4/14/2005	-14.44	7.22	-12.44	9.22	-11.44	10.22	-10.44	11.22
4/15/2005	-7.78	13.33	-5.78	15.33	-4.78	16.33	-3.78	17.33
4/16/2005	-6.11	12.22	-4.11	14.22	-3.11	15.22	-2.11	16.22
4/17/2005	-1.67	7.78	0.33	9.78	1.33	10.78	2.33	11.78
4/18/2005	-5.56	4.44	-3.56	6.44	-2.56	7.44	-1.56	8.44
4/19/2005	-6.67	1.11	-4.67	3.11	-3.67	4.11	-2.67	5.11
4/20/2005	-10.56	4.44	-8.56	6.44	-7.56	7.44	-6.56	8.44
4/21/2005	-8.33	8.89	-6.33	10.89	-5.33	11.89	-4.33	12.89
4/22/2005	-5	11.11	-3	13.11	-2	14.11	-1	15.11
4/23/2005	-3.33	3.89	-1.33	5.89	-0.33	6.89	0.67	7.89
4/24/2005	-5.56	2.78	-3.56	4.78	-2.56	5.78	-1.56	6.78
4/25/2005	-8.89	9.44	-6.89	11.44	-5.89	12.44	-4.89	13.44
4/26/2005	-4.44	10.56	-2.44	12.56	-1.44	13.56	-0.44	14.56
4/27/2005	-1.67	7.22	0.33	9.22	1.33	10.22	2.33	11.22
4/28/2005	-2.22	2.78	-0.22	4.78	0.78	5.78	1.78	6.78
4/29/2005	-3.89	10.56	-1.89	12.56	-0.89	13.56	0.11	14.56
4/30/2005	-2.22	7.22	-0.22	9.22	0.78	10.22	1.78	11.22
5/1/2005	-2.22	4.44	-0.22	6.44	0.78	7.44	1.78	8.44
5/2/2005	-4.44	8.89	-2.44	10.89	-1.44	11.89	-0.44	12.89
5/3/2005	-5.56	10.56	-3.56	12.56	-2.56	13.56	-1.56	14.56
5/4/2005	-2.22	10	-0.22	12	0.78	13	1.78	14
5/5/2005	-1.11	2.78	0.89	4.78	1.89	5.78	2.89	6.78
5/6/2005	-3.33	3.33	-1.33	5.33	-0.33	6.33	0.67	7.33
5/7/2005	-7.78	7.22	-5.78	9.22	-4.78	10.22	-3.78	11.22
5/8/2005	0	2.22	2	4.22	3	5.22	4	6.22
5/9/2005	-5	0	-3	2	-2	3	-1	4
5/10/2005	-11.11	4.44	-9.11	6.44	-8.11	7.44	-7.11	8.44
5/11/2005	-6.67	9.44	-4.67	11.44	-3.67	12.44	-2.67	13.44
5/12/2005	-2.78	13.89	-0.78	15.89	0.22	16.89	1.22	17.89
5/13/2005	-0.56	13.89	1.44	15.89	2.44	16.89	3.44	17.89
5/14/2005	-1.67	16.11	0.33	18.11	1.33	19.11	2.33	20.11
5/15/2005	-1.11	12.78	0.89	14.78	1.89	15.78	2.89	16.78
5/16/2005	-1.67	5.56	0.33	7.56	1.33	8.56	2.33	9.56
5/17/2005	-4.44	5.56	-2.44	7.56	-1.44	8.56	-0.44	9.56
5/18/2005	0	5.56	2	7.56	3	8.56	4	9.56
5/19/2005	3.89	10	5.89	12	6.89	13	7.89	14
5/20/2005	-1.67	8.89	0.33	10.89	1.33	11.89	2.33	12.89
5/21/2005	-4.44	17.78	-2.44	19.78	-1.44	20.78	-0.44	21.78
5/22/2005	-1.67	17.78	0.33	19.78	1.33	20.78	2.33	21.78
5/23/2005	-1.67	18.89	0.33	20.89	1.33	21.89	2.33	22.89
5/24/2005	-2.22	19.44	-0.22	21.44	0.78	22.44	1.78	23.44
5/25/2005	2.22	21.11	4.22	23.11	5.22	24.11	6.22	25.11
5/26/2005	1.11	21.11	3.11	23.11	4.11	24.11	5.11	25.11
5/27/2005	0.56	21.11	2.56	23.11	3.56	24.11	4.56	25.11
5/28/2005	-0.56	14.44	1.44	16.44	2.44	17.44	3.44	18.44
5/29/2005	-2.22	8.89	-0.22	10.89	0.78	11.89	1.78	12.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/30/2005	-2.78	16.11	-0.78	18.11	0.22	19.11	1.22	20.11
5/31/2005	-0.56	18.33	1.44	20.33	2.44	21.33	3.44	22.33
6/1/2005	-1.67	16.11	0.33	18.11	1.33	19.11	2.33	20.11
6/2/2005	-2.78	12.78	-0.78	14.78	0.22	15.78	1.22	16.78
6/3/2005	1.11	14.44	3.11	16.44	4.11	17.44	5.11	18.44
6/4/2005	-2.22	13.89	-0.22	15.89	0.78	16.89	1.78	17.89
6/5/2005	0	8.89	2	10.89	3	11.89	4	12.89
6/6/2005	-4.44	5	-2.44	7	-1.44	8	-0.44	9
6/7/2005	-8.33	7.22	-6.33	9.22	-5.33	10.22	-4.33	11.22
6/8/2005	-1.67	4.44	0.33	6.44	1.33	7.44	2.33	8.44
6/9/2005	0.56	8.33	2.56	10.33	3.56	11.33	4.56	12.33
6/10/2005	-1.11	14.44	0.89	16.44	1.89	17.44	2.89	18.44
6/11/2005	-1.67	14.44	0.33	16.44	1.33	17.44	2.33	18.44
6/12/2005	-1.67	17.78	0.33	19.78	1.33	20.78	2.33	21.78
6/13/2005	0.56	19.44	2.56	21.44	3.56	22.44	4.56	23.44
6/14/2005	0	17.22	2	19.22	3	20.22	4	21.22
6/15/2005	-1.67	16.11	0.33	18.11	1.33	19.11	2.33	20.11
6/16/2005	-0.56	11.11	1.44	13.11	2.44	14.11	3.44	15.11
6/17/2005	-1.67	2.22	0.33	4.22	1.33	5.22	2.33	6.22
6/18/2005	-2.22	6.67	-0.22	8.67	0.78	9.67	1.78	10.67
6/19/2005	-4.44	10.56	-2.44	12.56	-1.44	13.56	-0.44	14.56
6/20/2005	-3.33	15	-1.33	17	-0.33	18	0.67	19
6/21/2005	-1.67	15	0.33	17	1.33	18	2.33	19
6/22/2005	-2.22	16.67	-0.22	18.67	0.78	19.67	1.78	20.67
6/23/2005	-1.11	16.67	0.89	18.67	1.89	19.67	2.89	20.67
6/24/2005	-0.56	15.56	1.44	17.56	2.44	18.56	3.44	19.56
6/25/2005	-0.56	14.44	1.44	16.44	2.44	17.44	3.44	18.44
6/26/2005	-1.11	14.44	0.89	16.44	1.89	17.44	2.89	18.44
6/27/2005	-1.67	15	0.33	17	1.33	18	2.33	19
6/28/2005	0	16.11	2	18.11	3	19.11	4	20.11
6/29/2005	5.56	20.56	7.56	22.56	8.56	23.56	9.56	24.56
6/30/2005	3.89	21.67	5.89	23.67	6.89	24.67	7.89	25.67
7/1/2005	2.22	22.78	4.22	24.78	5.22	25.78	6.22	26.78
7/2/2005	2.22	21.11	4.22	23.11	5.22	24.11	6.22	25.11
7/3/2005	0	21.11	2	23.11	3	24.11	4	25.11
7/4/2005	0	21.11	2	23.11	3	24.11	4	25.11
7/5/2005	0	21.11	2	23.11	3	24.11	4	25.11
7/6/2005	3.89	21.11	5.89	23.11	6.89	24.11	7.89	25.11
7/7/2005	6.11	22.78	8.11	24.78	9.11	25.78	10.11	26.78
7/8/2005	3.89	21.11	5.89	23.11	6.89	24.11	7.89	25.11
7/9/2005	3.89	20.56	5.89	22.56	6.89	23.56	7.89	24.56
7/10/2005	2.78	16.67	4.78	18.67	5.78	19.67	6.78	20.67
7/11/2005	2.78	19.44	4.78	21.44	5.78	22.44	6.78	23.44
7/12/2005	3.89	23.89	5.89	25.89	6.89	26.89	7.89	27.89
7/13/2005	7.22	25.56	9.22	27.56	10.22	28.56	11.22	29.56
7/14/2005	6.11	24.44	8.11	26.44	9.11	27.44	10.11	28.44
7/15/2005	6.11	25	8.11	27	9.11	28	10.11	29

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SLM							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/16/2005	7.22	26.11	9.22	28.11	10.22	29.11	11.22	30.11
7/17/2005	10	26.67	12	28.67	13	29.67	14	30.67
7/18/2005	8.33	26.67	10.33	28.67	11.33	29.67	12.33	30.67
7/19/2005	10	25.56	12	27.56	13	28.56	14	29.56
7/20/2005	8.89	24.44	10.89	26.44	11.89	27.44	12.89	28.44
7/21/2005	6.67	25.56	8.67	27.56	9.67	28.56	10.67	29.56
7/22/2005	11.11	23.33	13.11	25.33	14.11	26.33	15.11	27.33
7/23/2005	8.89	21.67	10.89	23.67	11.89	24.67	12.89	25.67
7/24/2005	2.78	23.89	4.78	25.89	5.78	26.89	6.78	27.89
7/25/2005	4.44	23.33	6.44	25.33	7.44	26.33	8.44	27.33
7/26/2005	1.67	22.22	3.67	24.22	4.67	25.22	5.67	26.22
7/27/2005	8.33	23.89	10.33	25.89	11.33	26.89	12.33	27.89
7/28/2005	6.11	23.89	8.11	25.89	9.11	26.89	10.11	27.89
7/29/2005	7.22	22.78	9.22	24.78	10.22	25.78	11.22	26.78
7/30/2005	7.22	21.67	9.22	23.67	10.22	24.67	11.22	25.67
7/31/2005	5.56	22.22	7.56	24.22	8.56	25.22	9.56	26.22
8/1/2005	7.78	21.11	9.78	23.11	10.78	24.11	11.78	25.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/1/1999	16.67	30.56	18.67	32.56	19.67	33.56	20.67	34.56
10/2/1999	16.11	28.33	18.11	30.33	19.11	31.33	20.11	32.33
10/3/1999	10	28.33	12	30.33	13	31.33	14	32.33
10/4/1999	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
10/5/1999	10	23.89	12	25.89	13	26.89	14	27.89
10/6/1999	8.89	19.44	10.89	21.44	11.89	22.44	12.89	23.44
10/7/1999	9.44	27.22	11.44	29.22	12.44	30.22	13.44	31.22
10/8/1999	17.22	29.44	19.22	31.44	20.22	32.44	21.22	33.44
10/9/1999	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
10/10/1999	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
10/11/1999	13.89	29.44	15.89	31.44	16.89	32.44	17.89	33.44
10/12/1999	13.33	31.11	15.33	33.11	16.33	34.11	17.33	35.11
10/13/1999	15.56	32.22	17.56	34.22	18.56	35.22	19.56	36.22
10/14/1999	14.44	30.56	16.44	32.56	17.44	33.56	18.44	34.56
10/15/1999	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
10/16/1999	15	28.33	17	30.33	18	31.33	19	32.33
10/17/1999	11.11	27.22	13.11	29.22	14.11	30.22	15.11	31.22
10/18/1999	7.22	25.56	9.22	27.56	10.22	28.56	11.22	29.56
10/19/1999	6.11	27.78	8.11	29.78	9.11	30.78	10.11	31.78
10/20/1999	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
10/21/1999	11.11	28.89	13.11	30.89	14.11	31.89	15.11	32.89
10/22/1999	15.56	27.78	17.56	29.78	18.56	30.78	19.56	31.78
10/23/1999	11.11	24.44	13.11	26.44	14.11	27.44	15.11	28.44
10/24/1999	8.89	25.56	10.89	27.56	11.89	28.56	12.89	29.56
10/25/1999	8.33	26.11	10.33	28.11	11.33	29.11	12.33	30.11
10/26/1999	7.78	23.89	9.78	25.89	10.78	26.89	11.78	27.89
10/27/1999	8.89	21.67	10.89	23.67	11.89	24.67	12.89	25.67
10/28/1999	12.22	16.67	14.22	18.67	15.22	19.67	16.22	20.67
10/29/1999	8.89	23.89	10.89	25.89	11.89	26.89	12.89	27.89
10/30/1999	11.11	27.22	13.11	29.22	14.11	30.22	15.11	31.22
10/31/1999	15	28.33	17	30.33	18	31.33	19	32.33
11/1/1999	18.89	29.44	20.89	31.44	21.89	32.44	22.89	33.44
11/2/1999	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
11/3/1999	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
11/4/1999	11.67	26.67	13.67	28.67	14.67	29.67	15.67	30.67
11/5/1999	11.11	27.22	13.11	29.22	14.11	30.22	15.11	31.22
11/6/1999	11.11	27.22	13.11	29.22	14.11	30.22	15.11	31.22
11/7/1999	7.78	21.67	9.78	23.67	10.78	24.67	11.78	25.67
11/8/1999	5.56	14.44	7.56	16.44	8.56	17.44	9.56	18.44
11/9/1999	5	17.22	7	19.22	8	20.22	9	21.22
11/10/1999	5	16.67	7	18.67	8	19.67	9	20.67
11/11/1999	8.33	22.78	10.33	24.78	11.33	25.78	12.33	26.78
11/12/1999	13.33	23.89	15.33	25.89	16.33	26.89	17.33	27.89
11/13/1999	14.44	25	16.44	27	17.44	28	18.44	29
11/14/1999	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
11/15/1999	7.22	17.78	9.22	19.78	10.22	20.78	11.22	21.78
11/16/1999	4.44	16.67	6.44	18.67	7.44	19.67	8.44	20.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/17/1999	2.78	11.11	4.78	13.11	5.78	14.11	6.78	15.11
11/18/1999	3.89	13.89	5.89	15.89	6.89	16.89	7.89	17.89
11/19/1999	2.22	12.78	4.22	14.78	5.22	15.78	6.22	16.78
11/20/1999	3.89	11.11	5.89	13.11	6.89	14.11	7.89	15.11
11/21/1999	0	10	2	12	3	13	4	14
11/22/1999	0	12.22	2	14.22	3	15.22	4	16.22
11/23/1999	1.11	11.11	3.11	13.11	4.11	14.11	5.11	15.11
11/24/1999	3.89	14.44	5.89	16.44	6.89	17.44	7.89	18.44
11/25/1999	2.22	17.78	4.22	19.78	5.22	20.78	6.22	21.78
11/26/1999	5	18.33	7	20.33	8	21.33	9	22.33
11/27/1999	2.22	17.22	4.22	19.22	5.22	20.22	6.22	21.22
11/28/1999	5	16.67	7	18.67	8	19.67	9	20.67
11/29/1999	7.22	15.56	9.22	17.56	10.22	18.56	11.22	19.56
11/30/1999	1.67	10.56	3.67	12.56	4.67	13.56	5.67	14.56
12/1/1999	0.56	9.44	2.56	11.44	3.56	12.44	4.56	13.44
12/2/1999	0	7.78	2	9.78	3	10.78	4	11.78
12/3/1999	0	11.11	2	13.11	3	14.11	4	15.11
12/4/1999	0	13.33	2	15.33	3	16.33	4	17.33
12/5/1999	0	13.89	2	15.89	3	16.89	4	17.89
12/6/1999	0.56	10.56	2.56	12.56	3.56	13.56	4.56	14.56
12/7/1999	-2.22	5	-0.22	7	0.78	8	1.78	9
12/8/1999	-3.33	8.33	-1.33	10.33	-0.33	11.33	0.67	12.33
12/9/1999	0.56	5.56	2.56	7.56	3.56	8.56	4.56	9.56
12/10/1999	-1.67	8.33	0.33	10.33	1.33	11.33	2.33	12.33
12/11/1999	0	16.67	2	18.67	3	19.67	4	20.67
12/12/1999	1.67	15.56	3.67	17.56	4.67	18.56	5.67	19.56
12/13/1999	2.78	8.89	4.78	10.89	5.78	11.89	6.78	12.89
12/14/1999	2.22	10.56	4.22	12.56	5.22	13.56	6.22	14.56
12/15/1999	0.56	15	2.56	17	3.56	18	4.56	19
12/16/1999	5.56	16.67	7.56	18.67	8.56	19.67	9.56	20.67
12/17/1999	9.44	19.44	11.44	21.44	12.44	22.44	13.44	23.44
12/18/1999	4.44	13.89	6.44	15.89	7.44	16.89	8.44	17.89
12/19/1999	9.44	18.89	11.44	20.89	12.44	21.89	13.44	22.89
12/20/1999	7.22	20	9.22	22	10.22	23	11.22	24
12/21/1999	6.11	17.78	8.11	19.78	9.11	20.78	10.11	21.78
12/22/1999	2.101	17.78	4.101	19.78	5.101	20.78	6.101	21.78
12/23/1999	4.44	16.11	6.44	18.11	7.44	19.11	8.44	20.11
12/24/1999	9.44	18.33	11.44	20.33	12.44	21.33	13.44	22.33
12/25/1999	9.44	17.22	11.44	19.22	12.44	20.22	13.44	21.22
12/26/1999	6.11	16.67	8.11	18.67	9.11	19.67	10.11	20.67
12/27/1999	1.11	16.11	3.11	18.11	4.11	19.11	5.11	20.11
12/28/1999	2.78	17.78	4.78	19.78	5.78	20.78	6.78	21.78
12/29/1999	2.78	15.56	4.78	17.56	5.78	18.56	6.78	19.56
12/30/1999	1.67	15	3.67	17	4.67	18	5.67	19
12/31/1999	0.56	13.33	2.56	15.33	3.56	16.33	4.56	17.33
1/1/2000	-1.67	8.33	0.33	10.33	1.33	11.33	2.33	12.33
1/2/2000	-2.22	6.11	-0.22	8.11	0.78	9.11	1.78	10.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/3/2000	-2.22	10.56	-0.22	12.56	0.78	13.56	1.78	14.56
1/4/2000	0.56	10.56	2.56	12.56	3.56	13.56	4.56	14.56
1/5/2000	-1.11	11.11	0.89	13.11	1.89	14.11	2.89	15.11
1/6/2000	1.67	14.44	3.67	16.44	4.67	17.44	5.67	18.44
1/7/2000	1.11	14.44	3.11	16.44	4.11	17.44	5.11	18.44
1/8/2000	0	16.11	2	18.11	3	19.11	4	20.11
1/9/2000	2.78	10.56	4.78	12.56	5.78	13.56	6.78	14.56
1/10/2000	2.22	12.78	4.22	14.78	5.22	15.78	6.22	16.78
1/11/2000	0.56	7.78	2.56	9.78	3.56	10.78	4.56	11.78
1/12/2000	2.78	8.33	4.78	10.33	5.78	11.33	6.78	12.33
1/13/2000	2.78	15.56	4.78	17.56	5.78	18.56	6.78	19.56
1/14/2000	3.89	14.44	5.89	16.44	6.89	17.44	7.89	18.44
1/15/2000	5.56	9.44	7.56	11.44	8.56	12.44	9.56	13.44
1/16/2000	2.22	10.56	4.22	12.56	5.22	13.56	6.22	14.56
1/17/2000	6.11	8.89	8.11	10.89	9.11	11.89	10.11	12.89
1/18/2000	8.33	12.22	10.33	14.22	11.33	15.22	12.33	16.22
1/19/2000	7.651	14.44	9.651	16.44	10.651	17.44	11.651	18.44
1/20/2000	7.101	10.56	9.101	12.56	10.101	13.56	11.101	14.56
1/21/2000	2.22	12.78	4.22	14.78	5.22	15.78	6.22	16.78
1/22/2000	4.44	12.22	6.44	14.22	7.44	15.22	8.44	16.22
1/23/2000	5.56	8.33	7.56	10.33	8.56	11.33	9.56	12.33
1/24/2000	6.67	8.33	8.67	10.33	9.67	11.33	10.67	12.33
1/25/2000	5.56	8.89	7.56	10.89	8.56	11.89	9.56	12.89
1/26/2000	2.78	13.33	4.78	15.33	5.78	16.33	6.78	17.33
1/27/2000	5	13.89	7	15.89	8	16.89	9	17.89
1/28/2000	4.44	14.44	6.44	16.44	7.44	17.44	8.44	18.44
1/29/2000	4.44	14.44	6.44	16.44	7.44	17.44	8.44	18.44
1/30/2000	3.33	7.22	5.33	9.22	6.33	10.22	7.33	11.22
1/31/2000	1.67	6.67	3.67	8.67	4.67	9.67	5.67	10.67
2/1/2000	3.89	14.44	5.89	16.44	6.89	17.44	7.89	18.44
2/2/2000	3.33	20	5.33	22	6.33	23	7.33	24
2/3/2000	5.56	16.67	7.56	18.67	8.56	19.67	9.56	20.67
2/4/2000	5.56	10	7.56	12	8.56	13	9.56	14
2/5/2000	3.89	13.89	5.89	15.89	6.89	16.89	7.89	17.89
2/6/2000	7.22	16.67	9.22	18.67	10.22	19.67	11.22	20.67
2/7/2000	9.44	20	11.44	22	12.44	23	13.44	24
2/8/2000	7.78	20.56	9.78	22.56	10.78	23.56	11.78	24.56
2/9/2000	7.22	13.89	9.22	15.89	10.22	16.89	11.22	17.89
2/10/2000	2.22	10	4.22	12	5.22	13	6.22	14
2/11/2000	1.67	7.78	3.67	9.78	4.67	10.78	5.67	11.78
2/12/2000	1.67	6.11	3.67	8.11	4.67	9.11	5.67	10.11
2/13/2000	2.78	9.44	4.78	11.44	5.78	12.44	6.78	13.44
2/14/2000	2.22	10.56	4.22	12.56	5.22	13.56	6.22	14.56
2/15/2000	2.78	13.89	4.78	15.89	5.78	16.89	6.78	17.89
2/16/2000	2.78	7.22	4.78	9.22	5.78	10.22	6.78	11.22
2/17/2000	2.78	10	4.78	12	5.78	13	6.78	14
2/18/2000	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/19/2000	6.11	17.22	8.11	19.22	9.11	20.22	10.11	21.22
2/20/2000	5	12.22	7	14.22	8	15.22	9	16.22
2/21/2000	1.67	13.33	3.67	15.33	4.67	16.33	5.67	17.33
2/22/2000	1.11	7.22	3.11	9.22	4.11	10.22	5.11	11.22
2/23/2000	0	10.56	2	12.56	3	13.56	4	14.56
2/24/2000	-2.78	7.78	-0.78	9.78	0.22	10.78	1.22	11.78
2/25/2000	-0.56	10.56	1.44	12.56	2.44	13.56	3.44	14.56
2/26/2000	2.78	13.33	4.78	15.33	5.78	16.33	6.78	17.33
2/27/2000	0.56	5	2.56	7	3.56	8	4.56	9
2/28/2000	0.56	9.44	2.56	11.44	3.56	12.44	4.56	13.44
2/29/2000	0.56	4.44	2.56	6.44	3.56	7.44	4.56	8.44
3/1/2000	-1.67	13.33	0.33	15.33	1.33	16.33	2.33	17.33
3/2/2000	2.22	6.67	4.22	8.67	5.22	9.67	6.22	10.67
3/3/2000	1.11	16.11	3.11	18.11	4.11	19.11	5.11	20.11
3/4/2000	0.56	16.11	2.56	18.11	3.56	19.11	4.56	20.11
3/5/2000	1.67	7.78	3.67	9.78	4.67	10.78	5.67	11.78
3/6/2000	0.56	3.33	2.56	5.33	3.56	6.33	4.56	7.33
3/7/2000	0	7.22	2	9.22	3	10.22	4	11.22
3/8/2000	0	5.56	2	7.56	3	8.56	4	9.56
3/9/2000	0	7.22	2	9.22	3	10.22	4	11.22
3/10/2000	1.67	16.67	3.67	18.67	4.67	19.67	5.67	20.67
3/11/2000	5	15	7	17	8	18	9	19
3/12/2000	5.56	18.89	7.56	20.89	8.56	21.89	9.56	22.89
3/13/2000	3.89	20.56	5.89	22.56	6.89	23.56	7.89	24.56
3/14/2000	6.11	21.67	8.11	23.67	9.11	24.67	10.11	25.67
3/15/2000	7.78	22.22	9.78	24.22	10.78	25.22	11.78	26.22
3/16/2000	3.33	16.11	5.33	18.11	6.33	19.11	7.33	20.11
3/17/2000	0	21.11	2	23.11	3	24.11	4	25.11
3/18/2000	8.89	22.78	10.89	24.78	11.89	25.78	12.89	26.78
3/19/2000	3.89	17.22	5.89	19.22	6.89	20.22	7.89	21.22
3/20/2000	2.78	10	4.78	12	5.78	13	6.78	14
3/21/2000	6.11	16.11	8.11	18.11	9.11	19.11	10.11	20.11
3/22/2000	6.11	20.56	8.11	22.56	9.11	23.56	10.11	24.56
3/23/2000	6.67	18.33	8.67	20.33	9.67	21.33	10.67	22.33
3/24/2000	3.89	20.56	5.89	22.56	6.89	23.56	7.89	24.56
3/25/2000	5.56	20	7.56	22	8.56	23	9.56	24
3/26/2000	5	23.33	7	25.33	8	26.33	9	27.33
3/27/2000	3.89	17.78	5.89	19.78	6.89	20.78	7.89	21.78
3/28/2000	1.11	16.11	3.11	18.11	4.11	19.11	5.11	20.11
3/29/2000	1.11	17.22	3.11	19.22	4.11	20.22	5.11	21.22
3/30/2000	7.22	17.22	9.22	19.22	10.22	20.22	11.22	21.22
3/31/2000	5.56	18.33	7.56	20.33	8.56	21.33	9.56	22.33
4/1/2000	5.56	23.33	7.56	25.33	8.56	26.33	9.56	27.33
4/2/2000	5.56	26.67	7.56	28.67	8.56	29.67	9.56	30.67
4/3/2000	7.78	26.11	9.78	28.11	10.78	29.11	11.78	30.11
4/4/2000	11.67	23.89	13.67	25.89	14.67	26.89	15.67	27.89
4/5/2000	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/6/2000	6.11	23.89	8.11	25.89	9.11	26.89	10.11	27.89
4/7/2000	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
4/8/2000	6.67	21.11	8.67	23.11	9.67	24.11	10.67	25.11
4/9/2000	3.33	18.89	5.33	20.89	6.33	21.89	7.33	22.89
4/10/2000	3.89	23.33	5.89	25.33	6.89	26.33	7.89	27.33
4/11/2000	7.78	25.56	9.78	27.56	10.78	28.56	11.78	29.56
4/12/2000	10.56	25	12.56	27	13.56	28	14.56	29
4/13/2000	3.89	10.56	5.89	12.56	6.89	13.56	7.89	14.56
4/14/2000	3.89	12.22	5.89	14.22	6.89	15.22	7.89	16.22
4/15/2000	3.89	11.11	5.89	13.11	6.89	14.11	7.89	15.11
4/16/2000	5.56	13.33	7.56	15.33	8.56	16.33	9.56	17.33
4/17/2000	2.78	8.33	4.78	10.33	5.78	11.33	6.78	12.33
4/18/2000	1.67	7.22	3.67	9.22	4.67	10.22	5.67	11.22
4/19/2000	1.67	14.44	3.67	16.44	4.67	17.44	5.67	18.44
4/20/2000	3.89	21.11	5.89	23.11	6.89	24.11	7.89	25.11
4/21/2000	8.33	20	10.33	22	11.33	23	12.33	24
4/22/2000	5	15.56	7	17.56	8	18.56	9	19.56
4/23/2000	5	18.33	7	20.33	8	21.33	9	22.33
4/24/2000	6.67	22.78	8.67	24.78	9.67	25.78	10.67	26.78
4/25/2000	6.11	23.33	8.11	25.33	9.11	26.33	10.11	27.33
4/26/2000	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
4/27/2000	8.89	24.44	10.89	26.44	11.89	27.44	12.89	28.44
4/28/2000	4.44	15	6.44	17	7.44	18	8.44	19
4/29/2000	3.315	21.11	5.315	23.11	6.315	24.11	7.315	25.11
4/30/2000	-17.22	26.67	-15.22	28.67	-14.22	29.67	-13.22	30.67
5/1/2000	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
5/2/2000	8.89	24.44	10.89	26.44	11.89	27.44	12.89	28.44
5/3/2000	9.44	26.11	11.44	28.11	12.44	29.11	13.44	30.11
5/4/2000	8.89	22.78	10.89	24.78	11.89	25.78	12.89	26.78
5/5/2000	8.89	20	10.89	22	11.89	23	12.89	24
5/6/2000	5.56	20	7.56	22	8.56	23	9.56	24
5/7/2000	6.11	13.89	8.11	15.89	9.11	16.89	10.11	17.89
5/8/2000	8.89	20	10.89	22	11.89	23	12.89	24
5/9/2000	6.67	20	8.67	22	9.67	23	10.67	24
5/10/2000	1.11	10	3.11	12	4.11	13	5.11	14
5/11/2000	-1.11	15.56	0.89	17.56	1.89	18.56	2.89	19.56
5/12/2000	2.78	20	4.78	22	5.78	23	6.78	24
5/13/2000	7.22	21.11	9.22	23.11	10.22	24.11	11.22	25.11
5/14/2000	5.56	19.44	7.56	21.44	8.56	22.44	9.56	23.44
5/15/2000	4.44	13.89	6.44	15.89	7.44	16.89	8.44	17.89
5/16/2000	2.78	7.22	4.78	9.22	5.78	10.22	6.78	11.22
5/17/2000	3.89	18.33	5.89	20.33	6.89	21.33	7.89	22.33
5/18/2000	6.11	24.44	8.11	26.44	9.11	27.44	10.11	28.44
5/19/2000	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
5/20/2000	12.22	28.33	14.22	30.33	15.22	31.33	16.22	32.33
5/21/2000	13.89	27.22	15.89	29.22	16.89	30.22	17.89	31.22
5/22/2000	13.33	23.89	15.33	25.89	16.33	26.89	17.33	27.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/23/2000	15.56	26.11	17.56	28.11	18.56	29.11	19.56	30.11
5/24/2000	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
5/25/2000	11.01	20.56	13.01	22.56	14.01	23.56	15.01	24.56
5/26/2000	10	23.33	12	25.33	13	26.33	14	27.33
5/27/2000	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11
5/28/2000	11.11	24.44	13.11	26.44	14.11	27.44	15.11	28.44
5/29/2000	10	23.89	12	25.89	13	26.89	14	27.89
5/30/2000	8.33	22.22	10.33	24.22	11.33	25.22	12.33	26.22
5/31/2000	8.89	24.44	10.89	26.44	11.89	27.44	12.89	28.44
6/1/2000	10	25.56	12	27.56	13	28.56	14	29.56
6/2/2000	13.89	27.22	15.89	29.22	16.89	30.22	17.89	31.22
6/3/2000	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
6/4/2000	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
6/5/2000	10	23.33	12	25.33	13	26.33	14	27.33
6/6/2000	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
6/7/2000	11.11	24.44	13.11	26.44	14.11	27.44	15.11	28.44
6/8/2000	7.22	13.89	9.22	15.89	10.22	16.89	11.22	17.89
6/9/2000	5.56	20	7.56	22	8.56	23	9.56	24
6/10/2000	5.56	21.11	7.56	23.11	8.56	24.11	9.56	25.11
6/11/2000	7.22	25	9.22	27	10.22	28	11.22	29
6/12/2000	12.22	28.33	14.22	30.33	15.22	31.33	16.22	32.33
6/13/2000	12.78	31.67	14.78	33.67	15.78	34.67	16.78	35.67
6/14/2000	20	36.11	22	38.11	23	39.11	24	40.11
6/15/2000	20	36.11	22	38.11	23	39.11	24	40.11
6/16/2000	17.78	33.89	19.78	35.89	20.78	36.89	21.78	37.89
6/17/2000	19.44	32.22	21.44	34.22	22.44	35.22	23.44	36.22
6/18/2000	15.56	30	17.56	32	18.56	33	19.56	34
6/19/2000	15	30	17	32	18	33	19	34
6/20/2000	13.89	32.22	15.89	34.22	16.89	35.22	17.89	36.22
6/21/2000	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
6/22/2000	19.44	33.33	21.44	35.33	22.44	36.33	23.44	37.33
6/23/2000	20	31.67	22	33.67	23	34.67	24	35.67
6/24/2000	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
6/25/2000	13.33	31.11	15.33	33.11	16.33	34.11	17.33	35.11
6/26/2000	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
6/27/2000	17.78	33.33	19.78	35.33	20.78	36.33	21.78	37.33
6/28/2000	20	34.44	22	36.44	23	37.44	24	38.44
6/29/2000	16.11	33.33	18.11	35.33	19.11	36.33	20.11	37.33
6/30/2000	18.33	31.67	20.33	33.67	21.33	34.67	22.33	35.67
7/1/2000	11.67	28.89	13.67	30.89	14.67	31.89	15.67	32.89
7/2/2000	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11
7/3/2000	10	24.44	12	26.44	13	27.44	14	28.44
7/4/2000	11.67	25	13.67	27	14.67	28	15.67	29
7/5/2000	8.33	22.22	10.33	24.22	11.33	25.22	12.33	26.22
7/6/2000	8.89	25	10.89	27	11.89	28	12.89	29
7/7/2000	9.44	24.44	11.44	26.44	12.44	27.44	13.44	28.44
7/8/2000	8.89	26.11	10.89	28.11	11.89	29.11	12.89	30.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/9/2000	10	27.78	12	29.78	13	30.78	14	31.78
7/10/2000	13.89	29.44	15.89	31.44	16.89	32.44	17.89	33.44
7/11/2000	12.78	30.56	14.78	32.56	15.78	33.56	16.78	34.56
7/12/2000	17.22	31.11	19.22	33.11	20.22	34.11	21.22	35.11
7/13/2000	12.78	30.56	14.78	32.56	15.78	33.56	16.78	34.56
7/14/2000	13.89	31.67	15.89	33.67	16.89	34.67	17.89	35.67
7/15/2000	16.11	31.67	18.11	33.67	19.11	34.67	20.11	35.67
7/16/2000	16.11	27.78	18.11	29.78	19.11	30.78	20.11	31.78
7/17/2000	13.33	28.89	15.33	30.89	16.33	31.89	17.33	32.89
7/18/2000	16.67	30.56	18.67	32.56	19.67	33.56	20.67	34.56
7/19/2000	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
7/20/2000	18.89	34.44	20.89	36.44	21.89	37.44	22.89	38.44
7/21/2000	18.89	32.78	20.89	34.78	21.89	35.78	22.89	36.78
7/22/2000	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22
7/23/2000	15	34.44	17	36.44	18	37.44	19	38.44
7/24/2000	20	33.89	22	35.89	23	36.89	24	37.89
7/25/2000	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
7/26/2000	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
7/27/2000	15	32.22	17	34.22	18	35.22	19	36.22
7/28/2000	15	33.89	17	35.89	18	36.89	19	37.89
7/29/2000	20.56	35	22.56	37	23.56	38	24.56	39
7/30/2000	18.33	35.56	20.33	37.56	21.33	38.56	22.33	39.56
7/31/2000	20	37.22	22	39.22	23	40.22	24	41.22
8/1/2000	19.44	37.22	21.44	39.22	22.44	40.22	23.44	41.22
8/2/2000	23.89	35.56	25.89	37.56	26.89	38.56	27.89	39.56
8/3/2000	23.33	33.89	25.33	35.89	26.33	36.89	27.33	37.89
8/4/2000	20.56	33.33	22.56	35.33	23.56	36.33	24.56	37.33
8/5/2000	20.56	34.44	22.56	36.44	23.56	37.44	24.56	38.44
8/6/2000	18.33	33.89	20.33	35.89	21.33	36.89	22.33	37.89
8/7/2000	18.89	31.67	20.89	33.67	21.89	34.67	22.89	35.67
8/8/2000	18.33	31.11	20.33	33.11	21.33	34.11	22.33	35.11
8/9/2000	17.22	30.56	19.22	32.56	20.22	33.56	21.22	34.56
8/10/2000	13.89	29.44	15.89	31.44	16.89	32.44	17.89	33.44
8/11/2000	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
8/12/2000	18.33	33.33	20.33	35.33	21.33	36.33	22.33	37.33
8/13/2000	17.78	33.89	19.78	35.89	20.78	36.89	21.78	37.89
8/14/2000	18.89	34.44	20.89	36.44	21.89	37.44	22.89	38.44
8/15/2000	15.56	34.44	17.56	36.44	18.56	37.44	19.56	38.44
8/16/2000	20.56	35	22.56	37	23.56	38	24.56	39
8/17/2000	20	34.44	22	36.44	23	37.44	24	38.44
8/18/2000	13.89	30.56	15.89	32.56	16.89	33.56	17.89	34.56
8/19/2000	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
8/20/2000	12.78	29.44	14.78	31.44	15.78	32.44	16.78	33.44
8/21/2000	12.22	30.56	14.22	32.56	15.22	33.56	16.22	34.56
8/22/2000	13.89	31.11	15.89	33.11	16.89	34.11	17.89	35.11
8/23/2000	14.44	30.56	16.44	32.56	17.44	33.56	18.44	34.56
8/24/2000	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/25/2000	17.22	33.33	19.22	35.33	20.22	36.33	21.22	37.33
8/26/2000	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78
8/27/2000	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
8/28/2000	17.78	33.33	19.78	35.33	20.78	36.33	21.78	37.33
8/29/2000	16.11	22.78	18.11	24.78	19.11	25.78	20.11	26.78
8/30/2000	13.89	18.89	15.89	20.89	16.89	21.89	17.89	22.89
8/31/2000	12.22	23.33	14.22	25.33	15.22	26.33	16.22	27.33
9/1/2000	9.44	15	11.44	17	12.44	18	13.44	19
9/2/2000	8.33	11.67	10.33	13.67	11.33	14.67	12.33	15.67
9/3/2000	8.89	17.22	10.89	19.22	11.89	20.22	12.89	21.22
9/4/2000	6.67	17.22	8.67	19.22	9.67	20.22	10.67	21.22
9/5/2000	6.11	22.22	8.11	24.22	9.11	25.22	10.11	26.22
9/6/2000	14.44	26.67	16.44	28.67	17.44	29.67	18.44	30.67
9/7/2000	15.56	30	17.56	32	18.56	33	19.56	34
9/8/2000	15	28.89	17	30.89	18	31.89	19	32.89
9/9/2000	14.44	30	16.44	32	17.44	33	18.44	34
9/10/2000	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
9/11/2000	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
9/12/2000	15	32.78	17	34.78	18	35.78	19	36.78
9/13/2000	18.33	34.44	20.33	36.44	21.33	37.44	22.33	38.44
9/14/2000	14.44	27.78	16.44	29.78	17.44	30.78	18.44	31.78
9/15/2000	12.78	28.33	14.78	30.33	15.78	31.33	16.78	32.33
9/16/2000	11.67	30.56	13.67	32.56	14.67	33.56	15.67	34.56
9/17/2000	13.33	33.89	15.33	35.89	16.33	36.89	17.33	37.89
9/18/2000	22.78	35	24.78	37	25.78	38	26.78	39
9/19/2000	20.56	35.56	22.56	37.56	23.56	38.56	24.56	39.56
9/20/2000	17.78	34.44	19.78	36.44	20.78	37.44	21.78	38.44
9/21/2000	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
9/22/2000	8.89	14.44	10.89	16.44	11.89	17.44	12.89	18.44
9/23/2000	7.78	23.89	9.78	25.89	10.78	26.89	11.78	27.89
9/24/2000	5.56	26.67	7.56	28.67	8.56	29.67	9.56	30.67
9/25/2000	12.22	27.78	14.22	29.78	15.22	30.78	16.22	31.78
9/26/2000	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
9/27/2000	14.44	28.33	16.44	30.33	17.44	31.33	18.44	32.33
9/28/2000	13.33	26.11	15.33	28.11	16.33	29.11	17.33	30.11
9/29/2000	10	31.11	12	33.11	13	34.11	14	35.11
9/30/2000	17.78	33.89	19.78	35.89	20.78	36.89	21.78	37.89
10/1/2000	18.33	31.67	20.33	33.67	21.33	34.67	22.33	35.67
10/2/2000	13.89	30	15.89	32	16.89	33	17.89	34
10/3/2000	12.78	28.33	14.78	30.33	15.78	31.33	16.78	32.33
10/4/2000	11.11	28.33	13.11	30.33	14.11	31.33	15.11	32.33
10/5/2000	10	30.56	12	32.56	13	33.56	14	34.56
10/6/2000	18.33	30.56	20.33	32.56	21.33	33.56	22.33	34.56
10/7/2000	13.89	30.56	15.89	32.56	16.89	33.56	17.89	34.56
10/8/2000	8.89	28.89	10.89	30.89	11.89	31.89	12.89	32.89
10/9/2000	7.22	20	9.22	22	10.22	23	11.22	24
10/10/2000	3.89	11.11	5.89	13.11	6.89	14.11	7.89	15.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/11/2000	4.44	9.44	6.44	11.44	7.44	12.44	8.44	13.44
10/12/2000	2.22	15	4.22	17	5.22	18	6.22	19
10/13/2000	2.22	18.85	4.22	20.85	5.22	21.85	6.22	22.85
10/14/2000	4.44	22.22	6.44	24.22	7.44	25.22	8.44	26.22
10/15/2000	8.33	22.22	10.33	24.22	11.33	25.22	12.33	26.22
10/16/2000	7.78	23.89	9.78	25.89	10.78	26.89	11.78	27.89
10/17/2000	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
10/18/2000	13.33	26.11	15.33	28.11	16.33	29.11	17.33	30.11
10/19/2000	11.11	25.56	13.11	27.56	14.11	28.56	15.11	29.56
10/20/2000	10	20.56	12	22.56	13	23.56	14	24.56
10/21/2000	6.67	15	8.67	17	9.67	18	10.67	19
10/22/2000	6.11	14.44	8.11	16.44	9.11	17.44	10.11	18.44
10/23/2000	8.33	21.67	10.33	23.67	11.33	24.67	12.33	25.67
10/24/2000	7.78	21.11	9.78	23.11	10.78	24.11	11.78	25.11
10/25/2000	5.56	14.44	7.56	16.44	8.56	17.44	9.56	18.44
10/26/2000	5	8.33	7	10.33	8	11.33	9	12.33
10/27/2000	2.22	15	4.22	17	5.22	18	6.22	19
10/28/2000	4.44	10.56	6.44	12.56	7.44	13.56	8.44	14.56
10/29/2000	2.22	7.22	4.22	9.22	5.22	10.22	6.22	11.22
10/30/2000	2.22	10.56	4.22	12.56	5.22	13.56	6.22	14.56
10/31/2000	0	13.89	2	15.89	3	16.89	4	17.89
11/1/2000	0.56	16.11	2.56	18.11	3.56	19.11	4.56	20.11
11/2/2000	3.33	18.89	5.33	20.89	6.33	21.89	7.33	22.89
11/3/2000	6.67	17.22	8.67	19.22	9.67	20.22	10.67	21.22
11/4/2000	4.44	17.78	6.44	19.78	7.44	20.78	8.44	21.78
11/5/2000	7.22	17.78	9.22	19.78	10.22	20.78	11.22	21.78
11/6/2000	3.33	14.44	5.33	16.44	6.33	17.44	7.33	18.44
11/7/2000	3.89	16.67	5.89	18.67	6.89	19.67	7.89	20.67
11/8/2000	2.22	12.22	4.22	14.22	5.22	15.22	6.22	16.22
11/9/2000	0	10	2	12	3	13	4	14
11/10/2000	-1.11	3.33	0.89	5.33	1.89	6.33	2.89	7.33
11/11/2000	-2.78	8.89	-0.78	10.89	0.22	11.89	1.22	12.89
11/12/2000	-1.67	11.11	0.33	13.11	1.33	14.11	2.33	15.11
11/13/2000	-1.11	5	0.89	7	1.89	8	2.89	9
11/14/2000	-2.78	8.33	-0.78	10.33	0.22	11.33	1.22	12.33
11/15/2000	-1.11	8.89	0.89	10.89	1.89	11.89	2.89	12.89
11/16/2000	-2.22	8.33	-0.22	10.33	0.78	11.33	1.78	12.33
11/17/2000	-1.67	11.67	0.33	13.67	1.33	14.67	2.33	15.67
11/18/2000	-2.22	14.44	-0.22	16.44	0.78	17.44	1.78	18.44
11/19/2000	1.67	15.56	3.67	17.56	4.67	18.56	5.67	19.56
11/20/2000	6.67	17.22	8.67	19.22	9.67	20.22	10.67	21.22
11/21/2000	2.78	12.78	4.78	14.78	5.78	15.78	6.78	16.78
11/22/2000	0	12.78	2	14.78	3	15.78	4	16.78
11/23/2000	1.11	13.33	3.11	15.33	4.11	16.33	5.11	17.33
11/24/2000	2.78	16.67	4.78	18.67	5.78	19.67	6.78	20.67
11/25/2000	3.33	17.22	5.33	19.22	6.33	20.22	7.33	21.22
11/26/2000	7.22	16.11	9.22	18.11	10.22	19.11	11.22	20.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/27/2000	6.67	16.11	8.67	18.11	9.67	19.11	10.67	20.11
11/28/2000	6.11	20	8.11	22	9.11	23	10.11	24
11/29/2000	2.78	11.11	4.78	13.11	5.78	14.11	6.78	15.11
11/30/2000	1.67	13.33	3.67	15.33	4.67	16.33	5.67	17.33
12/1/2000	0.56	12.22	2.56	14.22	3.56	15.22	4.56	16.22
12/2/2000	2.78	16.11	4.78	18.11	5.78	19.11	6.78	20.11
12/3/2000	2.78	17.78	4.78	19.78	5.78	20.78	6.78	21.78
12/4/2000	5	18.33	7	20.33	8	21.33	9	22.33
12/5/2000	8.89	18.33	10.89	20.33	11.89	21.33	12.89	22.33
12/6/2000	7.78	17.22	9.78	19.22	10.78	20.22	11.78	21.22
12/7/2000	5.56	15	7.56	17	8.56	18	9.56	19
12/8/2000	5	15.56	7	17.56	8	18.56	9	19.56
12/9/2000	2.78	3.33	4.78	5.33	5.78	6.33	6.78	7.33
12/10/2000	4.44	13.33	6.44	15.33	7.44	16.33	8.44	17.33
12/11/2000	0	10.56	2	12.56	3	13.56	4	14.56
12/12/2000	0	6.11	2	8.11	3	9.11	4	10.11
12/13/2000	0	6.11	2	8.11	3	9.11	4	10.11
12/14/2000	1.11	5.56	3.11	7.56	4.11	8.56	5.11	9.56
12/15/2000	1.11	9.44	3.11	11.44	4.11	12.44	5.11	13.44
12/16/2000	0.56	17.22	2.56	19.22	3.56	20.22	4.56	21.22
12/17/2000	2.78	13.89	4.78	15.89	5.78	16.89	6.78	17.89
12/18/2000	3.89	16.11	5.89	18.11	6.89	19.11	7.89	20.11
12/19/2000	2.22	16.11	4.22	18.11	5.22	19.11	6.22	20.11
12/20/2000	6.67	14.44	8.67	16.44	9.67	17.44	10.67	18.44
12/21/2000	3.89	16.11	5.89	18.11	6.89	19.11	7.89	20.11
12/22/2000	2.78	11.67	4.78	13.67	5.78	14.67	6.78	15.67
12/23/2000	0	8.89	2	10.89	3	11.89	4	12.89
12/24/2000	2.22	13.33	4.22	15.33	5.22	16.33	6.22	17.33
12/25/2000	5	15	7	17	8	18	9	19
12/26/2000	2.78	15.56	4.78	17.56	5.78	18.56	6.78	19.56
12/27/2000	1.11	13.33	3.11	15.33	4.11	16.33	5.11	17.33
12/28/2000	6.67	18.33	8.67	20.33	9.67	21.33	10.67	22.33
12/29/2000	8.89	17.78	10.89	19.78	11.89	20.78	12.89	21.78
12/30/2000	7.78	17.22	9.78	19.22	10.78	20.22	11.78	21.22
12/31/2000	6.67	17.78	8.67	19.78	9.67	20.78	10.67	21.78
1/1/2001	3.33	17.22	5.33	19.22	6.33	20.22	7.33	21.22
1/2/2001	10	20	12	22	13	23	14	24
1/3/2001	8.89	18.89	10.89	20.89	11.89	21.89	12.89	22.89
1/4/2001	8.33	18.89	10.33	20.89	11.33	21.89	12.33	22.89
1/5/2001	4.44	18.33	6.44	20.33	7.44	21.33	8.44	22.33
1/6/2001	3.89	15.56	5.89	17.56	6.89	18.56	7.89	19.56
1/7/2001	4.44	16.67	6.44	18.67	7.44	19.67	8.44	20.67
1/8/2001	1.11	12.22	3.11	14.22	4.11	15.22	5.11	16.22
1/9/2001	0	7.22	2	9.22	3	10.22	4	11.22
1/10/2001	0	9.44	2	11.44	3	12.44	4	13.44
1/11/2001	0	5	2	7	3	8	4	9
1/12/2001	-1.67	10.56	0.33	12.56	1.33	13.56	2.33	14.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/13/2001	0	7.22	2	9.22	3	10.22	4	11.22
1/14/2001	-0.56	7.78	1.44	9.78	2.44	10.78	3.44	11.78
1/15/2001	-1.11	4.44	0.89	6.44	1.89	7.44	2.89	8.44
1/16/2001	-0.56	3.33	1.44	5.33	2.44	6.33	3.44	7.33
1/17/2001	-2.78	11.11	-0.78	13.11	0.22	14.11	1.22	15.11
1/18/2001	-2.78	12.22	-0.78	14.22	0.22	15.22	1.22	16.22
1/19/2001	0.56	13.33	2.56	15.33	3.56	16.33	4.56	17.33
1/20/2001	3.33	15	5.33	17	6.33	18	7.33	19
1/21/2001	1.67	13.33	3.67	15.33	4.67	16.33	5.67	17.33
1/22/2001	3.89	15	5.89	17	6.89	18	7.89	19
1/23/2001	0	15.56	2	17.56	3	18.56	4	19.56
1/24/2001	-0.56	2.22	1.44	4.22	2.44	5.22	3.44	6.22
1/25/2001	-1.67	2.22	0.33	4.22	1.33	5.22	2.33	6.22
1/26/2001	-0.56	16.67	1.44	18.67	2.44	19.67	3.44	20.67
1/27/2001	10	19.44	12	21.44	13	22.44	14	23.44
1/28/2001	8.33	21.11	10.33	23.11	11.33	24.11	12.33	25.11
1/29/2001	6.67	16.67	8.67	18.67	9.67	19.67	10.67	20.67
1/30/2001	6.67	18.33	8.67	20.33	9.67	21.33	10.67	22.33
1/31/2001	10	19.44	12	21.44	13	22.44	14	23.44
2/1/2001	7.22	21.11	9.22	23.11	10.22	24.11	11.22	25.11
2/2/2001	10	17.78	12	19.78	13	20.78	14	21.78
2/3/2001	11.11	23.33	13.11	25.33	14.11	26.33	15.11	27.33
2/4/2001	16.11	28.89	18.11	30.89	19.11	31.89	20.11	32.89
2/5/2001	12.22	25.56	14.22	27.56	15.22	28.56	16.22	29.56
2/6/2001	6.11	16.11	8.11	18.11	9.11	19.11	10.11	20.11
2/7/2001	-2.78	9.44	-0.78	11.44	0.22	12.44	1.22	13.44
2/8/2001	4.44	17.22	6.44	19.22	7.44	20.22	8.44	21.22
2/9/2001	6.67	10.56	8.67	12.56	9.67	13.56	10.67	14.56
2/10/2001	-0.56	7.78	1.44	9.78	2.44	10.78	3.44	11.78
2/11/2001	-1.67	8.89	0.33	10.89	1.33	11.89	2.33	12.89
2/12/2001	-4.44	13.89	-2.44	15.89	-1.44	16.89	-0.44	17.89
2/13/2001	6.11	14.44	8.11	16.44	9.11	17.44	10.11	18.44
2/14/2001	-2.78	19.44	-0.78	21.44	0.22	22.44	1.22	23.44
2/15/2001	-0.56	11.67	1.44	13.67	2.44	14.67	3.44	15.67
2/16/2001	-2.22	15	-0.22	17	0.78	18	1.78	19
2/17/2001	0	10	2	12	3	13	4	14
2/18/2001	1.67	8.33	3.67	10.33	4.67	11.33	5.67	12.33
2/19/2001	0.56	5	2.56	7	3.56	8	4.56	9
2/20/2001	0	5	2	7	3	8	4	9
2/21/2001	0.56	8.33	2.56	10.33	3.56	11.33	4.56	12.33
2/22/2001	1.541	2.78	3.541	4.78	4.541	5.78	5.541	6.78
2/23/2001	1.541	9.44	3.541	11.44	4.541	12.44	5.541	13.44
2/24/2001	0	2.22	2	4.22	3	5.22	4	6.22
2/25/2001	0	10.56	2	12.56	3	13.56	4	14.56
2/26/2001	6.67	8.33	8.67	10.33	9.67	11.33	10.67	12.33
2/27/2001	4.44	13.33	6.44	15.33	7.44	16.33	8.44	17.33
2/28/2001	0.56	7.22	2.56	9.22	3.56	10.22	4.56	11.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/1/2001	0	11.11	2	13.11	3	14.11	4	15.11
3/2/2001	0	5	2	7	3	8	4	9
3/3/2001	-0.56	10	1.44	12	2.44	13	3.44	14
3/4/2001	3.33	7.78	5.33	9.78	6.33	10.78	7.33	11.78
3/5/2001	2.22	6.67	4.22	8.67	5.22	9.67	6.22	10.67
3/6/2001	3.89	16.11	5.89	18.11	6.89	19.11	7.89	20.11
3/7/2001	1.67	18.89	3.67	20.89	4.67	21.89	5.67	22.89
3/8/2001	2.22	16.11	4.22	18.11	5.22	19.11	6.22	20.11
3/9/2001	0.56	10	2.56	12	3.56	13	4.56	14
3/10/2001	-13.89	13.33	-11.89	15.33	-10.89	16.33	-9.89	17.33
3/11/2001	0	15.56	2	17.56	3	18.56	4	19.56
3/12/2001	1.67	17.22	3.67	19.22	4.67	20.22	5.67	21.22
3/13/2001	1.11	21.11	3.11	23.11	4.11	24.11	5.11	25.11
3/14/2001	4.44	20.56	6.44	22.56	7.44	23.56	8.44	24.56
3/15/2001	2.22	15.56	4.22	17.56	5.22	18.56	6.22	19.56
3/16/2001	1.11	16.67	3.11	18.67	4.11	19.67	5.11	20.67
3/17/2001	3.89	21.11	5.89	23.11	6.89	24.11	7.89	25.11
3/18/2001	5	24.44	7	26.44	8	27.44	9	28.44
3/19/2001	8.89	25	10.89	27	11.89	28	12.89	29
3/20/2001	10	23.33	12	25.33	13	26.33	14	27.33
3/21/2001	10	23.89	12	25.89	13	26.89	14	27.89
3/22/2001	10	22.78	12	24.78	13	25.78	14	26.78
3/23/2001	8.89	22.78	10.89	24.78	11.89	25.78	12.89	26.78
3/24/2001	6.67	20.56	8.67	22.56	9.67	23.56	10.67	24.56
3/25/2001	6.11	16.67	8.11	18.67	9.11	19.67	10.11	20.67
3/26/2001	2.78	21.11	4.78	23.11	5.78	24.11	6.78	25.11
3/27/2001	4.44	22.78	6.44	24.78	7.44	25.78	8.44	26.78
3/28/2001	8.89	23.89	10.89	25.89	11.89	26.89	12.89	27.89
3/29/2001	8.33	22.78	10.33	24.78	11.33	25.78	12.33	26.78
3/30/2001	10	25	12	27	13	28	14	29
3/31/2001	8.33	24.44	10.33	26.44	11.33	27.44	12.33	28.44
4/1/2001	7.22	20.56	9.22	22.56	10.22	23.56	11.22	24.56
4/2/2001	1.11	11.11	3.11	13.11	4.11	14.11	5.11	15.11
4/3/2001	-1.11	8.33	0.89	10.33	1.89	11.33	2.89	12.33
4/4/2001	-1.11	11.11	0.89	13.11	1.89	14.11	2.89	15.11
4/5/2001	0	15	2	17	3	18	4	19
4/6/2001	0.56	6.67	2.56	8.67	3.56	9.67	4.56	10.67
4/7/2001	-0.56	3.89	1.44	5.89	2.44	6.89	3.44	7.89
4/8/2001	-1.11	6.67	0.89	8.67	1.89	9.67	2.89	10.67
4/9/2001	-2.22	8.89	-0.22	10.89	0.78	11.89	1.78	12.89
4/10/2001	2.78	14.44	4.78	16.44	5.78	17.44	6.78	18.44
4/11/2001	0	5	2	7	3	8	4	9
4/12/2001	0	13.89	2	15.89	3	16.89	4	17.89
4/13/2001	1.11	15	3.11	17	4.11	18	5.11	19
4/14/2001	2.22	16.67	4.22	18.67	5.22	19.67	6.22	20.67
4/15/2001	0.56	20	2.56	22	3.56	23	4.56	24
4/16/2001	3.89	20.56	5.89	22.56	6.89	23.56	7.89	24.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/17/2001	3.89	20.56	5.89	22.56	6.89	23.56	7.89	24.56
4/18/2001	3.89	18.89	5.89	20.89	6.89	21.89	7.89	22.89
4/19/2001	0	6.11	2	8.11	3	9.11	4	10.11
4/20/2001	0	3.33	2	5.33	3	6.33	4	7.33
4/21/2001	0	12.22	2	14.22	3	15.22	4	16.22
4/22/2001	0.56	17.22	2.56	19.22	3.56	20.22	4.56	21.22
4/23/2001	5	22.78	7	24.78	8	25.78	9	26.78
4/24/2001	8.761	25	10.761	27	11.761	28	12.761	29
4/25/2001	10.56	28.33	12.56	30.33	13.56	31.33	14.56	32.33
4/26/2001	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
4/27/2001	8.33	21.11	10.33	23.11	11.33	24.11	12.33	25.11
4/28/2001	5.56	13.89	7.56	15.89	8.56	16.89	9.56	17.89
4/29/2001	3.89	18.89	5.89	20.89	6.89	21.89	7.89	22.89
4/30/2001	8.33	21.67	10.33	23.67	11.33	24.67	12.33	25.67
5/1/2001	7.78	21.11	9.78	23.11	10.78	24.11	11.78	25.11
5/2/2001	7.78	19.97	9.78	21.97	10.78	22.97	11.78	23.97
5/3/2001	-17.22	20.56	-15.22	22.56	-14.22	23.56	-13.22	24.56
5/4/2001	6.67	21.11	8.67	23.11	9.67	24.11	10.67	25.11
5/5/2001	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
5/6/2001	8.761	28.33	10.761	30.33	11.761	31.33	12.761	32.33
5/7/2001	10.43	30.52	12.43	32.52	13.43	33.52	14.43	34.52
5/8/2001	17.22	31.11	19.22	33.11	20.22	34.11	21.22	35.11
5/9/2001	15.56	31.11	17.56	33.11	18.56	34.11	19.56	35.11
5/10/2001	11.54	32.22	13.54	34.22	14.54	35.22	15.54	36.22
5/11/2001	13.76	30.56	15.76	32.56	16.76	33.56	17.76	34.56
5/12/2001	13.76	26.08	15.76	28.08	16.76	29.08	17.76	30.08
5/13/2001	12.78	25.56	14.78	27.56	15.78	28.56	16.78	29.56
5/14/2001	11.11	25.56	13.11	27.56	14.11	28.56	15.11	29.56
5/15/2001	13.89	20	15.89	22	16.89	23	17.89	24
5/16/2001	12.22	25.56	14.22	27.56	15.22	28.56	16.22	29.56
5/17/2001	-13.33	27.78	-11.33	29.78	-10.33	30.78	-9.33	31.78
5/18/2001	11.54	28.33	13.54	30.33	14.54	31.33	15.54	32.33
5/19/2001	12.78	31.11	14.78	33.11	15.78	34.11	16.78	35.11
5/20/2001	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
5/21/2001	15.56	33.33	17.56	35.33	18.56	36.33	19.56	37.33
5/22/2001	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
5/23/2001	18.89	32.78	20.89	34.78	21.89	35.78	22.89	36.78
5/24/2001	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
5/25/2001	15	30	17	32	18	33	19	34
5/26/2001	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
5/27/2001	12.78	27.78	14.78	29.78	15.78	30.78	16.78	31.78
5/28/2001	8.89	25.56	10.89	27.56	11.89	28.56	12.89	29.56
5/29/2001	8.89	30.56	10.89	32.56	11.89	33.56	12.89	34.56
5/30/2001	16.11	34.44	18.11	36.44	19.11	37.44	20.11	38.44
5/31/2001	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
6/1/2001	15.56	30.56	17.56	32.56	18.56	33.56	19.56	34.56
6/2/2001	10	24.44	12	26.44	13	27.44	14	28.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/3/2001	8.89	23.33	10.89	25.33	11.89	26.33	12.89	27.33
6/4/2001	8.89	26.11	10.89	28.11	11.89	29.11	12.89	30.11
6/5/2001	9.44	24.44	11.44	26.44	12.44	27.44	13.44	28.44
6/6/2001	11.11	30	13.11	32	14.11	33	15.11	34
6/7/2001	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
6/8/2001	16.11	30.56	18.11	32.56	19.11	33.56	20.11	34.56
6/9/2001	10	29.44	12	31.44	13	32.44	14	33.44
6/10/2001	10.56	28.33	12.56	30.33	13.56	31.33	14.56	32.33
6/11/2001	14.44	26.67	16.44	28.67	17.44	29.67	18.44	30.67
6/12/2001	10	25	12	27	13	28	14	29
6/13/2001	11.11	27.22	13.11	29.22	14.11	30.22	15.11	31.22
6/14/2001	15	30	17	32	18	33	19	34
6/15/2001	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
6/16/2001	17.78	33.33	19.78	35.33	20.78	36.33	21.78	37.33
6/17/2001	18.33	31.11	20.33	33.11	21.33	34.11	22.33	35.11
6/18/2001	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
6/19/2001	18.33	33.33	20.33	35.33	21.33	36.33	22.33	37.33
6/20/2001	17.22	33.89	19.22	35.89	20.22	36.89	21.22	37.89
6/21/2001	19.44	35	21.44	37	22.44	38	23.44	39
6/22/2001	20.56	34.44	22.56	36.44	23.56	37.44	24.56	38.44
6/23/2001	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
6/24/2001	12.22	27.78	14.22	29.78	15.22	30.78	16.22	31.78
6/25/2001	11.67	25	13.67	27	14.67	28	15.67	29
6/26/2001	12.22	25.56	14.22	27.56	15.22	28.56	16.22	29.56
6/27/2001	12.22	20.56	14.22	22.56	15.22	23.56	16.22	24.56
6/28/2001	8.33	27.22	10.33	29.22	11.33	30.22	12.33	31.22
6/29/2001	12.78	31.11	14.78	33.11	15.78	34.11	16.78	35.11
6/30/2001	15.56	32.22	17.56	34.22	18.56	35.22	19.56	36.22
7/1/2001	14.44	35	16.44	37	17.44	38	18.44	39
7/2/2001	22.22	37.78	24.22	39.78	25.22	40.78	26.22	41.78
7/3/2001	24.44	38.33	26.44	40.33	27.44	41.33	28.44	42.33
7/4/2001	24.44	33.89	26.44	35.89	27.44	36.89	28.44	37.89
7/5/2001	22.22	33.89	24.22	35.89	25.22	36.89	26.22	37.89
7/6/2001	20.56	30.56	22.56	32.56	23.56	33.56	24.56	34.56
7/7/2001	17.22	30	19.22	32	20.22	33	21.22	34
7/8/2001	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
7/9/2001	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
7/10/2001	18.89	31.11	20.89	33.11	21.89	34.11	22.89	35.11
7/11/2001	16.67	28.89	18.67	30.89	19.67	31.89	20.67	32.89
7/12/2001	16.11	30.56	18.11	32.56	19.11	33.56	20.11	34.56
7/13/2001	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
7/14/2001	17.22	30	19.22	32	20.22	33	21.22	34
7/15/2001	16.67	28.89	18.67	30.89	19.67	31.89	20.67	32.89
7/16/2001	11.67	25.56	13.67	27.56	14.67	28.56	15.67	29.56
7/17/2001	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11
7/18/2001	14.44	28.33	16.44	30.33	17.44	31.33	18.44	32.33
7/19/2001	15.56	27.78	17.56	29.78	18.56	30.78	19.56	31.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/20/2001	12.78	27.78	14.78	29.78	15.78	30.78	16.78	31.78
7/21/2001	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
7/22/2001	12.22	30	14.22	32	15.22	33	16.22	34
7/23/2001	15	31.67	17	33.67	18	34.67	19	35.67
7/24/2001	13.89	34.44	15.89	36.44	16.89	37.44	17.89	38.44
7/25/2001	15.56	35.56	17.56	37.56	18.56	38.56	19.56	39.56
7/26/2001	17.78	36.11	19.78	38.11	20.78	39.11	21.78	40.11
7/27/2001	21.11	36.11	23.11	38.11	24.11	39.11	25.11	40.11
7/28/2001	20	34.44	22	36.44	23	37.44	24	38.44
7/29/2001	15.56	33.33	17.56	35.33	18.56	36.33	19.56	37.33
7/30/2001	13.33	26.11	15.33	28.11	16.33	29.11	17.33	30.11
7/31/2001	11.11	30.56	13.11	32.56	14.11	33.56	15.11	34.56
8/1/2001	15.43	31.67	17.43	33.67	18.43	34.67	19.43	35.67
8/2/2001	15.56	33.33	17.56	35.33	18.56	36.33	19.56	37.33
8/3/2001	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
8/4/2001	13.33	28.89	15.33	30.89	16.33	31.89	17.33	32.89
8/5/2001	12.78	33.33	14.78	35.33	15.78	36.33	16.78	37.33
8/6/2001	13.89	36.67	15.89	38.67	16.89	39.67	17.89	40.67
8/7/2001	20.56	37.78	22.56	39.78	23.56	40.78	24.56	41.78
8/8/2001	23.33	37.78	25.33	39.78	26.33	40.78	27.33	41.78
8/9/2001	20.56	35	22.56	37	23.56	38	24.56	39
8/10/2001	17.1	34.44	19.1	36.44	20.1	37.44	21.1	38.44
8/11/2001	20.56	36.11	22.56	38.11	23.56	39.11	24.56	40.11
8/12/2001	17.78	35.56	19.78	37.56	20.78	38.56	21.78	39.56
8/13/2001	16.11	33.89	18.11	35.89	19.11	36.89	20.11	37.89
8/14/2001	16.67	35	18.67	37	19.67	38	20.67	39
8/15/2001	20.56	35.56	22.56	37.56	23.56	38.56	24.56	39.56
8/16/2001	0	36.11	2	38.11	3	39.11	4	40.11
8/17/2001	16.11	36.11	18.11	38.11	19.11	39.11	20.11	40.11
8/18/2001	20	36.11	22	38.11	23	39.11	24	40.11
8/19/2001	17.22	34.44	19.22	36.44	20.22	37.44	21.22	38.44
8/20/2001	15	30.56	17	32.56	18	33.56	19	34.56
8/21/2001	12.78	28.89	14.78	30.89	15.78	31.89	16.78	32.89
8/22/2001	10.56	27.78	12.56	29.78	13.56	30.78	14.56	31.78
8/23/2001	10	29.44	12	31.44	13	32.44	14	33.44
8/24/2001	11.67	31.11	13.67	33.11	14.67	34.11	15.67	35.11
8/25/2001	13.33	34.44	15.33	36.44	16.33	37.44	17.33	38.44
8/26/2001	16.11	36.11	18.11	38.11	19.11	39.11	20.11	40.11
8/27/2001	22.22	37.22	24.22	39.22	25.22	40.22	26.22	41.22
8/28/2001	18.33	37.22	20.33	39.22	21.33	40.22	22.33	41.22
8/29/2001	21.67	35	23.67	37	24.67	38	25.67	39
8/30/2001	16.54	31.11	18.54	33.11	19.54	34.11	20.54	35.11
8/31/2001	13.89	31.11	15.89	33.11	16.89	34.11	17.89	35.11
9/1/2001	15	31.67	17	33.67	18	34.67	19	35.67
9/2/2001	16.11	33.33	18.11	35.33	19.11	36.33	20.11	37.33
9/3/2001	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
9/4/2001	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/5/2001	15	30	17	32	18	33	19	34
9/6/2001	12.78	30.56	14.78	32.56	15.78	33.56	16.78	34.56
9/7/2001	13.89	32.22	15.89	34.22	16.89	35.22	17.89	36.22
9/8/2001	15	32.78	17	34.78	18	35.78	19	36.78
9/9/2001	14.32	30.52	16.32	32.52	17.32	33.52	18.32	34.52
9/10/2001	13.89	30	15.89	32	16.89	33	17.89	34
9/11/2001	16.11	26.67	18.11	28.67	19.11	29.67	20.11	30.67
9/12/2001	6.67	26.11	8.67	28.11	9.67	29.11	10.67	30.11
9/13/2001	15	28.89	17	30.89	18	31.89	19	32.89
9/14/2001	16.67	30	18.67	32	19.67	33	20.67	34
9/15/2001	16.11	30.56	18.11	32.56	19.11	33.56	20.11	34.56
9/16/2001	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
9/17/2001	11.67	30	13.67	32	14.67	33	15.67	34
9/18/2001	12.78	31.11	14.78	33.11	15.78	34.11	16.78	35.11
9/19/2001	17.78	31.11	19.78	33.11	20.78	34.11	21.78	35.11
9/20/2001	15	32.22	17	34.22	18	35.22	19	36.22
9/21/2001	17.78	32.78	19.78	34.78	20.78	35.78	21.78	36.78
9/22/2001	13.89	32.22	15.89	34.22	16.89	35.22	17.89	36.22
9/23/2001	16.11	29.44	18.11	31.44	19.11	32.44	20.11	33.44
9/24/2001	14.44	33.33	16.44	35.33	17.44	36.33	18.44	37.33
9/25/2001	11.67	23.89	13.67	25.89	14.67	26.89	15.67	27.89
9/26/2001	10	27.78	12	29.78	13	30.78	14	31.78
9/27/2001	12.22	27.78	14.22	29.78	15.22	30.78	16.22	31.78
9/28/2001	10.56	27.22	12.56	29.22	13.56	30.22	14.56	31.22
9/29/2001	12.22	31.11	14.22	33.11	15.22	34.11	16.22	35.11
9/30/2001	20.56	35	22.56	37	23.56	38	24.56	39
10/1/2001	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
10/2/2001	20.56	35	22.56	37	23.56	38	24.56	39
10/3/2001	20	33.89	22	35.89	23	36.89	24	37.89
10/4/2001	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67
10/5/2001	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
10/6/2001	8.33	23.89	10.33	25.89	11.33	26.89	12.33	27.89
10/7/2001	8.33	24.44	10.33	26.44	11.33	27.44	12.33	28.44
10/8/2001	10	22.22	12	24.22	13	25.22	14	26.22
10/9/2001	11.11	25	13.11	27	14.11	28	15.11	29
10/10/2001	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
10/11/2001	11.67	23.33	13.67	25.33	14.67	26.33	15.67	27.33
10/12/2001	15	27.78	17	29.78	18	30.78	19	31.78
10/13/2001	15	31.11	17	33.11	18	34.11	19	35.11
10/14/2001	17.78	31.11	19.78	33.11	20.78	34.11	21.78	35.11
10/15/2001	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
10/16/2001	13.89	28.89	15.89	30.89	16.89	31.89	17.89	32.89
10/17/2001	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
10/18/2001	12.22	28.33	14.22	30.33	15.22	31.33	16.22	32.33
10/19/2001	12.22	27.78	14.22	29.78	15.22	30.78	16.22	31.78
10/20/2001	11.11	26.67	13.11	28.67	14.11	29.67	15.11	30.67
10/21/2001	10	25	12	27	13	28	14	29

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/22/2001	10	23.33	12	25.33	13	26.33	14	27.33
10/23/2001	8.33	23.89	10.33	25.89	11.33	26.89	12.33	27.89
10/24/2001	10	26.67	12	28.67	13	29.67	14	30.67
10/25/2001	11.67	27.22	13.67	29.22	14.67	30.22	15.67	31.22
10/26/2001	13.89	27.22	15.89	29.22	16.89	30.22	17.89	31.22
10/27/2001	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
10/28/2001	6.67	20.56	8.67	22.56	9.67	23.56	10.67	24.56
10/29/2001	6.67	18.33	8.67	20.33	9.67	21.33	10.67	22.33
10/30/2001	6.11	11.67	8.11	13.67	9.11	14.67	10.11	15.67
10/31/2001	4.44	16.11	6.44	18.11	7.44	19.11	8.44	20.11
11/1/2001	5.56	19.44	7.56	21.44	8.56	22.44	9.56	23.44
11/2/2001	7.22	21.11	9.22	23.11	10.22	24.11	11.22	25.11
11/3/2001	7.78	23.33	9.78	25.33	10.78	26.33	11.78	27.33
11/4/2001	10	25.56	12	27.56	13	28.56	14	29.56
11/5/2001	11.67	23.33	13.67	25.33	14.67	26.33	15.67	27.33
11/6/2001	7.78	20.56	9.78	22.56	10.78	23.56	11.78	24.56
11/7/2001	6.11	21.67	8.11	23.67	9.11	24.67	10.11	25.67
11/8/2001	11.67	24.44	13.67	26.44	14.67	27.44	15.67	28.44
11/9/2001	10.56	22.22	12.56	24.22	13.56	25.22	14.56	26.22
11/10/2001	10.56	21.11	12.56	23.11	13.56	24.11	14.56	25.11
11/11/2001	8.33	13.33	10.33	15.33	11.33	16.33	12.33	17.33
11/12/2001	2.78	15.56	4.78	17.56	5.78	18.56	6.78	19.56
11/13/2001	3.33	12.22	5.33	14.22	6.33	15.22	7.33	16.22
11/14/2001	5	17.78	7	19.78	8	20.78	9	21.78
11/15/2001	3.89	18.89	5.89	20.89	6.89	21.89	7.89	22.89
11/16/2001	3.89	17.22	5.89	19.22	6.89	20.22	7.89	21.22
11/17/2001	5.56	16.11	7.56	18.11	8.56	19.11	9.56	20.11
11/18/2001	2.22	17.78	4.22	19.78	5.22	20.78	6.22	21.78
11/19/2001	7.22	20	9.22	22	10.22	23	11.22	24
11/20/2001	6.11	13.33	8.11	15.33	9.11	16.33	10.11	17.33
11/21/2001	6.67	11.67	8.67	13.67	9.67	14.67	10.67	15.67
11/22/2001	4.44	10.56	6.44	12.56	7.44	13.56	8.44	14.56
11/23/2001	1.67	11.11	3.67	13.11	4.67	14.11	5.67	15.11
11/24/2001	4.321	9.44	6.321	11.44	7.321	12.44	8.321	13.44
11/25/2001	0	3.89	2	5.89	3	6.89	4	7.89
11/26/2001	-1.11	7.78	0.89	9.78	1.89	10.78	2.89	11.78
11/27/2001	-0.56	8.33	1.44	10.33	2.44	11.33	3.44	12.33
11/28/2001	0	5.56	2	7.56	3	8.56	4	9.56
11/29/2001	0	1.67	2	3.67	3	4.67	4	5.67
11/30/2001	0.56	8.33	2.56	10.33	3.56	11.33	4.56	12.33
12/1/2001	0	3.33	2	5.33	3	6.33	4	7.33
12/2/2001	0.56	7.22	2.56	9.22	3.56	10.22	4.56	11.22
12/3/2001	-2.22	6.67	-0.22	8.67	0.78	9.67	1.78	10.67
12/4/2001	-2.22	11.11	-0.22	13.11	0.78	14.11	1.78	15.11
12/5/2001	0	2.22	2	4.22	3	5.22	4	6.22
12/6/2001	0.56	10	2.56	12	3.56	13	4.56	14
12/7/2001	0.56	16.11	2.56	18.11	3.56	19.11	4.56	20.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/8/2001	3.89	13.89	5.89	15.89	6.89	16.89	7.89	17.89
12/9/2001	0	5.56	2	7.56	3	8.56	4	9.56
12/10/2001	-1.67	7.22	0.33	9.22	1.33	10.22	2.33	11.22
12/11/2001	-3.33	8.89	-1.33	10.89	-0.33	11.89	0.67	12.89
12/12/2001	-2.22	10	-0.22	12	0.78	13	1.78	14
12/13/2001	0	11.11	2	13.11	3	14.11	4	15.11
12/14/2001	0	2.22	2	4.22	3	5.22	4	6.22
12/15/2001	-5.56	7.22	-3.56	9.22	-2.56	10.22	-1.56	11.22
12/16/2001	-2.22	8.33	-0.22	10.33	0.78	11.33	1.78	12.33
12/17/2001	0	3.89	2	5.89	3	6.89	4	7.89
12/18/2001	0.56	6.11	2.56	8.11	3.56	9.11	4.56	10.11
12/19/2001	2.22	10.56	4.22	12.56	5.22	13.56	6.22	14.56
12/20/2001	0	6.67	2	8.67	3	9.67	4	10.67
12/21/2001	-1.67	5.56	0.33	7.56	1.33	8.56	2.33	9.56
12/22/2001	0	3.33	2	5.33	3	6.33	4	7.33
12/23/2001	0	8.33	2	10.33	3	11.33	4	12.33
12/24/2001	2.22	11.67	4.22	13.67	5.22	14.67	6.22	15.67
12/25/2001	2.78	9.44	4.78	11.44	5.78	12.44	6.78	13.44
12/26/2001	4.44	11.11	6.44	13.11	7.44	14.11	8.44	15.11
12/27/2001	3.89	12.78	5.89	14.78	6.89	15.78	7.89	16.78
12/28/2001	3.89	6.11	5.89	8.11	6.89	9.11	7.89	10.11
12/29/2001	4.44	8.33	6.44	10.33	7.44	11.33	8.44	12.33
12/30/2001	4.44	8.89	6.44	10.89	7.44	11.89	8.44	12.89
12/31/2001	5	12.22	7	14.22	8	15.22	9	16.22
1/1/2002	4.44	11.67	6.44	13.67	7.44	14.67	8.44	15.67
1/2/2002	3.33	7.78	5.33	9.78	6.33	10.78	7.33	11.78
1/3/2002	2.78	10.56	4.78	12.56	5.78	13.56	6.78	14.56
1/4/2002	2.78	11.67	4.78	13.67	5.78	14.67	6.78	15.67
1/5/2002	3.33	11.11	5.33	13.11	6.33	14.11	7.33	15.11
1/6/2002	6.11	11.67	8.11	13.67	9.11	14.67	10.11	15.67
1/7/2002	4.44	15	6.44	17	7.44	18	8.44	19
1/8/2002	3.89	12.78	5.89	14.78	6.89	15.78	7.89	16.78
1/9/2002	1.11	13.33	3.11	15.33	4.11	16.33	5.11	17.33
1/10/2002	6.67	17.78	8.67	19.78	9.67	20.78	10.67	21.78
1/11/2002	3.89	18.89	5.89	20.89	6.89	21.89	7.89	22.89
1/12/2002	5	17.22	7	19.22	8	20.22	9	21.22
1/13/2002	4.44	17.78	6.44	19.78	7.44	20.78	8.44	21.78
1/14/2002	-1.11	13.33	0.89	15.33	1.89	16.33	2.89	17.33
1/15/2002	-2.22	9.44	-0.22	11.44	0.78	12.44	1.78	13.44
1/16/2002	0	8.89	2	10.89	3	11.89	4	12.89
1/17/2002	-0.56	7.78	1.44	9.78	2.44	10.78	3.44	11.78
1/18/2002	-1.67	12.22	0.33	14.22	1.33	15.22	2.33	16.22
1/19/2002	-2.78	7.78	-0.78	9.78	0.22	10.78	1.22	11.78
1/20/2002	-2.78	11.67	-0.78	13.67	0.22	14.67	1.22	15.67
1/21/2002	0.56	6.67	2.56	8.67	3.56	9.67	4.56	10.67
1/22/2002	-3.89	5.56	-1.89	7.56	-0.89	8.56	0.11	9.56
1/23/2002	-2.78	8.33	-0.78	10.33	0.22	11.33	1.22	12.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/24/2002	-3.33	13.33	-1.33	15.33	-0.33	16.33	0.67	17.33
1/25/2002	0	12.78	2	14.78	3	15.78	4	16.78
1/26/2002	0	6.11	2	8.11	3	9.11	4	10.11
1/27/2002	-5	1.67	-3	3.67	-2	4.67	-1	5.67
1/28/2002	-5.56	1.67	-3.56	3.67	-2.56	4.67	-1.56	5.67
1/29/2002	-7.78	4.44	-5.78	6.44	-4.78	7.44	-3.78	8.44
1/30/2002	-4.44	3.853	-2.44	5.853	-1.44	6.853	-0.44	7.853
1/31/2002	-6.67	9.44	-4.67	11.44	-3.67	12.44	-2.67	13.44
2/1/2002	-1.11	11.67	0.89	13.67	1.89	14.67	2.89	15.67
2/2/2002	0	13.33	2	15.33	3	16.33	4	17.33
2/3/2002	-1.11	14.44	0.89	16.44	1.89	17.44	2.89	18.44
2/4/2002	-2.78	16.11	-0.78	18.11	0.22	19.11	1.22	20.11
2/5/2002	1.11	16.67	3.11	18.67	4.11	19.67	5.11	20.67
2/6/2002	1.11	16.11	3.11	18.11	4.11	19.11	5.11	20.11
2/7/2002	1.67	10.56	3.67	12.56	4.67	13.56	5.67	14.56
2/8/2002	0.56	12.78	2.56	14.78	3.56	15.78	4.56	16.78
2/9/2002	5.56	16.11	7.56	18.11	8.56	19.11	9.56	20.11
2/10/2002	0	20	2	22	3	23	4	24
2/11/2002	5.56	20	7.56	22	8.56	23	9.56	24
2/12/2002	5	18.89	7	20.89	8	21.89	9	22.89
2/13/2002	3.89	13.33	5.89	15.33	6.89	16.33	7.89	17.33
2/14/2002	5	17.78	7	19.78	8	20.78	9	21.78
2/15/2002	4.44	17.78	6.44	19.78	7.44	20.78	8.44	21.78
2/16/2002	3.33	15	5.33	17	6.33	18	7.33	19
2/17/2002	0	5	2	7	3	8	4	9
2/18/2002	0	8.33	2	10.33	3	11.33	4	12.33
2/19/2002	2.78	6.67	4.78	8.67	5.78	9.67	6.78	10.67
2/20/2002	4.44	14.44	6.44	16.44	7.44	17.44	8.44	18.44
2/21/2002	5	21.67	7	23.67	8	24.67	9	25.67
2/22/2002	7.22	24.44	9.22	26.44	10.22	27.44	11.22	28.44
2/23/2002	2.78	12.22	4.78	14.22	5.78	15.22	6.78	16.22
2/24/2002	3.89	20	5.89	22	6.89	23	7.89	24
2/25/2002	9.44	25	11.44	27	12.44	28	13.44	29
2/26/2002	10	22.22	12	24.22	13	25.22	14	26.22
2/27/2002	11.11	22.22	13.11	24.22	14.11	25.22	15.11	26.22
2/28/2002	6.11	19.44	8.11	21.44	9.11	22.44	10.11	23.44
3/1/2002	2.22	13.89	4.22	15.89	5.22	16.89	6.22	17.89
3/2/2002	1.67	16.67	3.67	18.67	4.67	19.67	5.67	20.67
3/3/2002	2.78	16.67	4.78	18.67	5.78	19.67	6.78	20.67
3/4/2002	2.78	16.67	4.78	18.67	5.78	19.67	6.78	20.67
3/5/2002	3.89	18.33	5.89	20.33	6.89	21.33	7.89	22.33
3/6/2002	0.56	8.33	2.56	10.33	3.56	11.33	4.56	12.33
3/7/2002	0	4.44	2	6.44	3	7.44	4	8.44
3/8/2002	-2.78	10	-0.78	12	0.22	13	1.22	14
3/9/2002	0.56	13.89	2.56	15.89	3.56	16.89	4.56	17.89
3/10/2002	0	11.11	2	13.11	3	14.11	4	15.11
3/11/2002	3.761	16.67	5.761	18.67	6.761	19.67	7.761	20.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/12/2002	4.44	15	6.44	17	7.44	18	8.44	19
3/13/2002	-1.11	8.33	0.89	10.33	1.89	11.33	2.89	12.33
3/14/2002	-2.22	7.78	-0.22	9.78	0.78	10.78	1.78	11.78
3/15/2002	-1.67	5	0.33	7	1.33	8	2.33	9
3/16/2002	-1.67	1.11	0.33	3.11	1.33	4.11	2.33	5.11
3/17/2002	-3.33	4.44	-1.33	6.44	-0.33	7.44	0.67	8.44
3/18/2002	-0.56	11.67	1.44	13.67	2.44	14.67	3.44	15.67
3/19/2002	-0.56	19.44	1.44	21.44	2.44	22.44	3.44	23.44
3/20/2002	6.11	21.67	8.11	23.67	9.11	24.67	10.11	25.67
3/21/2002	7.22	22.78	9.22	24.78	10.22	25.78	11.22	26.78
3/22/2002	3.33	16.11	5.33	18.11	6.33	19.11	7.33	20.11
3/23/2002	0	5	2	7	3	8	4	9
3/24/2002	1.11	10	3.11	12	4.11	13	5.11	14
3/25/2002	1.11	13.33	3.11	15.33	4.11	16.33	5.11	17.33
3/26/2002	4.44	18.89	6.44	20.89	7.44	21.89	8.44	22.89
3/27/2002	6.67	21.67	8.67	23.67	9.67	24.67	10.67	25.67
3/28/2002	8.89	22.78	10.89	24.78	11.89	25.78	12.89	26.78
3/29/2002	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
3/30/2002	8.89	27.78	10.89	29.78	11.89	30.78	12.89	31.78
3/31/2002	13.33	26.11	15.33	28.11	16.33	29.11	17.33	30.11
4/1/2002	11.11	28.89	13.11	30.89	14.11	31.89	15.11	32.89
4/2/2002	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
4/3/2002	12.22	25.56	14.22	27.56	15.22	28.56	16.22	29.56
4/4/2002	9.44	23.89	11.44	25.89	12.44	26.89	13.44	27.89
4/5/2002	6.11	17.78	8.11	19.78	9.11	20.78	10.11	21.78
4/6/2002	4.44	18.89	6.44	20.89	7.44	21.89	8.44	22.89
4/7/2002	2.78	21.67	4.78	23.67	5.78	24.67	6.78	25.67
4/8/2002	5	22.22	7	24.22	8	25.22	9	26.22
4/9/2002	6.67	16.67	8.67	18.67	9.67	19.67	10.67	20.67
4/10/2002	6.11	20	8.11	22	9.11	23	10.11	24
4/11/2002	8.33	21.67	10.33	23.67	11.33	24.67	12.33	25.67
4/12/2002	6.11	26.11	8.11	28.11	9.11	29.11	10.11	30.11
4/13/2002	8.89	28.33	10.89	30.33	11.89	31.33	12.89	32.33
4/14/2002	11.67	25.56	13.67	27.56	14.67	28.56	15.67	29.56
4/15/2002	0	11.11	2	13.11	3	14.11	4	15.11
4/16/2002	0	11.11	2	13.11	3	14.11	4	15.11
4/17/2002	0	5.56	2	7.56	3	8.56	4	9.56
4/18/2002	-1.11	8.33	0.89	10.33	1.89	11.33	2.89	12.33
4/19/2002	-1.67	13.33	0.33	15.33	1.33	16.33	2.33	17.33
4/20/2002	0	15	2	17	3	18	4	19
4/21/2002	5	20	7	22	8	23	9	24
4/22/2002	8.33	23.89	10.33	25.89	11.33	26.89	12.33	27.89
4/23/2002	9.44	25.56	11.44	27.56	12.44	28.56	13.44	29.56
4/24/2002	9.44	22.22	11.44	24.22	12.44	25.22	13.44	26.22
4/25/2002	7.22	21.11	9.22	23.11	10.22	24.11	11.22	25.11
4/26/2002	5.56	10.56	7.56	12.56	8.56	13.56	9.56	14.56
4/27/2002	3.89	6.11	5.89	8.11	6.89	9.11	7.89	10.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/28/2002	0.56	12.22	2.56	14.22	3.56	15.22	4.56	16.22
4/29/2002	3.89	7.78	5.89	9.78	6.89	10.78	7.89	11.78
4/30/2002	2.22	7.22	4.22	9.22	5.22	10.22	6.22	11.22
5/1/2002	1.11	15.56	3.11	17.56	4.11	18.56	5.11	19.56
5/2/2002	5	20	7	22	8	23	9	24
5/3/2002	6.11	21.67	8.11	23.67	9.11	24.67	10.11	25.67
5/4/2002	7.78	23.89	9.78	25.89	10.78	26.89	11.78	27.89
5/5/2002	9.44	25	11.44	27	12.44	28	13.44	29
5/6/2002	10	23.33	12	25.33	13	26.33	14	27.33
5/7/2002	8.89	21.67	10.89	23.67	11.89	24.67	12.89	25.67
5/8/2002	8.89	21.67	10.89	23.67	11.89	24.67	12.89	25.67
5/9/2002	6.67	21.11	8.67	23.11	9.67	24.11	10.67	25.11
5/10/2002	3.89	16.11	5.89	18.11	6.89	19.11	7.89	20.11
5/11/2002	3.89	24.44	5.89	26.44	6.89	27.44	7.89	28.44
5/12/2002	9.44	25	11.44	27	12.44	28	13.44	29
5/13/2002	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
5/14/2002	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
5/15/2002	9.44	26.11	11.44	28.11	12.44	29.11	13.44	30.11
5/16/2002	8.33	27.22	10.33	29.22	11.33	30.22	12.33	31.22
5/17/2002	11.11	27.78	13.11	29.78	14.11	30.78	15.11	31.78
5/18/2002	10	26.11	12	28.11	13	29.11	14	30.11
5/19/2002	5	17.78	7	19.78	8	20.78	9	21.78
5/20/2002	0.56	7.78	2.56	9.78	3.56	10.78	4.56	11.78
5/21/2002	0	10.56	2	12.56	3	13.56	4	14.56
5/22/2002	2.22	18.33	4.22	20.33	5.22	21.33	6.22	22.33
5/23/2002	3.89	22.22	5.89	24.22	6.89	25.22	7.89	26.22
5/24/2002	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
5/25/2002	12.22	25.56	14.22	27.56	15.22	28.56	16.22	29.56
5/26/2002	12.78	26.67	14.78	28.67	15.78	29.67	16.78	30.67
5/27/2002	9.44	25	11.44	27	12.44	28	13.44	29
5/28/2002	10	26.67	12	28.67	13	29.67	14	30.67
5/29/2002	11.11	31.11	13.11	33.11	14.11	34.11	15.11	35.11
5/30/2002	18.33	31.67	20.33	33.67	21.33	34.67	22.33	35.67
5/31/2002	17.78	32.78	19.78	34.78	20.78	35.78	21.78	36.78
6/1/2002	14.44	26.11	16.44	28.11	17.44	29.11	18.44	30.11
6/2/2002	12.22	25	14.22	27	15.22	28	16.22	29
6/3/2002	8.89	27.78	10.89	29.78	11.89	30.78	12.89	31.78
6/4/2002	11.11	31.11	13.11	33.11	14.11	34.11	15.11	35.11
6/5/2002	19.44	35.56	21.44	37.56	22.44	38.56	23.44	39.56
6/6/2002	15	28.89	17	30.89	18	31.89	19	32.89
6/7/2002	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
6/8/2002	10	24.44	12	26.44	13	27.44	14	28.44
6/9/2002	8.89	23.89	10.89	25.89	11.89	26.89	12.89	27.89
6/10/2002	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
6/11/2002	16.67	29.44	18.67	31.44	19.67	32.44	20.67	33.44
6/12/2002	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
6/13/2002	15.56	30.56	17.56	32.56	18.56	33.56	19.56	34.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/14/2002	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
6/15/2002	15	30	17	32	18	33	19	34
6/16/2002	15	30.56	17	32.56	18	33.56	19	34.56
6/17/2002	13.89	30.56	15.89	32.56	16.89	33.56	17.89	34.56
6/18/2002	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
6/19/2002	11.67	30	13.67	32	14.67	33	15.67	34
6/20/2002	15	29.44	17	31.44	18	32.44	19	33.44
6/21/2002	13.33	27.22	15.33	29.22	16.33	30.22	17.33	31.22
6/22/2002	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
6/23/2002	13.33	28.89	15.33	30.89	16.33	31.89	17.33	32.89
6/24/2002	13.89	31.11	15.89	33.11	16.89	34.11	17.89	35.11
6/25/2002	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
6/26/2002	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
6/27/2002	18.33	31.11	20.33	33.11	21.33	34.11	22.33	35.11
6/28/2002	15	30.56	17	32.56	18	33.56	19	34.56
6/29/2002	15	32.22	17	34.22	18	35.22	19	36.22
6/30/2002	16.67	34.44	18.67	36.44	19.67	37.44	20.67	38.44
7/1/2002	20	35	22	37	23	38	24	39
7/2/2002	20.56	32.78	22.56	34.78	23.56	35.78	24.56	36.78
7/3/2002	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
7/4/2002	15	32.22	17	34.22	18	35.22	19	36.22
7/5/2002	13.33	31.67	15.33	33.67	16.33	34.67	17.33	35.67
7/6/2002	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
7/7/2002	15	31.11	17	33.11	18	34.11	19	35.11
7/8/2002	15	35.56	17	37.56	18	38.56	19	39.56
7/9/2002	14.44	38.33	16.44	40.33	17.44	41.33	18.44	42.33
7/10/2002	21.67	40	23.67	42	24.67	43	25.67	44
7/11/2002	22.22	38.33	24.22	40.33	25.22	41.33	26.22	42.33
7/12/2002	21.67	36.67	23.67	38.67	24.67	39.67	25.67	40.67
7/13/2002	24.44	36.11	26.44	38.11	27.44	39.11	28.44	40.11
7/14/2002	22.22	35	24.22	37	25.22	38	26.22	39
7/15/2002	20.56	33.89	22.56	35.89	23.56	36.89	24.56	37.89
7/16/2002	20	33.33	22	35.33	23	36.33	24	37.33
7/17/2002	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
7/18/2002	15.56	30.56	17.56	32.56	18.56	33.56	19.56	34.56
7/19/2002	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
7/20/2002	15.56	35	17.56	37	18.56	38	19.56	39
7/21/2002	20	32.78	22	34.78	23	35.78	24	36.78
7/22/2002	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
7/23/2002	13.33	32.78	15.33	34.78	16.33	35.78	17.33	36.78
7/24/2002	15	34.44	17	36.44	18	37.44	19	38.44
7/25/2002	18.89	33.89	20.89	35.89	21.89	36.89	22.89	37.89
7/26/2002	18.89	33.89	20.89	35.89	21.89	36.89	22.89	37.89
7/27/2002	15.56	34.44	17.56	36.44	18.56	37.44	19.56	38.44
7/28/2002	15.56	33.89	17.56	35.89	18.56	36.89	19.56	37.89
7/29/2002	16.11	35.56	18.11	37.56	19.11	38.56	20.11	39.56
7/30/2002	17.22	34.44	19.22	36.44	20.22	37.44	21.22	38.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/31/2002	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
8/1/2002	17.22	33.33	19.22	35.33	20.22	36.33	21.22	37.33
8/2/2002	16.67	32.78	18.67	34.78	19.67	35.78	20.67	36.78
8/3/2002	16.67	29.44	18.67	31.44	19.67	32.44	20.67	33.44
8/4/2002	13.33	28.89	15.33	30.89	16.33	31.89	17.33	32.89
8/5/2002	11.11	27.22	13.11	29.22	14.11	30.22	15.11	31.22
8/6/2002	10	27.22	12	29.22	13	30.22	14	31.22
8/7/2002	10.56	30.56	12.56	32.56	13.56	33.56	14.56	34.56
8/8/2002	10.56	33.89	12.56	35.89	13.56	36.89	14.56	37.89
8/9/2002	13.89	36.67	15.89	38.67	16.89	39.67	17.89	40.67
8/10/2002	20.56	35.56	22.56	37.56	23.56	38.56	24.56	39.56
8/11/2002	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
8/12/2002	21.67	37.22	23.67	39.22	24.67	40.22	25.67	41.22
8/13/2002	20.56	37.22	22.56	39.22	23.56	40.22	24.56	41.22
8/14/2002	21.11	38.33	23.11	40.33	24.11	41.33	25.11	42.33
8/15/2002	21.67	36.67	23.67	38.67	24.67	39.67	25.67	40.67
8/16/2002	22.22	36.67	24.22	38.67	25.22	39.67	26.22	40.67
8/17/2002	18.89	35.56	20.89	37.56	21.89	38.56	22.89	39.56
8/18/2002	18.89	35	20.89	37	21.89	38	22.89	39
8/19/2002	15.56	32.22	17.56	34.22	18.56	35.22	19.56	36.22
8/20/2002	15.56	28.33	17.56	30.33	18.56	31.33	19.56	32.33
8/21/2002	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
8/22/2002	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
8/23/2002	12.22	28.33	14.22	30.33	15.22	31.33	16.22	32.33
8/24/2002	11.11	30.56	13.11	32.56	14.11	33.56	15.11	34.56
8/25/2002	12.22	31.11	14.22	33.11	15.22	34.11	16.22	35.11
8/26/2002	16.67	31.67	18.67	33.67	19.67	34.67	20.67	35.67
8/27/2002	14.44	33.89	16.44	35.89	17.44	36.89	18.44	37.89
8/28/2002	17.22	33.33	19.22	35.33	20.22	36.33	21.22	37.33
8/29/2002	18.89	31.11	20.89	33.11	21.89	34.11	22.89	35.11
8/30/2002	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
8/31/2002	17.78	32.78	19.78	34.78	20.78	35.78	21.78	36.78
9/1/2002	20	35	22	37	23	38	24	39
9/2/2002	20.56	36.11	22.56	38.11	23.56	39.11	24.56	40.11
9/3/2002	17.78	32.78	19.78	34.78	20.78	35.78	21.78	36.78
9/4/2002	15.56	27.78	17.56	29.78	18.56	30.78	19.56	31.78
9/5/2002	10.56	27.22	12.56	29.22	13.56	30.22	14.56	31.22
9/6/2002	8.33	20.56	10.33	22.56	11.33	23.56	12.33	24.56
9/7/2002	5	22.78	7	24.78	8	25.78	9	26.78
9/8/2002	6.67	25	8.67	27	9.67	28	10.67	29
9/9/2002	8.89	31.67	10.89	33.67	11.89	34.67	12.89	35.67
9/10/2002	11.11	32.78	13.11	34.78	14.11	35.78	15.11	36.78
9/11/2002	18.33	33.33	20.33	35.33	21.33	36.33	22.33	37.33
9/12/2002	12.78	32.78	14.78	34.78	15.78	35.78	16.78	36.78
9/13/2002	12.78	33.89	14.78	35.89	15.78	36.89	16.78	37.89
9/14/2002	18.33	34.44	20.33	36.44	21.33	37.44	22.33	38.44
9/15/2002	12.78	30.56	14.78	32.56	15.78	33.56	16.78	34.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/16/2002	8.33	26.67	10.33	28.67	11.33	29.67	12.33	30.67
9/17/2002	10	27.78	12	29.78	13	30.78	14	31.78
9/18/2002	10	30.56	12	32.56	13	33.56	14	34.56
9/19/2002	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
9/20/2002	15.56	33.33	17.56	35.33	18.56	36.33	19.56	37.33
9/21/2002	18.89	34.44	20.89	36.44	21.89	37.44	22.89	38.44
9/22/2002	20.56	35.56	22.56	37.56	23.56	38.56	24.56	39.56
9/23/2002	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
9/24/2002	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
9/25/2002	18.89	33.89	20.89	35.89	21.89	36.89	22.89	37.89
9/26/2002	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
9/27/2002	11.11	24.44	13.11	26.44	14.11	27.44	15.11	28.44
9/28/2002	8.33	21.67	10.33	23.67	11.33	24.67	12.33	25.67
9/29/2002	7.78	20	9.78	22	10.78	23	11.78	24
9/30/2002	6.11	21.67	8.11	23.67	9.11	24.67	10.11	25.67
10/1/2002	5	16.11	7	18.11	8	19.11	9	20.11
10/2/2002	7.22	18.89	9.22	20.89	10.22	21.89	11.22	22.89
10/3/2002	10	23.33	12	25.33	13	26.33	14	27.33
10/4/2002	7.78	23.33	9.78	25.33	10.78	26.33	11.78	27.33
10/5/2002	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
10/6/2002	17.78	30	19.78	32	20.78	33	21.78	34
10/7/2002	15.56	31.11	17.56	33.11	18.56	34.11	19.56	35.11
10/8/2002	15	31.11	17	33.11	18	34.11	19	35.11
10/9/2002	14.44	30.56	16.44	32.56	17.44	33.56	18.44	34.56
10/10/2002	11.11	23.89	13.11	25.89	14.11	26.89	15.11	27.89
10/11/2002	7.78	26.11	9.78	28.11	10.78	29.11	11.78	30.11
10/12/2002	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
10/13/2002	15.56	28.89	17.56	30.89	18.56	31.89	19.56	32.89
10/14/2002	12.22	28.89	14.22	30.89	15.22	31.89	16.22	32.89
10/15/2002	15.56	27.22	17.56	29.22	18.56	30.22	19.56	31.22
10/16/2002	7.22	27.22	9.22	29.22	10.22	30.22	11.22	31.22
10/17/2002	8.89	26.67	10.89	28.67	11.89	29.67	12.89	30.67
10/18/2002	5.56	22.78	7.56	24.78	8.56	25.78	9.56	26.78
10/19/2002	7.22	22.78	9.22	24.78	10.22	25.78	11.22	26.78
10/20/2002	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
10/21/2002	8.89	22.22	10.89	24.22	11.89	25.22	12.89	26.22
10/22/2002	6.67	21.67	8.67	23.67	9.67	24.67	10.67	25.67
10/23/2002	6.67	20.56	8.67	22.56	9.67	23.56	10.67	24.56
10/24/2002	7.78	18.89	9.78	20.89	10.78	21.89	11.78	22.89
10/25/2002	3.89	20	5.89	22	6.89	23	7.89	24
10/26/2002	1.67	20	3.67	22	4.67	23	5.67	24
10/27/2002	2.78	21.67	4.78	23.67	5.78	24.67	6.78	25.67
10/28/2002	4.44	21.11	6.44	23.11	7.44	24.11	8.44	25.11
10/29/2002	5.56	20	7.56	22	8.56	23	9.56	24
10/30/2002	6.11	18.89	8.11	20.89	9.11	21.89	10.11	22.89
10/31/2002	6.67	20	8.67	22	9.67	23	10.67	24
11/1/2002	5	18.89	7	20.89	8	21.89	9	22.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/2/2002	4.44	20	6.44	22	7.44	23	8.44	24
11/3/2002	4.44	21.11	6.44	23.11	7.44	24.11	8.44	25.11
11/4/2002	6.67	21.11	8.67	23.11	9.67	24.11	10.67	25.11
11/5/2002	3.33	21.11	5.33	23.11	6.33	24.11	7.33	25.11
11/6/2002	8.33	21.67	10.33	23.67	11.33	24.67	12.33	25.67
11/7/2002	6.11	15.56	8.11	17.56	9.11	18.56	10.11	19.56
11/8/2002	8.33	10.56	10.33	12.56	11.33	13.56	12.33	14.56
11/9/2002	3.89	11.11	5.89	13.11	6.89	14.11	7.89	15.11
11/10/2002	3.89	6.11	5.89	8.11	6.89	9.11	7.89	10.11
11/11/2002	5	13.89	7	15.89	8	16.89	9	17.89
11/12/2002	7.78	19.44	9.78	21.44	10.78	22.44	11.78	23.44
11/13/2002	7.78	17.78	9.78	19.78	10.78	20.78	11.78	21.78
11/14/2002	7.78	20	9.78	22	10.78	23	11.78	24
11/15/2002	8.89	19.44	10.89	21.44	11.89	22.44	12.89	23.44
11/16/2002	7.78	20	9.78	22	10.78	23	11.78	24
11/17/2002	3.89	18.33	5.89	20.33	6.89	21.33	7.89	22.33
11/18/2002	7.78	18.89	9.78	20.89	10.78	21.89	11.78	22.89
11/19/2002	7.22	24.44	9.22	26.44	10.22	27.44	11.22	28.44
11/20/2002	12.78	25.56	14.78	27.56	15.78	28.56	16.78	29.56
11/21/2002	13.33	23.89	15.33	25.89	16.33	26.89	17.33	27.89
11/22/2002	8.89	20	10.89	22	11.89	23	12.89	24
11/23/2002	5.56	18.33	7.56	20.33	8.56	21.33	9.56	22.33
11/24/2002	4.44	17.78	6.44	19.78	7.44	20.78	8.44	21.78
11/25/2002	7.78	12.78	9.78	14.78	10.78	15.78	11.78	16.78
11/26/2002	5	18.33	7	20.33	8	21.33	9	22.33
11/27/2002	5.56	19.44	7.56	21.44	8.56	22.44	9.56	23.44
11/28/2002	6.67	20.56	8.67	22.56	9.67	23.56	10.67	24.56
11/29/2002	3.89	17.78	5.89	19.78	6.89	20.78	7.89	21.78
11/30/2002	1.11	9.44	3.11	11.44	4.11	12.44	5.11	13.44
12/1/2002	0.56	12.78	2.56	14.78	3.56	15.78	4.56	16.78
12/2/2002	0.56	14.44	2.56	16.44	3.56	17.44	4.56	18.44
12/3/2002	0.56	14.44	2.56	16.44	3.56	17.44	4.56	18.44
12/4/2002	3.33	17.22	5.33	19.22	6.33	20.22	7.33	21.22
12/5/2002	2.78	15.56	4.78	17.56	5.78	18.56	6.78	19.56
12/6/2002	2.78	16.11	4.78	18.11	5.78	19.11	6.78	20.11
12/7/2002	3.89	15.56	5.89	17.56	6.89	18.56	7.89	19.56
12/8/2002	0	14.44	2	16.44	3	17.44	4	18.44
12/9/2002	2.78	11.67	4.78	13.67	5.78	14.67	6.78	15.67
12/10/2002	1.11	7.22	3.11	9.22	4.11	10.22	5.11	11.22
12/11/2002	2.78	12.78	4.78	14.78	5.78	15.78	6.78	16.78
12/12/2002	3.89	13.89	5.89	15.89	6.89	16.89	7.89	17.89
12/13/2002	4.44	7.78	6.44	9.78	7.44	10.78	8.44	11.78
12/14/2002	0	12.78	2	14.78	3	15.78	4	16.78
12/15/2002	1.67	7.78	3.67	9.78	4.67	10.78	5.67	11.78
12/16/2002	4.321	5.56	6.321	7.56	7.321	8.56	8.321	9.56
12/17/2002	0	1.67	2	3.67	3	4.67	4	5.67
12/18/2002	-1.67	6.67	0.33	8.67	1.33	9.67	2.33	10.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/19/2002	-1.11	6.11	0.89	8.11	1.89	9.11	2.89	10.11
12/20/2002	0	5.56	2	7.56	3	8.56	4	9.56
12/21/2002	0	4.44	2	6.44	3	7.44	4	8.44
12/22/2002	-1.67	6.11	0.33	8.11	1.33	9.11	2.33	10.11
12/23/2002	-1.67	6.67	0.33	8.67	1.33	9.67	2.33	10.67
12/24/2002	-1.67	6.11	0.33	8.11	1.33	9.11	2.33	10.11
12/25/2002	-0.56	7.78	1.44	9.78	2.44	10.78	3.44	11.78
12/26/2002	1.67	7.22	3.67	9.22	4.67	10.22	5.67	11.22
12/27/2002	1.67	8.89	3.67	10.89	4.67	11.89	5.67	12.89
12/28/2002	0	8.89	2	10.89	3	11.89	4	12.89
12/29/2002	0	6.67	2	8.67	3	9.67	4	10.67
12/30/2002	0	5.56	2	7.56	3	8.56	4	9.56
12/31/2002	0	5	2	7	3	8	4	9
1/1/2003	-1.67	10	0.33	12	1.33	13	2.33	14
1/2/2003	2.78	10	4.78	12	5.78	13	6.78	14
1/3/2003	5	13.89	7	15.89	8	16.89	9	17.89
1/4/2003	4.44	13.33	6.44	15.33	7.44	16.33	8.44	17.33
1/5/2003	6.67	18.89	8.67	20.89	9.67	21.89	10.67	22.89
1/6/2003	11.67	18.33	13.67	20.33	14.67	21.33	15.67	22.33
1/7/2003	10	17.78	12	19.78	13	20.78	14	21.78
1/8/2003	6.11	15.56	8.11	17.56	9.11	18.56	10.11	19.56
1/9/2003	5	8.89	7	10.89	8	11.89	9	12.89
1/10/2003	3.89	6.67	5.89	8.67	6.89	9.67	7.89	10.67
1/11/2003	3.33	10	5.33	12	6.33	13	7.33	14
1/12/2003	2.78	13.89	4.78	15.89	5.78	16.89	6.78	17.89
1/13/2003	3.33	15.56	5.33	17.56	6.33	18.56	7.33	19.56
1/14/2003	2.22	12.22	4.22	14.22	5.22	15.22	6.22	16.22
1/15/2003	5.56	17.22	7.56	19.22	8.56	20.22	9.56	21.22
1/16/2003	10	17.22	12	19.22	13	20.22	14	21.22
1/17/2003	11.67	23.33	13.67	25.33	14.67	26.33	15.67	27.33
1/18/2003	9.44	18.89	11.44	20.89	12.44	21.89	13.44	22.89
1/19/2003	8.89	20.56	10.89	22.56	11.89	23.56	12.89	24.56
1/20/2003	6.67	18.89	8.67	20.89	9.67	21.89	10.67	22.89
1/21/2003	5	12.22	7	14.22	8	15.22	9	16.22
1/22/2003	5	15	7	17	8	18	9	19
1/23/2003	6.67	11.67	8.67	13.67	9.67	14.67	10.67	15.67
1/24/2003	4.44	13.33	6.44	15.33	7.44	16.33	8.44	17.33
1/25/2003	5	18.89	7	20.89	8	21.89	9	22.89
1/26/2003	7.78	16.11	9.78	18.11	10.78	19.11	11.78	20.11
1/27/2003	6.11	12.78	8.11	14.78	9.11	15.78	10.11	16.78
1/28/2003	5	16.11	7	18.11	8	19.11	9	20.11
1/29/2003	4.44	18.33	6.44	20.33	7.44	21.33	8.44	22.33
1/30/2003	6.67	17.78	8.67	19.78	9.67	20.78	10.67	21.78
1/31/2003	10	22.22	12	24.22	13	25.22	14	26.22
2/1/2003	0.56	11.67	2.56	13.67	3.56	14.67	4.56	15.67
2/2/2003	0	12.78	2	14.78	3	15.78	4	16.78
2/3/2003	5	15	7	17	8	18	9	19

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/4/2003	2.22	15	4.22	17	5.22	18	6.22	19
2/5/2003	-1.11	13.89	0.89	15.89	1.89	16.89	2.89	17.89
2/6/2003	-0.56	8.89	1.44	10.89	2.44	11.89	3.44	12.89
2/7/2003	0.56	8.89	2.56	10.89	3.56	11.89	4.56	12.89
2/8/2003	-1.11	12.78	0.89	14.78	1.89	15.78	2.89	16.78
2/9/2003	-1.11	14.44	0.89	16.44	1.89	17.44	2.89	18.44
2/10/2003	1.67	17.78	3.67	19.78	4.67	20.78	5.67	21.78
2/11/2003	2.22	12.22	4.22	14.22	5.22	15.22	6.22	16.22
2/12/2003	6.67	14.44	8.67	16.44	9.67	17.44	10.67	18.44
2/13/2003	5	11.11	7	13.11	8	14.11	9	15.11
2/14/2003	2.22	15.56	4.22	17.56	5.22	18.56	6.22	19.56
2/15/2003	5	13.33	7	15.33	8	16.33	9	17.33
2/16/2003	0	8.89	2	10.89	3	11.89	4	12.89
2/17/2003	2.22	12.22	4.22	14.22	5.22	15.22	6.22	16.22
2/18/2003	1.11	14.44	3.11	16.44	4.11	17.44	5.11	18.44
2/19/2003	0	4.44	2	6.44	3	7.44	4	8.44
2/20/2003	-1.11	15.56	0.89	17.56	1.89	18.56	2.89	19.56
2/21/2003	0	16.67	2	18.67	3	19.67	4	20.67
2/22/2003	3.33	17.78	5.33	19.78	6.33	20.78	7.33	21.78
2/23/2003	3.89	17.78	5.89	19.78	6.89	20.78	7.89	21.78
2/24/2003	3.89	10.56	5.89	12.56	6.89	13.56	7.89	14.56
2/25/2003	3.33	10	5.33	12	6.33	13	7.33	14
2/26/2003	0.56	10	2.56	12	3.56	13	4.56	14
2/27/2003	0	6.67	2	8.67	3	9.67	4	10.67
2/28/2003	-1.11	10.56	0.89	12.56	1.89	13.56	2.89	14.56
3/1/2003	0	11.67	2	13.67	3	14.67	4	15.67
3/2/2003	-1.11	15.56	0.89	17.56	1.89	18.56	2.89	19.56
3/3/2003	0.56	10.56	2.56	12.56	3.56	13.56	4.56	14.56
3/4/2003	0	10	2	12	3	13	4	14
3/5/2003	0.56	16.11	2.56	18.11	3.56	19.11	4.56	20.11
3/6/2003	2.22	17.22	4.22	19.22	5.22	20.22	6.22	21.22
3/7/2003	3.89	17.22	5.89	19.22	6.89	20.22	7.89	21.22
3/8/2003	5	20	7	22	8	23	9	24
3/9/2003	5	20.56	7	22.56	8	23.56	9	24.56
3/10/2003	7.22	17.22	9.22	19.22	10.22	20.22	11.22	21.22
3/11/2003	6.11	20	8.11	22	9.11	23	10.11	24
3/12/2003	7.22	21.11	9.22	23.11	10.22	24.11	11.22	25.11
3/13/2003	6.11	19.44	8.11	21.44	9.11	22.44	10.11	23.44
3/14/2003	5.56	17.78	7.56	19.78	8.56	20.78	9.56	21.78
3/15/2003	2.22	11.11	4.22	13.11	5.22	14.11	6.22	15.11
3/16/2003	1.67	11.11	3.67	13.11	4.67	14.11	5.67	15.11
3/17/2003	0.56	8.33	2.56	10.33	3.56	11.33	4.56	12.33
3/18/2003	0.56	16.11	2.56	18.11	3.56	19.11	4.56	20.11
3/19/2003	1.11	18.33	3.11	20.33	4.11	21.33	5.11	22.33
3/20/2003	3.33	14.44	5.33	16.44	6.33	17.44	7.33	18.44
3/21/2003	1.11	19.44	3.11	21.44	4.11	22.44	5.11	23.44
3/22/2003	3.89	18.33	5.89	20.33	6.89	21.33	7.89	22.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/23/2003	5	9.44	7	11.44	8	12.44	9	13.44
3/24/2003	6.11	17.22	8.11	19.22	9.11	20.22	10.11	21.22
3/25/2003	5	20.56	7	22.56	8	23.56	9	24.56
3/26/2003	5.56	15	7.56	17	8.56	18	9.56	19
3/27/2003	2.22	16.11	4.22	18.11	5.22	19.11	6.22	20.11
3/28/2003	6.67	18.89	8.67	20.89	9.67	21.89	10.67	22.89
3/29/2003	4.44	31.67	6.44	33.67	7.44	34.67	8.44	35.67
3/30/2003	11.11	24.44	13.11	26.44	14.11	27.44	15.11	28.44
3/31/2003	10	23.33	12	25.33	13	26.33	14	27.33
4/1/2003	0	11.67	2	13.67	3	14.67	4	15.67
4/2/2003	0	3.89	2	5.89	3	6.89	4	7.89
4/3/2003	-2.22	9.44	-0.22	11.44	0.78	12.44	1.78	13.44
4/4/2003	0	5	2	7	3	8	4	9
4/5/2003	-2.78	9.44	-0.78	11.44	0.22	12.44	1.22	13.44
4/6/2003	0	11.67	2	13.67	3	14.67	4	15.67
4/7/2003	0	18.89	2	20.89	3	21.89	4	22.89
4/8/2003	6.11	22.22	8.11	24.22	9.11	25.22	10.11	26.22
4/9/2003	8.33	22.78	10.33	24.78	11.33	25.78	12.33	26.78
4/10/2003	5.56	18.89	7.56	20.89	8.56	21.89	9.56	22.89
4/11/2003	7.22	15	9.22	17	10.22	18	11.22	19
4/12/2003	4.44	8.33	6.44	10.33	7.44	11.33	8.44	12.33
4/13/2003	0.56	5	2.56	7	3.56	8	4.56	9
4/14/2003	0	10	2	12	3	13	4	14
4/15/2003	0.56	10.56	2.56	12.56	3.56	13.56	4.56	14.56
4/16/2003	2.22	10	4.22	12	5.22	13	6.22	14
4/17/2003	2.78	7.78	4.78	9.78	5.78	10.78	6.78	11.78
4/18/2003	1.67	11.11	3.67	13.11	4.67	14.11	5.67	15.11
4/19/2003	0	17.22	2	19.22	3	20.22	4	21.22
4/20/2003	5.56	17.78	7.56	19.78	8.56	20.78	9.56	21.78
4/21/2003	0.56	9.44	2.56	11.44	3.56	12.44	4.56	13.44
4/22/2003	0	9.44	2	11.44	3	12.44	4	13.44
4/23/2003	3.33	14.44	5.33	16.44	6.33	17.44	7.33	18.44
4/24/2003	0.56	7.78	2.56	9.78	3.56	10.78	4.56	11.78
4/25/2003	0.56	7.22	2.56	9.22	3.56	10.22	4.56	11.22
4/26/2003	0	11.67	2	13.67	3	14.67	4	15.67
4/27/2003	3.89	15	5.89	17	6.89	18	7.89	19
4/28/2003	0.56	10.56	2.56	12.56	3.56	13.56	4.56	14.56
4/29/2003	1.67	9.44	3.67	11.44	4.67	12.44	5.67	13.44
4/30/2003	1.11	15.56	3.11	17.56	4.11	18.56	5.11	19.56
5/1/2003	2.78	17.22	4.78	19.22	5.78	20.22	6.78	21.22
5/2/2003	6.67	15	8.67	17	9.67	18	10.67	19
5/3/2003	4.44	11.67	6.44	13.67	7.44	14.67	8.44	15.67
5/4/2003	3.89	9.44	5.89	11.44	6.89	12.44	7.89	13.44
5/5/2003	2.78	17.22	4.78	19.22	5.78	20.22	6.78	21.22
5/6/2003	2.22	16.11	4.22	18.11	5.22	19.11	6.22	20.11
5/7/2003	5.56	8.33	7.56	10.33	8.56	11.33	9.56	12.33
5/8/2003	0	6.11	2	8.11	3	9.11	4	10.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/9/2003	0	9.44	2	11.44	3	12.44	4	13.44
5/10/2003	0	16.11	2	18.11	3	19.11	4	20.11
5/11/2003	2.22	21.11	4.22	23.11	5.22	24.11	6.22	25.11
5/12/2003	7.78	25	9.78	27	10.78	28	11.78	29
5/13/2003	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11
5/14/2003	11.67	24.44	13.67	26.44	14.67	27.44	15.67	28.44
5/15/2003	10	23.89	12	25.89	13	26.89	14	27.89
5/16/2003	10	25.56	12	27.56	13	28.56	14	29.56
5/17/2003	11.11	24.44	13.11	26.44	14.11	27.44	15.11	28.44
5/18/2003	8.89	24.44	10.89	26.44	11.89	27.44	12.89	28.44
5/19/2003	12.78	26.67	14.78	28.67	15.78	29.67	16.78	30.67
5/20/2003	12.78	28.89	14.78	30.89	15.78	31.89	16.78	32.89
5/21/2003	15	31.11	17	33.11	18	34.11	19	35.11
5/22/2003	16.11	31.67	18.11	33.67	19.11	34.67	20.11	35.67
5/23/2003	17.78	33.33	19.78	35.33	20.78	36.33	21.78	37.33
5/24/2003	16.67	29.44	18.67	31.44	19.67	32.44	20.67	33.44
5/25/2003	11.11	24.44	13.11	26.44	14.11	27.44	15.11	28.44
5/26/2003	8.89	28.33	10.89	30.33	11.89	31.33	12.89	32.33
5/27/2003	12.22	34.44	14.22	36.44	15.22	37.44	16.22	38.44
5/28/2003	18.33	34.44	20.33	36.44	21.33	37.44	22.33	38.44
5/29/2003	15.56	30.56	17.56	32.56	18.56	33.56	19.56	34.56
5/30/2003	11.67	28.33	13.67	30.33	14.67	31.33	15.67	32.33
5/31/2003	15	30	17	32	18	33	19	34
6/1/2003	14.44	30.56	16.44	32.56	17.44	33.56	18.44	34.56
6/2/2003	12.78	28.33	14.78	30.33	15.78	31.33	16.78	32.33
6/3/2003	11.11	27.78	13.11	29.78	14.11	30.78	15.11	31.78
6/4/2003	12.22	30.56	14.22	32.56	15.22	33.56	16.22	34.56
6/5/2003	12.78	28.33	14.78	30.33	15.78	31.33	16.78	32.33
6/6/2003	12.78	25.56	14.78	27.56	15.78	28.56	16.78	29.56
6/7/2003	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
6/8/2003	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
6/9/2003	11.11	25	13.11	27	14.11	28	15.11	29
6/10/2003	11.11	23.89	13.11	25.89	14.11	26.89	15.11	27.89
6/11/2003	10.56	23.33	12.56	25.33	13.56	26.33	14.56	27.33
6/12/2003	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
6/13/2003	10.56	26.67	12.56	28.67	13.56	29.67	14.56	30.67
6/14/2003	11.67	28.89	13.67	30.89	14.67	31.89	15.67	32.89
6/15/2003	15	30	17	32	18	33	19	34
6/16/2003	11.67	30.56	13.67	32.56	14.67	33.56	15.67	34.56
6/17/2003	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
6/18/2003	15	28.89	17	30.89	18	31.89	19	32.89
6/19/2003	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
6/20/2003	12.78	25.56	14.78	27.56	15.78	28.56	16.78	29.56
6/21/2003	10	24.44	12	26.44	13	27.44	14	28.44
6/22/2003	11.67	25.56	13.67	27.56	14.67	28.56	15.67	29.56
6/23/2003	11.67	23.33	13.67	25.33	14.67	26.33	15.67	27.33
6/24/2003	10.56	27.78	12.56	29.78	13.56	30.78	14.56	31.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/25/2003	17.78	31.11	19.78	33.11	20.78	34.11	21.78	35.11
6/26/2003	20	32.78	22	34.78	23	35.78	24	36.78
6/27/2003	13.89	35.56	15.89	37.56	16.89	38.56	17.89	39.56
6/28/2003	14.44	34.44	16.44	36.44	17.44	37.44	18.44	38.44
6/29/2003	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
6/30/2003	14.44	30	16.44	32	17.44	33	18.44	34
7/1/2003	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
7/2/2003	12.78	30.56	14.78	32.56	15.78	33.56	16.78	34.56
7/3/2003	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
7/4/2003	16.67	33.33	18.67	35.33	19.67	36.33	20.67	37.33
7/5/2003	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
7/6/2003	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
7/7/2003	16.67	30.56	18.67	32.56	19.67	33.56	20.67	34.56
7/8/2003	16.67	33.33	18.67	35.33	19.67	36.33	20.67	37.33
7/9/2003	13.89	33.33	15.89	35.33	16.89	36.33	17.89	37.33
7/10/2003	17.22	34.44	19.22	36.44	20.22	37.44	21.22	38.44
7/11/2003	15.56	34.44	17.56	36.44	18.56	37.44	19.56	38.44
7/12/2003	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
7/13/2003	15	33.89	17	35.89	18	36.89	19	37.89
7/14/2003	20	34.44	22	36.44	23	37.44	24	38.44
7/15/2003	20.56	34.44	22.56	36.44	23.56	37.44	24.56	38.44
7/16/2003	20	36.11	22	38.11	23	39.11	24	40.11
7/17/2003	18.89	36.67	20.89	38.67	21.89	39.67	22.89	40.67
7/18/2003	23.89	36.67	25.89	38.67	26.89	39.67	27.89	40.67
7/19/2003	20	35.56	22	37.56	23	38.56	24	39.56
7/20/2003	20	36.67	22	38.67	23	39.67	24	40.67
7/21/2003	23.33	36.11	25.33	38.11	26.33	39.11	27.33	40.11
7/22/2003	20.56	37.22	22.56	39.22	23.56	40.22	24.56	41.22
7/23/2003	20.56	33.89	22.56	35.89	23.56	36.89	24.56	37.89
7/24/2003	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
7/25/2003	22.78	33.89	24.78	35.89	25.78	36.89	26.78	37.89
7/26/2003	22.22	35	24.22	37	25.22	38	26.22	39
7/27/2003	18.33	35.56	20.33	37.56	21.33	38.56	22.33	39.56
7/28/2003	25.56	37.22	27.56	39.22	28.56	40.22	29.56	41.22
7/29/2003	22.78	37.78	24.78	39.78	25.78	40.78	26.78	41.78
7/30/2003	25	33.33	27	35.33	28	36.33	29	37.33
7/31/2003	18.89	30.56	20.89	32.56	21.89	33.56	22.89	34.56
8/1/2003	16.67	27.22	18.67	29.22	19.67	30.22	20.67	31.22
8/2/2003	15.56	21.11	17.56	23.11	18.56	24.11	19.56	25.11
8/3/2003	16.11	28.89	18.11	30.89	19.11	31.89	20.11	32.89
8/4/2003	14.44	28.33	16.44	30.33	17.44	31.33	18.44	32.33
8/5/2003	12.22	25.56	14.22	27.56	15.22	28.56	16.22	29.56
8/6/2003	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
8/7/2003	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
8/8/2003	11.11	28.89	13.11	30.89	14.11	31.89	15.11	32.89
8/9/2003	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
8/10/2003	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/11/2003	12.22	32.22	14.22	34.22	15.22	35.22	16.22	36.22
8/12/2003	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
8/13/2003	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
8/14/2003	15	33.33	17	35.33	18	36.33	19	37.33
8/15/2003	20.56	34.44	22.56	36.44	23.56	37.44	24.56	38.44
8/16/2003	17.22	33.89	19.22	35.89	20.22	36.89	21.22	37.89
8/17/2003	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
8/18/2003	19.44	35.56	21.44	37.56	22.44	38.56	23.44	39.56
8/19/2003	18.89	33.89	20.89	35.89	21.89	36.89	22.89	37.89
8/20/2003	16.67	34.44	18.67	36.44	19.67	37.44	20.67	38.44
8/21/2003	18.89	27.78	20.89	29.78	21.89	30.78	22.89	31.78
8/22/2003	15	25.56	17	27.56	18	28.56	19	29.56
8/23/2003	11.67	30.56	13.67	32.56	14.67	33.56	15.67	34.56
8/24/2003	15.56	33.89	17.56	35.89	18.56	36.89	19.56	37.89
8/25/2003	19.44	35.56	21.44	37.56	22.44	38.56	23.44	39.56
8/26/2003	16.11	32.78	18.11	34.78	19.11	35.78	20.11	36.78
8/27/2003	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
8/28/2003	17.22	31.11	19.22	33.11	20.22	34.11	21.22	35.11
8/29/2003	16.67	31.67	18.67	33.67	19.67	34.67	20.67	35.67
8/30/2003	12.78	33.89	14.78	35.89	15.78	36.89	16.78	37.89
8/31/2003	18.89	28.89	20.89	30.89	21.89	31.89	22.89	32.89
9/1/2003	20	35	22	37	23	38	24	39
9/2/2003	21.67	36.67	23.67	38.67	24.67	39.67	25.67	40.67
9/3/2003	18.33	33.89	20.33	35.89	21.33	36.89	22.33	37.89
9/4/2003	20.56	31.11	22.56	33.11	23.56	34.11	24.56	35.11
9/5/2003	20	32.78	22	34.78	23	35.78	24	36.78
9/6/2003	17.78	31.11	19.78	33.11	20.78	34.11	21.78	35.11
9/7/2003	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
9/8/2003	11.67	25.56	13.67	27.56	14.67	28.56	15.67	29.56
9/9/2003	11.11	20	13.11	22	14.11	23	15.11	24
9/10/2003	12.78	28.33	14.78	30.33	15.78	31.33	16.78	32.33
9/11/2003	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
9/12/2003	16.11	33.33	18.11	35.33	19.11	36.33	20.11	37.33
9/13/2003	20	34.44	22	36.44	23	37.44	24	38.44
9/14/2003	19.44	32.78	21.44	34.78	22.44	35.78	23.44	36.78
9/15/2003	15	30	17	32	18	33	19	34
9/16/2003	10.56	26.67	12.56	28.67	13.56	29.67	14.56	30.67
9/17/2003	8.33	27.78	10.33	29.78	11.33	30.78	12.33	31.78
9/18/2003	17.22	30	19.22	32	20.22	33	21.22	34
9/19/2003	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
9/20/2003	15.56	34.44	17.56	36.44	18.56	37.44	19.56	38.44
9/21/2003	17.22	35	19.22	37	20.22	38	21.22	39
9/22/2003	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
9/23/2003	21.67	35.56	23.67	37.56	24.67	38.56	25.67	39.56
9/24/2003	16.67	35	18.67	37	19.67	38	20.67	39
9/25/2003	12.78	35	14.78	37	15.78	38	16.78	39
9/26/2003	11.67	31.67	13.67	33.67	14.67	34.67	15.67	35.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/27/2003	21.67	35	23.67	37	24.67	38	25.67	39
9/28/2003	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
9/29/2003	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
9/30/2003	11.67	31.11	13.67	33.11	14.67	34.11	15.67	35.11
10/1/2003	12.78	27.78	14.78	29.78	15.78	30.78	16.78	31.78
10/2/2003	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
10/3/2003	8.89	28.33	10.89	30.33	11.89	31.33	12.89	32.33
10/4/2003	11.11	27.22	13.11	29.22	14.11	30.22	15.11	31.22
10/5/2003	12.22	27.78	14.22	29.78	15.22	30.78	16.22	31.78
10/6/2003	11.67	28.89	13.67	30.89	14.67	31.89	15.67	32.89
10/7/2003	16.67	29.44	18.67	31.44	19.67	32.44	20.67	33.44
10/8/2003	15	30	17	32	18	33	19	34
10/9/2003	10	27.22	12	29.22	13	30.22	14	31.22
10/10/2003	5.56	25	7.56	27	8.56	28	9.56	29
10/11/2003	10	27.78	12	29.78	13	30.78	14	31.78
10/12/2003	10.56	28.89	12.56	30.89	13.56	31.89	14.56	32.89
10/13/2003	10.56	28.33	12.56	30.33	13.56	31.33	14.56	32.33
10/14/2003	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
10/15/2003	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
10/16/2003	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
10/17/2003	12.22	28.89	14.22	30.89	15.22	31.89	16.22	32.89
10/18/2003	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
10/19/2003	15	29.44	17	31.44	18	32.44	19	33.44
10/20/2003	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
10/21/2003	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67
10/22/2003	16.67	29.44	18.67	31.44	19.67	32.44	20.67	33.44
10/23/2003	15	29.44	17	31.44	18	32.44	19	33.44
10/24/2003	17.78	31.11	19.78	33.11	20.78	34.11	21.78	35.11
10/25/2003	20.56	28.89	22.56	30.89	23.56	31.89	24.56	32.89
10/26/2003	20.56	31.11	22.56	33.11	23.56	34.11	24.56	35.11
10/27/2003	18.33	31.11	20.33	33.11	21.33	34.11	22.33	35.11
10/28/2003	15.56	31.11	17.56	33.11	18.56	34.11	19.56	35.11
10/29/2003	9.44	25.56	11.44	27.56	12.44	28.56	13.44	29.56
10/30/2003	0.56	12.22	2.56	14.22	3.56	15.22	4.56	16.22
10/31/2003	0.56	5.56	2.56	7.56	3.56	8.56	4.56	9.56
11/1/2003	0	11.67	2	13.67	3	14.67	4	15.67
11/2/2003	1.11	7.78	3.11	9.78	4.11	10.78	5.11	11.78
11/3/2003	0	5	2	7	3	8	4	9
11/4/2003	0	11.11	2	13.11	3	14.11	4	15.11
11/5/2003	2.22	13.89	4.22	15.89	5.22	16.89	6.22	17.89
11/6/2003	3.89	13.89	5.89	15.89	6.89	16.89	7.89	17.89
11/7/2003	3.89	12.22	5.89	14.22	6.89	15.22	7.89	16.22
11/8/2003	4.44	13.33	6.44	15.33	7.44	16.33	8.44	17.33
11/9/2003	1.11	6.67	3.11	8.67	4.11	9.67	5.11	10.67
11/10/2003	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89
11/11/2003	4.44	17.78	6.44	19.78	7.44	20.78	8.44	21.78
11/12/2003	8.33	13.33	10.33	15.33	11.33	16.33	12.33	17.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/13/2003	4.44	11.67	6.44	13.67	7.44	14.67	8.44	15.67
11/14/2003	2.22	15	4.22	17	5.22	18	6.22	19
11/15/2003	2.22	5.56	4.22	7.56	5.22	8.56	6.22	9.56
11/16/2003	0.56	11.11	2.56	13.11	3.56	14.11	4.56	15.11
11/17/2003	5	15	7	17	8	18	9	19
11/18/2003	6.11	20.56	8.11	22.56	9.11	23.56	10.11	24.56
11/19/2003	5.56	20.56	7.56	22.56	8.56	23.56	9.56	24.56
11/20/2003	5	15	7	17	8	18	9	19
11/21/2003	-2.22	7.78	-0.22	9.78	0.78	10.78	1.78	11.78
11/22/2003	-3.33	10	-1.33	12	-0.33	13	0.67	14
11/23/2003	-2.22	13.33	-0.22	15.33	0.78	16.33	1.78	17.33
11/24/2003	0	12.78	2	14.78	3	15.78	4	16.78
11/25/2003	-1.67	12.22	0.33	14.22	1.33	15.22	2.33	16.22
11/26/2003	-1.11	12.22	0.89	14.22	1.89	15.22	2.89	16.22
11/27/2003	0	15	2	17	3	18	4	19
11/28/2003	5	14.44	7	16.44	8	17.44	9	18.44
11/29/2003	5.56	13.33	7.56	15.33	8.56	16.33	9.56	17.33
11/30/2003	5.56	14.44	7.56	16.44	8.56	17.44	9.56	18.44
12/1/2003	5	13.33	7	15.33	8	16.33	9	17.33
12/2/2003	3.33	15	5.33	17	6.33	18	7.33	19
12/3/2003	6.11	17.22	8.11	19.22	9.11	20.22	10.11	21.22
12/4/2003	6.11	12.78	8.11	14.78	9.11	15.78	10.11	16.78
12/5/2003	7.78	12.22	9.78	14.22	10.78	15.22	11.78	16.22
12/6/2003	5.56	9.44	7.56	11.44	8.56	12.44	9.56	13.44
12/7/2003	1.11	7.78	3.11	9.78	4.11	10.78	5.11	11.78
12/8/2003	-0.56	11.11	1.44	13.11	2.44	14.11	3.44	15.11
12/9/2003	1.67	10.56	3.67	12.56	4.67	13.56	5.67	14.56
12/10/2003	0	4.44	2	6.44	3	7.44	4	8.44
12/11/2003	0	6.11	2	8.11	3	9.11	4	10.11
12/12/2003	0	5	2	7	3	8	4	9
12/13/2003	2.78	7.78	4.78	9.78	5.78	10.78	6.78	11.78
12/14/2003	-0.56	6.67	1.44	8.67	2.44	9.67	3.44	10.67
12/15/2003	-1.11	8.33	0.89	10.33	1.89	11.33	2.89	12.33
12/16/2003	-1.11	8.89	0.89	10.89	1.89	11.89	2.89	12.89
12/17/2003	2.22	12.78	4.22	14.78	5.22	15.78	6.22	16.78
12/18/2003	6.67	15.56	8.67	17.56	9.67	18.56	10.67	19.56
12/19/2003	5.56	14.44	7.56	16.44	8.56	17.44	9.56	18.44
12/20/2003	5	7.78	7	9.78	8	10.78	9	11.78
12/21/2003	1.11	11.67	3.11	13.67	4.11	14.67	5.11	15.67
12/22/2003	4.44	11.67	6.44	13.67	7.44	14.67	8.44	15.67
12/23/2003	4.44	10.56	6.44	12.56	7.44	13.56	8.44	14.56
12/24/2003	2.22	6.67	4.22	8.67	5.22	9.67	6.22	10.67
12/25/2003	0	1.11	2	3.11	3	4.11	4	5.11
12/26/2003	-3.89	4.44	-1.89	6.44	-0.89	7.44	0.11	8.44
12/27/2003	-5	6.11	-3	8.11	-2	9.11	-1	10.11
12/28/2003	-2.22	5	-0.22	7	0.78	8	1.78	9
12/29/2003	0	1.67	2	3.67	3	4.67	4	5.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/30/2003	0	5	2	7	3	8	4	9
12/31/2003	1.11	6.67	3.11	8.67	4.11	9.67	5.11	10.67
1/1/2004	0	2.78	2	4.78	3	5.78	4	6.78
1/2/2004	-1.11	3.33	0.89	5.33	1.89	6.33	2.89	7.33
1/3/2004	-5.56	8.33	-3.56	10.33	-2.56	11.33	-1.56	12.33
1/4/2004	-5.56	3.89	-3.56	5.89	-2.56	6.89	-1.56	7.89
1/5/2004	-1.67	10.56	0.33	12.56	1.33	13.56	2.33	14.56
1/6/2004	1.11	5.56	3.11	7.56	4.11	8.56	5.11	9.56
1/7/2004	1.11	8.89	3.11	10.89	4.11	11.89	5.11	12.89
1/8/2004	2.78	11.67	4.78	13.67	5.78	14.67	6.78	15.67
1/9/2004	4.44	15.56	6.44	17.56	7.44	18.56	8.44	19.56
1/10/2004	3.33	12.22	5.33	14.22	6.33	15.22	7.33	16.22
1/11/2004	2.78	13.89	4.78	15.89	5.78	16.89	6.78	17.89
1/12/2004	5	14.44	7	16.44	8	17.44	9	18.44
1/13/2004	6.67	17.78	8.67	19.78	9.67	20.78	10.67	21.78
1/14/2004	5.56	16.67	7.56	18.67	8.56	19.67	9.56	20.67
1/15/2004	2.22	16.11	4.22	18.11	5.22	19.11	6.22	20.11
1/16/2004	1.67	12.78	3.67	14.78	4.67	15.78	5.67	16.78
1/17/2004	-0.56	16.11	1.44	18.11	2.44	19.11	3.44	20.11
1/18/2004	1.11	14.44	3.11	16.44	4.11	17.44	5.11	18.44
1/19/2004	0.56	13.89	2.56	15.89	3.56	16.89	4.56	17.89
1/20/2004	-1.67	10	0.33	12	1.33	13	2.33	14
1/21/2004	2.78	11.11	4.78	13.11	5.78	14.11	6.78	15.11
1/22/2004	-0.56	15.56	1.44	17.56	2.44	18.56	3.44	19.56
1/23/2004	-1.67	16.67	0.33	18.67	1.33	19.67	2.33	20.67
1/24/2004	0.56	7.78	2.56	9.78	3.56	10.78	4.56	11.78
1/25/2004	-1.11	10.56	0.89	12.56	1.89	13.56	2.89	14.56
1/26/2004	0	6.11	2	8.11	3	9.11	4	10.11
1/27/2004	0	5.56	2	7.56	3	8.56	4	9.56
1/28/2004	0	10	2	12	3	13	4	14
1/29/2004	0	15	2	17	3	18	4	19
1/30/2004	1.11	9.44	3.11	11.44	4.11	12.44	5.11	13.44
1/31/2004	-2.22	10.56	-0.22	12.56	0.78	13.56	1.78	14.56
2/1/2004	0	7.22	2	9.22	3	10.22	4	11.22
2/2/2004	0.56	6.11	2.56	8.11	3.56	9.11	4.56	10.11
2/3/2004	0	3.33	2	5.33	3	6.33	4	7.33
2/4/2004	-2.22	9.44	-0.22	11.44	0.78	12.44	1.78	13.44
2/5/2004	-1.67	11.11	0.33	13.11	1.33	14.11	2.33	15.11
2/6/2004	-0.56	8.89	1.44	10.89	2.44	11.89	3.44	12.89
2/7/2004	-2.22	10.56	-0.22	12.56	0.78	13.56	1.78	14.56
2/8/2004	1.11	13.33	3.11	15.33	4.11	16.33	5.11	17.33
2/9/2004	2.78	12.22	4.78	14.22	5.78	15.22	6.78	16.22
2/10/2004	2.78	15.56	4.78	17.56	5.78	18.56	6.78	19.56
2/11/2004	0.56	17.78	2.56	19.78	3.56	20.78	4.56	21.78
2/12/2004	5.56	17.22	7.56	19.22	8.56	20.22	9.56	21.22
2/13/2004	2.78	11.67	4.78	13.67	5.78	14.67	6.78	15.67
2/14/2004	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/15/2004	2.78	13.33	4.78	15.33	5.78	16.33	6.78	17.33
2/16/2004	4.44	7.78	6.44	9.78	7.44	10.78	8.44	11.78
2/17/2004	5	11.67	7	13.67	8	14.67	9	15.67
2/18/2004	2.22	6.67	4.22	8.67	5.22	9.67	6.22	10.67
2/19/2004	0	12.78	2	14.78	3	15.78	4	16.78
2/20/2004	1.11	8.89	3.11	10.89	4.11	11.89	5.11	12.89
2/21/2004	1.67	7.78	3.67	9.78	4.67	10.78	5.67	11.78
2/22/2004	2.22	6.11	4.22	8.11	5.22	9.11	6.22	10.11
2/23/2004	0	10	2	12	3	13	4	14
2/24/2004	1.11	7.78	3.11	9.78	4.11	10.78	5.11	11.78
2/25/2004	1.67	8.89	3.67	10.89	4.67	11.89	5.67	12.89
2/26/2004	0.56	3.33	2.56	5.33	3.56	6.33	4.56	7.33
2/27/2004	-2.22	10.56	-0.22	12.56	0.78	13.56	1.78	14.56
2/28/2004	-3.89	13.89	-1.89	15.89	-0.89	16.89	0.11	17.89
2/29/2004	0	11.11	2	13.11	3	14.11	4	15.11
3/1/2004	0	3.89	2	5.89	3	6.89	4	7.89
3/2/2004	-1.11	10	0.89	12	1.89	13	2.89	14
3/3/2004	0	13.89	2	15.89	3	16.89	4	17.89
3/4/2004	0	16.11	2	18.11	3	19.11	4	20.11
3/5/2004	1.11	15	3.11	17	4.11	18	5.11	19
3/6/2004	2.78	20.56	4.78	22.56	5.78	23.56	6.78	24.56
3/7/2004	11.67	25	13.67	27	14.67	28	15.67	29
3/8/2004	12.78	27.22	14.78	29.22	15.78	30.22	16.78	31.22
3/9/2004	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
3/10/2004	13.89	22.22	15.89	24.22	16.89	25.22	17.89	26.22
3/11/2004	12.22	25	14.22	27	15.22	28	16.22	29
3/12/2004	10	25.56	12	27.56	13	28.56	14	29.56
3/13/2004	9.44	26.11	11.44	28.11	12.44	29.11	13.44	30.11
3/14/2004	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11
3/15/2004	8.89	24.44	10.89	26.44	11.89	27.44	12.89	28.44
3/16/2004	14.44	25.56	16.44	27.56	17.44	28.56	18.44	29.56
3/17/2004	12.22	27.78	14.22	29.78	15.22	30.78	16.22	31.78
3/18/2004	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
3/19/2004	10	26.11	12	28.11	13	29.11	14	30.11
3/20/2004	11.67	28.33	13.67	30.33	14.67	31.33	15.67	32.33
3/21/2004	13.89	28.89	15.89	30.89	16.89	31.89	17.89	32.89
3/22/2004	10	26.67	12	28.67	13	29.67	14	30.67
3/23/2004	7.78	23.89	9.78	25.89	10.78	26.89	11.78	27.89
3/24/2004	6.67	20	8.67	22	9.67	23	10.67	24
3/25/2004	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89
3/26/2004	1.67	11.67	3.67	13.67	4.67	14.67	5.67	15.67
3/27/2004	1.11	18.89	3.11	20.89	4.11	21.89	5.11	22.89
3/28/2004	8.89	25.56	10.89	27.56	11.89	28.56	12.89	29.56
3/29/2004	11.67	26.67	13.67	28.67	14.67	29.67	15.67	30.67
3/30/2004	7.78	18.89	9.78	20.89	10.78	21.89	11.78	22.89
3/31/2004	3.89	18.33	5.89	20.33	6.89	21.33	7.89	22.33
4/1/2004	2.22	13.33	4.22	15.33	5.22	16.33	6.22	17.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/2/2004	6.67	20	8.67	22	9.67	23	10.67	24
4/3/2004	4.44	21.11	6.44	23.11	7.44	24.11	8.44	25.11
4/4/2004	5.56	21.11	7.56	23.11	8.56	24.11	9.56	25.11
4/5/2004	7.22	21.11	9.22	23.11	10.22	24.11	11.22	25.11
4/6/2004	3.89	19.44	5.89	21.44	6.89	22.44	7.89	23.44
4/7/2004	6.67	23.89	8.67	25.89	9.67	26.89	10.67	27.89
4/8/2004	6.11	23.33	8.11	25.33	9.11	26.33	10.11	27.33
4/9/2004	10	25.56	12	27.56	13	28.56	14	29.56
4/10/2004	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11
4/11/2004	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
4/12/2004	11.11	23.89	13.11	25.89	14.11	26.89	15.11	27.89
4/13/2004	6.11	15.56	8.11	17.56	9.11	18.56	10.11	19.56
4/14/2004	1.67	18.33	3.67	20.33	4.67	21.33	5.67	22.33
4/15/2004	5	13.89	7	15.89	8	16.89	9	17.89
4/16/2004	2.22	9.44	4.22	11.44	5.22	12.44	6.22	13.44
4/17/2004	1.67	10.56	3.67	12.56	4.67	13.56	5.67	14.56
4/18/2004	1.11	11.67	3.11	13.67	4.11	14.67	5.11	15.67
4/19/2004	2.22	10.56	4.22	12.56	5.22	13.56	6.22	14.56
4/20/2004	5	14.44	7	16.44	8	17.44	9	18.44
4/21/2004	5	15.56	7	17.56	8	18.56	9	19.56
4/22/2004	5	17.22	7	19.22	8	20.22	9	21.22
4/23/2004	4.44	22.78	6.44	24.78	7.44	25.78	8.44	26.78
4/24/2004	6.11	26.11	8.11	28.11	9.11	29.11	10.11	30.11
4/25/2004	10	28.89	12	30.89	13	31.89	14	32.89
4/26/2004	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
4/27/2004	15	29.44	17	31.44	18	32.44	19	33.44
4/28/2004	12.22	25.56	14.22	27.56	15.22	28.56	16.22	29.56
4/29/2004	8.89	23.89	10.89	25.89	11.89	26.89	12.89	27.89
4/30/2004	7.78	26.11	9.78	28.11	10.78	29.11	11.78	30.11
5/1/2004	7.78	27.78	9.78	29.78	10.78	30.78	11.78	31.78
5/2/2004	15	30.56	17	32.56	18	33.56	19	34.56
5/3/2004	15.56	32.22	17.56	34.22	18.56	35.22	19.56	36.22
5/4/2004	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
5/5/2004	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
5/6/2004	8.89	23.89	10.89	25.89	11.89	26.89	12.89	27.89
5/7/2004	6.67	23.89	8.67	25.89	9.67	26.89	10.67	27.89
5/8/2004	6.11	22.22	8.11	24.22	9.11	25.22	10.11	26.22
5/9/2004	8.33	23.89	10.33	25.89	11.33	26.89	12.33	27.89
5/10/2004	6.11	17.22	8.11	19.22	9.11	20.22	10.11	21.22
5/11/2004	5	17.22	7	19.22	8	20.22	9	21.22
5/12/2004	4.44	22.22	6.44	24.22	7.44	25.22	8.44	26.22
5/13/2004	5	25.56	7	27.56	8	28.56	9	29.56
5/14/2004	11.67	26.67	13.67	28.67	14.67	29.67	15.67	30.67
5/15/2004	12.78	25	14.78	27	15.78	28	16.78	29
5/16/2004	10	25.56	12	27.56	13	28.56	14	29.56
5/17/2004	7.78	21.67	9.78	23.67	10.78	24.67	11.78	25.67
5/18/2004	5.56	18.89	7.56	20.89	8.56	21.89	9.56	22.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/19/2004	3.89	21.67	5.89	23.67	6.89	24.67	7.89	25.67
5/20/2004	8.89	20	10.89	22	11.89	23	12.89	24
5/21/2004	8.89	21.11	10.89	23.11	11.89	24.11	12.89	25.11
5/22/2004	7.22	22.22	9.22	24.22	10.22	25.22	11.22	26.22
5/23/2004	6.11	22.22	8.11	24.22	9.11	25.22	10.11	26.22
5/24/2004	7.78	21.11	9.78	23.11	10.78	24.11	11.78	25.11
5/25/2004	5.56	21.11	7.56	23.11	8.56	24.11	9.56	25.11
5/26/2004	11.67	27.22	13.67	29.22	14.67	30.22	15.67	31.22
5/27/2004	12.78	25.56	14.78	27.56	15.78	28.56	16.78	29.56
5/28/2004	9.44	17.78	11.44	19.78	12.44	20.78	13.44	21.78
5/29/2004	8.33	23.89	10.33	25.89	11.33	26.89	12.33	27.89
5/30/2004	11.11	28.33	13.11	30.33	14.11	31.33	15.11	32.33
5/31/2004	15	29.44	17	31.44	18	32.44	19	33.44
6/1/2004	15	31.11	17	33.11	18	34.11	19	35.11
6/2/2004	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
6/3/2004	15.56	30.56	17.56	32.56	18.56	33.56	19.56	34.56
6/4/2004	17.78	30.56	19.78	32.56	20.78	33.56	21.78	34.56
6/5/2004	15.56	31.11	17.56	33.11	18.56	34.11	19.56	35.11
6/6/2004	15	30.56	17	32.56	18	33.56	19	34.56
6/7/2004	8.89	25	10.89	27	11.89	28	12.89	29
6/8/2004	5	18.33	7	20.33	8	21.33	9	22.33
6/9/2004	5	17.22	7	19.22	8	20.22	9	21.22
6/10/2004	8.89	23.33	10.89	25.33	11.89	26.33	12.89	27.33
6/11/2004	11.11	25.56	13.11	27.56	14.11	28.56	15.11	29.56
6/12/2004	12.22	28.33	14.22	30.33	15.22	31.33	16.22	32.33
6/13/2004	11.67	31.11	13.67	33.11	14.67	34.11	15.67	35.11
6/14/2004	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22
6/15/2004	14.44	33.33	16.44	35.33	17.44	36.33	18.44	37.33
6/16/2004	16.11	32.78	18.11	34.78	19.11	35.78	20.11	36.78
6/17/2004	18.33	30.56	20.33	32.56	21.33	33.56	22.33	34.56
6/18/2004	17.78	29.44	19.78	31.44	20.78	32.44	21.78	33.44
6/19/2004	16.67	29.44	18.67	31.44	19.67	32.44	20.67	33.44
6/20/2004	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
6/21/2004	11.67	31.11	13.67	33.11	14.67	34.11	15.67	35.11
6/22/2004	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
6/23/2004	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
6/24/2004	17.78	30.56	19.78	32.56	20.78	33.56	21.78	34.56
6/25/2004	15.56	31.11	17.56	33.11	18.56	34.11	19.56	35.11
6/26/2004	12.78	30.56	14.78	32.56	15.78	33.56	16.78	34.56
6/27/2004	12.78	32.22	14.78	34.22	15.78	35.22	16.78	36.22
6/28/2004	13.33	30.56	15.33	32.56	16.33	33.56	17.33	34.56
6/29/2004	15	29.44	17	31.44	18	32.44	19	33.44
6/30/2004	15	26.67	17	28.67	18	29.67	19	30.67
7/1/2004	15.56	28.33	17.56	30.33	18.56	31.33	19.56	32.33
7/2/2004	14.44	30	16.44	32	17.44	33	18.44	34
7/3/2004	16.67	31.67	18.67	33.67	19.67	34.67	20.67	35.67
7/4/2004	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/5/2004	20.56	35.56	22.56	37.56	23.56	38.56	24.56	39.56
7/6/2004	19.44	36.11	21.44	38.11	22.44	39.11	23.44	40.11
7/7/2004	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
7/8/2004	17.22	31.11	19.22	33.11	20.22	34.11	21.22	35.11
7/9/2004	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
7/10/2004	12.78	30	14.78	32	15.78	33	16.78	34
7/11/2004	13.89	31.11	15.89	33.11	16.89	34.11	17.89	35.11
7/12/2004	17.22	33.33	19.22	35.33	20.22	36.33	21.22	37.33
7/13/2004	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78
7/14/2004	15	33.33	17	35.33	18	36.33	19	37.33
7/15/2004	15	33.33	17	35.33	18	36.33	19	37.33
7/16/2004	15.56	33.33	17.56	35.33	18.56	36.33	19.56	37.33
7/17/2004	17.78	33.89	19.78	35.89	20.78	36.89	21.78	37.89
7/18/2004	20.56	33.89	22.56	35.89	23.56	36.89	24.56	37.89
7/19/2004	20	32.78	22	34.78	23	35.78	24	36.78
7/20/2004	16.11	33.89	18.11	35.89	19.11	36.89	20.11	37.89
7/21/2004	20	34.44	22	36.44	23	37.44	24	38.44
7/22/2004	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
7/23/2004	18.33	35.56	20.33	37.56	21.33	38.56	22.33	39.56
7/24/2004	20	35	22	37	23	38	24	39
7/25/2004	21.67	35.56	23.67	37.56	24.67	38.56	25.67	39.56
7/26/2004	17.78	34.44	19.78	36.44	20.78	37.44	21.78	38.44
7/27/2004	20.56	34.44	22.56	36.44	23.56	37.44	24.56	38.44
7/28/2004	16.67	35	18.67	37	19.67	38	20.67	39
7/29/2004	16.67	33.33	18.67	35.33	19.67	36.33	20.67	37.33
7/30/2004	18.89	32.78	20.89	34.78	21.89	35.78	22.89	36.78
7/31/2004	16.11	31.67	18.11	33.67	19.11	34.67	20.11	35.67
8/1/2004	13.89	31.11	15.89	33.11	16.89	34.11	17.89	35.11
8/2/2004	12.78	28.89	14.78	30.89	15.78	31.89	16.78	32.89
8/3/2004	15.56	30	17.56	32	18.56	33	19.56	34
8/4/2004	16.67	30	18.67	32	19.67	33	20.67	34
8/5/2004	12.78	30	14.78	32	15.78	33	16.78	34
8/6/2004	12.78	30.56	14.78	32.56	15.78	33.56	16.78	34.56
8/7/2004	16.67	32.78	18.67	34.78	19.67	35.78	20.67	36.78
8/8/2004	15.56	35.56	17.56	37.56	18.56	38.56	19.56	39.56
8/9/2004	20.56	36.67	22.56	38.67	23.56	39.67	24.56	40.67
8/10/2004	21.67	35.56	23.67	37.56	24.67	38.56	25.67	39.56
8/11/2004	21.67	38.33	23.67	40.33	24.67	41.33	25.67	42.33
8/12/2004	23.33	37.22	25.33	39.22	26.33	40.22	27.33	41.22
8/13/2004	22.78	36.11	24.78	38.11	25.78	39.11	26.78	40.11
8/14/2004	20	34.44	22	36.44	23	37.44	24	38.44
8/15/2004	16.11	32.78	18.11	34.78	19.11	35.78	20.11	36.78
8/16/2004	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22
8/17/2004	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
8/18/2004	17.22	34.44	19.22	36.44	20.22	37.44	21.22	38.44
8/19/2004	18.33	35.56	20.33	37.56	21.33	38.56	22.33	39.56
8/20/2004	18.33	34.44	20.33	36.44	21.33	37.44	22.33	38.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/21/2004	18.33	33.89	20.33	35.89	21.33	36.89	22.33	37.89
8/22/2004	14.44	26.67	16.44	28.67	17.44	29.67	18.44	30.67
8/23/2004	13.89	26.11	15.89	28.11	16.89	29.11	17.89	30.11
8/24/2004	11.67	28.33	13.67	30.33	14.67	31.33	15.67	32.33
8/25/2004	12.22	28.89	14.22	30.89	15.22	31.89	16.22	32.89
8/26/2004	10.56	28.33	12.56	30.33	13.56	31.33	14.56	32.33
8/27/2004	17.78	32.78	19.78	34.78	20.78	35.78	21.78	36.78
8/28/2004	20	34.44	22	36.44	23	37.44	24	38.44
8/29/2004	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
8/30/2004	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
8/31/2004	18.89	35.56	20.89	37.56	21.89	38.56	22.89	39.56
9/1/2004	20	35	22	37	23	38	24	39
9/2/2004	15	29.44	17	31.44	18	32.44	19	33.44
9/3/2004	12.22	24.44	14.22	26.44	15.22	27.44	16.22	28.44
9/4/2004	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
9/5/2004	15.56	32.22	17.56	34.22	18.56	35.22	19.56	36.22
9/6/2004	13.89	34.44	15.89	36.44	16.89	37.44	17.89	38.44
9/7/2004	15	35.56	17	37.56	18	38.56	19	39.56
9/8/2004	19.44	35	21.44	37	22.44	38	23.44	39
9/9/2004	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
9/10/2004	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
9/11/2004	20	33.33	22	35.33	23	36.33	24	37.33
9/12/2004	13.89	30	15.89	32	16.89	33	17.89	34
9/13/2004	11.67	29.44	13.67	31.44	14.67	32.44	15.67	33.44
9/14/2004	15	31.11	17	33.11	18	34.11	19	35.11
9/15/2004	18.33	31.11	20.33	33.11	21.33	34.11	22.33	35.11
9/16/2004	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
9/17/2004	15	29.44	17	31.44	18	32.44	19	33.44
9/18/2004	8.89	16.67	10.89	18.67	11.89	19.67	12.89	20.67
9/19/2004	5	10.56	7	12.56	8	13.56	9	14.56
9/20/2004	2.22	19.44	4.22	21.44	5.22	22.44	6.22	23.44
9/21/2004	11.11	25.56	13.11	27.56	14.11	28.56	15.11	29.56
9/22/2004	6.67	27.78	8.67	29.78	9.67	30.78	10.67	31.78
9/23/2004	12.22	30.56	14.22	32.56	15.22	33.56	16.22	34.56
9/24/2004	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
9/25/2004	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
9/26/2004	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
9/27/2004	16.11	30.56	18.11	32.56	19.11	33.56	20.11	34.56
9/28/2004	11.67	27.22	13.67	29.22	14.67	30.22	15.67	31.22
9/29/2004	7.78	25.56	9.78	27.56	10.78	28.56	11.78	29.56
9/30/2004	7.78	25.56	9.78	27.56	10.78	28.56	11.78	29.56
10/1/2004	7.22	26.67	9.22	28.67	10.22	29.67	11.22	30.67
10/2/2004	14.44	27.22	16.44	29.22	17.44	30.22	18.44	31.22
10/3/2004	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
10/4/2004	16.67	30	18.67	32	19.67	33	20.67	34
10/5/2004	16.11	29.44	18.11	31.44	19.11	32.44	20.11	33.44
10/6/2004	15	29.44	17	31.44	18	32.44	19	33.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/7/2004	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
10/8/2004	11.67	28.89	13.67	30.89	14.67	31.89	15.67	32.89
10/9/2004	8.89	21.11	10.89	23.11	11.89	24.11	12.89	25.11
10/10/2004	9.44	22.22	11.44	24.22	12.44	25.22	13.44	26.22
10/11/2004	13.89	23.89	15.89	25.89	16.89	26.89	17.89	27.89
10/12/2004	17.22	27.22	19.22	29.22	20.22	30.22	21.22	31.22
10/13/2004	20	30	22	32	23	33	24	34
10/14/2004	19.44	31.11	21.44	33.11	22.44	34.11	23.44	35.11
10/15/2004	13.89	25.56	15.89	27.56	16.89	28.56	17.89	29.56
10/16/2004	12.22	24.44	14.22	26.44	15.22	27.44	16.22	28.44
10/17/2004	7.22	13.89	9.22	15.89	10.22	16.89	11.22	17.89
10/18/2004	5	10.56	7	12.56	8	13.56	9	14.56
10/19/2004	5	8.89	7	10.89	8	11.89	9	12.89
10/20/2004	1.11	10	3.11	12	4.11	13	5.11	14
10/21/2004	1.11	15	3.11	17	4.11	18	5.11	19
10/22/2004	2.78	17.22	4.78	19.22	5.78	20.22	6.78	21.22
10/23/2004	6.67	8.89	8.67	10.89	9.67	11.89	10.67	12.89
10/24/2004	6.67	15.56	8.67	17.56	9.67	18.56	10.67	19.56
10/25/2004	5	11.67	7	13.67	8	14.67	9	15.67
10/26/2004	0	8.33	2	10.33	3	11.33	4	12.33
10/27/2004	0	9.44	2	11.44	3	12.44	4	13.44
10/28/2004	0.56	7.78	2.56	9.78	3.56	10.78	4.56	11.78
10/29/2004	0	15.56	2	17.56	3	18.56	4	19.56
10/30/2004	0	17.22	2	19.22	3	20.22	4	21.22
10/31/2004	1.11	15.56	3.11	17.56	4.11	18.56	5.11	19.56
11/1/2004	3.89	19.44	5.89	21.44	6.89	22.44	7.89	23.44
11/2/2004	5	20	7	22	8	23	9	24
11/3/2004	3.33	7.22	5.33	9.22	6.33	10.22	7.33	11.22
11/4/2004	0.56	9.44	2.56	11.44	3.56	12.44	4.56	13.44
11/5/2004	0	18.89	2	20.89	3	21.89	4	22.89
11/6/2004	12.78	22.22	14.78	24.22	15.78	25.22	16.78	26.22
11/7/2004	7.22	22.22	9.22	24.22	10.22	25.22	11.22	26.22
11/8/2004	6.11	9.44	8.11	11.44	9.11	12.44	10.11	13.44
11/9/2004	6.67	14.44	8.67	16.44	9.67	17.44	10.67	18.44
11/10/2004	3.33	13.33	5.33	15.33	6.33	16.33	7.33	17.33
11/11/2004	3.33	8.33	5.33	10.33	6.33	11.33	7.33	12.33
11/12/2004	1.67	15.56	3.67	17.56	4.67	18.56	5.67	19.56
11/13/2004	2.78	14.44	4.78	16.44	5.78	17.44	6.78	18.44
11/14/2004	6.11	16.67	8.11	18.67	9.11	19.67	10.11	20.67
11/15/2004	6.11	16.67	8.11	18.67	9.11	19.67	10.11	20.67
11/16/2004	4.44	18.89	6.44	20.89	7.44	21.89	8.44	22.89
11/17/2004	3.33	18.89	5.33	20.89	6.33	21.89	7.33	22.89
11/18/2004	5	20	7	22	8	23	9	24
11/19/2004	2.78	13.89	4.78	15.89	5.78	16.89	6.78	17.89
11/20/2004	1.67	16.11	3.67	18.11	4.67	19.11	5.67	20.11
11/21/2004	1.67	6.67	3.67	8.67	4.67	9.67	5.67	10.67
11/22/2004	1.11	17.22	3.11	19.22	4.11	20.22	5.11	21.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/23/2004	-0.56	13.89	1.44	15.89	2.44	16.89	3.44	17.89
11/24/2004	3.89	17.78	5.89	19.78	6.89	20.78	7.89	21.78
11/25/2004	3.33	13.33	5.33	15.33	6.33	16.33	7.33	17.33
11/26/2004	2.22	14.44	4.22	16.44	5.22	17.44	6.22	18.44
11/27/2004	1.67	8.33	3.67	10.33	4.67	11.33	5.67	12.33
11/28/2004	0	3.89	2	5.89	3	6.89	4	7.89
11/29/2004	-2.22	9.44	-0.22	11.44	0.78	12.44	1.78	13.44
11/30/2004	-1.67	9.44	0.33	11.44	1.33	12.44	2.33	13.44
12/1/2004	2.78	10	4.78	12	5.78	13	6.78	14
12/2/2004	1.67	6.67	3.67	8.67	4.67	9.67	5.67	10.67
12/3/2004	-1.11	15	0.89	17	1.89	18	2.89	19
12/4/2004	-2.78	11.67	-0.78	13.67	0.22	14.67	1.22	15.67
12/5/2004	0	11.67	2	13.67	3	14.67	4	15.67
12/6/2004	-1.11	10.56	0.89	12.56	1.89	13.56	2.89	14.56
12/7/2004	0	5	2	7	3	8	4	9
12/8/2004	0.56	5.56	2.56	7.56	3.56	8.56	4.56	9.56
12/9/2004	3.89	11.11	5.89	13.11	6.89	14.11	7.89	15.11
12/10/2004	3.89	15	5.89	17	6.89	18	7.89	19
12/11/2004	8.33	17.78	10.33	19.78	11.33	20.78	12.33	21.78
12/12/2004	6.11	18.89	8.11	20.89	9.11	21.89	10.11	22.89
12/13/2004	3.33	16.11	5.33	18.11	6.33	19.11	7.33	20.11
12/14/2004	6.67	17.22	8.67	19.22	9.67	20.22	10.67	21.22
12/15/2004	8.33	20.56	10.33	22.56	11.33	23.56	12.33	24.56
12/16/2004	8.33	16.67	10.33	18.67	11.33	19.67	12.33	20.67
12/17/2004	3.33	15	5.33	17	6.33	18	7.33	19
12/18/2004	4.44	22.22	6.44	24.22	7.44	25.22	8.44	26.22
12/19/2004	10.56	20	12.56	22	13.56	23	14.56	24
12/20/2004	7.78	16.11	9.78	18.11	10.78	19.11	11.78	20.11
12/21/2004	5.56	15.56	7.56	17.56	8.56	18.56	9.56	19.56
12/22/2004	2.78	13.33	4.78	15.33	5.78	16.33	6.78	17.33
12/23/2004	3.89	13.89	5.89	15.89	6.89	16.89	7.89	17.89
12/24/2004	1.67	14.44	3.67	16.44	4.67	17.44	5.67	18.44
12/25/2004	0	15.56	2	17.56	3	18.56	4	19.56
12/26/2004	0.56	7.78	2.56	9.78	3.56	10.78	4.56	11.78
12/27/2004	2.78	9.44	4.78	11.44	5.78	12.44	6.78	13.44
12/28/2004	1.67	7.22	3.67	9.22	4.67	10.22	5.67	11.22
12/29/2004	0	3.33	2	5.33	3	6.33	4	7.33
12/30/2004	0	3.89	2	5.89	3	6.89	4	7.89
12/31/2004	0.56	7.22	2.56	9.22	3.56	10.22	4.56	11.22
1/1/2005	0	2.78	2	4.78	3	5.78	4	6.78
1/2/2005	0.56	4.44	2.56	6.44	3.56	7.44	4.56	8.44
1/3/2005	0	6.11	2	8.11	3	9.11	4	10.11
1/4/2005	-1.67	5	0.33	7	1.33	8	2.33	9
1/5/2005	0	7.78	2	9.78	3	10.78	4	11.78
1/6/2005	-1.11	7.78	0.89	9.78	1.89	10.78	2.89	11.78
1/7/2005	0	5.56	2	7.56	3	8.56	4	9.56
1/8/2005	0	3.33	2	5.33	3	6.33	4	7.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/9/2005	0.56	3.33	2.56	5.33	3.56	6.33	4.56	7.33
1/10/2005	1.67	5.56	3.67	7.56	4.67	8.56	5.67	9.56
1/11/2005	-0.56	3.33	1.44	5.33	2.44	6.33	3.44	7.33
1/12/2005	-2.22	8.89	-0.22	10.89	0.78	11.89	1.78	12.89
1/13/2005	1.67	8.89	3.67	10.89	4.67	11.89	5.67	12.89
1/14/2005	3.89	15	5.89	17	6.89	18	7.89	19
1/15/2005	5	14.44	7	16.44	8	17.44	9	18.44
1/16/2005	5.56	15.56	7.56	17.56	8.56	18.56	9.56	19.56
1/17/2005	5	16.11	7	18.11	8	19.11	9	20.11
1/18/2005	5	16.11	7	18.11	8	19.11	9	20.11
1/19/2005	4.44	18.89	6.44	20.89	7.44	21.89	8.44	22.89
1/20/2005	8.89	17.22	10.89	19.22	11.89	20.22	12.89	21.22
1/21/2005	5	17.78	7	19.78	8	20.78	9	21.78
1/22/2005	4.44	19.44	6.44	21.44	7.44	22.44	8.44	23.44
1/23/2005	7.22	20.56	9.22	22.56	10.22	23.56	11.22	24.56
1/24/2005	7.22	19.44	9.22	21.44	10.22	22.44	11.22	23.44
1/25/2005	6.67	11.11	8.67	13.11	9.67	14.11	10.67	15.11
1/26/2005	1.11	7.78	3.11	9.78	4.11	10.78	5.11	11.78
1/27/2005	0	10	2	12	3	13	4	14
1/28/2005	0	5.56	2	7.56	3	8.56	4	9.56
1/29/2005	-1.67	8.89	0.33	10.89	1.33	11.89	2.33	12.89
1/30/2005	2.22	15.56	4.22	17.56	5.22	18.56	6.22	19.56
1/31/2005	3.33	18.33	5.33	20.33	6.33	21.33	7.33	22.33
2/1/2005	1.67	16.11	3.67	18.11	4.67	19.11	5.67	20.11
2/2/2005	7.78	14.44	9.78	16.44	10.78	17.44	11.78	18.44
2/3/2005	3.89	20	5.89	22	6.89	23	7.89	24
2/4/2005	3.89	17.22	5.89	19.22	6.89	20.22	7.89	21.22
2/5/2005	4.44	17.22	6.44	19.22	7.44	20.22	8.44	21.22
2/6/2005	1.67	12.22	3.67	14.22	4.67	15.22	5.67	16.22
2/7/2005	1.11	5.56	3.11	7.56	4.11	8.56	5.11	9.56
2/8/2005	1.11	11.11	3.11	13.11	4.11	14.11	5.11	15.11
2/9/2005	1.11	13.33	3.11	15.33	4.11	16.33	5.11	17.33
2/10/2005	0	16.11	2	18.11	3	19.11	4	20.11
2/11/2005	5.56	11.67	7.56	13.67	8.56	14.67	9.56	15.67
2/12/2005	3.89	14.44	5.89	16.44	6.89	17.44	7.89	18.44
2/13/2005	3.33	12.78	5.33	14.78	6.33	15.78	7.33	16.78
2/14/2005	3.89	8.33	5.89	10.33	6.89	11.33	7.89	12.33
2/15/2005	3.33	7.22	5.33	9.22	6.33	10.22	7.33	11.22
2/16/2005	3.89	11.11	5.89	13.11	6.89	14.11	7.89	15.11
2/17/2005	5.56	12.78	7.56	14.78	8.56	15.78	9.56	16.78
2/18/2005	3.33	10	5.33	12	6.33	13	7.33	14
2/19/2005	0.56	12.22	2.56	14.22	3.56	15.22	4.56	16.22
2/20/2005	0	10.56	2	12.56	3	13.56	4	14.56
2/21/2005	3.89	10	5.89	12	6.89	13	7.89	14
2/22/2005	3.33	13.33	5.33	15.33	6.33	16.33	7.33	17.33
2/23/2005	5	15.56	7	17.56	8	18.56	9	19.56
2/24/2005	2.78	15	4.78	17	5.78	18	6.78	19

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/25/2005	1.11	10	3.11	12	4.11	13	5.11	14
2/26/2005	2.22	13.89	4.22	15.89	5.22	16.89	6.22	17.89
2/27/2005	0.56	12.78	2.56	14.78	3.56	15.78	4.56	16.78
2/28/2005	0	12.22	2	14.22	3	15.22	4	16.22
3/1/2005	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89
3/2/2005	2.78	12.78	4.78	14.78	5.78	15.78	6.78	16.78
3/3/2005	2.22	13.89	4.22	15.89	5.22	16.89	6.22	17.89
3/4/2005	3.89	11.11	5.89	13.11	6.89	14.11	7.89	15.11
3/5/2005	5.56	18.33	7.56	20.33	8.56	21.33	9.56	22.33
3/6/2005	5	21.11	7	23.11	8	24.11	9	25.11
3/7/2005	4.44	22.22	6.44	24.22	7.44	25.22	8.44	26.22
3/8/2005	5	26.67	7	28.67	8	29.67	9	30.67
3/9/2005	11.67	26.67	13.67	28.67	14.67	29.67	15.67	30.67
3/10/2005	11.11	22.78	13.11	24.78	14.11	25.78	15.11	26.78
3/11/2005	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67
3/12/2005	11.67	25.56	13.67	27.56	14.67	28.56	15.67	29.56
3/13/2005	10	21.11	12	23.11	13	24.11	14	25.11
3/14/2005	6.11	15.56	8.11	17.56	9.11	18.56	10.11	19.56
3/15/2005	5.56	18.89	7.56	20.89	8.56	21.89	9.56	22.89
3/16/2005	3.89	16.67	5.89	18.67	6.89	19.67	7.89	20.67
3/17/2005	2.78	12.78	4.78	14.78	5.78	15.78	6.78	16.78
3/18/2005	4.44	12.22	6.44	14.22	7.44	15.22	8.44	16.22
3/19/2005	2.78	7.78	4.78	9.78	5.78	10.78	6.78	11.78
3/20/2005	0	5.56	2	7.56	3	8.56	4	9.56
3/21/2005	2.78	12.78	4.78	14.78	5.78	15.78	6.78	16.78
3/22/2005	0	8.89	2	10.89	3	11.89	4	12.89
3/23/2005	0	2.22	2	4.22	3	5.22	4	6.22
3/24/2005	0	9.44	2	11.44	3	12.44	4	13.44
3/25/2005	0	12.78	2	14.78	3	15.78	4	16.78
3/26/2005	1.11	17.78	3.11	19.78	4.11	20.78	5.11	21.78
3/27/2005	2.78	16.11	4.78	18.11	5.78	19.11	6.78	20.11
3/28/2005	0	7.78	2	9.78	3	10.78	4	11.78
3/29/2005	0	5	2	7	3	8	4	9
3/30/2005	0	15	2	17	3	18	4	19
3/31/2005	0.56	21.11	2.56	23.11	3.56	24.11	4.56	25.11
4/1/2005	2.78	20.56	4.78	22.56	5.78	23.56	6.78	24.56
4/2/2005	5	18.33	7	20.33	8	21.33	9	22.33
4/3/2005	0.56	11.11	2.56	13.11	3.56	14.11	4.56	15.11
4/4/2005	0	11.67	2	13.67	3	14.67	4	15.67
4/5/2005	4.44	21.11	6.44	23.11	7.44	24.11	8.44	25.11
4/6/2005	5.56	23.89	7.56	25.89	8.56	26.89	9.56	27.89
4/7/2005	1.11	10.56	3.11	12.56	4.11	13.56	5.11	14.56
4/8/2005	0	3.89	2	5.89	3	6.89	4	7.89
4/9/2005	0	13.33	2	15.33	3	16.33	4	17.33
4/10/2005	0.56	17.78	2.56	19.78	3.56	20.78	4.56	21.78
4/11/2005	4.44	18.89	6.44	20.89	7.44	21.89	8.44	22.89
4/12/2005	2.78	18.33	4.78	20.33	5.78	21.33	6.78	22.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/13/2005	0.56	11.67	2.56	13.67	3.56	14.67	4.56	15.67
4/14/2005	2.22	18.89	4.22	20.89	5.22	21.89	6.22	22.89
4/15/2005	7.78	22.78	9.78	24.78	10.78	25.78	11.78	26.78
4/16/2005	6.11	23.33	8.11	25.33	9.11	26.33	10.11	27.33
4/17/2005	5.56	18.33	7.56	20.33	8.56	21.33	9.56	22.33
4/18/2005	1.67	15.56	3.67	17.56	4.67	18.56	5.67	19.56
4/19/2005	2.22	13.89	4.22	15.89	5.22	16.89	6.22	17.89
4/20/2005	0.56	15.56	2.56	17.56	3.56	18.56	4.56	19.56
4/21/2005	6.11	20.56	8.11	22.56	9.11	23.56	10.11	24.56
4/22/2005	7.78	23.89	9.78	25.89	10.78	26.89	11.78	27.89
4/23/2005	5	13.33	7	15.33	8	16.33	9	17.33
4/24/2005	3.89	11.67	5.89	13.67	6.89	14.67	7.89	15.67
4/25/2005	4.44	18.89	6.44	20.89	7.44	21.89	8.44	22.89
4/26/2005	6.11	20.56	8.11	22.56	9.11	23.56	10.11	24.56
4/27/2005	5	15	7	17	8	18	9	19
4/28/2005	5	10.56	7	12.56	8	13.56	9	14.56
4/29/2005	3.89	18.33	5.89	20.33	6.89	21.33	7.89	22.33
4/30/2005	5	16.67	7	18.67	8	19.67	9	20.67
5/1/2005	6.67	14.44	8.67	16.44	9.67	17.44	10.67	18.44
5/2/2005	6.67	20.56	8.67	22.56	9.67	23.56	10.67	24.56
5/3/2005	8.89	22.22	10.89	24.22	11.89	25.22	12.89	26.22
5/4/2005	10	18.89	12	20.89	13	21.89	14	22.89
5/5/2005	6.11	11.11	8.11	13.11	9.11	14.11	10.11	15.11
5/6/2005	5.56	14.44	7.56	16.44	8.56	17.44	9.56	18.44
5/7/2005	2.22	17.78	4.22	19.78	5.22	20.78	6.22	21.78
5/8/2005	7.78	10.56	9.78	12.56	10.78	13.56	11.78	14.56
5/9/2005	1.11	10	3.11	12	4.11	13	5.11	14
5/10/2005	1.11	15	3.11	17	4.11	18	5.11	19
5/11/2005	1.67	18.89	3.67	20.89	4.67	21.89	5.67	22.89
5/12/2005	5.56	22.22	7.56	24.22	8.56	25.22	9.56	26.22
5/13/2005	7.78	23.89	9.78	25.89	10.78	26.89	11.78	27.89
5/14/2005	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
5/15/2005	10.56	18.89	12.56	20.89	13.56	21.89	14.56	22.89
5/16/2005	6.67	12.22	8.67	14.22	9.67	15.22	10.67	16.22
5/17/2005	4.44	15	6.44	17	7.44	18	8.44	19
5/18/2005	7.22	11.67	9.22	13.67	10.22	14.67	11.22	15.67
5/19/2005	8.89	19.44	10.89	21.44	11.89	22.44	12.89	23.44
5/20/2005	7.78	19.44	9.78	21.44	10.78	22.44	11.78	23.44
5/21/2005	8.33	26.11	10.33	28.11	11.33	29.11	12.33	30.11
5/22/2005	12.78	27.78	14.78	29.78	15.78	30.78	16.78	31.78
5/23/2005	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
5/24/2005	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
5/25/2005	11.11	28.89	13.11	30.89	14.11	31.89	15.11	32.89
5/26/2005	16.11	30	18.11	32	19.11	33	20.11	34
5/27/2005	11.67	30	13.67	32	14.67	33	15.67	34
5/28/2005	9.44	25.56	11.44	27.56	12.44	28.56	13.44	29.56
5/29/2005	5	20.56	7	22.56	8	23.56	9	24.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/30/2005	8.89	25.56	10.89	27.56	11.89	28.56	12.89	29.56
5/31/2005	8.33	27.78	10.33	29.78	11.33	30.78	12.33	31.78
6/1/2005	13.89	26.11	15.89	28.11	16.89	29.11	17.89	30.11
6/2/2005	10	23.89	12	25.89	13	26.89	14	27.89
6/3/2005	11.67	24.44	13.67	26.44	14.67	27.44	15.67	28.44
6/4/2005	10	25	12	27	13	28	14	29
6/5/2005	7.78	20	9.78	22	10.78	23	11.78	24
6/6/2005	4.44	16.11	6.44	18.11	7.44	19.11	8.44	20.11
6/7/2005	5	18.33	7	20.33	8	21.33	9	22.33
6/8/2005	7.78	11.67	9.78	13.67	10.78	14.67	11.78	15.67
6/9/2005	8.89	18.89	10.89	20.89	11.89	21.89	12.89	22.89
6/10/2005	8.33	21.67	10.33	23.67	11.33	24.67	12.33	25.67
6/11/2005	10	21.67	12	23.67	13	24.67	14	25.67
6/12/2005	11.11	23.33	13.11	25.33	14.11	26.33	15.11	27.33
6/13/2005	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
6/14/2005	11.11	23.89	13.11	25.89	14.11	26.89	15.11	27.89
6/15/2005	10	25	12	27	13	28	14	29
6/16/2005	7.78	21.67	9.78	23.67	10.78	24.67	11.78	25.67
6/17/2005	6.67	11.11	8.67	13.11	9.67	14.11	10.67	15.11
6/18/2005	6.67	14.44	8.67	16.44	9.67	17.44	10.67	18.44
6/19/2005	6.11	19.44	8.11	21.44	9.11	22.44	10.11	23.44
6/20/2005	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
6/21/2005	9.44	23.89	11.44	25.89	12.44	26.89	13.44	27.89
6/22/2005	10	24.44	12	26.44	13	27.44	14	28.44
6/23/2005	12.78	24.44	14.78	26.44	15.78	27.44	16.78	28.44
6/24/2005	11.67	24.44	13.67	26.44	14.67	27.44	15.67	28.44
6/25/2005	12.22	22.78	14.22	24.78	15.22	25.78	16.22	26.78
6/26/2005	11.67	23.89	13.67	25.89	14.67	26.89	15.67	27.89
6/27/2005	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
6/28/2005	13.33	25.56	15.33	27.56	16.33	28.56	17.33	29.56
6/29/2005	11.11	28.89	13.11	30.89	14.11	31.89	15.11	32.89
6/30/2005	15.56	30.56	17.56	32.56	18.56	33.56	19.56	34.56
7/1/2005	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
7/2/2005	17.78	30.56	19.78	32.56	20.78	33.56	21.78	34.56
7/3/2005	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
7/4/2005	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
7/5/2005	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67
7/6/2005	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
7/7/2005	17.22	31.11	19.22	33.11	20.22	34.11	21.22	35.11
7/8/2005	14.44	28.33	16.44	30.33	17.44	31.33	18.44	32.33
7/9/2005	10.56	26.67	12.56	28.67	13.56	29.67	14.56	30.67
7/10/2005	11.11	29.44	13.11	31.44	14.11	32.44	15.11	33.44
7/11/2005	15.56	32.22	17.56	34.22	18.56	35.22	19.56	36.22
7/12/2005	18.33	34.44	20.33	36.44	21.33	37.44	22.33	38.44
7/13/2005	23.33	36.11	25.33	38.11	26.33	39.11	27.33	40.11
7/14/2005	20	36.11	22	38.11	23	39.11	24	40.11
7/15/2005	23.89	36.11	25.89	38.11	26.89	39.11	27.89	40.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: SSR							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/16/2005	23.33	38.33	25.33	40.33	26.33	41.33	27.33	42.33
7/17/2005	22.78	38.33	24.78	40.33	25.78	41.33	26.78	42.33
7/18/2005	23.89	37.22	25.89	39.22	26.89	40.22	27.89	41.22
7/19/2005	21.11	37.22	23.11	39.22	24.11	40.22	25.11	41.22
7/20/2005	22.78	36.67	24.78	38.67	25.78	39.67	26.78	40.67
7/21/2005	21.67	33.33	23.67	35.33	24.67	36.33	25.67	37.33
7/22/2005	18.33	33.33	20.33	35.33	21.33	36.33	22.33	37.33
7/23/2005	21.67	35.56	23.67	37.56	24.67	38.56	25.67	39.56
7/24/2005	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
7/25/2005	19.44	35	21.44	37	22.44	38	23.44	39
7/26/2005	14.44	35.56	16.44	37.56	17.44	38.56	18.44	39.56
7/27/2005	17.78	36.11	19.78	38.11	20.78	39.11	21.78	40.11
7/28/2005	19.44	35	21.44	37	22.44	38	23.44	39
7/29/2005	21.11	34.44	23.11	36.44	24.11	37.44	25.11	38.44
7/30/2005	21.11	34.44	23.11	36.44	24.11	37.44	25.11	38.44
7/31/2005	18.89	33.89	20.89	35.89	21.89	36.89	22.89	37.89
8/1/2005	20	33.33	22	35.33	23	36.33	24	37.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/1/1999	12.78	32.78	14.78	34.78	15.78	35.78	16.78	36.78
10/2/1999	11.11	30	13.11	32	14.11	33	15.11	34
10/3/1999	11.11	29.44	13.11	31.44	14.11	32.44	15.11	33.44
10/4/1999	9.44	28.89	11.44	30.89	12.44	31.89	13.44	32.89
10/5/1999	8.33	21.67	10.33	23.67	11.33	24.67	12.33	25.67
10/6/1999	8.89	20	10.89	22	11.89	23	12.89	24
10/7/1999	5	24.89	7	26.89	8	27.89	9	28.89
10/8/1999	7.22	30.56	9.22	32.56	10.22	33.56	11.22	34.56
10/9/1999	10.56	31.67	12.56	33.67	13.56	34.67	14.56	35.67
10/10/1999	10	33.33	12	35.33	13	36.33	14	37.33
10/11/1999	11.11	31.11	13.11	33.11	14.11	34.11	15.11	35.11
10/12/1999	8.89	32.78	10.89	34.78	11.89	35.78	12.89	36.78
10/13/1999	10	33.33	12	35.33	13	36.33	14	37.33
10/14/1999	11.11	31.67	13.11	33.67	14.11	34.67	15.11	35.67
10/15/1999	9.44	27.22	11.44	29.22	12.44	30.22	13.44	31.22
10/16/1999	11.67	28.89	13.67	30.89	14.67	31.89	15.67	32.89
10/17/1999	10	28.33	12	30.33	13	31.33	14	32.33
10/18/1999	7.78	26.11	9.78	28.11	10.78	29.11	11.78	30.11
10/19/1999	6.67	27.78	8.67	29.78	9.67	30.78	10.67	31.78
10/20/1999	8.33	29.44	10.33	31.44	11.33	32.44	12.33	33.44
10/21/1999	8.89	30.56	10.89	32.56	11.89	33.56	12.89	34.56
10/22/1999	8.33	30	10.33	32	11.33	33	12.33	34
10/23/1999	8.33	27.22	10.33	29.22	11.33	30.22	12.33	31.22
10/24/1999	7.22	26.67	9.22	28.67	10.22	29.67	11.22	30.67
10/25/1999	6.11	27.22	8.11	29.22	9.11	30.22	10.11	31.22
10/26/1999	6.67	25.56	8.67	27.56	9.67	28.56	10.67	29.56
10/27/1999	7.22	22.78	9.22	24.78	10.22	25.78	11.22	26.78
10/28/1999	6.67	15	8.67	17	9.67	18	10.67	19
10/29/1999	2.78	21.11	4.78	23.11	5.78	24.11	6.78	25.11
10/30/1999	6.11	24.44	8.11	26.44	9.11	27.44	10.11	28.44
10/31/1999	5.56	24.44	7.56	26.44	8.56	27.44	9.56	28.44
11/1/1999	6.11	23.33	8.11	25.33	9.11	26.33	10.11	27.33
11/2/1999	6.67	23.89	8.67	25.89	9.67	26.89	10.67	27.89
11/3/1999	5.56	23.33	7.56	25.33	8.56	26.33	9.56	27.33
11/4/1999	5.56	23.89	7.56	25.89	8.56	26.89	9.56	27.89
11/5/1999	6.67	23.89	8.67	25.89	9.67	26.89	10.67	27.89
11/6/1999	6.11	26.11	8.11	28.11	9.11	29.11	10.11	30.11
11/7/1999	3.33	17.78	5.33	19.78	6.33	20.78	7.33	21.78
11/8/1999	5	13.89	7	15.89	8	16.89	9	17.89
11/9/1999	2.78	18.33	4.78	20.33	5.78	21.33	6.78	22.33
11/10/1999	5	16.67	7	18.67	8	19.67	9	20.67
11/11/1999	7.274	20	9.274	22	10.274	23	11.274	24
11/12/1999	5.56	20	7.56	22	8.56	23	9.56	24
11/13/1999	7.22	22.78	9.22	24.78	10.22	25.78	11.22	26.78
11/14/1999	8.89	20.56	10.89	22.56	11.89	23.56	12.89	24.56
11/15/1999	7.78	20	9.78	22	10.78	23	11.78	24
11/16/1999	5	18.33	7	20.33	8	21.33	9	22.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/17/1999	2.78	11.11	4.78	13.11	5.78	14.11	6.78	15.11
11/18/1999	0.56	15.56	2.56	17.56	3.56	18.56	4.56	19.56
11/19/1999	1.67	8.89	3.67	10.89	4.67	11.89	5.67	12.89
11/20/1999	5	12.22	7	14.22	8	15.22	9	16.22
11/21/1999	-0.56	11.67	1.44	13.67	2.44	14.67	3.44	15.67
11/22/1999	-1.67	10.56	0.33	12.56	1.33	13.56	2.33	14.56
11/23/1999	-0.56	13.89	1.44	15.89	2.44	16.89	3.44	17.89
11/24/1999	0	13.33	2	15.33	3	16.33	4	17.33
11/25/1999	1.67	15	3.67	17	4.67	18	5.67	19
11/26/1999	2.22	15	4.22	17	5.22	18	6.22	19
11/27/1999	1.67	16.67	3.67	18.67	4.67	19.67	5.67	20.67
11/28/1999	2.78	15	4.78	17	5.78	18	6.78	19
11/29/1999	5.56	12.22	7.56	14.22	8.56	15.22	9.56	16.22
11/30/1999	5.56	9.44	7.56	11.44	8.56	12.44	9.56	13.44
12/1/1999	2.22	9.44	4.22	11.44	5.22	12.44	6.22	13.44
12/2/1999	0.56	8.33	2.56	10.33	3.56	11.33	4.56	12.33
12/3/1999	-0.56	8.89	1.44	10.89	2.44	11.89	3.44	12.89
12/4/1999	0	9.44	2	11.44	3	12.44	4	13.44
12/5/1999	0	10	2	12	3	13	4	14
12/6/1999	0.56	12.78	2.56	14.78	3.56	15.78	4.56	16.78
12/7/1999	-0.56	7.22	1.44	9.22	2.44	10.22	3.44	11.22
12/8/1999	-1.67	10.56	0.33	12.56	1.33	13.56	2.33	14.56
12/9/1999	2.22	6.11	4.22	8.11	5.22	9.11	6.22	10.11
12/10/1999	0	6.67	2	8.67	3	9.67	4	10.67
12/11/1999	-1.11	10	0.89	12	1.89	13	2.89	14
12/12/1999	0	11.67	2	13.67	3	14.67	4	15.67
12/13/1999	0	10	2	12	3	13	4	14
12/14/1999	-0.56	10	1.44	12	2.44	13	3.44	14
12/15/1999	0	10	2	12	3	13	4	14
12/16/1999	0	11.67	2	13.67	3	14.67	4	15.67
12/17/1999	0.56	12.78	2.56	14.78	3.56	15.78	4.56	16.78
12/18/1999	3.33	15	5.33	17	6.33	18	7.33	19
12/19/1999	1.67	12.78	3.67	14.78	4.67	15.78	5.67	16.78
12/20/1999	1.67	12.78	3.67	14.78	4.67	15.78	5.67	16.78
12/21/1999	0.56	17.78	2.56	19.78	3.56	20.78	4.56	21.78
12/22/1999	0.56	13.33	2.56	15.33	3.56	16.33	4.56	17.33
12/23/1999	0	11.67	2	13.67	3	14.67	4	15.67
12/24/1999	0	11.67	2	13.67	3	14.67	4	15.67
12/25/1999	-0.56	12.22	1.44	14.22	2.44	15.22	3.44	16.22
12/26/1999	0	12.22	2	14.22	3	15.22	4	16.22
12/27/1999	0	12.22	2	14.22	3	15.22	4	16.22
12/28/1999	0	12.22	2	14.22	3	15.22	4	16.22
12/29/1999	0	10.56	2	12.56	3	13.56	4	14.56
12/30/1999	0	10.56	2	12.56	3	13.56	4	14.56
12/31/1999	1.67	12.78	3.67	14.78	4.67	15.78	5.67	16.78
1/1/2000	-0.56	7.78	1.44	9.78	2.44	10.78	3.44	11.78
1/2/2000	-1.11	5	0.89	7	1.89	8	2.89	9

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/3/2000	-1.11	8.89	0.89	10.89	1.89	11.89	2.89	12.89
1/4/2000	-16.11	11.67	-14.11	13.67	-13.11	14.67	-12.11	15.67
1/5/2000	-1.11	9.44	0.89	11.44	1.89	12.44	2.89	13.44
1/6/2000	-2.78	11.11	-0.78	13.11	0.22	14.11	1.22	15.11
1/7/2000	0	10.56	2	12.56	3	13.56	4	14.56
1/8/2000	-0.56	12.78	1.44	14.78	2.44	15.78	3.44	16.78
1/9/2000	0.56	12.78	2.56	14.78	3.56	15.78	4.56	16.78
1/10/2000	2.22	13.33	4.22	15.33	5.22	16.33	6.22	17.33
1/11/2000	2.78	8.33	4.78	10.33	5.78	11.33	6.78	12.33
1/12/2000	4.44	8.89	6.44	10.89	7.44	11.89	8.44	12.89
1/13/2000	2.78	13.89	4.78	15.89	5.78	16.89	6.78	17.89
1/14/2000	0.56	12.78	2.56	14.78	3.56	15.78	4.56	16.78
1/15/2000	6.67	10	8.67	12	9.67	13	10.67	14
1/16/2000	2.78	7.78	4.78	9.78	5.78	10.78	6.78	11.78
1/17/2000	5.56	10	7.56	12	8.56	13	9.56	14
1/18/2000	7.78	13.89	9.78	15.89	10.78	16.89	11.78	17.89
1/19/2000	6.11	12.78	8.11	14.78	9.11	15.78	10.11	16.78
1/20/2000	5.56	11.11	7.56	13.11	8.56	14.11	9.56	15.11
1/21/2000	2.22	10	4.22	12	5.22	13	6.22	14
1/22/2000	2.22	14.44	4.22	16.44	5.22	17.44	6.22	18.44
1/23/2000	5.56	8.33	7.56	10.33	8.56	11.33	9.56	12.33
1/24/2000	7.22	11.11	9.22	13.11	10.22	14.11	11.22	15.11
1/25/2000	7.22	10.49	9.22	12.49	10.22	13.49	11.22	14.49
1/26/2000	3.974	9.887	5.974	11.887	6.974	12.887	7.974	13.887
1/27/2000	2.874	10.99	4.874	12.99	5.874	13.99	6.874	14.99
1/28/2000	0.5744	12.09	2.5744	14.09	3.5744	15.09	4.5744	16.09
1/29/2000	0.5744	14.39	2.5744	16.39	3.5744	17.39	4.5744	18.39
1/30/2000	5.074	13.29	7.074	15.29	8.074	16.29	9.074	17.29
1/31/2000	3.374	9.887	5.374	11.887	6.374	12.887	7.374	13.887
2/1/2000	2.874	13.29	4.874	15.29	5.874	16.29	6.874	17.29
2/2/2000	2.274	16.59	4.274	18.59	5.274	19.59	6.274	20.59
2/3/2000	2.874	17.09	4.874	19.09	5.874	20.09	6.874	21.09
2/4/2000	5.074	13.79	7.074	15.79	8.074	16.79	9.074	17.79
2/5/2000	5.574	14.39	7.574	16.39	8.574	17.39	9.574	18.39
2/6/2000	3.974	15.49	5.974	17.49	6.974	18.49	7.974	19.49
2/7/2000	2.874	18.29	4.874	20.29	5.874	21.29	6.874	22.29
2/8/2000	3.374	17.69	5.374	19.69	6.374	20.69	7.374	21.69
2/9/2000	7.274	13.29	9.274	15.29	10.274	16.29	11.274	17.29
2/10/2000	6.774	13.79	8.774	15.79	9.774	16.79	10.774	17.79
2/11/2000	3.374	9.387	5.374	11.387	6.374	12.387	7.374	13.387
2/12/2000	1.174	8.287	3.174	10.287	4.174	11.287	5.174	12.287
2/13/2000	2.874	12.09	4.874	14.09	5.874	15.09	6.874	16.09
2/14/2000	5.574	14.39	7.574	16.39	8.574	17.39	9.574	18.39
2/15/2000	0.5744	15.49	2.5744	17.49	3.5744	18.49	4.5744	19.49
2/16/2000	3.89	7.22	5.89	9.22	6.89	10.22	7.89	11.22
2/17/2000	1.11	9.44	3.11	11.44	4.11	12.44	5.11	13.44
2/18/2000	0	16.67	2	18.67	3	19.67	4	20.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/19/2000	1.11	16.67	3.11	18.67	4.11	19.67	5.11	20.67
2/20/2000	6.11	12.78	8.11	14.78	9.11	15.78	10.11	16.78
2/21/2000	2.78	15	4.78	17	5.78	18	6.78	19
2/22/2000	3.33	8.89	5.33	10.89	6.33	11.89	7.33	12.89
2/23/2000	0.56	7.78	2.56	9.78	3.56	10.78	4.56	11.78
2/24/2000	-1.11	7.22	0.89	9.22	1.89	10.22	2.89	11.22
2/25/2000	1.11	13.89	3.11	15.89	4.11	16.89	5.11	17.89
2/26/2000	5	15.56	7	17.56	8	18.56	9	19.56
2/27/2000	2.78	8.89	4.78	10.89	5.78	11.89	6.78	12.89
2/28/2000	2.22	11.67	4.22	13.67	5.22	14.67	6.22	15.67
2/29/2000	0	6.67	2	8.67	3	9.67	4	10.67
3/1/2000	0	15.56	2	17.56	3	18.56	4	19.56
3/2/2000	3.33	7.78	5.33	9.78	6.33	10.78	7.33	11.78
3/3/2000	0.56	17.22	2.56	19.22	3.56	20.22	4.56	21.22
3/4/2000	2.78	17.22	4.78	19.22	5.78	20.22	6.78	21.22
3/5/2000	3.33	8.33	5.33	10.33	6.33	11.33	7.33	12.33
3/6/2000	3.33	6.11	5.33	8.11	6.33	9.11	7.33	10.11
3/7/2000	0	8.33	2	10.33	3	11.33	4	12.33
3/8/2000	1.67	9.44	3.67	11.44	4.67	12.44	5.67	13.44
3/9/2000	1.67	9.44	3.67	11.44	4.67	12.44	5.67	13.44
3/10/2000	0	16.67	2	18.67	3	19.67	4	20.67
3/11/2000	5	17.22	7	19.22	8	20.22	9	21.22
3/12/2000	2.22	20	4.22	22	5.22	23	6.22	24
3/13/2000	3.89	20.56	5.89	22.56	6.89	23.56	7.89	24.56
3/14/2000	4.44	21.67	6.44	23.67	7.44	24.67	8.44	25.67
3/15/2000	3.89	21.67	5.89	23.67	6.89	24.67	7.89	25.67
3/16/2000	3.89	17.22	5.89	19.22	6.89	20.22	7.89	21.22
3/17/2000	1.11	20.56	3.11	22.56	4.11	23.56	5.11	24.56
3/18/2000	3.89	23.33	5.89	25.33	6.89	26.33	7.89	27.33
3/19/2000	2.78	17.78	4.78	19.78	5.78	20.78	6.78	21.78
3/20/2000	0	16.67	2	18.67	3	19.67	4	20.67
3/21/2000	0	21.11	2	23.11	3	24.11	4	25.11
3/22/2000	2.78	20.56	4.78	22.56	5.78	23.56	6.78	24.56
3/23/2000	6.67	20	8.67	22	9.67	23	10.67	24
3/24/2000	4.44	20.56	6.44	22.56	7.44	23.56	8.44	24.56
3/25/2000	5	21.11	7	23.11	8	24.11	9	25.11
3/26/2000	5	21.67	7	23.67	8	24.67	9	25.67
3/27/2000	4.44	15	6.44	17	7.44	18	8.44	19
3/28/2000	1.67	15	3.67	17	4.67	18	5.67	19
3/29/2000	3.89	17.22	5.89	19.22	6.89	20.22	7.89	21.22
3/30/2000	2.22	21.67	4.22	23.67	5.22	24.67	6.22	25.67
3/31/2000	6.67	23.89	8.67	25.89	9.67	26.89	10.67	27.89
4/1/2000	8.33	25	10.33	27	11.33	28	12.33	29
4/2/2000	7.22	27.22	9.22	29.22	10.22	30.22	11.22	31.22
4/3/2000	6.67	27.78	8.67	29.78	9.67	30.78	10.67	31.78
4/4/2000	8.89	25.56	10.89	27.56	11.89	28.56	12.89	29.56
4/5/2000	7.22	25	9.22	27	10.22	28	11.22	29

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/6/2000	5	24.44	7	26.44	8	27.44	9	28.44
4/7/2000	5	25.56	7	27.56	8	28.56	9	29.56
4/8/2000	5.56	21.67	7.56	23.67	8.56	24.67	9.56	25.67
4/9/2000	3.33	18.89	5.33	20.89	6.33	21.89	7.33	22.89
4/10/2000	3.374	23.33	5.374	25.33	6.374	26.33	7.374	27.33
4/11/2000	6.11	26.67	8.11	28.67	9.11	29.67	10.11	30.67
4/12/2000	9.44	25.56	11.44	27.56	12.44	28.56	13.44	29.56
4/13/2000	6.67	12.22	8.67	14.22	9.67	15.22	10.67	16.22
4/14/2000	5.56	15	7.56	17	8.56	18	9.56	19
4/15/2000	5	14.44	7	16.44	8	17.44	9	18.44
4/16/2000	7.22	15.56	9.22	17.56	10.22	18.56	11.22	19.56
4/17/2000	4.44	9.44	6.44	11.44	7.44	12.44	8.44	13.44
4/18/2000	4.44	14.44	6.44	16.44	7.44	17.44	8.44	18.44
4/19/2000	2.78	15.56	4.78	17.56	5.78	18.56	6.78	19.56
4/20/2000	5	20.56	7	22.56	8	23.56	9	24.56
4/21/2000	6.67	22.22	8.67	24.22	9.67	25.22	10.67	26.22
4/22/2000	6.11	13.89	8.11	15.89	9.11	16.89	10.11	17.89
4/23/2000	4.44	17.78	6.44	19.78	7.44	20.78	8.44	21.78
4/24/2000	2.78	22.22	4.78	24.22	5.78	25.22	6.78	26.22
4/25/2000	5	22.78	7	24.78	8	25.78	9	26.78
4/26/2000	6.67	27.22	8.67	29.22	9.67	30.22	10.67	31.22
4/27/2000	8.33	22.22	10.33	24.22	11.33	25.22	12.33	26.22
4/28/2000	5	15	7	17	8	18	9	19
4/29/2000	1.774	21.11	3.774	23.11	4.774	24.11	5.774	25.11
4/30/2000	7.274	25.56	9.274	27.56	10.274	28.56	11.274	29.56
5/1/2000	8.89	25.56	10.89	27.56	11.89	28.56	12.89	29.56
5/2/2000	7.22	25	9.22	27	10.22	28	11.22	29
5/3/2000	7.22	26.11	9.22	28.11	10.22	29.11	11.22	30.11
5/4/2000	8.89	23.33	10.89	25.33	11.89	26.33	12.89	27.33
5/5/2000	8.33	20	10.33	22	11.33	23	12.33	24
5/6/2000	5	18.89	7	20.89	8	21.89	9	22.89
5/7/2000	7.78	13.89	9.78	15.89	10.78	16.89	11.78	17.89
5/8/2000	10.56	18.89	12.56	20.89	13.56	21.89	14.56	22.89
5/9/2000	7.22	20.56	9.22	22.56	10.22	23.56	11.22	24.56
5/10/2000	3.33	12.22	5.33	14.22	6.33	15.22	7.33	16.22
5/11/2000	0	15.56	2	17.56	3	18.56	4	19.56
5/12/2000	0.56	19.44	2.56	21.44	3.56	22.44	4.56	23.44
5/13/2000	7.22	22.22	9.22	24.22	10.22	25.22	11.22	26.22
5/14/2000	4.44	20.56	6.44	22.56	7.44	23.56	8.44	24.56
5/15/2000	6.67	11.11	8.67	13.11	9.67	14.11	10.67	15.11
5/16/2000	5.56	9.44	7.56	11.44	8.56	12.44	9.56	13.44
5/17/2000	4.44	18.89	6.44	20.89	7.44	21.89	8.44	22.89
5/18/2000	6.67	25	8.67	27	9.67	28	10.67	29
5/19/2000	10	28.89	12	30.89	13	31.89	14	32.89
5/20/2000	10.56	31.11	12.56	33.11	13.56	34.11	14.56	35.11
5/21/2000	10.56	33.33	12.56	35.33	13.56	36.33	14.56	37.33
5/22/2000	12.22	34.44	14.22	36.44	15.22	37.44	16.22	38.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/23/2000	13.89	32.78	15.89	34.78	16.89	35.78	17.89	36.78
5/24/2000	15	28.89	17	30.89	18	31.89	19	32.89
5/25/2000	9.474	25	11.474	27	12.474	28	13.474	29
5/26/2000	10	26.11	12	28.11	13	29.11	14	30.11
5/27/2000	10.56	28.89	12.56	30.89	13.56	31.89	14.56	32.89
5/28/2000	10.56	30	12.56	32	13.56	33	14.56	34
5/29/2000	8.89	26.11	10.89	28.11	11.89	29.11	12.89	30.11
5/30/2000	6.67	23.89	8.67	25.89	9.67	26.89	10.67	27.89
5/31/2000	7.22	26.11	9.22	28.11	10.22	29.11	11.22	30.11
6/1/2000	8.33	28.89	10.33	30.89	11.33	31.89	12.33	32.89
6/2/2000	9.44	29.44	11.44	31.44	12.44	32.44	13.44	33.44
6/3/2000	10	31.11	12	33.11	13	34.11	14	35.11
6/4/2000	12.22	32.22	14.22	34.22	15.22	35.22	16.22	36.22
6/5/2000	8.33	26.11	10.33	28.11	11.33	29.11	12.33	30.11
6/6/2000	9.44	27.78	11.44	29.78	12.44	30.78	13.44	31.78
6/7/2000	9.44	23.33	11.44	25.33	12.44	26.33	13.44	27.33
6/8/2000	10	16.11	12	18.11	13	19.11	14	20.11
6/9/2000	6.67	20.56	8.67	22.56	9.67	23.56	10.67	24.56
6/10/2000	5.56	21.67	7.56	23.67	8.56	24.67	9.56	25.67
6/11/2000	6.67	25.56	8.67	27.56	9.67	28.56	10.67	29.56
6/12/2000	12.22	28.33	14.22	30.33	15.22	31.33	16.22	32.33
6/13/2000	12.22	34.44	14.22	36.44	15.22	37.44	16.22	38.44
6/14/2000	12.78	37.78	14.78	39.78	15.78	40.78	16.78	41.78
6/15/2000	16.11	37.22	18.11	39.22	19.11	40.22	20.11	41.22
6/16/2000	13.89	35	15.89	37	16.89	38	17.89	39
6/17/2000	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78
6/18/2000	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
6/19/2000	12.78	30	14.78	32	15.78	33	16.78	34
6/20/2000	11.11	33.89	13.11	35.89	14.11	36.89	15.11	37.89
6/21/2000	13.89	34.44	15.89	36.44	16.89	37.44	17.89	38.44
6/22/2000	13.33	33.89	15.33	35.89	16.33	36.89	17.33	37.89
6/23/2000	13.33	31.67	15.33	33.67	16.33	34.67	17.33	35.67
6/24/2000	15	32.78	17	34.78	18	35.78	19	36.78
6/25/2000	12.78	31.67	14.78	33.67	15.78	34.67	16.78	35.67
6/26/2000	15.08	34.44	17.08	36.44	18.08	37.44	19.08	38.44
6/27/2000	15.56	35	17.56	37	18.56	38	19.56	39
6/28/2000	16.67	34.44	18.67	36.44	19.67	37.44	20.67	38.44
6/29/2000	16.11	33.89	18.11	35.89	19.11	36.89	20.11	37.89
6/30/2000	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
7/1/2000	10.56	28.89	12.56	30.89	13.56	31.89	14.56	32.89
7/2/2000	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
7/3/2000	8.33	25	10.33	27	11.33	28	12.33	29
7/4/2000	8.89	26.11	10.89	28.11	11.89	29.11	12.89	30.11
7/5/2000	8.89	23.89	10.89	25.89	11.89	26.89	12.89	27.89
7/6/2000	8.89	25	10.89	27	11.89	28	12.89	29
7/7/2000	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
7/8/2000	9.44	27.22	11.44	29.22	12.44	30.22	13.44	31.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/9/2000	10.56	29.44	12.56	31.44	13.56	32.44	14.56	33.44
7/10/2000	12.78	29.44	14.78	31.44	15.78	32.44	16.78	33.44
7/11/2000	12.78	30.56	14.78	32.56	15.78	33.56	16.78	34.56
7/12/2000	13.33	32.22	15.33	34.22	16.33	35.22	17.33	36.22
7/13/2000	13.89	30	15.89	32	16.89	33	17.89	34
7/14/2000	12.78	32.22	14.78	34.22	15.78	35.22	16.78	36.22
7/15/2000	13.89	31.11	15.89	33.11	16.89	34.11	17.89	35.11
7/16/2000	15.56	28.89	17.56	30.89	18.56	31.89	19.56	32.89
7/17/2000	11.67	28.33	13.67	30.33	14.67	31.33	15.67	32.33
7/18/2000	11.11	31.11	13.11	33.11	14.11	34.11	15.11	35.11
7/19/2000	11.67	33.33	13.67	35.33	14.67	36.33	15.67	37.33
7/20/2000	11.67	34.44	13.67	36.44	14.67	37.44	15.67	38.44
7/21/2000	13.33	33.89	15.33	35.89	16.33	36.89	17.33	37.89
7/22/2000	12.22	32.22	14.22	34.22	15.22	35.22	16.22	36.22
7/23/2000	12.78	35	14.78	37	15.78	38	16.78	39
7/24/2000	13.89	34.44	15.89	36.44	16.89	37.44	17.89	38.44
7/25/2000	13.89	34.44	15.89	36.44	16.89	37.44	17.89	38.44
7/26/2000	14.44	31.67	16.44	33.67	17.44	34.67	18.44	35.67
7/27/2000	11.18	32.78	13.18	34.78	14.18	35.78	15.18	36.78
7/28/2000	12.22	34.44	14.22	36.44	15.22	37.44	16.22	38.44
7/29/2000	13.89	35	15.89	37	16.89	38	17.89	39
7/30/2000	16.67	37.22	18.67	39.22	19.67	40.22	20.67	41.22
7/31/2000	16.11	38.33	18.11	40.33	19.11	41.33	20.11	42.33
8/1/2000	17.78	38.89	19.78	40.89	20.78	41.89	21.78	42.89
8/2/2000	17.78	37.22	19.78	39.22	20.78	40.22	21.78	41.22
8/3/2000	20	35	22	37	23	38	24	39
8/4/2000	16.67	34.44	18.67	36.44	19.67	37.44	20.67	38.44
8/5/2000	16.67	34.44	18.67	36.44	19.67	37.44	20.67	38.44
8/6/2000	14.44	34.44	16.44	36.44	17.44	37.44	18.44	38.44
8/7/2000	15.56	32.22	17.56	34.22	18.56	35.22	19.56	36.22
8/8/2000	12.78	30.56	14.78	32.56	15.78	33.56	16.78	34.56
8/9/2000	13.89	30.56	15.89	32.56	16.89	33.56	17.89	34.56
8/10/2000	12.78	29.44	14.78	31.44	15.78	32.44	16.78	33.44
8/11/2000	11.11	32.78	13.11	34.78	14.11	35.78	15.11	36.78
8/12/2000	12.78	34.44	14.78	36.44	15.78	37.44	16.78	38.44
8/13/2000	12.78	33.89	14.78	35.89	15.78	36.89	16.78	37.89
8/14/2000	12.22	34.44	14.22	36.44	15.22	37.44	16.22	38.44
8/15/2000	12.78	35	14.78	37	15.78	38	16.78	39
8/16/2000	13.33	35.56	15.33	37.56	16.33	38.56	17.33	39.56
8/17/2000	12.78	34.44	14.78	36.44	15.78	37.44	16.78	38.44
8/18/2000	11.67	31.11	13.67	33.11	14.67	34.11	15.67	35.11
8/19/2000	10	28.89	12	30.89	13	31.89	14	32.89
8/20/2000	10	28.89	12	30.89	13	31.89	14	32.89
8/21/2000	10.56	31.67	12.56	33.67	13.56	34.67	14.56	35.67
8/22/2000	12.22	31.67	14.22	33.67	15.22	34.67	16.22	35.67
8/23/2000	12.78	31.11	14.78	33.11	15.78	34.11	16.78	35.11
8/24/2000	11.67	32.78	13.67	34.78	14.67	35.78	15.67	36.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/25/2000	13.89	33.89	15.89	35.89	16.89	36.89	17.89	37.89
8/26/2000	13.89	32.78	15.89	34.78	16.89	35.78	17.89	36.78
8/27/2000	14.44	33.33	16.44	35.33	17.44	36.33	18.44	37.33
8/28/2000	14.44	32.78	16.44	34.78	17.44	35.78	18.44	36.78
8/29/2000	16.67	23.89	18.67	25.89	19.67	26.89	20.67	27.89
8/30/2000	12.78	19.44	14.78	21.44	15.78	22.44	16.78	23.44
8/31/2000	11.67	22.22	13.67	24.22	14.67	25.22	15.67	26.22
9/1/2000	11.11	16.11	13.11	18.11	14.11	19.11	15.11	20.11
9/2/2000	10	16.11	12	18.11	13	19.11	14	20.11
9/3/2000	8.33	18.89	10.33	20.89	11.33	21.89	12.33	22.89
9/4/2000	5.56	19.44	7.56	21.44	8.56	22.44	9.56	23.44
9/5/2000	5	23.33	7	25.33	8	26.33	9	27.33
9/6/2000	6.67	26.67	8.67	28.67	9.67	29.67	10.67	30.67
9/7/2000	8.89	32.22	10.89	34.22	11.89	35.22	12.89	36.22
9/8/2000	10	30.56	12	32.56	13	33.56	14	34.56
9/9/2000	10	30.56	12	32.56	13	33.56	14	34.56
9/10/2000	10.56	31.11	12.56	33.11	13.56	34.11	14.56	35.11
9/11/2000	11.11	32.78	13.11	34.78	14.11	35.78	15.11	36.78
9/12/2000	10.56	33.33	12.56	35.33	13.56	36.33	14.56	37.33
9/13/2000	13.89	33.89	15.89	35.89	16.89	36.89	17.89	37.89
9/14/2000	12.22	28.33	14.22	30.33	15.22	31.33	16.22	32.33
9/15/2000	12.22	28.33	14.22	30.33	15.22	31.33	16.22	32.33
9/16/2000	11.11	30.56	13.11	32.56	14.11	33.56	15.11	34.56
9/17/2000	10.56	34.44	12.56	36.44	13.56	37.44	14.56	38.44
9/18/2000	13.89	36.11	15.89	38.11	16.89	39.11	17.89	40.11
9/19/2000	12.78	35.56	14.78	37.56	15.78	38.56	16.78	39.56
9/20/2000	13.33	35.56	15.33	37.56	16.33	38.56	17.33	39.56
9/21/2000	12.22	25.56	14.22	27.56	15.22	28.56	16.22	29.56
9/22/2000	12.22	17.22	14.22	19.22	15.22	20.22	16.22	21.22
9/23/2000	7.78	24.44	9.78	26.44	10.78	27.44	11.78	28.44
9/24/2000	7.22	27.78	9.22	29.78	10.22	30.78	11.22	31.78
9/25/2000	9.44	30	11.44	32	12.44	33	13.44	34
9/26/2000	10	31.11	12	33.11	13	34.11	14	35.11
9/27/2000	11.11	28.33	13.11	30.33	14.11	31.33	15.11	32.33
9/28/2000	10	25.56	12	27.56	13	28.56	14	29.56
9/29/2000	8.89	30.56	10.89	32.56	11.89	33.56	12.89	34.56
9/30/2000	10.56	31.11	12.56	33.11	13.56	34.11	14.56	35.11
10/1/2000	12.22	32.78	14.22	34.78	15.22	35.78	16.22	36.78
10/2/2000	11.67	28.89	13.67	30.89	14.67	31.89	15.67	32.89
10/3/2000	10.56	28.89	12.56	30.89	13.56	31.89	14.56	32.89
10/4/2000	10.56	28.33	12.56	30.33	13.56	31.33	14.56	32.33
10/5/2000	8.89	32.22	10.89	34.22	11.89	35.22	12.89	36.22
10/6/2000	10	31.11	12	33.11	13	34.11	14	35.11
10/7/2000	10.56	27.22	12.56	29.22	13.56	30.22	14.56	31.22
10/8/2000	9.44	28.33	11.44	30.33	12.44	31.33	13.44	32.33
10/9/2000	9.44	17.78	11.44	19.78	12.44	20.78	13.44	21.78
10/10/2000	6.11	14.44	8.11	16.44	9.11	17.44	10.11	18.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/11/2000	4.44	10.56	6.44	12.56	7.44	13.56	8.44	14.56
10/12/2000	3.33	15.56	5.33	17.56	6.33	18.56	7.33	19.56
10/13/2000	3.89	19.44	5.89	21.44	6.89	22.44	7.89	23.44
10/14/2000	7.274	21.67	9.274	23.67	10.274	24.67	11.274	25.67
10/15/2000	6.67	23.33	8.67	25.33	9.67	26.33	10.67	27.33
10/16/2000	7.78	25	9.78	27	10.78	28	11.78	29
10/17/2000	7.78	25.56	9.78	27.56	10.78	28.56	11.78	29.56
10/18/2000	7.78	26.67	9.78	28.67	10.78	29.67	11.78	30.67
10/19/2000	7.78	26.11	9.78	28.11	10.78	29.11	11.78	30.11
10/20/2000	7.78	21.67	9.78	23.67	10.78	24.67	11.78	25.67
10/21/2000	7.78	19.44	9.78	21.44	10.78	22.44	11.78	23.44
10/22/2000	8.89	19.44	10.89	21.44	11.89	22.44	12.89	23.44
10/23/2000	4.44	23.33	6.44	25.33	7.44	26.33	8.44	27.33
10/24/2000	6.11	23.33	8.11	25.33	9.11	26.33	10.11	27.33
10/25/2000	6.67	16.11	8.67	18.11	9.67	19.11	10.67	20.11
10/26/2000	7.22	10.56	9.22	12.56	10.22	13.56	11.22	14.56
10/27/2000	3.89	16.67	5.89	18.67	6.89	19.67	7.89	20.67
10/28/2000	5.56	13.33	7.56	15.33	8.56	16.33	9.56	17.33
10/29/2000	5	8.89	7	10.89	8	11.89	9	12.89
10/30/2000	2.22	11.67	4.22	13.67	5.22	14.67	6.22	15.67
10/31/2000	1.11	15	3.11	17	4.11	18	5.11	19
11/1/2000	1.11	15	3.11	17	4.11	18	5.11	19
11/2/2000	3.89	18.89	5.89	20.89	6.89	21.89	7.89	22.89
11/3/2000	2.78	19.44	4.78	21.44	5.78	22.44	6.78	23.44
11/4/2000	2.22	19.44	4.22	21.44	5.22	22.44	6.22	23.44
11/5/2000	3.89	18.33	5.89	20.33	6.89	21.33	7.89	22.33
11/6/2000	1.67	17.78	3.67	19.78	4.67	20.78	5.67	21.78
11/7/2000	0.56	16.67	2.56	18.67	3.56	19.67	4.56	20.67
11/8/2000	2.78	13.89	4.78	15.89	5.78	16.89	6.78	17.89
11/9/2000	0.56	10.56	2.56	12.56	3.56	13.56	4.56	14.56
11/10/2000	0	3.89	2	5.89	3	6.89	4	7.89
11/11/2000	-1.67	6.67	0.33	8.67	1.33	9.67	2.33	10.67
11/12/2000	-1.11	7.78	0.89	9.78	1.89	10.78	2.89	11.78
11/13/2000	-1.67	7.78	0.33	9.78	1.33	10.78	2.33	11.78
11/14/2000	-1.11	8.89	0.89	10.89	1.89	11.89	2.89	12.89
11/15/2000	-1.11	9.44	0.89	11.44	1.89	12.44	2.89	13.44
11/16/2000	-1.67	10.56	0.33	12.56	1.33	13.56	2.33	14.56
11/17/2000	-1.11	10.56	0.89	12.56	1.89	13.56	2.89	14.56
11/18/2000	-2.22	10.56	-0.22	12.56	0.78	13.56	1.78	14.56
11/19/2000	0	14.44	2	16.44	3	17.44	4	18.44
11/20/2000	0.56	14.44	2.56	16.44	3.56	17.44	4.56	18.44
11/21/2000	0.56	12.78	2.56	14.78	3.56	15.78	4.56	16.78
11/22/2000	0	12.78	2	14.78	3	15.78	4	16.78
11/23/2000	-1.11	10.56	0.89	12.56	1.89	13.56	2.89	14.56
11/24/2000	0.56	15	2.56	17	3.56	18	4.56	19
11/25/2000	0	18.33	2	20.33	3	21.33	4	22.33
11/26/2000	3.33	15.56	5.33	17.56	6.33	18.56	7.33	19.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/27/2000	3.89	18.33	5.89	20.33	6.89	21.33	7.89	22.33
11/28/2000	3.89	17.22	5.89	19.22	6.89	20.22	7.89	21.22
11/29/2000	1.67	8.33	3.67	10.33	4.67	11.33	5.67	12.33
11/30/2000	1.67	11.11	3.67	13.11	4.67	14.11	5.67	15.11
12/1/2000	0.56	11.67	2.56	13.67	3.56	14.67	4.56	15.67
12/2/2000	0.56	11.67	2.56	13.67	3.56	14.67	4.56	15.67
12/3/2000	2.78	14.44	4.78	16.44	5.78	17.44	6.78	18.44
12/4/2000	3.33	16.67	5.33	18.67	6.33	19.67	7.33	20.67
12/5/2000	3.33	15.56	5.33	17.56	6.33	18.56	7.33	19.56
12/6/2000	2.78	16.67	4.78	18.67	5.78	19.67	6.78	20.67
12/7/2000	6.11	16.67	8.11	18.67	9.11	19.67	10.11	20.67
12/8/2000	4.44	16.11	6.44	18.11	7.44	19.11	8.44	20.11
12/9/2000	2.874	13.29	4.874	15.29	5.874	16.29	6.874	17.29
12/10/2000	2.78	13.89	4.78	15.89	5.78	16.89	6.78	17.89
12/11/2000	1.11	10.56	3.11	12.56	4.11	13.56	5.11	14.56
12/12/2000	1.11	8.89	3.11	10.89	4.11	11.89	5.11	12.89
12/13/2000	1.67	10	3.67	12	4.67	13	5.67	14
12/14/2000	4.44	8.33	6.44	10.33	7.44	11.33	8.44	12.33
12/15/2000	2.78	10.56	4.78	12.56	5.78	13.56	6.78	14.56
12/16/2000	0	10	2	12	3	13	4	14
12/17/2000	0.56	11.67	2.56	13.67	3.56	14.67	4.56	15.67
12/18/2000	-1.11	10	0.89	12	1.89	13	2.89	14
12/19/2000	1.11	13.33	3.11	15.33	4.11	16.33	5.11	17.33
12/20/2000	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89
12/21/2000	1.67	16.11	3.67	18.11	4.67	19.11	5.67	20.11
12/22/2000	2.78	9.44	4.78	11.44	5.78	12.44	6.78	13.44
12/23/2000	0	11.11	2	13.11	3	14.11	4	15.11
12/24/2000	0	10.56	2	12.56	3	13.56	4	14.56
12/25/2000	0	12.78	2	14.78	3	15.78	4	16.78
12/26/2000	-1.11	10.56	0.89	12.56	1.89	13.56	2.89	14.56
12/27/2000	0.56	15	2.56	17	3.56	18	4.56	19
12/28/2000	1.11	12.78	3.11	14.78	4.11	15.78	5.11	16.78
12/29/2000	1.67	12.22	3.67	14.22	4.67	15.22	5.67	16.22
12/30/2000	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89
12/31/2000	1.11	12.22	3.11	14.22	4.11	15.22	5.11	16.22
1/1/2001	0.56	12.78	2.56	14.78	3.56	15.78	4.56	16.78
1/2/2001	-0.56	15.56	1.44	17.56	2.44	18.56	3.44	19.56
1/3/2001	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89
1/4/2001	0	13.89	2	15.89	3	16.89	4	17.89
1/5/2001	0.56	12.22	2.56	14.22	3.56	15.22	4.56	16.22
1/6/2001	1.11	13.33	3.11	15.33	4.11	16.33	5.11	17.33
1/7/2001	1.11	11.67	3.11	13.67	4.11	14.67	5.11	15.67
1/8/2001	2.874	10.56	4.874	12.56	5.874	13.56	6.874	14.56
1/9/2001	0	7.22	2	9.22	3	10.22	4	11.22
1/10/2001	0.56	7.22	2.56	9.22	3.56	10.22	4.56	11.22
1/11/2001	1.67	6.67	3.67	8.67	4.67	9.67	5.67	10.67
1/12/2001	0	10.56	2	12.56	3	13.56	4	14.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/13/2001	0	8.89	2	10.89	3	11.89	4	12.89
1/14/2001	-1.11	10.56	0.89	12.56	1.89	13.56	2.89	14.56
1/15/2001	-2.78	8.89	-0.78	10.89	0.22	11.89	1.22	12.89
1/16/2001	-2.78	8.33	-0.78	10.33	0.22	11.33	1.22	12.33
1/17/2001	-2.78	8.89	-0.78	10.89	0.22	11.89	1.22	12.89
1/18/2001	-2.78	11.67	-0.78	13.67	0.22	14.67	1.22	15.67
1/19/2001	1.67	14.44	3.67	16.44	4.67	17.44	5.67	18.44
1/20/2001	0	12.22	2	14.22	3	15.22	4	16.22
1/21/2001	0.56	14.44	2.56	16.44	3.56	17.44	4.56	18.44
1/22/2001	1.67	17.78	3.67	19.78	4.67	20.78	5.67	21.78
1/23/2001	2.22	13.89	4.22	15.89	5.22	16.89	6.22	17.89
1/24/2001	0	3.89	2	5.89	3	6.89	4	7.89
1/25/2001	0	3.89	2	5.89	3	6.89	4	7.89
1/26/2001	-0.56	6.67	1.44	8.67	2.44	9.67	3.44	10.67
1/27/2001	-1.67	8.33	0.33	10.33	1.33	11.33	2.33	12.33
1/28/2001	-2.78	7.78	-0.78	9.78	0.22	10.78	1.22	11.78
1/29/2001	-0.56	7.22	1.44	9.22	2.44	10.22	3.44	11.22
1/30/2001	-2.78	8.89	-0.78	10.89	0.22	11.89	1.22	12.89
1/31/2001	-2.78	10.56	-0.78	12.56	0.22	13.56	1.22	14.56
2/1/2001	-2.78	10.56	-0.78	12.56	0.22	13.56	1.22	14.56
2/2/2001	0	13.33	2	15.33	3	16.33	4	17.33
2/3/2001	2.78	20.56	4.78	22.56	5.78	23.56	6.78	24.56
2/4/2001	3.33	18.33	5.33	20.33	6.33	21.33	7.33	22.33
2/5/2001	2.78	21.11	4.78	23.11	5.78	24.11	6.78	25.11
2/6/2001	0	8.33	2	10.33	3	11.33	4	12.33
2/7/2001	-3.33	5.56	-1.33	7.56	-0.33	8.56	0.67	9.56
2/8/2001	-4.44	11.67	-2.44	13.67	-1.44	14.67	-0.44	15.67
2/9/2001	0	6.11	2	8.11	3	9.11	4	10.11
2/10/2001	0	2.22	2	4.22	3	5.22	4	6.22
2/11/2001	0	3.33	2	5.33	3	6.33	4	7.33
2/12/2001	-2.22	4.44	-0.22	6.44	0.78	7.44	1.78	8.44
2/13/2001	-1.67	11.11	0.33	13.11	1.33	14.11	2.33	15.11
2/14/2001	-0.56	11.67	1.44	13.67	2.44	14.67	3.44	15.67
2/15/2001	-1.67	9.44	0.33	11.44	1.33	12.44	2.33	13.44
2/16/2001	-0.56	13.89	1.44	15.89	2.44	16.89	3.44	17.89
2/17/2001	0	6.67	2	8.67	3	9.67	4	10.67
2/18/2001	1.67	6.67	3.67	8.67	4.67	9.67	5.67	10.67
2/19/2001	2.22	7.78	4.22	9.78	5.22	10.78	6.22	11.78
2/20/2001	2.22	7.22	4.22	9.22	5.22	10.22	6.22	11.22
2/21/2001	2.22	11.11	4.22	13.11	5.22	14.11	6.22	15.11
2/22/2001	0	6.67	2	8.67	3	9.67	4	10.67
2/23/2001	0	8.89	2	10.89	3	11.89	4	12.89
2/24/2001	1.11	4.44	3.11	6.44	4.11	7.44	5.11	8.44
2/25/2001	2.22	10.56	4.22	12.56	5.22	13.56	6.22	14.56
2/26/2001	0	13.33	2	15.33	3	16.33	4	17.33
2/27/2001	0	17.78	2	19.78	3	20.78	4	21.78
2/28/2001	-1.67	11.67	0.33	13.67	1.33	14.67	2.33	15.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/1/2001	-0.56	12.78	1.44	14.78	2.44	15.78	3.44	16.78
3/2/2001	0	5.56	2	7.56	3	8.56	4	9.56
3/3/2001	-0.56	11.67	1.44	13.67	2.44	14.67	3.44	15.67
3/4/2001	4.44	8.33	6.44	10.33	7.44	11.33	8.44	12.33
3/5/2001	5	8.89	7	10.89	8	11.89	9	12.89
3/6/2001	2.22	16.11	4.22	18.11	5.22	19.11	6.22	20.11
3/7/2001	1.67	17.78	3.67	19.78	4.67	20.78	5.67	21.78
3/8/2001	5	16.67	7	18.67	8	19.67	9	20.67
3/9/2001	0.56	10.56	2.56	12.56	3.56	13.56	4.56	14.56
3/10/2001	0	15.56	2	17.56	3	18.56	4	19.56
3/11/2001	0	15.56	2	17.56	3	18.56	4	19.56
3/12/2001	0	17.78	2	19.78	3	20.78	4	21.78
3/13/2001	1.11	21.11	3.11	23.11	4.11	24.11	5.11	25.11
3/14/2001	1.67	20	3.67	22	4.67	23	5.67	24
3/15/2001	2.78	16.67	4.78	18.67	5.78	19.67	6.78	20.67
3/16/2001	1.67	17.78	3.67	19.78	4.67	20.78	5.67	21.78
3/17/2001	3.89	20.56	5.89	22.56	6.89	23.56	7.89	24.56
3/18/2001	5	24.44	7	26.44	8	27.44	9	28.44
3/19/2001	6.67	26.11	8.67	28.11	9.67	29.11	10.67	30.11
3/20/2001	8.33	25	10.33	27	11.33	28	12.33	29
3/21/2001	7.78	25.56	9.78	27.56	10.78	28.56	11.78	29.56
3/22/2001	8.33	22.78	10.33	24.78	11.33	25.78	12.33	26.78
3/23/2001	6.11	22.22	8.11	24.22	9.11	25.22	10.11	26.22
3/24/2001	8.89	20.56	10.89	22.56	11.89	23.56	12.89	24.56
3/25/2001	6.67	15.56	8.67	17.56	9.67	18.56	10.67	19.56
3/26/2001	3.33	20	5.33	22	6.33	23	7.33	24
3/27/2001	4.44	22.78	6.44	24.78	7.44	25.78	8.44	26.78
3/28/2001	7.78	23.89	9.78	25.89	10.78	26.89	11.78	27.89
3/29/2001	6.11	23.33	8.11	25.33	9.11	26.33	10.11	27.33
3/30/2001	6.11	25	8.11	27	9.11	28	10.11	29
3/31/2001	7.22	25.56	9.22	27.56	10.22	28.56	11.22	29.56
4/1/2001	7.22	20.56	9.22	22.56	10.22	23.56	11.22	24.56
4/2/2001	0.56	11.11	2.56	13.11	3.56	14.11	4.56	15.11
4/3/2001	-0.56	10.56	1.44	12.56	2.44	13.56	3.44	14.56
4/4/2001	0	12.22	2	14.22	3	15.22	4	16.22
4/5/2001	0	16.11	2	18.11	3	19.11	4	20.11
4/6/2001	1.67	10.56	3.67	12.56	4.67	13.56	5.67	14.56
4/7/2001	0	5.56	2	7.56	3	8.56	4	9.56
4/8/2001	0	7.78	2	9.78	3	10.78	4	11.78
4/9/2001	0	11.11	2	13.11	3	14.11	4	15.11
4/10/2001	-1.67	15	0.33	17	1.33	18	2.33	19
4/11/2001	2.78	6.67	4.78	8.67	5.78	9.67	6.78	10.67
4/12/2001	0	15.56	2	17.56	3	18.56	4	19.56
4/13/2001	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89
4/14/2001	0.56	16.67	2.56	18.67	3.56	19.67	4.56	20.67
4/15/2001	2.22	20.56	4.22	22.56	5.22	23.56	6.22	24.56
4/16/2001	5.56	20	7.56	22	8.56	23	9.56	24

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/17/2001	3.89	20	5.89	22	6.89	23	7.89	24
4/18/2001	4.44	20	6.44	22	7.44	23	8.44	24
4/19/2001	2.78	8.33	4.78	10.33	5.78	11.33	6.78	12.33
4/20/2001	0	6.11	2	8.11	3	9.11	4	10.11
4/21/2001	0.56	14.44	2.56	16.44	3.56	17.44	4.56	18.44
4/22/2001	1.67	18.33	3.67	20.33	4.67	21.33	5.67	22.33
4/23/2001	5	22.22	7	24.22	8	25.22	9	26.22
4/24/2001	7.22	26.11	9.22	28.11	10.22	29.11	11.22	30.11
4/25/2001	8.89	28.33	10.89	30.33	11.89	31.33	12.89	32.33
4/26/2001	11.11	27.78	13.11	29.78	14.11	30.78	15.11	31.78
4/27/2001	7.22	23.89	9.22	25.89	10.22	26.89	11.22	27.89
4/28/2001	5.56	16.67	7.56	18.67	8.56	19.67	9.56	20.67
4/29/2001	4.44	21.11	6.44	23.11	7.44	24.11	8.44	25.11
4/30/2001	6.67	26.67	8.67	28.67	9.67	29.67	10.67	30.67
5/1/2001	8.33	25	10.33	27	11.33	28	12.33	29
5/2/2001	5	20.56	7	22.56	8	23.56	9	24.56
5/3/2001	1.67	22.78	3.67	24.78	4.67	25.78	5.67	26.78
5/4/2001	5.56	25.56	7.56	27.56	8.56	28.56	9.56	29.56
5/5/2001	7.78	26.67	9.78	28.67	10.78	29.67	11.78	30.67
5/6/2001	7.22	28.33	9.22	30.33	10.22	31.33	11.22	32.33
5/7/2001	8.89	31.11	10.89	33.11	11.89	34.11	12.89	35.11
5/8/2001	11.67	32.78	13.67	34.78	14.67	35.78	15.67	36.78
5/9/2001	11.11	32.22	13.11	34.22	14.11	35.22	15.11	36.22
5/10/2001	10	32.22	12	34.22	13	35.22	14	36.22
5/11/2001	12.22	32.22	14.22	34.22	15.22	35.22	16.22	36.22
5/12/2001	12.22	26.67	14.22	28.67	15.22	29.67	16.22	30.67
5/13/2001	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
5/14/2001	8.33	25	10.33	27	11.33	28	12.33	29
5/15/2001	13.89	24.44	15.89	26.44	16.89	27.44	17.89	28.44
5/16/2001	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
5/17/2001	8.33	28.89	10.33	30.89	11.33	31.89	12.33	32.89
5/18/2001	10	28.33	12	30.33	13	31.33	14	32.33
5/19/2001	11.11	32.22	13.11	34.22	14.11	35.22	15.11	36.22
5/20/2001	11.11	32.78	13.11	34.78	14.11	35.78	15.11	36.78
5/21/2001	13.89	34.44	15.89	36.44	16.89	37.44	17.89	38.44
5/22/2001	13.89	33.89	15.89	35.89	16.89	36.89	17.89	37.89
5/23/2001	13.89	33.33	15.89	35.33	16.89	36.33	17.89	37.33
5/24/2001	12.22	32.78	14.22	34.78	15.22	35.78	16.22	36.78
5/25/2001	11.11	31.11	13.11	33.11	14.11	34.11	15.11	35.11
5/26/2001	10.56	29.44	12.56	31.44	13.56	32.44	14.56	33.44
5/27/2001	9.44	27.22	11.44	29.22	12.44	30.22	13.44	31.22
5/28/2001	6.67	24.44	8.67	26.44	9.67	27.44	10.67	28.44
5/29/2001	9.44	29.44	11.44	31.44	12.44	32.44	13.44	33.44
5/30/2001	11.11	35	13.11	37	14.11	38	15.11	39
5/31/2001	12.78	36.11	14.78	38.11	15.78	39.11	16.78	40.11
6/1/2001	13.89	30.56	15.89	32.56	16.89	33.56	17.89	34.56
6/2/2001	9.44	25	11.44	27	12.44	28	13.44	29

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/3/2001	7.22	23.89	9.22	25.89	10.22	26.89	11.22	27.89
6/4/2001	6.67	26.67	8.67	28.67	9.67	29.67	10.67	30.67
6/5/2001	8.89	25	10.89	27	11.89	28	12.89	29
6/6/2001	8.89	30.56	10.89	32.56	11.89	33.56	12.89	34.56
6/7/2001	10.56	32.78	12.56	34.78	13.56	35.78	14.56	36.78
6/8/2001	11.67	31.11	13.67	33.11	14.67	34.11	15.67	35.11
6/9/2001	10	28.89	12	30.89	13	31.89	14	32.89
6/10/2001	10	28.33	12	30.33	13	31.33	14	32.33
6/11/2001	10	26.67	12	28.67	13	29.67	14	30.67
6/12/2001	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
6/13/2001	7.78	27.78	9.78	29.78	10.78	30.78	11.78	31.78
6/14/2001	9.44	32.22	11.44	34.22	12.44	35.22	13.44	36.22
6/15/2001	11.11	33.89	13.11	35.89	14.11	36.89	15.11	37.89
6/16/2001	12.22	33.33	14.22	35.33	15.22	36.33	16.22	37.33
6/17/2001	12.22	33.33	14.22	35.33	15.22	36.33	16.22	37.33
6/18/2001	11.11	33.89	13.11	35.89	14.11	36.89	15.11	37.89
6/19/2001	12.78	34.44	14.78	36.44	15.78	37.44	16.78	38.44
6/20/2001	13.89	35.56	15.89	37.56	16.89	38.56	17.89	39.56
6/21/2001	15	36.11	17	38.11	18	39.11	19	40.11
6/22/2001	15.56	36.11	17.56	38.11	18.56	39.11	19.56	40.11
6/23/2001	13.89	32.78	15.89	34.78	16.89	35.78	17.89	36.78
6/24/2001	9.44	28.33	11.44	30.33	12.44	31.33	13.44	32.33
6/25/2001	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
6/26/2001	13.33	25	15.33	27	16.33	28	17.33	29
6/27/2001	11.67	20.56	13.67	22.56	14.67	23.56	15.67	24.56
6/28/2001	8.89	27.22	10.89	29.22	11.89	30.22	12.89	31.22
6/29/2001	12.22	31.11	14.22	33.11	15.22	34.11	16.22	35.11
6/30/2001	13.89	32.78	15.89	34.78	16.89	35.78	17.89	36.78
7/1/2001	13.98	35	15.98	37	16.98	38	17.98	39
7/2/2001	15.56	38.33	17.56	40.33	18.56	41.33	19.56	42.33
7/3/2001	18.89	38.89	20.89	40.89	21.89	41.89	22.89	42.89
7/4/2001	18.89	37.78	20.89	39.78	21.89	40.78	22.89	41.78
7/5/2001	18.89	36.11	20.89	38.11	21.89	39.11	22.89	40.11
7/6/2001	17.22	31.11	19.22	33.11	20.22	34.11	21.22	35.11
7/7/2001	16.67	30	18.67	32	19.67	33	20.67	34
7/8/2001	15	32.78	17	34.78	18	35.78	19	36.78
7/9/2001	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78
7/10/2001	15	30.56	17	32.56	18	33.56	19	34.56
7/11/2001	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
7/12/2001	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
7/13/2001	12.22	31.11	14.22	33.11	15.22	34.11	16.22	35.11
7/14/2001	12.78	30	14.78	32	15.78	33	16.78	34
7/15/2001	11.11	28.89	13.11	30.89	14.11	31.89	15.11	32.89
7/16/2001	11.11	25	13.11	27	14.11	28	15.11	29
7/17/2001	11.67	27.22	13.67	29.22	14.67	30.22	15.67	31.22
7/18/2001	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
7/19/2001	11.67	28.33	13.67	30.33	14.67	31.33	15.67	32.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/20/2001	10	27.78	12	29.78	13	30.78	14	31.78
7/21/2001	10	27.78	12	29.78	13	30.78	14	31.78
7/22/2001	10.56	30	12.56	32	13.56	33	14.56	34
7/23/2001	12.22	31.67	14.22	33.67	15.22	34.67	16.22	35.67
7/24/2001	13.33	33.89	15.33	35.89	16.33	36.89	17.33	37.89
7/25/2001	15.56	33.89	17.56	35.89	18.56	36.89	19.56	37.89
7/26/2001	16.11	36.11	18.11	38.11	19.11	39.11	20.11	40.11
7/27/2001	15	37.22	17	39.22	18	40.22	19	41.22
7/28/2001	14.44	35	16.44	37	17.44	38	18.44	39
7/29/2001	12.78	32.78	14.78	34.78	15.78	35.78	16.78	36.78
7/30/2001	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
7/31/2001	12.78	30.56	14.78	32.56	15.78	33.56	16.78	34.56
8/1/2001	13.89	32.22	15.89	34.22	16.89	35.22	17.89	36.22
8/2/2001	13.89	33.89	15.89	35.89	16.89	36.89	17.89	37.89
8/3/2001	15	31.11	17	33.11	18	34.11	19	35.11
8/4/2001	11.67	28.89	13.67	30.89	14.67	31.89	15.67	32.89
8/5/2001	12.22	32.22	14.22	34.22	15.22	35.22	16.22	36.22
8/6/2001	15	35.56	17	37.56	18	38.56	19	39.56
8/7/2001	16.67	37.22	18.67	39.22	19.67	40.22	20.67	41.22
8/8/2001	18.33	38.33	20.33	40.33	21.33	41.33	22.33	42.33
8/9/2001	17.22	35.56	19.22	37.56	20.22	38.56	21.22	39.56
8/10/2001	15.56	33.89	17.56	35.89	18.56	36.89	19.56	37.89
8/11/2001	13.89	35	15.89	37	16.89	38	17.89	39
8/12/2001	15	35	17	37	18	38	19	39
8/13/2001	13.33	32.78	15.33	34.78	16.33	35.78	17.33	36.78
8/14/2001	13.89	35	15.89	37	16.89	38	17.89	39
8/15/2001	13.89	35	15.89	37	16.89	38	17.89	39
8/16/2001	14.44	36.11	16.44	38.11	17.44	39.11	18.44	40.11
8/17/2001	15	36.11	17	38.11	18	39.11	19	40.11
8/18/2001	15	35.56	17	37.56	18	38.56	19	39.56
8/19/2001	13.89	34.44	15.89	36.44	16.89	37.44	17.89	38.44
8/20/2001	12.78	30	14.78	32	15.78	33	16.78	34
8/21/2001	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
8/22/2001	10.56	27.78	12.56	29.78	13.56	30.78	14.56	31.78
8/23/2001	10	28.33	12	30.33	13	31.33	14	32.33
8/24/2001	11.67	31.67	13.67	33.67	14.67	34.67	15.67	35.67
8/25/2001	12.78	34.44	14.78	36.44	15.78	37.44	16.78	38.44
8/26/2001	15	36.11	17	38.11	18	39.11	19	40.11
8/27/2001	15.56	36.67	17.56	38.67	18.56	39.67	19.56	40.67
8/28/2001	15.56	37.22	17.56	39.22	18.56	40.22	19.56	41.22
8/29/2001	15	34.44	17	36.44	18	37.44	19	38.44
8/30/2001	15	30	17	32	18	33	19	34
8/31/2001	13.33	31.11	15.33	33.11	16.33	34.11	17.33	35.11
9/1/2001	13.89	32.78	15.89	34.78	16.89	35.78	17.89	36.78
9/2/2001	13.89	33.89	15.89	35.89	16.89	36.89	17.89	37.89
9/3/2001	15	33.89	17	35.89	18	36.89	19	37.89
9/4/2001	15	33.89	17	35.89	18	36.89	19	37.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/5/2001	13.89	30.56	15.89	32.56	16.89	33.56	17.89	34.56
9/6/2001	10.56	30.56	12.56	32.56	13.56	33.56	14.56	34.56
9/7/2001	10.56	32.22	12.56	34.22	13.56	35.22	14.56	36.22
9/8/2001	10	31.67	12	33.67	13	34.67	14	35.67
9/9/2001	12.78	31.11	14.78	33.11	15.78	34.11	16.78	35.11
9/10/2001	10	28.89	12	30.89	13	31.89	14	32.89
9/11/2001	15	27.78	17	29.78	18	30.78	19	31.78
9/12/2001	11.67	28.33	13.67	30.33	14.67	31.33	15.67	32.33
9/13/2001	11.11	30	13.11	32	14.11	33	15.11	34
9/14/2001	12.22	31.11	14.22	33.11	15.22	34.11	16.22	35.11
9/15/2001	12.22	31.11	14.22	33.11	15.22	34.11	16.22	35.11
9/16/2001	13.33	30.56	15.33	32.56	16.33	33.56	17.33	34.56
9/17/2001	11.67	30.56	13.67	32.56	14.67	33.56	15.67	34.56
9/18/2001	12.78	32.22	14.78	34.22	15.78	35.22	16.78	36.22
9/19/2001	12.78	32.22	14.78	34.22	15.78	35.22	16.78	36.22
9/20/2001	12.78	32.78	14.78	34.78	15.78	35.78	16.78	36.78
9/21/2001	12.78	33.33	14.78	35.33	15.78	36.33	16.78	37.33
9/22/2001	12.22	33.33	14.22	35.33	15.22	36.33	16.22	37.33
9/23/2001	12.78	31.11	14.78	33.11	15.78	34.11	16.78	35.11
9/24/2001	12.22	32.78	14.22	34.78	15.22	35.78	16.22	36.78
9/25/2001	11.11	25.56	13.11	27.56	14.11	28.56	15.11	29.56
9/26/2001	9.44	28.33	11.44	30.33	12.44	31.33	13.44	32.33
9/27/2001	10.56	27.78	12.56	29.78	13.56	30.78	14.56	31.78
9/28/2001	8.89	27.78	10.89	29.78	11.89	30.78	12.89	31.78
9/29/2001	8.89	30.56	10.89	32.56	11.89	33.56	12.89	34.56
9/30/2001	12.78	36.11	14.78	38.11	15.78	39.11	16.78	40.11
10/1/2001	15	36.67	17	38.67	18	39.67	19	40.67
10/2/2001	13.89	36.11	15.89	38.11	16.89	39.11	17.89	40.11
10/3/2001	15	35.56	17	37.56	18	38.56	19	39.56
10/4/2001	13.33	33.33	15.33	35.33	16.33	36.33	17.33	37.33
10/5/2001	11.11	23.89	13.11	25.89	14.11	26.89	15.11	27.89
10/6/2001	7.22	22.78	9.22	24.78	10.22	25.78	11.22	26.78
10/7/2001	8.89	25	10.89	27	11.89	28	12.89	29
10/8/2001	10	25	12	27	13	28	14	29
10/9/2001	6.67	26.11	8.67	28.11	9.67	29.11	10.67	30.11
10/10/2001	7.22	26.67	9.22	28.67	10.22	29.67	11.22	30.67
10/11/2001	10	25	12	27	13	28	14	29
10/12/2001	8.89	27.78	10.89	29.78	11.89	30.78	12.89	31.78
10/13/2001	6.11	30	8.11	32	9.11	33	10.11	34
10/14/2001	7.78	32.78	9.78	34.78	10.78	35.78	11.78	36.78
10/15/2001	10.56	31.67	12.56	33.67	13.56	34.67	14.56	35.67
10/16/2001	11.67	28.89	13.67	30.89	14.67	31.89	15.67	32.89
10/17/2001	11.11	27.22	13.11	29.22	14.11	30.22	15.11	31.22
10/18/2001	8.89	28.89	10.89	30.89	11.89	31.89	12.89	32.89
10/19/2001	8.89	28.33	10.89	30.33	11.89	31.33	12.89	32.33
10/20/2001	8.89	28.33	10.89	30.33	11.89	31.33	12.89	32.33
10/21/2001	8.33	25.56	10.33	27.56	11.33	28.56	12.33	29.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/22/2001	7.22	25	9.22	27	10.22	28	11.22	29
10/23/2001	8.33	23.89	10.33	25.89	11.33	26.89	12.33	27.89
10/24/2001	6.67	24.44	8.67	26.44	9.67	27.44	10.67	28.44
10/25/2001	8.33	26.11	10.33	28.11	11.33	29.11	12.33	30.11
10/26/2001	8.33	30	10.33	32	11.33	33	12.33	34
10/27/2001	9.44	25.56	11.44	27.56	12.44	28.56	13.44	29.56
10/28/2001	5.56	20	7.56	22	8.56	23	9.56	24
10/29/2001	7.22	18.89	9.22	20.89	10.22	21.89	11.22	22.89
10/30/2001	9.44	12.78	11.44	14.78	12.44	15.78	13.44	16.78
10/31/2001	5.56	17.78	7.56	19.78	8.56	20.78	9.56	21.78
11/1/2001	3.89	18.33	5.89	20.33	6.89	21.33	7.89	22.33
11/2/2001	4.44	22.22	6.44	24.22	7.44	25.22	8.44	26.22
11/3/2001	6.67	22.78	8.67	24.78	9.67	25.78	10.67	26.78
11/4/2001	7.22	25.56	9.22	27.56	10.22	28.56	11.22	29.56
11/5/2001	7.22	23.89	9.22	25.89	10.22	26.89	11.22	27.89
11/6/2001	6.11	22.78	8.11	24.78	9.11	25.78	10.11	26.78
11/7/2001	5.56	22.78	7.56	24.78	8.56	25.78	9.56	26.78
11/8/2001	4.44	26.11	6.44	28.11	7.44	29.11	8.44	30.11
11/9/2001	7.22	22.78	9.22	24.78	10.22	25.78	11.22	26.78
11/10/2001	7.22	23.33	9.22	25.33	10.22	26.33	11.22	27.33
11/11/2001	9.44	15.56	11.44	17.56	12.44	18.56	13.44	19.56
11/12/2001	5.56	14.44	7.56	16.44	8.56	17.44	9.56	18.44
11/13/2001	6.11	14.44	8.11	16.44	9.11	17.44	10.11	18.44
11/14/2001	6.11	18.89	8.11	20.89	9.11	21.89	10.11	22.89
11/15/2001	4.44	18.89	6.44	20.89	7.44	21.89	8.44	22.89
11/16/2001	5	21.11	7	23.11	8	24.11	9	25.11
11/17/2001	6.11	18.33	8.11	20.33	9.11	21.33	10.11	22.33
11/18/2001	3.33	16.67	5.33	18.67	6.33	19.67	7.33	20.67
11/19/2001	-13.89	22.22	-11.89	24.22	-10.89	25.22	-9.89	26.22
11/20/2001	-15	14.44	-13	16.44	-12	17.44	-11	18.44
11/21/2001	8.33	11.11	10.33	13.11	11.33	14.11	12.33	15.11
11/22/2001	6.11	11.67	8.11	13.67	9.11	14.67	10.11	15.67
11/23/2001	2.78	12.22	4.78	14.22	5.78	15.22	6.78	16.22
11/24/2001	2.78	10.56	4.78	12.56	5.78	13.56	6.78	14.56
11/25/2001	0	6.11	2	8.11	3	9.11	4	10.11
11/26/2001	-0.56	7.22	1.44	9.22	2.44	10.22	3.44	11.22
11/27/2001	-1.11	7.22	0.89	9.22	1.89	10.22	2.89	11.22
11/28/2001	1.11	8.33	3.11	10.33	4.11	11.33	5.11	12.33
11/29/2001	1.11	5.56	3.11	7.56	4.11	8.56	5.11	9.56
11/30/2001	1.11	10	3.11	12	4.11	13	5.11	14
12/1/2001	3.33	5.56	5.33	7.56	6.33	8.56	7.33	9.56
12/2/2001	2.78	8.33	4.78	10.33	5.78	11.33	6.78	12.33
12/3/2001	0	5	2	7	3	8	4	9
12/4/2001	-1.11	5	0.89	7	1.89	8	2.89	9
12/5/2001	1.67	4.44	3.67	6.44	4.67	7.44	5.67	8.44
12/6/2001	2.78	12.22	4.78	14.22	5.78	15.22	6.78	16.22
12/7/2001	0	12.22	2	14.22	3	15.22	4	16.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/8/2001	1.11	12.78	3.11	14.78	4.11	15.78	5.11	16.78
12/9/2001	0	6.11	2	8.11	3	9.11	4	10.11
12/10/2001	-0.56	10	1.44	12	2.44	13	3.44	14
12/11/2001	-1.67	7.78	0.33	9.78	1.33	10.78	2.33	11.78
12/12/2001	-1.11	6.67	0.89	8.67	1.89	9.67	2.89	10.67
12/13/2001	0	11.11	2	13.11	3	14.11	4	15.11
12/14/2001	0	3.89	2	5.89	3	6.89	4	7.89
12/15/2001	-2.22	3.33	-0.22	5.33	0.78	6.33	1.78	7.33
12/16/2001	-1.11	6.67	0.89	8.67	1.89	9.67	2.89	10.67
12/17/2001	2.22	6.11	4.22	8.11	5.22	9.11	6.22	10.11
12/18/2001	0	8.89	2	10.89	3	11.89	4	12.89
12/19/2001	0.56	10	2.56	12	3.56	13	4.56	14
12/20/2001	0	5.56	2	7.56	3	8.56	4	9.56
12/21/2001	0	4.44	2	6.44	3	7.44	4	8.44
12/22/2001	1.11	5.56	3.11	7.56	4.11	8.56	5.11	9.56
12/23/2001	0	6.67	2	8.67	3	9.67	4	10.67
12/24/2001	-1.11	6.67	0.89	8.67	1.89	9.67	2.89	10.67
12/25/2001	0	8.89	2	10.89	3	11.89	4	12.89
12/26/2001	4.44	12.78	6.44	14.78	7.44	15.78	8.44	16.78
12/27/2001	2.78	12.22	4.78	14.22	5.78	15.22	6.78	16.22
12/28/2001	5	8.89	7	10.89	8	11.89	9	12.89
12/29/2001	6.11	10.56	8.11	12.56	9.11	13.56	10.11	14.56
12/30/2001	5.56	10	7.56	12	8.56	13	9.56	14
12/31/2001	6.11	11.67	8.11	13.67	9.11	14.67	10.11	15.67
1/1/2002	5	10.56	7	12.56	8	13.56	9	14.56
1/2/2002	5.56	9.44	7.56	11.44	8.56	12.44	9.56	13.44
1/3/2002	1.67	9.44	3.67	11.44	4.67	12.44	5.67	13.44
1/4/2002	0	10.56	2	12.56	3	13.56	4	14.56
1/5/2002	1.11	11.67	3.11	13.67	4.11	14.67	5.11	15.67
1/6/2002	7.22	12.22	9.22	14.22	10.22	15.22	11.22	16.22
1/7/2002	5	14.44	7	16.44	8	17.44	9	18.44
1/8/2002	3.33	13.89	5.33	15.89	6.33	16.89	7.33	17.89
1/9/2002	1.67	11.11	3.67	13.11	4.67	14.11	5.67	15.11
1/10/2002	0	11.67	2	13.67	3	14.67	4	15.67
1/11/2002	2.22	13.33	4.22	15.33	5.22	16.33	6.22	17.33
1/12/2002	1.67	14.44	3.67	16.44	4.67	17.44	5.67	18.44
1/13/2002	0	13.33	2	15.33	3	16.33	4	17.33
1/14/2002	-1.67	10.56	0.33	12.56	1.33	13.56	2.33	14.56
1/15/2002	-3.89	8.89	-1.89	10.89	-0.89	11.89	0.11	12.89
1/16/2002	-3.89	10	-1.89	12	-0.89	13	0.11	14
1/17/2002	-1.11	10.56	0.89	12.56	1.89	13.56	2.89	14.56
1/18/2002	-2.22	10.56	-0.22	12.56	0.78	13.56	1.78	14.56
1/19/2002	-2.22	8.89	-0.22	10.89	0.78	11.89	1.78	12.89
1/20/2002	-1.67	13.33	0.33	15.33	1.33	16.33	2.33	17.33
1/21/2002	-1.11	9.44	0.89	11.44	1.89	12.44	2.89	13.44
1/22/2002	-2.22	7.78	-0.22	9.78	0.78	10.78	1.78	11.78
1/23/2002	-3.33	7.22	-1.33	9.22	-0.33	10.22	0.67	11.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/24/2002	-2.78	10	-0.78	12	0.22	13	1.22	14
1/25/2002	-1.11	13.89	0.89	15.89	1.89	16.89	2.89	17.89
1/26/2002	0	4.44	2	6.44	3	7.44	4	8.44
1/27/2002	-1.11	5.56	0.89	7.56	1.89	8.56	2.89	9.56
1/28/2002	-3.89	2.22	-1.89	4.22	-0.89	5.22	0.11	6.22
1/29/2002	-6.67	3.89	-4.67	5.89	-3.67	6.89	-2.67	7.89
1/30/2002	-5	4.44	-3	6.44	-2	7.44	-1	8.44
1/31/2002	-5	6.67	-3	8.67	-2	9.67	-1	10.67
2/1/2002	-1.67	10.56	0.33	12.56	1.33	13.56	2.33	14.56
2/2/2002	-2.78	10	-0.78	12	0.22	13	1.22	14
2/3/2002	-1.11	12.78	0.89	14.78	1.89	15.78	2.89	16.78
2/4/2002	-1.67	13.33	0.33	15.33	1.33	16.33	2.33	17.33
2/5/2002	-1.11	16.67	0.89	18.67	1.89	19.67	2.89	20.67
2/6/2002	0	16.67	2	18.67	3	19.67	4	20.67
2/7/2002	1.67	12.78	3.67	14.78	4.67	15.78	5.67	16.78
2/8/2002	0.56	14.44	2.56	16.44	3.56	17.44	4.56	18.44
2/9/2002	-0.56	17.22	1.44	19.22	2.44	20.22	3.44	21.22
2/10/2002	0	16.67	2	18.67	3	19.67	4	20.67
2/11/2002	0.56	18.33	2.56	20.33	3.56	21.33	4.56	22.33
2/12/2002	0	18.89	2	20.89	3	21.89	4	22.89
2/13/2002	2.22	12.78	4.22	14.78	5.22	15.78	6.22	16.78
2/14/2002	3.33	19.44	5.33	21.44	6.33	22.44	7.33	23.44
2/15/2002	3.33	18.33	5.33	20.33	6.33	21.33	7.33	22.33
2/16/2002	2.78	17.78	4.78	19.78	5.78	20.78	6.78	21.78
2/17/2002	0.56	6.67	2.56	8.67	3.56	9.67	4.56	10.67
2/18/2002	0	8.89	2	10.89	3	11.89	4	12.89
2/19/2002	4.44	8.33	6.44	10.33	7.44	11.33	8.44	12.33
2/20/2002	6.11	16.67	8.11	18.67	9.11	19.67	10.11	20.67
2/21/2002	3.89	22.78	5.89	24.78	6.89	25.78	7.89	26.78
2/22/2002	4.44	25.56	6.44	27.56	7.44	28.56	8.44	29.56
2/23/2002	2.22	12.78	4.22	14.78	5.22	15.78	6.22	16.78
2/24/2002	0.56	18.89	2.56	20.89	3.56	21.89	4.56	22.89
2/25/2002	1.11	20	3.11	22	4.11	23	5.11	24
2/26/2002	3.89	24.44	5.89	26.44	6.89	27.44	7.89	28.44
2/27/2002	2.78	23.33	4.78	25.33	5.78	26.33	6.78	27.33
2/28/2002	3.89	21.11	5.89	23.11	6.89	24.11	7.89	25.11
3/1/2002	1.11	19.44	3.11	21.44	4.11	22.44	5.11	23.44
3/2/2002	-0.56	17.22	1.44	19.22	2.44	20.22	3.44	21.22
3/3/2002	1.67	17.22	3.67	19.22	4.67	20.22	5.67	21.22
3/4/2002	1.11	18.89	3.11	20.89	4.11	21.89	5.11	22.89
3/5/2002	1.67	18.89	3.67	20.89	4.67	21.89	5.67	22.89
3/6/2002	5	9.44	7	11.44	8	12.44	9	13.44
3/7/2002	2.22	7.78	4.22	9.78	5.22	10.78	6.22	11.78
3/8/2002	-0.56	12.22	1.44	14.22	2.44	15.22	3.44	16.22
3/9/2002	0	15.56	2	17.56	3	18.56	4	19.56
3/10/2002	3.33	13.33	5.33	15.33	6.33	16.33	7.33	17.33
3/11/2002	2.22	18.33	4.22	20.33	5.22	21.33	6.22	22.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/12/2002	6.11	15.56	8.11	17.56	9.11	18.56	10.11	19.56
3/13/2002	0	10	2	12	3	13	4	14
3/14/2002	-1.11	11.11	0.89	13.11	1.89	14.11	2.89	15.11
3/15/2002	-2.22	7.78	-0.22	9.78	0.78	10.78	1.78	11.78
3/16/2002	-1.11	4.44	0.89	6.44	1.89	7.44	2.89	8.44
3/17/2002	-0.56	3.89	1.44	5.89	2.44	6.89	3.44	7.89
3/18/2002	-2.78	12.78	-0.78	14.78	0.22	15.78	1.22	16.78
3/19/2002	-1.11	18.33	0.89	20.33	1.89	21.33	2.89	22.33
3/20/2002	1.67	21.67	3.67	23.67	4.67	24.67	5.67	25.67
3/21/2002	4.44	24.44	6.44	26.44	7.44	27.44	8.44	28.44
3/22/2002	5	15.56	7	17.56	8	18.56	9	19.56
3/23/2002	3.33	7.22	5.33	9.22	6.33	10.22	7.33	11.22
3/24/2002	3.33	12.78	5.33	14.78	6.33	15.78	7.33	16.78
3/25/2002	0	15	2	17	3	18	4	19
3/26/2002	1.67	19.44	3.67	21.44	4.67	22.44	5.67	23.44
3/27/2002	2.78	22.78	4.78	24.78	5.78	25.78	6.78	26.78
3/28/2002	3.89	26.11	5.89	28.11	6.89	29.11	7.89	30.11
3/29/2002	5	25.56	7	27.56	8	28.56	9	29.56
3/30/2002	5	27.78	7	29.78	8	30.78	9	31.78
3/31/2002	5.56	26.67	7.56	28.67	8.56	29.67	9.56	30.67
4/1/2002	7.22	27.78	9.22	29.78	10.22	30.78	11.22	31.78
4/2/2002	6.67	27.78	8.67	29.78	9.67	30.78	10.67	31.78
4/3/2002	8.89	23.33	10.89	25.33	11.89	26.33	12.89	27.33
4/4/2002	8.33	20	10.33	22	11.33	23	12.33	24
4/5/2002	6.67	13.33	8.67	15.33	9.67	16.33	10.67	17.33
4/6/2002	7.22	17.78	9.22	19.78	10.22	20.78	11.22	21.78
4/7/2002	4.44	21.11	6.44	23.11	7.44	24.11	8.44	25.11
4/8/2002	6.11	22.22	8.11	24.22	9.11	25.22	10.11	26.22
4/9/2002	7.78	16.11	9.78	18.11	10.78	19.11	11.78	20.11
4/10/2002	6.67	21.11	8.67	23.11	9.67	24.11	10.67	25.11
4/11/2002	7.78	22.22	9.78	24.22	10.78	25.22	11.78	26.22
4/12/2002	6.67	25.56	8.67	27.56	9.67	28.56	10.67	29.56
4/13/2002	7.22	28.33	9.22	30.33	10.22	31.33	11.22	32.33
4/14/2002	10	25	12	27	13	28	14	29
4/15/2002	1.67	11.67	3.67	13.67	4.67	14.67	5.67	15.67
4/16/2002	0	11.11	2	13.11	3	14.11	4	15.11
4/17/2002	0	7.78	2	9.78	3	10.78	4	11.78
4/18/2002	0	11.11	2	13.11	3	14.11	4	15.11
4/19/2002	0	17.22	2	19.22	3	20.22	4	21.22
4/20/2002	0.56	17.78	2.56	19.78	3.56	20.78	4.56	21.78
4/21/2002	2.78	21.67	4.78	23.67	5.78	24.67	6.78	25.67
4/22/2002	4.44	25	6.44	27	7.44	28	8.44	29
4/23/2002	5.56	26.67	7.56	28.67	8.56	29.67	9.56	30.67
4/24/2002	6.11	21.11	8.11	23.11	9.11	24.11	10.11	25.11
4/25/2002	7.22	21.67	9.22	23.67	10.22	24.67	11.22	25.67
4/26/2002	7.78	11.11	9.78	13.11	10.78	14.11	11.78	15.11
4/27/2002	5	8.33	7	10.33	8	11.33	9	12.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/28/2002	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89
4/29/2002	5	8.89	7	10.89	8	11.89	9	12.89
4/30/2002	2.22	12.22	4.22	14.22	5.22	15.22	6.22	16.22
5/1/2002	0.56	15	2.56	17	3.56	18	4.56	19
5/2/2002	2.78	19.44	4.78	21.44	5.78	22.44	6.78	23.44
5/3/2002	5.56	21.67	7.56	23.67	8.56	24.67	9.56	25.67
5/4/2002	6.11	23.89	8.11	25.89	9.11	26.89	10.11	27.89
5/5/2002	6.11	24.44	8.11	26.44	9.11	27.44	10.11	28.44
5/6/2002	6.11	23.33	8.11	25.33	9.11	26.33	10.11	27.33
5/7/2002	6.67	21.11	8.67	23.11	9.67	24.11	10.67	25.11
5/8/2002	4.44	22.22	6.44	24.22	7.44	25.22	8.44	26.22
5/9/2002	4.44	21.67	6.44	23.67	7.44	24.67	8.44	25.67
5/10/2002	3.33	16.11	5.33	18.11	6.33	19.11	7.33	20.11
5/11/2002	2.22	24.44	4.22	26.44	5.22	27.44	6.22	28.44
5/12/2002	5.56	26.11	7.56	28.11	8.56	29.11	9.56	30.11
5/13/2002	7.78	25	9.78	27	10.78	28	11.78	29
5/14/2002	7.78	26.67	9.78	28.67	10.78	29.67	11.78	30.67
5/15/2002	7.78	25.56	9.78	27.56	10.78	28.56	11.78	29.56
5/16/2002	7.78	27.22	9.78	29.22	10.78	30.22	11.78	31.22
5/17/2002	9.44	28.33	11.44	30.33	12.44	31.33	13.44	32.33
5/18/2002	8.33	24.44	10.33	26.44	11.33	27.44	12.33	28.44
5/19/2002	4.44	17.22	6.44	19.22	7.44	20.22	8.44	21.22
5/20/2002	2.22	10	4.22	12	5.22	13	6.22	14
5/21/2002	2.22	13.89	4.22	15.89	5.22	16.89	6.22	17.89
5/22/2002	1.11	19.44	3.11	21.44	4.11	22.44	5.11	23.44
5/23/2002	2.22	22.78	4.22	24.78	5.22	25.78	6.22	26.78
5/24/2002	5	27.22	7	29.22	8	30.22	9	31.22
5/25/2002	8.89	27.22	10.89	29.22	11.89	30.22	12.89	31.22
5/26/2002	8.89	25.56	10.89	27.56	11.89	28.56	12.89	29.56
5/27/2002	8.89	25	10.89	27	11.89	28	12.89	29
5/28/2002	8.33	26.11	10.33	28.11	11.33	29.11	12.33	30.11
5/29/2002	10.56	30.56	12.56	32.56	13.56	33.56	14.56	34.56
5/30/2002	13.89	33.33	15.89	35.33	16.89	36.33	17.89	37.33
5/31/2002	16.18	32.22	18.18	34.22	19.18	35.22	20.18	36.22
6/1/2002	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
6/2/2002	7.78	25.56	9.78	27.56	10.78	28.56	11.78	29.56
6/3/2002	8.89	27.22	10.89	29.22	11.89	30.22	12.89	31.22
6/4/2002	11.11	30.56	13.11	32.56	14.11	33.56	15.11	34.56
6/5/2002	13.33	35	15.33	37	16.33	38	17.33	39
6/6/2002	13.33	33.33	15.33	35.33	16.33	36.33	17.33	37.33
6/7/2002	11.67	30.56	13.67	32.56	14.67	33.56	15.67	34.56
6/8/2002	8.89	23.33	10.89	25.33	11.89	26.33	12.89	27.33
6/9/2002	7.22	23.89	9.22	25.89	10.22	26.89	11.22	27.89
6/10/2002	10	28.33	12	30.33	13	31.33	14	32.33
6/11/2002	11.11	31.11	13.11	33.11	14.11	34.11	15.11	35.11
6/12/2002	11.11	31.67	13.11	33.67	14.11	34.67	15.11	35.67
6/13/2002	12.78	28.89	14.78	30.89	15.78	31.89	16.78	32.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/14/2002	11.67	28.33	13.67	30.33	14.67	31.33	15.67	32.33
6/15/2002	10	30	12	32	13	33	14	34
6/16/2002	10	30.56	12	32.56	13	33.56	14	34.56
6/17/2002	10	30.56	12	32.56	13	33.56	14	34.56
6/18/2002	12.22	28.89	14.22	30.89	15.22	31.89	16.22	32.89
6/19/2002	12.22	30	14.22	32	15.22	33	16.22	34
6/20/2002	12.78	29.44	14.78	31.44	15.78	32.44	16.78	33.44
6/21/2002	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
6/22/2002	11.11	27.22	13.11	29.22	14.11	30.22	15.11	31.22
6/23/2002	12.78	30	14.78	32	15.78	33	16.78	34
6/24/2002	11.11	31.11	13.11	33.11	14.11	34.11	15.11	35.11
6/25/2002	12.78	32.78	14.78	34.78	15.78	35.78	16.78	36.78
6/26/2002	15	32.78	17	34.78	18	35.78	19	36.78
6/27/2002	12.78	31.67	14.78	33.67	15.78	34.67	16.78	35.67
6/28/2002	13.89	30	15.89	32	16.89	33	17.89	34
6/29/2002	12.78	32.22	14.78	34.22	15.78	35.22	16.78	36.22
6/30/2002	13.33	35.56	15.33	37.56	16.33	38.56	17.33	39.56
7/1/2002	15	35.56	17	37.56	18	38.56	19	39.56
7/2/2002	16.67	32.78	18.67	34.78	19.67	35.78	20.67	36.78
7/3/2002	14.44	31.67	16.44	33.67	17.44	34.67	18.44	35.67
7/4/2002	11.67	32.22	13.67	34.22	14.67	35.22	15.67	36.22
7/5/2002	12.22	31.11	14.22	33.11	15.22	34.11	16.22	35.11
7/6/2002	12.78	32.78	14.78	34.78	15.78	35.78	16.78	36.78
7/7/2002	14.44	30	16.44	32	17.44	33	18.44	34
7/8/2002	11.67	34.44	13.67	36.44	14.67	37.44	15.67	38.44
7/9/2002	15	39.44	17	41.44	18	42.44	19	43.44
7/10/2002	16.11	40.56	18.11	42.56	19.11	43.56	20.11	44.56
7/11/2002	17.22	37.78	19.22	39.78	20.22	40.78	21.22	41.78
7/12/2002	20.56	38.33	22.56	40.33	23.56	41.33	24.56	42.33
7/13/2002	18.33	36.67	20.33	38.67	21.33	39.67	22.33	40.67
7/14/2002	17.78	35.56	19.78	37.56	20.78	38.56	21.78	39.56
7/15/2002	15.56	33.89	17.56	35.89	18.56	36.89	19.56	37.89
7/16/2002	13.89	32.78	15.89	34.78	16.89	35.78	17.89	36.78
7/17/2002	14.44	32.78	16.44	34.78	17.44	35.78	18.44	36.78
7/18/2002	16.11	31.67	18.11	33.67	19.11	34.67	20.11	35.67
7/19/2002	15	34.44	17	36.44	18	37.44	19	38.44
7/20/2002	15.56	35	17.56	37	18.56	38	19.56	39
7/21/2002	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
7/22/2002	12.78	32.22	14.78	34.22	15.78	35.22	16.78	36.22
7/23/2002	12.78	31.11	14.78	33.11	15.78	34.11	16.78	35.11
7/24/2002	12.78	33.89	14.78	35.89	15.78	36.89	16.78	37.89
7/25/2002	12.22	34.44	14.22	36.44	15.22	37.44	16.22	38.44
7/26/2002	12.78	34.44	14.78	36.44	15.78	37.44	16.78	38.44
7/27/2002	14.44	34.44	16.44	36.44	17.44	37.44	18.44	38.44
7/28/2002	15.56	32.22	17.56	34.22	18.56	35.22	19.56	36.22
7/29/2002	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78
7/30/2002	16.67	34.44	18.67	36.44	19.67	37.44	20.67	38.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/31/2002	15.56	33.89	17.56	35.89	18.56	36.89	19.56	37.89
8/1/2002	15	33.89	17	35.89	18	36.89	19	37.89
8/2/2002	15	32.22	17	34.22	18	35.22	19	36.22
8/3/2002	15	30	17	32	18	33	19	34
8/4/2002	13.33	27.22	15.33	29.22	16.33	30.22	17.33	31.22
8/5/2002	11.11	26.67	13.11	28.67	14.11	29.67	15.11	30.67
8/6/2002	9.44	27.78	11.44	29.78	12.44	30.78	13.44	31.78
8/7/2002	9.44	30	11.44	32	12.44	33	13.44	34
8/8/2002	10.56	33.89	12.56	35.89	13.56	36.89	14.56	37.89
8/9/2002	12.78	36.11	14.78	38.11	15.78	39.11	16.78	40.11
8/10/2002	15	36.67	17	38.67	18	39.67	19	40.67
8/11/2002	15	36.67	17	38.67	18	39.67	19	40.67
8/12/2002	16.11	38.33	18.11	40.33	19.11	41.33	20.11	42.33
8/13/2002	16.67	37.78	18.67	39.78	19.67	40.78	20.67	41.78
8/14/2002	16.67	37.78	18.67	39.78	19.67	40.78	20.67	41.78
8/15/2002	16.11	37.78	18.11	39.78	19.11	40.78	20.11	41.78
8/16/2002	16.67	37.22	18.67	39.22	19.67	40.22	20.67	41.22
8/17/2002	16.11	36.11	18.11	38.11	19.11	39.11	20.11	40.11
8/18/2002	13.89	35	15.89	37	16.89	38	17.89	39
8/19/2002	13.33	31.11	15.33	33.11	16.33	34.11	17.33	35.11
8/20/2002	11.11	28.89	13.11	30.89	14.11	31.89	15.11	32.89
8/21/2002	10	28.89	12	30.89	13	31.89	14	32.89
8/22/2002	10.56	28.89	12.56	30.89	13.56	31.89	14.56	32.89
8/23/2002	10.56	28.89	12.56	30.89	13.56	31.89	14.56	32.89
8/24/2002	10.56	28.89	12.56	30.89	13.56	31.89	14.56	32.89
8/25/2002	10.56	31.11	12.56	33.11	13.56	34.11	14.56	35.11
8/26/2002	11.11	32.22	13.11	34.22	14.11	35.22	15.11	36.22
8/27/2002	11.67	33.33	13.67	35.33	14.67	36.33	15.67	37.33
8/28/2002	13.33	34.44	15.33	36.44	16.33	37.44	17.33	38.44
8/29/2002	13.89	31.67	15.89	33.67	16.89	34.67	17.89	35.67
8/30/2002	14.44	31.67	16.44	33.67	17.44	34.67	18.44	35.67
8/31/2002	12.78	33.89	14.78	35.89	15.78	36.89	16.78	37.89
9/1/2002	15	36.11	17	38.11	18	39.11	19	40.11
9/2/2002	15.56	37.22	17.56	39.22	18.56	40.22	19.56	41.22
9/3/2002	15	35	17	37	18	38	19	39
9/4/2002	15.56	30	17.56	32	18.56	33	19.56	34
9/5/2002	9.44	25.56	11.44	27.56	12.44	28.56	13.44	29.56
9/6/2002	8.89	23.33	10.89	25.33	11.89	26.33	12.89	27.33
9/7/2002	5.56	23.89	7.56	25.89	8.56	26.89	9.56	27.89
9/8/2002	6.67	26.67	8.67	28.67	9.67	29.67	10.67	30.67
9/9/2002	7.78	32.78	9.78	34.78	10.78	35.78	11.78	36.78
9/10/2002	10.56	33.33	12.56	35.33	13.56	36.33	14.56	37.33
9/11/2002	11.67	34.44	13.67	36.44	14.67	37.44	15.67	38.44
9/12/2002	12.78	33.89	14.78	35.89	15.78	36.89	16.78	37.89
9/13/2002	12.22	33.89	14.22	35.89	15.22	36.89	16.22	37.89
9/14/2002	12.78	35.56	14.78	37.56	15.78	38.56	16.78	39.56
9/15/2002	11.67	28.89	13.67	30.89	14.67	31.89	15.67	32.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/16/2002	8.33	27.22	10.33	29.22	11.33	30.22	12.33	31.22
9/17/2002	10	28.33	12	30.33	13	31.33	14	32.33
9/18/2002	8.89	31.67	10.89	33.67	11.89	34.67	12.89	35.67
9/19/2002	11.11	33.89	13.11	35.89	14.11	36.89	15.11	37.89
9/20/2002	12.78	35	14.78	37	15.78	38	16.78	39
9/21/2002	13.33	35	15.33	37	16.33	38	17.33	39
9/22/2002	13.33	37.22	15.33	39.22	16.33	40.22	17.33	41.22
9/23/2002	13.89	36.11	15.89	38.11	16.89	39.11	17.89	40.11
9/24/2002	13.33	35	15.33	37	16.33	38	17.33	39
9/25/2002	12.78	35.56	14.78	37.56	15.78	38.56	16.78	39.56
9/26/2002	12.22	32.78	14.22	34.78	15.22	35.78	16.22	36.78
9/27/2002	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
9/28/2002	8.33	17.78	10.33	19.78	11.33	20.78	12.33	21.78
9/29/2002	10	21.11	12	23.11	13	24.11	14	25.11
9/30/2002	7.22	22.22	9.22	24.22	10.22	25.22	11.22	26.22
10/1/2002	5.56	20	7.56	22	8.56	23	9.56	24
10/2/2002	5	21.11	7	23.11	8	24.11	9	25.11
10/3/2002	3.33	22.78	5.33	24.78	6.33	25.78	7.33	26.78
10/4/2002	7.78	25.56	9.78	27.56	10.78	28.56	11.78	29.56
10/5/2002	8.89	27.78	10.89	29.78	11.89	30.78	12.89	31.78
10/6/2002	12.88	30	14.88	32	15.88	33	16.88	34
10/7/2002	8.33	31.67	10.33	33.67	11.33	34.67	12.33	35.67
10/8/2002	9.44	31.67	11.44	33.67	12.44	34.67	13.44	35.67
10/9/2002	10.56	31.67	12.56	33.67	13.56	34.67	14.56	35.67
10/10/2002	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
10/11/2002	6.67	25.56	8.67	27.56	9.67	28.56	10.67	29.56
10/12/2002	4.44	28.89	6.44	30.89	7.44	31.89	8.44	32.89
10/13/2002	9.44	30	11.44	32	12.44	33	13.44	34
10/14/2002	10	29.44	12	31.44	13	32.44	14	33.44
10/15/2002	8.33	27.78	10.33	29.78	11.33	30.78	12.33	31.78
10/16/2002	6.11	23.33	8.11	25.33	9.11	26.33	10.11	27.33
10/17/2002	3.89	23.33	5.89	25.33	6.89	26.33	7.89	27.33
10/18/2002	5.56	22.78	7.56	24.78	8.56	25.78	9.56	26.78
10/19/2002	6.67	24.44	8.67	26.44	9.67	27.44	10.67	28.44
10/20/2002	5.56	25	7.56	27	8.56	28	9.56	29
10/21/2002	6.11	23.33	8.11	25.33	9.11	26.33	10.11	27.33
10/22/2002	5.56	22.22	7.56	24.22	8.56	25.22	9.56	26.22
10/23/2002	5	21.11	7	23.11	8	24.11	9	25.11
10/24/2002	3.33	18.33	5.33	20.33	6.33	21.33	7.33	22.33
10/25/2002	5	17.78	7	19.78	8	20.78	9	21.78
10/26/2002	3.89	20	5.89	22	6.89	23	7.89	24
10/27/2002	2.78	22.22	4.78	24.22	5.78	25.22	6.78	26.22
10/28/2002	4.44	21.67	6.44	23.67	7.44	24.67	8.44	25.67
10/29/2002	2.78	21.11	4.78	23.11	5.78	24.11	6.78	25.11
10/30/2002	2.78	21.11	4.78	23.11	5.78	24.11	6.78	25.11
10/31/2002	2.22	20.56	4.22	22.56	5.22	23.56	6.22	24.56
11/1/2002	2.22	20.56	4.22	22.56	5.22	23.56	6.22	24.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/2/2002	1.67	21.67	3.67	23.67	4.67	24.67	5.67	25.67
11/3/2002	1.67	18.89	3.67	20.89	4.67	21.89	5.67	22.89
11/4/2002	2.22	21.67	4.22	23.67	5.22	24.67	6.22	25.67
11/5/2002	2.22	22.78	4.22	24.78	5.22	25.78	6.22	26.78
11/6/2002	3.33	20.56	5.33	22.56	6.33	23.56	7.33	24.56
11/7/2002	7.78	16.11	9.78	18.11	10.78	19.11	11.78	20.11
11/8/2002	10	13.33	12	15.33	13	16.33	14	17.33
11/9/2002	6.11	15	8.11	17	9.11	18	10.11	19
11/10/2002	6.11	8.89	8.11	10.89	9.11	11.89	10.11	12.89
11/11/2002	3.89	15.56	5.89	17.56	6.89	18.56	7.89	19.56
11/12/2002	5.56	20	7.56	22	8.56	23	9.56	24
11/13/2002	7.22	19.44	9.22	21.44	10.22	22.44	11.22	23.44
11/14/2002	4.44	18.89	6.44	20.89	7.44	21.89	8.44	22.89
11/15/2002	3.33	18.33	5.33	20.33	6.33	21.33	7.33	22.33
11/16/2002	3.89	22.22	5.89	24.22	6.89	25.22	7.89	26.22
11/17/2002	2.78	16.11	4.78	18.11	5.78	19.11	6.78	20.11
11/18/2002	1.67	16.11	3.67	18.11	4.67	19.11	5.67	20.11
11/19/2002	3.33	20	5.33	22	6.33	23	7.33	24
11/20/2002	4.44	19.44	6.44	21.44	7.44	22.44	8.44	23.44
11/21/2002	7.22	20	9.22	22	10.22	23	11.22	24
11/22/2002	7.22	20	9.22	22	10.22	23	11.22	24
11/23/2002	3.89	17.78	5.89	19.78	6.89	20.78	7.89	21.78
11/24/2002	2.78	16.11	4.78	18.11	5.78	19.11	6.78	20.11
11/25/2002	0.56	18.89	2.56	20.89	3.56	21.89	4.56	22.89
11/26/2002	1.11	22.22	3.11	24.22	4.11	25.22	5.11	26.22
11/27/2002	2.22	18.33	4.22	20.33	5.22	21.33	6.22	22.33
11/28/2002	1.11	17.22	3.11	19.22	4.11	20.22	5.11	21.22
11/29/2002	1.67	15.56	3.67	17.56	4.67	18.56	5.67	19.56
11/30/2002	1.11	11.11	3.11	13.11	4.11	14.11	5.11	15.11
12/1/2002	1.11	14.44	3.11	16.44	4.11	17.44	5.11	18.44
12/2/2002	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89
12/3/2002	1.11	11.67	3.11	13.67	4.11	14.67	5.11	15.67
12/4/2002	1.67	13.33	3.67	15.33	4.67	16.33	5.67	17.33
12/5/2002	1.11	13.89	3.11	15.89	4.11	16.89	5.11	17.89
12/6/2002	2.78	18.33	4.78	20.33	5.78	21.33	6.78	22.33
12/7/2002	1.67	13.33	3.67	15.33	4.67	16.33	5.67	17.33
12/8/2002	0	13.89	2	15.89	3	16.89	4	17.89
12/9/2002	2.78	11.11	4.78	13.11	5.78	14.11	6.78	15.11
12/10/2002	3.33	9.44	5.33	11.44	6.33	12.44	7.33	13.44
12/11/2002	0	10.56	2	12.56	3	13.56	4	14.56
12/12/2002	0.56	12.78	2.56	14.78	3.56	15.78	4.56	16.78
12/13/2002	5	8.89	7	10.89	8	11.89	9	12.89
12/14/2002	5.56	11.67	7.56	13.67	8.56	14.67	9.56	15.67
12/15/2002	5	9.44	7	11.44	8	12.44	9	13.44
12/16/2002	2.78	7.78	4.78	9.78	5.78	10.78	6.78	11.78
12/17/2002	0	3.89	2	5.89	3	6.89	4	7.89
12/18/2002	0	5.56	2	7.56	3	8.56	4	9.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/19/2002	-0.56	5.56	1.44	7.56	2.44	8.56	3.44	9.56
12/20/2002	0	3.33	2	5.33	3	6.33	4	7.33
12/21/2002	0	6.11	2	8.11	3	9.11	4	10.11
12/22/2002	-1.11	6.67	0.89	8.67	1.89	9.67	2.89	10.67
12/23/2002	-2.22	4.44	-0.22	6.44	0.78	7.44	1.78	8.44
12/24/2002	-1.67	5.56	0.33	7.56	1.33	8.56	2.33	9.56
12/25/2002	-1.11	8.33	0.89	10.33	1.89	11.33	2.89	12.33
12/26/2002	1.67	10.56	3.67	12.56	4.67	13.56	5.67	14.56
12/27/2002	3.89	10.56	5.89	12.56	6.89	13.56	7.89	14.56
12/28/2002	0	8.89	2	10.89	3	11.89	4	12.89
12/29/2002	0	4.44	2	6.44	3	7.44	4	8.44
12/30/2002	0	6.11	2	8.11	3	9.11	4	10.11
12/31/2002	0	7.22	2	9.22	3	10.22	4	11.22
1/1/2003	0	7.78	2	9.78	3	10.78	4	11.78
1/2/2003	2.22	11.11	4.22	13.11	5.22	14.11	6.22	15.11
1/3/2003	3.33	15.56	5.33	17.56	6.33	18.56	7.33	19.56
1/4/2003	3.33	13.89	5.33	15.89	6.33	16.89	7.33	17.89
1/5/2003	2.78	15	4.78	17	5.78	18	6.78	19
1/6/2003	0.56	12.78	2.56	14.78	3.56	15.78	4.56	16.78
1/7/2003	1.67	15.56	3.67	17.56	4.67	18.56	5.67	19.56
1/8/2003	2.22	13.89	4.22	15.89	5.22	16.89	6.22	17.89
1/9/2003	5	8.89	7	10.89	8	11.89	9	12.89
1/10/2003	5.56	8.89	7.56	10.89	8.56	11.89	9.56	12.89
1/11/2003	2.78	10.56	4.78	12.56	5.78	13.56	6.78	14.56
1/12/2003	3.33	13.33	5.33	15.33	6.33	16.33	7.33	17.33
1/13/2003	3.89	15.56	5.89	17.56	6.89	18.56	7.89	19.56
1/14/2003	1.67	12.22	3.67	14.22	4.67	15.22	5.67	16.22
1/15/2003	0	12.78	2	14.78	3	15.78	4	16.78
1/16/2003	0.56	15	2.56	17	3.56	18	4.56	19
1/17/2003	1.67	15.56	3.67	17.56	4.67	18.56	5.67	19.56
1/18/2003	3.33	18.33	5.33	20.33	6.33	21.33	7.33	22.33
1/19/2003	2.78	15	4.78	17	5.78	18	6.78	19
1/20/2003	2.22	18.89	4.22	20.89	5.22	21.89	6.22	22.89
1/21/2003	3.89	11.67	5.89	13.67	6.89	14.67	7.89	15.67
1/22/2003	5.56	16.67	7.56	18.67	8.56	19.67	9.56	20.67
1/23/2003	6.67	13.33	8.67	15.33	9.67	16.33	10.67	17.33
1/24/2003	4.44	15	6.44	17	7.44	18	8.44	19
1/25/2003	5	17.22	7	19.22	8	20.22	9	21.22
1/26/2003	6.11	16.11	8.11	18.11	9.11	19.11	10.11	20.11
1/27/2003	6.67	15.56	8.67	17.56	9.67	18.56	10.67	19.56
1/28/2003	3.33	16.67	5.33	18.67	6.33	19.67	7.33	20.67
1/29/2003	2.22	17.22	4.22	19.22	5.22	20.22	6.22	21.22
1/30/2003	4.44	17.78	6.44	19.78	7.44	20.78	8.44	21.78
1/31/2003	5.56	20.56	7.56	22.56	8.56	23.56	9.56	24.56
2/1/2003	1.67	12.78	3.67	14.78	4.67	15.78	5.67	16.78
2/2/2003	-0.56	12.78	1.44	14.78	2.44	15.78	3.44	16.78
2/3/2003	-1.11	15	0.89	17	1.89	18	2.89	19

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/4/2003	-0.56	15.56	1.44	17.56	2.44	18.56	3.44	19.56
2/5/2003	-2.78	13.89	-0.78	15.89	0.22	16.89	1.22	17.89
2/6/2003	-1.11	13.89	0.89	15.89	1.89	16.89	2.89	17.89
2/7/2003	0	14.44	2	16.44	3	17.44	4	18.44
2/8/2003	-1.67	14.44	0.33	16.44	1.33	17.44	2.33	18.44
2/9/2003	-1.11	14.44	0.89	16.44	1.89	17.44	2.89	18.44
2/10/2003	0	17.78	2	19.78	3	20.78	4	21.78
2/11/2003	2.22	12.78	4.22	14.78	5.22	15.78	6.22	16.78
2/12/2003	2.78	14.44	4.78	16.44	5.78	17.44	6.78	18.44
2/13/2003	6.11	17.22	8.11	19.22	9.11	20.22	10.11	21.22
2/14/2003	2.78	15	4.78	17	5.78	18	6.78	19
2/15/2003	5.56	15.56	7.56	17.56	8.56	18.56	9.56	19.56
2/16/2003	2.78	12.22	4.78	14.22	5.78	15.22	6.78	16.22
2/17/2003	0.56	14.44	2.56	16.44	3.56	17.44	4.56	18.44
2/18/2003	-0.56	15.56	1.44	17.56	2.44	18.56	3.44	19.56
2/19/2003	0	5.56	2	7.56	3	8.56	4	9.56
2/20/2003	-0.56	15	1.44	17	2.44	18	3.44	19
2/21/2003	0	17.22	2	19.22	3	20.22	4	21.22
2/22/2003	1.11	17.78	3.11	19.78	4.11	20.78	5.11	21.78
2/23/2003	0.56	17.22	2.56	19.22	3.56	20.22	4.56	21.22
2/24/2003	3.33	9.44	5.33	11.44	6.33	12.44	7.33	13.44
2/25/2003	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89
2/26/2003	0	11.11	2	13.11	3	14.11	4	15.11
2/27/2003	2.22	8.33	4.22	10.33	5.22	11.33	6.22	12.33
2/28/2003	0	12.22	2	14.22	3	15.22	4	16.22
3/1/2003	1.11	13.89	3.11	15.89	4.11	16.89	5.11	17.89
3/2/2003	-0.56	16.11	1.44	18.11	2.44	19.11	3.44	20.11
3/3/2003	0	12.22	2	14.22	3	15.22	4	16.22
3/4/2003	0	11.11	2	13.11	3	14.11	4	15.11
3/5/2003	0	16.11	2	18.11	3	19.11	4	20.11
3/6/2003	0.56	17.78	2.56	19.78	3.56	20.78	4.56	21.78
3/7/2003	0.56	18.89	2.56	20.89	3.56	21.89	4.56	22.89
3/8/2003	0	20	2	22	3	23	4	24
3/9/2003	1.11	21.11	3.11	23.11	4.11	24.11	5.11	25.11
3/10/2003	3.33	20	5.33	22	6.33	23	7.33	24
3/11/2003	3.89	21.11	5.89	23.11	6.89	24.11	7.89	25.11
3/12/2003	4.44	21.11	6.44	23.11	7.44	24.11	8.44	25.11
3/13/2003	6.11	18.89	8.11	20.89	9.11	21.89	10.11	22.89
3/14/2003	7.78	19.44	9.78	21.44	10.78	22.44	11.78	23.44
3/15/2003	2.78	15	4.78	17	5.78	18	6.78	19
3/16/2003	0.56	12.22	2.56	14.22	3.56	15.22	4.56	16.22
3/17/2003	1.67	12.22	3.67	14.22	4.67	15.22	5.67	16.22
3/18/2003	0	16.11	2	18.11	3	19.11	4	20.11
3/19/2003	0	17.78	2	19.78	3	20.78	4	21.78
3/20/2003	4.44	16.11	6.44	18.11	7.44	19.11	8.44	20.11
3/21/2003	2.78	20	4.78	22	5.78	23	6.78	24
3/22/2003	3.89	19.44	5.89	21.44	6.89	22.44	7.89	23.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/23/2003	6.67	11.11	8.67	13.11	9.67	14.11	10.67	15.11
3/24/2003	5.56	18.33	7.56	20.33	8.56	21.33	9.56	22.33
3/25/2003	3.89	20.56	5.89	22.56	6.89	23.56	7.89	24.56
3/26/2003	6.67	17.22	8.67	19.22	9.67	20.22	10.67	21.22
3/27/2003	3.33	17.22	5.33	19.22	6.33	20.22	7.33	21.22
3/28/2003	1.11	20.56	3.11	22.56	4.11	23.56	5.11	24.56
3/29/2003	1.67	22.78	3.67	24.78	4.67	25.78	5.67	26.78
3/30/2003	3.33	26.11	5.33	28.11	6.33	29.11	7.33	30.11
3/31/2003	7.22	24.44	9.22	26.44	10.22	27.44	11.22	28.44
4/1/2003	1.67	12.22	3.67	14.22	4.67	15.22	5.67	16.22
4/2/2003	0	5	2	7	3	8	4	9
4/3/2003	0	9.44	2	11.44	3	12.44	4	13.44
4/4/2003	0	5.56	2	7.56	3	8.56	4	9.56
4/5/2003	-0.56	10.56	1.44	12.56	2.44	13.56	3.44	14.56
4/6/2003	0.56	12.78	2.56	14.78	3.56	15.78	4.56	16.78
4/7/2003	0.56	20	2.56	22	3.56	23	4.56	24
4/8/2003	3.89	23.33	5.89	25.33	6.89	26.33	7.89	27.33
4/9/2003	5	23.89	7	25.89	8	26.89	9	27.89
4/10/2003	5	18.89	7	20.89	8	21.89	9	22.89
4/11/2003	8.33	13.33	10.33	15.33	11.33	16.33	12.33	17.33
4/12/2003	6.67	11.67	8.67	13.67	9.67	14.67	10.67	15.67
4/13/2003	5	10.56	7	12.56	8	13.56	9	14.56
4/14/2003	1.67	11.11	3.67	13.11	4.67	14.11	5.67	15.11
4/15/2003	0	12.78	2	14.78	3	15.78	4	16.78
4/16/2003	3.89	12.22	5.89	14.22	6.89	15.22	7.89	16.22
4/17/2003	5	12.22	7	14.22	8	15.22	9	16.22
4/18/2003	2.78	13.89	4.78	15.89	5.78	16.89	6.78	17.89
4/19/2003	1.11	18.33	3.11	20.33	4.11	21.33	5.11	22.33
4/20/2003	4.44	17.78	6.44	19.78	7.44	20.78	8.44	21.78
4/21/2003	2.78	10	4.78	12	5.78	13	6.78	14
4/22/2003	2.22	11.11	4.22	13.11	5.22	14.11	6.22	15.11
4/23/2003	5.56	14.44	7.56	16.44	8.56	17.44	9.56	18.44
4/24/2003	3.89	9.44	5.89	11.44	6.89	12.44	7.89	13.44
4/25/2003	3.89	11.11	5.89	13.11	6.89	14.11	7.89	15.11
4/26/2003	1.67	15	3.67	17	4.67	18	5.67	19
4/27/2003	1.67	16.67	3.67	18.67	4.67	19.67	5.67	20.67
4/28/2003	0	12.78	2	14.78	3	15.78	4	16.78
4/29/2003	3.89	12.78	5.89	14.78	6.89	15.78	7.89	16.78
4/30/2003	0.56	16.11	2.56	18.11	3.56	19.11	4.56	20.11
5/1/2003	3.33	17.78	5.33	19.78	6.33	20.78	7.33	21.78
5/2/2003	7.78	15.56	9.78	17.56	10.78	18.56	11.78	19.56
5/3/2003	7.78	14.44	9.78	16.44	10.78	17.44	11.78	18.44
5/4/2003	5	13.89	7	15.89	8	16.89	9	17.89
5/5/2003	2.22	16.67	4.22	18.67	5.22	19.67	6.22	20.67
5/6/2003	2.78	16.11	4.78	18.11	5.78	19.11	6.78	20.11
5/7/2003	7.22	15	9.22	17	10.22	18	11.22	19
5/8/2003	2.78	8.33	4.78	10.33	5.78	11.33	6.78	12.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/9/2003	0.56	11.11	2.56	13.11	3.56	14.11	4.56	15.11
5/10/2003	0.56	17.78	2.56	19.78	3.56	20.78	4.56	21.78
5/11/2003	3.89	21.67	5.89	23.67	6.89	24.67	7.89	25.67
5/12/2003	6.11	26.11	8.11	28.11	9.11	29.11	10.11	30.11
5/13/2003	8.33	26.11	10.33	28.11	11.33	29.11	12.33	30.11
5/14/2003	8.89	25.56	10.89	27.56	11.89	28.56	12.89	29.56
5/15/2003	7.22	21.67	9.22	23.67	10.22	24.67	11.22	25.67
5/16/2003	6.11	23.89	8.11	25.89	9.11	26.89	10.11	27.89
5/17/2003	7.22	23.89	9.22	25.89	10.22	26.89	11.22	27.89
5/18/2003	4.44	24.44	6.44	26.44	7.44	27.44	8.44	28.44
5/19/2003	5	27.22	7	29.22	8	30.22	9	31.22
5/20/2003	7.78	28.89	9.78	30.89	10.78	31.89	11.78	32.89
5/21/2003	10	31.11	12	33.11	13	34.11	14	35.11
5/22/2003	11.11	31.67	13.11	33.67	14.11	34.67	15.11	35.67
5/23/2003	12.78	32.78	14.78	34.78	15.78	35.78	16.78	36.78
5/24/2003	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
5/25/2003	10	23.89	12	25.89	13	26.89	14	27.89
5/26/2003	10	26.67	12	28.67	13	29.67	14	30.67
5/27/2003	10	32.22	12	34.22	13	35.22	14	36.22
5/28/2003	13.33	35.56	15.33	37.56	16.33	38.56	17.33	39.56
5/29/2003	13.89	31.11	15.89	33.11	16.89	34.11	17.89	35.11
5/30/2003	10	27.22	12	29.22	13	30.22	14	31.22
5/31/2003	10	29.44	12	31.44	13	32.44	14	33.44
6/1/2003	10	32.78	12	34.78	13	35.78	14	36.78
6/2/2003	12.22	33.33	14.22	35.33	15.22	36.33	16.22	37.33
6/3/2003	12.22	33.33	14.22	35.33	15.22	36.33	16.22	37.33
6/4/2003	14.44	32.22	16.44	34.22	17.44	35.22	18.44	36.22
6/5/2003	11.11	31.11	13.11	33.11	14.11	34.11	15.11	35.11
6/6/2003	14.44	30	16.44	32	17.44	33	18.44	34
6/7/2003	12.78	29.44	14.78	31.44	15.78	32.44	16.78	33.44
6/8/2003	13.33	30.56	15.33	32.56	16.33	33.56	17.33	34.56
6/9/2003	13.89	30	15.89	32	16.89	33	17.89	34
6/10/2003	11.11	25	13.11	27	14.11	28	15.11	29
6/11/2003	10	23.89	12	25.89	13	26.89	14	27.89
6/12/2003	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
6/13/2003	10	26.11	12	28.11	13	29.11	14	30.11
6/14/2003	9.44	28.33	11.44	30.33	12.44	31.33	13.44	32.33
6/15/2003	11.11	30.56	13.11	32.56	14.11	33.56	15.11	34.56
6/16/2003	12.22	32.78	14.22	34.78	15.22	35.78	16.22	36.78
6/17/2003	15	33.89	17	35.89	18	36.89	19	37.89
6/18/2003	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
6/19/2003	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
6/20/2003	10	25.56	12	27.56	13	28.56	14	29.56
6/21/2003	9.44	24.44	11.44	26.44	12.44	27.44	13.44	28.44
6/22/2003	7.78	26.11	9.78	28.11	10.78	29.11	11.78	30.11
6/23/2003	10	23.33	12	25.33	13	26.33	14	27.33
6/24/2003	7.22	27.78	9.22	29.78	10.22	30.78	11.22	31.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/25/2003	10	32.78	12	34.78	13	35.78	14	36.78
6/26/2003	10.56	35.56	12.56	37.56	13.56	38.56	14.56	39.56
6/27/2003	14.44	36.11	16.44	38.11	17.44	39.11	18.44	40.11
6/28/2003	15.56	35.56	17.56	37.56	18.56	38.56	19.56	39.56
6/29/2003	12.22	32.22	14.22	34.22	15.22	35.22	16.22	36.22
6/30/2003	10.56	30.56	12.56	32.56	13.56	33.56	14.56	34.56
7/1/2003	10.56	30	12.56	32	13.56	33	14.56	34
7/2/2003	10	32.22	12	34.22	13	35.22	14	36.22
7/3/2003	11.67	32.22	13.67	34.22	14.67	35.22	15.67	36.22
7/4/2003	11.67	34.44	13.67	36.44	14.67	37.44	15.67	38.44
7/5/2003	11.11	33.33	13.11	35.33	14.11	36.33	15.11	37.33
7/6/2003	11.67	31.67	13.67	33.67	14.67	34.67	15.67	35.67
7/7/2003	11.67	30	13.67	32	14.67	33	15.67	34
7/8/2003	10.56	33.33	12.56	35.33	13.56	36.33	14.56	37.33
7/9/2003	12.22	35.56	14.22	37.56	15.22	38.56	16.22	39.56
7/10/2003	13.33	34.44	15.33	36.44	16.33	37.44	17.33	38.44
7/11/2003	13.33	35.56	15.33	37.56	16.33	38.56	17.33	39.56
7/12/2003	13.89	33.89	15.89	35.89	16.89	36.89	17.89	37.89
7/13/2003	12.22	33.89	14.22	35.89	15.22	36.89	16.22	37.89
7/14/2003	12.22	35.56	14.22	37.56	15.22	38.56	16.22	39.56
7/15/2003	13.33	35.56	15.33	37.56	16.33	38.56	17.33	39.56
7/16/2003	15	36.11	17	38.11	18	39.11	19	40.11
7/17/2003	16.11	38.89	18.11	40.89	19.11	41.89	20.11	42.89
7/18/2003	17.78	38.89	19.78	40.89	20.78	41.89	21.78	42.89
7/19/2003	18.33	36.67	20.33	38.67	21.33	39.67	22.33	40.67
7/20/2003	18.89	37.22	20.89	39.22	21.89	40.22	22.89	41.22
7/21/2003	18.89	37.78	20.89	39.78	21.89	40.78	22.89	41.78
7/22/2003	18.89	37.22	20.89	39.22	21.89	40.22	22.89	41.22
7/23/2003	20.56	36.67	22.56	38.67	23.56	39.67	24.56	40.67
7/24/2003	18.89	35.56	20.89	37.56	21.89	38.56	22.89	39.56
7/25/2003	18.89	35	20.89	37	21.89	38	22.89	39
7/26/2003	16.11	36.11	18.11	38.11	19.11	39.11	20.11	40.11
7/27/2003	17.78	36.67	19.78	38.67	20.78	39.67	21.78	40.67
7/28/2003	17.78	37.22	19.78	39.22	20.78	40.22	21.78	41.22
7/29/2003	18.89	38.33	20.89	40.33	21.89	41.33	22.89	42.33
7/30/2003	21.11	33.89	23.11	35.89	24.11	36.89	25.11	37.89
7/31/2003	18.33	33.29	20.33	35.29	21.33	36.29	22.33	37.29
8/1/2003	15.56	28.33	17.56	30.33	18.56	31.33	19.56	32.33
8/2/2003	16.67	24.44	18.67	26.44	19.67	27.44	20.67	28.44
8/3/2003	15	30	17	32	18	33	19	34
8/4/2003	14.44	30	16.44	32	17.44	33	18.44	34
8/5/2003	11.11	27.22	13.11	29.22	14.11	30.22	15.11	31.22
8/6/2003	12.22	26.67	14.22	28.67	15.22	29.67	16.22	30.67
8/7/2003	11.67	28.33	13.67	30.33	14.67	31.33	15.67	32.33
8/8/2003	11.67	28.89	13.67	30.89	14.67	31.89	15.67	32.89
8/9/2003	12.22	31.11	14.22	33.11	15.22	34.11	16.22	35.11
8/10/2003	12.78	32.78	14.78	34.78	15.78	35.78	16.78	36.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/11/2003	12.22	31.11	14.22	33.11	15.22	34.11	16.22	35.11
8/12/2003	11.67	31.67	13.67	33.67	14.67	34.67	15.67	35.67
8/13/2003	12.22	33.33	14.22	35.33	15.22	36.33	16.22	37.33
8/14/2003	13.89	34.44	15.89	36.44	16.89	37.44	17.89	38.44
8/15/2003	13.33	33.89	15.33	35.89	16.33	36.89	17.33	37.89
8/16/2003	13.89	33.89	15.89	35.89	16.89	36.89	17.89	37.89
8/17/2003	14.44	36.11	16.44	38.11	17.44	39.11	18.44	40.11
8/18/2003	15.56	36.11	17.56	38.11	18.56	39.11	19.56	40.11
8/19/2003	15.56	34.44	17.56	36.44	18.56	37.44	19.56	38.44
8/20/2003	15.56	34.44	17.56	36.44	18.56	37.44	19.56	38.44
8/21/2003	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
8/22/2003	15.56	25	17.56	27	18.56	28	19.56	29
8/23/2003	13.33	30.56	15.33	32.56	16.33	33.56	17.33	34.56
8/24/2003	13.89	34.44	15.89	36.44	16.89	37.44	17.89	38.44
8/25/2003	13.89	37.22	15.89	39.22	16.89	40.22	17.89	41.22
8/26/2003	16.67	33.89	18.67	35.89	19.67	36.89	20.67	37.89
8/27/2003	15.56	33.33	17.56	35.33	18.56	36.33	19.56	37.33
8/28/2003	13.89	32.78	15.89	34.78	16.89	35.78	17.89	36.78
8/29/2003	12.22	31.67	14.22	33.67	15.22	34.67	16.22	35.67
8/30/2003	12.22	33.89	14.22	35.89	15.22	36.89	16.22	37.89
8/31/2003	16.11	35	18.11	37	19.11	38	20.11	39
9/1/2003	16.11	35.56	18.11	37.56	19.11	38.56	20.11	39.56
9/2/2003	15.56	38.33	17.56	40.33	18.56	41.33	19.56	42.33
9/3/2003	18.89	37.22	20.89	39.22	21.89	40.22	22.89	41.22
9/4/2003	18.33	35.56	20.33	37.56	21.33	38.56	22.33	39.56
9/5/2003	16.67	34.44	18.67	36.44	19.67	37.44	20.67	38.44
9/6/2003	13.89	31.11	15.89	33.11	16.89	34.11	17.89	35.11
9/7/2003	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
9/8/2003	10	26.11	12	28.11	13	29.11	14	30.11
9/9/2003	10.56	22.22	12.56	24.22	13.56	25.22	14.56	26.22
9/10/2003	8.33	29.44	10.33	31.44	11.33	32.44	12.33	33.44
9/11/2003	10.56	33.33	12.56	35.33	13.56	36.33	14.56	37.33
9/12/2003	13.33	34.44	15.33	36.44	16.33	37.44	17.33	38.44
9/13/2003	14.44	35	16.44	37	17.44	38	18.44	39
9/14/2003	15.56	35	17.56	37	18.56	38	19.56	39
9/15/2003	13.33	31.67	15.33	33.67	16.33	34.67	17.33	35.67
9/16/2003	10.56	28.33	12.56	30.33	13.56	31.33	14.56	32.33
9/17/2003	7.78	28.33	9.78	30.33	10.78	31.33	11.78	32.33
9/18/2003	10	31.67	12	33.67	13	34.67	14	35.67
9/19/2003	11.67	33.33	13.67	35.33	14.67	36.33	15.67	37.33
9/20/2003	11.11	35	13.11	37	14.11	38	15.11	39
9/21/2003	12.22	36.11	14.22	38.11	15.22	39.11	16.22	40.11
9/22/2003	13.89	37.22	15.89	39.22	16.89	40.22	17.89	41.22
9/23/2003	15	36.67	17	38.67	18	39.67	19	40.67
9/24/2003	15	34.44	17	36.44	18	37.44	19	38.44
9/25/2003	11.67	31.67	13.67	33.67	14.67	34.67	15.67	35.67
9/26/2003	11.11	32.22	13.11	34.22	14.11	35.22	15.11	36.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/27/2003	10.56	35	12.56	37	13.56	38	14.56	39
9/28/2003	12.22	32.78	14.22	34.78	15.22	35.78	16.22	36.78
9/29/2003	11.11	29.44	13.11	31.44	14.11	32.44	15.11	33.44
9/30/2003	11.67	30.56	13.67	32.56	14.67	33.56	15.67	34.56
10/1/2003	12.22	28.89	14.22	30.89	15.22	31.89	16.22	32.89
10/2/2003	10	26.11	12	28.11	13	29.11	14	30.11
10/3/2003	8.89	27.78	10.89	29.78	11.89	30.78	12.89	31.78
10/4/2003	11.11	28.33	13.11	30.33	14.11	31.33	15.11	32.33
10/5/2003	10.56	28.33	12.56	30.33	13.56	31.33	14.56	32.33
10/6/2003	11.11	31.11	13.11	33.11	14.11	34.11	15.11	35.11
10/7/2003	11.11	30.56	13.11	32.56	14.11	33.56	15.11	34.56
10/8/2003	10.56	30	12.56	32	13.56	33	14.56	34
10/9/2003	10	27.22	12	29.22	13	30.22	14	31.22
10/10/2003	5.56	24.44	7.56	26.44	8.56	27.44	9.56	28.44
10/11/2003	6.11	28.33	8.11	30.33	9.11	31.33	10.11	32.33
10/12/2003	8.89	28.89	10.89	30.89	11.89	31.89	12.89	32.89
10/13/2003	5.56	27.78	7.56	29.78	8.56	30.78	9.56	31.78
10/14/2003	7.78	28.89	9.78	30.89	10.78	31.89	11.78	32.89
10/15/2003	7.78	27.78	9.78	29.78	10.78	30.78	11.78	31.78
10/16/2003	7.22	28.89	9.22	30.89	10.22	31.89	11.22	32.89
10/17/2003	8.33	31.11	10.33	33.11	11.33	34.11	12.33	35.11
10/18/2003	8.89	31.67	10.89	33.67	11.89	34.67	12.89	35.67
10/19/2003	10.56	30.56	12.56	32.56	13.56	33.56	14.56	34.56
10/20/2003	10	33.89	12	35.89	13	36.89	14	37.89
10/21/2003	11.67	33.89	13.67	35.89	14.67	36.89	15.67	37.89
10/22/2003	11.11	32.22	13.11	34.22	14.11	35.22	15.11	36.22
10/23/2003	9.44	30	11.44	32	12.44	33	13.44	34
10/24/2003	6.67	30.56	8.67	32.56	9.67	33.56	10.67	34.56
10/25/2003	10.56	31.11	12.56	33.11	13.56	34.11	14.56	35.11
10/26/2003	8.89	32.78	10.89	34.78	11.89	35.78	12.89	36.78
10/27/2003	7.78	32.22	9.78	34.22	10.78	35.22	11.78	36.22
10/28/2003	8.33	30.56	10.33	32.56	11.33	33.56	12.33	34.56
10/29/2003	8.89	26.11	10.89	28.11	11.89	29.11	12.89	30.11
10/30/2003	1.11	13.89	3.11	15.89	4.11	16.89	5.11	17.89
10/31/2003	1.67	6.67	3.67	8.67	4.67	9.67	5.67	10.67
11/1/2003	0	13.33	2	15.33	3	16.33	4	17.33
11/2/2003	0	10.56	2	12.56	3	13.56	4	14.56
11/3/2003	0	7.78	2	9.78	3	10.78	4	11.78
11/4/2003	-0.56	11.11	1.44	13.11	2.44	14.11	3.44	15.11
11/5/2003	1.67	14.44	3.67	16.44	4.67	17.44	5.67	18.44
11/6/2003	0.56	17.22	2.56	19.22	3.56	20.22	4.56	21.22
11/7/2003	5.56	13.33	7.56	15.33	8.56	16.33	9.56	17.33
11/8/2003	6.67	13.89	8.67	15.89	9.67	16.89	10.67	17.89
11/9/2003	3.89	9.44	5.89	11.44	6.89	12.44	7.89	13.44
11/10/2003	2.22	13.89	4.22	15.89	5.22	16.89	6.22	17.89
11/11/2003	0.56	16.67	2.56	18.67	3.56	19.67	4.56	20.67
11/12/2003	1.67	18.89	3.67	20.89	4.67	21.89	5.67	22.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/13/2003	5	15	7	17	8	18	9	19
11/14/2003	2.78	13.89	4.78	15.89	5.78	16.89	6.78	17.89
11/15/2003	2.22	8.33	4.22	10.33	5.22	11.33	6.22	12.33
11/16/2003	0.56	12.22	2.56	14.22	3.56	15.22	4.56	16.22
11/17/2003	5	15.56	7	17.56	8	18.56	9	19.56
11/18/2003	2.78	16.67	4.78	18.67	5.78	19.67	6.78	20.67
11/19/2003	4.44	18.33	6.44	20.33	7.44	21.33	8.44	22.33
11/20/2003	3.89	16.11	5.89	18.11	6.89	19.11	7.89	20.11
11/21/2003	-1.11	10.56	0.89	12.56	1.89	13.56	2.89	14.56
11/22/2003	-3.33	9.44	-1.33	11.44	-0.33	12.44	0.67	13.44
11/23/2003	-2.22	8.89	-0.22	10.89	0.78	11.89	1.78	12.89
11/24/2003	-0.56	10	1.44	12	2.44	13	3.44	14
11/25/2003	-1.11	12.78	0.89	14.78	1.89	15.78	2.89	16.78
11/26/2003	-1.11	12.22	0.89	14.22	1.89	15.22	2.89	16.22
11/27/2003	-1.67	15.56	0.33	17.56	1.33	18.56	2.33	19.56
11/28/2003	3.89	16.11	5.89	18.11	6.89	19.11	7.89	20.11
11/29/2003	3.89	13.89	5.89	15.89	6.89	16.89	7.89	17.89
11/30/2003	6.11	15.56	8.11	17.56	9.11	18.56	10.11	19.56
12/1/2003	6.67	15	8.67	17	9.67	18	10.67	19
12/2/2003	3.89	13.33	5.89	15.33	6.89	16.33	7.89	17.33
12/3/2003	2.78	14.44	4.78	16.44	5.78	17.44	6.78	18.44
12/4/2003	1.11	13.33	3.11	15.33	4.11	16.33	5.11	17.33
12/5/2003	8.33	12.22	10.33	14.22	11.33	15.22	12.33	16.22
12/6/2003	8.89	11.67	10.89	13.67	11.89	14.67	12.89	15.67
12/7/2003	2.22	12.22	4.22	14.22	5.22	15.22	6.22	16.22
12/8/2003	-0.56	7.78	1.44	9.78	2.44	10.78	3.44	11.78
12/9/2003	0	10	2	12	3	13	4	14
12/10/2003	4.44	8.33	6.44	10.33	7.44	11.33	8.44	12.33
12/11/2003	0	3.89	2	5.89	3	6.89	4	7.89
12/12/2003	0	7.78	2	9.78	3	10.78	4	11.78
12/13/2003	4.44	8.89	6.44	10.89	7.44	11.89	8.44	12.89
12/14/2003	0	8.33	2	10.33	3	11.33	4	12.33
12/15/2003	-1.11	6.11	0.89	8.11	1.89	9.11	2.89	10.11
12/16/2003	0	8.89	2	10.89	3	11.89	4	12.89
12/17/2003	0.56	13.33	2.56	15.33	3.56	16.33	4.56	17.33
12/18/2003	2.22	15.56	4.22	17.56	5.22	18.56	6.22	19.56
12/19/2003	2.78	10.56	4.78	12.56	5.78	13.56	6.78	14.56
12/20/2003	6.67	10.56	8.67	12.56	9.67	13.56	10.67	14.56
12/21/2003	3.33	10.56	5.33	12.56	6.33	13.56	7.33	14.56
12/22/2003	0.56	12.22	2.56	14.22	3.56	15.22	4.56	16.22
12/23/2003	2.78	10	4.78	12	5.78	13	6.78	14
12/24/2003	5.56	8.89	7.56	10.89	8.56	11.89	9.56	12.89
12/25/2003	1.11	4.44	3.11	6.44	4.11	7.44	5.11	8.44
12/26/2003	-1.11	7.22	0.89	9.22	1.89	10.22	2.89	11.22
12/27/2003	-2.78	3.89	-0.78	5.89	0.22	6.89	1.22	7.89
12/28/2003	-1.67	6.11	0.33	8.11	1.33	9.11	2.33	10.11
12/29/2003	0	3.33	2	5.33	3	6.33	4	7.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/30/2003	2.22	7.22	4.22	9.22	5.22	10.22	6.22	11.22
12/31/2003	3.33	8.89	5.33	10.89	6.33	11.89	7.33	12.89
1/1/2004	1.11	5.56	3.11	7.56	4.11	8.56	5.11	9.56
1/2/2004	0	5.56	2	7.56	3	8.56	4	9.56
1/3/2004	-2.22	2.22	-0.22	4.22	0.78	5.22	1.78	6.22
1/4/2004	-3.89	2.78	-1.89	4.78	-0.89	5.78	0.11	6.78
1/5/2004	-1.11	5.56	0.89	7.56	1.89	8.56	2.89	9.56
1/6/2004	0	5.56	2	7.56	3	8.56	4	9.56
1/7/2004	3.33	11.11	5.33	13.11	6.33	14.11	7.33	15.11
1/8/2004	3.33	13.33	5.33	15.33	6.33	16.33	7.33	17.33
1/9/2004	2.78	15.56	4.78	17.56	5.78	18.56	6.78	19.56
1/10/2004	2.22	13.89	4.22	15.89	5.22	16.89	6.22	17.89
1/11/2004	2.22	14.44	4.22	16.44	5.22	17.44	6.22	18.44
1/12/2004	1.67	13.33	3.67	15.33	4.67	16.33	5.67	17.33
1/13/2004	1.67	14.44	3.67	16.44	4.67	17.44	5.67	18.44
1/14/2004	1.67	12.78	3.67	14.78	4.67	15.78	5.67	16.78
1/15/2004	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89
1/16/2004	0	13.33	2	15.33	3	16.33	4	17.33
1/17/2004	0	12.78	2	14.78	3	15.78	4	16.78
1/18/2004	1.11	15	3.11	17	4.11	18	5.11	19
1/19/2004	0	11.11	2	13.11	3	14.11	4	15.11
1/20/2004	0.56	8.89	2.56	10.89	3.56	11.89	4.56	12.89
1/21/2004	-1.67	15	0.33	17	1.33	18	2.33	19
1/22/2004	-3.33	11.11	-1.33	13.11	-0.33	14.11	0.67	15.11
1/23/2004	-1.11	13.89	0.89	15.89	1.89	16.89	2.89	17.89
1/24/2004	2.78	8.89	4.78	10.89	5.78	11.89	6.78	12.89
1/25/2004	-0.56	12.78	1.44	14.78	2.44	15.78	3.44	16.78
1/26/2004	-1.11	9.44	0.89	11.44	1.89	12.44	2.89	13.44
1/27/2004	3.33	7.22	5.33	9.22	6.33	10.22	7.33	11.22
1/28/2004	0	11.11	2	13.11	3	14.11	4	15.11
1/29/2004	0	13.89	2	15.89	3	16.89	4	17.89
1/30/2004	1.67	9.44	3.67	11.44	4.67	12.44	5.67	13.44
1/31/2004	0	11.11	2	13.11	3	14.11	4	15.11
2/1/2004	0	8.33	2	10.33	3	11.33	4	12.33
2/2/2004	1.11	9.44	3.11	11.44	4.11	12.44	5.11	13.44
2/3/2004	0.56	4.44	2.56	6.44	3.56	7.44	4.56	8.44
2/4/2004	0	11.11	2	13.11	3	14.11	4	15.11
2/5/2004	-0.56	12.78	1.44	14.78	2.44	15.78	3.44	16.78
2/6/2004	-1.11	13.33	0.89	15.33	1.89	16.33	2.89	17.33
2/7/2004	0	13.33	2	15.33	3	16.33	4	17.33
2/8/2004	-1.67	13.89	0.33	15.89	1.33	16.89	2.33	17.89
2/9/2004	-1.11	14.44	0.89	16.44	1.89	17.44	2.89	18.44
2/10/2004	0	15.56	2	17.56	3	18.56	4	19.56
2/11/2004	-1.67	17.22	0.33	19.22	1.33	20.22	2.33	21.22
2/12/2004	-1.67	19.44	0.33	21.44	1.33	22.44	2.33	23.44
2/13/2004	0	12.78	2	14.78	3	15.78	4	16.78
2/14/2004	1.11	15.56	3.11	17.56	4.11	18.56	5.11	19.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/15/2004	2.78	16.11	4.78	18.11	5.78	19.11	6.78	20.11
2/16/2004	6.67	10	8.67	12	9.67	13	10.67	14
2/17/2004	6.67	13.33	8.67	15.33	9.67	16.33	10.67	17.33
2/18/2004	1.67	8.33	3.67	10.33	4.67	11.33	5.67	12.33
2/19/2004	0	13.89	2	15.89	3	16.89	4	17.89
2/20/2004	2.22	10.56	4.22	12.56	5.22	13.56	6.22	14.56
2/21/2004	4.44	9.44	6.44	11.44	7.44	12.44	8.44	13.44
2/22/2004	3.33	8.89	5.33	10.89	6.33	11.89	7.33	12.89
2/23/2004	2.22	13.89	4.22	15.89	5.22	16.89	6.22	17.89
2/24/2004	2.22	9.44	4.22	11.44	5.22	12.44	6.22	13.44
2/25/2004	4.44	9.44	6.44	11.44	7.44	12.44	8.44	13.44
2/26/2004	0	5.56	2	7.56	3	8.56	4	9.56
2/27/2004	0	9.44	2	11.44	3	12.44	4	13.44
2/28/2004	-0.56	13.33	1.44	15.33	2.44	16.33	3.44	17.33
2/29/2004	0	13.33	2	15.33	3	16.33	4	17.33
3/1/2004	2.78	6.11	4.78	8.11	5.78	9.11	6.78	10.11
3/2/2004	0	15.56	2	17.56	3	18.56	4	19.56
3/3/2004	0	13.89	2	15.89	3	16.89	4	17.89
3/4/2004	0	17.22	2	19.22	3	20.22	4	21.22
3/5/2004	1.11	15.56	3.11	17.56	4.11	18.56	5.11	19.56
3/6/2004	3.33	21.11	5.33	23.11	6.33	24.11	7.33	25.11
3/7/2004	2.78	23.89	4.78	25.89	5.78	26.89	6.78	27.89
3/8/2004	5.56	27.22	7.56	29.22	8.56	30.22	9.56	31.22
3/9/2004	6.67	27.22	8.67	29.22	9.67	30.22	10.67	31.22
3/10/2004	6.67	25.56	8.67	27.56	9.67	28.56	10.67	29.56
3/11/2004	5.56	25.56	7.56	27.56	8.56	28.56	9.56	29.56
3/12/2004	6.11	25	8.11	27	9.11	28	10.11	29
3/13/2004	5.56	25.56	7.56	27.56	8.56	28.56	9.56	29.56
3/14/2004	7.22	26.11	9.22	28.11	10.22	29.11	11.22	30.11
3/15/2004	6.67	26.11	8.67	28.11	9.67	29.11	10.67	30.11
3/16/2004	5.56	26.67	7.56	28.67	8.56	29.67	9.56	30.67
3/17/2004	6.11	27.22	8.11	29.22	9.11	30.22	10.11	31.22
3/18/2004	8.89	27.22	10.89	29.22	11.89	30.22	12.89	31.22
3/19/2004	7.78	27.78	9.78	29.78	10.78	30.78	11.78	31.78
3/20/2004	6.67	28.89	8.67	30.89	9.67	31.89	10.67	32.89
3/21/2004	10	28.33	12	30.33	13	31.33	14	32.33
3/22/2004	10	26.11	12	28.11	13	29.11	14	30.11
3/23/2004	7.22	22.78	9.22	24.78	10.22	25.78	11.22	26.78
3/24/2004	5.56	20	7.56	22	8.56	23	9.56	24
3/25/2004	3.33	13.89	5.33	15.89	6.33	16.89	7.33	17.89
3/26/2004	1.67	12.78	3.67	14.78	4.67	15.78	5.67	16.78
3/27/2004	2.22	18.33	4.22	20.33	5.22	21.33	6.22	22.33
3/28/2004	3.33	24.44	5.33	26.44	6.33	27.44	7.33	28.44
3/29/2004	7.78	26.11	9.78	28.11	10.78	29.11	11.78	30.11
3/30/2004	4.44	16.67	6.44	18.67	7.44	19.67	8.44	20.67
3/31/2004	4.44	18.89	6.44	20.89	7.44	21.89	8.44	22.89
4/1/2004	2.78	18.33	4.78	20.33	5.78	21.33	6.78	22.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/2/2004	2.78	21.11	4.78	23.11	5.78	24.11	6.78	25.11
4/3/2004	4.44	21.67	6.44	23.67	7.44	24.67	8.44	25.67
4/4/2004	6.11	21.11	8.11	23.11	9.11	24.11	10.11	25.11
4/5/2004	3.89	18.89	5.89	20.89	6.89	21.89	7.89	22.89
4/6/2004	2.78	18.33	4.78	20.33	5.78	21.33	6.78	22.33
4/7/2004	4.44	21.67	6.44	23.67	7.44	24.67	8.44	25.67
4/8/2004	5.56	23.89	7.56	25.89	8.56	26.89	9.56	27.89
4/9/2004	6.67	25.56	8.67	27.56	9.67	28.56	10.67	29.56
4/10/2004	6.11	27.22	8.11	29.22	9.11	30.22	10.11	31.22
4/11/2004	7.22	25.56	9.22	27.56	10.22	28.56	11.22	29.56
4/12/2004	7.78	24.44	9.78	26.44	10.78	27.44	11.78	28.44
4/13/2004	5.56	16.67	7.56	18.67	8.56	19.67	9.56	20.67
4/14/2004	6.67	16.67	8.67	18.67	9.67	19.67	10.67	20.67
4/15/2004	5.56	12.22	7.56	14.22	8.56	15.22	9.56	16.22
4/16/2004	3.33	13.89	5.33	15.89	6.33	16.89	7.33	17.89
4/17/2004	1.67	12.78	3.67	14.78	4.67	15.78	5.67	16.78
4/18/2004	3.33	12.78	5.33	14.78	6.33	15.78	7.33	16.78
4/19/2004	5	15	7	17	8	18	9	19
4/20/2004	7.22	16.11	9.22	18.11	10.22	19.11	11.22	20.11
4/21/2004	6.11	16.67	8.11	18.67	9.11	19.67	10.11	20.67
4/22/2004	2.78	20.56	4.78	22.56	5.78	23.56	6.78	24.56
4/23/2004	5.56	23.89	7.56	25.89	8.56	26.89	9.56	27.89
4/24/2004	5	26.11	7	28.11	8	29.11	9	30.11
4/25/2004	6.67	28.89	8.67	30.89	9.67	31.89	10.67	32.89
4/26/2004	8.89	31.11	10.89	33.11	11.89	34.11	12.89	35.11
4/27/2004	10.56	30.56	12.56	32.56	13.56	33.56	14.56	34.56
4/28/2004	9.44	25.56	11.44	27.56	12.44	28.56	13.44	29.56
4/29/2004	5	23.89	7	25.89	8	26.89	9	27.89
4/30/2004	5	25.56	7	27.56	8	28.56	9	29.56
5/1/2004	6.67	28.89	8.67	30.89	9.67	31.89	10.67	32.89
5/2/2004	10	31.11	12	33.11	13	34.11	14	35.11
5/3/2004	10.56	32.78	12.56	34.78	13.56	35.78	14.56	36.78
5/4/2004	11.11	30	13.11	32	14.11	33	15.11	34
5/5/2004	8.33	26.67	10.33	28.67	11.33	29.67	12.33	30.67
5/6/2004	8.33	23.89	10.33	25.89	11.33	26.89	12.33	27.89
5/7/2004	4.44	23.33	6.44	25.33	7.44	26.33	8.44	27.33
5/8/2004	6.11	22.22	8.11	24.22	9.11	25.22	10.11	26.22
5/9/2004	6.11	23.89	8.11	25.89	9.11	26.89	10.11	27.89
5/10/2004	7.22	18.33	9.22	20.33	10.22	21.33	11.22	22.33
5/11/2004	5	17.78	7	19.78	8	20.78	9	21.78
5/12/2004	2.78	22.78	4.78	24.78	5.78	25.78	6.78	26.78
5/13/2004	5	26.11	7	28.11	8	29.11	9	30.11
5/14/2004	7.78	26.67	9.78	28.67	10.78	29.67	11.78	30.67
5/15/2004	8.89	26.11	10.89	28.11	11.89	29.11	12.89	30.11
5/16/2004	7.22	26.11	9.22	28.11	10.22	29.11	11.22	30.11
5/17/2004	6.67	21.11	8.67	23.11	9.67	24.11	10.67	25.11
5/18/2004	5	20	7	22	8	23	9	24

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/19/2004	6.11	23.33	8.11	25.33	9.11	26.33	10.11	27.33
5/20/2004	5.56	22.78	7.56	24.78	8.56	25.78	9.56	26.78
5/21/2004	6.11	20.56	8.11	22.56	9.11	23.56	10.11	24.56
5/22/2004	6.67	22.22	8.67	24.22	9.67	25.22	10.67	26.22
5/23/2004	5.56	21.11	7.56	23.11	8.56	24.11	9.56	25.11
5/24/2004	5.56	22.22	7.56	24.22	8.56	25.22	9.56	26.22
5/25/2004	6.67	24.44	8.67	26.44	9.67	27.44	10.67	28.44
5/26/2004	7.78	27.22	9.78	29.22	10.78	30.22	11.78	31.22
5/27/2004	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
5/28/2004	11.11	20	13.11	22	14.11	23	15.11	24
5/29/2004	6.11	23.89	8.11	25.89	9.11	26.89	10.11	27.89
5/30/2004	8.33	28.89	10.33	30.89	11.33	31.89	12.33	32.89
5/31/2004	10	30.56	12	32.56	13	33.56	14	34.56
6/1/2004	10	31.11	12	33.11	13	34.11	14	35.11
6/2/2004	11.67	31.67	13.67	33.67	14.67	34.67	15.67	35.67
6/3/2004	11.67	30.56	13.67	32.56	14.67	33.56	15.67	34.56
6/4/2004	10.56	30.56	12.56	32.56	13.56	33.56	14.56	34.56
6/5/2004	10	30.56	12	32.56	13	33.56	14	34.56
6/6/2004	10.56	30	12.56	32	13.56	33	14.56	34
6/7/2004	8.33	22.78	10.33	24.78	11.33	25.78	12.33	26.78
6/8/2004	5.56	20	7.56	22	8.56	23	9.56	24
6/9/2004	5.56	20.56	7.56	22.56	8.56	23.56	9.56	24.56
6/10/2004	8.33	23.89	10.33	25.89	11.33	26.89	12.33	27.89
6/11/2004	8.89	27.22	10.89	29.22	11.89	30.22	12.89	31.22
6/12/2004	8.89	29.44	10.89	31.44	11.89	32.44	12.89	33.44
6/13/2004	10.56	31.11	12.56	33.11	13.56	34.11	14.56	35.11
6/14/2004	13.33	32.22	15.33	34.22	16.33	35.22	17.33	36.22
6/15/2004	13.89	33.89	15.89	35.89	16.89	36.89	17.89	37.89
6/16/2004	12.78	33.89	14.78	35.89	15.78	36.89	16.78	37.89
6/17/2004	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
6/18/2004	11.67	28.89	13.67	30.89	14.67	31.89	15.67	32.89
6/19/2004	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
6/20/2004	11.67	30.56	13.67	32.56	14.67	33.56	15.67	34.56
6/21/2004	11.67	30.56	13.67	32.56	14.67	33.56	15.67	34.56
6/22/2004	13.89	31.11	15.89	33.11	16.89	34.11	17.89	35.11
6/23/2004	13.89	31.67	15.89	33.67	16.89	34.67	17.89	35.67
6/24/2004	13.33	15.56	15.33	17.56	16.33	18.56	17.33	19.56
6/25/2004	11.67	30	13.67	32	14.67	33	15.67	34
6/26/2004	10.56	30.56	12.56	32.56	13.56	33.56	14.56	34.56
6/27/2004	12.22	32.22	14.22	34.22	15.22	35.22	16.22	36.22
6/28/2004	14.44	31.67	16.44	33.67	17.44	34.67	18.44	35.67
6/29/2004	12.78	27.22	14.78	29.22	15.78	30.22	16.78	31.22
6/30/2004	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
7/1/2004	12.22	28.33	14.22	30.33	15.22	31.33	16.22	32.33
7/2/2004	12.78	31.11	14.78	33.11	15.78	34.11	16.78	35.11
7/3/2004	13.89	32.78	15.89	34.78	16.89	35.78	17.89	36.78
7/4/2004	13.89	33.33	15.89	35.33	16.89	36.33	17.89	37.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/5/2004	15	35.56	17	37.56	18	38.56	19	39.56
7/6/2004	16.67	36.11	18.67	38.11	19.67	39.11	20.67	40.11
7/7/2004	16.67	33.33	18.67	35.33	19.67	36.33	20.67	37.33
7/8/2004	12.78	30.56	14.78	32.56	15.78	33.56	16.78	34.56
7/9/2004	12.78	28.89	14.78	30.89	15.78	31.89	16.78	32.89
7/10/2004	11.67	30	13.67	32	14.67	33	15.67	34
7/11/2004	12.78	32.78	14.78	34.78	15.78	35.78	16.78	36.78
7/12/2004	13.33	33.89	15.33	35.89	16.33	36.89	17.33	37.89
7/13/2004	13.89	33.33	15.89	35.33	16.89	36.33	17.89	37.33
7/14/2004	12.78	32.78	14.78	34.78	15.78	35.78	16.78	36.78
7/15/2004	12.78	33.33	14.78	35.33	15.78	36.33	16.78	37.33
7/16/2004	15	34.44	17	36.44	18	37.44	19	38.44
7/17/2004	16.67	33.33	18.67	35.33	19.67	36.33	20.67	37.33
7/18/2004	15.56	33.89	17.56	35.89	18.56	36.89	19.56	37.89
7/19/2004	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
7/20/2004	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78
7/21/2004	16.67	35	18.67	37	19.67	38	20.67	39
7/22/2004	15.56	35	17.56	37	18.56	38	19.56	39
7/23/2004	16.67	35.56	18.67	37.56	19.67	38.56	20.67	39.56
7/24/2004	16.67	34.44	18.67	36.44	19.67	37.44	20.67	38.44
7/25/2004	15.56	35.56	17.56	37.56	18.56	38.56	19.56	39.56
7/26/2004	16.11	35.56	18.11	37.56	19.11	38.56	20.11	39.56
7/27/2004	14.44	34.44	16.44	36.44	17.44	37.44	18.44	38.44
7/28/2004	15.56	34.44	17.56	36.44	18.56	37.44	19.56	38.44
7/29/2004	8.974	33.33	10.974	35.33	11.974	36.33	12.974	37.33
7/30/2004	13.33	32.78	15.33	34.78	16.33	35.78	17.33	36.78
7/31/2004	13.33	31.11	15.33	33.11	16.33	34.11	17.33	35.11
8/1/2004	12.22	31.11	14.22	33.11	15.22	34.11	16.22	35.11
8/2/2004	12.78	28.33	14.78	30.33	15.78	31.33	16.78	32.33
8/3/2004	11.67	30.56	13.67	32.56	14.67	33.56	15.67	34.56
8/4/2004	12.22	31.11	14.22	33.11	15.22	34.11	16.22	35.11
8/5/2004	11.67	30	13.67	32	14.67	33	15.67	34
8/6/2004	11.11	30.56	13.11	32.56	14.11	33.56	15.11	34.56
8/7/2004	12.22	33.33	14.22	35.33	15.22	36.33	16.22	37.33
8/8/2004	13.89	36.11	15.89	38.11	16.89	39.11	17.89	40.11
8/9/2004	15	37.22	17	39.22	18	40.22	19	41.22
8/10/2004	15.56	37.22	17.56	39.22	18.56	40.22	19.56	41.22
8/11/2004	16.11	38.89	18.11	40.89	19.11	41.89	20.11	42.89
8/12/2004	18.89	36.11	20.89	38.11	21.89	39.11	22.89	40.11
8/13/2004	17.22	36.11	19.22	38.11	20.22	39.11	21.22	40.11
8/14/2004	16.67	33.33	18.67	35.33	19.67	36.33	20.67	37.33
8/15/2004	15	30.56	17	32.56	18	33.56	19	34.56
8/16/2004	15	32.22	17	34.22	18	35.22	19	36.22
8/17/2004	13.89	33.89	15.89	35.89	16.89	36.89	17.89	37.89
8/18/2004	15	35	17	37	18	38	19	39
8/19/2004	16.11	35	18.11	37	19.11	38	20.11	39
8/20/2004	16.67	33.89	18.67	35.89	19.67	36.89	20.67	37.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/21/2004	16.11	33.33	18.11	35.33	19.11	36.33	20.11	37.33
8/22/2004	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
8/23/2004	13.33	26.11	15.33	28.11	16.33	29.11	17.33	30.11
8/24/2004	11.67	28.89	13.67	30.89	14.67	31.89	15.67	32.89
8/25/2004	12.22	27.78	14.22	29.78	15.22	30.78	16.22	31.78
8/26/2004	10	28.33	12	30.33	13	31.33	14	32.33
8/27/2004	12.78	32.22	14.78	34.22	15.78	35.22	16.78	36.22
8/28/2004	14.44	35.56	16.44	37.56	17.44	38.56	18.44	39.56
8/29/2004	15	36.11	17	38.11	18	39.11	19	40.11
8/30/2004	15	35.56	17	37.56	18	38.56	19	39.56
8/31/2004	14.44	35.56	16.44	37.56	17.44	38.56	18.44	39.56
9/1/2004	15	36.67	17	38.67	18	39.67	19	40.67
9/2/2004	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
9/3/2004	10	28.89	12	30.89	13	31.89	14	32.89
9/4/2004	8.89	30.56	10.89	32.56	11.89	33.56	12.89	34.56
9/5/2004	10.56	33.89	12.56	35.89	13.56	36.89	14.56	37.89
9/6/2004	13.33	35	15.33	37	16.33	38	17.33	39
9/7/2004	13.33	35.56	15.33	37.56	16.33	38.56	17.33	39.56
9/8/2004	14.44	35.56	16.44	37.56	17.44	38.56	18.44	39.56
9/9/2004	13.89	36.11	15.89	38.11	16.89	39.11	17.89	40.11
9/10/2004	12.78	35	14.78	37	15.78	38	16.78	39
9/11/2004	13.89	35	15.89	37	16.89	38	17.89	39
9/12/2004	13.89	30	15.89	32	16.89	33	17.89	34
9/13/2004	10.56	28.89	12.56	30.89	13.56	31.89	14.56	32.89
9/14/2004	9.44	30.56	11.44	32.56	12.44	33.56	13.44	34.56
9/15/2004	10	32.22	12	34.22	13	35.22	14	36.22
9/16/2004	12.78	32.78	14.78	34.78	15.78	35.78	16.78	36.78
9/17/2004	12.78	30	14.78	32	15.78	33	16.78	34
9/18/2004	8.89	16.11	10.89	18.11	11.89	19.11	12.89	20.11
9/19/2004	5.56	10.56	7.56	12.56	8.56	13.56	9.56	14.56
9/20/2004	2.78	20	4.78	22	5.78	23	6.78	24
9/21/2004	2.78	24.44	4.78	26.44	5.78	27.44	6.78	28.44
9/22/2004	5.56	27.78	7.56	29.78	8.56	30.78	9.56	31.78
9/23/2004	8.89	30	10.89	32	11.89	33	12.89	34
9/24/2004	10	32.22	12	34.22	13	35.22	14	36.22
9/25/2004	10.56	32.22	12.56	34.22	13.56	35.22	14.56	36.22
9/26/2004	10	32.22	12	34.22	13	35.22	14	36.22
9/27/2004	9.44	31.11	11.44	33.11	12.44	34.11	13.44	35.11
9/28/2004	8.89	25.56	10.89	27.56	11.89	28.56	12.89	29.56
9/29/2004	7.78	23.89	9.78	25.89	10.78	26.89	11.78	27.89
9/30/2004	8.33	25.56	10.33	27.56	11.33	28.56	12.33	29.56
10/1/2004	8.89	26.67	10.89	28.67	11.89	29.67	12.89	30.67
10/2/2004	11.67	28.89	13.67	30.89	14.67	31.89	15.67	32.89
10/3/2004	10.56	30	12.56	32	13.56	33	14.56	34
10/4/2004	12.78	29.44	14.78	31.44	15.78	32.44	16.78	33.44
10/5/2004	10.56	30	12.56	32	13.56	33	14.56	34
10/6/2004	10	30.56	12	32.56	13	33.56	14	34.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/7/2004	9.44	29.44	11.44	31.44	12.44	32.44	13.44	33.44
10/8/2004	10	29.44	12	31.44	13	32.44	14	33.44
10/9/2004	9.44	21.11	11.44	23.11	12.44	24.11	13.44	25.11
10/10/2004	7.22	18.89	9.22	20.89	10.22	21.89	11.22	22.89
10/11/2004	10	27.22	12	29.22	13	30.22	14	31.22
10/12/2004	10	31.67	12	33.67	13	34.67	14	35.67
10/13/2004	13.33	30.56	15.33	32.56	16.33	33.56	17.33	34.56
10/14/2004	11.11	30	13.11	32	14.11	33	15.11	34
10/15/2004	10	25.56	12	27.56	13	28.56	14	29.56
10/16/2004	8.33	23.33	10.33	25.33	11.33	26.33	12.33	27.33
10/17/2004	9.44	12.78	11.44	14.78	12.44	15.78	13.44	16.78
10/18/2004	6.67	13.89	8.67	15.89	9.67	16.89	10.67	17.89
10/19/2004	6.67	8.33	8.67	10.33	9.67	11.33	10.67	12.33
10/20/2004	4.44	11.11	6.44	13.11	7.44	14.11	8.44	15.11
10/21/2004	1.11	16.67	3.11	18.67	4.11	19.67	5.11	20.67
10/22/2004	1.67	17.78	3.67	19.78	4.67	20.78	5.67	21.78
10/23/2004	6.11	11.11	8.11	13.11	9.11	14.11	10.11	15.11
10/24/2004	8.33	15	10.33	17	11.33	18	12.33	19
10/25/2004	6.67	15	8.67	17	9.67	18	10.67	19
10/26/2004	2.22	9.44	4.22	11.44	5.22	12.44	6.22	13.44
10/27/2004	0.56	10	2.56	12	3.56	13	4.56	14
10/28/2004	0	10.56	2	12.56	3	13.56	4	14.56
10/29/2004	0.56	16.11	2.56	18.11	3.56	19.11	4.56	20.11
10/30/2004	1.11	18.89	3.11	20.89	4.11	21.89	5.11	22.89
10/31/2004	1.11	18.33	3.11	20.33	4.11	21.33	5.11	22.33
11/1/2004	0	18.33	2	20.33	3	21.33	4	22.33
11/2/2004	2.22	18.89	4.22	20.89	5.22	21.89	6.22	22.89
11/3/2004	3.89	6.67	5.89	8.67	6.89	9.67	7.89	10.67
11/4/2004	1.67	10.56	3.67	12.56	4.67	13.56	5.67	14.56
11/5/2004	0	17.78	2	19.78	3	20.78	4	21.78
11/6/2004	1.11	18.89	3.11	20.89	4.11	21.89	5.11	22.89
11/7/2004	3.89	18.89	5.89	20.89	6.89	21.89	7.89	22.89
11/8/2004	6.67	12.78	8.67	14.78	9.67	15.78	10.67	16.78
11/9/2004	8.33	12.22	10.33	14.22	11.33	15.22	12.33	16.22
11/10/2004	6.67	14.44	8.67	16.44	9.67	17.44	10.67	18.44
11/11/2004	6.11	10.56	8.11	12.56	9.11	13.56	10.11	14.56
11/12/2004	2.78	15.56	4.78	17.56	5.78	18.56	6.78	19.56
11/13/2004	4.44	16.11	6.44	18.11	7.44	19.11	8.44	20.11
11/14/2004	0.56	15	2.56	17	3.56	18	4.56	19
11/15/2004	3.33	16.67	5.33	18.67	6.33	19.67	7.33	20.67
11/16/2004	3.89	15.56	5.89	17.56	6.89	18.56	7.89	19.56
11/17/2004	3.89	16.67	5.89	18.67	6.89	19.67	7.89	20.67
11/18/2004	3.33	18.33	5.33	20.33	6.33	21.33	7.33	22.33
11/19/2004	0	14.44	2	16.44	3	17.44	4	18.44
11/20/2004	-0.56	17.22	1.44	19.22	2.44	20.22	3.44	21.22
11/21/2004	-2.22	11.67	-0.22	13.67	0.78	14.67	1.78	15.67
11/22/2004	1.11	13.89	3.11	15.89	4.11	16.89	5.11	17.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/23/2004	0	13.33	2	15.33	3	16.33	4	17.33
11/24/2004	-0.56	12.78	1.44	14.78	2.44	15.78	3.44	16.78
11/25/2004	1.67	13.33	3.67	15.33	4.67	16.33	5.67	17.33
11/26/2004	2.22	15	4.22	17	5.22	18	6.22	19
11/27/2004	0	8.33	2	10.33	3	11.33	4	12.33
11/28/2004	-2.78	6.67	-0.78	8.67	0.22	9.67	1.22	10.67
11/29/2004	-4.44	5	-2.44	7	-1.44	8	-0.44	9
11/30/2004	-2.78	7.78	-0.78	9.78	0.22	10.78	1.22	11.78
12/1/2004	-2.78	6.11	-0.78	8.11	0.22	9.11	1.22	10.11
12/2/2004	-2.78	8.33	-0.78	10.33	0.22	11.33	1.22	12.33
12/3/2004	-2.22	8.33	-0.22	10.33	0.78	11.33	1.78	12.33
12/4/2004	-1.67	11.67	0.33	13.67	1.33	14.67	2.33	15.67
12/5/2004	-1.67	13.33	0.33	15.33	1.33	16.33	2.33	17.33
12/6/2004	-1.67	10.56	0.33	12.56	1.33	13.56	2.33	14.56
12/7/2004	3.33	6.67	5.33	8.67	6.33	9.67	7.33	10.67
12/8/2004	3.89	7.22	5.89	9.22	6.89	10.22	7.89	11.22
12/9/2004	4.44	13.33	6.44	15.33	7.44	16.33	8.44	17.33
12/10/2004	2.78	14.44	4.78	16.44	5.78	17.44	6.78	18.44
12/11/2004	4.44	16.67	6.44	18.67	7.44	19.67	8.44	20.67
12/12/2004	3.89	15.56	5.89	17.56	6.89	18.56	7.89	19.56
12/13/2004	2.22	12.78	4.22	14.78	5.22	15.78	6.22	16.78
12/14/2004	1.11	11.67	3.11	13.67	4.11	14.67	5.11	15.67
12/15/2004	0	10.56	2	12.56	3	13.56	4	14.56
12/16/2004	0	11.67	2	13.67	3	14.67	4	15.67
12/17/2004	0	11.67	2	13.67	3	14.67	4	15.67
12/18/2004	0	12.78	2	14.78	3	15.78	4	16.78
12/19/2004	2.22	14.44	4.22	16.44	5.22	17.44	6.22	18.44
12/20/2004	1.67	13.33	3.67	15.33	4.67	16.33	5.67	17.33
12/21/2004	0.56	12.22	2.56	14.22	3.56	15.22	4.56	16.22
12/22/2004	-0.56	11.11	1.44	13.11	2.44	14.11	3.44	15.11
12/23/2004	-1.67	10.56	0.33	12.56	1.33	13.56	2.33	14.56
12/24/2004	-1.11	11.11	0.89	13.11	1.89	14.11	2.89	15.11
12/25/2004	-1.11	14.44	0.89	16.44	1.89	17.44	2.89	18.44
12/26/2004	0	10.56	2	12.56	3	13.56	4	14.56
12/27/2004	3.89	8.89	5.89	10.89	6.89	11.89	7.89	12.89
12/28/2004	5	7.22	7	9.22	8	10.22	9	11.22
12/29/2004	1.67	5	3.67	7	4.67	8	5.67	9
12/30/2004	2.78	8.33	4.78	10.33	5.78	11.33	6.78	12.33
12/31/2004	0	6.11	2	8.11	3	9.11	4	10.11
1/1/2005	0	3.89	2	5.89	3	6.89	4	7.89
1/2/2005	0.56	5.56	2.56	7.56	3.56	8.56	4.56	9.56
1/3/2005	0.56	5.56	2.56	7.56	3.56	8.56	4.56	9.56
1/4/2005	0	5	2	7	3	8	4	9
1/5/2005	0	8.33	2	10.33	3	11.33	4	12.33
1/6/2005	0	7.22	2	9.22	3	10.22	4	11.22
1/7/2005	0.56	8.33	2.56	10.33	3.56	11.33	4.56	12.33
1/8/2005	0	6.11	2	8.11	3	9.11	4	10.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/9/2005	3.33	4.44	5.33	6.44	6.33	7.44	7.33	8.44
1/10/2005	2.874	5.484	4.874	7.484	5.874	8.484	6.874	9.484
1/11/2005	-1.026	6.587	0.974	8.587	1.974	9.587	2.974	10.587
1/12/2005	-2.726	3.784	-0.726	5.784	0.274	6.784	1.274	7.784
1/13/2005	-1.626	2.084	0.374	4.084	1.374	5.084	2.374	6.084
1/14/2005	-2.726	4.884	-0.726	6.884	0.274	7.884	1.274	8.884
1/15/2005	-1.026	3.784	0.974	5.784	1.974	6.784	2.974	7.784
1/16/2005	-0.5256	4.884	1.4744	6.884	2.4744	7.884	3.4744	8.884
1/17/2005	0.07435	5.484	2.07435	7.484	3.07435	8.484	4.07435	9.484
1/18/2005	0.5744	4.384	2.5744	6.384	3.5744	7.384	4.5744	8.384
1/19/2005	0.5744	5.984	2.5744	7.984	3.5744	8.984	4.5744	9.984
1/20/2005	-1.026	4.384	0.974	6.384	1.974	7.384	2.974	8.384
1/21/2005	-1.026	4.384	0.974	6.384	1.974	7.384	2.974	8.384
1/22/2005	-0.5256	5.484	1.4744	7.484	2.4744	8.484	3.4744	9.484
1/23/2005	0.07435	8.287	2.07435	10.287	3.07435	11.287	4.07435	12.287
1/24/2005	-1.026	5.484	0.974	7.484	1.974	8.484	2.974	9.484
1/25/2005	3.974	11.59	5.974	13.59	6.974	14.59	7.974	15.59
1/26/2005	5.074	11.59	7.074	13.59	8.074	14.59	9.074	15.59
1/27/2005	2.874	9.887	4.874	11.887	5.874	12.887	6.874	13.887
1/28/2005	0.5744	8.287	2.5744	10.287	3.5744	11.287	4.5744	12.287
1/29/2005	-1.026	10.49	0.974	12.49	1.974	13.49	2.974	14.49
1/30/2005	-5.526	12.09	-3.526	14.09	-2.526	15.09	-1.526	16.09
1/31/2005	-5.526	13.79	-3.526	15.79	-2.526	16.79	-1.526	17.79
2/1/2005	2.22	9.44	4.22	11.44	5.22	12.44	6.22	13.44
2/2/2005	1.67	17.78	3.67	19.78	4.67	20.78	5.67	21.78
2/3/2005	0.56	17.78	2.56	19.78	3.56	20.78	4.56	21.78
2/4/2005	1.11	17.22	3.11	19.22	4.11	20.22	5.11	21.22
2/5/2005	1.67	17.22	3.67	19.22	4.67	20.22	5.67	21.22
2/6/2005	1.67	14.44	3.67	16.44	4.67	17.44	5.67	18.44
2/7/2005	1.11	7.78	3.11	9.78	4.11	10.78	5.11	11.78
2/8/2005	1.11	14.44	3.11	16.44	4.11	17.44	5.11	18.44
2/9/2005	1.11	15.56	3.11	17.56	4.11	18.56	5.11	19.56
2/10/2005	1.11	17.78	3.11	19.78	4.11	20.78	5.11	21.78
2/11/2005	4.44	13.33	6.44	15.33	7.44	16.33	8.44	17.33
2/12/2005	3.89	16.67	5.89	18.67	6.89	19.67	7.89	20.67
2/13/2005	3.33	13.33	5.33	15.33	6.33	16.33	7.33	17.33
2/14/2005	6.11	8.89	8.11	10.89	9.11	11.89	10.11	12.89
2/15/2005	4.44	10	6.44	12	7.44	13	8.44	14
2/16/2005	6.11	13.89	8.11	15.89	9.11	16.89	10.11	17.89
2/17/2005	5.56	14.44	7.56	16.44	8.56	17.44	9.56	18.44
2/18/2005	3.89	12.78	5.89	14.78	6.89	15.78	7.89	16.78
2/19/2005	2.78	12.78	4.78	14.78	5.78	15.78	6.78	16.78
2/20/2005	3.89	11.11	5.89	13.11	6.89	14.11	7.89	15.11
2/21/2005	5.56	10.56	7.56	12.56	8.56	13.56	9.56	14.56
2/22/2005	3.89	15	5.89	17	6.89	18	7.89	19
2/23/2005	0.56	16.67	2.56	18.67	3.56	19.67	4.56	20.67
2/24/2005	0.56	15.56	2.56	17.56	3.56	18.56	4.56	19.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/25/2005	2.78	15	4.78	17	5.78	18	6.78	19
2/26/2005	1.11	15	3.11	17	4.11	18	5.11	19
2/27/2005	2.78	15	4.78	17	5.78	18	6.78	19
2/28/2005	0.56	16.11	2.56	18.11	3.56	19.11	4.56	20.11
3/1/2005	1.67	13.89	3.67	15.89	4.67	16.89	5.67	17.89
3/2/2005	3.89	14.44	5.89	16.44	6.89	17.44	7.89	18.44
3/3/2005	1.67	14.44	3.67	16.44	4.67	17.44	5.67	18.44
3/4/2005	3.89	11.67	5.89	13.67	6.89	14.67	7.89	15.67
3/5/2005	1.67	18.89	3.67	20.89	4.67	21.89	5.67	22.89
3/6/2005	2.78	20	4.78	22	5.78	23	6.78	24
3/7/2005	2.22	21.11	4.22	23.11	5.22	24.11	6.22	25.11
3/8/2005	4.44	25	6.44	27	7.44	28	8.44	29
3/9/2005	6.11	25.56	8.11	27.56	9.11	28.56	10.11	29.56
3/10/2005	6.11	26.67	8.11	28.67	9.11	29.67	10.11	30.67
3/11/2005	8.89	29.44	10.89	31.44	11.89	32.44	12.89	33.44
3/12/2005	6.67	27.22	8.67	29.22	9.67	30.22	10.67	31.22
3/13/2005	5	21.67	7	23.67	8	24.67	9	25.67
3/14/2005	2.22	18.89	4.22	20.89	5.22	21.89	6.22	22.89
3/15/2005	0.56	18.89	2.56	20.89	3.56	21.89	4.56	22.89
3/16/2005	3.33	17.78	5.33	19.78	6.33	20.78	7.33	21.78
3/17/2005	2.78	16.11	4.78	18.11	5.78	19.11	6.78	20.11
3/18/2005	3.33	16.11	5.33	18.11	6.33	19.11	7.33	20.11
3/19/2005	6.11	10	8.11	12	9.11	13	10.11	14
3/20/2005	2.22	8.89	4.22	10.89	5.22	11.89	6.22	12.89
3/21/2005	4.44	13.33	6.44	15.33	7.44	16.33	8.44	17.33
3/22/2005	0.56	10	2.56	12	3.56	13	4.56	14
3/23/2005	0.56	3.89	2.56	5.89	3.56	6.89	4.56	7.89
3/24/2005	1.11	10.56	3.11	12.56	4.11	13.56	5.11	14.56
3/25/2005	0	14.44	2	16.44	3	17.44	4	18.44
3/26/2005	1.11	18.33	3.11	20.33	4.11	21.33	5.11	22.33
3/27/2005	4.44	17.78	6.44	19.78	7.44	20.78	8.44	21.78
3/28/2005	3.33	8.89	5.33	10.89	6.33	11.89	7.33	12.89
3/29/2005	2.78	8.89	4.78	10.89	5.78	11.89	6.78	12.89
3/30/2005	0	16.67	2	18.67	3	19.67	4	20.67
3/31/2005	0	20.56	2	22.56	3	23.56	4	24.56
4/1/2005	2.78	22.78	4.78	24.78	5.78	25.78	6.78	26.78
4/2/2005	5.56	20	7.56	22	8.56	23	9.56	24
4/3/2005	2.78	13.89	4.78	15.89	5.78	16.89	6.78	17.89
4/4/2005	2.22	14.44	4.22	16.44	5.22	17.44	6.22	18.44
4/5/2005	1.67	20	3.67	22	4.67	23	5.67	24
4/6/2005	5.56	25	7.56	27	8.56	28	9.56	29
4/7/2005	3.89	10	5.89	12	6.89	13	7.89	14
4/8/2005	0.56	4.44	2.56	6.44	3.56	7.44	4.56	8.44
4/9/2005	0	14.44	2	16.44	3	17.44	4	18.44
4/10/2005	2.22	18.33	4.22	20.33	5.22	21.33	6.22	22.33
4/11/2005	4.44	18.89	6.44	20.89	7.44	21.89	8.44	22.89
4/12/2005	2.78	16.11	4.78	18.11	5.78	19.11	6.78	20.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/13/2005	2.22	12.78	4.22	14.78	5.22	15.78	6.22	16.78
4/14/2005	-1.11	17.78	0.89	19.78	1.89	20.78	2.89	21.78
4/15/2005	1.11	21.67	3.11	23.67	4.11	24.67	5.11	25.67
4/16/2005	5.56	23.89	7.56	25.89	8.56	26.89	9.56	27.89
4/17/2005	5.56	20	7.56	22	8.56	23	9.56	24
4/18/2005	3.89	16.11	5.89	18.11	6.89	19.11	7.89	20.11
4/19/2005	0.56	16.11	2.56	18.11	3.56	19.11	4.56	20.11
4/20/2005	1.67	17.78	3.67	19.78	4.67	20.78	5.67	21.78
4/21/2005	2.78	21.11	4.78	23.11	5.78	24.11	6.78	25.11
4/22/2005	5	25.56	7	27.56	8	28.56	9	29.56
4/23/2005	5	15	7	17	8	18	9	19
4/24/2005	5	12.78	7	14.78	8	15.78	9	16.78
4/25/2005	2.22	18.33	4.22	20.33	5.22	21.33	6.22	22.33
4/26/2005	5	21.11	7	23.11	8	24.11	9	25.11
4/27/2005	6.67	17.78	8.67	19.78	9.67	20.78	10.67	21.78
4/28/2005	6.67	12.78	8.67	14.78	9.67	15.78	10.67	16.78
4/29/2005	3.89	18.33	5.89	20.33	6.89	21.33	7.89	22.33
4/30/2005	5.56	20	7.56	22	8.56	23	9.56	24
5/1/2005	8.89	17.78	10.89	19.78	11.89	20.78	12.89	21.78
5/2/2005	5.56	22.22	7.56	24.22	8.56	25.22	9.56	26.22
5/3/2005	5.56	23.33	7.56	25.33	8.56	26.33	9.56	27.33
5/4/2005	8.33	20.56	10.33	22.56	11.33	23.56	12.33	24.56
5/5/2005	8.33	12.22	10.33	14.22	11.33	15.22	12.33	16.22
5/6/2005	7.78	16.11	9.78	18.11	10.78	19.11	11.78	20.11
5/7/2005	3.89	19.44	5.89	21.44	6.89	22.44	7.89	23.44
5/8/2005	8.33	12.78	10.33	14.78	11.33	15.78	12.33	16.78
5/9/2005	3.89	11.67	5.89	13.67	6.89	14.67	7.89	15.67
5/10/2005	2.22	15	4.22	17	5.22	18	6.22	19
5/11/2005	2.78	18.89	4.78	20.89	5.78	21.89	6.78	22.89
5/12/2005	5	22.78	7	24.78	8	25.78	9	26.78
5/13/2005	8.89	26.11	10.89	28.11	11.89	29.11	12.89	30.11
5/14/2005	8.89	27.22	10.89	29.22	11.89	30.22	12.89	31.22
5/15/2005	10	22.22	12	24.22	13	25.22	14	26.22
5/16/2005	8.33	14.44	10.33	16.44	11.33	17.44	12.33	18.44
5/17/2005	5.56	15.56	7.56	17.56	8.56	18.56	9.56	19.56
5/18/2005	8.89	13.33	10.89	15.33	11.89	16.33	12.89	17.33
5/19/2005	10	22.22	12	24.22	13	25.22	14	26.22
5/20/2005	7.78	22.22	9.78	24.22	10.78	25.22	11.78	26.22
5/21/2005	5.56	26.67	7.56	28.67	8.56	29.67	9.56	30.67
5/22/2005	8.89	29.44	10.89	31.44	11.89	32.44	12.89	33.44
5/23/2005	10	28.33	12	30.33	13	31.33	14	32.33
5/24/2005	10	30.56	12	32.56	13	33.56	14	34.56
5/25/2005	9.44	31.11	11.44	33.11	12.44	34.11	13.44	35.11
5/26/2005	9.44	30.56	11.44	32.56	12.44	33.56	13.44	34.56
5/27/2005	12.22	31.11	14.22	33.11	15.22	34.11	16.22	35.11
5/28/2005	7.78	22.78	9.78	24.78	10.78	25.78	11.78	26.78
5/29/2005	4.44	20.56	6.44	22.56	7.44	23.56	8.44	24.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/30/2005	6.67	25	8.67	27	9.67	28	10.67	29
5/31/2005	9.44	28.33	11.44	30.33	12.44	31.33	13.44	32.33
6/1/2005	11.11	27.22	13.11	29.22	14.11	30.22	15.11	31.22
6/2/2005	7.78	25.56	9.78	27.56	10.78	28.56	11.78	29.56
6/3/2005	6.67	26.67	8.67	28.67	9.67	29.67	10.67	30.67
6/4/2005	8.33	27.78	10.33	29.78	11.33	30.78	12.33	31.78
6/5/2005	7.78	20	9.78	22	10.78	23	11.78	24
6/6/2005	5.56	17.78	7.56	19.78	8.56	20.78	9.56	21.78
6/7/2005	3.33	20.56	5.33	22.56	6.33	23.56	7.33	24.56
6/8/2005	6.67	13.89	8.67	15.89	9.67	16.89	10.67	17.89
6/9/2005	10.56	22.22	12.56	24.22	13.56	25.22	14.56	26.22
6/10/2005	8.33	25	10.33	27	11.33	28	12.33	29
6/11/2005	9.44	26.11	11.44	28.11	12.44	29.11	13.44	30.11
6/12/2005	8.89	27.78	10.89	29.78	11.89	30.78	12.89	31.78
6/13/2005	10	31.11	12	33.11	13	34.11	14	35.11
6/14/2005	12.78	31.11	14.78	33.11	15.78	34.11	16.78	35.11
6/15/2005	10.56	28.89	12.56	30.89	13.56	31.89	14.56	32.89
6/16/2005	8.89	21.11	10.89	23.11	11.89	24.11	12.89	25.11
6/17/2005	8.33	13.89	10.33	15.89	11.33	16.89	12.33	17.89
6/18/2005	5.56	19.44	7.56	21.44	8.56	22.44	9.56	23.44
6/19/2005	6.11	23.89	8.11	25.89	9.11	26.89	10.11	27.89
6/20/2005	7.22	26.67	9.22	28.67	10.22	29.67	11.22	30.67
6/21/2005	8.89	26.11	10.89	28.11	11.89	29.11	12.89	30.11
6/22/2005	10	27.78	12	29.78	13	30.78	14	31.78
6/23/2005	10.56	28.89	12.56	30.89	13.56	31.89	14.56	32.89
6/24/2005	11.11	26.67	13.11	28.67	14.11	29.67	15.11	30.67
6/25/2005	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11
6/26/2005	10	26.67	12	28.67	13	29.67	14	30.67
6/27/2005	10	26.11	12	28.11	13	29.11	14	30.11
6/28/2005	10.56	27.22	12.56	29.22	13.56	30.22	14.56	31.22
6/29/2005	11.67	31.11	13.67	33.11	14.67	34.11	15.67	35.11
6/30/2005	13.89	33.89	15.89	35.89	16.89	36.89	17.89	37.89
7/1/2005	15	34.44	17	36.44	18	37.44	19	38.44
7/2/2005	15	33.33	17	35.33	18	36.33	19	37.33
7/3/2005	11.67	33.33	13.67	35.33	14.67	36.33	15.67	37.33
7/4/2005	12.22	32.78	14.22	34.78	15.22	35.78	16.22	36.78
7/5/2005	13.33	32.22	15.33	34.22	16.33	35.22	17.33	36.22
7/6/2005	15	31.67	17	33.67	18	34.67	19	35.67
7/7/2005	14.44	32.22	16.44	34.22	17.44	35.22	18.44	36.22
7/8/2005	13.33	28.89	15.33	30.89	16.33	31.89	17.33	32.89
7/9/2005	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
7/10/2005	12.78	30	14.78	32	15.78	33	16.78	34
7/11/2005	12.22	32.78	14.22	34.78	15.22	35.78	16.22	36.78
7/12/2005	15	35	17	37	18	38	19	39
7/13/2005	15.56	35.56	17.56	37.56	18.56	38.56	19.56	39.56
7/14/2005	17.22	36.67	19.22	38.67	20.22	39.67	21.22	40.67
7/15/2005	16.67	37.78	18.67	39.78	19.67	40.78	20.67	41.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: TIGER CREEK							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/16/2005	18.89	38.33	20.89	40.33	21.89	41.33	22.89	42.33
7/17/2005	16.67	37.78	18.67	39.78	19.67	40.78	20.67	41.78
7/18/2005	18.33	37.78	20.33	39.78	21.33	40.78	22.33	41.78
7/19/2005	17.78	37.22	19.78	39.22	20.78	40.22	21.78	41.22
7/20/2005	16.11	37.78	18.11	39.78	19.11	40.78	20.11	41.78
7/21/2005	18.89	36.11	20.89	38.11	21.89	39.11	22.89	40.11
7/22/2005	17.22	33.33	19.22	35.33	20.22	36.33	21.22	37.33
7/23/2005	16.11	36.11	18.11	38.11	19.11	39.11	20.11	40.11
7/24/2005	15	35.56	17	37.56	18	38.56	19	39.56
7/25/2005	13.33	35.56	15.33	37.56	16.33	38.56	17.33	39.56
7/26/2005	13.89	36.67	15.89	38.67	16.89	39.67	17.89	40.67
7/27/2005	15	36.11	17	38.11	18	39.11	19	40.11
7/28/2005	16.11	35.56	18.11	37.56	19.11	38.56	20.11	39.56
7/29/2005	16.11	34.44	18.11	36.44	19.11	37.44	20.11	38.44
7/30/2005	16.11	35	18.11	37	19.11	38	20.11	39
7/31/2005	17.22	35	19.22	37	20.22	38	21.22	39
8/1/2005	14.44	34.44	16.44	36.44	17.44	37.44	18.44	38.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/1/1999	19.44	32.78	21.44	34.78	22.44	35.78	23.44	36.78
10/2/1999	17.78	28.33	19.78	30.33	20.78	31.33	21.78	32.33
10/3/1999	17.22	27.22	19.22	29.22	20.22	30.22	21.22	31.22
10/4/1999	10	26.11	12	28.11	13	29.11	14	30.11
10/5/1999	8.889	20	10.889	22	11.889	23	12.889	24
10/6/1999	9.444	21.11	11.444	23.11	12.444	24.11	13.444	25.11
10/7/1999	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
10/8/1999	16.11	28.33	18.11	30.33	19.11	31.33	20.11	32.33
10/9/1999	18.33	31.11	20.33	33.11	21.33	34.11	22.33	35.11
10/10/1999	18.89	32.22	20.89	34.22	21.89	35.22	22.89	36.22
10/11/1999	19.44	30	21.44	32	22.44	33	23.44	34
10/12/1999	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
10/13/1999	20	34.44	22	36.44	23	37.44	24	38.44
10/14/1999	18.33	31.11	20.33	33.11	21.33	34.11	22.33	35.11
10/15/1999	17.22	26.67	19.22	28.67	20.22	29.67	21.22	30.67
10/16/1999	17.78	28.89	19.78	30.89	20.78	31.89	21.78	32.89
10/17/1999	15	27.22	17	29.22	18	30.22	19	31.22
10/18/1999	14.44	25	16.44	27	17.44	28	18.44	29
10/19/1999	15	28.33	17	30.33	18	31.33	19	32.33
10/20/1999	17.22	30	19.22	32	20.22	33	21.22	34
10/21/1999	17.78	29.44	19.78	31.44	20.78	32.44	21.78	33.44
10/22/1999	17.78	29.44	19.78	31.44	20.78	32.44	21.78	33.44
10/23/1999	15.56	26.67	17.56	28.67	18.56	29.67	19.56	30.67
10/24/1999	15	26.11	17	28.11	18	29.11	19	30.11
10/25/1999	15	27.22	17	29.22	18	30.22	19	31.22
10/26/1999	13.89	25	15.89	27	16.89	28	17.89	29
10/27/1999	12.78	22.22	14.78	24.22	15.78	25.22	16.78	26.22
10/28/1999	8.333	15	10.333	17	11.333	18	12.333	19
10/29/1999	9.444	20.56	11.444	22.56	12.444	23.56	13.444	24.56
10/30/1999	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
10/31/1999	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
11/1/1999	15	28.33	17	30.33	18	31.33	19	32.33
11/2/1999	15.56	27.22	17.56	29.22	18.56	30.22	19.56	31.22
11/3/1999	13.33	26.11	15.33	28.11	16.33	29.11	17.33	30.11
11/4/1999	12.78	24.44	14.78	26.44	15.78	27.44	16.78	28.44
11/5/1999	13.33	25	15.33	27	16.33	28	17.33	29
11/6/1999	11.67	24.44	13.67	26.44	14.67	27.44	15.67	28.44
11/7/1999	6.667	17.22	8.667	19.22	9.667	20.22	10.667	21.22
11/8/1999	5.556	15	7.556	17	8.556	18	9.556	19
11/9/1999	6.111	17.78	8.111	19.78	9.111	20.78	10.111	21.78
11/10/1999	7.222	16.67	9.222	18.67	10.222	19.67	11.222	20.67
11/11/1999	8.889	23.33	10.889	25.33	11.889	26.33	12.889	27.33
11/12/1999	13.89	25.56	15.89	27.56	16.89	28.56	17.89	29.56
11/13/1999	16.11	28.33	18.11	30.33	19.11	31.33	20.11	32.33
11/14/1999	9.444	24.44	11.444	26.44	12.444	27.44	13.444	28.44
11/15/1999	8.889	18.89	10.889	20.89	11.889	21.89	12.889	22.89
11/16/1999	3.889	14.44	5.889	16.44	6.889	17.44	7.889	18.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/17/1999	3.333	12.78	5.333	14.78	6.333	15.78	7.333	16.78
11/18/1999	4.444	14.44	6.444	16.44	7.444	17.44	8.444	18.44
11/19/1999	6.111	10.56	8.111	12.56	9.111	13.56	10.111	14.56
11/20/1999	6.111	11.11	8.111	13.11	9.111	14.11	10.111	15.11
11/21/1999	2.778	9.444	4.778	11.444	5.778	12.444	6.778	13.444
11/22/1999	2.778	11.67	4.778	13.67	5.778	14.67	6.778	15.67
11/23/1999	2.222	13.33	4.222	15.33	5.222	16.33	6.222	17.33
11/24/1999	5	13.33	7	15.33	8	16.33	9	17.33
11/25/1999	6.111	16.67	8.111	18.67	9.111	19.67	10.111	20.67
11/26/1999	7.222	17.22	9.222	19.22	10.222	20.22	11.222	21.22
11/27/1999	6.667	17.22	8.667	19.22	9.667	20.22	10.667	21.22
11/28/1999	8.333	16.11	10.333	18.11	11.333	19.11	12.333	20.11
11/29/1999	10	15.56	12	17.56	13	18.56	14	19.56
11/30/1999	3.333	11.11	5.333	13.11	6.333	14.11	7.333	15.11
12/1/1999	2.778	10.56	4.778	12.56	5.778	13.56	6.778	14.56
12/2/1999	3.333	8.333	5.333	10.333	6.333	11.333	7.333	12.333
12/3/1999	2.778	11.11	4.778	13.11	5.778	14.11	6.778	15.11
12/4/1999	3.889	15	5.889	17	6.889	18	7.889	19
12/5/1999	6.111	16.67	8.111	18.67	9.111	19.67	10.111	20.67
12/6/1999	5	13.33	7	15.33	8	16.33	9	17.33
12/7/1999	2.222	8.333	4.222	10.333	5.222	11.333	6.222	12.333
12/8/1999	1.667	11.67	3.667	13.67	4.667	14.67	5.667	15.67
12/9/1999	1.111	7.222	3.111	9.222	4.111	10.222	5.111	11.222
12/10/1999	0.5556	12.78	2.5556	14.78	3.5556	15.78	4.5556	16.78
12/11/1999	1.111	11.67	3.111	13.67	4.111	14.67	5.111	15.67
12/12/1999	5.556	17.22	7.556	19.22	8.556	20.22	9.556	21.22
12/13/1999	3.333	9.444	5.333	11.444	6.333	12.444	7.333	13.444
12/14/1999	2.222	11.11	4.222	13.11	5.222	14.11	6.222	15.11
12/15/1999	6.111	13.33	8.111	15.33	9.111	16.33	10.111	17.33
12/16/1999	5	18.33	7	20.33	8	21.33	9	22.33
12/17/1999	7.222	18.89	9.222	20.89	10.222	21.89	11.222	22.89
12/18/1999	8.889	13.89	10.889	15.89	11.889	16.89	12.889	17.89
12/19/1999	9.444	17.22	11.444	19.22	12.444	20.22	13.444	21.22
12/20/1999	11.67	24.44	13.67	26.44	14.67	27.44	15.67	28.44
12/21/1999	10	22.22	12	24.22	13	25.22	14	26.22
12/22/1999	7.778	18.89	9.778	20.89	10.778	21.89	11.778	22.89
12/23/1999	7.222	18.33	9.222	20.33	10.222	21.33	11.222	22.33
12/24/1999	9.444	20.56	11.444	22.56	12.444	23.56	13.444	24.56
12/25/1999	8.333	18.33	10.333	20.33	11.333	21.33	12.333	22.33
12/26/1999	8.889	18.33	10.889	20.33	11.889	21.33	12.889	22.33
12/27/1999	8.889	19.44	10.889	21.44	11.889	22.44	12.889	23.44
12/28/1999	9.444	19.44	11.444	21.44	12.444	22.44	13.444	23.44
12/29/1999	7.778	16.67	9.778	18.67	10.778	19.67	11.778	20.67
12/30/1999	7.222	17.78	9.222	19.78	10.222	20.78	11.222	21.78
12/31/1999	3.333	13.89	5.333	15.89	6.333	16.89	7.333	17.89
1/1/2000	0.5556	6.111	2.5556	8.111	3.5556	9.111	4.5556	10.111
1/2/2000	0.5556	8.889	2.5556	10.889	3.5556	11.889	4.5556	12.889

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/3/2000	2.778	11.67	4.778	13.67	5.778	14.67	6.778	15.67
1/4/2000	5	13.33	7	15.33	8	16.33	9	17.33
1/5/2000	3.333	15	5.333	17	6.333	18	7.333	19
1/6/2000	2.778	12.78	4.778	14.78	5.778	15.78	6.778	16.78
1/7/2000	5	13.89	7	15.89	8	16.89	9	17.89
1/8/2000	4.444	15.56	6.444	17.56	7.444	18.56	8.444	19.56
1/9/2000	5	11.11	7	13.11	8	14.11	9	15.11
1/10/2000	5	13.33	7	15.33	8	16.33	9	17.33
1/11/2000	4.444	6.667	6.444	8.667	7.444	9.667	8.444	10.667
1/12/2000	2.222	6.667	4.222	8.667	5.222	9.667	6.222	10.667
1/13/2000	6.667	13.33	8.667	15.33	9.667	16.33	10.667	17.33
1/14/2000	9.444	13.89	11.444	15.89	12.444	16.89	13.444	17.89
1/15/2000	6.111	12.78	8.111	14.78	9.111	15.78	10.111	16.78
1/16/2000	2.222	12.22	4.222	14.22	5.222	15.22	6.222	16.22
1/17/2000	6.667	10	8.667	12	9.667	13	10.667	14
1/18/2000	8.333	11.67	10.333	13.67	11.333	14.67	12.333	15.67
1/19/2000	10	13.33	12	15.33	13	16.33	14	17.33
1/20/2000	4.444	9.444	6.444	11.444	7.444	12.444	8.444	13.444
1/21/2000	4.444	15	6.444	17	7.444	18	8.444	19
1/22/2000	4.444	13.33	6.444	15.33	7.444	16.33	8.444	17.33
1/23/2000	5.556	8.889	7.556	10.889	8.556	11.889	9.556	12.889
1/24/2000	5.556	9.444	7.556	11.444	8.556	12.444	9.556	13.444
1/25/2000	5.556	8.889	7.556	10.889	8.556	11.889	9.556	12.889
1/26/2000	3.889	12.22	5.889	14.22	6.889	15.22	7.889	16.22
1/27/2000	3.889	11.67	5.889	13.67	6.889	14.67	7.889	15.67
1/28/2000	1.667	14.44	3.667	16.44	4.667	17.44	5.667	18.44
1/29/2000	6.111	16.67	8.111	18.67	9.111	19.67	10.111	20.67
1/30/2000	3.889	8.333	5.889	10.333	6.889	11.333	7.889	12.333
1/31/2000	1.667	8.333	3.667	10.333	4.667	11.333	5.667	12.333
2/1/2000	6.667	15.56	8.667	17.56	9.667	18.56	10.667	19.56
2/2/2000	7.778	23.33	9.778	25.33	10.778	26.33	11.778	27.33
2/3/2000	6.111	15	8.111	17	9.111	18	10.111	19
2/4/2000	6.111	10.56	8.111	12.56	9.111	13.56	10.111	14.56
2/5/2000	6.667	12.78	8.667	14.78	9.667	15.78	10.667	16.78
2/6/2000	7.778	20	9.778	22	10.778	23	11.778	24
2/7/2000	10.56	21.11	12.56	23.11	13.56	24.11	14.56	25.11
2/8/2000	10	20	12	22	13	23	14	24
2/9/2000	7.222	12.78	9.222	14.78	10.222	15.78	11.222	16.78
2/10/2000	2.778	10	4.778	12	5.778	13	6.778	14
2/11/2000	1.667	6.111	3.667	8.111	4.667	9.111	5.667	10.111
2/12/2000	0	5	2	7	3	8	4	9
2/13/2000	3.333	9.444	5.333	11.444	6.333	12.444	7.333	13.444
2/14/2000	3.889	9.444	5.889	11.444	6.889	12.444	7.889	13.444
2/15/2000	3.889	13.89	5.889	15.89	6.889	16.89	7.889	17.89
2/16/2000	2.778	7.222	4.778	9.222	5.778	10.222	6.778	11.222
2/17/2000	2.222	8.333	4.222	10.333	5.222	11.333	6.222	12.333
2/18/2000	2.778	17.22	4.778	19.22	5.778	20.22	6.778	21.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/19/2000	7.222	16.67	9.222	18.67	10.222	19.67	11.222	20.67
2/20/2000	3.333	12.78	5.333	14.78	6.333	15.78	7.333	16.78
2/21/2000	2.778	13.89	4.778	15.89	5.778	16.89	6.778	17.89
2/22/2000	2.222	7.222	4.222	9.222	5.222	10.222	6.222	11.222
2/23/2000	0	6.667	2	8.667	3	9.667	4	10.667
2/24/2000	-1.667	5.556	0.333	7.556	1.333	8.556	2.333	9.556
2/25/2000	1.111	11.67	3.111	13.67	4.111	14.67	5.111	15.67
2/26/2000	6.111	14.44	8.111	16.44	9.111	17.44	10.111	18.44
2/27/2000	3.333	7.778	5.333	9.778	6.333	10.778	7.333	11.778
2/28/2000	2.778	9.444	4.778	11.444	5.778	12.444	6.778	13.444
2/29/2000	2.778	7.222	4.778	9.222	5.778	10.222	6.778	11.222
3/1/2000	2.222	13.33	4.222	15.33	5.222	16.33	6.222	17.33
3/2/2000	3.889	6.111	5.889	8.111	6.889	9.111	7.889	10.111
3/3/2000	3.889	15	5.889	17	6.889	18	7.889	19
3/4/2000	5	15	7	17	8	18	9	19
3/5/2000	2.222	7.222	4.222	9.222	5.222	10.222	6.222	11.222
3/6/2000	0.5556	5.556	2.5556	7.556	3.5556	8.556	4.5556	9.556
3/7/2000	0.5556	7.778	2.5556	9.778	3.5556	10.778	4.5556	11.778
3/8/2000	1.667	8.333	3.667	10.333	4.667	11.333	5.667	12.333
3/9/2000	2.778	8.889	4.778	10.889	5.778	11.889	6.778	12.889
3/10/2000	2.778	16.11	4.778	18.11	5.778	19.11	6.778	20.11
3/11/2000	7.222	15	9.222	17	10.222	18	11.222	19
3/12/2000	7.222	17.22	9.222	19.22	10.222	20.22	11.222	21.22
3/13/2000	8.333	18.89	10.333	20.89	11.333	21.89	12.333	22.89
3/14/2000	11.11	20	13.11	22	14.11	23	15.11	24
3/15/2000	9.444	20	11.444	22	12.444	23	13.444	24
3/16/2000	8.889	17.22	10.889	19.22	11.889	20.22	12.889	21.22
3/17/2000	7.778	18.33	9.778	20.33	10.778	21.33	11.778	22.33
3/18/2000	9.444	20.56	11.444	22.56	12.444	23.56	13.444	24.56
3/19/2000	5.556	16.11	7.556	18.11	8.556	19.11	9.556	20.11
3/20/2000	5	16.67	7	18.67	8	19.67	9	20.67
3/21/2000	6.667	18.89	8.667	20.89	9.667	21.89	10.667	22.89
3/22/2000	7.222	19.44	9.222	21.44	10.222	22.44	11.222	23.44
3/23/2000	8.889	18.89	10.889	20.89	11.889	21.89	12.889	22.89
3/24/2000	8.889	18.33	10.889	20.33	11.889	21.33	12.889	22.33
3/25/2000	7.222	18.89	9.222	20.89	10.222	21.89	11.222	22.89
3/26/2000	8.333	19.44	10.333	21.44	11.333	22.44	12.333	23.44
3/27/2000	5	10.56	7	12.56	8	13.56	9	14.56
3/28/2000	3.333	13.89	5.333	15.89	6.333	16.89	7.333	17.89
3/29/2000	5	15	7	17	8	18	9	19
3/30/2000	8.889	21.67	10.889	23.67	11.889	24.67	12.889	25.67
3/31/2000	11.11	25	13.11	27	14.11	28	15.11	29
4/1/2000	14.44	26.11	16.44	28.11	17.44	29.11	18.44	30.11
4/2/2000	15.56	26.11	17.56	28.11	18.56	29.11	19.56	30.11
4/3/2000	14.44	26.11	16.44	28.11	17.44	29.11	18.44	30.11
4/4/2000	13.33	24.44	15.33	26.44	16.33	27.44	17.33	28.44
4/5/2000	12.22	23.33	14.22	25.33	15.22	26.33	16.22	27.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/6/2000	11.11	22.78	13.11	24.78	14.11	25.78	15.11	26.78
4/7/2000	12.78	23.33	14.78	25.33	15.78	26.33	16.78	27.33
4/8/2000	7.778	20.56	9.778	22.56	10.778	23.56	11.778	24.56
4/9/2000	5	17.78	7	19.78	8	20.78	9	21.78
4/10/2000	9.444	22.22	11.444	24.22	12.444	25.22	13.444	26.22
4/11/2000	11.67	25	13.67	27	14.67	28	15.67	29
4/12/2000	10	24.44	12	26.44	13	27.44	14	28.44
4/13/2000	6.667	13.33	8.667	15.33	9.667	16.33	10.667	17.33
4/14/2000	5	13.89	7	15.89	8	16.89	9	17.89
4/15/2000	5	12.78	7	14.78	8	15.78	9	16.78
4/16/2000	7.222	14.44	9.222	16.44	10.222	17.44	11.222	18.44
4/17/2000	3.333	10	5.333	12	6.333	13	7.333	14
4/18/2000	2.778	13.33	4.778	15.33	5.778	16.33	6.778	17.33
4/19/2000	6.111	16.11	8.111	18.11	9.111	19.11	10.111	20.11
4/20/2000	8.333	20.56	10.333	22.56	11.333	23.56	12.333	24.56
4/21/2000	7.778	20.56	9.778	22.56	10.778	23.56	11.778	24.56
4/22/2000	4.444	12.22	6.444	14.22	7.444	15.22	8.444	16.22
4/23/2000	2.222	15.56	4.222	17.56	5.222	18.56	6.222	19.56
4/24/2000	9.444	21.11	11.444	23.11	12.444	24.11	13.444	25.11
4/25/2000	10	22.22	12	24.22	13	25.22	14	26.22
4/26/2000	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67
4/27/2000	5.556	20	7.556	22	8.556	23	9.556	24
4/28/2000	2.778	15	4.778	17	5.778	18	6.778	19
4/29/2000	7.222	20	9.222	22	10.222	23	11.222	24
4/30/2000	10.56	26.67	12.56	28.67	13.56	29.67	14.56	30.67
5/1/2000	12.78	25.56	14.78	27.56	15.78	28.56	16.78	29.56
5/2/2000	12.22	23.89	14.22	25.89	15.22	26.89	16.22	27.89
5/3/2000	12.78	24.44	14.78	26.44	15.78	27.44	16.78	28.44
5/4/2000	10.56	23.33	12.56	25.33	13.56	26.33	14.56	27.33
5/5/2000	7.222	18.33	9.222	20.33	10.222	21.33	11.222	22.33
5/6/2000	6.111	18.33	8.111	20.33	9.111	21.33	10.111	22.33
5/7/2000	7.222	11.67	9.222	13.67	10.222	14.67	11.222	15.67
5/8/2000	10	16.11	12	18.11	13	19.11	14	20.11
5/9/2000	6.667	17.78	8.667	19.78	9.667	20.78	10.667	21.78
5/10/2000	3.333	10	5.333	12	6.333	13	7.333	14
5/11/2000	3.333	15	5.333	17	6.333	18	7.333	19
5/12/2000	6.667	19.44	8.667	21.44	9.667	22.44	10.667	23.44
5/13/2000	8.333	21.11	10.333	23.11	11.333	24.11	12.333	25.11
5/14/2000	7.222	18.33	9.222	20.33	10.222	21.33	11.222	22.33
5/15/2000	5.556	10	7.556	12	8.556	13	9.556	14
5/16/2000	5	8.889	7	10.889	8	11.889	9	12.889
5/17/2000	6.667	18.89	8.667	20.89	9.667	21.89	10.667	22.89
5/18/2000	11.67	23.33	13.67	25.33	14.67	26.33	15.67	27.33
5/19/2000	16.11	28.89	18.11	30.89	19.11	31.89	20.11	32.89
5/20/2000	18.89	31.67	20.89	33.67	21.89	34.67	22.89	35.67
5/21/2000	21.11	33.89	23.11	35.89	24.11	36.89	25.11	37.89
5/22/2000	22.78	34.44	24.78	36.44	25.78	37.44	26.78	38.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/23/2000	21.11	32.78	23.11	34.78	24.11	35.78	25.11	36.78
5/24/2000	15	28.89	17	30.89	18	31.89	19	32.89
5/25/2000	12.22	25	14.22	27	15.22	28	16.22	29
5/26/2000	15	25.56	17	27.56	18	28.56	19	29.56
5/27/2000	16.11	27.78	18.11	29.78	19.11	30.78	20.11	31.78
5/28/2000	15.56	28.89	17.56	30.89	18.56	31.89	19.56	32.89
5/29/2000	13.89	26.11	15.89	28.11	16.89	29.11	17.89	30.11
5/30/2000	12.78	23.33	14.78	25.33	15.78	26.33	16.78	27.33
5/31/2000	12.78	25	14.78	27	15.78	28	16.78	29
6/1/2000	14.44	27.22	16.44	29.22	17.44	30.22	18.44	31.22
6/2/2000	17.22	28.33	19.22	30.33	20.22	31.33	21.22	32.33
6/3/2000	18.33	30.56	20.33	32.56	21.33	33.56	22.33	34.56
6/4/2000	13.33	30	15.33	32	16.33	33	17.33	34
6/5/2000	7.778	23.89	9.778	25.89	10.778	26.89	11.778	27.89
6/6/2000	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67
6/7/2000	10.56	21.67	12.56	23.67	13.56	24.67	14.56	25.67
6/8/2000	8.333	16.11	10.333	18.11	11.333	19.11	12.333	20.11
6/9/2000	8.333	20	10.333	22	11.333	23	12.333	24
6/10/2000	6.667	21.67	8.667	23.67	9.667	24.67	10.667	25.67
6/11/2000	12.78	23.33	14.78	25.33	15.78	26.33	16.78	27.33
6/12/2000	16.67	27.22	18.67	29.22	19.67	30.22	20.67	31.22
6/13/2000	19.44	35	21.44	37	22.44	38	23.44	39
6/14/2000	27.22	38.33	29.22	40.33	30.22	41.33	31.22	42.33
6/15/2000	25	37.22	27	39.22	28	40.22	29	41.22
6/16/2000	23.33	33.33	25.33	35.33	26.33	36.33	27.33	37.33
6/17/2000	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
6/18/2000	13.89	25.56	15.89	27.56	16.89	28.56	17.89	29.56
6/19/2000	18.89	29.44	20.89	31.44	21.89	32.44	22.89	33.44
6/20/2000	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
6/21/2000	22.22	35	24.22	37	25.22	38	26.22	39
6/22/2000	21.67	32.78	23.67	34.78	24.67	35.78	25.67	36.78
6/23/2000	20	30.56	22	32.56	23	33.56	24	34.56
6/24/2000	20	31.11	22	33.11	23	34.11	24	35.11
6/25/2000	19.44	30.56	21.44	32.56	22.44	33.56	23.44	34.56
6/26/2000	21.11	32.78	23.11	34.78	24.11	35.78	25.11	36.78
6/27/2000	22.22	33.89	24.22	35.89	25.22	36.89	26.22	37.89
6/28/2000	24.44	34.44	26.44	36.44	27.44	37.44	28.44	38.44
6/29/2000	22.22	32.78	24.22	34.78	25.22	35.78	26.22	36.78
6/30/2000	17.22	28.89	19.22	30.89	20.22	31.89	21.22	32.89
7/1/2000	15.56	27.22	17.56	29.22	18.56	30.22	19.56	31.22
7/2/2000	13.89	26.11	15.89	28.11	16.89	29.11	17.89	30.11
7/3/2000	12.78	23.33	14.78	25.33	15.78	26.33	16.78	27.33
7/4/2000	13.89	25.56	15.89	27.56	16.89	28.56	17.89	29.56
7/5/2000	11.67	22.78	13.67	24.78	14.67	25.78	15.67	26.78
7/6/2000	12.22	24.44	14.22	26.44	15.22	27.44	16.22	28.44
7/7/2000	12.78	23.33	14.78	25.33	15.78	26.33	16.78	27.33
7/8/2000	13.89	25.56	15.89	27.56	16.89	28.56	17.89	29.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/9/2000	16.11	30	18.11	32	19.11	33	20.11	34
7/10/2000	17.78	28.33	19.78	30.33	20.78	31.33	21.78	32.33
7/11/2000	19.44	30.56	21.44	32.56	22.44	33.56	23.44	34.56
7/12/2000	17.22	29.44	19.22	31.44	20.22	32.44	21.22	33.44
7/13/2000	16.67	27.78	18.67	29.78	19.67	30.78	20.67	31.78
7/14/2000	18.89	31.11	20.89	33.11	21.89	34.11	22.89	35.11
7/15/2000	19.44	31.11	21.44	33.11	22.44	34.11	23.44	35.11
7/16/2000	17.22	27.22	19.22	29.22	20.22	30.22	21.22	31.22
7/17/2000	15.56	26.11	17.56	28.11	18.56	29.11	19.56	30.11
7/18/2000	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67
7/19/2000	19.44	32.22	21.44	34.22	22.44	35.22	23.44	36.22
7/20/2000	21.11	32.78	23.11	34.78	24.11	35.78	25.11	36.78
7/21/2000	20	32.22	22	34.22	23	35.22	24	36.22
7/22/2000	19.44	31.11	21.44	33.11	22.44	34.11	23.44	35.11
7/23/2000	21.11	33.33	23.11	35.33	24.11	36.33	25.11	37.33
7/24/2000	22.22	33.89	24.22	35.89	25.22	36.89	26.22	37.89
7/25/2000	20	33.89	22	35.89	23	36.89	24	37.89
7/26/2000	18.33	29.44	20.33	31.44	21.33	32.44	22.33	33.44
7/27/2000	17.78	31.11	19.78	33.11	20.78	34.11	21.78	35.11
7/28/2000	21.11	33.33	23.11	35.33	24.11	36.33	25.11	37.33
7/29/2000	22.22	33.89	24.22	35.89	25.22	36.89	26.22	37.89
7/30/2000	24.44	36.67	26.44	38.67	27.44	39.67	28.44	40.67
7/31/2000	25	37.78	27	39.78	28	40.78	29	41.78
8/1/2000	25	38.33	27	40.33	28	41.33	29	42.33
8/2/2000	25.56	36.67	27.56	38.67	28.56	39.67	29.56	40.67
8/3/2000	23.89	35	25.89	37	26.89	38	27.89	39
8/4/2000	22.78	33.33	24.78	35.33	25.78	36.33	26.78	37.33
8/5/2000	22.78	34.44	24.78	36.44	25.78	37.44	26.78	38.44
8/6/2000	21.67	33.89	23.67	35.89	24.67	36.89	25.67	37.89
8/7/2000	20.56	30.56	22.56	32.56	23.56	33.56	24.56	34.56
8/8/2000	18.89	30.56	20.89	32.56	21.89	33.56	22.89	34.56
8/9/2000	16.67	30	18.67	32	19.67	33	20.67	34
8/10/2000	16.11	28.89	18.11	30.89	19.11	31.89	20.11	32.89
8/11/2000	20	31.67	22	33.67	23	34.67	24	35.67
8/12/2000	20.56	33.89	22.56	35.89	23.56	36.89	24.56	37.89
8/13/2000	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
8/14/2000	21.67	33.33	23.67	35.33	24.67	36.33	25.67	37.33
8/15/2000	21.67	34.44	23.67	36.44	24.67	37.44	25.67	38.44
8/16/2000	23.33	35	25.33	37	26.33	38	27.33	39
8/17/2000	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
8/18/2000	17.78	31.11	19.78	33.11	20.78	34.11	21.78	35.11
8/19/2000	16.67	27.22	18.67	29.22	19.67	30.22	20.67	31.22
8/20/2000	16.11	28.89	18.11	30.89	19.11	31.89	20.11	32.89
8/21/2000	18.33	30	20.33	32	21.33	33	22.33	34
8/22/2000	19.44	31.67	21.44	33.67	22.44	34.67	23.44	35.67
8/23/2000	19.44	31.11	21.44	33.11	22.44	34.11	23.44	35.11
8/24/2000	19.44	32.78	21.44	34.78	22.44	35.78	23.44	36.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/25/2000	21.67	33.33	23.67	35.33	24.67	36.33	25.67	37.33
8/26/2000	20.56	32.78	22.56	34.78	23.56	35.78	24.56	36.78
8/27/2000	21.67	32.78	23.67	34.78	24.67	35.78	25.67	36.78
8/28/2000	20.56	31.11	22.56	33.11	23.56	34.11	24.56	35.11
8/29/2000	17.78	23.89	19.78	25.89	20.78	26.89	21.78	27.89
8/30/2000	14.44	19.44	16.44	21.44	17.44	22.44	18.44	23.44
8/31/2000	10	22.78	12	24.78	13	25.78	14	26.78
9/1/2000	8.889	17.22	10.889	19.22	11.889	20.22	12.889	21.22
9/2/2000	8.889	17.22	10.889	19.22	11.889	20.22	12.889	21.22
9/3/2000	8.889	18.89	10.889	20.89	11.889	21.89	12.889	22.89
9/4/2000	8.333	20	10.333	22	11.333	23	12.333	24
9/5/2000	11.67	23.33	13.67	25.33	14.67	26.33	15.67	27.33
9/6/2000	15.56	26.11	17.56	28.11	18.56	29.11	19.56	30.11
9/7/2000	17.22	31.11	19.22	33.11	20.22	34.11	21.22	35.11
9/8/2000	17.22	29.44	19.22	31.44	20.22	32.44	21.22	33.44
9/9/2000	17.22	28.89	19.22	30.89	20.22	31.89	21.22	32.89
9/10/2000	17.78	30	19.78	32	20.78	33	21.78	34
9/11/2000	19.44	31.67	21.44	33.67	22.44	34.67	23.44	35.67
9/12/2000	20.56	32.78	22.56	34.78	23.56	35.78	24.56	36.78
9/13/2000	20	37.22	22	39.22	23	40.22	24	41.22
9/14/2000	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67
9/15/2000	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67
9/16/2000	16.11	28.33	18.11	30.33	19.11	31.33	20.11	32.33
9/17/2000	20	33.89	22	35.89	23	36.89	24	37.89
9/18/2000	23.89	35.56	25.89	37.56	26.89	38.56	27.89	39.56
9/19/2000	24.44	36.67	26.44	38.67	27.44	39.67	28.44	40.67
9/20/2000	21.11	36.11	23.11	38.11	24.11	39.11	25.11	40.11
9/21/2000	11.11	23.89	13.11	25.89	14.11	26.89	15.11	27.89
9/22/2000	11.11	20	13.11	22	14.11	23	15.11	24
9/23/2000	11.11	25	13.11	27	14.11	28	15.11	29
9/24/2000	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
9/25/2000	16.67	29.44	18.67	31.44	19.67	32.44	20.67	33.44
9/26/2000	17.78	30	19.78	32	20.78	33	21.78	34
9/27/2000	15.56	26.67	17.56	28.67	18.56	29.67	19.56	30.67
9/28/2000	14.44	23.33	16.44	25.33	17.44	26.33	18.44	27.33
9/29/2000	13.89	27.22	15.89	29.22	16.89	30.22	17.89	31.22
9/30/2000	17.78	30.56	19.78	32.56	20.78	33.56	21.78	34.56
10/1/2000	20	32.22	22	34.22	23	35.22	24	36.22
10/2/2000	17.22	27.22	19.22	29.22	20.22	30.22	21.22	31.22
10/3/2000	16.67	18.89	18.67	20.89	19.67	21.89	20.67	22.89
10/4/2000	12.75	26.27	14.75	28.27	15.75	29.27	16.75	30.27
10/5/2000	22.22	29.44	24.22	31.44	25.22	32.44	26.22	33.44
10/6/2000	18.89	29.44	20.89	31.44	21.89	32.44	22.89	33.44
10/7/2000	16.11	24.44	18.11	26.44	19.11	27.44	20.11	28.44
10/8/2000	15	25.56	17	27.56	18	28.56	19	29.56
10/9/2000	8.333	16.67	10.333	18.67	11.333	19.67	12.333	20.67
10/10/2000	5.556	10.56	7.556	12.56	8.556	13.56	9.556	14.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/11/2000	5	8.889	7	10.889	8	11.889	9	12.889
10/12/2000	5	13.89	7	15.89	8	16.89	9	17.89
10/13/2000	7.778	17.78	9.778	19.78	10.778	20.78	11.778	21.78
10/14/2000	8.889	20	10.889	22	11.889	23	12.889	24
10/15/2000	11.11	23.89	13.11	25.89	14.11	26.89	15.11	27.89
10/16/2000	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
10/17/2000	14.44	27.22	16.44	29.22	17.44	30.22	18.44	31.22
10/18/2000	16.67	26.11	18.67	28.11	19.67	29.11	20.67	30.11
10/19/2000	14.44	23.89	16.44	25.89	17.44	26.89	18.44	27.89
10/20/2000	11.11	20	13.11	22	14.11	23	15.11	24
10/21/2000	9.444	20	11.444	22	12.444	23	13.444	24
10/22/2000	9.444	18.33	11.444	20.33	12.444	21.33	13.444	22.33
10/23/2000	11.11	21.11	13.11	23.11	14.11	24.11	15.11	25.11
10/24/2000	11.67	22.22	13.67	24.22	14.67	25.22	15.67	26.22
10/25/2000	7.222	13.33	9.222	15.33	10.222	16.33	11.222	17.33
10/26/2000	6.667	10	8.667	12	9.667	13	10.667	14
10/27/2000	6.111	16.11	8.111	18.11	9.111	19.11	10.111	20.11
10/28/2000	5.556	11.11	7.556	13.11	8.556	14.11	9.556	15.11
10/29/2000	4.444	8.333	6.444	10.333	7.444	11.333	8.444	12.333
10/30/2000	2.778	12.22	4.778	14.22	5.778	15.22	6.778	16.22
10/31/2000	5.556	16.11	7.556	18.11	8.556	19.11	9.556	20.11
11/1/2000	5.556	13.89	7.556	15.89	8.556	16.89	9.556	17.89
11/2/2000	8.333	16.67	10.333	18.67	11.333	19.67	12.333	20.67
11/3/2000	11.11	21.11	13.11	23.11	14.11	24.11	15.11	25.11
11/4/2000	8.889	17.22	10.889	19.22	11.889	20.22	12.889	21.22
11/5/2000	8.889	17.22	10.889	19.22	11.889	20.22	12.889	21.22
11/6/2000	8.333	17.22	10.333	19.22	11.333	20.22	12.333	21.22
11/7/2000	7.222	15.56	9.222	17.56	10.222	18.56	11.222	19.56
11/8/2000	4.444	12.22	6.444	14.22	7.444	15.22	8.444	16.22
11/9/2000	0	9.444	2	11.444	3	12.444	4	13.444
11/10/2000	0	3.889	2	5.889	3	6.889	4	7.889
11/11/2000	-0.555	10.56	1.445	12.56	2.445	13.56	3.445	14.56
11/12/2000	0.5556	10.56	2.5556	12.56	3.5556	13.56	4.5556	14.56
11/13/2000	0.5556	7.778	2.5556	9.778	3.5556	10.778	4.5556	11.778
11/14/2000	0	8.889	2	10.889	3	11.889	4	12.889
11/15/2000	1.111	8.889	3.111	10.889	4.111	11.889	5.111	12.889
11/16/2000	0.5556	8.889	2.5556	10.889	3.5556	11.889	4.5556	12.889
11/17/2000	3.889	12.78	5.889	14.78	6.889	15.78	7.889	16.78
11/18/2000	2.778	18.33	4.778	20.33	5.778	21.33	6.778	22.33
11/19/2000	6.111	19.44	8.111	21.44	9.111	22.44	10.111	23.44
11/20/2000	8.333	18.89	10.333	20.89	11.333	21.89	12.333	22.89
11/21/2000	7.778	9.444	9.778	11.444	10.778	12.444	11.778	13.444
11/22/2000	4.953	8.466	6.953	10.466	7.953	11.466	8.953	12.466
11/23/2000	3.333	12.22	5.333	14.22	6.333	15.22	7.333	16.22
11/24/2000	3.889	16.67	5.889	18.67	6.889	19.67	7.889	20.67
11/25/2000	3.889	20	5.889	22	6.889	23	7.889	24
11/26/2000	7.778	17.78	9.778	19.78	10.778	20.78	11.778	21.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/27/2000	8.889	21.11	10.889	23.11	11.889	24.11	12.889	25.11
11/28/2000	8.889	19.44	10.889	21.44	11.889	22.44	12.889	23.44
11/29/2000	4.444	11.11	6.444	13.11	7.444	14.11	8.444	15.11
11/30/2000	5	16.11	7	18.11	8	19.11	9	20.11
12/1/2000	6.111	16.67	8.111	18.67	9.111	19.67	10.111	20.67
12/2/2000	8.333	19.44	10.333	21.44	11.333	22.44	12.333	23.44
12/3/2000	8.889	22.78	10.889	24.78	11.889	25.78	12.889	26.78
12/4/2000	11.67	22.22	13.67	24.22	14.67	25.22	15.67	26.22
12/5/2000	11.67	26.67	13.67	28.67	14.67	29.67	15.67	30.67
12/6/2000	11.67	25.56	13.67	27.56	14.67	28.56	15.67	29.56
12/7/2000	10.56	17.78	12.56	19.78	13.56	20.78	14.56	21.78
12/8/2000	7.778	19.44	9.778	21.44	10.778	22.44	11.778	23.44
12/9/2000	7.222	7.222	9.222	9.222	10.222	10.222	11.222	11.222
12/10/2000	4.444	14.44	6.444	16.44	7.444	17.44	8.444	18.44
12/11/2000	3.333	10	5.333	12	6.333	13	7.333	14
12/12/2000	2.222	11.67	4.222	13.67	5.222	14.67	6.222	15.67
12/13/2000	2.222	9.444	4.222	11.444	5.222	12.444	6.222	13.444
12/14/2000	3.889	6.667	5.889	8.667	6.889	9.667	7.889	10.667
12/15/2000	6.111	16.67	8.111	18.67	9.111	19.67	10.111	20.67
12/16/2000	6.111	18.33	8.111	20.33	9.111	21.33	10.111	22.33
12/17/2000	3.333	18.33	5.333	20.33	6.333	21.33	7.333	22.33
12/18/2000	2.778	21.11	4.778	23.11	5.778	24.11	6.778	25.11
12/19/2000	8.889	22.22	10.889	24.22	11.889	25.22	12.889	26.22
12/20/2000	10	20	12	22	13	23	14	24
12/21/2000	6.111	16.11	8.111	18.11	9.111	19.11	10.111	20.11
12/22/2000	4.444	13.89	6.444	15.89	7.444	16.89	8.444	17.89
12/23/2000	4.444	11.67	6.444	13.67	7.444	14.67	8.444	15.67
12/24/2000	4.444	16.67	6.444	18.67	7.444	19.67	8.444	20.67
12/25/2000	3.889	13.89	5.889	15.89	6.889	16.89	7.889	17.89
12/26/2000	6.667	22.22	8.667	24.22	9.667	25.22	10.667	26.22
12/27/2000	8.889	22.78	10.889	24.78	11.889	25.78	12.889	26.78
12/28/2000	9.444	20.56	11.444	22.56	12.444	23.56	13.444	24.56
12/29/2000	9.444	22.22	11.444	24.22	12.444	25.22	13.444	26.22
12/30/2000	10	22.22	12	24.22	13	25.22	14	26.22
12/31/2000	8.333	18.89	10.333	20.89	11.333	21.89	12.333	22.89
1/1/2001	7.222	24.44	9.222	26.44	10.222	27.44	11.222	28.44
1/2/2001	11.11	26.67	13.11	28.67	14.11	29.67	15.11	30.67
1/3/2001	11.11	23.33	13.11	25.33	14.11	26.33	15.11	27.33
1/4/2001	9.444	26.11	11.444	28.11	12.444	29.11	13.444	30.11
1/5/2001	10	21.67	12	23.67	13	24.67	14	25.67
1/6/2001	8.889	21.11	10.889	23.11	11.889	24.11	12.889	25.11
1/7/2001	8.333	21.11	10.333	23.11	11.333	24.11	12.333	25.11
1/8/2001	3.333	11.67	5.333	13.67	6.333	14.67	7.333	15.67
1/9/2001	1.111	7.222	3.111	9.222	4.111	10.222	5.111	11.222
1/10/2001	2.778	8.333	4.778	10.333	5.778	11.333	6.778	12.333
1/11/2001	2.222	5	4.222	7	5.222	8	6.222	9
1/12/2001	2.222	14.44	4.222	16.44	5.222	17.44	6.222	18.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/13/2001	2.222	10.56	4.222	12.56	5.222	13.56	6.222	14.56
1/14/2001	1.111	13.33	3.111	15.33	4.111	16.33	5.111	17.33
1/15/2001	0.5556	8.889	2.5556	10.889	3.5556	11.889	4.5556	12.889
1/16/2001	0	12.78	2	14.78	3	15.78	4	16.78
1/17/2001	0	13.33	2	15.33	3	16.33	4	17.33
1/18/2001	0	13.89	2	15.89	3	16.89	4	17.89
1/19/2001	3.889	18.33	5.889	20.33	6.889	21.33	7.889	22.33
1/20/2001	4.444	15.56	6.444	17.56	7.444	18.56	8.444	19.56
1/21/2001	8.333	20	10.333	22	11.333	23	12.333	24
1/22/2001	6.111	20.56	8.111	22.56	9.111	23.56	10.111	24.56
1/23/2001	3.333	16.11	5.333	18.11	6.333	19.11	7.333	20.11
1/24/2001	0	2.778	2	4.778	3	5.778	4	6.778
1/25/2001	-0.555	5	1.445	7	2.445	8	3.445	9
1/26/2001	0	7.222	2	9.222	3	10.222	4	11.222
1/27/2001	2.222	14.44	4.222	16.44	5.222	17.44	6.222	18.44
1/28/2001	-0.555	14.44	1.445	16.44	2.445	17.44	3.445	18.44
1/29/2001	1.667	8.333	3.667	10.333	4.667	11.333	5.667	12.333
1/30/2001	1.667	10	3.667	12	4.667	13	5.667	14
1/31/2001	2.222	15	4.222	17	5.222	18	6.222	19
2/1/2001	2.222	14.44	4.222	16.44	5.222	17.44	6.222	18.44
2/2/2001	7.222	18.33	9.222	20.33	10.222	21.33	11.222	22.33
2/3/2001	10.56	22.22	12.56	24.22	13.56	25.22	14.56	26.22
2/4/2001	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
2/5/2001	8.333	22.22	10.333	24.22	11.333	25.22	12.333	26.22
2/6/2001	-1.111	8.333	0.889	10.333	1.889	11.333	2.889	12.333
2/7/2001	-1.667	12.22	0.333	14.22	1.333	15.22	2.333	16.22
2/8/2001	0.5556	12.22	2.5556	14.22	3.5556	15.22	4.5556	16.22
2/9/2001	0	5	2	7	3	8	4	9
2/10/2001	0	1.667	2	3.667	3	4.667	4	5.667
2/11/2001	-0.555	1.111	1.445	3.111	2.445	4.111	3.445	5.111
2/12/2001	-2.222	7.778	-0.222	9.778	0.778	10.778	1.778	11.778
2/13/2001	2.222	18.89	4.222	20.89	5.222	21.89	6.222	22.89
2/14/2001	2.222	13.33	4.222	15.33	5.222	16.33	6.222	17.33
2/15/2001	1.111	14.44	3.111	16.44	4.111	17.44	5.111	18.44
2/16/2001	2.222	16.67	4.222	18.67	5.222	19.67	6.222	20.67
2/17/2001	6.667	11.11	8.667	13.11	9.667	14.11	10.667	15.11
2/18/2001	5	11.11	7	13.11	8	14.11	9	15.11
2/19/2001	3.333	7.778	5.333	9.778	6.333	10.778	7.333	11.778
2/20/2001	4.444	7.778	6.444	9.778	7.444	10.778	8.444	11.778
2/21/2001	4.444	11.11	6.444	13.11	7.444	14.11	8.444	15.11
2/22/2001	0	6.111	2	8.111	3	9.111	4	10.111
2/23/2001	0	10	2	12	3	13	4	14
2/24/2001	0.5556	4.444	2.5556	6.444	3.5556	7.444	4.5556	8.444
2/25/2001	3.333	13.33	5.333	15.33	6.333	16.33	7.333	17.33
2/26/2001	6.111	15	8.111	17	9.111	18	10.111	19
2/27/2001	6.111	20	8.111	22	9.111	23	10.111	24
2/28/2001	2.778	11.67	4.778	13.67	5.778	14.67	6.778	15.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/1/2001	2.778	13.89	4.778	15.89	5.778	16.89	6.778	17.89
3/2/2001	1.667	6.111	3.667	8.111	4.667	9.111	5.667	10.111
3/3/2001	0.5556	13.33	2.5556	15.33	3.5556	16.33	4.5556	17.33
3/4/2001	4.444	8.333	6.444	10.333	7.444	11.333	8.444	12.333
3/5/2001	5	9.444	7	11.444	8	12.444	9	13.444
3/6/2001	7.222	15.56	9.222	17.56	10.222	18.56	11.222	19.56
3/7/2001	5.556	18.33	7.556	20.33	8.556	21.33	9.556	22.33
3/8/2001	5	15	7	17	8	18	9	19
3/9/2001	2.222	11.11	4.222	13.11	5.222	14.11	6.222	15.11
3/10/2001	3.333	15.56	5.333	17.56	6.333	18.56	7.333	19.56
3/11/2001	3.889	17.22	5.889	19.22	6.889	20.22	7.889	21.22
3/12/2001	6.667	18.89	8.667	20.89	9.667	21.89	10.667	22.89
3/13/2001	6.667	20.56	8.667	22.56	9.667	23.56	10.667	24.56
3/14/2001	8.333	21.67	10.333	23.67	11.333	24.67	12.333	25.67
3/15/2001	6.111	19.44	8.111	21.44	9.111	22.44	10.111	23.44
3/16/2001	6.111	18.89	8.111	20.89	9.111	21.89	10.111	22.89
3/17/2001	8.889	21.11	10.889	23.11	11.889	24.11	12.889	25.11
3/18/2001	11.11	25	13.11	27	14.11	28	15.11	29
3/19/2001	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
3/20/2001	14.44	25.56	16.44	27.56	17.44	28.56	18.44	29.56
3/21/2001	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67
3/22/2001	10	22.22	12	24.22	13	25.22	14	26.22
3/23/2001	9.444	22.78	11.444	24.78	12.444	25.78	13.444	26.78
3/24/2001	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
3/25/2001	7.778	16.11	9.778	18.11	10.778	19.11	11.778	20.11
3/26/2001	7.778	20	9.778	22	10.778	23	11.778	24
3/27/2001	10	22.78	12	24.78	13	25.78	14	26.78
3/28/2001	13.33	23.89	15.33	25.89	16.33	26.89	17.33	27.89
3/29/2001	12.22	24.44	14.22	26.44	15.22	27.44	16.22	28.44
3/30/2001	12.78	25.56	14.78	27.56	15.78	28.56	16.78	29.56
3/31/2001	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
4/1/2001	5.556	21.11	7.556	23.11	8.556	24.11	9.556	25.11
4/2/2001	1.111	13.33	3.111	15.33	4.111	16.33	5.111	17.33
4/3/2001	-0.555	13.33	1.445	15.33	2.445	16.33	3.445	17.33
4/4/2001	2.778	14.44	4.778	16.44	5.778	17.44	6.778	18.44
4/5/2001	4.444	17.78	6.444	19.78	7.444	20.78	8.444	21.78
4/6/2001	2.222	10.56	4.222	12.56	5.222	13.56	6.222	14.56
4/7/2001	0.5556	8.333	2.5556	10.333	3.5556	11.333	4.5556	12.333
4/8/2001	7.222	20	9.222	22	10.222	23	11.222	24
4/9/2001	9.444	23.33	11.444	25.33	12.444	26.33	13.444	27.33
4/10/2001	17.78	24.44	19.78	26.44	20.78	27.44	21.78	28.44
4/11/2001	7.222	17.22	9.222	19.22	10.222	20.22	11.222	21.22
4/12/2001	7.222	24.44	9.222	26.44	10.222	27.44	11.222	28.44
4/13/2001	13.89	23.33	15.89	25.33	16.89	26.33	17.89	27.33
4/14/2001	15	26.11	17	28.11	18	29.11	19	30.11
4/15/2001	16.11	27.78	18.11	29.78	19.11	30.78	20.11	31.78
4/16/2001	16.11	28.89	18.11	30.89	19.11	31.89	20.11	32.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/17/2001	15	33.33	17	35.33	18	36.33	19	37.33
4/18/2001	13.89	33.33	15.89	35.33	16.89	36.33	17.89	37.33
4/19/2001	11.11	16.11	13.11	18.11	14.11	19.11	15.11	20.11
4/20/2001	7.222	10.56	9.222	12.56	10.222	13.56	11.222	14.56
4/21/2001	6.667	18.33	8.667	20.33	9.667	21.33	10.667	22.33
4/22/2001	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
4/23/2001	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
4/24/2001	21.11	35	23.11	37	24.11	38	25.11	39
4/25/2001	23.33	37.78	25.33	39.78	26.33	40.78	27.33	41.78
4/26/2001	17.78	38.89	19.78	40.89	20.78	41.89	21.78	42.89
4/27/2001	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
4/28/2001	10.56	22.22	12.56	24.22	13.56	25.22	14.56	26.22
4/29/2001	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
4/30/2001	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
5/1/2001	15	27.22	17	29.22	18	30.22	19	31.22
5/2/2001	10	26.11	12	28.11	13	29.11	14	30.11
5/3/2001	11.11	27.22	13.11	29.22	14.11	30.22	15.11	31.22
5/4/2001	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
5/5/2001	15.56	30	17.56	32	18.56	33	19.56	34
5/6/2001	18.89	31.11	20.89	33.11	21.89	34.11	22.89	35.11
5/7/2001	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
5/8/2001	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
5/9/2001	20.56	34.44	22.56	36.44	23.56	37.44	24.56	38.44
5/10/2001	20.56	34.44	22.56	36.44	23.56	37.44	24.56	38.44
5/11/2001	21.11	34.44	23.11	36.44	24.11	37.44	25.11	38.44
5/12/2001	15	30.56	17	32.56	18	33.56	19	34.56
5/13/2001	14.44	26.11	16.44	28.11	17.44	29.11	18.44	30.11
5/14/2001	14.44	27.78	16.44	29.78	17.44	30.78	18.44	31.78
5/15/2001	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
5/16/2001	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
5/17/2001	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
5/18/2001	18.33	30	20.33	32	21.33	33	22.33	34
5/19/2001	21.67	33.33	23.67	35.33	24.67	36.33	25.67	37.33
5/20/2001	22.78	35	24.78	37	25.78	38	26.78	39
5/21/2001	23.33	36.11	25.33	38.11	26.33	39.11	27.33	40.11
5/22/2001	22.22	34.44	24.22	36.44	25.22	37.44	26.22	38.44
5/23/2001	21.67	34.44	23.67	36.44	24.67	37.44	25.67	38.44
5/24/2001	20	33.33	22	35.33	23	36.33	24	37.33
5/25/2001	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
5/26/2001	15.56	30.56	17.56	32.56	18.56	33.56	19.56	34.56
5/27/2001	10.56	27.78	12.56	29.78	13.56	30.78	14.56	31.78
5/28/2001	9.444	25	11.444	27	12.444	28	13.444	29
5/29/2001	15	31.11	17	33.11	18	34.11	19	35.11
5/30/2001	18.89	37.22	20.89	39.22	21.89	40.22	22.89	41.22
5/31/2001	22.78	38.33	24.78	40.33	25.78	41.33	26.78	42.33
6/1/2001	15	32.22	17	34.22	18	35.22	19	36.22
6/2/2001	11.11	26.11	13.11	28.11	14.11	29.11	15.11	30.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/3/2001	10	25.56	12	27.56	13	28.56	14	29.56
6/4/2001	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
6/5/2001	12.22	26.67	14.22	28.67	15.22	29.67	16.22	30.67
6/6/2001	15	31.11	17	33.11	18	34.11	19	35.11
6/7/2001	20	33.33	22	35.33	23	36.33	24	37.33
6/8/2001	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
6/9/2001	14.44	30	16.44	32	17.44	33	18.44	34
6/10/2001	15	29.44	17	31.44	18	32.44	19	33.44
6/11/2001	13.89	27.22	15.89	29.22	16.89	30.22	17.89	31.22
6/12/2001	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67
6/13/2001	15	28.89	17	30.89	18	31.89	19	32.89
6/14/2001	16.11	33.33	18.11	35.33	19.11	36.33	20.11	37.33
6/15/2001	18.33	35	20.33	37	21.33	38	22.33	39
6/16/2001	20.56	36.11	22.56	38.11	23.56	39.11	24.56	40.11
6/17/2001	20	35	22	37	23	38	24	39
6/18/2001	20	35.56	22	37.56	23	38.56	24	39.56
6/19/2001	21.11	36.67	23.11	38.67	24.11	39.67	25.11	40.67
6/20/2001	22.22	38.33	24.22	40.33	25.22	41.33	26.22	42.33
6/21/2001	22.78	38.33	24.78	40.33	25.78	41.33	26.78	42.33
6/22/2001	21.67	37.78	23.67	39.78	24.67	40.78	25.67	41.78
6/23/2001	17.22	33.89	19.22	35.89	20.22	36.89	21.22	37.89
6/24/2001	13.89	29.44	15.89	31.44	16.89	32.44	17.89	33.44
6/25/2001	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
6/26/2001	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
6/27/2001	14.44	20.56	16.44	22.56	17.44	23.56	18.44	24.56
6/28/2001	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
6/29/2001	16.67	32.78	18.67	34.78	19.67	35.78	20.67	36.78
6/30/2001	19.44	35	21.44	37	22.44	38	23.44	39
7/1/2001	20.56	37.22	22.56	39.22	23.56	40.22	24.56	41.22
7/2/2001	24.44	40	26.44	42	27.44	43	28.44	44
7/3/2001	27.22	42.22	29.22	44.22	30.22	45.22	31.22	46.22
7/4/2001	25.56	40	27.56	42	28.56	43	29.56	44
7/5/2001	23.33	38.33	25.33	40.33	26.33	41.33	27.33	42.33
7/6/2001	21.11	36.11	23.11	38.11	24.11	39.11	25.11	40.11
7/7/2001	19.44	33.33	21.44	35.33	22.44	36.33	23.44	37.33
7/8/2001	20.56	33.33	22.56	35.33	23.56	36.33	24.56	37.33
7/9/2001	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
7/10/2001	18.89	31.67	20.89	33.67	21.89	34.67	22.89	35.67
7/11/2001	14.44	30	16.44	32	17.44	33	18.44	34
7/12/2001	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
7/13/2001	17.78	33.89	19.78	35.89	20.78	36.89	21.78	37.89
7/14/2001	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67
7/15/2001	15	30	17	32	18	33	19	34
7/16/2001	12.22	25.56	14.22	27.56	15.22	28.56	16.22	29.56
7/17/2001	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
7/18/2001	15.56	31.11	17.56	33.11	18.56	34.11	19.56	35.11
7/19/2001	14.44	30	16.44	32	17.44	33	18.44	34

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/20/2001	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
7/21/2001	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
7/22/2001	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
7/23/2001	17.22	33.89	19.22	35.89	20.22	36.89	21.22	37.89
7/24/2001	19.44	35.56	21.44	37.56	22.44	38.56	23.44	39.56
7/25/2001	21.11	35	23.11	37	24.11	38	25.11	39
7/26/2001	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
7/27/2001	21.67	37.78	23.67	39.78	24.67	40.78	25.67	41.78
7/28/2001	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
7/29/2001	16.11	32.78	18.11	34.78	19.11	35.78	20.11	36.78
7/30/2001	12.78	26.67	14.78	28.67	15.78	29.67	16.78	30.67
7/31/2001	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
8/1/2001	17.78	33.89	19.78	35.89	20.78	36.89	21.78	37.89
8/2/2001	18.89	34.44	20.89	36.44	21.89	37.44	22.89	38.44
8/3/2001	15	31.67	17	33.67	18	34.67	19	35.67
8/4/2001	15	30.56	17	32.56	18	33.56	19	34.56
8/5/2001	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
8/6/2001	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
8/7/2001	24.44	39.44	26.44	41.44	27.44	42.44	28.44	43.44
8/8/2001	25	39.44	27	41.44	28	42.44	29	43.44
8/9/2001	21.11	36.11	23.11	38.11	24.11	39.11	25.11	40.11
8/10/2001	20.56	35	22.56	37	23.56	38	24.56	39
8/11/2001	21.67	35.56	23.67	37.56	24.67	38.56	25.67	39.56
8/12/2001	19.44	35	21.44	37	22.44	38	23.44	39
8/13/2001	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
8/14/2001	19.44	35	21.44	37	22.44	38	23.44	39
8/15/2001	21.11	36.11	23.11	38.11	24.11	39.11	25.11	40.11
8/16/2001	22.22	37.78	24.22	39.78	25.22	40.78	26.22	41.78
8/17/2001	22.78	40	24.78	42	25.78	43	26.78	44
8/18/2001	22.22	37.78	24.22	39.78	25.22	40.78	26.22	41.78
8/19/2001	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
8/20/2001	16.11	30.56	18.11	32.56	19.11	33.56	20.11	34.56
8/21/2001	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
8/22/2001	12.22	27.78	14.22	29.78	15.22	30.78	16.22	31.78
8/23/2001	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
8/24/2001	16.11	31.67	18.11	33.67	19.11	34.67	20.11	35.67
8/25/2001	18.33	36.67	20.33	38.67	21.33	39.67	22.33	40.67
8/26/2001	22.22	38.33	24.22	40.33	25.22	41.33	26.22	42.33
8/27/2001	24.44	38.33	26.44	40.33	27.44	41.33	28.44	42.33
8/28/2001	22.78	38.89	24.78	40.89	25.78	41.89	26.78	42.89
8/29/2001	21.11	36.11	23.11	38.11	24.11	39.11	25.11	40.11
8/30/2001	17.22	31.11	19.22	33.11	20.22	34.11	21.22	35.11
8/31/2001	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
9/1/2001	17.78	35	19.78	37	20.78	38	21.78	39
9/2/2001	20.56	35.56	22.56	37.56	23.56	38.56	24.56	39.56
9/3/2001	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
9/4/2001	20.56	35.56	22.56	37.56	23.56	38.56	24.56	39.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/5/2001	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
9/6/2001	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
9/7/2001	17.78	33.89	19.78	35.89	20.78	36.89	21.78	37.89
9/8/2001	18.89	33.89	20.89	35.89	21.89	36.89	22.89	37.89
9/9/2001	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
9/10/2001	11.11	30.56	13.11	32.56	14.11	33.56	15.11	34.56
9/11/2001	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
9/12/2001	13.89	29.44	15.89	31.44	16.89	32.44	17.89	33.44
9/13/2001	16.11	31.67	18.11	33.67	19.11	34.67	20.11	35.67
9/14/2001	17.78	33.89	19.78	35.89	20.78	36.89	21.78	37.89
9/15/2001	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
9/16/2001	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
9/17/2001	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67
9/18/2001	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
9/19/2001	19.44	33.33	21.44	35.33	22.44	36.33	23.44	37.33
9/20/2001	20	34.44	22	36.44	23	37.44	24	38.44
9/21/2001	20	34.44	22	36.44	23	37.44	24	38.44
9/22/2001	19.44	35	21.44	37	22.44	38	23.44	39
9/23/2001	19.44	32.22	21.44	34.22	22.44	35.22	23.44	36.22
9/24/2001	11.67	35	13.67	37	14.67	38	15.67	39
9/25/2001	11.67	25	13.67	27	14.67	28	15.67	29
9/26/2001	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
9/27/2001	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
9/28/2001	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
9/29/2001	16.67	30.56	18.67	32.56	19.67	33.56	20.67	34.56
9/30/2001	21.11	38.89	23.11	40.89	24.11	41.89	25.11	42.89
10/1/2001	24.44	40	26.44	42	27.44	43	28.44	44
10/2/2001	25	38.89	27	40.89	28	41.89	29	42.89
10/3/2001	22.22	37.78	24.22	39.78	25.22	40.78	26.22	41.78
10/4/2001	15.56	33.89	17.56	35.89	18.56	36.89	19.56	37.89
10/5/2001	9.444	25	11.444	27	12.444	28	13.444	29
10/6/2001	11.11	24.44	13.11	26.44	14.11	27.44	15.11	28.44
10/7/2001	12.22	26.67	14.22	28.67	15.22	29.67	16.22	30.67
10/8/2001	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
10/9/2001	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67
10/10/2001	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
10/11/2001	14.44	27.22	16.44	29.22	17.44	30.22	18.44	31.22
10/12/2001	15	30	17	32	18	33	19	34
10/13/2001	15	32.78	17	34.78	18	35.78	19	36.78
10/14/2001	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22
10/15/2001	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
10/16/2001	18.33	31.67	20.33	33.67	21.33	34.67	22.33	35.67
10/17/2001	16.11	27.22	18.11	29.22	19.11	30.22	20.11	31.22
10/18/2001	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
10/19/2001	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
10/20/2001	15	30.56	17	32.56	18	33.56	19	34.56
10/21/2001	13.33	26.67	15.33	28.67	16.33	29.67	17.33	30.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/22/2001	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
10/23/2001	13.89	25.56	15.89	27.56	16.89	28.56	17.89	29.56
10/24/2001	13.89	26.11	15.89	28.11	16.89	29.11	17.89	30.11
10/25/2001	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
10/26/2001	16.11	32.78	18.11	34.78	19.11	35.78	20.11	36.78
10/27/2001	8.333	25	10.333	27	11.333	28	12.333	29
10/28/2001	7.778	21.11	9.778	23.11	10.778	24.11	11.778	25.11
10/29/2001	10	18.89	12	20.89	13	21.89	14	22.89
10/30/2001	9.444	12.22	11.444	14.22	12.444	15.22	13.444	16.22
10/31/2001	7.222	20.56	9.222	22.56	10.222	23.56	11.222	24.56
11/1/2001	8.333	22.22	10.333	24.22	11.333	25.22	12.333	26.22
11/2/2001	9.444	24.44	11.444	26.44	12.444	27.44	13.444	28.44
11/3/2001	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
11/4/2001	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
11/5/2001	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
11/6/2001	8.889	23.89	10.889	25.89	11.889	26.89	12.889	27.89
11/7/2001	10.56	25	12.56	27	13.56	28	14.56	29
11/8/2001	12.78	29.44	14.78	31.44	15.78	32.44	16.78	33.44
11/9/2001	12.78	27.22	14.78	29.22	15.78	30.22	16.78	31.22
11/10/2001	10	26.11	12	28.11	13	29.11	14	30.11
11/11/2001	9.444	15.56	11.444	17.56	12.444	18.56	13.444	19.56
11/12/2001	4.444	15	6.444	17	7.444	18	8.444	19
11/13/2001	5.556	15.56	7.556	17.56	8.556	18.56	9.556	19.56
11/14/2001	8.333	20	10.333	22	11.333	23	12.333	24
11/15/2001	7.778	18.89	9.778	20.89	10.778	21.89	11.778	22.89
11/16/2001	9.444	20	11.444	22	12.444	23	13.444	24
11/17/2001	8.333	20	10.333	22	11.333	23	12.333	24
11/18/2001	8.333	22.78	10.333	24.78	11.333	25.78	12.333	26.78
11/19/2001	7.222	23.33	9.222	25.33	10.222	26.33	11.222	27.33
11/20/2001	10.56	15	12.56	17	13.56	18	14.56	19
11/21/2001	7.778	12.78	9.778	14.78	10.778	15.78	11.778	16.78
11/22/2001	5.556	12.78	7.556	14.78	8.556	15.78	9.556	16.78
11/23/2001	5	14.44	7	16.44	8	17.44	9	18.44
11/24/2001	2.778	8.889	4.778	10.889	5.778	11.889	6.778	12.889
11/25/2001	1.111	9.444	3.111	11.444	4.111	12.444	5.111	13.444
11/26/2001	0.5556	12.78	2.5556	14.78	3.5556	15.78	4.5556	16.78
11/27/2001	1.667	13.33	3.667	15.33	4.667	16.33	5.667	17.33
11/28/2001	0	7.778	2	9.778	3	10.778	4	11.778
11/29/2001	1.667	5	3.667	7	4.667	8	5.667	9
11/30/2001	2.778	11.67	4.778	13.67	5.778	14.67	6.778	15.67
12/1/2001	3.333	6.111	5.333	8.111	6.333	9.111	7.333	10.111
12/2/2001	4.444	7.222	6.444	9.222	7.444	10.222	8.444	11.222
12/3/2001	1.111	9.444	3.111	11.444	4.111	12.444	5.111	13.444
12/4/2001	1.667	11.11	3.667	13.11	4.667	14.11	5.667	15.11
12/5/2001	1.667	5.556	3.667	7.556	4.667	8.556	5.667	9.556
12/6/2001	5	18.89	7	20.89	8	21.89	9	22.89
12/7/2001	7.222	18.89	9.222	20.89	10.222	21.89	11.222	22.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/8/2001	6.111	22.22	8.111	24.22	9.111	25.22	10.111	26.22
12/9/2001	1.667	8.333	3.667	10.333	4.667	11.333	5.667	12.333
12/10/2001	-0.555	12.22	1.445	14.22	2.445	15.22	3.445	16.22
12/11/2001	2.222	12.78	4.222	14.78	5.222	15.78	6.222	16.78
12/12/2001	2.222	14.44	4.222	16.44	5.222	17.44	6.222	18.44
12/13/2001	2.222	13.33	4.222	15.33	5.222	16.33	6.222	17.33
12/14/2001	0	4.444	2	6.444	3	7.444	4	8.444
12/15/2001	-0.555	14.44	1.445	16.44	2.445	17.44	3.445	18.44
12/16/2001	0.5556	12.22	2.5556	14.22	3.5556	15.22	4.5556	16.22
12/17/2001	4.444	7.778	6.444	9.778	7.444	10.778	8.444	11.778
12/18/2001	3.333	11.11	5.333	13.11	6.333	14.11	7.333	15.11
12/19/2001	4.444	16.11	6.444	18.11	7.444	19.11	8.444	20.11
12/20/2001	0.5556	6.667	2.5556	8.667	3.5556	9.667	4.5556	10.667
12/21/2001	5	11.11	7	13.11	8	14.11	9	15.11
12/22/2001	4.444	8.889	6.444	10.889	7.444	11.889	8.444	12.889
12/23/2001	3.889	10.56	5.889	12.56	6.889	13.56	7.889	14.56
12/24/2001	7.222	16.67	9.222	18.67	10.222	19.67	11.222	20.67
12/25/2001	10	13.89	12	15.89	13	16.89	14	17.89
12/26/2001	8.333	15.56	10.333	17.56	11.333	18.56	12.333	19.56
12/27/2001	10	20	12	22	13	23	14	24
12/28/2001	6.667	13.33	8.667	15.33	9.667	16.33	10.667	17.33
12/29/2001	7.222	9.444	9.222	11.444	10.222	12.444	11.222	13.444
12/30/2001	7.778	10	9.778	12	10.778	13	11.778	14
12/31/2001	8.333	13.89	10.333	15.89	11.333	16.89	12.333	17.89
1/1/2002	8.889	13.89	10.889	15.89	11.889	16.89	12.889	17.89
1/2/2002	8.889	9.444	10.889	11.444	11.889	12.444	12.889	13.444
1/3/2002	7.222	15.56	9.222	17.56	10.222	18.56	11.222	19.56
1/4/2002	6.667	17.22	8.667	19.22	9.667	20.22	10.667	21.22
1/5/2002	11.11	16.67	13.11	18.67	14.11	19.67	15.11	20.67
1/6/2002	12.22	20	14.22	22	15.22	23	16.22	24
1/7/2002	11.67	18.33	13.67	20.33	14.67	21.33	15.67	22.33
1/8/2002	8.333	19.44	10.333	21.44	11.333	22.44	12.333	23.44
1/9/2002	3.889	10.56	5.889	12.56	6.889	13.56	7.889	14.56
1/10/2002	2.778	12.78	4.778	14.78	5.778	15.78	6.778	16.78
1/11/2002	5.556	12.78	7.556	14.78	8.556	15.78	9.556	16.78
1/12/2002	3.889	12.78	5.889	14.78	6.889	15.78	7.889	16.78
1/13/2002	-3.889	4.444	-1.889	6.444	-0.889	7.444	0.111	8.444
1/14/2002	-10.56	-3.333	-8.56	-1.333	-7.56	-0.333	-6.56	0.667
1/15/2002	-11.67	-0.555	-9.67	1.445	-8.67	2.445	-7.67	3.445
1/16/2002	-6.111	8.889	-4.111	10.889	-3.111	11.889	-2.111	12.889
1/17/2002	-0.555	8.333	1.445	10.333	2.445	11.333	3.445	12.333
1/18/2002	0	10.56	2	12.56	3	13.56	4	14.56
1/19/2002	0	9.444	2	11.444	3	12.444	4	13.444
1/20/2002	1.111	12.78	3.111	14.78	4.111	15.78	5.111	16.78
1/21/2002	-1.667	7.222	0.333	9.222	1.333	10.222	2.333	11.222
1/22/2002	-2.778	6.111	-0.778	8.111	0.222	9.111	1.222	10.111
1/23/2002	-2.778	10	-0.778	12	0.222	13	1.222	14

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/24/2002	-0.555	12.22	1.445	14.22	2.445	15.22	3.445	16.22
1/25/2002	3.333	9.444	5.333	11.444	6.333	12.444	7.333	13.444
1/26/2002	0.5556	4.444	2.5556	6.444	3.5556	7.444	4.5556	8.444
1/27/2002	-2.222	5.556	-0.222	7.556	0.778	8.556	1.778	9.556
1/28/2002	-2.778	2.222	-0.778	4.222	0.222	5.222	1.222	6.222
1/29/2002	-5	9.444	-3	11.444	-2	12.444	-1	13.444
1/30/2002	-2.222	8.333	-0.222	10.333	0.778	11.333	1.778	12.333
1/31/2002	-1.111	10	0.889	12	1.889	13	2.889	14
2/1/2002	1.667	12.22	3.667	14.22	4.667	15.22	5.667	16.22
2/2/2002	0.5556	12.78	2.5556	14.78	3.5556	15.78	4.5556	16.78
2/3/2002	2.222	16.67	4.222	18.67	5.222	19.67	6.222	20.67
2/4/2002	4.444	18.33	6.444	20.33	7.444	21.33	8.444	22.33
2/5/2002	4.444	18.33	6.444	20.33	7.444	21.33	8.444	22.33
2/6/2002	5	16.67	7	18.67	8	19.67	9	20.67
2/7/2002	6.111	10.56	8.111	12.56	9.111	13.56	10.111	14.56
2/8/2002	4.444	15.56	6.444	17.56	7.444	18.56	8.444	19.56
2/9/2002	6.667	17.78	8.667	19.78	9.667	20.78	10.667	21.78
2/10/2002	8.889	21.11	10.889	23.11	11.889	24.11	12.889	25.11
2/11/2002	9.444	20.56	11.444	22.56	12.444	23.56	13.444	24.56
2/12/2002	7.778	20	9.778	22	10.778	23	11.778	24
2/13/2002	8.889	13.89	10.889	15.89	11.889	16.89	12.889	17.89
2/14/2002	7.778	21.67	9.778	23.67	10.778	24.67	11.778	25.67
2/15/2002	5.556	15	7.556	17	8.556	18	9.556	19
2/16/2002	4.444	16.67	6.444	18.67	7.444	19.67	8.444	20.67
2/17/2002	1.111	7.222	3.111	9.222	4.111	10.222	5.111	11.222
2/18/2002	1.667	8.889	3.667	10.889	4.667	11.889	5.667	12.889
2/19/2002	4.444	8.333	6.444	10.333	7.444	11.333	8.444	12.333
2/20/2002	8.333	17.78	10.333	19.78	11.333	20.78	12.333	21.78
2/21/2002	10	25	12	27	13	28	14	29
2/22/2002	8.889	25	10.889	27	11.889	28	12.889	29
2/23/2002	5	13.89	7	15.89	8	16.89	9	17.89
2/24/2002	6.111	20	8.111	22	9.111	23	10.111	24
2/25/2002	8.333	22.78	10.333	24.78	11.333	25.78	12.333	26.78
2/26/2002	11.67	23.89	13.67	25.89	14.67	26.89	15.67	27.89
2/27/2002	12.78	24.44	14.78	26.44	15.78	27.44	16.78	28.44
2/28/2002	10	23.33	12	25.33	13	26.33	14	27.33
3/1/2002	6.667	21.11	8.667	23.11	9.667	24.11	10.667	25.11
3/2/2002	6.667	18.89	8.667	20.89	9.667	21.89	10.667	22.89
3/3/2002	6.111	19.44	8.111	21.44	9.111	22.44	10.111	23.44
3/4/2002	7.222	20	9.222	22	10.222	23	11.222	24
3/5/2002	6.111	18.89	8.111	20.89	9.111	21.89	10.111	22.89
3/6/2002	5	8.333	7	10.333	8	11.333	9	12.333
3/7/2002	0	7.222	2	9.222	3	10.222	4	11.222
3/8/2002	-1.667	13.33	0.333	15.33	1.333	16.33	2.333	17.33
3/9/2002	2.222	15	4.222	17	5.222	18	6.222	19
3/10/2002	4.444	17.22	6.444	19.22	7.444	20.22	8.444	21.22
3/11/2002	7.778	20.56	9.778	22.56	10.778	23.56	11.778	24.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/12/2002	2.778	15.56	4.778	17.56	5.778	18.56	6.778	19.56
3/13/2002	1.111	11.67	3.111	13.67	4.111	14.67	5.111	15.67
3/14/2002	0	14.44	2	16.44	3	17.44	4	18.44
3/15/2002	0.5556	11.67	2.5556	13.67	3.5556	14.67	4.5556	15.67
3/16/2002	0	7.778	2	9.778	3	10.778	4	11.778
3/17/2002	0	5	2	7	3	8	4	9
3/18/2002	0.5556	16.67	2.5556	18.67	3.5556	19.67	4.5556	20.67
3/19/2002	3.333	18.89	5.333	20.89	6.333	21.89	7.333	22.89
3/20/2002	8.333	24.44	10.333	26.44	11.333	27.44	12.333	28.44
3/21/2002	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
3/22/2002	6.111	18.89	8.111	20.89	9.111	21.89	10.111	22.89
3/23/2002	3.889	8.889	5.889	10.889	6.889	11.889	7.889	12.889
3/24/2002	3.333	13.33	5.333	15.33	6.333	16.33	7.333	17.33
3/25/2002	2.778	16.11	4.778	18.11	5.778	19.11	6.778	20.11
3/26/2002	7.222	22.22	9.222	24.22	10.222	25.22	11.222	26.22
3/27/2002	11.11	25	13.11	27	14.11	28	15.11	29
3/28/2002	15.56	27.22	17.56	29.22	18.56	30.22	19.56	31.22
3/29/2002	13.89	26.11	15.89	28.11	16.89	29.11	17.89	30.11
3/30/2002	14.44	28.33	16.44	30.33	17.44	31.33	18.44	32.33
3/31/2002	15	28.89	17	30.89	18	31.89	19	32.89
4/1/2002	16.11	28.89	18.11	30.89	19.11	31.89	20.11	32.89
4/2/2002	13.33	30	15.33	32	16.33	33	17.33	34
4/3/2002	11.11	25.56	13.11	27.56	14.11	28.56	15.11	29.56
4/4/2002	8.333	20	10.333	22	11.333	23	12.333	24
4/5/2002	6.667	16.11	8.667	18.11	9.667	19.11	10.667	20.11
4/6/2002	6.667	20	8.667	22	9.667	23	10.667	24
4/7/2002	8.333	22.22	10.333	24.22	11.333	25.22	12.333	26.22
4/8/2002	11.11	24.44	13.11	26.44	14.11	27.44	15.11	28.44
4/9/2002	10	16.11	12	18.11	13	19.11	14	20.11
4/10/2002	8.889	22.78	10.889	24.78	11.889	25.78	12.889	26.78
4/11/2002	11.67	25	13.67	27	14.67	28	15.67	29
4/12/2002	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
4/13/2002	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
4/14/2002	3.889	27.22	5.889	29.22	6.889	30.22	7.889	31.22
4/15/2002	1.111	15	3.111	17	4.111	18	5.111	19
4/16/2002	3.333	15	5.333	17	6.333	18	7.333	19
4/17/2002	2.222	11.11	4.222	13.11	5.222	14.11	6.222	15.11
4/18/2002	0.5556	14.44	2.5556	16.44	3.5556	17.44	4.5556	18.44
4/19/2002	5.556	21.11	7.556	23.11	8.556	24.11	9.556	25.11
4/20/2002	7.778	21.67	9.778	23.67	10.778	24.67	11.778	25.67
4/21/2002	10	24.44	12	26.44	13	27.44	14	28.44
4/22/2002	12.78	27.78	14.78	29.78	15.78	30.78	16.78	31.78
4/23/2002	15	28.89	17	30.89	18	31.89	19	32.89
4/24/2002	10	23.89	12	25.89	13	26.89	14	27.89
4/25/2002	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
4/26/2002	7.222	11.67	9.222	13.67	10.222	14.67	11.222	15.67
4/27/2002	3.333	8.889	5.333	10.889	6.333	11.889	7.333	12.889

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/28/2002	2.778	17.22	4.778	19.22	5.778	20.22	6.778	21.22
4/29/2002	5.556	9.444	7.556	11.444	8.556	12.444	9.556	13.444
4/30/2002	3.333	17.22	5.333	19.22	6.333	20.22	7.333	21.22
5/1/2002	5	20	7	22	8	23	9	24
5/2/2002	8.889	23.33	10.889	25.33	11.889	26.33	12.889	27.33
5/3/2002	11.67	30	13.67	32	14.67	33	15.67	34
5/4/2002	19.44	32.22	21.44	34.22	22.44	35.22	23.44	36.22
5/5/2002	19.44	32.22	21.44	34.22	22.44	35.22	23.44	36.22
5/6/2002	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
5/7/2002	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
5/8/2002	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
5/9/2002	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
5/10/2002	6.111	20.56	8.111	22.56	9.111	23.56	10.111	24.56
5/11/2002	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
5/12/2002	13.89	30	15.89	32	16.89	33	17.89	34
5/13/2002	12.22	27.78	14.22	29.78	15.22	30.78	16.22	31.78
5/14/2002	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
5/15/2002	15.56	28.33	17.56	30.33	18.56	31.33	19.56	32.33
5/16/2002	16.67	29.44	18.67	31.44	19.67	32.44	20.67	33.44
5/17/2002	14.44	30	16.44	32	17.44	33	18.44	34
5/18/2002	11.11	25.56	13.11	27.56	14.11	28.56	15.11	29.56
5/19/2002	7.778	21.67	9.778	23.67	10.778	24.67	11.778	25.67
5/20/2002	4.444	9.444	6.444	11.444	7.444	12.444	8.444	13.444
5/21/2002	3.889	14.44	5.889	16.44	6.889	17.44	7.889	18.44
5/22/2002	6.111	21.11	8.111	23.11	9.111	24.11	10.111	25.11
5/23/2002	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
5/24/2002	15	30	17	32	18	33	19	34
5/25/2002	17.22	30	19.22	32	20.22	33	21.22	34
5/26/2002	13.89	28.89	15.89	30.89	16.89	31.89	17.89	32.89
5/27/2002	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
5/28/2002	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
5/29/2002	16.67	31.67	18.67	33.67	19.67	34.67	20.67	35.67
5/30/2002	20.56	34.44	22.56	36.44	23.56	37.44	24.56	38.44
5/31/2002	21.11	34.44	23.11	36.44	24.11	37.44	25.11	38.44
6/1/2002	13.89	27.22	15.89	29.22	16.89	30.22	17.89	31.22
6/2/2002	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
6/3/2002	16.11	28.89	18.11	30.89	19.11	31.89	20.11	32.89
6/4/2002	19.44	32.78	21.44	34.78	22.44	35.78	23.44	36.78
6/5/2002	23.89	36.11	25.89	38.11	26.89	39.11	27.89	40.11
6/6/2002	21.67	35.56	23.67	37.56	24.67	38.56	25.67	39.56
6/7/2002	20	32.22	22	34.22	23	35.22	24	36.22
6/8/2002	13.33	25.56	15.33	27.56	16.33	28.56	17.33	29.56
6/9/2002	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
6/10/2002	16.67	30.56	18.67	32.56	19.67	33.56	20.67	34.56
6/11/2002	20	33.89	22	35.89	23	36.89	24	37.89
6/12/2002	20.56	32.22	22.56	34.22	23.56	35.22	24.56	36.22
6/13/2002	17.22	31.11	19.22	33.11	20.22	34.11	21.22	35.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/14/2002	17.22	30	19.22	32	20.22	33	21.22	34
6/15/2002	17.78	31.11	19.78	33.11	20.78	34.11	21.78	35.11
6/16/2002	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
6/17/2002	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
6/18/2002	18.89	30.56	20.89	32.56	21.89	33.56	22.89	34.56
6/19/2002	19.44	32.22	21.44	34.22	22.44	35.22	23.44	36.22
6/20/2002	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67
6/21/2002	15.56	27.78	17.56	29.78	18.56	30.78	19.56	31.78
6/22/2002	15	28.89	17	30.89	18	31.89	19	32.89
6/23/2002	16.67	30.56	18.67	32.56	19.67	33.56	20.67	34.56
6/24/2002	18.33	33.33	20.33	35.33	21.33	36.33	22.33	37.33
6/25/2002	20.56	35.56	22.56	37.56	23.56	38.56	24.56	39.56
6/26/2002	21.11	34.44	23.11	36.44	24.11	37.44	25.11	38.44
6/27/2002	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
6/28/2002	18.33	31.67	20.33	33.67	21.33	34.67	22.33	35.67
6/29/2002	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
6/30/2002	21.11	35	23.11	37	24.11	38	25.11	39
7/1/2002	22.22	37.78	24.22	39.78	25.22	40.78	26.22	41.78
7/2/2002	21.67	33.89	23.67	35.89	24.67	36.89	25.67	37.89
7/3/2002	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
7/4/2002	17.22	33.33	19.22	35.33	20.22	36.33	21.22	37.33
7/5/2002	18.89	32.22	20.89	34.22	21.89	35.22	22.89	36.22
7/6/2002	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
7/7/2002	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
7/8/2002	17.22	34.44	19.22	36.44	20.22	37.44	21.22	38.44
7/9/2002	22.78	40.56	24.78	42.56	25.78	43.56	26.78	44.56
7/10/2002	26.11	41.67	28.11	43.67	29.11	44.67	30.11	45.67
7/11/2002	25	41.67	27	43.67	28	44.67	29	45.67
7/12/2002	25.56	39.44	27.56	41.44	28.56	42.44	29.56	43.44
7/13/2002	23.89	37.78	25.89	39.78	26.89	40.78	27.89	41.78
7/14/2002	21.67	36.67	23.67	38.67	24.67	39.67	25.67	40.67
7/15/2002	20.56	35	22.56	37	23.56	38	24.56	39
7/16/2002	19.44	33.33	21.44	35.33	22.44	36.33	23.44	37.33
7/17/2002	20	32.78	22	34.78	23	35.78	24	36.78
7/18/2002	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
7/19/2002	20	34.44	22	36.44	23	37.44	24	38.44
7/20/2002	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
7/21/2002	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
7/22/2002	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
7/23/2002	18.33	33.33	20.33	35.33	21.33	36.33	22.33	37.33
7/24/2002	20	33.89	22	35.89	23	36.89	24	37.89
7/25/2002	20	35	22	37	23	38	24	39
7/26/2002	20.56	35	22.56	37	23.56	38	24.56	39
7/27/2002	21.11	36.11	23.11	38.11	24.11	39.11	25.11	40.11
7/28/2002	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
7/29/2002	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
7/30/2002	20	36.11	22	38.11	23	39.11	24	40.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/31/2002	20	34.44	22	36.44	23	37.44	24	38.44
8/1/2002	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
8/2/2002	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
8/3/2002	17.22	30.56	19.22	32.56	20.22	33.56	21.22	34.56
8/4/2002	15.56	27.78	17.56	29.78	18.56	30.78	19.56	31.78
8/5/2002	13.33	28.89	15.33	30.89	16.33	31.89	17.33	32.89
8/6/2002	12.78	28.33	14.78	30.33	15.78	31.33	16.78	32.33
8/7/2002	15	32.22	17	34.22	18	35.22	19	36.22
8/8/2002	18.33	35	20.33	37	21.33	38	22.33	39
8/9/2002	22.22	37.78	24.22	39.78	25.22	40.78	26.22	41.78
8/10/2002	23.33	37.78	25.33	39.78	26.33	40.78	27.33	41.78
8/11/2002	23.33	38.89	25.33	40.89	26.33	41.89	27.33	42.89
8/12/2002	24.44	39.44	26.44	41.44	27.44	42.44	28.44	43.44
8/13/2002	25	38.33	27	40.33	28	41.33	29	42.33
8/14/2002	23.33	38.89	25.33	40.89	26.33	41.89	27.33	42.89
8/15/2002	23.33	38.33	25.33	40.33	26.33	41.33	27.33	42.33
8/16/2002	23.33	38.33	25.33	40.33	26.33	41.33	27.33	42.33
8/17/2002	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
8/18/2002	20	35	22	37	23	38	24	39
8/19/2002	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
8/20/2002	16.11	29.44	18.11	31.44	19.11	32.44	20.11	33.44
8/21/2002	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
8/22/2002	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
8/23/2002	15	28.33	17	30.33	18	31.33	19	32.33
8/24/2002	16.11	30	18.11	32	19.11	33	20.11	34
8/25/2002	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78
8/26/2002	18.89	34.44	20.89	36.44	21.89	37.44	22.89	38.44
8/27/2002	20	34.44	22	36.44	23	37.44	24	38.44
8/28/2002	18.89	35.56	20.89	37.56	21.89	38.56	22.89	39.56
8/29/2002	19.44	33.33	21.44	35.33	22.44	36.33	23.44	37.33
8/30/2002	19.44	32.78	21.44	34.78	22.44	35.78	23.44	36.78
8/31/2002	20	36.11	22	38.11	23	39.11	24	40.11
9/1/2002	22.22	38.33	24.22	40.33	25.22	41.33	26.22	42.33
9/2/2002	23.33	38.89	25.33	40.89	26.33	41.89	27.33	42.89
9/3/2002	20	35.56	22	37.56	23	38.56	24	39.56
9/4/2002	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22
9/5/2002	12.78	28.89	14.78	30.89	15.78	31.89	16.78	32.89
9/6/2002	8.889	23.33	10.889	25.33	11.889	26.33	12.889	27.33
9/7/2002	9.444	25	11.444	27	12.444	28	13.444	29
9/8/2002	12.22	28.33	14.22	30.33	15.22	31.33	16.22	32.33
9/9/2002	15	34.44	17	36.44	18	37.44	19	38.44
9/10/2002	19.44	36.11	21.44	38.11	22.44	39.11	23.44	40.11
9/11/2002	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
9/12/2002	20.56	35	22.56	37	23.56	38	24.56	39
9/13/2002	20	36.67	22	38.67	23	39.67	24	40.67
9/14/2002	21.11	37.22	23.11	39.22	24.11	40.22	25.11	41.22
9/15/2002	10	30.56	12	32.56	13	33.56	14	34.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/16/2002	10.56	28.89	12.56	30.89	13.56	31.89	14.56	32.89
9/17/2002	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
9/18/2002	16.67	32.78	18.67	34.78	19.67	35.78	20.67	36.78
9/19/2002	20.56	36.67	22.56	38.67	23.56	39.67	24.56	40.67
9/20/2002	20.56	37.22	22.56	39.22	23.56	40.22	24.56	41.22
9/21/2002	20.56	37.78	22.56	39.78	23.56	40.78	24.56	41.78
9/22/2002	22.78	38.89	24.78	40.89	25.78	41.89	26.78	42.89
9/23/2002	22.22	39.44	24.22	41.44	25.22	42.44	26.22	43.44
9/24/2002	21.11	36.67	23.11	38.67	24.11	39.67	25.11	40.67
9/25/2002	21.11	37.78	23.11	39.78	24.11	40.78	25.11	41.78
9/26/2002	17.22	34.44	19.22	36.44	20.22	37.44	21.22	38.44
9/27/2002	8.889	24.44	10.889	26.44	11.889	27.44	12.889	28.44
9/28/2002	10	18.89	12	20.89	13	21.89	14	22.89
9/29/2002	10	24.44	12	26.44	13	27.44	14	28.44
9/30/2002	10	24.44	12	26.44	13	27.44	14	28.44
10/1/2002	9.444	22.22	11.444	24.22	12.444	25.22	13.444	26.22
10/2/2002	8.889	22.78	10.889	24.78	11.889	25.78	12.889	26.78
10/3/2002	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
10/4/2002	12.22	28.89	14.22	30.89	15.22	31.89	16.22	32.89
10/5/2002	14.44	30	16.44	32	17.44	33	18.44	34
10/6/2002	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
10/7/2002	17.78	35	19.78	37	20.78	38	21.78	39
10/8/2002	18.33	34.44	20.33	36.44	21.33	37.44	22.33	38.44
10/9/2002	17.78	33.89	19.78	35.89	20.78	36.89	21.78	37.89
10/10/2002	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
10/11/2002	11.67	27.22	13.67	29.22	14.67	30.22	15.67	31.22
10/12/2002	12.22	28.89	14.22	30.89	15.22	31.89	16.22	32.89
10/13/2002	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
10/14/2002	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
10/15/2002	13.33	28.89	15.33	30.89	16.33	31.89	17.33	32.89
10/16/2002	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
10/17/2002	8.333	23.89	10.333	25.89	11.333	26.89	12.333	27.89
10/18/2002	9.444	23.89	11.444	25.89	12.444	26.89	13.444	27.89
10/19/2002	11.11	26.67	13.11	28.67	14.11	29.67	15.11	30.67
10/20/2002	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
10/21/2002	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
10/22/2002	10	24.44	12	26.44	13	27.44	14	28.44
10/23/2002	8.333	20.56	10.333	22.56	11.333	23.56	12.333	24.56
10/24/2002	6.111	19.44	8.111	21.44	9.111	22.44	10.111	23.44
10/25/2002	6.111	21.11	8.111	23.11	9.111	24.11	10.111	25.11
10/26/2002	7.222	23.89	9.222	25.89	10.222	26.89	11.222	27.89
10/27/2002	8.333	25	10.333	27	11.333	28	12.333	29
10/28/2002	9.444	24.44	11.444	26.44	12.444	27.44	13.444	28.44
10/29/2002	9.444	23.33	11.444	25.33	12.444	26.33	13.444	27.33
10/30/2002	8.333	22.78	10.333	24.78	11.333	25.78	12.333	26.78
10/31/2002	8.333	22.78	10.333	24.78	11.333	25.78	12.333	26.78
11/1/2002	6.667	21.67	8.667	23.67	9.667	24.67	10.667	25.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/2/2002	7.778	22.78	9.778	24.78	10.778	25.78	11.778	26.78
11/3/2002	7.778	20	9.778	22	10.778	23	11.778	24
11/4/2002	8.333	23.89	10.333	25.89	11.333	26.89	12.333	27.89
11/5/2002	8.889	25	10.889	27	11.889	28	12.889	29
11/6/2002	10	23.89	12	25.89	13	26.89	14	27.89
11/7/2002	5.556	17.78	7.556	19.78	8.556	20.78	9.556	21.78
11/8/2002	8.889	12.22	10.889	14.22	11.889	15.22	12.889	16.22
11/9/2002	5.556	14.44	7.556	16.44	8.556	17.44	9.556	18.44
11/10/2002	6.111	7.778	8.111	9.778	9.111	10.778	10.111	11.778
11/11/2002	6.667	20	8.667	22	9.667	23	10.667	24
11/12/2002	8.889	22.22	10.889	24.22	11.889	25.22	12.889	26.22
11/13/2002	10	20.56	12	22.56	13	23.56	14	24.56
11/14/2002	10	20	12	22	13	23	14	24
11/15/2002	10.56	25	12.56	27	13.56	28	14.56	29
11/16/2002	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
11/17/2002	8.333	22.22	10.333	24.22	11.333	25.22	12.333	26.22
11/18/2002	7.778	23.33	9.778	25.33	10.778	26.33	11.778	27.33
11/19/2002	11.67	23.33	13.67	25.33	14.67	26.33	15.67	27.33
11/20/2002	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
11/21/2002	15	28.33	17	30.33	18	31.33	19	32.33
11/22/2002	5.556	25	7.556	27	8.556	28	9.556	29
11/23/2002	5.556	21.67	7.556	23.67	8.556	24.67	9.556	25.67
11/24/2002	3.333	16.11	5.333	18.11	6.333	19.11	7.333	20.11
11/25/2002	5	19.44	7	21.44	8	22.44	9	23.44
11/26/2002	12.22	23.89	14.22	25.89	15.22	26.89	16.22	27.89
11/27/2002	8.889	23.89	10.889	25.89	11.889	26.89	12.889	27.89
11/28/2002	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
11/29/2002	8.889	21.11	10.889	23.11	11.889	24.11	12.889	25.11
11/30/2002	6.111	14.44	8.111	16.44	9.111	17.44	10.111	18.44
12/1/2002	6.111	18.33	8.111	20.33	9.111	21.33	10.111	22.33
12/2/2002	6.111	18.33	8.111	20.33	9.111	21.33	10.111	22.33
12/3/2002	6.111	18.33	8.111	20.33	9.111	21.33	10.111	22.33
12/4/2002	7.222	18.89	9.222	20.89	10.222	21.89	11.222	22.89
12/5/2002	7.778	21.67	9.778	23.67	10.778	24.67	11.778	25.67
12/6/2002	7.222	18.89	9.222	20.89	10.222	21.89	11.222	22.89
12/7/2002	6.667	20	8.667	22	9.667	23	10.667	24
12/8/2002	6.111	17.22	8.111	19.22	9.111	20.22	10.111	21.22
12/9/2002	5.556	11.67	7.556	13.67	8.556	14.67	9.556	15.67
12/10/2002	3.333	7.778	5.333	9.778	6.333	10.778	7.333	11.778
12/11/2002	3.889	17.22	5.889	19.22	6.889	20.22	7.889	21.22
12/12/2002	4.444	17.78	6.444	19.78	7.444	20.78	8.444	21.78
12/13/2002	5	9.444	7	11.444	8	12.444	9	13.444
12/14/2002	3.889	11.67	5.889	13.67	6.889	14.67	7.889	15.67
12/15/2002	3.333	8.889	5.333	10.889	6.333	11.889	7.333	12.889
12/16/2002	3.889	6.667	5.889	8.667	6.889	9.667	7.889	10.667
12/17/2002	1.667	5.556	3.667	7.556	4.667	8.556	5.667	9.556
12/18/2002	-0.555	10.56	1.445	12.56	2.445	13.56	3.445	14.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/19/2002	0	7.222	2	9.222	3	10.222	4	11.222
12/20/2002	1.111	5	3.111	7	4.111	8	5.111	9
12/21/2002	2.222	10.56	4.222	12.56	5.222	13.56	6.222	14.56
12/22/2002	1.667	15	3.667	17	4.667	18	5.667	19
12/23/2002	0.5556	11.67	2.5556	13.67	3.5556	14.67	4.5556	15.67
12/24/2002	0	6.667	2	8.667	3	9.667	4	10.667
12/25/2002	1.111	10	3.111	12	4.111	13	5.111	14
12/26/2002	2.778	10	4.778	12	5.778	13	6.778	14
12/27/2002	7.222	12.22	9.222	14.22	10.222	15.22	11.222	16.22
12/28/2002	1.111	10.56	3.111	12.56	4.111	13.56	5.111	14.56
12/29/2002	1.667	5	3.667	7	4.667	8	5.667	9
12/30/2002	1.667	6.667	3.667	8.667	4.667	9.667	5.667	10.667
12/31/2002	2.222	8.333	4.222	10.333	5.222	11.333	6.222	12.333
1/1/2003	2.778	15	4.778	17	5.778	18	6.778	19
1/2/2003	6.111	13.89	8.111	15.89	9.111	16.89	10.111	17.89
1/3/2003	9.444	23.89	11.444	25.89	12.444	26.89	13.444	27.89
1/4/2003	10.56	21.67	12.56	23.67	13.56	24.67	14.56	25.67
1/5/2003	11.67	21.11	13.67	23.11	14.67	24.11	15.67	25.11
1/6/2003	9.444	23.33	11.444	25.33	12.444	26.33	13.444	27.33
1/7/2003	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
1/8/2003	10	22.78	12	24.78	13	25.78	14	26.78
1/9/2003	6.111	10.56	8.111	12.56	9.111	13.56	10.111	14.56
1/10/2003	6.111	8.333	8.111	10.333	9.111	11.333	10.111	12.333
1/11/2003	5.556	11.67	7.556	13.67	8.556	14.67	9.556	15.67
1/12/2003	6.667	16.11	8.667	18.11	9.667	19.11	10.667	20.11
1/13/2003	8.333	20	10.333	22	11.333	23	12.333	24
1/14/2003	6.667	14.44	8.667	16.44	9.667	17.44	10.667	18.44
1/15/2003	6.667	16.67	8.667	18.67	9.667	19.67	10.667	20.67
1/16/2003	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
1/17/2003	11.11	25.56	13.11	27.56	14.11	28.56	15.11	29.56
1/18/2003	11.67	24.44	13.67	26.44	14.67	27.44	15.67	28.44
1/19/2003	10.56	23.33	12.56	25.33	13.56	26.33	14.56	27.33
1/20/2003	7.778	20.56	9.778	22.56	10.778	23.56	11.778	24.56
1/21/2003	6.667	18.89	8.667	20.89	9.667	21.89	10.667	22.89
1/22/2003	7.778	17.78	9.778	19.78	10.778	20.78	11.778	21.78
1/23/2003	8.333	19.44	10.333	21.44	11.333	22.44	12.333	23.44
1/24/2003	8.333	18.33	10.333	20.33	11.333	21.33	12.333	22.33
1/25/2003	8.889	21.11	10.889	23.11	11.889	24.11	12.889	25.11
1/26/2003	7.222	19.44	9.222	21.44	10.222	22.44	11.222	23.44
1/27/2003	7.778	13.89	9.778	15.89	10.778	16.89	11.778	17.89
1/28/2003	6.111	17.78	8.111	19.78	9.111	20.78	10.111	21.78
1/29/2003	5.556	21.11	7.556	23.11	8.556	24.11	9.556	25.11
1/30/2003	9.444	21.67	11.444	23.67	12.444	24.67	13.444	25.67
1/31/2003	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
2/1/2003	2.222	12.78	4.222	14.78	5.222	15.78	6.222	16.78
2/2/2003	2.222	17.22	4.222	19.22	5.222	20.22	6.222	21.22
2/3/2003	2.222	17.78	4.222	19.78	5.222	20.78	6.222	21.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/4/2003	5	18.89	7	20.89	8	21.89	9	22.89
2/5/2003	2.222	16.11	4.222	18.11	5.222	19.11	6.222	20.11
2/6/2003	3.333	15.56	5.333	17.56	6.333	18.56	7.333	19.56
2/7/2003	3.333	16.11	5.333	18.11	6.333	19.11	7.333	20.11
2/8/2003	1.667	16.11	3.667	18.11	4.667	19.11	5.667	20.11
2/9/2003	2.778	17.22	4.778	19.22	5.778	20.22	6.778	21.22
2/10/2003	4.444	20.56	6.444	22.56	7.444	23.56	8.444	24.56
2/11/2003	7.222	14.44	9.222	16.44	10.222	17.44	11.222	18.44
2/12/2003	8.333	13.89	10.333	15.89	11.333	16.89	12.333	17.89
2/13/2003	7.778	14.44	9.778	16.44	10.778	17.44	11.778	18.44
2/14/2003	6.667	16.11	8.667	18.11	9.667	19.11	10.667	20.11
2/15/2003	6.667	15.56	8.667	17.56	9.667	18.56	10.667	19.56
2/16/2003	3.333	13.33	5.333	15.33	6.333	16.33	7.333	17.33
2/17/2003	3.889	16.11	5.889	18.11	6.889	19.11	7.889	20.11
2/18/2003	3.333	16.67	5.333	18.67	6.333	19.67	7.333	20.67
2/19/2003	1.667	5.556	3.667	7.556	4.667	8.556	5.667	9.556
2/20/2003	1.111	15	3.111	17	4.111	18	5.111	19
2/21/2003	3.333	18.89	5.333	20.89	6.333	21.89	7.333	22.89
2/22/2003	6.111	18.33	8.111	20.33	9.111	21.33	10.111	22.33
2/23/2003	6.111	17.78	8.111	19.78	9.111	20.78	10.111	21.78
2/24/2003	5	10	7	12	8	13	9	14
2/25/2003	5	15	7	17	8	18	9	19
2/26/2003	1.667	12.22	3.667	14.22	4.667	15.22	5.667	16.22
2/27/2003	1.667	11.11	3.667	13.11	4.667	14.11	5.667	15.11
2/28/2003	1.111	13.89	3.111	15.89	4.111	16.89	5.111	17.89
3/1/2003	3.889	14.44	5.889	16.44	6.889	17.44	7.889	18.44
3/2/2003	3.889	16.11	5.889	18.11	6.889	19.11	7.889	20.11
3/3/2003	1.667	11.11	3.667	13.11	4.667	14.11	5.667	15.11
3/4/2003	2.222	13.33	4.222	15.33	5.222	16.33	6.222	17.33
3/5/2003	3.333	17.22	5.333	19.22	6.333	20.22	7.333	21.22
3/6/2003	5	18.89	7	20.89	8	21.89	9	22.89
3/7/2003	5	18.89	7	20.89	8	21.89	9	22.89
3/8/2003	6.111	20.56	8.111	22.56	9.111	23.56	10.111	24.56
3/9/2003	7.222	22.22	9.222	24.22	10.222	25.22	11.222	26.22
3/10/2003	9.444	21.67	11.444	23.67	12.444	24.67	13.444	25.67
3/11/2003	8.889	21.11	10.889	23.11	11.889	24.11	12.889	25.11
3/12/2003	8.889	21.11	10.889	23.11	11.889	24.11	12.889	25.11
3/13/2003	9.444	19.44	11.444	21.44	12.444	22.44	13.444	23.44
3/14/2003	6.667	19.44	8.667	21.44	9.667	22.44	10.667	23.44
3/15/2003	4.444	13.89	6.444	15.89	7.444	16.89	8.444	17.89
3/16/2003	3.333	14.44	5.333	16.44	6.333	17.44	7.333	18.44
3/17/2003	2.222	12.78	4.222	14.78	5.222	15.78	6.222	16.78
3/18/2003	4.444	17.22	6.444	19.22	7.444	20.22	8.444	21.22
3/19/2003	5.556	18.33	7.556	20.33	8.556	21.33	9.556	22.33
3/20/2003	5.556	16.11	7.556	18.11	8.556	19.11	9.556	20.11
3/21/2003	6.111	21.11	8.111	23.11	9.111	24.11	10.111	25.11
3/22/2003	7.222	21.11	9.222	23.11	10.222	24.11	11.222	25.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
3/23/2003	6.111	11.11	8.111	13.11	9.111	14.11	10.111	15.11
3/24/2003	5.556	19.44	7.556	21.44	8.556	22.44	9.556	23.44
3/25/2003	7.778	21.67	9.778	23.67	10.778	24.67	11.778	25.67
3/26/2003	5.556	17.22	7.556	19.22	8.556	20.22	9.556	21.22
3/27/2003	6.111	17.78	8.111	19.78	9.111	20.78	10.111	21.78
3/28/2003	7.778	21.67	9.778	23.67	10.778	24.67	11.778	25.67
3/29/2003	10	23.33	12	25.33	13	26.33	14	27.33
3/30/2003	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
3/31/2003	10	23.89	12	25.89	13	26.89	14	27.89
4/1/2003	1.667	10	3.667	12	4.667	13	5.667	14
4/2/2003	0	6.111	2	8.111	3	9.111	4	10.111
4/3/2003	0	11.67	2	13.67	3	14.67	4	15.67
4/4/2003	0	5	2	7	3	8	4	9
4/5/2003	-0.555	12.22	1.445	14.22	2.445	15.22	3.445	16.22
4/6/2003	2.222	13.89	4.222	15.89	5.222	16.89	6.222	17.89
4/7/2003	5.556	18.33	7.556	20.33	8.556	21.33	9.556	22.33
4/8/2003	8.889	23.89	10.889	25.89	11.889	26.89	12.889	27.89
4/9/2003	11.11	25	13.11	27	14.11	28	15.11	29
4/10/2003	9.953	21.27	11.953	23.27	12.953	24.27	13.953	25.27
4/11/2003	9.453	16.77	11.453	18.77	12.453	19.77	13.453	20.77
4/12/2003	9.953	15.67	11.953	17.67	12.953	18.67	13.953	19.67
4/13/2003	9.953	14.57	11.953	16.57	12.953	17.57	13.953	18.57
4/14/2003	6.153	14.57	8.153	16.57	9.153	17.57	10.153	18.57
4/15/2003	3.353	14.57	5.353	16.57	6.353	17.57	7.353	18.57
4/16/2003	9.453	16.27	11.453	18.27	12.453	19.27	13.453	20.27
4/17/2003	9.453	16.27	11.453	18.27	12.453	19.27	13.453	20.27
4/18/2003	6.153	16.27	8.153	18.27	9.153	19.27	10.153	20.27
4/19/2003	6.153	20.67	8.153	22.67	9.153	23.67	10.153	24.67
4/20/2003	6.653	17.37	8.653	19.37	9.653	20.37	10.653	21.37
4/21/2003	8.353	9.566	10.353	11.566	11.353	12.566	12.353	13.566
4/22/2003	6.153	14.07	8.153	16.07	9.153	17.07	10.153	18.07
4/23/2003	7.753	17.37	9.753	19.37	10.753	20.37	11.753	21.37
4/24/2003	7.753	10.67	9.753	12.67	10.753	13.67	11.753	14.67
4/25/2003	8.353	12.87	10.353	14.87	11.353	15.87	12.353	16.87
4/26/2003	6.153	15.17	8.153	17.17	9.153	18.17	10.153	19.17
4/27/2003	6.153	18.47	8.153	20.47	9.153	21.47	10.153	22.47
4/28/2003	4.953	15.17	6.953	17.17	7.953	18.17	8.953	19.17
4/29/2003	7.253	16.27	9.253	18.27	10.253	19.27	11.253	20.27
4/30/2003	7.253	17.37	9.253	19.37	10.253	20.37	11.253	21.37
5/1/2003	8.353	19.57	10.353	21.57	11.353	22.57	12.353	23.57
5/2/2003	8.353	16.77	10.353	18.77	11.353	19.77	12.353	20.77
5/3/2003	11.65	17.37	13.65	19.37	14.65	20.37	15.65	21.37
5/4/2003	9.453	16.27	11.453	18.27	12.453	19.27	13.453	20.27
5/5/2003	8.353	18.47	10.353	20.47	11.353	21.47	12.353	22.47
5/6/2003	7.253	18.47	9.253	20.47	10.253	21.47	11.253	22.47
5/7/2003	9.453	18.47	11.453	20.47	12.453	21.47	13.453	22.47
5/8/2003	8.353	15.17	10.353	17.17	11.353	18.17	12.353	19.17

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/9/2003	6.153	15.67	8.153	17.67	9.153	18.67	10.153	19.67
5/10/2003	5.553	19.07	7.553	21.07	8.553	22.07	9.553	23.07
5/11/2003	7.753	22.87	9.753	24.87	10.753	25.87	11.753	26.87
5/12/2003	10.55	25.17	12.55	27.17	13.55	28.17	14.55	29.17
5/13/2003	12.25	26.77	14.25	28.77	15.25	29.77	16.25	30.77
5/14/2003	11.15	25.17	13.15	27.17	14.15	28.17	15.15	29.17
5/15/2003	9.453	22.87	11.453	24.87	12.453	25.87	13.453	26.87
5/16/2003	8.353	24.07	10.353	26.07	11.353	27.07	12.353	28.07
5/17/2003	10.55	24.07	12.55	26.07	13.55	27.07	14.55	28.07
5/18/2003	8.353	22.87	10.353	24.87	11.353	25.87	12.353	26.87
5/19/2003	8.353	26.77	10.353	28.77	11.353	29.77	12.353	30.77
5/20/2003	11.15	30.67	13.15	32.67	14.15	33.67	15.15	34.67
5/21/2003	20	31.11	22	33.11	23	34.11	24	35.11
5/22/2003	18.33	33.33	20.33	35.33	21.33	36.33	22.33	37.33
5/23/2003	18.89	32.78	20.89	34.78	21.89	35.78	22.89	36.78
5/24/2003	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
5/25/2003	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
5/26/2003	9.444	25.56	11.444	27.56	12.444	28.56	13.444	29.56
5/27/2003	15.56	33.33	17.56	35.33	18.56	36.33	19.56	37.33
5/28/2003	21.67	36.67	23.67	38.67	24.67	39.67	25.67	40.67
5/29/2003	10.56	32.22	12.56	34.22	13.56	35.22	14.56	36.22
5/30/2003	8.333	26.11	10.333	28.11	11.333	29.11	12.333	30.11
5/31/2003	16.11	30	18.11	32	19.11	33	20.11	34
6/1/2003	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
6/2/2003	20	33.89	22	35.89	23	36.89	24	37.89
6/3/2003	21.67	35	23.67	37	24.67	38	25.67	39
6/4/2003	19.44	31.67	21.44	33.67	22.44	34.67	23.44	35.67
6/5/2003	18.89	32.22	20.89	34.22	21.89	35.22	22.89	36.22
6/6/2003	16.67	30.56	18.67	32.56	19.67	33.56	20.67	34.56
6/7/2003	16.67	30	18.67	32	19.67	33	20.67	34
6/8/2003	18.33	31.67	20.33	33.67	21.33	34.67	22.33	35.67
6/9/2003	16.11	30.56	18.11	32.56	19.11	33.56	20.11	34.56
6/10/2003	10.56	26.11	12.56	28.11	13.56	29.11	14.56	30.11
6/11/2003	12.22	26.11	14.22	28.11	15.22	29.11	16.22	30.11
6/12/2003	11.67	25	13.67	27	14.67	28	15.67	29
6/13/2003	10.56	27.22	12.56	29.22	13.56	30.22	14.56	31.22
6/14/2003	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
6/15/2003	17.22	31.11	19.22	33.11	20.22	34.11	21.22	35.11
6/16/2003	18.89	32.78	20.89	34.78	21.89	35.78	22.89	36.78
6/17/2003	20.56	35	22.56	37	23.56	38	24.56	39
6/18/2003	15.56	30	17.56	32	18.56	33	19.56	34
6/19/2003	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
6/20/2003	11.11	26.67	13.11	28.67	14.11	29.67	15.11	30.67
6/21/2003	9.444	26.67	11.444	28.67	12.444	29.67	13.444	30.67
6/22/2003	12.78	27.78	14.78	29.78	15.78	30.78	16.78	31.78
6/23/2003	13.33	25	15.33	27	16.33	28	17.33	29
6/24/2003	13.89	28.89	15.89	30.89	16.89	31.89	17.89	32.89

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
6/25/2003	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
6/26/2003	22.22	37.22	24.22	39.22	25.22	40.22	26.22	41.22
6/27/2003	23.89	37.22	25.89	39.22	26.89	40.22	27.89	41.22
6/28/2003	21.67	36.67	23.67	38.67	24.67	39.67	25.67	40.67
6/29/2003	17.78	33.33	19.78	35.33	20.78	36.33	21.78	37.33
6/30/2003	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
7/1/2003	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
7/2/2003	16.67	32.78	18.67	34.78	19.67	35.78	20.67	36.78
7/3/2003	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
7/4/2003	19.44	35	21.44	37	22.44	38	23.44	39
7/5/2003	17.78	33.33	19.78	35.33	20.78	36.33	21.78	37.33
7/6/2003	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
7/7/2003	15.56	19.44	17.56	21.44	18.56	22.44	19.56	23.44
7/8/2003	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
7/9/2003	31.11	33.89	33.11	35.89	34.11	36.89	35.11	37.89
7/10/2003	32.22	35	34.22	37	35.22	38	36.22	39
7/11/2003	33.89	34.44	35.89	36.44	36.89	37.44	37.89	38.44
7/12/2003	18.89	35.56	20.89	37.56	21.89	38.56	22.89	39.56
7/13/2003	17.78	19.44	19.78	21.44	20.78	22.44	21.78	23.44
7/14/2003	32.22	35.56	34.22	37.56	35.22	38.56	36.22	39.56
7/15/2003	36.11	36.11	38.11	38.11	39.11	39.11	40.11	40.11
7/16/2003	34.44	36.67	36.44	38.67	37.44	39.67	38.44	40.67
7/17/2003	32.78	40	34.78	42	35.78	43	36.78	44
7/18/2003	37.78	40	39.78	42	40.78	43	41.78	44
7/19/2003	36.67	36.67	38.67	38.67	39.67	39.67	40.67	40.67
7/20/2003	37.22	40	39.22	42	40.22	43	41.22	44
7/21/2003	38.33	38.89	40.33	40.89	41.33	41.89	42.33	42.89
7/22/2003	31.67	38.33	33.67	40.33	34.67	41.33	35.67	42.33
7/23/2003	37.22	37.22	39.22	39.22	40.22	40.22	41.22	41.22
7/24/2003	34.44	37.78	36.44	39.78	37.44	40.78	38.44	41.78
7/25/2003	34.44	35	36.44	37	37.44	38	38.44	39
7/26/2003	32.78	36.67	34.78	38.67	35.78	39.67	36.78	40.67
7/27/2003	36.11	38.33	38.11	40.33	39.11	41.33	40.11	42.33
7/28/2003	36.67	38.89	38.67	40.89	39.67	41.89	40.67	42.89
7/29/2003	36.67	39.44	38.67	41.44	39.67	42.44	40.67	43.44
7/30/2003	37.22	37.22	39.22	39.22	40.22	40.22	41.22	41.22
7/31/2003	16.11	19.44	18.11	21.44	19.11	22.44	20.11	23.44
8/1/2003	-9.444	28.33	-7.444	30.33	-6.444	31.33	-5.444	32.33
8/2/2003	11.67	26.67	13.67	28.67	14.67	29.67	15.67	30.67
8/3/2003	8.889	31.11	10.889	33.11	11.889	34.11	12.889	35.11
8/4/2003	-8.333	21.11	-6.333	23.11	-5.333	24.11	-4.333	25.11
8/5/2003	8.333	25	10.333	27	11.333	28	12.333	29
8/6/2003	7.222	25	9.222	27	10.222	28	11.222	29
8/7/2003	13.89	28.89	15.89	30.89	16.89	31.89	17.89	32.89
8/8/2003	14.44	30.56	16.44	32.56	17.44	33.56	18.44	34.56
8/9/2003	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
8/10/2003	18.89	32.78	20.89	34.78	21.89	35.78	22.89	36.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/11/2003	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
8/12/2003	18.89	32.78	20.89	34.78	21.89	35.78	22.89	36.78
8/13/2003	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
8/14/2003	20	34.44	22	36.44	23	37.44	24	38.44
8/15/2003	20.56	34.44	22.56	36.44	23.56	37.44	24.56	38.44
8/16/2003	20.56	35.56	22.56	37.56	23.56	38.56	24.56	39.56
8/17/2003	21.67	37.22	23.67	39.22	24.67	40.22	25.67	41.22
8/18/2003	23.33	36.67	25.33	38.67	26.33	39.67	27.33	40.67
8/19/2003	23.33	35	25.33	37	26.33	38	27.33	39
8/20/2003	21.67	35.56	23.67	37.56	24.67	38.56	25.67	39.56
8/21/2003	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
8/22/2003	12.78	26.11	14.78	28.11	15.78	29.11	16.78	30.11
8/23/2003	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
8/24/2003	18.89	36.11	20.89	38.11	21.89	39.11	22.89	40.11
8/25/2003	22.22	37.78	24.22	39.78	25.22	40.78	26.22	41.78
8/26/2003	18.33	35.56	20.33	37.56	21.33	38.56	22.33	39.56
8/27/2003	20.56	34.44	22.56	36.44	23.56	37.44	24.56	38.44
8/28/2003	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
8/29/2003	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
8/30/2003	19.44	36.11	21.44	38.11	22.44	39.11	23.44	40.11
8/31/2003	22.78	36.67	24.78	38.67	25.78	39.67	26.78	40.67
9/1/2003	22.22	37.22	24.22	39.22	25.22	40.22	26.22	41.22
9/2/2003	24.44	40.56	26.44	42.56	27.44	43.56	28.44	44.56
9/3/2003	25	37.78	27	39.78	28	40.78	29	41.78
9/4/2003	21.67	36.67	23.67	38.67	24.67	39.67	25.67	40.67
9/5/2003	20.56	35	22.56	37	23.56	38	24.56	39
9/6/2003	16.67	30.56	18.67	32.56	19.67	33.56	20.67	34.56
9/7/2003	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
9/8/2003	11.67	27.22	13.67	29.22	14.67	30.22	15.67	31.22
9/9/2003	12.78	22.78	14.78	24.78	15.78	25.78	16.78	26.78
9/10/2003	13.89	30	15.89	32	16.89	33	17.89	34
9/11/2003	16.11	35	18.11	37	19.11	38	20.11	39
9/12/2003	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
9/13/2003	22.22	37.22	24.22	39.22	25.22	40.22	26.22	41.22
9/14/2003	21.67	37.22	23.67	39.22	24.67	40.22	25.67	41.22
9/15/2003	16.67	33.33	18.67	35.33	19.67	36.33	20.67	37.33
9/16/2003	13.89	28.89	15.89	30.89	16.89	31.89	17.89	32.89
9/17/2003	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
9/18/2003	17.22	32.78	19.22	34.78	20.22	35.78	21.22	36.78
9/19/2003	18.89	35	20.89	37	21.89	38	22.89	39
9/20/2003	21.67	36.67	23.67	38.67	24.67	39.67	25.67	40.67
9/21/2003	23.33	38.33	25.33	40.33	26.33	41.33	27.33	42.33
9/22/2003	24.44	39.44	26.44	41.44	27.44	42.44	28.44	43.44
9/23/2003	23.89	38.89	25.89	40.89	26.89	41.89	27.89	42.89
9/24/2003	16.11	34.44	18.11	36.44	19.11	37.44	20.11	38.44
9/25/2003	17.78	32.78	19.78	34.78	20.78	35.78	21.78	36.78
9/26/2003	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
9/27/2003	20.56	34.44	22.56	36.44	23.56	37.44	24.56	38.44
9/28/2003	17.78	33.33	19.78	35.33	20.78	36.33	21.78	37.33
9/29/2003	15.56	30.56	17.56	32.56	18.56	33.56	19.56	34.56
9/30/2003	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
10/1/2003	16.11	30	18.11	32	19.11	33	20.11	34
10/2/2003	15	27.22	17	29.22	18	30.22	19	31.22
10/3/2003	15	28.89	17	30.89	18	31.89	19	32.89
10/4/2003	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
10/5/2003	16.11	30.56	18.11	32.56	19.11	33.56	20.11	34.56
10/6/2003	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
10/7/2003	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
10/8/2003	15	31.11	17	33.11	18	34.11	19	35.11
10/9/2003	12.22	28.33	14.22	30.33	15.22	31.33	16.22	32.33
10/10/2003	12.22	25.56	14.22	27.56	15.22	28.56	16.22	29.56
10/11/2003	12.22	29.44	14.22	31.44	15.22	32.44	16.22	33.44
10/12/2003	16.11	30.56	18.11	32.56	19.11	33.56	20.11	34.56
10/13/2003	16.11	30	18.11	32	19.11	33	20.11	34
10/14/2003	16.11	30	18.11	32	19.11	33	20.11	34
10/15/2003	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
10/16/2003	15	29.44	17	31.44	18	32.44	19	33.44
10/17/2003	17.22	33.33	19.22	35.33	20.22	36.33	21.22	37.33
10/18/2003	18.33	33.33	20.33	35.33	21.33	36.33	22.33	37.33
10/19/2003	18.33	32.78	20.33	34.78	21.33	35.78	22.33	36.78
10/20/2003	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
10/21/2003	20.56	37.22	22.56	39.22	23.56	40.22	24.56	41.22
10/22/2003	16.67	33.33	18.67	35.33	19.67	36.33	20.67	37.33
10/23/2003	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
10/24/2003	15.56	32.78	17.56	34.78	18.56	35.78	19.56	36.78
10/25/2003	20	33.33	22	35.33	23	36.33	24	37.33
10/26/2003	20.56	33.33	22.56	35.33	23.56	36.33	24.56	37.33
10/27/2003	18.89	33.89	20.89	35.89	21.89	36.89	22.89	37.89
10/28/2003	19.44	32.78	21.44	34.78	22.44	35.78	23.44	36.78
10/29/2003	5.556	27.22	7.556	29.22	8.556	30.22	9.556	31.22
10/30/2003	2.222	16.11	4.222	18.11	5.222	19.11	6.222	20.11
10/31/2003	2.222	6.111	4.222	8.111	5.222	9.111	6.222	10.111
11/1/2003	1.667	15.56	3.667	17.56	4.667	18.56	5.667	19.56
11/2/2003	2.778	11.11	4.778	13.11	5.778	14.11	6.778	15.11
11/3/2003	0	10	2	12	3	13	4	14
11/4/2003	1.111	15	3.111	17	4.111	18	5.111	19
11/5/2003	4.444	15.56	6.444	17.56	7.444	18.56	8.444	19.56
11/6/2003	5.556	18.89	7.556	20.89	8.556	21.89	9.556	22.89
11/7/2003	5.556	17.78	7.556	19.78	8.556	20.78	9.556	21.78
11/8/2003	6.667	12.22	8.667	14.22	9.667	15.22	10.667	16.22
11/9/2003	5.556	9.444	7.556	11.444	8.556	12.444	9.556	13.444
11/10/2003	6.111	20	8.111	22	9.111	23	10.111	24
11/11/2003	6.111	19.44	8.111	21.44	9.111	22.44	10.111	23.44
11/12/2003	7.778	21.11	9.778	23.11	10.778	24.11	11.778	25.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/13/2003	7.222	15.56	9.222	17.56	10.222	18.56	11.222	19.56
11/14/2003	5.556	12.78	7.556	14.78	8.556	15.78	9.556	16.78
11/15/2003	3.333	6.667	5.333	8.667	6.333	9.667	7.333	10.667
11/16/2003	3.333	15	5.333	17	6.333	18	7.333	19
11/17/2003	6.111	10	8.111	12	9.111	13	10.111	14
11/18/2003	6.667	20.56	8.667	22.56	9.667	23.56	10.667	24.56
11/19/2003	10	25.56	12	27.56	13	28.56	14	29.56
11/20/2003	7.222	16.11	9.222	18.11	10.222	19.11	11.222	20.11
11/21/2003	1.111	12.78	3.111	14.78	4.111	15.78	5.111	16.78
11/22/2003	1.111	13.89	3.111	15.89	4.111	16.89	5.111	17.89
11/23/2003	1.667	17.22	3.667	19.22	4.667	20.22	5.667	21.22
11/24/2003	3.333	16.11	5.333	18.11	6.333	19.11	7.333	20.11
11/25/2003	2.222	14.44	4.222	16.44	5.222	17.44	6.222	18.44
11/26/2003	2.222	16.11	4.222	18.11	5.222	19.11	6.222	20.11
11/27/2003	3.889	16.67	5.889	18.67	6.889	19.67	7.889	20.67
11/28/2003	10	16.11	12	18.11	13	19.11	14	20.11
11/29/2003	10	16.67	12	18.67	13	19.67	14	20.67
11/30/2003	9.444	13.89	11.444	15.89	12.444	16.89	13.444	17.89
12/1/2003	7.778	15	9.778	17	10.778	18	11.778	19
12/2/2003	7.778	19.44	9.778	21.44	10.778	22.44	11.778	23.44
12/3/2003	7.222	21.67	9.222	23.67	10.222	24.67	11.222	25.67
12/4/2003	5.556	16.11	7.556	18.11	8.556	19.11	9.556	20.11
12/5/2003	7.778	12.78	9.778	14.78	10.778	15.78	11.778	16.78
12/6/2003	8.889	11.11	10.889	13.11	11.889	14.11	12.889	15.11
12/7/2003	3.889	13.33	5.889	15.33	6.889	16.33	7.889	17.33
12/8/2003	2.778	16.11	4.778	18.11	5.778	19.11	6.778	20.11
12/9/2003	2.778	13.33	4.778	15.33	5.778	16.33	6.778	17.33
12/10/2003	3.333	8.333	5.333	10.333	6.333	11.333	7.333	12.333
12/11/2003	0.5556	6.667	2.5556	8.667	3.5556	9.667	4.5556	10.667
12/12/2003	1.667	8.889	3.667	10.889	4.667	11.889	5.667	12.889
12/13/2003	6.667	8.333	8.667	10.333	9.667	11.333	10.667	12.333
12/14/2003	1.111	10	3.111	12	4.111	13	5.111	14
12/15/2003	0.5556	11.67	2.5556	13.67	3.5556	14.67	4.5556	15.67
12/16/2003	2.778	14.44	4.778	16.44	5.778	17.44	6.778	18.44
12/17/2003	8.889	20	10.889	22	11.889	23	12.889	24
12/18/2003	9.444	23.33	11.444	25.33	12.444	26.33	13.444	27.33
12/19/2003	6.111	21.67	8.111	23.67	9.111	24.67	10.111	25.67
12/20/2003	9.444	11.67	11.444	13.67	12.444	14.67	13.444	15.67
12/21/2003	8.889	18.89	10.889	20.89	11.889	21.89	12.889	22.89
12/22/2003	7.778	16.67	9.778	18.67	10.778	19.67	11.778	20.67
12/23/2003	6.667	11.11	8.667	13.11	9.667	14.11	10.667	15.11
12/24/2003	6.667	9.444	8.667	11.444	9.667	12.444	10.667	13.444
12/25/2003	3.333	7.778	5.333	9.778	6.333	10.778	7.333	11.778
12/26/2003	0.5556	11.11	2.5556	13.11	3.5556	14.11	4.5556	15.11
12/27/2003	-1.667	26.11	0.333	28.11	1.333	29.11	2.333	30.11
12/28/2003	9.444	18.89	11.444	20.89	12.444	21.89	13.444	22.89
12/29/2003	6.667	11.11	8.667	13.11	9.667	14.11	10.667	15.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
12/30/2003	10	13.89	12	15.89	13	16.89	14	17.89
12/31/2003	10	14.44	12	16.44	13	17.44	14	18.44
1/1/2004	7.222	10.56	9.222	12.56	10.222	13.56	11.222	14.56
1/2/2004	5.556	12.22	7.556	14.22	8.556	15.22	9.556	16.22
1/3/2004	2.222	14.44	4.222	16.44	5.222	17.44	6.222	18.44
1/4/2004	0.5556	16.67	2.5556	18.67	3.5556	19.67	4.5556	20.67
1/5/2004	5	17.22	7	19.22	8	20.22	9	21.22
1/6/2004	6.667	11.67	8.667	13.67	9.667	14.67	10.667	15.67
1/7/2004	6.111	16.11	8.111	18.11	9.111	19.11	10.111	20.11
1/8/2004	11.67	20.56	13.67	22.56	14.67	23.56	15.67	24.56
1/9/2004	10	17.78	12	19.78	13	20.78	14	21.78
1/10/2004	10.56	23.89	12.56	25.89	13.56	26.89	14.56	27.89
1/11/2004	11.11	22.78	13.11	24.78	14.11	25.78	15.11	26.78
1/12/2004	12.22	21.67	14.22	23.67	15.22	24.67	16.22	25.67
1/13/2004	12.22	23.89	14.22	25.89	15.22	26.89	16.22	27.89
1/14/2004	10	22.78	12	24.78	13	25.78	14	26.78
1/15/2004	4.444	16.11	6.444	18.11	7.444	19.11	8.444	20.11
1/16/2004	2.778	15	4.778	17	5.778	18	6.778	19
1/17/2004	2.778	15	4.778	17	5.778	18	6.778	19
1/18/2004	3.889	16.11	5.889	18.11	6.889	19.11	7.889	20.11
1/19/2004	3.333	17.78	5.333	19.78	6.333	20.78	7.333	21.78
1/20/2004	2.778	11.67	4.778	13.67	5.778	14.67	6.778	15.67
1/21/2004	3.889	19.44	5.889	21.44	6.889	22.44	7.889	23.44
1/22/2004	2.778	18.33	4.778	20.33	5.778	21.33	6.778	22.33
1/23/2004	6.111	19.44	8.111	21.44	9.111	22.44	10.111	23.44
1/24/2004	5	11.11	7	13.11	8	14.11	9	15.11
1/25/2004	3.333	12.22	5.333	14.22	6.333	15.22	7.333	16.22
1/26/2004	3.333	10.56	5.333	12.56	6.333	13.56	7.333	14.56
1/27/2004	5	8.889	7	10.889	8	11.889	9	12.889
1/28/2004	4.444	16.67	6.444	18.67	7.444	19.67	8.444	20.67
1/29/2004	5	17.78	7	19.78	8	20.78	9	21.78
1/30/2004	5	9.444	7	11.444	8	12.444	9	13.444
1/31/2004	2.778	15	4.778	17	5.778	18	6.778	19
2/1/2004	4.444	9.444	6.444	11.444	7.444	12.444	8.444	13.444
2/2/2004	2.222	8.889	4.222	10.889	5.222	11.889	6.222	12.889
2/3/2004	2.778	6.111	4.778	8.111	5.778	9.111	6.778	10.111
2/4/2004	2.222	15	4.222	17	5.222	18	6.222	19
2/5/2004	3.889	17.78	5.889	19.78	6.889	20.78	7.889	21.78
2/6/2004	4.444	17.22	6.444	19.22	7.444	20.22	8.444	21.22
2/7/2004	3.333	17.22	5.333	19.22	6.333	20.22	7.333	21.22
2/8/2004	3.333	17.22	5.333	19.22	6.333	20.22	7.333	21.22
2/9/2004	5.556	18.89	7.556	20.89	8.556	21.89	9.556	22.89
2/10/2004	7.222	20	9.222	22	10.222	23	11.222	24
2/11/2004	6.111	20	8.111	22	9.111	23	10.111	24
2/12/2004	8.889	22.22	10.889	24.22	11.889	25.22	12.889	26.22
2/13/2004	8.889	15.56	10.889	17.56	11.889	18.56	12.889	19.56
2/14/2004	7.222	19.44	9.222	21.44	10.222	22.44	11.222	23.44

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/15/2004	8.333	18.89	10.333	20.89	11.333	21.89	12.333	22.89
2/16/2004	8.333	12.22	10.333	14.22	11.333	15.22	12.333	16.22
2/17/2004	7.778	16.67	9.778	18.67	10.778	19.67	11.778	20.67
2/18/2004	6.111	10	8.111	12	9.111	13	10.111	14
2/19/2004	6.111	18.89	8.111	20.89	9.111	21.89	10.111	22.89
2/20/2004	6.667	13.89	8.667	15.89	9.667	16.89	10.667	17.89
2/21/2004	6.111	15.56	8.111	17.56	9.111	18.56	10.111	19.56
2/22/2004	7.222	11.11	9.222	13.11	10.222	14.11	11.222	15.11
2/23/2004	7.222	17.22	9.222	19.22	10.222	20.22	11.222	21.22
2/24/2004	7.222	12.78	9.222	14.78	10.222	15.78	11.222	16.78
2/25/2004	7.222	11.11	9.222	13.11	10.222	14.11	11.222	15.11
2/26/2004	5	8.889	7	10.889	8	11.889	9	12.889
2/27/2004	2.222	14.44	4.222	16.44	5.222	17.44	6.222	18.44
2/28/2004	3.889	17.78	5.889	19.78	6.889	20.78	7.889	21.78
2/29/2004	5	16.11	7	18.11	8	19.11	9	20.11
3/1/2004	5.556	7.778	7.556	9.778	8.556	10.778	9.556	11.778
3/2/2004	3.889	20	5.889	22	6.889	23	7.889	24
3/3/2004	7.222	19.44	9.222	21.44	10.222	22.44	11.222	23.44
3/4/2004	2.753	16.27	4.753	18.27	5.753	19.27	6.753	20.27
3/5/2004	3.853	16.27	5.853	18.27	6.853	19.27	7.853	20.27
3/6/2004	7.253	18.47	9.253	20.47	10.253	21.47	11.253	22.47
3/7/2004	8.353	20.17	10.353	22.17	11.353	23.17	12.353	24.17
3/8/2004	8.353	22.87	10.353	24.87	11.353	25.87	12.353	26.87
3/9/2004	11.65	25.17	13.65	27.17	14.65	28.17	15.65	29.17
3/10/2004	12.75	25.67	14.75	27.67	15.75	28.67	16.75	29.67
3/11/2004	11.65	23.47	13.65	25.47	14.65	26.47	15.65	27.47
3/12/2004	11.65	22.37	13.65	24.37	14.65	25.37	15.65	26.37
3/13/2004	11.65	25.17	13.65	27.17	14.65	28.17	15.65	29.17
3/14/2004	13.35	23.47	15.35	25.47	16.35	26.47	17.35	27.47
3/15/2004	12.75	25.17	14.75	27.17	15.75	28.17	16.75	29.17
3/16/2004	11.65	25.17	13.65	27.17	14.65	28.17	15.65	29.17
3/17/2004	12.75	26.27	14.75	28.27	15.75	29.27	16.75	30.27
3/18/2004	13.85	27.37	15.85	29.37	16.85	30.37	17.85	31.37
3/19/2004	11.65	25.17	13.65	27.17	14.65	28.17	15.65	29.17
3/20/2004	11.65	26.27	13.65	28.27	14.65	29.27	15.65	30.27
3/21/2004	11.65	24.57	13.65	26.57	14.65	27.57	15.65	28.57
3/22/2004	12.75	24.07	14.75	26.07	15.75	27.07	16.75	28.07
3/23/2004	8.853	19.57	10.853	21.57	11.853	22.57	12.853	23.57
3/24/2004	7.253	19.57	9.253	21.57	10.253	22.57	11.253	23.57
3/25/2004	8.353	14.07	10.353	16.07	11.353	17.07	12.353	18.07
3/26/2004	4.953	14.07	6.953	16.07	7.953	17.07	8.953	18.07
3/27/2004	7.253	17.37	9.253	19.37	10.253	20.37	11.253	21.37
3/28/2004	8.353	22.87	10.353	24.87	11.353	25.87	12.353	26.87
3/29/2004	11.65	27.37	13.65	29.37	14.65	30.37	15.65	31.37
3/30/2004	8.853	13.47	10.853	15.47	11.853	16.47	12.853	17.47
3/31/2004	8.353	17.87	10.353	19.87	11.353	20.87	12.353	21.87
4/1/2004	6.653	18.47	8.653	20.47	9.653	21.47	10.653	22.47

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/2/2004	7.753	22.87	9.753	24.87	10.753	25.87	11.753	26.87
4/3/2004	11.65	24.07	13.65	26.07	14.65	27.07	15.65	28.07
4/4/2004	9.453	25.17	11.453	27.17	12.453	28.17	13.453	29.17
4/5/2004	7.253	17.37	9.253	19.37	10.253	20.37	11.253	21.37
4/6/2004	6.153	16.77	8.153	18.77	9.153	19.77	10.153	20.77
4/7/2004	7.253	21.77	9.253	23.77	10.253	24.77	11.253	25.77
4/8/2004	16.11	27.22	18.11	29.22	19.11	30.22	20.11	31.22
4/9/2004	16.11	28.89	18.11	30.89	19.11	31.89	20.11	32.89
4/10/2004	17.22	30.56	19.22	32.56	20.22	33.56	21.22	34.56
4/11/2004	15.56	29.44	17.56	31.44	18.56	32.44	19.56	33.44
4/12/2004	11.11	26.67	13.11	28.67	14.11	29.67	15.11	30.67
4/13/2004	6.667	20	8.667	22	9.667	23	10.667	24
4/14/2004	5	19.44	7	21.44	8	22.44	9	23.44
4/15/2004	5.556	15.56	7.556	17.56	8.556	18.56	9.556	19.56
4/16/2004	5	16.11	7	18.11	8	19.11	9	20.11
4/17/2004	4.444	17.22	6.444	19.22	7.444	20.22	8.444	21.22
4/18/2004	4.444	16.11	6.444	18.11	7.444	19.11	8.444	20.11
4/19/2004	5.556	17.78	7.556	19.78	8.556	20.78	9.556	21.78
4/20/2004	8.333	19.44	10.333	21.44	11.333	22.44	12.333	23.44
4/21/2004	6.667	20.56	8.667	22.56	9.667	23.56	10.667	24.56
4/22/2004	8.889	26.67	10.889	28.67	11.889	29.67	12.889	30.67
4/23/2004	15	27.22	17	29.22	18	30.22	19	31.22
4/24/2004	16.11	30	18.11	32	19.11	33	20.11	34
4/25/2004	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67
4/26/2004	20.56	33.89	22.56	35.89	23.56	36.89	24.56	37.89
4/27/2004	17.78	33.89	19.78	35.89	20.78	36.89	21.78	37.89
4/28/2004	14.44	28.33	16.44	30.33	17.44	31.33	18.44	32.33
4/29/2004	11.67	26.67	13.67	28.67	14.67	29.67	15.67	30.67
4/30/2004	15	28.33	17	30.33	18	31.33	19	32.33
5/1/2004	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
5/2/2004	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
5/3/2004	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
5/4/2004	16.11	32.22	18.11	34.22	19.11	35.22	20.11	36.22
5/5/2004	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
5/6/2004	10.56	25	12.56	27	13.56	28	14.56	29
5/7/2004	7.778	25.56	9.778	27.56	10.778	28.56	11.778	29.56
5/8/2004	8.889	25	10.889	27	11.889	28	12.889	29
5/9/2004	10	26.11	12	28.11	13	29.11	14	30.11
5/10/2004	6.667	20	8.667	22	9.667	23	10.667	24
5/11/2004	6.111	21.11	8.111	23.11	9.111	24.11	10.111	25.11
5/12/2004	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
5/13/2004	12.22	28.89	14.22	30.89	15.22	31.89	16.22	32.89
5/14/2004	14.44	29.44	16.44	31.44	17.44	32.44	18.44	33.44
5/15/2004	13.89	27.22	15.89	29.22	16.89	30.22	17.89	31.22
5/16/2004	11.11	27.22	13.11	29.22	14.11	30.22	15.11	31.22
5/17/2004	7.778	22.22	9.778	24.22	10.778	25.22	11.778	26.22
5/18/2004	5.556	22.78	7.556	24.78	8.556	25.78	9.556	26.78

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/19/2004	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
5/20/2004	8.889	24.44	10.889	26.44	11.889	27.44	12.889	28.44
5/21/2004	7.778	22.78	9.778	24.78	10.778	25.78	11.778	26.78
5/22/2004	7.778	22.78	9.778	24.78	10.778	25.78	11.778	26.78
5/23/2004	7.778	22.78	9.778	24.78	10.778	25.78	11.778	26.78
5/24/2004	9.444	24.44	11.444	26.44	12.444	27.44	13.444	28.44
5/25/2004	10	25	12	27	13	28	14	29
5/26/2004	12.22	28.89	14.22	30.89	15.22	31.89	16.22	32.89
5/27/2004	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
5/28/2004	8.889	21.11	10.889	23.11	11.889	24.11	12.889	25.11
5/29/2004	8.889	25.56	10.889	27.56	11.889	28.56	12.889	29.56
5/30/2004	14.44	31.11	16.44	33.11	17.44	34.11	18.44	35.11
5/31/2004	18.89	31.67	20.89	33.67	21.89	34.67	22.89	35.67
6/1/2004	18.89	32.78	20.89	34.78	21.89	35.78	22.89	36.78
6/2/2004	20	33.89	22	35.89	23	36.89	24	37.89
6/3/2004	18.89	32.78	20.89	34.78	21.89	35.78	22.89	36.78
6/4/2004	17.78	34.44	19.78	36.44	20.78	37.44	21.78	38.44
6/5/2004	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67
6/6/2004	13.33	32.22	15.33	34.22	16.33	35.22	17.33	36.22
6/7/2004	9.444	25	11.444	27	12.444	28	13.444	29
6/8/2004	8.889	22.78	10.889	24.78	11.889	25.78	12.889	26.78
6/9/2004	7.778	23.33	9.778	25.33	10.778	26.33	11.778	27.33
6/10/2004	9.444	26.11	11.444	28.11	12.444	29.11	13.444	30.11
6/11/2004	13.33	28.33	15.33	30.33	16.33	31.33	17.33	32.33
6/12/2004	15	30.56	17	32.56	18	33.56	19	34.56
6/13/2004	17.22	31.11	19.22	33.11	20.22	34.11	21.22	35.11
6/14/2004	20	32.78	22	34.78	23	35.78	24	36.78
6/15/2004	21.11	36.11	23.11	38.11	24.11	39.11	25.11	40.11
6/16/2004	20	35	22	37	23	38	24	39
6/17/2004	16.11	30	18.11	32	19.11	33	20.11	34
6/18/2004	16.67	30	18.67	32	19.67	33	20.67	34
6/19/2004	15.56	31.11	17.56	33.11	18.56	34.11	19.56	35.11
6/20/2004	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
6/21/2004	18.33	31.67	20.33	33.67	21.33	34.67	22.33	35.67
6/22/2004	18.33	31.67	20.33	33.67	21.33	34.67	22.33	35.67
6/23/2004	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
6/24/2004	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22
6/25/2004	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
6/26/2004	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
6/27/2004	18.33	33.33	20.33	35.33	21.33	36.33	22.33	37.33
6/28/2004	18.33	35.56	20.33	37.56	21.33	38.56	22.33	39.56
6/29/2004	12.78	30.56	14.78	32.56	15.78	33.56	16.78	34.56
6/30/2004	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
7/1/2004	15.56	30	17.56	32	18.56	33	19.56	34
7/2/2004	18.33	31.67	20.33	33.67	21.33	34.67	22.33	35.67
7/3/2004	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
7/4/2004	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/5/2004	20.56	36.11	22.56	38.11	23.56	39.11	24.56	40.11
7/6/2004	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
7/7/2004	18.89	34.44	20.89	36.44	21.89	37.44	22.89	38.44
7/8/2004	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
7/9/2004	17.22	30.56	19.22	32.56	20.22	33.56	21.22	34.56
7/10/2004	16.11	31.67	18.11	33.67	19.11	34.67	20.11	35.67
7/11/2004	18.33	35	20.33	37	21.33	38	22.33	39
7/12/2004	20	35	22	37	23	38	24	39
7/13/2004	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
7/14/2004	20	35	22	37	23	38	24	39
7/15/2004	20	35	22	37	23	38	24	39
7/16/2004	21.11	35.56	23.11	37.56	24.11	38.56	25.11	39.56
7/17/2004	20	34.44	22	36.44	23	37.44	24	38.44
7/18/2004	20.56	35	22.56	37	23.56	38	24.56	39
7/19/2004	19.44	33.33	21.44	35.33	22.44	36.33	23.44	37.33
7/20/2004	19.44	35	21.44	37	22.44	38	23.44	39
7/21/2004	22.22	25	24.22	27	25.22	28	26.22	29
7/22/2004	22.22	36.67	24.22	38.67	25.22	39.67	26.22	40.67
7/23/2004	22.22	35.56	24.22	37.56	25.22	38.56	26.22	39.56
7/24/2004	22.78	36.11	24.78	38.11	25.78	39.11	26.78	40.11
7/25/2004	23.33	37.78	25.33	39.78	26.33	40.78	27.33	41.78
7/26/2004	22.78	37.78	24.78	39.78	25.78	40.78	26.78	41.78
7/27/2004	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
7/28/2004	21.11	36.11	23.11	38.11	24.11	39.11	25.11	40.11
7/29/2004	20	35	22	37	23	38	24	39
7/30/2004	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
7/31/2004	18.33	32.22	20.33	34.22	21.33	35.22	22.33	36.22
8/1/2004	16.11	31.67	18.11	33.67	19.11	34.67	20.11	35.67
8/2/2004	16.11	30	18.11	32	19.11	33	20.11	34
8/3/2004	16.67	31.67	18.67	33.67	19.67	34.67	20.67	35.67
8/4/2004	16.11	32.78	18.11	34.78	19.11	35.78	20.11	36.78
8/5/2004	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
8/6/2004	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
8/7/2004	18.89	36.11	20.89	38.11	21.89	39.11	22.89	40.11
8/8/2004	21.67	37.78	23.67	39.78	24.67	40.78	25.67	41.78
8/9/2004	23.33	38.33	25.33	40.33	26.33	41.33	27.33	42.33
8/10/2004	23.33	38.89	25.33	40.89	26.33	41.89	27.33	42.89
8/11/2004	25	42.22	27	44.22	28	45.22	29	46.22
8/12/2004	23.89	38.89	25.89	40.89	26.89	41.89	27.89	42.89
8/13/2004	22.22	38.33	24.22	40.33	25.22	41.33	26.22	42.33
8/14/2004	19.44	35	21.44	37	22.44	38	23.44	39
8/15/2004	17.22	31.67	19.22	33.67	20.22	34.67	21.22	35.67
8/16/2004	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
8/17/2004	20.56	36.11	22.56	38.11	23.56	39.11	24.56	40.11
8/18/2004	22.78	37.22	24.78	39.22	25.78	40.22	26.78	41.22
8/19/2004	22.22	36.67	24.22	38.67	25.22	39.67	26.22	40.67
8/20/2004	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
8/21/2004	16.11	35.56	18.11	37.56	19.11	38.56	20.11	39.56
8/22/2004	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
8/23/2004	13.89	28.33	15.89	30.33	16.89	31.33	17.89	32.33
8/24/2004	15	31.11	17	33.11	18	34.11	19	35.11
8/25/2004	13.89	29.44	15.89	31.44	16.89	32.44	17.89	33.44
8/26/2004	11.11	30	13.11	32	14.11	33	15.11	34
8/27/2004	19.44	35	21.44	37	22.44	38	23.44	39
8/28/2004	21.67	37.78	23.67	39.78	24.67	40.78	25.67	41.78
8/29/2004	22.78	39.44	24.78	41.44	25.78	42.44	26.78	43.44
8/30/2004	23.33	38.33	25.33	40.33	26.33	41.33	27.33	42.33
8/31/2004	22.78	37.22	24.78	39.22	25.78	40.22	26.78	41.22
9/1/2004	20.56	37.22	22.56	39.22	23.56	40.22	24.56	41.22
9/2/2004	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
9/3/2004	16.67	30.56	18.67	32.56	19.67	33.56	20.67	34.56
9/4/2004	21.11	32.78	23.11	34.78	24.11	35.78	25.11	36.78
9/5/2004	18.33	36.67	20.33	38.67	21.33	39.67	22.33	40.67
9/6/2004	21.67	38.33	23.67	40.33	24.67	41.33	25.67	42.33
9/7/2004	22.22	38.89	24.22	40.89	25.22	41.89	26.22	42.89
9/8/2004	22.22	40	24.22	42	25.22	43	26.22	44
9/9/2004	21.67	37.78	23.67	39.78	24.67	40.78	25.67	41.78
9/10/2004	21.11	37.78	23.11	39.78	24.11	40.78	25.11	41.78
9/11/2004	21.11	38.33	23.11	40.33	24.11	41.33	25.11	42.33
9/12/2004	15.56	32.22	17.56	34.22	18.56	35.22	19.56	36.22
9/13/2004	13.89	30.56	15.89	32.56	16.89	33.56	17.89	34.56
9/14/2004	16.67	31.67	18.67	33.67	19.67	34.67	20.67	35.67
9/15/2004	17.22	33.89	19.22	35.89	20.22	36.89	21.22	37.89
9/16/2004	19.44	35	21.44	37	22.44	38	23.44	39
9/17/2004	12.22	31.67	14.22	33.67	15.22	34.67	16.22	35.67
9/18/2004	7.222	17.22	9.222	19.22	10.222	20.22	11.222	21.22
9/19/2004	5	11.67	7	13.67	8	14.67	9	15.67
9/20/2004	6.111	21.67	8.111	23.67	9.111	24.67	10.111	25.67
9/21/2004	12.22	26.67	14.22	28.67	15.22	29.67	16.22	30.67
9/22/2004	12.22	30.56	14.22	32.56	15.22	33.56	16.22	34.56
9/23/2004	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22
9/24/2004	18.33	33.89	20.33	35.89	21.33	36.89	22.33	37.89
9/25/2004	19.44	34.44	21.44	36.44	22.44	37.44	23.44	38.44
9/26/2004	19.44	33.89	21.44	35.89	22.44	36.89	23.44	37.89
9/27/2004	17.22	33.33	19.22	35.33	20.22	36.33	21.22	37.33
9/28/2004	9.444	26.11	11.444	28.11	12.444	29.11	13.444	30.11
9/29/2004	12.22	25	14.22	27	15.22	28	16.22	29
9/30/2004	12.22	27.22	14.22	29.22	15.22	30.22	16.22	31.22
10/1/2004	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
10/2/2004	16.11	31.11	18.11	33.11	19.11	34.11	20.11	35.11
10/3/2004	17.22	32.22	19.22	34.22	20.22	35.22	21.22	36.22
10/4/2004	17.78	31.67	19.78	33.67	20.78	34.67	21.78	35.67
10/5/2004	17.78	32.22	19.78	34.22	20.78	35.22	21.78	36.22
10/6/2004	16.67	32.22	18.67	34.22	19.67	35.22	20.67	36.22

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
10/7/2004	15.56	31.67	17.56	33.67	18.56	34.67	19.56	35.67
10/8/2004	11.11	31.11	13.11	33.11	14.11	34.11	15.11	35.11
10/9/2004	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
10/10/2004	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
10/11/2004	15	29.44	17	31.44	18	32.44	19	33.44
10/12/2004	18.89	33.33	20.89	35.33	21.89	36.33	22.89	37.33
10/13/2004	20.56	32.78	22.56	34.78	23.56	35.78	24.56	36.78
10/14/2004	20	31.67	22	33.67	23	34.67	24	35.67
10/15/2004	17.22	27.78	19.22	29.78	20.22	30.78	21.22	31.78
10/16/2004	8.889	25.56	10.889	27.56	11.889	28.56	12.889	29.56
10/17/2004	7.778	12.22	9.778	14.22	10.778	15.22	11.778	16.22
10/18/2004	6.667	13.33	8.667	15.33	9.667	16.33	10.667	17.33
10/19/2004	6.111	8.889	8.111	10.889	9.111	11.889	10.111	12.889
10/20/2004	5	16.67	7	18.67	8	19.67	9	20.67
10/21/2004	6.111	20	8.111	22	9.111	23	10.111	24
10/22/2004	7.222	20	9.222	22	10.222	23	11.222	24
10/23/2004	8.333	10	10.333	12	11.333	13	12.333	14
10/24/2004	7.778	11.11	9.778	13.11	10.778	14.11	11.778	15.11
10/25/2004	6.667	18.33	8.667	20.33	9.667	21.33	10.667	22.33
10/26/2004	3.889	10.56	5.889	12.56	6.889	13.56	7.889	14.56
10/27/2004	4.444	16.11	6.444	18.11	7.444	19.11	8.444	20.11
10/28/2004	5	12.78	7	14.78	8	15.78	9	16.78
10/29/2004	6.111	20	8.111	22	9.111	23	10.111	24
10/30/2004	6.667	20	8.667	22	9.667	23	10.667	24
10/31/2004	7.222	20	9.222	22	10.222	23	11.222	24
11/1/2004	6.111	20	8.111	22	9.111	23	10.111	24
11/2/2004	8.333	23.89	10.333	25.89	11.333	26.89	12.333	27.89
11/3/2004	2.778	9.444	4.778	11.444	5.778	12.444	6.778	13.444
11/4/2004	2.222	16.11	4.222	18.11	5.222	19.11	6.222	20.11
11/5/2004	6.667	20.56	8.667	22.56	9.667	23.56	10.667	24.56
11/6/2004	7.222	22.78	9.222	24.78	10.222	25.78	11.222	26.78
11/7/2004	6.667	21.67	8.667	23.67	9.667	24.67	10.667	25.67
11/8/2004	7.222	14.44	9.222	16.44	10.222	17.44	11.222	18.44
11/9/2004	7.222	11.67	9.222	13.67	10.222	14.67	11.222	15.67
11/10/2004	6.667	11.11	8.667	13.11	9.667	14.11	10.667	15.11
11/11/2004	6.111	8.889	8.111	10.889	9.111	11.889	10.111	12.889
11/12/2004	6.111	20	8.111	22	9.111	23	10.111	24
11/13/2004	6.667	20.56	8.667	22.56	9.667	23.56	10.667	24.56
11/14/2004	6.111	19.44	8.111	21.44	9.111	22.44	10.111	23.44
11/15/2004	8.889	21.67	10.889	23.67	11.889	24.67	12.889	25.67
11/16/2004	9.444	22.78	11.444	24.78	12.444	25.78	13.444	26.78
11/17/2004	10	21.11	12	23.11	13	24.11	14	25.11
11/18/2004	7.222	19.44	9.222	21.44	10.222	22.44	11.222	23.44
11/19/2004	3.333	16.67	5.333	18.67	6.333	19.67	7.333	20.67
11/20/2004	2.222	17.22	4.222	19.22	5.222	20.22	6.222	21.22
11/21/2004	1.667	17.78	3.667	19.78	4.667	20.78	5.667	21.78
11/22/2004	4.444	15.56	6.444	17.56	7.444	18.56	8.444	19.56

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
11/23/2004	4.444	17.22	6.444	19.22	7.444	20.22	8.444	21.22
11/24/2004	5.556	20	7.556	22	8.556	23	9.556	24
11/25/2004	6.667	16.67	8.667	18.67	9.667	19.67	10.667	20.67
11/26/2004	6.111	18.33	8.111	20.33	9.111	21.33	10.111	22.33
11/27/2004	0.5556	7.222	2.5556	9.222	3.5556	10.222	4.5556	11.222
11/28/2004	0	11.67	2	13.67	3	14.67	4	15.67
11/29/2004	0.5556	12.78	2.5556	14.78	3.5556	15.78	4.5556	16.78
11/30/2004	1.111	13.89	3.111	15.89	4.111	16.89	5.111	17.89
12/1/2004	0.5556	14.44	2.5556	16.44	3.5556	17.44	4.5556	18.44
12/2/2004	1.111	15.56	3.111	17.56	4.111	18.56	5.111	19.56
12/3/2004	2.778	17.22	4.778	19.22	5.778	20.22	6.778	21.22
12/4/2004	2.778	16.67	4.778	18.67	5.778	19.67	6.778	20.67
12/5/2004	2.778	16.11	4.778	18.11	5.778	19.11	6.778	20.11
12/6/2004	2.222	11.67	4.222	13.67	5.222	14.67	6.222	15.67
12/7/2004	2.778	6.111	4.778	8.111	5.778	9.111	6.778	10.111
12/8/2004	4.444	9.444	6.444	11.444	7.444	12.444	8.444	13.444
12/9/2004	8.333	18.33	10.333	20.33	11.333	21.33	12.333	22.33
12/10/2004	6.667	23.89	8.667	25.89	9.667	26.89	10.667	27.89
12/11/2004	12.78	27.22	14.78	29.22	15.78	30.22	16.78	31.22
12/12/2004	9.444	23.33	11.444	25.33	12.444	26.33	13.444	27.33
12/13/2004	6.111	20.56	8.111	22.56	9.111	23.56	10.111	24.56
12/14/2004	5.556	18.33	7.556	20.33	8.556	21.33	9.556	22.33
12/15/2004	5.556	18.89	7.556	20.89	8.556	21.89	9.556	22.89
12/16/2004	8.333	23.33	10.333	25.33	11.333	26.33	12.333	27.33
12/17/2004	8.889	22.22	10.889	24.22	11.889	25.22	12.889	26.22
12/18/2004	8.333	23.33	10.333	25.33	11.333	26.33	12.333	27.33
12/19/2004	11.67	25.56	13.67	27.56	14.67	28.56	15.67	29.56
12/20/2004	8.889	19.44	10.889	21.44	11.889	22.44	12.889	23.44
12/21/2004	9.444	19.44	11.444	21.44	12.444	22.44	13.444	23.44
12/22/2004	5.556	16.11	7.556	18.11	8.556	19.11	9.556	20.11
12/23/2004	5.556	19.44	7.556	21.44	8.556	22.44	9.556	23.44
12/24/2004	4.444	19.44	6.444	21.44	7.444	22.44	8.444	23.44
12/25/2004	5	17.22	7	19.22	8	20.22	9	21.22
12/26/2004	3.333	11.67	5.333	13.67	6.333	14.67	7.333	15.67
12/27/2004	5.556	9.444	7.556	11.444	8.556	12.444	9.556	13.444
12/28/2004	4.444	7.222	6.444	9.222	7.444	10.222	8.444	11.222
12/29/2004	3.333	5	5.333	7	6.333	8	7.333	9
12/30/2004	2.222	6.667	4.222	8.667	5.222	9.667	6.222	10.667
12/31/2004	1.111	8.889	3.111	10.889	4.111	11.889	5.111	12.889
1/1/2005	0.5556	5.556	2.5556	7.556	3.5556	8.556	4.5556	9.556
1/2/2005	1.667	5	3.667	7	4.667	8	5.667	9
1/3/2005	1.111	3.889	3.111	5.889	4.111	6.889	5.111	7.889
1/4/2005	0.5556	4.444	2.5556	6.444	3.5556	7.444	4.5556	8.444
1/5/2005	1.111	8.333	3.111	10.333	4.111	11.333	5.111	12.333
1/6/2005	1.667	13.89	3.667	15.89	4.667	16.89	5.667	17.89
1/7/2005	0.5556	7.222	2.5556	9.222	3.5556	10.222	4.5556	11.222
1/8/2005	2.222	5.556	4.222	7.556	5.222	8.556	6.222	9.556

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
1/9/2005	5	7.222	7	9.222	8	10.222	9	11.222
1/10/2005	2.222	7.778	4.222	9.778	5.222	10.778	6.222	11.778
1/11/2005	1.111	4.444	3.111	6.444	4.111	7.444	5.111	8.444
1/12/2005	1.667	13.33	3.667	15.33	4.667	16.33	5.667	17.33
1/13/2005	1.111	11.11	3.111	13.11	4.111	14.11	5.111	15.11
1/14/2005	5	23.33	7	25.33	8	26.33	9	27.33
1/15/2005	8.889	20.56	10.889	22.56	11.889	23.56	12.889	24.56
1/16/2005	10.56	21.67	12.56	23.67	13.56	24.67	14.56	25.67
1/17/2005	10	19.44	12	21.44	13	22.44	14	23.44
1/18/2005	9.444	23.89	11.444	25.89	12.444	26.89	13.444	27.89
1/19/2005	12.78	27.22	14.78	29.22	15.78	30.22	16.78	31.22
1/20/2005	12.22	26.67	14.22	28.67	15.22	29.67	16.22	30.67
1/21/2005	11.11	25	13.11	27	14.11	28	15.11	29
1/22/2005	11.11	23.33	13.11	25.33	14.11	26.33	15.11	27.33
1/23/2005	11.67	24.44	13.67	26.44	14.67	27.44	15.67	28.44
1/24/2005	11.11	23.33	13.11	25.33	14.11	26.33	15.11	27.33
1/25/2005	8.889	20	10.889	22	11.889	23	12.889	24
1/26/2005	4.444	8.889	6.444	10.889	7.444	11.889	8.444	12.889
1/27/2005	3.333	13.89	5.333	15.89	6.333	16.89	7.333	17.89
1/28/2005	1.111	7.222	3.111	9.222	4.111	10.222	5.111	11.222
1/29/2005	1.667	13.33	3.667	15.33	4.667	16.33	5.667	17.33
1/30/2005	4.444	16.11	6.444	18.11	7.444	19.11	8.444	20.11
1/31/2005	2.778	18.33	4.778	20.33	5.778	21.33	6.778	22.33
2/1/2005	10.56	25	12.56	27	13.56	28	14.56	29
2/2/2005	7.778	20	9.778	22	10.778	23	11.778	24
2/3/2005	8.333	21.11	10.333	23.11	11.333	24.11	12.333	25.11
2/4/2005	8.333	21.67	10.333	23.67	11.333	24.67	12.333	25.67
2/5/2005	6.667	18.89	8.667	20.89	9.667	21.89	10.667	22.89
2/6/2005	5	17.22	7	19.22	8	20.22	9	21.22
2/7/2005	3.889	11.11	5.889	13.11	6.889	14.11	7.889	15.11
2/8/2005	3.889	15.56	5.889	17.56	6.889	18.56	7.889	19.56
2/9/2005	6.111	18.89	8.111	20.89	9.111	21.89	10.111	22.89
2/10/2005	7.222	21.11	9.222	23.11	10.222	24.11	11.222	25.11
2/11/2005	7.222	16.11	9.222	18.11	10.222	19.11	11.222	20.11
2/12/2005	6.111	18.89	8.111	20.89	9.111	21.89	10.111	22.89
2/13/2005	7.222	13.33	9.222	15.33	10.222	16.33	11.222	17.33
2/14/2005	6.667	10	8.667	12	9.667	13	10.667	14
2/15/2005	6.667	9.444	8.667	11.444	9.667	12.444	10.667	13.444
2/16/2005	7.222	14.44	9.222	16.44	10.222	17.44	11.222	18.44
2/17/2005	8.333	18.33	10.333	20.33	11.333	21.33	12.333	22.33
2/18/2005	6.111	14.44	8.111	16.44	9.111	17.44	10.111	18.44
2/19/2005	5.556	12.78	7.556	14.78	8.556	15.78	9.556	16.78
2/20/2005	6.111	11.67	8.111	13.67	9.111	14.67	10.111	15.67
2/21/2005	6.111	16.67	8.111	18.67	9.111	19.67	10.111	20.67
2/22/2005	7.222	17.78	9.222	19.78	10.222	20.78	11.222	21.78
2/23/2005	6.667	18.89	8.667	20.89	9.667	21.89	10.667	22.89
2/24/2005	5.556	16.67	7.556	18.67	8.556	19.67	9.556	20.67

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
2/25/2005	4.444	16.11	6.444	18.11	7.444	19.11	8.444	20.11
2/26/2005	5	17.78	7	19.78	8	20.78	9	21.78
2/27/2005	4.444	15.56	6.444	17.56	7.444	18.56	8.444	19.56
2/28/2005	2.778	17.22	4.778	19.22	5.778	20.22	6.778	21.22
3/1/2005	5.556	15.56	7.556	17.56	8.556	18.56	9.556	19.56
3/2/2005	6.111	17.22	8.111	19.22	9.111	20.22	10.111	21.22
3/3/2005	5.556	16.67	7.556	18.67	8.556	19.67	9.556	20.67
3/4/2005	6.667	11.67	8.667	13.67	9.667	14.67	10.667	15.67
3/5/2005	8.333	20	10.333	22	11.333	23	12.333	24
3/6/2005	8.333	21.11	10.333	23.11	11.333	24.11	12.333	25.11
3/7/2005	9.444	22.22	11.444	24.22	12.444	25.22	13.444	26.22
3/8/2005	11.67	27.78	13.67	29.78	14.67	30.78	15.67	31.78
3/9/2005	13.89	27.78	15.89	29.78	16.89	30.78	17.89	31.78
3/10/2005	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
3/11/2005	17.78	31.11	19.78	33.11	20.78	34.11	21.78	35.11
3/12/2005	13.33	29.44	15.33	31.44	16.33	32.44	17.33	33.44
3/13/2005	9.444	23.33	11.444	25.33	12.444	26.33	13.444	27.33
3/14/2005	8.333	22.78	10.333	24.78	11.333	25.78	12.333	26.78
3/15/2005	8.333	21.67	10.333	23.67	11.333	24.67	12.333	25.67
3/16/2005	8.333	20.56	10.333	22.56	11.333	23.56	12.333	24.56
3/17/2005	7.222	18.33	9.222	20.33	10.222	21.33	11.222	22.33
3/18/2005	7.778	17.78	9.778	19.78	10.778	20.78	11.778	21.78
3/19/2005	5.556	8.889	7.556	10.889	8.556	11.889	9.556	12.889
3/20/2005	3.889	10	5.889	12	6.889	13	7.889	14
3/21/2005	4.444	16.67	6.444	18.67	7.444	19.67	8.444	20.67
3/22/2005	1.111	8.889	3.111	10.889	4.111	11.889	5.111	12.889
3/23/2005	2.778	5.556	4.778	7.556	5.778	8.556	6.778	9.556
3/24/2005	1.111	15	3.111	17	4.111	18	5.111	19
3/25/2005	2.778	18.33	4.778	20.33	5.778	21.33	6.778	22.33
3/26/2005	6.667	20.56	8.667	22.56	9.667	23.56	10.667	24.56
3/27/2005	7.222	20	9.222	22	10.222	23	11.222	24
3/28/2005	3.889	13.33	5.889	15.33	6.889	16.33	7.889	17.33
3/29/2005	3.333	8.333	5.333	10.333	6.333	11.333	7.333	12.333
3/30/2005	3.889	18.33	5.889	20.33	6.889	21.33	7.889	22.33
3/31/2005	6.667	22.22	8.667	24.22	9.667	25.22	10.667	26.22
4/1/2005	9.444	25	11.444	27	12.444	28	13.444	29
4/2/2005	6.111	22.22	8.111	24.22	9.111	25.22	10.111	26.22
4/3/2005	2.778	17.78	4.778	19.78	5.778	20.78	6.778	21.78
4/4/2005	3.333	16.11	5.333	18.11	6.333	19.11	7.333	20.11
4/5/2005	6.667	21.11	8.667	23.11	9.667	24.11	10.667	25.11
4/6/2005	10.56	25.56	12.56	27.56	13.56	28.56	14.56	29.56
4/7/2005	3.333	12.22	5.333	14.22	6.333	15.22	7.333	16.22
4/8/2005	1.111	6.667	3.111	8.667	4.111	9.667	5.111	10.667
4/9/2005	1.667	17.22	3.667	19.22	4.667	20.22	5.667	21.22
4/10/2005	7.222	19.44	9.222	21.44	10.222	22.44	11.222	23.44
4/11/2005	7.778	22.22	9.778	24.22	10.778	25.22	11.778	26.22
4/12/2005	4.444	18.33	6.444	20.33	7.444	21.33	8.444	22.33

APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
4/13/2005	1.667	16.11	3.667	18.11	4.667	19.11	5.667	20.11
4/14/2005	5	19.44	7	21.44	8	22.44	9	23.44
4/15/2005	8.333	23.33	10.333	25.33	11.333	26.33	12.333	27.33
4/16/2005	11.67	26.11	13.67	28.11	14.67	29.11	15.67	30.11
4/17/2005	8.333	21.67	10.333	23.67	11.333	24.67	12.333	25.67
4/18/2005	7.222	19.44	9.222	21.44	10.222	22.44	11.222	23.44
4/19/2005	6.667	20.56	8.667	22.56	9.667	23.56	10.667	24.56
4/20/2005	6.667	21.67	8.667	23.67	9.667	24.67	10.667	25.67
4/21/2005	10	24.44	12	26.44	13	27.44	14	28.44
4/22/2005	8.333	28.89	10.333	30.89	11.333	31.89	12.333	32.89
4/23/2005	6.667	20	8.667	22	9.667	23	10.667	24
4/24/2005	8.333	15	10.333	17	11.333	18	12.333	19
4/25/2005	7.222	22.78	9.222	24.78	10.222	25.78	11.222	26.78
4/26/2005	10.56	24.44	12.56	26.44	13.56	27.44	14.56	28.44
4/27/2005	10	22.78	12	24.78	13	25.78	14	26.78
4/28/2005	8.333	14.44	10.333	16.44	11.333	17.44	12.333	18.44
4/29/2005	8.333	24.44	10.333	26.44	11.333	27.44	12.333	28.44
4/30/2005	10.56	26.67	12.56	28.67	13.56	29.67	14.56	30.67
5/1/2005	12.22	26.67	14.22	28.67	15.22	29.67	16.22	30.67
5/2/2005	12.78	28.89	14.78	30.89	15.78	31.89	16.78	32.89
5/3/2005	14.44	28.33	16.44	30.33	17.44	31.33	18.44	32.33
5/4/2005	12.78	25.56	14.78	27.56	15.78	28.56	16.78	29.56
5/5/2005	11.11	15	13.11	17	14.11	18	15.11	19
5/6/2005	7.778	19.44	9.778	21.44	10.778	22.44	11.778	23.44
5/7/2005	5.556	21.67	7.556	23.67	8.556	24.67	9.556	25.67
5/8/2005	9.444	12.22	11.444	14.22	12.444	15.22	13.444	16.22
5/9/2005	4.444	10	6.444	12	7.444	13	8.444	14
5/10/2005	4.444	17.78	6.444	19.78	7.444	20.78	8.444	21.78
5/11/2005	8.333	22.22	10.333	24.22	11.333	25.22	12.333	26.22
5/12/2005	12.22	24.44	14.22	26.44	15.22	27.44	16.22	28.44
5/13/2005	15	27.78	17	29.78	18	30.78	19	31.78
5/14/2005	15.56	28.33	17.56	30.33	18.56	31.33	19.56	32.33
5/15/2005	12.78	25.56	14.78	27.56	15.78	28.56	16.78	29.56
5/16/2005	7.222	16.11	9.222	18.11	10.222	19.11	11.222	20.11
5/17/2005	6.667	17.78	8.667	19.78	9.667	20.78	10.667	21.78
5/18/2005	10.56	17.22	12.56	19.22	13.56	20.22	14.56	21.22
5/19/2005	12.78	24.44	14.78	26.44	15.78	27.44	16.78	28.44
5/20/2005	10.56	23.33	12.56	25.33	13.56	26.33	14.56	27.33
5/21/2005	12.78	26.67	14.78	28.67	15.78	29.67	16.78	30.67
5/22/2005	16.67	29.44	18.67	31.44	19.67	32.44	20.67	33.44
5/23/2005	17.22	30	19.22	32	20.22	33	21.22	34
5/24/2005	16.67	31.11	18.67	33.11	19.67	34.11	20.67	35.11
5/25/2005	19.44	32.22	21.44	34.22	22.44	35.22	23.44	36.22
5/26/2005	20	32.22	22	34.22	23	35.22	24	36.22
5/27/2005	18.33	31.67	20.33	33.67	21.33	34.67	22.33	35.67
5/28/2005	8.333	25	10.333	27	11.333	28	12.333	29
5/29/2005	7.778	22.78	9.778	24.78	10.778	25.78	11.778	26.78

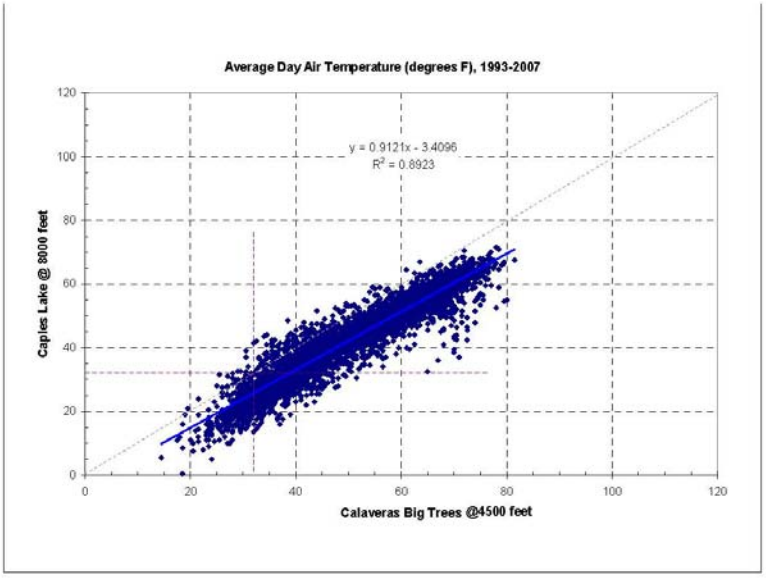
APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
5/30/2005	13.33	27.78	15.33	29.78	16.33	30.78	17.33	31.78
5/31/2005	15.56	30	17.56	32	18.56	33	19.56	34
6/1/2005	17.22	29.44	19.22	31.44	20.22	32.44	21.22	33.44
6/2/2005	16.11	28.33	18.11	30.33	19.11	31.33	20.11	32.33
6/3/2005	17.22	29.44	19.22	31.44	20.22	32.44	21.22	33.44
6/4/2005	12.22	30	14.22	32	15.22	33	16.22	34
6/5/2005	8.333	23.89	10.333	25.89	11.333	26.89	12.333	27.89
6/6/2005	7.222	22.22	9.222	24.22	10.222	25.22	11.222	26.22
6/7/2005	8.333	24.44	10.333	26.44	11.333	27.44	12.333	28.44
6/8/2005	9.444	15	11.444	17	12.444	18	13.444	19
6/9/2005	12.78	22.78	14.78	24.78	15.78	25.78	16.78	26.78
6/10/2005	13.33	27.22	15.33	29.22	16.33	30.22	17.33	31.22
6/11/2005	15.56	28.89	17.56	30.89	18.56	31.89	19.56	32.89
6/12/2005	16.11	29.44	18.11	31.44	19.11	32.44	20.11	33.44
6/13/2005	19.44	33.33	21.44	35.33	22.44	36.33	23.44	37.33
6/14/2005	18.33	34.44	20.33	36.44	21.33	37.44	22.33	38.44
6/15/2005	15.56	31.11	17.56	33.11	18.56	34.11	19.56	35.11
6/16/2005	8.889	22.78	10.889	24.78	11.889	25.78	12.889	26.78
6/17/2005	8.333	18.89	10.333	20.89	11.333	21.89	12.333	22.89
6/18/2005	7.778	23.89	9.778	25.89	10.778	26.89	11.778	27.89
6/19/2005	9.444	26.11	11.444	28.11	12.444	29.11	13.444	30.11
6/20/2005	12.78	29.44	14.78	31.44	15.78	32.44	16.78	33.44
6/21/2005	14.44	27.22	16.44	29.22	17.44	30.22	18.44	31.22
6/22/2005	14.44	30	16.44	32	17.44	33	18.44	34
6/23/2005	17.78	30.56	19.78	32.56	20.78	33.56	21.78	34.56
6/24/2005	16.11	29.44	18.11	31.44	19.11	32.44	20.11	33.44
6/25/2005	14.44	27.78	16.44	29.78	17.44	30.78	18.44	31.78
6/26/2005	15	28.33	17	30.33	18	31.33	19	32.33
6/27/2005	14.44	28.33	16.44	30.33	17.44	31.33	18.44	32.33
6/28/2005	15	30	17	32	18	33	19	34
6/29/2005	18.33	34.44	20.33	36.44	21.33	37.44	22.33	38.44
6/30/2005	21.67	36.11	23.67	38.11	24.67	39.11	25.67	40.11
7/1/2005	22.78	36.67	24.78	38.67	25.78	39.67	26.78	40.67
7/2/2005	21.11	35	23.11	37	24.11	38	25.11	39
7/3/2005	20	34.44	22	36.44	23	37.44	24	38.44
7/4/2005	21.11	35	23.11	37	24.11	38	25.11	39
7/5/2005	21.67	34.44	23.67	36.44	24.67	37.44	25.67	38.44
7/6/2005	20.56	33.89	22.56	35.89	23.56	36.89	24.56	37.89
7/7/2005	18.33	33.89	20.33	35.89	21.33	36.89	22.33	37.89
7/8/2005	13.89	30	15.89	32	16.89	33	17.89	34
7/9/2005	14.44	28.89	16.44	30.89	17.44	31.89	18.44	32.89
7/10/2005	15	31.11	17	33.11	18	34.11	19	35.11
7/11/2005	18.89	35.56	20.89	37.56	21.89	38.56	22.89	39.56
7/12/2005	22.78	37.78	24.78	39.78	25.78	40.78	26.78	41.78
7/13/2005	25	38.89	27	40.89	28	41.89	29	42.89
7/14/2005	25	38.89	27	40.89	28	41.89	29	42.89
7/15/2005	25.56	39.44	27.56	41.44	28.56	42.44	29.56	43.44

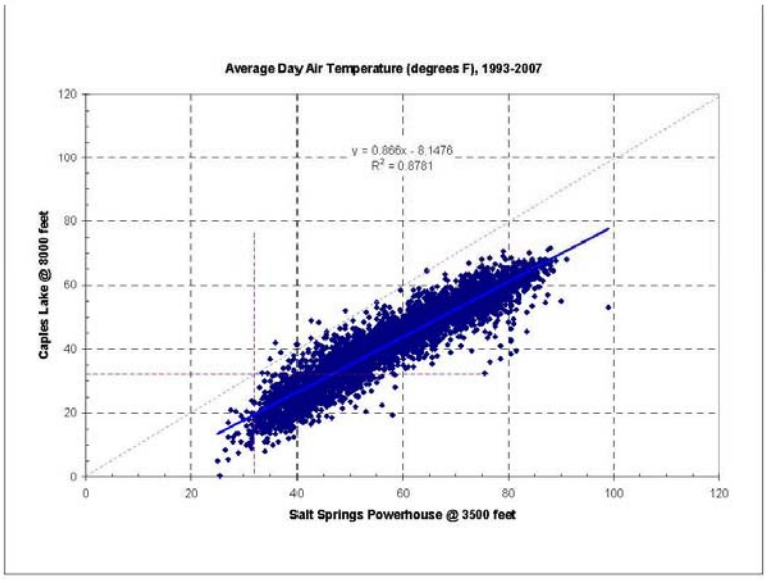
APPENDIX A: AIR TEMPERATURE INPUTS

	STATION: WEST POINT							
	Base Case		2 deg incr		3 deg incr		4 deg incr	
	Temp (degC)		Temp (degC)		Temp (degC)		Temp (degC)	
Date	Min T	Max T	Min T	Max T	Min T	Max T	Min T	Max T
7/16/2005	25.56	39.44	27.56	41.44	28.56	42.44	29.56	43.44
7/17/2005	26.67	39.44	28.67	41.44	29.67	42.44	30.67	43.44
7/18/2005	23.89	38.89	25.89	40.89	26.89	41.89	27.89	42.89
7/19/2005	23.89	37.22	25.89	39.22	26.89	40.22	27.89	41.22
7/20/2005	24.44	39.44	26.44	41.44	27.44	42.44	28.44	43.44
7/21/2005	20	37.22	22	39.22	23	40.22	24	41.22
7/22/2005	20.56	35.56	22.56	37.56	23.56	38.56	24.56	39.56
7/23/2005	23.89	38.33	25.89	40.33	26.89	41.33	27.89	42.33
7/24/2005	22.78	38.33	24.78	40.33	25.78	41.33	26.78	42.33
7/25/2005	21.67	37.22	23.67	39.22	24.67	40.22	25.67	41.22
7/26/2005	22.78	38.33	24.78	40.33	25.78	41.33	26.78	42.33
7/27/2005	23.33	37.78	25.33	39.78	26.33	40.78	27.33	41.78
7/28/2005	23.33	37.78	25.33	39.78	26.33	40.78	27.33	41.78
7/29/2005	22.78	36.67	24.78	38.67	25.78	39.67	26.78	40.67
7/30/2005	23.33	37.22	25.33	39.22	26.33	40.22	27.33	41.22
7/31/2005	23.89	37.22	25.89	39.22	26.89	40.22	27.89	41.22
8/1/2005	22.22	37.78	24.22	39.78	25.22	40.78	26.22	41.78

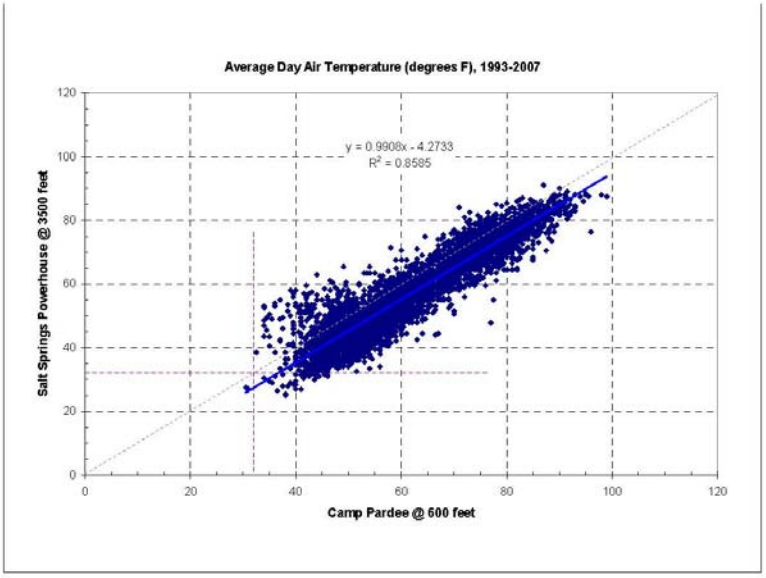
Appendix B – Average Day Air Temperature Graphs



Caples Lake (8000') versus Calaveras Big Trees (4500'). Excluding days for which there is missing or questionable data at either station.

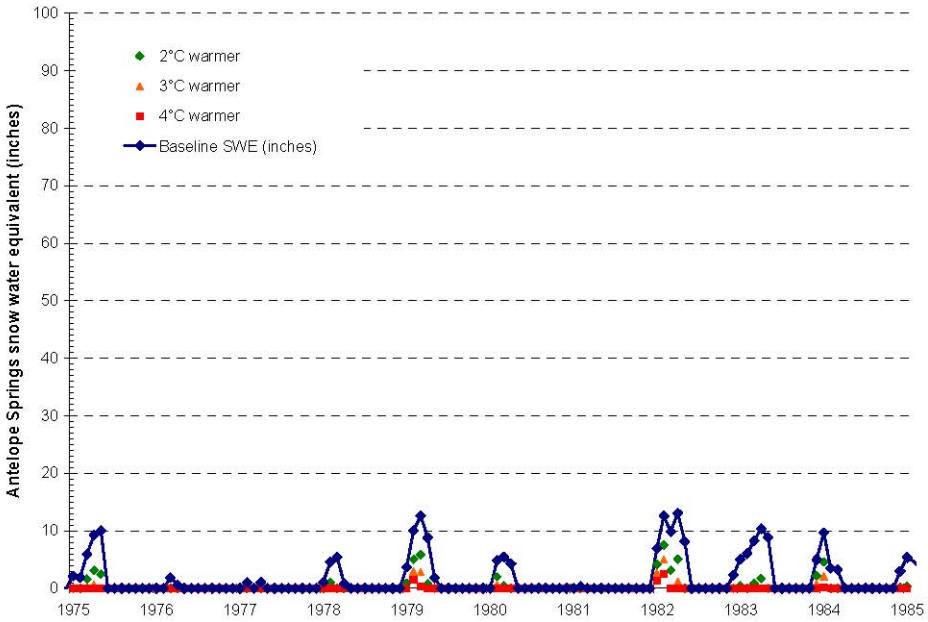


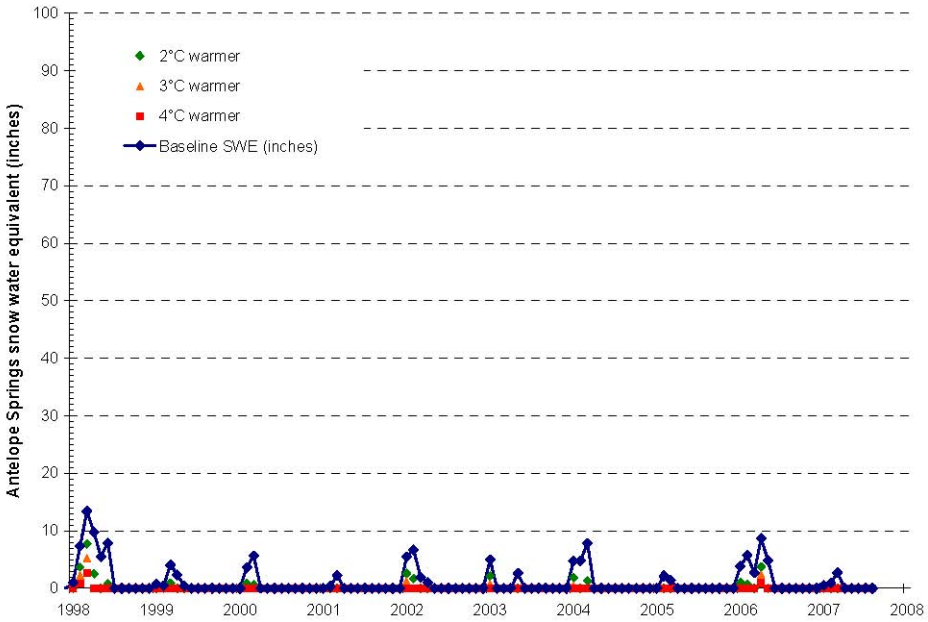
Caples Lake (8000') versus Salt Springs powerhouse (3500'). Excluding days for which there is missing or questionable data at either station.



Salt Springs powerhouse (3500') versus Camp Pardee (600'). Excluding days for which there is missing or questionable data at either station.

Appendix C – Graphs of Linear Regressions


Antelope Springs snow water equivalent (inches)
2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
0
10
20
30
40
50
60
70
80
90
100
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985


Antelope Springs snow water equivalent (inches)
2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
0
10
20
30
40
50
60
70
80
90
100
1998
1999
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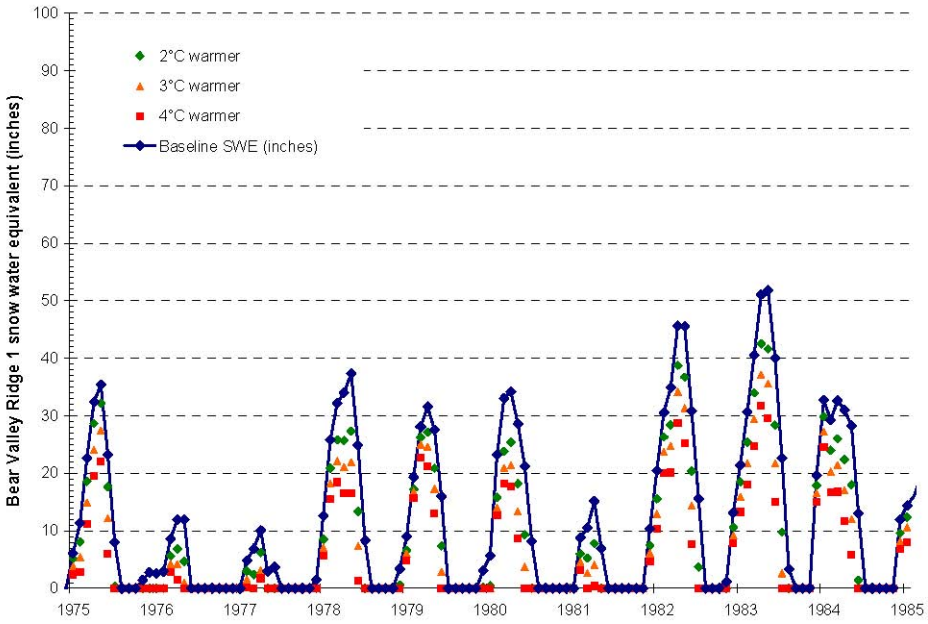
2001
2002
2003
2004
2005
2006
2007
2008


2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
Bear Valley Ridge 1 snow water equivalent (inches)
0
10
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70
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1975
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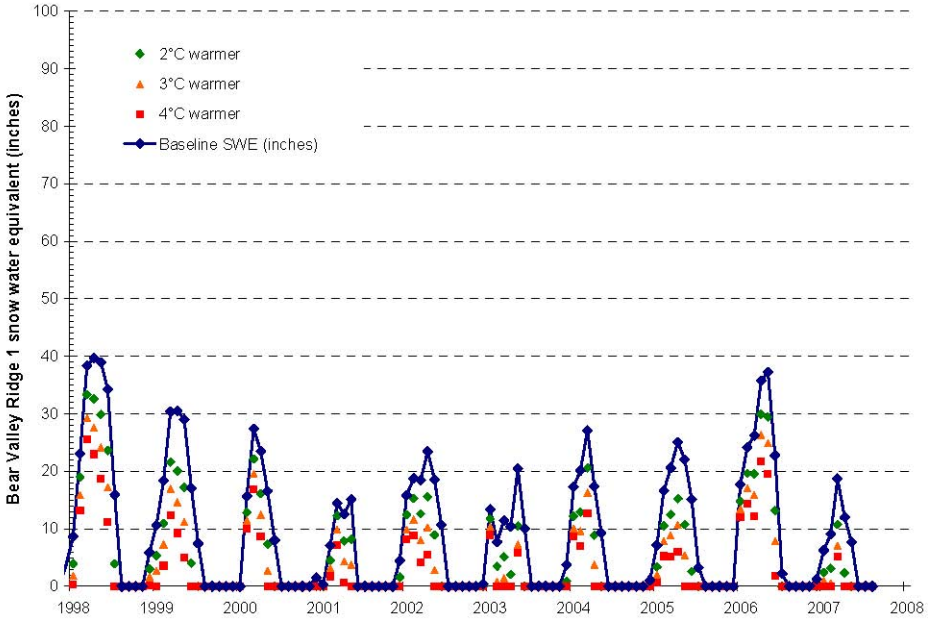
2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
Bear Valley Ridge 1 snow water equivalent (inches)
0
10
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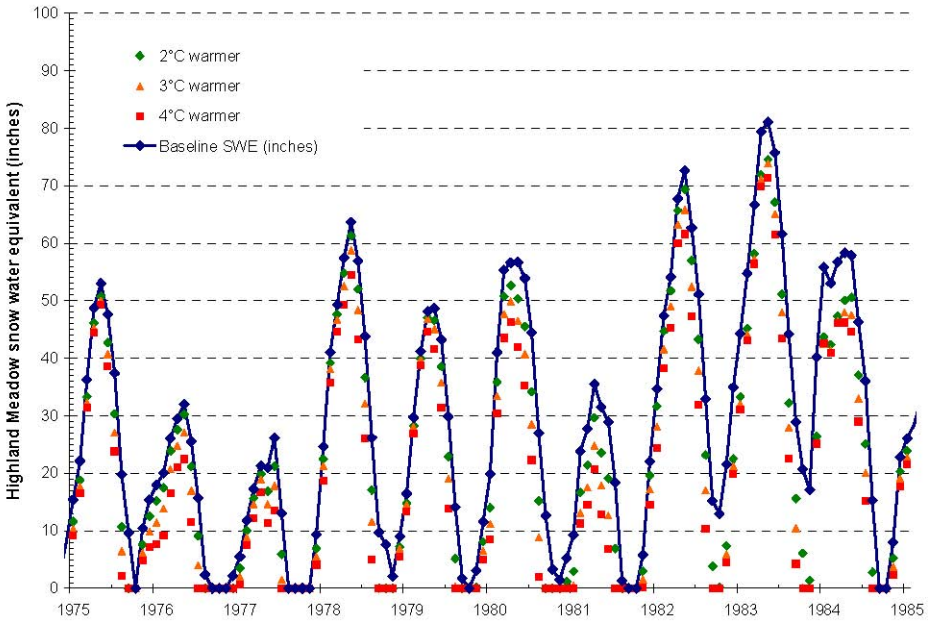
30
40
50
60
70
80
90
100
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008


2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
Highland Meadow snow water equivalent (inches)
0
10
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70
80
90
100
1975
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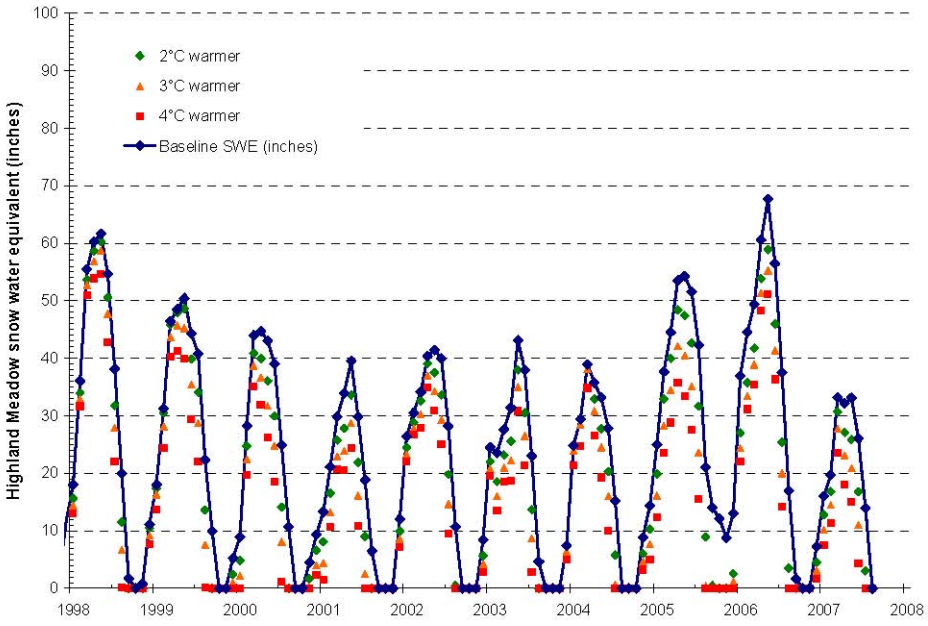
1982
1983
1984
1985


2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
Highland Meadow snow water equivalent (inches)
0
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80
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1998
1999
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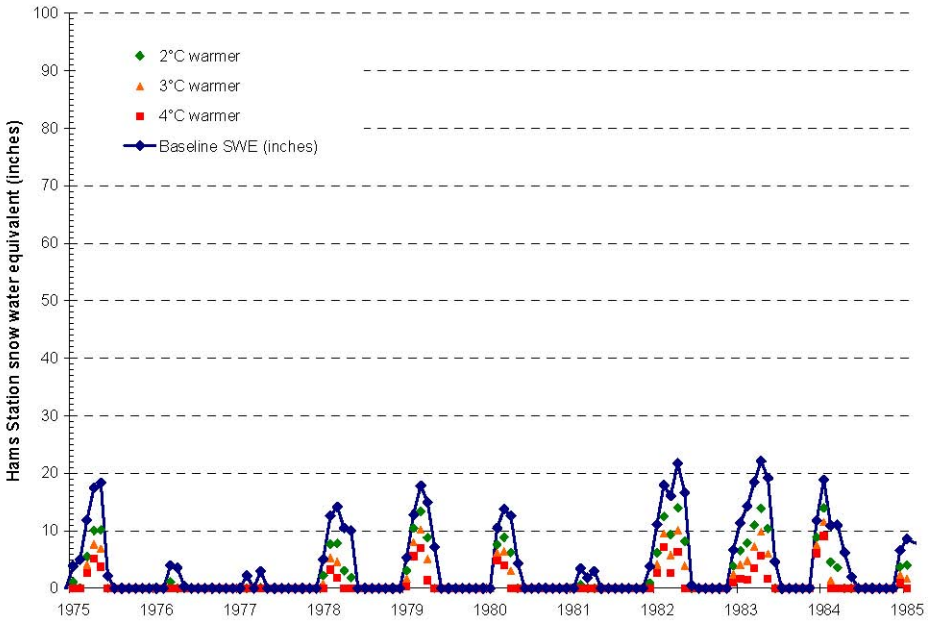
2002
2003
2004
2005
2006
2007
2008


Hams Station snow water equivalent (inches)
2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
0
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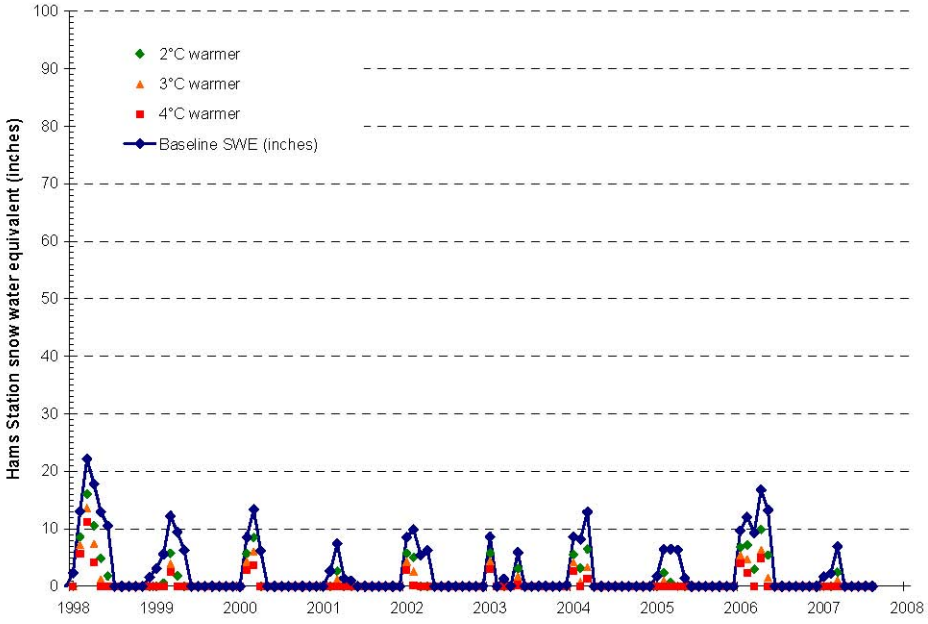
Hams Station snow water equivalent (inches)
2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
0
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2005
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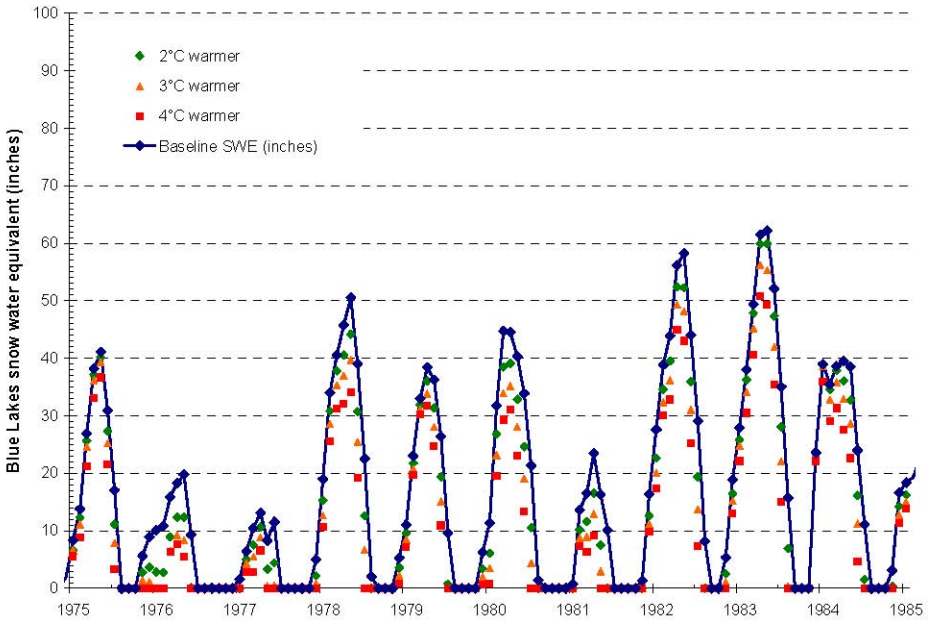
2007
2008


2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
Blue Lakes snow water equivalent (inches)
0
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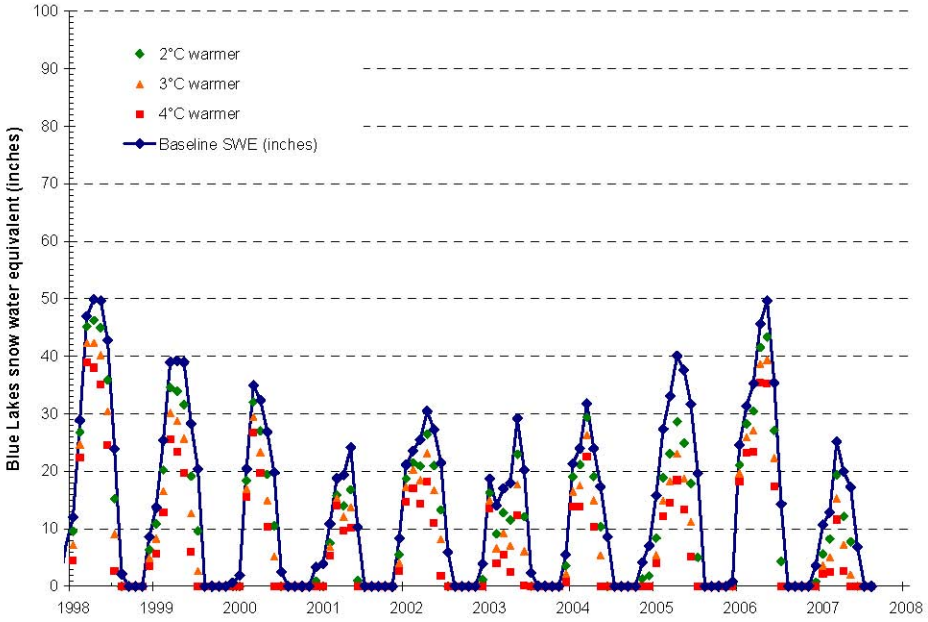
2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
Blue Lakes snow water equivalent (inches)
0
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2006
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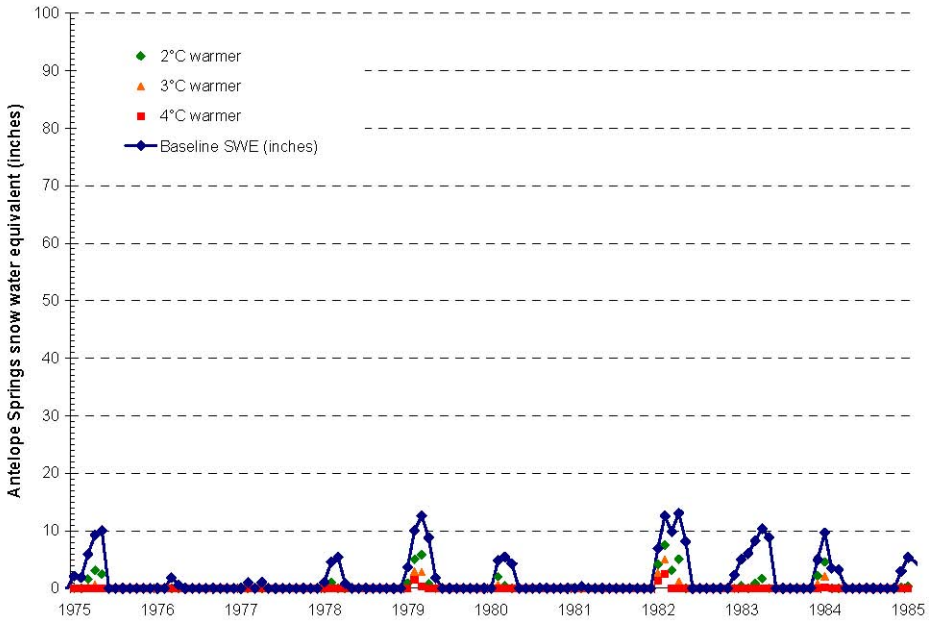
2008

Appendix D – Station-Specific Changes to SWE from Average Month Air Temperature Increases


Antelope Springs snow water equivalent (inches)
2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
0
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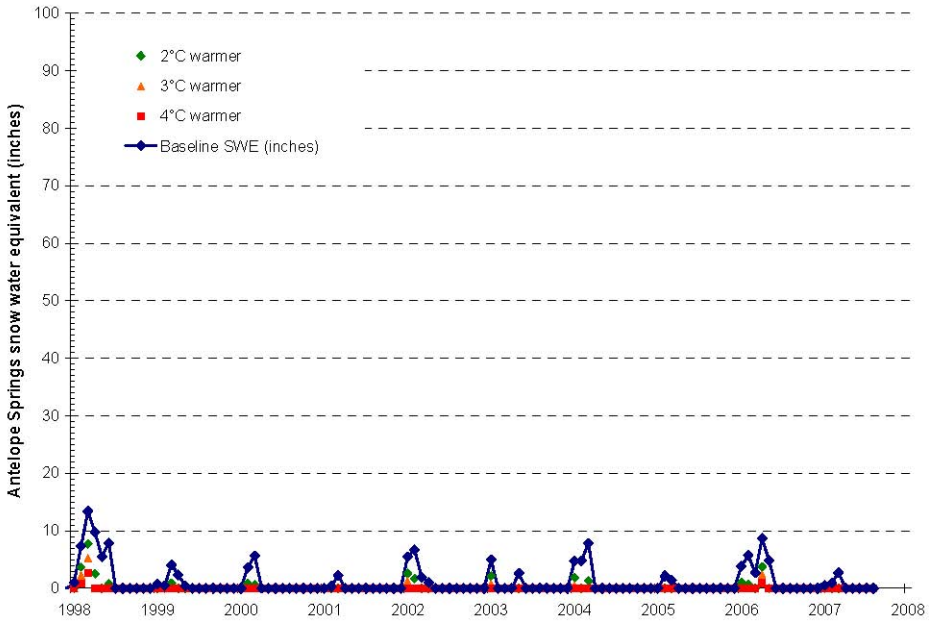
Antelope Springs snow water equivalent (inches)
2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
0
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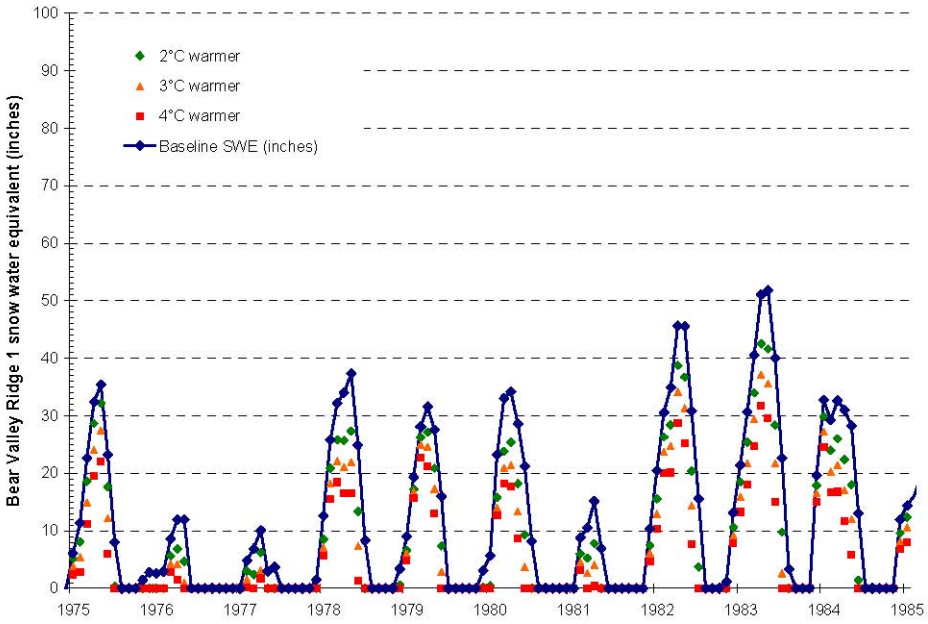
2005
2006
2007
2008


Bear Valley Ridge 1 snow water equivalent (inches)
2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
0
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100
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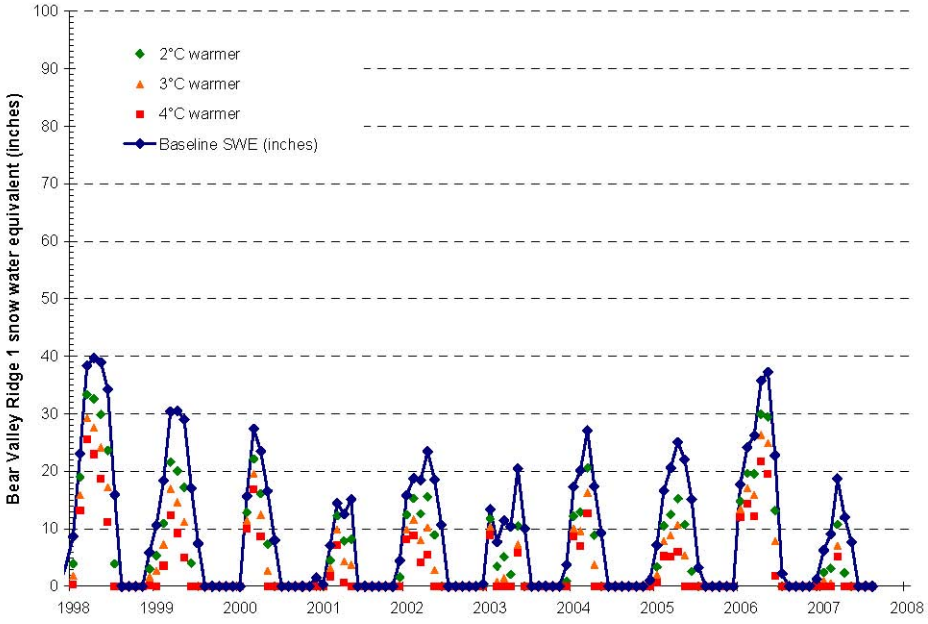
1983
1984
1985


Bear Valley Ridge 1 snow water equivalent (inches)
2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
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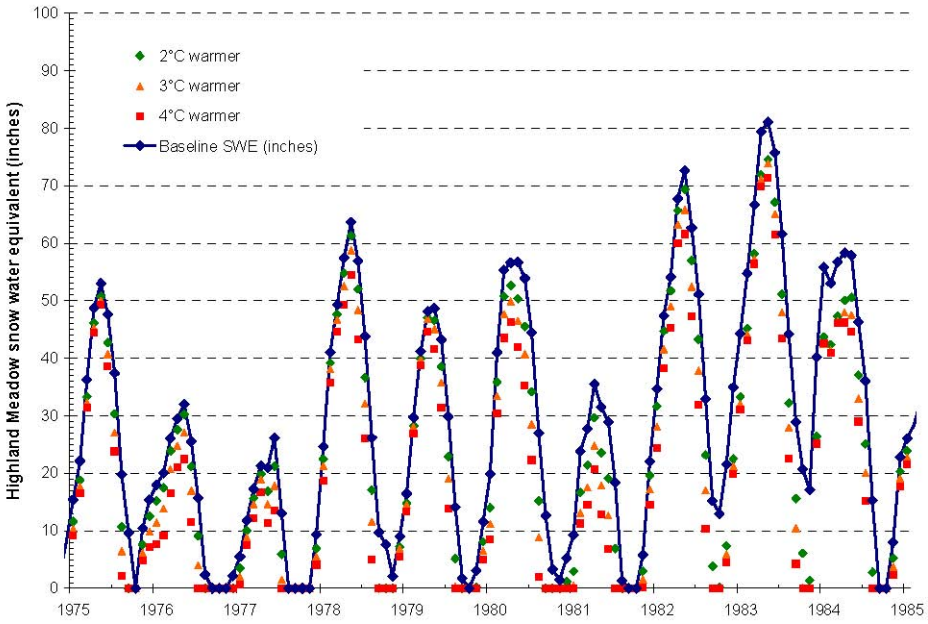
2008


2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
Highland Meadow snow water equivalent (inches)
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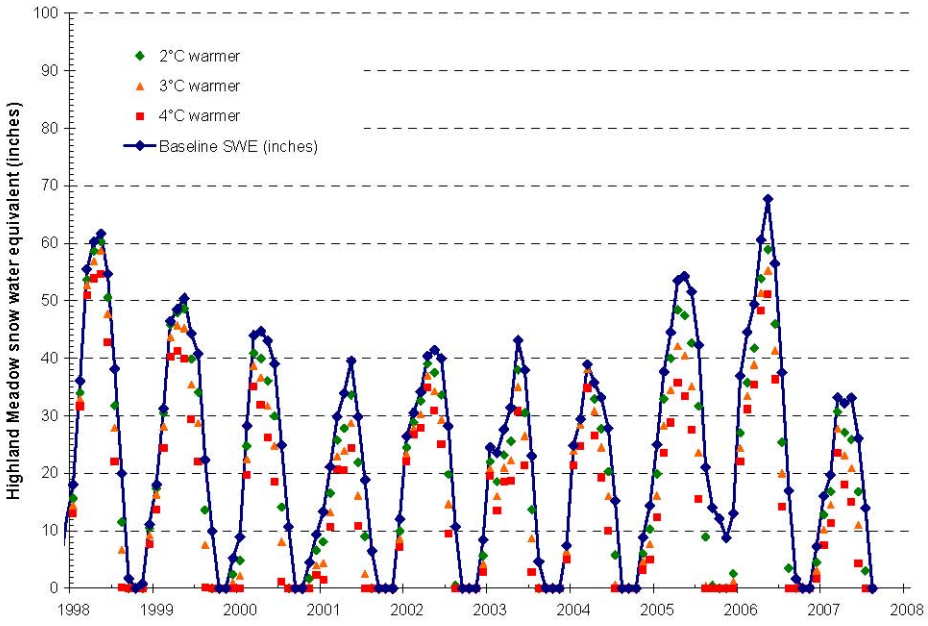
2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
Highland Meadow snow water equivalent (inches)
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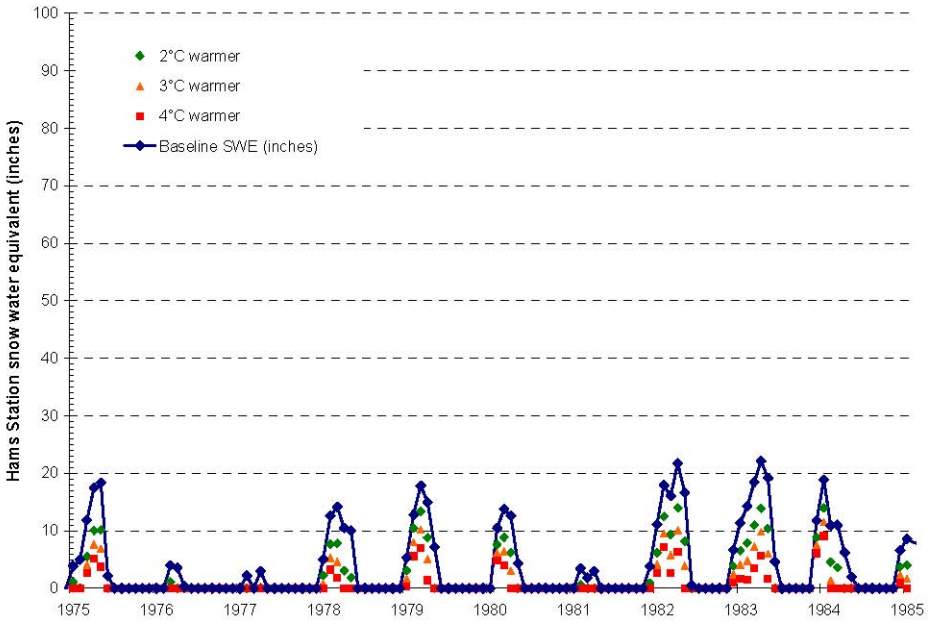
2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
Hams Station snow water equivalent (inches)
0
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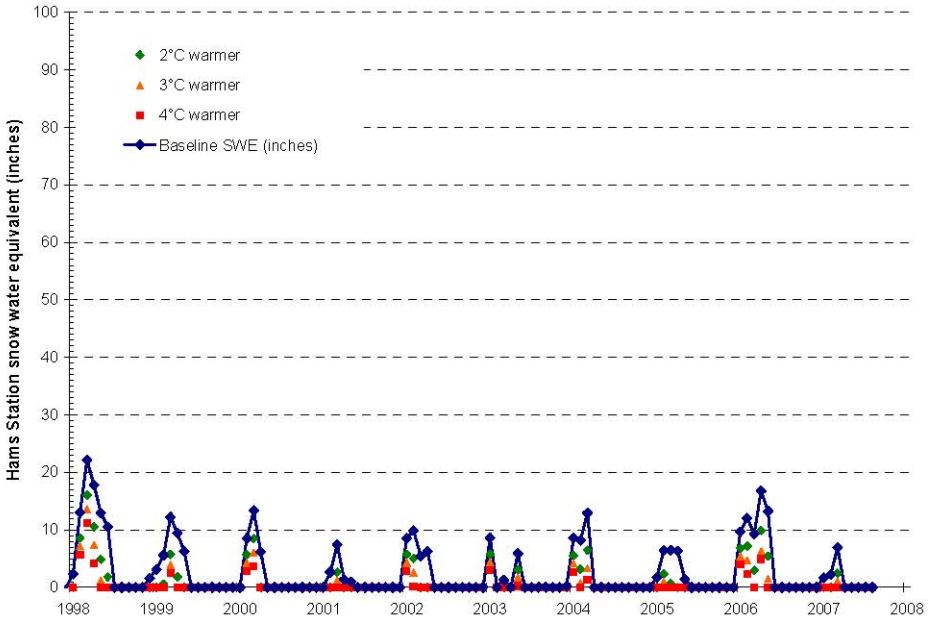
2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
Hams Station snow water equivalent (inches)
0
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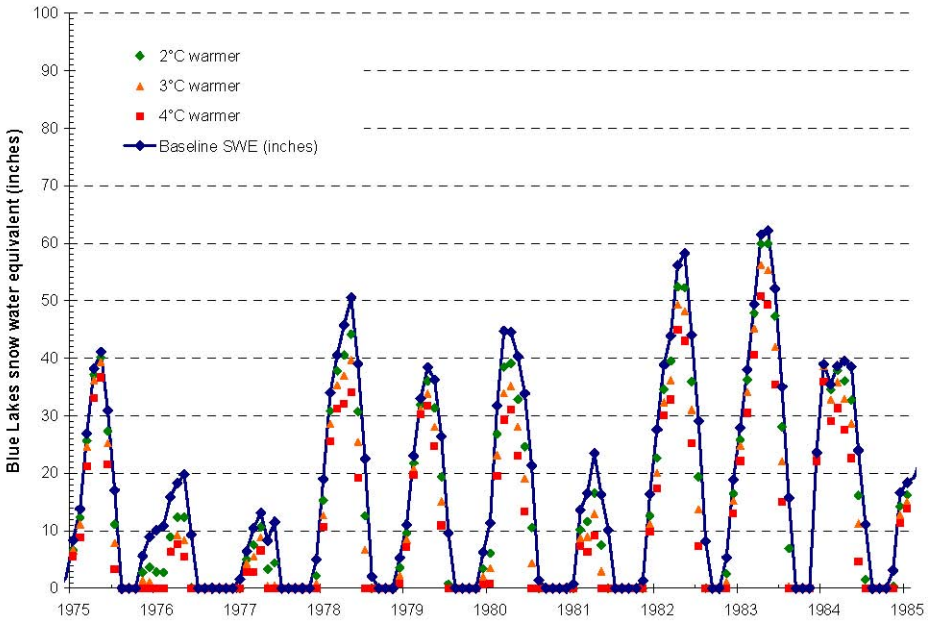
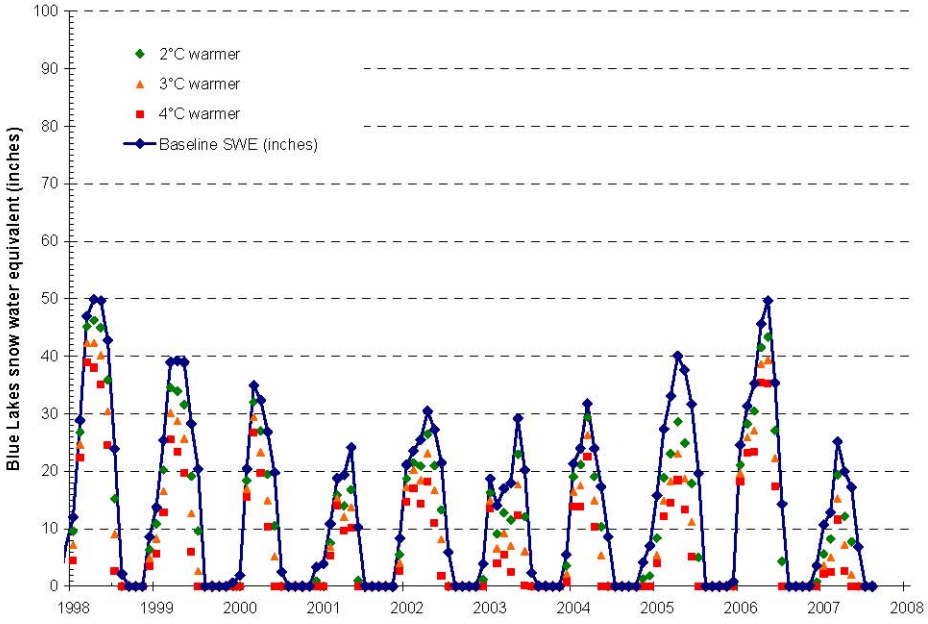
2005
2006
2007
2008


2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
Blue Lakes snow water equivalent (inches)
0
10
20
30
40
50
60
70
80
90
100
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985


2°C warmer
3°C warmer
4°C warmer
Baseline SWE (inches)
Blue Lakes snow water equivalent (inches)
0
10
20
30
40
50
60
70
80
90
100
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008

Appendix E – WARMF Results

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
10/1/1999	9.78985	10.0889	10.2368	10.3836
10/2/1999	8.39231	8.81839	9.03155	9.23668
10/3/1999	10.4467	11.0259	11.3181	11.6068
10/4/1999	11.5736	12.3008	12.6639	13.0236
10/5/1999	12.6815	13.5816	14.0464	14.4983
10/6/1999	12.2211	13.1818	13.6706	14.1547
10/7/1999	12.5562	13.664	14.2646	14.8637
10/8/1999	13.0276	14.1006	14.6291	15.1901
10/9/1999	14.5227	15.6471	16.1962	16.7483
10/10/1999	16.1354	17.3532	17.947	18.5406
10/11/1999	16.7281	17.9909	18.6081	19.2262
10/12/1999	14.422	15.3415	15.792	16.2402
10/13/1999	15.2808	16.2776	16.7862	17.2952
10/14/1999	15.1751	16.1858	16.6839	17.1811
10/15/1999	15.4699	16.5154	17.043	17.5676
10/16/1999	14.8582	15.8889	16.399	16.908
10/17/1999	13.4369	14.2568	14.6652	15.0682
10/18/1999	12.8987	13.6281	14.0147	14.4032
10/19/1999	12.7282	13.556	13.8914	14.2865
10/20/1999	14.1449	15.1971	15.801	16.3143
10/21/1999	15.2009	16.3602	16.9601	17.4896
10/22/1999	16.2823	17.5532	18.1933	18.8349
10/23/1999	16.4023	17.8492	18.5834	19.3237
10/24/1999	16.225	17.7672	18.5371	19.3107
10/25/1999	16.1498	17.5534	18.2612	18.9568
10/26/1999	16.0296	17.5344	18.2961	19.0478
10/27/1999	16.4233	18.1499	19.018	19.8814
10/28/1999	12.9185	14.2637	14.9383	15.6015
10/29/1999	11.4354	12.3498	12.7468	13.1527
10/30/1999	12.1561	13.3582	13.9322	14.4973
10/31/1999	13.1504	14.4098	15.041	15.6558
11/1/1999	13.7486	15.0393	15.6304	16.245
11/2/1999	13.6635	14.9423	15.5556	16.177
11/3/1999	13.2103	14.401	14.9865	15.5771
11/4/1999	12.6135	13.5483	14.0121	14.4698
11/5/1999	12.5008	13.3687	13.7995	14.2194
11/6/1999	12.6909	13.6921	14.1476	14.6073
11/7/1999	12.2218	13.2472	13.7605	14.2602
11/8/1999	11.3044	12.7144	13.376	14.1708
11/9/1999	10.9548	12.2835	12.9445	13.6809
11/10/1999	11.2478	12.7252	13.422	14.1076
11/11/1999	11.5676	12.9192	13.5754	14.1997
11/12/1999	12.3353	13.4671	14.0019	14.5298
11/13/1999	12.247	13.238	13.7437	14.2038
11/14/1999	12.5046	13.5262	14.0242	14.4894
11/15/1999	12.5467	13.5312	14.0031	14.4261
11/16/1999	12.4199	13.595	14.16	14.7373
11/17/1999	11.2263	12.3472	12.8902	13.4233
11/18/1999	10.6834	11.7398	12.2326	12.7171
11/19/1999	10.2869	11.4592	12.0028	12.5382
11/20/1999	9.39281	10.7518	11.3739	11.9746

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
11/21/1999	9.19529	10.6222	11.3087	11.9173
11/22/1999	8.74965	10.1413	10.797	11.4101
11/23/1999	9.20448	10.4897	11.1146	11.67
11/24/1999	9.68436	10.8486	11.4008	11.9261
11/25/1999	9.74589	11.05	11.6366	12.2103
11/26/1999	10.3432	11.6973	12.3318	12.9778
11/27/1999	10.5046	11.6778	12.2709	12.7881
11/28/1999	10.7057	11.8899	12.5013	13.0375
11/29/1999	10.9659	12.2174	12.8321	13.4165
11/30/1999	10.3375	11.7745	12.5136	13.2153
12/1/1999	9.35788	10.9249	11.7306	12.5058
12/2/1999	8.55655	10.1815	11.0155	11.7972
12/3/1999	8.89342	10.4885	11.2945	12.0457
12/4/1999	9.38863	10.9519	11.7049	12.4105
12/5/1999	9.99253	11.381	12.1152	12.7996
12/6/1999	9.70091	11.4143	12.1515	12.8458
12/7/1999	9.30742	11.1039	12.034	12.7497
12/8/1999	8.78777	10.716	11.6088	12.3393
12/9/1999	8.66102	10.5512	11.3871	12.0983
12/10/1999	8.15593	9.94339	10.9478	11.6889
12/11/1999	7.88864	9.71752	10.6977	11.3948
12/12/1999	8.40665	9.92881	10.7945	11.7246
12/13/1999	7.93371	9.57888	10.5634	11.4718
12/14/1999	7.30569	9.04381	10.0207	10.6905
12/15/1999	7.05022	8.83494	9.70101	10.5046
12/16/1999	7.84703	9.42654	10.2862	11.1001
12/17/1999	8.57849	9.85197	10.6886	11.6712
12/18/1999	8.60133	10.199	11.0303	11.9155
12/19/1999	9.1042	10.6861	11.5057	12.3108
12/20/1999	9.56331	10.8451	11.7762	12.6168
12/21/1999	9.55563	10.8977	11.6943	12.5375
12/22/1999	9.42048	10.8324	11.5767	12.3904
12/23/1999	9.05912	10.5284	11.3059	12.2359
12/24/1999	8.57773	10.0519	10.8301	11.6879
12/25/1999	8.48535	9.96028	10.7645	11.7389
12/26/1999	8.21703	9.7973	10.6243	11.5035
12/27/1999	8.52303	10.0343	10.8706	11.6261
12/28/1999	8.5422	10.0309	11.0252	11.7777
12/29/1999	8.29671	9.75043	10.7757	11.5401
12/30/1999	8.19389	9.73071	10.6231	11.4461
12/31/1999	7.87796	9.44808	10.2916	11.1616
1/1/2000	7.49191	9.23919	10.0603	10.9884
1/2/2000	6.45776	8.17864	9.17322	10.0348
1/3/2000	5.77172	7.49986	8.53308	9.43328
1/4/2000	6.03308	7.88505	8.80461	9.8646
1/5/2000	5.34323	7.07461	8.019	9.03477
1/6/2000	5.70551	7.39018	8.44206	9.39943
1/7/2000	6.41729	7.9647	8.96991	9.94598
1/8/2000	6.94275	8.47918	9.46235	10.4405
1/9/2000	7.03631	8.6793	9.64903	10.6288
1/10/2000	7.66821	9.40287	10.3557	11.348

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
1/11/2000	7.74278	9.58297	10.5606	11.5022
1/12/2000	6.48915	8.39589	9.39342	10.3727
1/13/2000	7.1592	8.63616	9.59011	10.4144
1/14/2000	7.46401	8.96237	9.87015	10.6813
1/15/2000	7.99945	9.59469	10.496	11.3469
1/16/2000	7.53908	9.25674	10.2003	11.1143
1/17/2000	7.22771	9.02611	9.99331	10.9872
1/18/2000	7.61018	9.39237	10.3548	11.2593
1/19/2000	8.72082	10.4695	11.3316	12.0905
1/20/2000	8.45828	9.91691	10.6493	11.5627
1/21/2000	7.88927	9.07876	9.71849	10.8231
1/22/2000	7.16401	8.03155	8.73906	9.64975
1/23/2000	6.94919	7.72636	8.24866	9.09998
1/24/2000	6.34921	7.8356	8.46889	9.09688
1/25/2000	6.36987	7.79281	8.27991	8.67748
1/26/2000	6.97338	8.66824	9.12431	9.56485
1/27/2000	7.05101	8.66419	9.17947	9.70975
1/28/2000	7.07868	8.65268	9.31687	10.0009
1/29/2000	7.60836	9.14208	9.87242	10.6629
1/30/2000	7.32595	8.91479	9.66232	10.4204
1/31/2000	6.63599	8.26769	9.00639	9.85434
2/1/2000	7.16022	8.72754	9.49042	10.334
2/2/2000	8.54366	9.79847	10.5837	11.4751
2/3/2000	8.55594	10.0084	10.8151	11.703
2/4/2000	8.24645	9.84887	10.7453	11.7053
2/5/2000	8.37229	10.0127	10.9562	12.0141
2/6/2000	8.78633	10.4159	11.2997	12.5064
2/7/2000	9.79316	11.69	12.582	13.6834
2/8/2000	10.2998	12.0854	12.9856	14.045
2/9/2000	9.57494	11.4285	12.3549	13.4254
2/10/2000	8.74815	10.8336	11.8363	12.9719
2/11/2000	7.23379	9.14416	10.3227	11.5028
2/12/2000	5.93151	7.72959	8.87109	10.0605
2/13/2000	6.10845	7.2697	8.24939	9.45337
2/14/2000	6.00328	7.18194	8.37513	9.48561
2/15/2000	5.95552	7.59829	8.71143	9.79704
2/16/2000	5.38026	7.16969	8.16735	9.22575
2/17/2000	5.31998	7.19037	8.11887	9.14513
2/18/2000	5.84326	7.68178	8.54748	9.52473
2/19/2000	6.71257	8.63464	9.51764	10.4779
2/20/2000	6.79955	8.78956	9.72977	10.7044
2/21/2000	6.9187	8.88889	9.8815	10.8023
2/22/2000	6.11892	8.05315	8.99795	9.91509
2/23/2000	4.5758	5.97256	7.48982	8.4092
2/24/2000	4.01411	5.57512	6.68648	7.56884
2/25/2000	4.77055	6.55184	7.58249	8.41076
2/26/2000	5.72435	7.74654	8.66198	9.46222
2/27/2000	4.47019	6.1046	6.95948	7.55451
2/28/2000	3.97286	6.29094	7.24529	7.92155
2/29/2000	3.92586	5.80699	6.65639	7.34717
3/1/2000	4.16909	6.07825	6.84038	7.54756

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
3/2/2000	4.34565	6.02018	6.72453	7.34665
3/3/2000	5.07944	6.68163	7.39913	7.94898
3/4/2000	5.86447	7.44783	8.07063	8.57811
3/5/2000	5.20443	6.91846	7.55827	8.11344
3/6/2000	4.68678	6.27171	6.90594	7.47522
3/7/2000	4.39967	5.93797	6.5893	7.20336
3/8/2000	4.58735	6.18872	6.90469	7.55562
3/9/2000	4.50652	6.16567	6.94769	7.62409
3/10/2000	5.05967	6.59521	7.30503	7.96727
3/11/2000	6.25282	7.79665	8.47644	9.15128
3/12/2000	6.97433	8.72778	9.39385	10.1133
3/13/2000	7.54851	9.38017	10.0351	10.7624
3/14/2000	8.59991	10.3618	11.0014	11.7514
3/15/2000	9.27101	10.8042	11.4742	12.2661
3/16/2000	9.35013	10.7222	11.4528	12.2478
3/17/2000	9.10192	10.4917	11.2379	12.0378
3/18/2000	9.30739	10.678	11.4112	12.1466
3/19/2000	9.53258	10.8503	11.612	12.3756
3/20/2000	8.70336	10.0939	10.9444	11.6904
3/21/2000	8.95019	10.3556	11.1143	11.6989
3/22/2000	9.29792	10.6816	11.3423	11.837
3/23/2000	9.35442	10.6498	11.2838	11.8127
3/24/2000	9.43122	10.6508	11.304	11.8223
3/25/2000	9.67558	10.7276	11.4283	12.3406
3/26/2000	10.1768	10.9643	11.7118	13.1568
3/27/2000	9.33012	10.133	10.9515	12.5635
3/28/2000	8.57467	9.55993	10.4431	11.9449
3/29/2000	8.23788	9.45306	10.3553	11.7713
3/30/2000	9.63868	11.1717	11.9669	13.1605
3/31/2000	11.7678	13.4317	14.1503	15.0332
4/1/2000	12.5873	14.2598	14.8944	15.6832
4/2/2000	12.3856	13.8029	14.9063	15.3747
4/3/2000	13.7263	15.1071	16.5325	16.2705
4/4/2000	13.834	15.5486	16.3115	15.8968
4/5/2000	14.0155	15.8619	16.4738	15.8378
4/6/2000	13.8991	15.6971	16.53	15.8369
4/7/2000	13.9466	15.6191	16.6376	15.687
4/8/2000	13.0416	14.2697	15.896	15.3647
4/9/2000	12.4064	13.5679	15.2586	14.552
4/10/2000	11.951	13.3033	15.044	14.6688
4/11/2000	12.4388	13.7306	15.8362	15.1578
4/12/2000	13.6265	14.532	16.4597	15.7821
4/13/2000	11.4713	12.8909	14.653	14.0908
4/14/2000	8.36004	10.5925	12.826	12.5224
4/15/2000	7.76185	9.85455	11.7651	11.6495
4/16/2000	8.64159	10.4316	11.8058	11.9603
4/17/2000	7.56032	9.25898	10.5019	10.7978
4/18/2000	6.93411	9.03337	10.2377	10.5237
4/19/2000	7.33422	9.16022	10.2055	10.5019
4/20/2000	8.88276	10.2476	11.132	11.5183
4/21/2000	10.9984	11.9595	12.8366	13.27

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
4/22/2000	10.1681	11.3038	12.2552	12.7391
4/23/2000	8.8501	10.923	11.9502	12.4737
4/24/2000	9.96582	12.0336	12.8188	13.3402
4/25/2000	11.4811	12.8758	13.3935	13.9448
4/26/2000	12.9285	14.0897	14.3854	14.9939
4/27/2000	12.8049	14.4194	14.7355	15.4484
4/28/2000	11.9039	13.3079	13.5273	14.4098
4/29/2000	9.91603	12.867	13.2164	14.1935
4/30/2000	10.8345	13.4092	13.663	14.6458
5/1/2000	12.5963	14.2687	14.5512	15.2434
5/2/2000	14.1568	14.7419	14.9752	15.6661
5/3/2000	13.9391	15.1205	15.1718	15.9061
5/4/2000	13.2879	15.3766	15.2823	16.2394
5/5/2000	10.7172	14.7157	14.596	15.6258
5/6/2000	9.74168	13.7099	13.6391	14.7644
5/7/2000	8.66648	12.333	12.3052	13.556
5/8/2000	7.90374	12.2855	12.3337	13.5625
5/9/2000	9.24068	12.4775	12.5876	14.6419
5/10/2000	8.60519	10.9552	11.2217	13.3403
5/11/2000	7.49217	9.94623	10.358	12.0983
5/12/2000	7.70681	9.97832	10.5142	11.9054
5/13/2000	8.84908	10.8938	11.4837	12.631
5/14/2000	9.11336	11.1206	11.6531	12.6326
5/15/2000	8.59295	10.6609	11.2328	12.1268
5/16/2000	7.49057	9.56734	10.2057	10.9615
5/17/2000	8.33629	10.2739	10.807	11.7474
5/18/2000	9.46928	11.2555	11.7211	12.8782
5/19/2000	11.1474	12.7509	13.4534	14.8703
5/20/2000	12.1194	13.3997	14.3713	15.9922
5/21/2000	11.6821	13.0453	14.1041	15.4937
5/22/2000	10.5502	12.3355	13.3351	14.3017
5/23/2000	10.3181	12.5849	13.4554	14.1988
5/24/2000	10.1846	12.723	13.4988	14.1266
5/25/2000	9.74631	11.9822	12.6691	13.3135
5/26/2000	9.88172	11.8748	12.4681	13.1179
5/27/2000	10.2082	12.0704	12.6233	13.2723
5/28/2000	10.2666	12.1265	12.6839	13.3359
5/29/2000	10.4373	12.1865	12.8026	13.4718
5/30/2000	10.0574	11.9327	12.5864	13.2864
5/31/2000	10.5966	12.6038	13.2746	14.0092
6/1/2000	10.9329	12.9283	13.6004	14.3385
6/2/2000	11.9402	13.6714	14.3584	15.0995
6/3/2000	12.8261	14.4677	15.1607	15.9453
6/4/2000	13.4903	15.1971	15.9142	16.7539
6/5/2000	12.4223	14.0904	14.8456	15.7142
6/6/2000	12.4298	13.9244	14.6774	15.5247
6/7/2000	12.3007	13.879	14.6759	15.6082
6/8/2000	11.244	12.9166	13.7489	14.7457
6/9/2000	10.8959	12.5473	13.4255	14.451
6/10/2000	11.3561	13.0569	13.9867	15.0223
6/11/2000	11.9718	13.7999	14.7626	15.7767

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
6/12/2000	13.668	15.6167	16.5997	17.6136
6/13/2000	15.6738	17.667	18.6612	19.727
6/14/2000	16.9613	19.0499	20.054	21.1559
6/15/2000	18.1731	20.1626	21.1799	22.329
6/16/2000	18.7955	20.7944	21.8432	23.0226
6/17/2000	18.1961	20.2796	21.3281	22.4869
6/18/2000	16.784	19.1861	20.2309	21.3646
6/19/2000	15.8696	18.4013	19.4682	20.6275
6/20/2000	16.3685	18.3997	19.5235	20.7057
6/21/2000	17.5874	19.6452	20.769	21.9899
6/22/2000	17.8568	20.314	21.4979	22.7558
6/23/2000	17.3688	19.7925	20.988	22.1794
6/24/2000	16.923	19.5818	20.7446	21.903
6/25/2000	16.3254	18.4629	19.6165	20.8616
6/26/2000	16.5071	18.1214	19.248	20.474
6/27/2000	16.8749	18.5892	19.7472	21.0265
6/28/2000	17.3244	19.1645	20.3407	21.6343
6/29/2000	17.3875	19.1671	20.3929	21.6899
6/30/2000	16.9348	18.5084	19.76	21.0551
7/1/2000	16.3771	17.8703	19.1136	20.4071
7/2/2000	16.0069	17.5058	18.7693	20.0425
7/3/2000	14.9565	16.3435	17.631	18.9196
7/4/2000	14.4493	15.7287	17.0799	18.4286
7/5/2000	14.0562	15.4383	16.8214	18.1949
7/6/2000	14.0538	15.5634	16.9284	18.3199
7/7/2000	13.6371	15.196	16.6397	18.0698
7/8/2000	13.8408	15.4889	16.973	18.4345
7/9/2000	13.9356	15.6721	17.2214	18.7902
7/10/2000	14.9198	16.8325	18.3867	19.943
7/11/2000	15.3191	17.3825	18.8483	20.4316
7/12/2000	14.8961	16.9651	18.458	20.1185
7/13/2000	14.6798	16.774	18.3901	20.0634
7/14/2000	14.6309	16.6852	18.2902	19.9334
7/15/2000	15.8847	17.9312	19.5874	21.2992
7/16/2000	15.8328	17.819	19.4017	21.044
7/17/2000	15.5608	17.5813	19.1921	20.8963
7/18/2000	14.4804	16.4209	18.1191	19.9187
7/19/2000	14.6848	16.7181	18.5402	20.3255
7/20/2000	16.0704	18.2282	19.8905	21.7146
7/21/2000	15.6634	17.6731	19.4152	21.251
7/22/2000	15.8867	17.9333	19.7019	21.5231
7/23/2000	15.6541	17.6889	19.5269	21.3857
7/24/2000	15.8946	18.0103	19.8855	21.7806
7/25/2000	15.9835	18.1055	20.0145	21.9306
7/26/2000	15.978	18.1224	20.0233	21.9242
7/27/2000	16.3767	18.5988	20.4231	22.2926
7/28/2000	15.7063	17.8413	19.8598	21.8888
7/29/2000	16.0617	18.2677	20.492	22.5455
7/30/2000	18.3819	20.6168	22.697	24.5915
7/31/2000	18.5275	20.9659	23.2599	25.5753
8/1/2000	18.9789	21.4321	23.6815	25.8241

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
8/2/2000	18.3568	20.8872	23.3244	25.6145
8/3/2000	18.0613	20.5856	23.0587	25.4214
8/4/2000	16.2088	18.7185	21.4188	24
8/5/2000	17.237	19.7727	22.4599	24.854
8/6/2000	17.1931	19.852	22.9664	25.7063
8/7/2000	16.9748	19.6978	22.8572	25.4618
8/8/2000	17.3525	20.028	22.541	24.8469
8/9/2000	16.7748	19.4772	21.8609	24.0348
8/10/2000	16.1696	18.7935	21.3195	23.4327
8/11/2000	16.0514	18.6856	21.4063	23.531
8/12/2000	16.6656	19.4371	22.2336	24.4528
8/13/2000	16.2007	19.187	22.7869	25.1964
8/14/2000	16.8171	19.9055	23.3711	25.8545
8/15/2000	16.7174	19.787	22.9787	25.336
8/16/2000	17.4391	20.5057	23.2136	25.3044
8/17/2000	17.315	20.4235	23.1118	25.0777
8/18/2000	17.4068	20.4805	23.1249	24.8768
8/19/2000	17.0557	20.0761	22.8365	24.5985
8/20/2000	15.9926	19.0708	22.4658	24.2098
8/21/2000	15.2762	18.6562	22.5929	24.3189
8/22/2000	16.1428	19.5077	22.8809	24.4022
8/23/2000	16.5481	19.886	22.7093	24.0835
8/24/2000	17.5506	20.5928	23.271	24.4955
8/25/2000	17.5422	20.6764	23.4518	24.6732
8/26/2000	18.1957	21.3133	24.0494	25.2586
8/27/2000	17.2105	20.7608	24.4936	25.7808
8/28/2000	17.1212	21.0687	24.6717	25.9106
8/29/2000	17.5867	21.1229	24.2949	25.3831
8/30/2000	15.6991	19.1961	22.3731	23.3077
8/31/2000	16.0475	19.0858	21.4529	22.4214
9/1/2000	15.3858	18.5577	20.9638	21.8528
9/2/2000	14.3375	17.5822	20.1168	20.9537
9/3/2000	13.2875	17.2338	20.3995	21.1728
9/4/2000	13.4397	16.6892	19.4097	20.1612
9/5/2000	13.3591	16.9229	19.5112	20.0651
9/6/2000	14.2621	17.7653	19.7538	20.2212
9/7/2000	15.4047	18.8363	20.7756	21.0787
9/8/2000	16.4467	19.8615	21.6729	21.7535
9/9/2000	16.4925	20.0955	21.9363	21.8168
9/10/2000	15.9244	19.9257	22.3427	22.0781
9/11/2000	16.6422	20.7616	22.9542	22.8525
9/12/2000	16.5105	20.7394	22.5788	23.6101
9/13/2000	17.5523	21.327	22.8686	24.3339
9/14/2000	17.967	21.4225	22.8214	24.3797
9/15/2000	17.7798	21.1198	22.4016	20.3463
9/16/2000	17.5234	21.0893	22.4091	12.4358
9/17/2000	16.8268	21.4762	23.073	6.92005
9/18/2000	17.8367	22.5493	24.0787	7.8141
9/19/2000	17.788	22.3713	23.7824	12.9003
9/20/2000	19.5731	23.4515	24.6871	12.9191
9/21/2000	16.6602	21.3141	22.6497	11.9791

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
9/22/2000	16.651	20.8524	22.166	9.39415
9/23/2000	16.0679	19.8258	21.0348	9.90309
9/24/2000	16.5444	20.5052	21.6437	8.79417
9/25/2000	19.6681	22.5805	23.5666	14.7222
9/26/2000	20.3661	23.2271	24.2279	17.1846
9/27/2000	19.9867	22.3336	23.3216	22.94
9/28/2000	17.7104	19.919	20.895	21.1361
9/29/2000	18.2132	20.5699	21.5339	21.373
9/30/2000	20.7399	23.1857	24.1656	24.4797
10/1/2000	22.8963	25.3378	26.334	27.3304
10/2/2000	21.4855	23.8476	24.8379	25.669
10/3/2000	19.5555	21.9494	22.9279	23.3691
10/4/2000	18.8392	21.1446	22.1179	22.4084
10/5/2000	20.4709	22.9214	23.8834	24.417
10/6/2000	18.8165	22.2109	23.1662	22.4183
10/7/2000	16.0548	20.7988	21.7867	20.9931
10/8/2000	16.8849	20.9231	21.8738	6.93191
10/9/2000	16.4329	20.2197	20.9816	4.7726
10/10/2000	14.3049	17.4267	18.4682	4.74432
10/11/2000	13.0766	16.1145	17.3132	6.30791
10/12/2000	13.3659	16.6897	17.2986	7.21324
10/13/2000	13.6494	16.9607	18.2422	4.77356
10/14/2000	14.1861	17.7561	16.8044	7.31593
10/15/2000	14.7029	18.4849	15.1546	8.59295
10/16/2000	14.8793	19.0959	5.2525	4.59401
10/17/2000	15.7519	19.4964	5.81575	5.90883
10/18/2000	16.3867	19.5318	7.48837	7.70997
10/19/2000	15.8617	19.0529	9.46971	9.782
10/20/2000	15.652	18.6652	9.91733	10.2795
10/21/2000	14.9188	17.7514	10.3425	10.8165
10/22/2000	14.802	17.4219	8.1606	8.50704
10/23/2000	14.7282	17.2063	6.58121	6.79721
10/24/2000	14.6267	16.8778	7.59109	7.82561
10/25/2000	14.24	16.3634	8.35788	8.69243
10/26/2000	13.0072	15.0178	9.08711	9.56815
10/27/2000	12.4536	14.4911	7.52708	7.93308
10/28/2000	12.0226	14.403	6.59077	6.94088
10/29/2000	11.2948	13.728	7.19285	7.62323
10/30/2000	11.4394	13.645	6.53774	6.91921
10/31/2000	10.7012	12.7005	3.82378	3.90876
11/1/2000	10.4791	12.4704	5.16098	5.32067
11/2/2000	11.5572	13.0102	6.12383	5.43597
11/3/2000	11.6273	13.5504	5.42352	5.68748
11/4/2000	11.5561	14.2738	5.41324	3.45699
11/5/2000	11.5825	14.2935	3.64723	3.24158
11/6/2000	11.749	14.0174	4.64722	4.6002
11/7/2000	11.1033	13.4483	3.88213	3.77273
11/8/2000	10.6543	13.3402	4.45994	4.33913
11/9/2000	8.96812	12.2425	3.35077	3.26755
11/10/2000	7.63003	10.4809	2.79412	2.8388
11/11/2000	7.42558	9.23084	3.34688	3.54051

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
11/12/2000	7.00715	9.16719	2.6163	2.72359
11/13/2000	7.11151	8.53243	3.74631	3.94395
11/14/2000	6.50353	9.06654	4.02545	4.01037
11/15/2000	6.22398	8.69366	2.78509	2.70646
11/16/2000	6.41364	6.15666	1.8573	1.90711
11/17/2000	6.89293	5.70511	1.68635	1.72207
11/18/2000	7.36505	7.16746	1.95452	2.01435
11/19/2000	7.84268	8.35358	2.0302	2.07641
11/20/2000	8.50473	8.47538	2.64661	2.60241
11/21/2000	8.65493	8.44672	2.49262	2.38917
11/22/2000	8.32326	6.16089	2.55421	2.51456
11/23/2000	8.45623	5.59496	2.28925	2.20341
11/24/2000	8.11195	5.28346	2.3784	2.33753
11/25/2000	8.58725	6.46456	2.43179	2.27414
11/26/2000	9.06145	7.90246	2.97823	2.8528
11/27/2000	9.1588	6.69295	2.84971	2.68621
11/28/2000	9.56726	4.22048	3.36085	3.20886
11/29/2000	9.59946	3.95608	3.56719	3.48311
11/30/2000	7.89396	4.17812	3.86786	3.87111
12/1/2000	7.31097	3.42599	2.8136	2.59374
12/2/2000	7.0744	3.65421	2.99653	2.76453
12/3/2000	7.18276	3.86992	3.26718	3.01701
12/4/2000	7.12773	4.19089	3.4999	3.17164
12/5/2000	8.13122	4.46864	3.87794	3.61537
12/6/2000	8.94857	4.75617	4.07126	3.71455
12/7/2000	8.02237	4.33917	3.76117	3.46325
12/8/2000	7.30251	4.31192	3.73126	3.4254
12/9/2000	7.17263	3.77532	3.29973	3.05353
12/10/2000	6.56572	3.853	3.54172	3.41396
12/11/2000	6.88478	3.34908	3.07843	2.97792
12/12/2000	5.9612	4.26969	4.36931	4.54768
12/13/2000	5.24721	3.65126	3.77482	3.91288
12/14/2000	5.41417	3.74275	3.85359	3.97053
12/15/2000	6.71469	5.89871	6.17129	6.46504
12/16/2000	6.50019	4.91738	5.08466	5.22832
12/17/2000	6.12456	4.62934	4.85641	5.10283
12/18/2000	6.33054	4.4089	4.55818	4.66588
12/19/2000	6.43355	4.31567	4.38247	4.30044
12/20/2000	6.92831	4.9489	4.88126	4.66504
12/21/2000	7.21825	5.63298	5.43949	5.07895
12/22/2000	7.51696	6.06497	5.68997	5.17962
12/23/2000	6.27409	4.78813	4.52664	4.04144
12/24/2000	5.66633	4.5485	4.48674	4.1185
12/25/2000	5.62874	4.61982	4.38553	3.82956
12/26/2000	5.82478	5.15945	4.52294	3.92196
12/27/2000	5.80935	4.40859	3.83246	3.35582
12/28/2000	6.01476	4.3443	3.81745	3.41313
12/29/2000	6.32236	4.43126	3.81197	3.41793
12/30/2000	6.34384	4.0528	3.33495	2.93333
12/31/2000	6.58668	4.27717	3.56756	3.20704
1/1/2001	7.30293	5.80232	5.076	4.75929

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
1/2/2001	7.59323	6.73694	5.69285	5.21863
1/3/2001	7.65447	6.61012	5.60331	5.13166
1/4/2001	7.81039	6.61389	5.64391	5.22004
1/5/2001	7.52828	6.32403	5.45137	5.09331
1/6/2001	7.32509	5.94838	5.16894	4.81931
1/7/2001	7.72775	6.38337	5.76019	5.5052
1/8/2001	6.78708	5.78222	5.35017	5.27666
1/9/2001	6.41759	5.94388	5.67526	5.72892
1/10/2001	6.40264	6.35869	6.38045	6.61155
1/11/2001	5.22406	6.34332	6.67126	7.09483
1/12/2001	5.2996	5.67903	6.01445	6.2638
1/13/2001	5.40321	5.59961	6.00543	6.09159
1/14/2001	5.19301	5.18476	5.68969	5.80264
1/15/2001	4.67091	4.68319	5.26237	5.32917
1/16/2001	4.29492	4.24052	4.88065	5.34691
1/17/2001	4.19611	3.57169	4.17641	4.67168
1/18/2001	4.8299	3.51105	4.12096	4.62854
1/19/2001	6.04611	4.62383	5.28255	5.86706
1/20/2001	6.5032	6.30048	7.12159	7.78358
1/21/2001	7.2268	7.76015	8.66128	9.10012
1/22/2001	7.56341	8.46566	9.29308	9.6274
1/23/2001	7.9631	8.84082	9.76583	10.3754
1/24/2001	5.4092	5.78297	6.42011	7.38249
1/25/2001	4.59546	5.50892	6.36205	7.18045
1/26/2001	4.29931	4.99858	6.13774	6.96266
1/27/2001	4.57123	5.14293	5.85971	6.62254
1/28/2001	4.66893	5.2745	5.97998	6.75628
1/29/2001	4.66995	5.43764	6.22966	7.03828
1/30/2001	4.29818	4.89029	5.68277	6.46252
1/31/2001	4.90791	5.52047	6.20556	6.88888
2/1/2001	5.41672	6.15764	6.77839	7.40402
2/2/2001	6.11317	6.72556	7.36214	7.84873
2/3/2001	8.31062	9.17983	9.97662	10.7403
2/4/2001	8.29041	8.98195	9.68826	10.5114
2/5/2001	8.18696	9.13579	10.0474	10.8949
2/6/2001	5.92254	7.30436	8.2175	9.23475
2/7/2001	4.71364	6.38737	7.31622	8.35839
2/8/2001	4.70795	6.10362	6.86791	7.44023
2/9/2001	3.68956	5.19071	6.00032	6.77598
2/10/2001	3.93782	5.44008	6.29666	7.10388
2/11/2001	3.64471	5.13669	5.75621	6.37783
2/12/2001	3.3477	4.72575	5.53278	6.5455
2/13/2001	5.27645	6.66332	7.59189	8.56981
2/14/2001	4.7119	6.01418	7.01691	7.95381
2/15/2001	4.72251	6.10252	7.11263	7.9817
2/16/2001	5.74031	7.4282	8.24305	9.10491
2/17/2001	6.383	7.95267	8.72982	9.59263
2/18/2001	6.34964	7.76356	8.52221	9.35992
2/19/2001	6.24002	7.8008	8.62551	9.51622
2/20/2001	6.05682	7.60202	8.40571	9.28764
2/21/2001	6.70502	8.28084	9.03906	9.89386

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
2/22/2001	5.26704	6.42059	7.16344	8.02229
2/23/2001	4.6473	5.90091	6.66517	7.50763
2/24/2001	4.91164	6.42817	7.24153	8.05086
2/25/2001	5.12212	6.67638	7.39533	8.10545
2/26/2001	5.55153	6.73781	7.39983	7.98515
2/27/2001	7.05408	8.17387	8.91874	9.62496
2/28/2001	6.25155	7.41966	8.26354	9.00893
3/1/2001	5.91305	7.30508	8.09971	8.74407
3/2/2001	5.04294	6.51287	7.2616	7.88084
3/3/2001	5.24985	6.79242	7.48742	8.13095
3/4/2001	6.69844	8.35667	9.08963	9.86624
3/5/2001	6.71264	8.06922	8.77077	9.46335
3/6/2001	6.86972	8.1272	8.7319	9.34579
3/7/2001	7.5305	8.55981	9.14059	9.73816
3/8/2001	7.79185	8.77486	9.3824	10.0502
3/9/2001	6.70305	7.46825	8.04788	8.75602
3/10/2001	6.67542	7.41218	7.6935	8.44754
3/11/2001	6.71041	7.50744	7.84171	8.56651
3/12/2001	7.39573	8.26251	8.62535	9.29884
3/13/2001	7.68566	8.38067	8.68307	9.34713
3/14/2001	7.85363	8.88101	9.21738	9.93224
3/15/2001	7.25334	8.29213	8.66915	9.33697
3/16/2001	7.62486	8.76266	9.2712	9.85581
3/17/2001	8.27697	9.36992	9.88082	10.4381
3/18/2001	8.79386	9.74283	10.2428	10.6738
3/19/2001	9.34356	10.2561	10.6704	11.0073
3/20/2001	9.51832	10.4877	10.6935	11.0032
3/21/2001	10.1846	11.217	11.6264	12.0633
3/22/2001	9.76399	10.7324	11.1969	11.5333
3/23/2001	9.49474	10.3849	10.7675	10.8962
3/24/2001	9.3014	10.0985	10.2064	10.2877
3/25/2001	8.9236	9.96375	10.0694	10.4381
3/26/2001	9.27999	10.4356	10.8284	11.3649
3/27/2001	9.80961	11.0014	11.5782	12.2392
3/28/2001	9.8079	11.1433	11.8067	12.6303
3/29/2001	10.2351	12.2573	13.2894	14.2271
3/30/2001	11.7183	13.8741	15.0691	15.9393
3/31/2001	12.9348	15.2604	16.0699	16.8107
4/1/2001	12.9919	14.9505	15.8713	14.1172
4/2/2001	10.8965	12.5199	11.002	9.7326
4/3/2001	8.4348	7.16057	5.88337	5.94497
4/4/2001	8.65674	5.15575	4.99262	5.07228
4/5/2001	8.27153	5.89341	5.95946	6.06049
4/6/2001	7.2366	6.34086	6.62025	6.88547
4/7/2001	5.49539	6.4104	6.89431	7.3685
4/8/2001	4.81238	5.73059	6.27819	6.78485
4/9/2001	5.56378	6.55844	7.04334	7.52461
4/10/2001	6.98869	8.01591	8.51736	9.01614
4/11/2001	6.37182	7.52577	8.11465	8.69988
4/12/2001	6.98614	8.23557	8.83727	9.46148
4/13/2001	8.09892	9.18726	9.72182	10.3017

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
4/14/2001	8.5155	9.49972	10.0266	10.6122
4/15/2001	9.3612	10.265	10.7983	11.3371
4/16/2001	10.8102	11.7154	12.2409	12.6584
4/17/2001	11.4481	12.416	12.8421	13.2016
4/18/2001	10.8884	12.077	12.7111	12.9058
4/19/2001	7.95371	9.3091	9.77094	10.2839
4/20/2001	6.38289	7.82957	8.36921	8.92796
4/21/2001	6.23145	7.56156	8.12454	8.73
4/22/2001	7.79632	9.25491	10.0526	10.9163
4/23/2001	11.5361	13.1186	14.0057	14.8966
4/24/2001	12.8349	14.3739	15.3116	16.2765
4/25/2001	13.4156	15.0412	16.2774	17.7202
4/26/2001	14.017	15.7189	17.1607	18.0564
4/27/2001	11.7463	13.5677	14.3387	14.0638
4/28/2001	10.0578	11.2972	11.4036	11.4281
4/29/2001	9.35787	10.3889	10.6514	10.9095
4/30/2001	9.45757	10.2821	10.8366	11.2032
5/1/2001	10.244	11.1821	11.8925	12.513
5/2/2001	10.1792	11.3009	12.0179	12.802
5/3/2001	9.98194	11.1745	11.9118	12.5826
5/4/2001	9.66932	10.8407	11.6253	12.2944
5/5/2001	10.3405	11.3915	12.2078	12.929
5/6/2001	11.0331	11.9047	12.7101	13.4932
5/7/2001	13.9269	14.7852	15.4657	16.4767
5/8/2001	15.0065	15.9366	16.4877	17.7027
5/9/2001	15.951	16.955	17.5287	18.7571
5/10/2001	16.4621	17.6127	18.0991	19.503
5/11/2001	15.9905	17.3093	17.8293	18.8351
5/12/2001	16.6143	18.4856	18.823	18.6515
5/13/2001	17.131	18.365	19.2273	17.8491
5/14/2001	17.8512	16.5702	14.4959	13.3762
5/15/2001	17.9904	16.8219	14.6764	13.6729
5/16/2001	19.4932	21.162	21.8369	22.5879
5/17/2001	18.449	19.2965	19.8159	20.3969
5/18/2001	18.1953	19.379	18.6672	18.1366
5/19/2001	16.7545	13.0604	12.6557	12.4914
5/20/2001	15.8982	13.3119	13.0495	12.9461
5/21/2001	17.5377	12.0289	11.7129	11.544
5/22/2001	21.4928	14.7323	14.6972	14.7858
5/23/2001	20.6206	16.0882	16.2749	16.5658
5/24/2001	20.8985	17.47	17.7519	18.1206
5/25/2001	20.4062	20.1123	20.5276	21.0349
5/26/2001	19.697	14.7627	14.8621	15.0504
5/27/2001	17.5571	14.0216	14.1833	14.4589
5/28/2001	17.0565	14.4051	14.6559	15.0241
5/29/2001	18.1266	14.9176	15.1065	15.4059
5/30/2001	19.3741	16.0555	16.1348	16.3314
5/31/2001	20.2971	16.2769	16.2561	16.3554
6/1/2001	19.7169	16.4623	16.6824	17.0024
6/2/2001	18.4306	15.9112	16.3812	16.9065
6/3/2001	17.5126	16.2065	16.7866	17.4175

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
6/4/2001	17.455	15.1886	15.6967	16.2755
6/5/2001	16.7642	14.3147	14.8421	15.4356
6/6/2001	17.1053	13.6623	14.1233	14.6558
6/7/2001	17.8096	14.5641	14.9924	15.4959
6/8/2001	18.6116	15.3515	15.7861	16.2933
6/9/2001	18.459	15.5504	16.0303	16.5815
6/10/2001	18.0932	18.1887	18.8551	19.6013
6/11/2001	17.7673	18.3811	19.071	19.8387
6/12/2001	17.3306	15.339	15.921	16.5688
6/13/2001	17.7675	14.31	14.8338	15.412
6/14/2001	18.4623	14.3801	14.8481	15.38
6/15/2001	19.107	14.8373	15.2657	15.771
6/16/2001	19.3342	15.7333	16.1873	16.7481
6/17/2001	16.5884	15.3911	16.0215	16.8963
6/18/2001	17.6992	19.1551	19.9499	20.9106
6/19/2001	19.3222	18.5644	19.0306	19.6517
6/20/2001	20.4475	16.9113	17.3734	17.9141
6/21/2001	21.3405	16.8132	17.2718	17.8035
6/22/2001	20.2816	17.3991	17.8683	18.4128
6/23/2001	19.9709	20.6548	21.2927	21.996
6/24/2001	18.8874	19.8524	20.5188	21.2483
6/25/2001	18.413	20.0665	20.7435	21.5909
6/26/2001	17.3412	18.8965	19.6516	20.505
6/27/2001	12.7247	13.4554	13.9297	14.5112
6/28/2001	11.689	12.6641	13.2162	13.8589
6/29/2001	12.8213	13.8041	14.3544	14.9905
6/30/2001	14.9608	15.9878	16.5713	17.2661
7/1/2001	18.4935	20.1253	20.9826	22.0429
7/2/2001	18.1153	19.9117	20.8324	21.9888
7/3/2001	19.8714	20.8861	21.5235	22.303
7/4/2001	17.7539	18.6733	19.2326	19.8723
7/5/2001	16.9832	17.9231	18.4823	19.1183
7/6/2001	16.1969	17.225	17.7888	18.4451
7/7/2001	16.0514	17.2238	17.8874	18.6055
7/8/2001	18.0381	20.16	21.119	22.2798
7/9/2001	17.8315	19.9747	20.9642	22.1867
7/10/2001	18.1679	19.5906	20.3407	21.2116
7/11/2001	14.2877	15.5169	16.1397	16.8588
7/12/2001	13.6497	14.8639	15.481	16.1687
7/13/2001	13.6553	14.8518	15.457	16.1287
7/14/2001	14.6347	16.055	16.738	17.5233
7/15/2001	15.6875	17.8103	18.8044	20.0014
7/16/2001	14.0487	16.3102	17.3665	18.6298
7/17/2001	14.8275	16.4803	17.2653	18.1405
7/18/2001	13.2262	14.6012	15.2554	15.9659
7/19/2001	13.4442	14.8127	15.4604	16.168
7/20/2001	13.6805	15.0957	15.7681	16.4927
7/21/2001	13.9874	15.5531	16.2895	17.0846
7/22/2001	14.7552	17.1145	18.1223	19.3141
7/23/2001	16.1892	18.703	19.7568	21.0033
7/24/2001	16.5595	18.4055	19.1832	20.0951

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
7/25/2001	14.8213	16.3533	17.0176	17.7732
7/26/2001	15.3149	16.7915	17.4367	18.1632
7/27/2001	14.6403	15.8813	16.437	17.0566
7/28/2001	21.1404	22.6024	23.301	24.0302
7/29/2001	22.3312	24.0908	24.9334	25.8114
7/30/2001	17.9835	20.1367	21.0849	22.167
7/31/2001	15.0226	17.7548	18.8116	20.1562
8/1/2001	14.0071	17.0518	18.1372	19.6046
8/2/2001	14.1257	17.1548	18.4359	19.957
8/3/2001	16.7279	19.552	20.7905	22.1636
8/4/2001	17.9025	20.5556	21.7542	23.0341
8/5/2001	17.8762	20.5174	21.7027	22.9667
8/6/2001	18.9892	21.6018	22.702	23.9436
8/7/2001	20.3526	23.0016	24.0692	25.3513
8/8/2001	21.5329	24.1568	25.2339	26.421
8/9/2001	22.2264	24.8447	25.8973	27.1111
8/10/2001	20.7611	21.8484	22.2148	22.744
8/11/2001	12.3842	13.1593	13.5183	13.9206
8/12/2001	18.3627	20.2701	21.0932	22.0483
8/13/2001	15.8245	19.2431	20.4464	22.0958
8/14/2001	18.6354	21.5895	22.7357	24.1761
8/15/2001	17.9945	20.1209	20.9811	22.0317
8/16/2001	15.49	17.1923	17.912	18.783
8/17/2001	15.5367	17.2052	17.9132	18.7615
8/18/2001	17.0648	18.7368	19.4634	20.3141
8/19/2001	20.4682	22.3963	23.2222	24.1958
8/20/2001	19.7814	21.8938	22.7991	23.8551
8/21/2001	16.314	18.1751	18.9996	19.9261
8/22/2001	13.77	15.4313	16.1805	17.0202
8/23/2001	13.4523	15.0325	15.7563	16.5499
8/24/2001	13.5233	15.1243	15.8447	16.6522
8/25/2001	15.6988	17.3704	18.1147	18.9559
8/26/2001	19.3694	21.3163	22.1636	23.1213
8/27/2001	20.4823	22.5221	23.4004	24.402
8/28/2001	19.2375	21.2371	22.1103	23.0933
8/29/2001	16.7304	18.5303	19.3323	20.216
8/30/2001	15.4984	17.3055	18.1092	18.9885
8/31/2001	14.6024	16.3247	17.0993	17.9279
9/1/2001	15.4496	17.3645	18.2158	19.1155
9/2/2001	19.8547	22.374	23.4592	24.5904
9/3/2001	20.772	23.3903	24.5249	25.6583
9/4/2001	18.7876	20.9951	21.958	22.9012
9/5/2001	17.1962	19.3173	20.2549	21.1533
9/6/2001	18.2326	21.1106	22.3801	23.6164
9/7/2001	19.3847	21.9572	23.097	24.2018
9/8/2001	17.9451	20.9838	22.2522	23.4206
9/9/2001	16.1153	20.3348	21.862	23.0355
9/10/2001	16.2175	20.5836	22.0974	23.2264
9/11/2001	17.5276	21.1782	22.5212	23.5925
9/12/2001	18.5679	21.5987	22.7962	23.8203
9/13/2001	17.7978	20.8151	22.0413	23.0417

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
9/14/2001	18.4554	21.3757	22.5253	23.5225
9/15/2001	17.8188	21.5455	22.7974	23.7503
9/16/2001	17.0172	21.4241	22.6174	23.5775
9/17/2001	16.7322	21.3587	22.4658	23.4599
9/18/2001	17.9809	21.9892	23.0455	23.9913
9/19/2001	18.0401	21.9423	22.9895	23.8846
9/20/2001	17.8483	21.6901	22.8004	23.6861
9/21/2001	17.7809	21.8548	22.8543	23.7711
9/22/2001	17.2298	21.5493	22.5293	23.4585
9/23/2001	17.1962	21.8662	22.7638	23.6933
9/24/2001	16.9228	21.6582	22.5025	23.3944
9/25/2001	17.1972	21.4057	22.2616	23.1489
9/26/2001	17.4127	21.2251	22.1063	22.9864
9/27/2001	17.4022	21.1041	21.8924	22.7067
9/28/2001	17.0258	20.5824	21.3732	22.1532
9/29/2001	17.5367	21.0571	21.8257	22.5624
9/30/2001	18.3067	22.0666	22.7883	23.4769
10/1/2001	19.1045	22.9284	23.6551	24.3471
10/2/2001	19.816	23.4521	24.1926	24.8949
10/3/2001	21.1234	24.2651	25.0371	25.7753
10/4/2001	19.4725	22.4018	23.1305	23.823
10/5/2001	18.41	21.2201	21.9449	22.6331
10/6/2001	17.7874	20.5144	21.2476	21.9602
10/7/2001	17.6382	20.5727	21.3395	22.0272
10/8/2001	17.8416	20.7695	21.4533	22.1201
10/9/2001	17.8891	20.5005	21.204	21.8419
10/10/2001	17.919	20.2608	20.9315	21.554
10/11/2001	18.1173	20.2841	20.9429	21.546
10/12/2001	18.0496	20.1307	20.7772	21.3458
10/13/2001	18.5597	20.5891	21.2573	21.8804
10/14/2001	18.7589	20.821	21.4417	22.0053
10/15/2001	19.4227	21.5071	22.152	22.746
10/16/2001	19.4253	21.4801	22.1661	22.8142
10/17/2001	19.4465	21.3694	22.1107	22.817
10/18/2001	19.3425	21.206	21.9616	22.6844
10/19/2001	19.1658	20.9817	21.74	22.444
10/20/2001	19.3556	21.1546	21.932	22.6562
10/21/2001	17.9376	19.7812	20.624	21.4115
10/22/2001	17.6208	19.4874	20.3604	21.2043
10/23/2001	17.0513	18.9181	19.7837	20.6266
10/24/2001	16.7562	18.6086	19.4574	20.2876
10/25/2001	16.9152	18.7102	19.5288	20.3194
10/26/2001	17.8405	19.4842	20.2355	20.9239
10/27/2001	17.3966	19.0724	19.8253	20.5088
10/28/2001	16.835	18.4103	19.1293	19.6729
10/29/2001	15.5696	17.2967	18.1221	18.7964
10/30/2001	14.6774	16.4366	17.2769	18.0119
10/31/2001	14.0568	15.8208	16.654	17.4534
11/1/2001	13.9961	15.6806	16.4492	17.1322
11/2/2001	14.624	16.0559	16.6878	17.1801
11/3/2001	15.2141	16.6545	17.2924	17.7842

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
11/4/2001	15.8376	17.5024	18.2397	18.8492
11/5/2001	16.4921	18.1439	18.8737	19.4818
11/6/2001	15.8845	17.5675	18.3529	19.0397
11/7/2001	15.2645	16.9619	17.7462	18.4845
11/8/2001	15.6424	17.2637	18.0177	18.5304
11/9/2001	16.223	17.6638	18.3497	18.7345
11/10/2001	16.0933	17.4713	18.1563	18.531
11/11/2001	15.7602	17.1065	17.7454	18.0209
11/12/2001	14.7548	16.2389	16.9725	17.3744
11/13/2001	13.2165	14.4325	15.0056	14.9003
11/14/2001	12.9985	14.3602	14.9705	7.66038
11/15/2001	13.0447	14.5706	15.2153	6.52953
11/16/2001	13.2739	14.599	15.2752	7.89026
11/17/2001	13.2006	14.6753	15.3752	9.69192
11/18/2001	13.0035	14.3288	14.9286	10.669
11/19/2001	13.0669	14.4316	15.0875	9.33429
11/20/2001	11.1496	12.4787	13.0884	7.69227
11/21/2001	9.35915	10.6903	11.2881	8.05862
11/22/2001	9.94774	11.7195	12.622	13.3386
11/23/2001	9.08132	11.0384	11.9346	12.8741
11/24/2001	8.71399	10.5099	11.3858	12.152
11/25/2001	7.88598	9.71691	10.5175	10.8401
11/26/2001	6.74325	8.77254	9.44426	6.01372
11/27/2001	6.54093	8.14865	8.78526	4.58013
11/28/2001	6.31763	7.64036	8.41464	4.38837
11/29/2001	6.47593	8.01852	8.66421	5.75893
11/30/2001	5.79617	7.34187	7.92024	4.75304
12/1/2001	5.96782	7.65839	8.41995	6.98613
12/2/2001	6.69447	8.46116	9.34347	9.74074
12/3/2001	5.45417	7.47619	8.29335	8.66739
12/4/2001	4.64258	6.41672	7.35351	7.81512
12/5/2001	4.10018	5.70513	6.59296	7.37341
12/6/2001	5.58861	7.05475	7.83892	8.58493
12/7/2001	6.63827	7.92917	8.51029	9.34795
12/8/2001	7.16641	8.38008	8.86297	9.68445
12/9/2001	6.51161	7.83438	8.32596	9.28752
12/10/2001	5.03115	6.47094	7.09524	8.36387
12/11/2001	4.95699	6.43358	7.06599	8.22072
12/12/2001	4.8401	6.21746	6.8273	8.11997
12/13/2001	5.0712	6.26001	6.75271	8.10825
12/14/2001	5.11274	6.28242	6.9105	7.54019
12/15/2001	3.74004	5.29264	6.15944	7.01347
12/16/2001	4.16356	5.59794	6.35505	7.0931
12/17/2001	4.88358	6.4299	6.99207	7.78282
12/18/2001	4.67416	6.11133	6.58216	7.20375
12/19/2001	5.26172	6.6707	7.18708	7.85398
12/20/2001	5.14085	6.37619	6.99976	7.79842
12/21/2001	4.64816	5.98655	6.60963	7.34966
12/22/2001	4.74257	6.04369	6.69207	7.47157
12/23/2001	4.92103	6.22364	6.84159	7.56072
12/24/2001	5.0146	6.24613	6.82443	7.51484

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
12/25/2001	5.1462	6.23848	6.75258	7.32553
12/26/2001	5.86585	6.74998	7.14518	7.73911
12/27/2001	7.46258	7.70706	8.0976	8.71895
12/28/2001	6.76752	6.78551	7.14844	7.81326
12/29/2001	6.98387	7.49826	7.83116	8.4439
12/30/2001	6.65899	6.97519	7.39613	8.01303
12/31/2001	7.04403	7.39772	7.60561	8.15748
1/1/2002	6.96678	7.30842	7.4493	8.16674
1/2/2002	7.0533	7.68199	7.71399	8.77746
1/3/2002	6.50359	6.97123	7.12671	8.30999
1/4/2002	6.40871	6.8494	7.10475	8.24617
1/5/2002	6.80412	7.08905	7.49976	8.73571
1/6/2002	7.19155	7.33742	7.6496	8.94614
1/7/2002	7.15091	7.2655	7.52413	8.75009
1/8/2002	6.84273	6.94845	7.44732	8.43921
1/9/2002	6.34061	6.56121	7.13265	7.76218
1/10/2002	6.43914	6.54209	7.2143	7.62696
1/11/2002	6.61809	6.64898	7.45505	7.79634
1/12/2002	6.37883	6.76298	7.34373	7.6451
1/13/2002	5.91499	6.44289	7.6711	8.20353
1/14/2002	4.62909	5.32583	6.34696	6.93049
1/15/2002	4.15324	4.88705	5.98965	6.5891
1/16/2002	3.95207	4.85682	5.88864	6.46796
1/17/2002	4.0293	5.04202	6.11292	6.727
1/18/2002	4.15925	5.14149	6.25985	6.95076
1/19/2002	4.05723	5.01391	6.13879	6.86091
1/20/2002	4.32514	5.14039	6.17059	6.77823
1/21/2002	4.23688	5.10239	6.12894	6.769
1/22/2002	3.53754	4.36255	5.29335	5.86141
1/23/2002	3.45454	4.39733	5.38671	6.13579
1/24/2002	3.66748	4.67185	5.60767	6.30122
1/25/2002	4.09536	5.12483	6.06089	6.6823
1/26/2002	3.76028	4.98867	5.99039	6.64537
1/27/2002	3.21293	4.4171	5.33031	6.00734
1/28/2002	2.38898	3.68265	4.73538	5.38668
1/29/2002	1.92328	3.29217	3.99969	4.69424
1/30/2002	2.01746	3.57495	4.26309	4.69308
1/31/2002	1.66076	3.4274	4.2208	4.682
2/1/2002	2.58634	4.4558	5.44105	6.05888
2/2/2002	3.21537	5.10767	5.79628	6.75608
2/3/2002	4.34438	5.91025	6.788	7.75421
2/4/2002	4.63356	6.18527	7.22899	8.11362
2/5/2002	5.07636	6.58378	7.81405	8.63995
2/6/2002	4.97342	6.40508	7.65697	8.4526
2/7/2002	4.96743	6.4194	7.55395	8.26134
2/8/2002	5.30578	6.59035	7.38415	7.90317
2/9/2002	6.01058	7.32898	8.05223	8.76828
2/10/2002	6.45049	7.90566	8.7659	9.39213
2/11/2002	6.64811	7.86618	8.74058	9.22176
2/12/2002	6.67942	7.79539	8.77295	9.33785
2/13/2002	6.40921	7.82446	8.82941	9.42608

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
2/14/2002	6.84521	8.36541	9.36892	9.97289
2/15/2002	6.43382	8.04209	9.03373	9.63553
2/16/2002	6.56051	8.23414	9.23953	9.87466
2/17/2002	5.0396	6.57264	7.50273	8.11491
2/18/2002	4.95492	6.14244	7.03618	7.58956
2/19/2002	5.60918	6.93969	7.87808	8.55267
2/20/2002	6.9425	8.28949	9.21687	9.85107
2/21/2002	8.44205	9.55008	10.439	11.0598
2/22/2002	8.28527	8.7719	9.51054	9.9126
2/23/2002	7.94507	8.96214	9.71203	10.2613
2/24/2002	8.23389	9.76949	10.6136	11.3352
2/25/2002	9.027	10.7063	11.5571	12.3359
2/26/2002	8.71502	9.74132	10.5357	11.6061
2/27/2002	9.11325	10.3479	10.9172	12.3093
2/28/2002	9.16527	10.8932	11.7899	13.0782
3/1/2002	8.62078	10.784	11.7039	12.7639
3/2/2002	8.14754	10.8433	11.9899	12.8288
3/3/2002	7.65421	9.97384	10.9896	11.8144
3/4/2002	7.33782	9.67294	10.5882	11.2864
3/5/2002	7.25258	9.81937	10.7296	11.0971
3/6/2002	7.43216	9.81271	10.7949	11.1937
3/7/2002	6.19151	8.10006	9.16285	9.10807
3/8/2002	5.91306	7.12693	7.87554	7.33031
3/9/2002	6.13849	7.28856	7.53588	7.83994
3/10/2002	6.91655	7.93913	8.48484	8.93963
3/11/2002	7.79261	9.06688	9.60743	10.0785
3/12/2002	7.79842	9.59764	10.2358	10.8034
3/13/2002	6.20734	7.89627	8.57358	9.21546
3/14/2002	5.34985	6.82291	7.38343	7.97894
3/15/2002	4.56859	6.11931	6.80276	7.39945
3/16/2002	3.66241	4.94049	5.58551	6.16054
3/17/2002	2.98141	4.51264	5.2212	5.86693
3/18/2002	3.88458	5.56598	6.27242	6.91448
3/19/2002	5.29853	6.88023	7.46134	7.95174
3/20/2002	7.60169	9.03354	9.51948	9.88669
3/21/2002	9.20216	10.6475	11.0361	11.33
3/22/2002	8.48968	9.66813	10.0324	10.4168
3/23/2002	6.7675	7.66726	8.10916	8.57644
3/24/2002	6.54126	7.28559	7.82108	8.32162
3/25/2002	6.66594	7.73875	8.34373	8.94281
3/26/2002	7.63701	9.07898	9.73191	10.4252
3/27/2002	9.23448	10.6227	11.1583	11.6932
3/28/2002	10.734	11.9529	12.4285	12.94
3/29/2002	11.0778	12.2049	12.3783	12.9244
3/30/2002	11.2406	12.2116	12.0074	12.5534
3/31/2002	10.964	11.8253	11.8025	12.2586
4/1/2002	11.4421	11.7527	12.1189	12.4315
4/2/2002	12.0564	12.6356	12.8935	13.0208
4/3/2002	11.7381	12.4227	12.6078	12.6315
4/4/2002	11.0876	10.6799	10.9304	11.9693
4/5/2002	9.77468	9.39319	9.48701	10.3179

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
4/6/2002	9.59852	9.48243	9.57951	9.79443
4/7/2002	9.32554	9.9549	10.0663	10.3309
4/8/2002	9.6266	10.1692	10.2664	10.6863
4/9/2002	8.88354	9.39811	9.53128	10.1605
4/10/2002	9.37871	9.83405	10.0174	10.8488
4/11/2002	10.3233	10.5688	10.7345	11.7808
4/12/2002	11.2216	11.406	11.6275	12.8357
4/13/2002	12.028	11.9365	12.1391	13.5548
4/14/2002	12.1322	11.7879	12.0014	13.5888
4/15/2002	8.70937	8.74205	9.11221	10.6889
4/16/2002	5.85138	6.37231	6.77996	8.17822
4/17/2002	4.92358	5.87874	6.34714	7.66859
4/18/2002	4.76782	5.92168	6.41472	7.72246
4/19/2002	6.49583	7.55779	8.03383	9.18974
4/20/2002	7.73121	8.67836	9.10532	10.2354
4/21/2002	8.54413	9.42748	9.82089	10.9017
4/22/2002	10.1628	10.8848	11.2362	12.3301
4/23/2002	12.1218	12.9571	13.3377	14.523
4/24/2002	11.5048	12.7745	13.1845	14.6508
4/25/2002	10.8612	11.7193	12.0854	13.2372
4/26/2002	9.24914	10.5297	10.949	12.1031
4/27/2002	7.40569	8.94004	9.53681	10.7297
4/28/2002	6.57049	7.94783	8.71196	10.1193
4/29/2002	6.06929	7.58234	8.41694	9.75368
4/30/2002	5.6949	7.10601	7.94258	8.86802
5/1/2002	6.23533	7.32569	8.24922	9.02865
5/2/2002	7.798	8.87889	9.99657	10.7918
5/3/2002	10.1376	11.1873	12.5404	13.3452
5/4/2002	11.6757	12.914	14.2794	14.989
5/5/2002	12.5272	14.0756	14.9222	15.6516
5/6/2002	12.3325	14.1067	15.0552	15.8724
5/7/2002	12.0848	13.9439	15.3551	16.2181
5/8/2002	12.8259	13.5042	15.5515	15.9911
5/9/2002	12.0661	12.2089	14.8128	14.2479
5/10/2002	10.1456	10.9513	12.7464	12.4543
5/11/2002	10.7216	11.4396	12.6555	12.7293
5/12/2002	12.594	12.826	14.1753	13.9963
5/13/2002	15.4123	16.7052	17.7687	18.2557
5/14/2002	16.137	17.9407	18.7704	19.5937
5/15/2002	16.4664	18.3278	19.1234	19.9666
5/16/2002	17.7792	19.7586	20.6048	21.5309
5/17/2002	17.2485	19.6649	20.4619	21.3785
5/18/2002	15.5872	18.3079	19.1022	20.0805
5/19/2002	13.3097	15.6087	16.0968	17.3749
5/20/2002	10.0442	11.7056	12.8454	13.566
5/21/2002	9.45086	11.686	12.6133	13.4922
5/22/2002	10.3891	12.7394	13.55	14.5345
5/23/2002	11.7086	14.0228	14.8568	15.771
5/24/2002	11.574	13.4349	14.2465	14.8983
5/25/2002	12.8901	14.4744	15.2651	15.9187
5/26/2002	13.515	15.0259	15.7923	16.4841

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
5/27/2002	13.9007	15.4623	15.9643	16.1691
5/28/2002	14.4617	14.6672	14.719	14.0584
5/29/2002	14.3339	12.2618	11.941	12.1236
5/30/2002	13.2761	12.7393	12.2425	12.3881
5/31/2002	14.2003	14.1193	13.5433	13.7042
6/1/2002	13.8446	14.2872	13.8156	14.1345
6/2/2002	12.8994	13.7973	13.439	13.9326
6/3/2002	13.7424	14.924	14.8213	15.4692
6/4/2002	15.183	16.5547	17.0598	17.8076
6/5/2002	16.8485	18.1812	18.6798	19.3796
6/6/2002	16.8507	18.1179	18.578	19.1461
6/7/2002	15.0971	16.2551	16.5601	17.2269
6/8/2002	14.0851	15.3407	15.8182	16.5339
6/9/2002	14.3646	15.7838	16.4262	17.2116
6/10/2002	14.8003	16.327	17.1025	17.9107
6/11/2002	15.8297	17.5542	18.208	18.9092
6/12/2002	16.2574	17.9743	17.6243	18.0573
6/13/2002	16.5443	16.9755	15.5569	16.0848
6/14/2002	16.6343	14.6116	14.9295	15.4822
6/15/2002	16.9912	14.4103	14.8978	15.4529
6/16/2002	16.981	14.6676	15.2013	15.7936
6/17/2002	17.3311	13.9212	14.4114	14.9387
6/18/2002	17.8182	13.848	14.3246	14.83
6/19/2002	18.2709	14.5299	15.0342	15.5682
6/20/2002	18.0276	14.2905	14.8097	15.3569
6/21/2002	17.1128	13.1714	13.686	14.2267
6/22/2002	17.0605	12.347	12.833	13.3407
6/23/2002	17.7335	12.3174	12.7577	13.2239
6/24/2002	18.422	13.0838	13.5233	13.9908
6/25/2002	19.0159	13.1022	13.5124	13.9565
6/26/2002	19.4513	13.9608	14.4065	14.8856
6/27/2002	19.4854	14.9539	15.4716	16.015
6/28/2002	19.6614	15.8285	16.4118	17.0165
6/29/2002	20.0698	16.0815	16.6605	17.2566
6/30/2002	20.5048	16.6084	17.1819	17.7736
7/1/2002	20.42	17.2097	17.7712	18.3453
7/2/2002	21.9132	19.7156	20.3086	20.9026
7/3/2002	22.2954	19.2584	19.7868	20.3077
7/4/2002	21.5755	21.1666	21.8128	22.4257
7/5/2002	20.5833	18.0107	18.6838	19.3404
7/6/2002	20.1669	17.9334	18.6231	19.3174
7/7/2002	20.3131	18.8351	19.5625	20.2953
7/8/2002	20.4929	18.9209	19.6268	20.3397
7/9/2002	21.1601	19.1811	19.8553	20.5366
7/10/2002	22.3488	20.315	20.9816	21.6664
7/11/2002	23.2131	20.5963	21.229	21.8978
7/12/2002	23.5848	19.074	19.6231	20.2029
7/13/2002	23.8737	20.2966	20.9197	21.5839
7/14/2002	23.6505	19.2304	19.8406	20.4867
7/15/2002	23.1153	17.667	18.2314	18.8237
7/16/2002	21.6431	17.2015	17.8145	18.4563

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
7/17/2002	21.3047	20.9211	21.639	22.3911
7/18/2002	22.0681	22.4904	23.2699	24.0742
7/19/2002	24.9207	26.5427	27.4898	28.456
7/20/2002	19.9943	20.7592	21.6514	22.649
7/21/2002	19.0603	20.5402	21.5204	22.7108
7/22/2002	17.8306	19.554	20.6156	21.8926
7/23/2002	18.1429	19.997	21.0647	22.2229
7/24/2002	18.3336	20.1905	21.2639	22.3305
7/25/2002	18.9674	18.8624	19.4779	20.1036
7/26/2002	16.8511	18.1657	18.948	19.7471
7/27/2002	16.6329	18.0658	18.87	19.6935
7/28/2002	17.7376	19.4275	20.4837	21.5222
7/29/2002	18.9859	20.8945	22.0216	23.1365
7/30/2002	18.2155	19.7786	20.6352	21.5306
7/31/2002	16.283	17.6579	18.4013	19.2074
8/1/2002	16.0088	17.3702	18.0991	18.8771
8/2/2002	15.6266	16.964	17.6841	18.4391
8/3/2002	14.7565	16.1065	16.8419	17.6095
8/4/2002	16.3769	18.1629	19.1103	20.1055
8/5/2002	15.8934	17.7168	18.6871	19.7091
8/6/2002	13.9772	15.5419	16.3711	17.2515
8/7/2002	12.5601	13.7927	14.446	15.1414
8/8/2002	12.6665	13.8443	14.4726	15.1471
8/9/2002	12.8536	13.9255	14.5068	15.1346
8/10/2002	11.7816	12.5795	13.0172	13.4842
8/11/2002	12.7598	13.5656	13.9974	14.4668
8/12/2002	18.802	20.0278	20.6829	21.3682
8/13/2002	19.1411	20.4219	21.1033	21.8092
8/14/2002	26.3808	28.1793	29.0911	30.0194
8/15/2002	24.9624	26.6741	27.586	28.5398
8/16/2002	19.0156	20.8877	21.9725	23.2708
8/17/2002	19.8228	21.9458	23.1113	24.4249
8/18/2002	17.1696	19.4238	20.7228	22.2031
8/19/2002	16.7573	19.0258	20.3627	21.8446
8/20/2002	17.9283	20.3284	21.5245	22.8251
8/21/2002	17.7234	18.8835	19.7904	20.7535
8/22/2002	14.8117	15.4762	16.3284	17.239
8/23/2002	14.5633	16.0683	17.011	18.0323
8/24/2002	16.3054	18.2761	19.3619	20.5759
8/25/2002	16.6244	18.9068	20.0593	21.3747
8/26/2002	17.6529	19.9458	21.1996	22.5997
8/27/2002	18.946	20.9354	22.0745	23.3332
8/28/2002	18.6034	20.5901	21.6433	22.8542
8/29/2002	18.7966	20.8099	21.882	23.1152
8/30/2002	17.4865	19.29	20.2445	21.3281
8/31/2002	17.4873	19.2677	20.2218	21.3064
9/1/2002	17.0746	18.7815	19.6967	20.786
9/2/2002	18.5919	20.3972	21.369	22.5134
9/3/2002	18.2935	20.0359	20.9629	22.0858
9/4/2002	19.6302	21.4256	22.382	23.48
9/5/2002	18.0134	19.8609	20.8333	21.9296

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
9/6/2002	17.9547	19.9304	20.929	21.9681
9/7/2002	15.7582	17.7239	18.7463	19.8932
9/8/2002	14.2919	16.4929	17.7871	19.3065
9/9/2002	15.0828	17.3404	18.6258	20.1767
9/10/2002	16.339	18.6538	19.983	21.5788
9/11/2002	17.3809	19.7905	21.1667	22.8218
9/12/2002	18.3743	20.7497	22.0853	23.711
9/13/2002	19.2003	21.5536	22.852	24.397
9/14/2002	19.6454	21.9648	23.2306	24.7903
9/15/2002	19.2575	21.4863	22.5752	23.8882
9/16/2002	17.1653	18.7975	19.8848	21.1302
9/17/2002	15.8619	17.8302	18.9622	20.3214
9/18/2002	16.3095	18.3593	19.5203	20.8568
9/19/2002	16.9049	18.8745	20.0284	21.3437
9/20/2002	17.5069	19.9363	21.5214	23.2637
9/21/2002	18.0415	20.1954	21.5219	23.0186
9/22/2002	18.4205	20.4707	21.6607	23.0502
9/23/2002	18.6479	20.5179	21.6447	22.9305
9/24/2002	18.588	20.6028	21.805	23.1718
9/25/2002	17.0377	18.8288	19.9208	21.1403
9/26/2002	19.2119	21.2929	22.5511	24.0622
9/27/2002	15.8618	17.6482	18.7366	19.897
9/28/2002	14.397	16.4129	17.6584	18.9754
9/29/2002	12.4399	14.5426	15.8742	17.3113
9/30/2002	13.9638	16.4376	18.1687	19.8538
10/1/2002	14.1907	16.5766	18.0632	19.5199
10/2/2002	13.6046	15.8666	17.1743	18.3685
10/3/2002	13.353	15.8719	17.4449	18.8785
10/4/2002	13.834	16.3703	17.9358	19.245
10/5/2002	15.3206	17.9477	19.602	20.8416
10/6/2002	16.4158	19.0882	20.7569	21.945
10/7/2002	16.492	19.35	21.194	22.393
10/8/2002	16.2608	19.2193	21.1159	22.2904
10/9/2002	16.63	19.5446	21.33	22.3538
10/10/2002	16.8236	19.6141	21.2247	22.2294
10/11/2002	15.8824	18.5857	20.1123	21.0783
10/12/2002	15.3956	18.1519	19.687	20.7102
10/13/2002	15.6057	18.4727	20.0108	21.0139
10/14/2002	16.4274	19.3211	20.8363	21.739
10/15/2002	16.5785	19.352	20.7598	21.6403
10/16/2002	16.1964	18.7994	20.1036	21.0594
10/17/2002	14.9485	17.6866	18.9937	19.9089
10/18/2002	14.3267	17.2006	18.5752	19.3804
10/19/2002	14.4288	17.3211	18.6874	19.4465
10/20/2002	14.6726	17.7139	19.0581	19.7778
10/21/2002	14.8721	17.8016	19.0427	19.7818
10/22/2002	14.5131	17.4994	18.6861	19.4056
10/23/2002	13.9397	16.7551	17.8666	18.6103
10/24/2002	13.6467	16.3626	17.4142	18.1518
10/25/2002	13.4251	16.1358	17.1271	17.8081
10/26/2002	13.6066	16.435	17.4588	18.0853

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
10/27/2002	13.8128	16.7004	17.5014	18.1061
10/28/2002	13.7891	16.4714	17.1922	17.9019
10/29/2002	13.7688	16.4544	17.1946	17.8456
10/30/2002	13.4064	15.9764	16.764	17.4142
10/31/2002	13.2097	15.7877	16.5049	17.1331
11/1/2002	12.6578	15.045	15.8362	16.5069
11/2/2002	12.5482	14.9175	15.6809	16.3548
11/3/2002	12.7197	15.0137	15.7933	16.429
11/4/2002	12.7247	14.9955	15.7258	16.5197
11/5/2002	12.9684	15.2068	15.9292	16.8193
11/6/2002	13.1387	15.3577	16.0552	16.6064
11/7/2002	13.0543	15.2016	15.9662	13.3187
11/8/2002	11.676	13.7676	14.5828	12.0931
11/9/2002	9.79058	11.7484	12.7406	13.2736
11/10/2002	9.50376	11.4652	12.4484	13.2037
11/11/2002	9.6309	11.4926	12.4637	13.4888
11/12/2002	10.4827	12.3926	13.2872	14.1522
11/13/2002	11.414	13.3035	14.1562	15.051
11/14/2002	11.5533	13.4192	14.2393	15.2587
11/15/2002	12.3373	14.0217	14.7456	15.7016
11/16/2002	12.1332	13.765	14.4705	15.663
11/17/2002	12.1726	13.7972	14.4607	15.8239
11/18/2002	11.4419	13.0439	13.6513	14.0371
11/19/2002	11.2134	12.6973	13.2086	10.4662
11/20/2002	12.1833	13.5491	14.083	11.5683
11/21/2002	12.6695	14.0106	14.7024	12.1261
11/22/2002	12.4302	13.6742	14.4787	14.0599
11/23/2002	12.1937	13.5851	14.4829	12.5308
11/24/2002	11.7542	13.3538	14.2643	11.5706
11/25/2002	11.617	13.3568	14.3216	14.6522
11/26/2002	11.2654	13.1028	14.1025	13.2772
11/27/2002	11.1548	13.1669	14.1864	11.4391
11/28/2002	9.3988	11.8674	12.316	10.9453
11/29/2002	9.00712	11.2172	12.3607	12.5654
11/30/2002	9.14881	11.2788	12.0404	11.0682
12/1/2002	8.48624	10.6345	10.6801	9.6325
12/2/2002	8.56805	10.757	10.3156	9.55977
12/3/2002	8.46395	10.7046	9.07889	9.30674
12/4/2002	8.1095	10.4478	8.6801	9.278
12/5/2002	8.48173	10.8418	9.48878	9.80828
12/6/2002	8.48142	10.7216	9.10951	9.71053
12/7/2002	9.37838	11.6104	10.0183	10.3906
12/8/2002	7.30854	9.32139	8.7913	9.38766
12/9/2002	8.29633	11.1389	8.67508	9.08668
12/10/2002	8.20954	10.6001	8.48394	8.77062
12/11/2002	8.11607	10.421	9.72822	8.88415
12/12/2002	7.91303	10.5204	9.26284	9.79935
12/13/2002	8.07376	10.3095	9.95356	10.4858
12/14/2002	8.61622	10.7021	10.7007	11.4649
12/15/2002	8.01514	9.79192	8.75939	9.46043
12/16/2002	7.129	8.3753	8.4303	9.17154

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
12/17/2002	4.53094	6.5414	7.4897	8.30903
12/18/2002	2.96792	4.83187	6.43112	7.75934
12/19/2002	4.42126	6.19199	7.1412	7.93781
12/20/2002	3.8858	5.71702	6.66818	7.59249
12/21/2002	3.77851	5.74541	6.65212	7.59265
12/22/2002	3.56441	5.312	6.21765	7.0107
12/23/2002	3.56062	5.24262	6.07504	6.8674
12/24/2002	3.13326	4.59722	5.27954	6.19328
12/25/2002	3.52078	4.78792	5.41366	6.33062
12/26/2002	4.94181	6.15748	6.82956	7.78377
12/27/2002	6.50712	7.81726	8.57786	9.30114
12/28/2002	7.17562	8.793	9.62356	9.98928
12/29/2002	4.93633	6.64779	7.51365	8.08788
12/30/2002	4.44212	6.07452	6.89888	7.5255
12/31/2002	5.0701	6.39747	7.27088	7.87859
1/1/2003	5.0096	5.98793	6.75584	7.25782
1/2/2003	5.76415	6.50863	7.26255	7.53987
1/3/2003	7.03071	7.73794	8.28614	8.37584
1/4/2003	7.60829	8.49909	8.51085	8.61388
1/5/2003	8.16858	9.20871	9.02137	9.19646
1/6/2003	8.35295	9.51091	9.21154	9.4905
1/7/2003	8.15131	9.2361	8.87086	9.31023
1/8/2003	7.75258	9.21801	8.50189	8.95601
1/9/2003	6.97334	8.04007	7.52917	8.12157
1/10/2003	6.85271	7.70576	7.64602	8.2735
1/11/2003	7.22637	8.18102	8.09973	8.71679
1/12/2003	6.72901	8.00383	7.47301	7.9593
1/13/2003	6.69181	7.85417	7.44439	7.84453
1/14/2003	6.73616	7.42064	7.46608	7.94382
1/15/2003	6.62547	7.2848	7.4606	7.96617
1/16/2003	6.44384	6.86139	6.91209	7.50344
1/17/2003	6.52656	6.86706	6.95335	7.52211
1/18/2003	6.73092	7.13036	7.16732	7.6544
1/19/2003	6.86694	7.18028	7.36609	7.76188
1/20/2003	6.77474	7.10988	7.36186	7.68926
1/21/2003	6.49248	6.83817	7.15343	7.54327
1/22/2003	6.77339	7.07194	7.44269	7.92583
1/23/2003	6.83853	7.0863	7.53501	8.00342
1/24/2003	6.46231	6.75136	7.31942	7.84135
1/25/2003	6.52288	6.711	7.28038	7.78939
1/26/2003	6.70247	7.12296	7.69321	8.24592
1/27/2003	6.58045	7.08148	7.65226	8.24058
1/28/2003	7.13582	7.89242	8.36757	9.17198
1/29/2003	6.27753	7.13413	7.6651	8.38099
1/30/2003	6.30011	7.19602	7.67493	8.38104
1/31/2003	6.28511	7.16022	7.59359	8.16815
2/1/2003	5.79181	6.86492	7.38346	7.93318
2/2/2003	5.47134	6.72086	7.28027	7.83471
2/3/2003	5.07448	6.39632	6.98165	7.64871
2/4/2003	5.24517	6.5601	7.13863	7.89417
2/5/2003	5.09517	6.46726	7.06309	7.91039

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
2/6/2003	4.89098	6.20838	6.76819	7.59644
2/7/2003	5.02483	6.34728	6.89585	7.76259
2/8/2003	4.77211	5.99165	6.49917	7.4233
2/9/2003	4.90711	5.96513	6.42766	7.36948
2/10/2003	5.55393	6.53942	6.98397	7.92456
2/11/2003	5.8036	6.74884	7.30668	8.18632
2/12/2003	5.96166	6.85749	7.42366	8.33373
2/13/2003	6.69558	7.63651	8.2758	9.18219
2/14/2003	6.99547	8.0165	8.82039	9.88057
2/15/2003	7.63074	8.86121	9.87537	10.4655
2/16/2003	7.89069	9.30752	10.3858	11.1757
2/17/2003	7.06586	8.58188	9.69421	10.3825
2/18/2003	6.48874	7.81131	8.74999	9.08913
2/19/2003	5.18672	6.41679	7.2007	7.86796
2/20/2003	5.66905	6.87027	7.64047	8.17169
2/21/2003	5.92284	7.08624	7.74319	8.3783
2/22/2003	6.29705	7.36653	8.00399	8.60194
2/23/2003	6.43717	7.4547	8.01742	8.79946
2/24/2003	5.97503	6.98631	7.49266	8.43158
2/25/2003	6.32882	7.41914	7.96214	8.84252
2/26/2003	5.66689	6.73741	7.25273	8.18692
2/27/2003	5.15764	6.08228	6.58003	7.82141
2/28/2003	5.00273	6.03477	6.62914	7.6514
3/1/2003	5.64051	6.76326	7.22783	8.00984
3/2/2003	6.01784	7.13923	7.70927	8.21707
3/3/2003	5.58122	6.6994	7.29731	7.91403
3/4/2003	5.32918	6.39643	6.95085	7.88784
3/5/2003	5.61178	6.72452	7.34335	8.04092
3/6/2003	6.05476	7.16696	7.795	8.2512
3/7/2003	6.60079	7.78279	8.46503	8.8638
3/8/2003	7.21203	8.47336	9.22867	9.66511
3/9/2003	7.56584	8.78691	9.56303	10.0423
3/10/2003	7.80015	8.8925	9.65026	10.1381
3/11/2003	8.18115	9.25484	10.0178	10.6112
3/12/2003	8.12353	9.08335	9.77602	10.4019
3/13/2003	8.15347	9.0942	9.95566	10.2097
3/14/2003	9.90887	11.1786	11.9908	12.628
3/15/2003	9.6749	11.2824	12.5446	12.5608
3/16/2003	8.22151	9.35428	8.70343	8.92731
3/17/2003	7.77356	8.57422	7.38871	7.87914
3/18/2003	7.51052	7.92427	8.02992	8.61535
3/19/2003	7.93357	8.09366	8.34546	8.88994
3/20/2003	8.01285	8.84039	9.1254	9.69955
3/21/2003	8.68558	9.5866	9.88768	10.448
3/22/2003	9.21233	10.0249	10.2889	10.7947
3/23/2003	8.59875	9.45701	9.75209	10.2128
3/24/2003	9.14763	10.1552	10.4569	10.8119
3/25/2003	9.60379	10.3584	10.5471	10.7179
3/26/2003	9.5887	10.3719	10.493	10.7596
3/27/2003	9.00846	10.1709	10.3523	10.6666
3/28/2003	9.22541	10.2958	10.5278	10.7964

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
3/29/2003	10.1305	10.8143	11.0284	11.1157
3/30/2003	12.2331	12.7459	12.8409	12.8967
3/31/2003	13.2138	14.0044	13.5569	13.6225
4/1/2003	9.83739	10.9076	10.9004	11.2589
4/2/2003	6.10779	7.39169	7.72608	8.20583
4/3/2003	4.54323	5.89273	6.23466	6.57403
4/4/2003	4.06727	5.35068	5.76519	6.14048
4/5/2003	4.51936	5.98405	6.49527	6.92179
4/6/2003	6.13888	7.71791	8.26033	8.69629
4/7/2003	8.00984	9.74942	10.2245	10.5826
4/8/2003	9.69466	11.4468	11.861	12.1354
4/9/2003	11.1301	12.6307	13.1439	13.4771
4/10/2003	10.5434	11.945	12.2868	12.5777
4/11/2003	9.88768	11.0448	10.9422	11.3045
4/12/2003	9.45383	10.5492	10.6537	11.1982
4/13/2003	8.14973	8.71443	9.07541	9.68412
4/14/2003	6.79273	6.9466	7.1114	7.48278
4/15/2003	6.50728	7.34085	7.6992	8.18862
4/16/2003	6.96635	8.15342	8.52773	8.98372
4/17/2003	7.60129	8.77036	9.10038	9.4928
4/18/2003	7.66366	8.86596	9.25403	9.69677
4/19/2003	8.22969	9.27628	9.62929	10.0268
4/20/2003	8.65789	9.49217	9.78217	10.0895
4/21/2003	7.92346	9.36391	9.90464	10.4931
4/22/2003	7.58868	8.99497	9.53183	10.1053
4/23/2003	9.00512	10.7483	11.5668	12.4067
4/24/2003	7.3576	9.40542	10.2393	11.0321
4/25/2003	7.12774	9.19447	10.0007	10.7509
4/26/2003	6.59664	8.43856	9.22248	9.95694
4/27/2003	7.17843	9.01028	9.83546	10.6698
4/28/2003	6.92548	8.92413	9.83625	10.9195
4/29/2003	6.62718	8.55173	9.35533	10.5004
4/30/2003	6.80702	8.6508	9.40726	10.3289
5/1/2003	7.13187	8.77165	9.42506	10.1944
5/2/2003	8.12092	9.67872	10.4476	11.2126
5/3/2003	8.37436	9.90123	10.959	11.7621
5/4/2003	7.61533	8.90357	9.86672	10.6832
5/5/2003	7.91263	9.05749	9.93198	10.6457
5/6/2003	8.41131	9.84652	10.4847	11.1422
5/7/2003	8.51309	9.87449	10.4765	11.0436
5/8/2003	7.81778	9.31105	10.0121	10.6468
5/9/2003	6.35768	7.70152	8.36481	8.97076
5/10/2003	6.86492	7.99511	8.59409	9.17504
5/11/2003	7.83009	8.86887	9.42769	9.80857
5/12/2003	8.9594	9.9871	10.4996	10.9501
5/13/2003	10.6706	11.7922	12.2474	12.7311
5/14/2003	11.6374	12.8805	13.3028	13.8675
5/15/2003	11.7311	13.1129	13.5579	14.2308
5/16/2003	11.6355	12.9432	13.3903	14.096
5/17/2003	12.1009	13.4877	14.0212	14.713
5/18/2003	12.2618	13.8031	14.3166	15.0693

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
5/19/2003	12.881	14.4527	14.8059	15.627
5/20/2003	13.6453	15.2571	15.4367	16.2731
5/21/2003	14.8026	16.405	16.3148	17.3181
5/22/2003	15.6426	17.1751	17.137	18.1661
5/23/2003	15.9499	17.0704	17.2218	18.3633
5/24/2003	15.9521	16.7707	17.262	18.7141
5/25/2003	15.1942	15.8956	16.7433	18.339
5/26/2003	14.3456	15.1721	16.3489	17.6458
5/27/2003	14.4861	15.8272	16.9497	17.6926
5/28/2003	14.9129	16.7997	17.8103	18.2857
5/29/2003	14.9393	17.2878	18.3113	17.5165
5/30/2003	14.4882	16.9539	18.0903	16.1381
5/31/2003	13.7402	16.6351	17.7864	15.7602
6/1/2003	13.0161	16.4291	17.3649	16.0981
6/2/2003	11.714	14.8725	15.2803	15.1711
6/3/2003	10.0023	12.8009	12.753	12.6875
6/4/2003	9.56812	12.0607	11.9636	11.9484
6/5/2003	9.13138	11.512	11.437	11.6316
6/6/2003	9.18464	11.4696	11.4422	11.7794
6/7/2003	9.18146	11.4353	11.4719	11.9178
6/8/2003	9.5622	11.7764	11.8676	12.3987
6/9/2003	9.96241	12.1355	12.3172	12.9523
6/10/2003	9.73576	11.7191	11.9721	12.6879
6/11/2003	10.2672	11.9695	12.3169	13.1536
6/12/2003	11.4573	13.0757	13.5209	14.5166
6/13/2003	12.3527	13.9129	14.4914	15.5216
6/14/2003	13.6441	15.3014	16.0059	16.9349
6/15/2003	14.6727	16.3784	17.1444	17.9872
6/16/2003	14.9307	16.5667	17.4342	18.6512
6/17/2003	15.8548	17.2606	18.1447	19.5272
6/18/2003	15.84	17.2726	18.1008	19.546
6/19/2003	15.1175	16.7011	17.5464	19.0447
6/20/2003	14.7258	16.4026	17.3916	18.7628
6/21/2003	14.6445	16.5719	17.6452	18.6704
6/22/2003	14.7942	16.9899	18.1454	18.9672
6/23/2003	14.7702	17.3082	18.3711	19.0517
6/24/2003	15.5645	18.3418	18.4969	19.1074
6/25/2003	16.7188	18.632	17.4636	16.8735
6/26/2003	18.1168	18.11	15.8093	16.3126
6/27/2003	19.6864	17.2447	17.2053	17.8548
6/28/2003	20.6393	17.8156	18.003	18.6636
6/29/2003	20.2067	16.6591	16.8842	17.5636
6/30/2003	19.2993	15.3531	15.6583	16.3664
7/1/2003	18.3504	16.0181	16.5684	17.3684
7/2/2003	17.1013	16.7969	17.7507	18.6413
7/3/2003	17.739	16.1554	16.892	17.6801
7/4/2003	18.3694	17.7058	18.4472	19.2419
7/5/2003	19.9346	21.4739	22.447	23.4943
7/6/2003	19.4935	21.0711	22.0904	23.1677
7/7/2003	17.0277	17.8537	18.9448	20.0995
7/8/2003	18.2989	19.9571	21.0209	22.1554

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
7/9/2003	18.9674	21.3611	22.4509	23.5867
7/10/2003	18.9155	20.8652	22.1087	23.4299
7/11/2003	18.3604	20.0147	21.2961	22.7135
7/12/2003	17.7584	19.2363	20.5475	22.3117
7/13/2003	17.3271	19.2479	20.5567	21.9088
7/14/2003	16.924	18.6041	19.9277	21.3427
7/15/2003	18.5484	19.9253	21.182	22.4879
7/16/2003	18.8822	20.5251	21.7635	23.0468
7/17/2003	20.6972	22.4677	23.7484	24.9742
7/18/2003	15.7481	16.663	17.7443	18.8456
7/19/2003	18.2732	19.8115	20.9798	22.1448
7/20/2003	16.9789	19.0494	20.5062	22.0528
7/21/2003	19.0098	21.1009	22.4637	23.8958
7/22/2003	20.6995	22.6343	23.917	25.2619
7/23/2003	21.7125	23.72	24.967	26.279
7/24/2003	21.8847	24.085	25.4009	26.806
7/25/2003	21.3406	23.627	24.9814	26.3943
7/26/2003	21.5133	23.764	25.128	26.5047
7/27/2003	21.6312	23.8837	25.2499	26.6291
7/28/2003	22.2656	24.5301	25.8945	27.2531
7/29/2003	22.3605	24.5613	25.954	27.3041
7/30/2003	22.1575	24.4003	25.8084	27.192
7/31/2003	21.5479	23.8074	25.2497	26.6283
8/1/2003	20.4602	22.7456	24.1768	25.5515
8/2/2003	19.4081	21.8477	23.2437	24.6007
8/3/2003	18.697	21.1152	22.5174	23.8526
8/4/2003	18.3804	20.7446	22.2066	23.5567
8/5/2003	18.8872	21.2413	22.607	23.9063
8/6/2003	18.0784	20.3632	21.7089	22.9531
8/7/2003	17.9839	20.2167	21.5422	22.7344
8/8/2003	18.2294	20.4769	21.7818	22.9159
8/9/2003	18.6297	20.8803	22.1801	23.3352
8/10/2003	18.8701	21.1735	22.478	23.6219
8/11/2003	18.7398	21.1849	22.5705	23.7805
8/12/2003	17.8173	20.4102	21.877	23.2092
8/13/2003	17.8714	20.4211	21.8869	23.1967
8/14/2003	18.3885	20.5985	22.0438	23.3398
8/15/2003	21.2667	22.8605	23.8327	24.7631
8/16/2003	15.1745	16.9634	18.3253	19.5179
8/17/2003	17.3411	19.4937	20.9005	22.1773
8/18/2003	19.3566	21.6983	23.0887	24.3413
8/19/2003	20.1469	22.5384	23.9243	25.2267
8/20/2003	20.7836	23.1853	24.6016	25.9266
8/21/2003	20.3842	22.7957	24.2438	25.5899
8/22/2003	20.1117	22.6028	24.0302	25.4022
8/23/2003	19.3336	21.8404	23.2646	24.659
8/24/2003	19.4926	22.072	23.5541	24.9988
8/25/2003	20.0043	22.6179	24.2408	25.749
8/26/2003	19.5866	22.4939	24.243	25.8659
8/27/2003	20.4989	23.0262	24.6226	26.13
8/28/2003	20.5011	23.1407	24.6908	26.1436

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
8/29/2003	20.117	22.7273	24.2753	25.6766
8/30/2003	20.0712	22.6325	24.1523	25.5583
8/31/2003	20.0701	22.7199	24.2672	25.6463
9/1/2003	20.8598	23.7055	25.2713	26.533
9/2/2003	21.6212	24.3953	26.0203	27.2637
9/3/2003	20.8979	23.8892	25.7549	26.963
9/4/2003	22.3249	24.8301	26.2991	27.3585
9/5/2003	20.2885	22.8244	24.6475	25.8123
9/6/2003	20.5367	23.1018	24.7687	25.8524
9/7/2003	19.6074	22.491	24.147	25.2832
9/8/2003	18.5204	21.5218	23.1941	24.2915
9/9/2003	17.3957	20.2313	21.7928	22.8643
9/10/2003	17.3332	20.0159	21.5051	22.5371
9/11/2003	17.4291	20.5454	22.3759	23.3443
9/12/2003	17.5752	21.0975	23.1661	24.0677
9/13/2003	17.6793	21.4279	23.5591	24.4628
9/14/2003	19.5937	22.9351	24.7426	25.6854
9/15/2003	20.9456	23.9911	25.5828	26.5184
9/16/2003	20.2601	23.299	24.7227	25.6424
9/17/2003	19.1041	22.0753	23.3538	24.2607
9/18/2003	18.697	21.8095	23.0457	23.9303
9/19/2003	18.7624	22.0714	23.3629	24.2049
9/20/2003	19.4641	22.8414	24.115	24.9609
9/21/2003	18.8658	22.5509	23.8732	24.659
9/22/2003	19.1401	22.823	24.148	24.934
9/23/2003	21.0836	24.4311	25.5466	26.3716
9/24/2003	21.5069	24.3993	25.3818	26.2378
9/25/2003	17.7217	20.8121	21.8057	22.5763
9/26/2003	17.3107	20.9403	22.0548	22.8541
9/27/2003	17.886	21.6404	22.8194	23.657
9/28/2003	18.8546	22.4861	23.6227	24.4715
9/29/2003	18.0252	21.9821	23.0666	23.9174
9/30/2003	18.6866	22.203	23.2515	24.1318
10/1/2003	18.8247	22.1798	23.1992	24.0612
10/2/2003	18.1903	21.8744	22.8441	23.5933
10/3/2003	17.2137	21.6105	22.5831	23.2164
10/4/2003	17.1401	21.644	22.6025	23.2425
10/5/2003	17.3482	21.9945	22.9108	23.5111
10/6/2003	17.9867	22.3583	23.2155	23.7991
10/7/2003	18.0516	22.5514	23.3712	23.8645
10/8/2003	18.3561	22.4679	23.3873	23.8364
10/9/2003	17.9223	21.9187	22.8619	23.164
10/10/2003	17.8082	21.6326	22.4541	22.8127
10/11/2003	16.6147	19.8901	20.6794	21.6857
10/12/2003	17.0234	20.5272	21.1439	21.9171
10/13/2003	17.5505	20.8865	21.4605	21.298
10/14/2003	17.747	20.6877	21.2576	5.7027
10/15/2003	17.6368	20.503	20.7832	10.1206
10/16/2003	17.7416	20.6631	20.9291	5.03975
10/17/2003	18.0872	20.866	21.1761	3.63343
10/18/2003	18.6263	21.2987	21.5653	4.17714

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
10/19/2003	18.9645	21.5552	21.88	5.71146
10/20/2003	19.3276	21.8519	22.1511	4.83119
10/21/2003	19.4008	21.8173	22.0403	4.35036
10/22/2003	19.1076	21.4038	21.9525	6.06548
10/23/2003	19.4365	21.6115	22.2881	7.58956
10/24/2003	19.553	21.6791	21.7197	5.18121
10/25/2003	19.4533	21.4582	7.91788	3.80745
10/26/2003	19.3656	21.3143	4.02971	3.6432
10/27/2003	19.8935	21.7862	4.10531	4.14732
10/28/2003	19.4531	21.2897	3.43086	3.50218
10/29/2003	19.4137	21.2189	4.48141	4.60829
10/30/2003	17.5142	19.3322	4.91194	5.14854
10/31/2003	14.3936	16.1136	2.68886	2.89216
11/1/2003	14.3287	15.7011	2.68974	2.91151
11/2/2003	12.6782	13.8643	2.02121	2.16811
11/3/2003	11.5815	12.7454	3.04504	3.30937
11/4/2003	9.73666	11.0915	3.40555	3.71271
11/5/2003	9.98714	11.5256	4.94838	5.2744
11/6/2003	10.7463	12.5154	6.1952	6.55188
11/7/2003	12.017	13.566	6.37155	6.6907
11/8/2003	13.7418	14.7575	4.86069	5.10533
11/9/2003	13.0633	14.0135	5.67668	6.05187
11/10/2003	13.7725	13.9918	5.84602	6.3445
11/11/2003	14.2227	14.0028	4.44316	4.77075
11/12/2003	13.6547	14.9273	2.18432	2.31349
11/13/2003	14.222	14.9266	3.22001	3.3968
11/14/2003	13.6013	11.2905	2.90475	3.06964
11/15/2003	13.1588	7.14918	6.51805	6.93504
11/16/2003	11.4119	5.76727	6.06427	6.48735
11/17/2003	11.4332	5.8255	6.19628	6.57984
11/18/2003	11.7791	6.47557	6.87593	7.28477
11/19/2003	12.2524	6.54504	6.95399	7.36365
11/20/2003	12.4792	6.82849	7.24108	7.60991
11/21/2003	11.7049	6.73752	7.21188	7.61066
11/22/2003	9.05321	5.11239	5.67781	6.18968
11/23/2003	7.91224	4.2332	4.78299	5.29605
11/24/2003	7.70637	3.76323	4.19852	4.57941
11/25/2003	8.75338	4.05401	4.43377	4.72593
11/26/2003	9.01385	4.53527	4.95708	5.30192
11/27/2003	8.88877	3.78146	4.14319	4.44782
11/28/2003	9.3258	4.59308	4.94588	5.23896
11/29/2003	10.1879	5.21161	5.48937	5.73244
11/30/2003	10.5584	6.12438	6.44953	6.78324
12/1/2003	11.0138	6.83953	7.14044	7.48503
12/2/2003	11.2157	7.55915	7.91516	8.30951
12/3/2003	10.3207	6.20413	6.49644	6.80767
12/4/2003	9.63252	5.51358	5.77114	4.4168
12/5/2003	9.38904	5.56708	5.8401	4.50147
12/6/2003	10.2978	8.06277	8.40308	5.68374
12/7/2003	9.71634	10.5944	11.4564	11.0285
12/8/2003	8.16462	8.84679	9.74399	9.11016

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
12/9/2003	6.89573	7.34369	7.39952	7.28908
12/10/2003	6.9903	7.83514	7.01372	7.56591
12/11/2003	6.24354	7.26529	7.60882	7.88409
12/12/2003	5.26749	5.97947	5.86299	7.02249
12/13/2003	6.00428	6.53871	6.97746	7.8572
12/14/2003	6.41177	7.45762	8.28259	9.17788
12/15/2003	5.49812	6.11293	7.07269	8.0335
12/16/2003	5.28272	4.78944	5.62868	6.39807
12/17/2003	5.71535	5.18577	5.93009	6.55907
12/18/2003	6.15913	5.86834	6.47332	7.21659
12/19/2003	6.65697	6.52701	7.23621	8.66413
12/20/2003	6.9556	6.4846	7.26208	9.15004
12/21/2003	7.52682	7.92664	8.867	10.3003
12/22/2003	7.13805	6.99957	8.36345	9.44899
12/23/2003	6.84412	6.79782	8.24699	9.35755
12/24/2003	7.13093	7.50344	9.01553	10.0524
12/25/2003	6.18905	7.95616	8.75827	9.56766
12/26/2003	5.56184	7.27508	8.11341	8.9862
12/27/2003	5.84258	6.36199	7.32037	8.19337
12/28/2003	5.56881	5.50423	6.36855	7.23897
12/29/2003	4.77043	5.01077	5.89755	7.05146
12/30/2003	5.5108	6.14486	7.02685	7.84584
12/31/2003	5.82685	6.05498	6.76896	7.41705
1/1/2004	6.29444	6.94651	7.58127	8.37515
1/2/2004	5.22487	6.21121	6.94985	7.7359
1/3/2004	4.32206	5.17898	5.89503	6.56339
1/4/2004	4.14843	4.85218	5.4911	5.91851
1/5/2004	4.39743	4.91618	5.51479	5.89585
1/6/2004	4.56497	5.03828	5.58274	6.14465
1/7/2004	5.92107	6.59599	6.99092	7.58496
1/8/2004	7.26405	7.31977	7.63328	8.16974
1/9/2004	7.64247	7.09819	7.87498	8.49234
1/10/2004	7.42959	6.85106	7.73304	8.38777
1/11/2004	7.56911	6.77254	7.59906	8.23205
1/12/2004	7.48197	6.851	7.62476	8.18382
1/13/2004	7.58146	7.0082	7.68788	8.22021
1/14/2004	7.51137	6.96252	7.56938	7.96655
1/15/2004	6.8283	6.34822	6.86522	7.34309
1/16/2004	6.62852	6.45712	6.91472	7.33764
1/17/2004	6.58024	6.58742	6.87712	7.26894
1/18/2004	6.616	6.55395	6.69729	7.04786
1/19/2004	6.47063	6.26562	6.45243	6.68034
1/20/2004	6.08066	5.9207	6.25072	6.42592
1/21/2004	6.3074	6.22381	6.79577	6.95858
1/22/2004	6.25363	6.11796	6.43907	6.79882
1/23/2004	6.11772	6.02822	6.44914	6.93345
1/24/2004	5.92008	5.89166	6.31011	6.85028
1/25/2004	5.69355	5.88318	6.46839	7.07927
1/26/2004	5.19134	5.56473	6.18605	6.85565
1/27/2004	5.04289	5.63758	6.37249	7.0966
1/28/2004	5.33847	5.85107	6.6352	7.36559

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
1/29/2004	5.23366	5.42875	6.20604	6.87408
1/30/2004	5.19084	5.27114	6.05987	6.70863
1/31/2004	5.2776	5.84477	6.55118	7.20115
2/1/2004	4.97648	5.35278	6.23617	6.86582
2/2/2004	5.11018	5.88529	6.78251	7.48997
2/3/2004	4.27349	5.05304	6.03481	6.76042
2/4/2004	4.52399	5.24681	6.19201	6.89228
2/5/2004	5.14827	5.65765	6.53965	7.27364
2/6/2004	5.95473	6.31924	7.26495	8.04073
2/7/2004	5.83495	6.1486	7.17393	7.98757
2/8/2004	5.92481	6.11572	7.16988	7.97149
2/9/2004	6.5442	6.64737	7.67822	8.45837
2/10/2004	6.81169	6.76944	7.79381	8.51024
2/11/2004	6.54653	6.30903	7.43031	8.12045
2/12/2004	7.19586	7.01964	8.04265	8.7043
2/13/2004	7.10802	7.09822	8.08533	8.77614
2/14/2004	7.67561	7.82939	8.78335	9.50515
2/15/2004	8.08623	8.64809	9.57294	10.3012
2/16/2004	8.59655	9.75566	10.6664	11.4456
2/17/2004	10.2104	11.6017	12.3774	13.1239
2/18/2004	7.87436	9.37722	10.2608	11.0519
2/19/2004	6.83618	8.20904	9.14987	9.87586
2/20/2004	6.02168	7.31051	8.17207	8.84488
2/21/2004	5.86623	7.14395	8.02551	8.6567
2/22/2004	5.61578	6.86785	7.78194	8.4659
2/23/2004	5.90536	7.16707	8.09123	8.7658
2/24/2004	6.29967	7.60431	8.51819	9.22304
2/25/2004	6.29328	7.90885	8.85546	9.64021
2/26/2004	5.18934	6.74669	7.59468	8.3883
2/27/2004	4.94173	6.38703	7.21552	8.05062
2/28/2004	5.30661	6.88034	7.64384	8.58537
2/29/2004	5.34458	6.90356	7.7586	8.62212
3/1/2004	5.1056	6.7342	7.70099	8.59146
3/2/2004	6.41668	8.01324	9.02995	9.90657
3/3/2004	6.19069	7.77533	8.71107	9.55838
3/4/2004	6.26654	7.89918	8.96177	9.78681
3/5/2004	6.46086	8.13021	9.14989	10.0047
3/6/2004	6.90875	8.63492	9.56995	10.4094
3/7/2004	7.76722	9.33351	10.265	11.0121
3/8/2004	8.04385	9.32542	10.2408	10.7983
3/9/2004	8.87938	9.60352	10.4366	10.8533
3/10/2004	11.1542	11.3583	12.0201	12.4856
3/11/2004	10.1571	10.5233	10.807	11.1917
3/12/2004	9.41872	9.76316	10.3725	10.8036
3/13/2004	9.41265	9.96551	10.5735	11.0372
3/14/2004	9.25563	9.60918	10.176	10.7311
3/15/2004	9.60713	9.83854	10.311	10.9146
3/16/2004	9.82229	9.71459	10.2983	10.8353
3/17/2004	9.15087	9.34753	9.89799	10.4119
3/18/2004	8.89913	9.21795	9.71251	10.379
3/19/2004	8.80172	9.23078	9.69742	10.8164

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
3/20/2004	9.27324	9.51171	10.1972	11.7803
3/21/2004	9.76396	10.1076	10.87	13.1162
3/22/2004	9.88707	10.2648	10.9721	13.7776
3/23/2004	9.57899	10.153	10.8713	13.7483
3/24/2004	9.53709	10.0869	10.8547	13.4803
3/25/2004	8.42079	9.07099	9.86145	11.0467
3/26/2004	7.35796	8.21617	8.96808	9.57989
3/27/2004	7.89664	8.87073	9.6121	9.71963
3/28/2004	9.68838	11.0345	11.8516	11.6707
3/29/2004	11.6151	13.0941	13.9277	12.7736
3/30/2004	10.9612	12.4305	13.3603	12.3283
3/31/2004	10.5474	12.071	12.9853	13.0745
4/1/2004	9.21386	10.608	11.3908	12.6121
4/2/2004	10.7623	12.3437	13.3155	14.3327
4/3/2004	11.5832	12.9685	14.1082	14.0328
4/4/2004	12.0459	13.064	14.5642	13.9054
4/5/2004	11.2604	11.8932	13.8858	13.2748
4/6/2004	10.8703	12.1823	13.6251	12.2181
4/7/2004	11.6343	13.2045	14.3908	12.72
4/8/2004	13.0236	14.4941	15.6472	13.9492
4/9/2004	13.6416	15.0396	16.2034	14.7684
4/10/2004	14.9586	16.1688	17.5621	16.2464
4/11/2004	14.7767	15.7179	17.4891	16.0928
4/12/2004	14.2212	15.175	17.0202	15.5152
4/13/2004	12.9391	14.0096	15.774	14.5485
4/14/2004	11.4187	12.8281	14.1849	12.557
4/15/2004	10.1601	11.5961	12.6468	11.6836
4/16/2004	9.26071	10.6531	11.0066	10.8527
4/17/2004	8.72678	10.0412	9.8499	10.7452
4/18/2004	8.0453	9.3945	9.23262	10.2622
4/19/2004	8.4242	9.76024	9.60677	10.6325
4/20/2004	9.24018	10.6391	10.2991	11.2855
4/21/2004	10.0274	11.5173	11.0782	12.066
4/22/2004	11.9713	13.5483	13.5755	14.5469
4/23/2004	11.5414	12.664	13.2451	14.0459
4/24/2004	14.8243	16.4096	17.6968	18.5802
4/25/2004	15.8511	17.5703	18.069	19.9132
4/26/2004	17.7559	19.5782	19.3371	20.1821
4/27/2004	17.5334	19.5995	19.3093	19.4328
4/28/2004	17.0962	19.352	17.8017	17.7137
4/29/2004	16.5981	18.8454	18.3161	18.4098
4/30/2004	15.806	18.2952	17.3527	16.9142
5/1/2004	16.1043	18.7739	18.2865	16.9983
5/2/2004	17.5277	20.0927	20.2497	18.1495
5/3/2004	18.0505	20.7194	20.9956	18.3399
5/4/2004	18.119	20.8821	21.0746	17.7394
5/5/2004	17.0807	19.6964	20.1009	17.5001
5/6/2004	15.9379	18.7437	19.2156	16.9439
5/7/2004	15.2174	18.0362	18.6609	18.5
5/8/2004	14.6142	17.7775	18.5165	19.2081
5/9/2004	13.4601	17.101	17.8924	17.6758

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
5/10/2004	12.9626	16.4216	17.193	17.017
5/11/2004	11.2733	14.7483	15.1366	14.3085
5/12/2004	11.8708	15.3482	15.706	14.4581
5/13/2004	13.1851	16.7521	17.5015	16.7582
5/14/2004	15.564	19.3488	20.5739	21.1012
5/15/2004	15.9418	19.7234	21.0754	22.0256
5/16/2004	14.4045	18.2225	19.8228	20.8018
5/17/2004	13.0389	17.3315	18.8096	19.4679
5/18/2004	12.2722	16.2087	17.3687	15.58
5/19/2004	13.1461	16.2631	16.4733	13.1401
5/20/2004	14.0704	16.9133	14.3876	13.3771
5/21/2004	13.8497	16.6077	14.2107	13.9158
5/22/2004	12.792	15.9386	15.9904	16.4755
5/23/2004	10.904	13.2945	12.8032	13.2847
5/24/2004	9.67877	11.8992	12.2718	12.8062
5/25/2004	10.458	13.4992	13.8821	14.7102
5/26/2004	12.4338	15.0791	15.4724	16.4757
5/27/2004	13.8913	16.2465	16.9731	18.0911
5/28/2004	13.706	16.014	17.0516	18.1634
5/29/2004	13.2988	15.9348	16.7179	16.9341
5/30/2004	14.1594	16.7472	16.6173	14.4016
5/31/2004	15.1762	17.8918	14.6246	14.3854
6/1/2004	16.12	18.647	15.3458	15.5644
6/2/2004	16.9662	19.2345	18.6614	19.0841
6/3/2004	17.0628	19.6748	18.729	19.2183
6/4/2004	16.1535	18.8006	18.2963	18.9737
6/5/2004	15.6656	17.8443	16.5716	17.2998
6/6/2004	15.9138	17.6478	16.5364	17.2846
6/7/2004	14.8193	15.5939	15.3807	16.1632
6/8/2004	13.4436	13.3496	13.7872	14.6048
6/9/2004	12.2538	11.9441	12.4295	13.2587
6/10/2004	12.4268	12.3705	12.8826	13.7391
6/11/2004	13.2472	13.4074	13.8926	14.7277
6/12/2004	14.354	14.92	15.4239	16.3015
6/13/2004	15.6211	16.2881	16.8175	17.7078
6/14/2004	16.5192	17.2753	17.8215	18.7127
6/15/2004	18.3527	19.4643	20.0292	20.9247
6/16/2004	19.0057	21.3133	22.2126	23.2591
6/17/2004	18.3988	20.3926	21.3291	22.3991
6/18/2004	18.0142	19.6754	20.6005	21.6045
6/19/2004	17.6966	19.2394	19.8496	20.7583
6/20/2004	17.7679	19.3194	19.8642	20.8505
6/21/2004	18.2661	19.946	20.9016	21.9648
6/22/2004	18.4085	20.5381	21.5071	22.5687
6/23/2004	18.8384	20.8232	21.2128	22.0388
6/24/2004	19.9941	18.6261	18.7778	19.487
6/25/2004	15.2945	14.3091	15.1136	16.1699
6/26/2004	17.2248	18.1011	19.0851	20.1575
6/27/2004	17.3956	19.0153	20.0689	21.1551
6/28/2004	18.1686	19.9661	21.0389	22.1067
6/29/2004	16.2101	18.2578	19.3772	20.5097

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
6/30/2004	16.4461	18.5268	19.6265	20.7117
7/1/2004	16.6801	18.7097	19.8004	20.8701
7/2/2004	17.4097	19.5108	20.596	21.6576
7/3/2004	18.2339	20.2771	21.3822	22.447
7/4/2004	18.8338	20.923	22.0499	23.1411
7/5/2004	19.2152	21.3351	22.4557	23.5522
7/6/2004	19.7694	22.0616	23.2007	24.2807
7/7/2004	19.6157	21.983	23.1436	24.2732
7/8/2004	17.3763	20.2286	21.4083	22.5383
7/9/2004	17.2637	19.99	21.1568	22.2713
7/10/2004	17.4539	19.9794	21.134	22.2419
7/11/2004	15.6945	18.5237	19.8078	20.932
7/12/2004	17.2346	19.6043	20.8609	21.9989
7/13/2004	17.6731	19.9346	21.2655	22.4794
7/14/2004	17.8814	20.4334	21.7507	22.9602
7/15/2004	18.4998	20.7592	22.0598	23.2555
7/16/2004	16.1203	19.0405	20.5238	21.7875
7/17/2004	18.3984	20.8109	22.1601	23.3803
7/18/2004	17.2876	20.0383	21.4982	22.7433
7/19/2004	19.2271	21.6018	22.9017	24.0794
7/20/2004	19.028	21.6438	23.0185	24.2459
7/21/2004	19.9789	22.2756	23.5707	24.7542
7/22/2004	19.5563	22.0973	23.4611	24.7353
7/23/2004	20.1207	22.6306	23.9618	25.1816
7/24/2004	20.9247	23.3042	24.6209	25.803
7/25/2004	20.8291	23.518	24.8534	26.0655
7/26/2004	20.9603	23.3651	24.7453	26.0342
7/27/2004	20.5431	23.0692	24.4223	25.7439
7/28/2004	20.2154	22.1288	23.4807	24.8026
7/29/2004	20.6053	21.6324	22.8564	24.0048
7/30/2004	15.2483	17.8833	19.3313	20.612
7/31/2004	17.4771	20.1841	21.5343	22.8551
8/1/2004	16.9644	19.7452	21.2483	22.645
8/2/2004	16.1559	19.1889	20.7341	22.1445
8/3/2004	17.7774	20.5288	21.7634	23.1074
8/4/2004	17.3345	20.3355	21.5706	23.0034
8/5/2004	16.9352	20.1215	21.5266	22.9686
8/6/2004	18.1133	21.0672	22.4128	23.7042
8/7/2004	18.831	21.6816	23.0084	24.2943
8/8/2004	15.4406	18.9591	20.5233	22.0107
8/9/2004	17.4752	20.927	22.505	24.0268
8/10/2004	18.9157	22.0968	23.5456	24.9474
8/11/2004	20.3497	23.1769	24.488	25.7362
8/12/2004	20.9151	23.5762	24.8173	25.9965
8/13/2004	20.8416	23.4508	24.6391	25.799
8/14/2004	20.7509	23.3682	24.5316	25.6948
8/15/2004	20.8225	23.3755	24.5442	25.6976
8/16/2004	20.444	23.0214	24.1736	25.3332
8/17/2004	20.3082	22.8957	24.0854	25.2576
8/18/2004	21.5485	24.0094	25.1717	26.3088
8/19/2004	20.6472	23.2201	24.3855	25.5754

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
8/20/2004	19.3029	22.1109	23.4036	24.6672
8/21/2004	20.1449	22.8844	24.1218	25.3614
8/22/2004	19.7996	22.5225	23.756	24.9876
8/23/2004	19.1588	21.8517	23.0797	24.2866
8/24/2004	18.3434	20.9933	22.1914	23.4002
8/25/2004	18.2708	20.8702	22.0428	23.1891
8/26/2004	18.9274	21.4668	22.6247	23.7562
8/27/2004	18.798	21.3953	22.5681	23.6904
8/28/2004	19.5185	22.1484	23.3856	24.4739
8/29/2004	20.0698	22.901	24.1811	25.2462
8/30/2004	20.7709	23.5186	24.7625	25.793
8/31/2004	22.0902	24.7271	25.9677	26.9467
9/1/2004	22.9618	25.1263	26.1214	26.9809
9/2/2004	16.4895	19.5419	20.7792	21.6815
9/3/2004	18.2501	21.2014	22.4453	23.3814
9/4/2004	18.7254	21.5118	22.7639	23.7283
9/5/2004	18.8302	21.6872	22.9996	23.9334
9/6/2004	18.7493	21.8981	23.2924	24.1743
9/7/2004	17.4029	21.3043	22.8498	23.5891
9/8/2004	18.7644	22.3628	23.7481	24.6008
9/9/2004	19.7009	23.2513	24.5567	25.4563
9/10/2004	19.7276	23.345	24.6134	25.5276
9/11/2004	19.9748	23.4442	24.6579	25.5823
9/12/2004	20.165	23.4102	24.5498	25.4879
9/13/2004	19.7102	22.719	23.798	24.7426
9/14/2004	19.2642	22.1223	23.1685	24.1171
9/15/2004	19.2411	22.1146	23.1243	24.0714
9/16/2004	19.3714	22.7166	23.7085	24.6078
9/17/2004	19.238	22.7288	23.7083	24.5847
9/18/2004	18.1167	21.4265	22.3943	23.2842
9/19/2004	14.4237	17.4541	18.4148	19.4583
9/20/2004	12.6573	15.7989	16.7409	17.6223
9/21/2004	14.8271	17.6179	18.5546	19.4441
9/22/2004	15.8981	18.7089	19.6358	20.5166
9/23/2004	16.8835	19.4863	20.407	21.2693
9/24/2004	15.077	18.067	18.9308	19.5904
9/25/2004	15.9385	19.7314	20.5226	21.0945
9/26/2004	17.0721	20.7849	21.5734	22.1633
9/27/2004	17.7671	21.2793	22.0912	22.7619
9/28/2004	16.7879	20.6255	21.3991	22.0517
9/29/2004	15.9477	20.0435	20.7748	21.4311
9/30/2004	15.748	19.5609	20.313	20.9642
10/1/2004	16.3195	19.7243	20.5093	21.2637
10/2/2004	16.2956	20.4759	21.1666	21.6457
10/3/2004	16.3624	20.6338	21.2452	21.6674
10/4/2004	16.5247	20.6321	21.2302	21.6912
10/5/2004	16.7467	20.8029	21.3712	21.8091
10/6/2004	17.1723	21.3435	21.9317	22.38
10/7/2004	17.3516	21.6489	22.2195	22.6427
10/8/2004	17.1623	21.5045	22.066	22.4756
10/9/2004	17.2866	21.3503	21.9442	22.4124

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
10/10/2004	17.5545	21.3531	21.9882	22.4881
10/11/2004	17.4048	20.9109	21.512	21.9671
10/12/2004	18.2507	21.2804	21.8794	22.2746
10/13/2004	20.1978	22.6354	23.354	23.9256
10/14/2004	19.9326	22.3526	23.0285	23.5372
10/15/2004	19.884	22.2593	22.9799	23.5388
10/16/2004	15.9113	18.1182	18.9467	19.6833
10/17/2004	12.4591	14.555	15.5095	16.4298
10/18/2004	11.2835	13.4071	14.3309	15.3339
10/19/2004	10.5435	12.6761	13.6401	14.6849
10/20/2004	10.4399	12.4043	13.4148	14.4165
10/21/2004	9.93633	11.6305	12.6564	13.6054
10/22/2004	10.8188	12.3555	13.2921	14.202
10/23/2004	10.7029	12.2294	13.162	14.0659
10/24/2004	11.9389	13.7343	14.7064	15.6375
10/25/2004	11.541	13.2904	14.2119	15.0542
10/26/2004	9.31849	11.5558	12.3052	13.1621
10/27/2004	9.4087	11.2256	12.0464	12.8108
10/28/2004	9.25539	10.919	11.7371	12.4328
10/29/2004	10.3317	11.8776	12.6646	13.1875
10/30/2004	10.9924	12.5281	13.2955	13.8842
10/31/2004	11.3251	12.9651	13.7859	14.4736
11/1/2004	11.5829	13.2735	14.0822	14.7375
11/2/2004	12.5406	14.0868	14.6638	14.687
11/3/2004	10.639	12.0306	12.4955	12.3596
11/4/2004	10.8258	12.1817	12.7479	12.9817
11/5/2004	11.2694	12.2731	12.7316	12.9516
11/6/2004	11.4676	11.9555	12.068	11.9063
11/7/2004	11.7144	11.8162	11.7883	11.3844
11/8/2004	11.8564	11.7071	11.9278	11.2417
11/9/2004	11.7403	11.6704	11.9525	10.8999
11/10/2004	11.2111	11.4621	11.8917	11.0418
11/11/2004	10.8968	11.4503	11.9373	11.3098
11/12/2004	10.5874	11.2904	11.7209	10.9944
11/13/2004	10.4662	11.2156	11.6282	10.9025
11/14/2004	10.0695	10.6676	10.8257	10.335
11/15/2004	10.0563	10.3926	10.3212	9.84326
11/16/2004	10.0937	10.509	10.4268	9.64435
11/17/2004	9.78601	10.1844	10.0794	9.16072
11/18/2004	9.8231	10.0755	9.87575	9.31777
11/19/2004	9.70637	9.89707	9.43451	9.92252
11/20/2004	9.46315	9.73912	9.46071	10.3942
11/21/2004	8.91664	9.22695	9.13934	10.6633
11/22/2004	8.47195	8.9291	9.03189	10.6838
11/23/2004	8.87519	9.43242	9.81652	10.6262
11/24/2004	8.38348	8.4924	8.44363	8.7732
11/25/2004	8.35074	8.79773	7.72703	8.18878
11/26/2004	8.49116	9.05547	7.68446	8.13747
11/27/2004	7.77649	8.57355	7.62125	6.90846
11/28/2004	7.01745	7.50195	7.17077	6.75012
11/29/2004	6.68046	7.20683	6.58725	4.88542

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
11/30/2004	6.76497	7.21303	6.09284	4.51816
12/1/2004	6.7219	7.23823	5.67916	4.41305
12/2/2004	6.88248	7.1351	5.60078	4.36259
12/3/2004	6.98378	7.27839	5.72696	4.05534
12/4/2004	6.85952	6.95055	5.48763	4.82719
12/5/2004	6.90253	6.81574	6.05554	3.32282
12/6/2004	6.89256	6.7238	5.73928	3.18346
12/7/2004	7.37165	7.84336	7.71928	6.03892
12/8/2004	7.63406	7.97939	7.36863	7.66564
12/9/2004	7.68817	7.81888	7.47221	8.11052
12/10/2004	7.04541	7.07208	5.8221	6.5247
12/11/2004	7.23156	7.3821	5.63022	6.15539
12/12/2004	7.2205	7.37508	6.96719	7.50739
12/13/2004	6.76697	6.8739	6.87881	7.5171
12/14/2004	6.7133	6.72715	6.75147	7.41904
12/15/2004	6.56217	6.80693	6.69974	7.47475
12/16/2004	6.84537	7.33888	7.17222	7.93266
12/17/2004	6.67919	7.19496	7.08536	7.78541
12/18/2004	6.35059	6.96087	7.07172	7.76513
12/19/2004	6.4191	6.97566	7.11251	7.77751
12/20/2004	6.2456	6.8202	7.0305	7.72046
12/21/2004	6.48648	7.10013	7.44538	8.10408
12/22/2004	5.96895	6.65258	7.17389	7.82624
12/23/2004	6.01899	6.73071	7.10084	7.73683
12/24/2004	5.58721	6.47043	6.81459	7.47965
12/25/2004	5.72491	6.43029	6.81091	7.44283
12/26/2004	5.6222	6.41294	6.90059	7.56167
12/27/2004	5.76134	6.79906	7.44029	8.15515
12/28/2004	5.5348	6.69058	7.16515	7.8833
12/29/2004	5.00915	6.16652	6.56559	7.2726
12/30/2004	5.12724	6.57434	7.12296	7.89502
12/31/2004	4.6852	6.31651	6.83548	7.61458
1/1/2005	4.3582	5.84293	6.42727	7.24007
1/2/2005	4.19488	5.50828	6.1052	6.90524
1/3/2005	4.25598	5.32034	5.87577	6.62643
1/4/2005	4.51101	5.26662	5.6686	6.36235
1/5/2005	4.84133	5.60582	5.9893	6.70191
1/6/2005	5.18139	5.37339	5.64397	6.28512
1/7/2005	5.33586	5.44764	5.86377	6.57847
1/8/2005	4.60476	5.3348	5.92592	6.74264
1/9/2005	4.66326	5.40057	5.9375	6.84978
1/10/2005	4.05815	5.18691	5.76386	6.77865
1/11/2005	2.94167	4.73867	5.58087	6.53719
1/12/2005	3.16803	4.49191	5.46116	6.28545
1/13/2005	3.90052	4.43819	5.17519	5.89626
1/14/2005	4.6547	5.51841	6.03495	6.64024
1/15/2005	5.3871	6.22051	6.60875	6.97003
1/16/2005	6.07969	6.82653	7.18882	7.34158
1/17/2005	6.33884	6.75825	7.08351	7.54895
1/18/2005	6.57029	6.81169	6.86633	7.48735
1/19/2005	7.51121	7.46171	7.45134	8.03224

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
1/20/2005	7.60991	7.35671	7.53561	8.01429
1/21/2005	7.30361	7.13574	7.39892	7.73749
1/22/2005	7.39245	7.25707	7.55304	7.7434
1/23/2005	7.46486	7.35721	7.67195	7.81511
1/24/2005	7.44297	7.40573	7.65248	7.83396
1/25/2005	7.36209	7.43756	7.59125	7.8153
1/26/2005	6.51933	6.84599	7.02389	7.36126
1/27/2005	6.21681	6.82544	6.9739	7.32815
1/28/2005	5.13954	6.29224	6.78922	7.27375
1/29/2005	5.11394	6.35448	6.92828	7.38597
1/30/2005	5.28655	6.45598	6.81978	7.26273
1/31/2005	5.597	6.64737	6.95683	7.38607
2/1/2005	7.14324	7.91303	8.39729	8.89532
2/2/2005	6.88789	7.49322	8.02107	8.55677
2/3/2005	6.99073	7.4886	7.90394	8.48521
2/4/2005	7.04233	7.49206	7.7934	8.3936
2/5/2005	6.88786	7.1999	7.48014	8.1363
2/6/2005	6.65891	6.96424	7.26644	7.87571
2/7/2005	6.16075	6.60782	6.981	7.59691
2/8/2005	5.6431	6.16717	6.54135	7.17384
2/9/2005	5.94511	6.3622	6.71677	7.35776
2/10/2005	6.32305	6.72072	7.09186	7.72302
2/11/2005	6.24853	6.76529	7.15642	7.79526
2/12/2005	5.93243	6.69436	7.15992	7.85184
2/13/2005	5.74874	6.28529	6.71126	7.45322
2/14/2005	5.79327	6.0973	6.49768	7.29643
2/15/2005	5.85986	6.30591	6.79915	7.62444
2/16/2005	6.08414	6.73558	7.37542	8.25041
2/17/2005	6.5085	7.01527	7.61536	8.47863
2/18/2005	6.47953	7.10374	7.80521	8.62459
2/19/2005	6.21272	7.07812	7.80249	8.6789
2/20/2005	6.29998	7.33741	8.03263	8.80602
2/21/2005	6.31851	7.50391	8.12425	8.95423
2/22/2005	6.20577	7.36886	7.87882	8.64166
2/23/2005	6.35296	7.51204	8.09035	8.78556
2/24/2005	6.34921	7.57331	8.15414	8.76991
2/25/2005	6.4198	7.60029	8.16296	8.73216
2/26/2005	6.22696	7.31568	7.93529	8.43815
2/27/2005	6.36758	7.43495	8.10405	8.62951
2/28/2005	6.29475	7.26846	7.96381	8.46448
3/1/2005	6.17558	7.24612	7.83182	8.31039
3/2/2005	6.57162	7.76118	8.42918	8.93962
3/3/2005	6.62819	7.82489	8.48947	8.94272
3/4/2005	6.34899	7.51264	8.14309	8.51881
3/5/2005	6.8557	8.02659	8.60304	8.95968
3/6/2005	7.14632	8.26954	8.7654	9.08679
3/7/2005	7.37697	8.41817	8.84572	9.16342
3/8/2005	7.76304	8.72354	9.0976	9.41655
3/9/2005	8.215	9.28113	9.62773	9.96633
3/10/2005	8.81277	9.92078	10.2209	10.5176
3/11/2005	8.87656	9.9745	10.2262	10.506

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
3/12/2005	8.51438	9.6223	9.88621	10.2937
3/13/2005	8.20059	9.18567	9.52322	9.98722
3/14/2005	8.39356	9.44395	9.87626	10.4923
3/15/2005	8.01059	9.00741	9.39363	10.0779
3/16/2005	7.65411	8.53203	8.87325	9.57196
3/17/2005	7.08697	7.88003	8.21256	9.1487
3/18/2005	6.92373	7.79857	8.17417	9.29248
3/19/2005	6.94155	8.20233	8.74313	9.97306
3/20/2005	6.5015	7.92809	8.52186	9.77598
3/21/2005	6.72621	8.08819	8.64757	9.74329
3/22/2005	5.24985	7.29875	7.92075	8.83482
3/23/2005	4.89532	6.56783	7.29568	7.8097
3/24/2005	5.06711	6.9223	7.49365	7.8894
3/25/2005	5.78443	7.57919	8.08754	8.72232
3/26/2005	6.26744	8.0364	8.65347	9.37313
3/27/2005	7.5764	8.56973	9.59582	10.2206
3/28/2005	6.37428	7.5899	8.59425	9.10311
3/29/2005	5.68284	6.94067	7.80322	8.30757
3/30/2005	6.09918	7.76897	8.50492	9.00052
3/31/2005	6.68389	8.2691	8.90574	9.41114
4/1/2005	7.41419	8.93221	9.4	9.90347
4/2/2005	7.55264	9.07545	9.47636	9.97086
4/3/2005	7.32093	8.86158	9.28766	9.85962
4/4/2005	6.82448	8.56243	9.00092	9.57659
4/5/2005	7.06904	8.75447	9.13146	9.66375
4/6/2005	8.23755	9.85805	10.2063	10.6897
4/7/2005	7.01387	8.46152	8.78014	9.27934
4/8/2005	5.5651	7.02146	7.34357	7.93638
4/9/2005	5.77832	7.41293	7.71788	8.26882
4/10/2005	6.79607	8.30259	8.63008	9.19894
4/11/2005	7.41775	8.84921	9.15981	9.78073
4/12/2005	7.38268	8.73243	9.07586	9.7218
4/13/2005	7.23785	8.64546	9.20232	9.85606
4/14/2005	7.83085	9.19588	9.29468	9.55604
4/15/2005	7.85507	7.89981	7.90117	8.15857
4/16/2005	7.65661	8.08498	8.1511	8.39011
4/17/2005	6.98784	7.52268	7.69635	7.99887
4/18/2005	6.03598	6.59283	6.84013	7.18129
4/19/2005	5.89946	6.56213	6.88631	7.26371
4/20/2005	6.44279	7.0845	7.3867	7.71323
4/21/2005	6.87138	7.38902	7.66245	7.96668
4/22/2005	7.54254	7.94317	8.21346	8.55367
4/23/2005	6.03361	6.50129	6.80303	7.17289
4/24/2005	5.1844	5.59386	5.85135	6.19733
4/25/2005	5.91458	6.39251	6.69183	7.13891
4/26/2005	6.79385	7.30045	7.64367	8.25445
4/27/2005	7.22511	7.83701	8.24289	9.0347
4/28/2005	7.09644	8.02137	8.48327	9.04054
4/29/2005	6.89497	7.63195	8.14015	8.90981
4/30/2005	5.39549	5.85697	6.28293	7.08053
5/1/2005	5.52516	6.01114	6.50709	7.57468

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
5/2/2005	5.8116	6.33922	6.90029	8.01084
5/3/2005	6.06544	6.61462	7.291	8.40271
5/4/2005	5.81897	6.37038	7.15277	8.19908
5/5/2005	4.82856	5.39967	6.198	7.19319
5/6/2005	5.04674	5.61444	6.33981	7.25851
5/7/2005	4.84634	5.38423	6.1086	6.90423
5/8/2005	4.8379	5.42722	6.29787	6.93962
5/9/2005	4.71155	5.56461	6.62873	7.21287
5/10/2005	4.33499	5.06201	6.07749	6.52291
5/11/2005	5.1229	5.68941	6.69822	7.12355
5/12/2005	5.4086	5.75185	6.77006	7.16601
5/13/2005	6.28155	6.53295	7.83652	8.20261
5/14/2005	7.27411	7.49642	9.1588	9.35027
5/15/2005	7.98934	8.43839	10.5578	10.7317
5/16/2005	7.54126	8.26906	10.1825	10.2569
5/17/2005	5.9327	6.57542	8.64398	8.2416
5/18/2005	5.81253	6.57324	8.40242	8.14208
5/19/2005	6.36278	7.32905	8.87534	8.66868
5/20/2005	6.65291	7.82692	9.06981	8.84818
5/21/2005	6.87719	8.17844	9.15247	8.96237
5/22/2005	7.3222	8.74096	9.47604	9.32692
5/23/2005	7.43106	8.99768	9.53371	9.452
5/24/2005	7.47785	9.17299	9.52234	9.53613
5/25/2005	7.45398	9.29154	9.46641	9.57389
5/26/2005	7.64096	9.64282	9.70521	9.91483
5/27/2005	7.1422	9.24921	9.23044	9.478
5/28/2005	6.55644	8.63712	8.6786	8.80467
5/29/2005	6.02678	7.96894	8.08856	8.02223
5/30/2005	6.65229	8.52926	8.66308	8.31547
5/31/2005	7.10311	9.04021	9.10875	8.3391
6/1/2005	8.29092	10.288	10.1757	9.3763
6/2/2005	8.49506	10.4731	10.1542	9.58175
6/3/2005	8.89422	10.7699	10.2031	9.97421
6/4/2005	7.39353	8.83698	8.1414	8.09165
6/5/2005	7.35315	8.6098	8.02859	8.15272
6/6/2005	6.68656	7.7543	7.29505	7.47855
6/7/2005	7.1721	8.20186	7.88459	8.17708
6/8/2005	6.49555	7.27294	7.14187	7.43955
6/9/2005	7.49569	8.1668	8.11828	8.48897
6/10/2005	8.78619	9.64511	9.89212	10.421
6/11/2005	9.82767	10.8596	11.5484	12.2804
6/12/2005	10.3821	11.5143	12.3554	13.1865
6/13/2005	10.008	11.3538	12.3851	13.2458
6/14/2005	9.70272	11.0731	12.2921	13.2008
6/15/2005	9.69866	11.2476	12.4107	13.4381
6/16/2005	8.90527	10.6931	11.6444	12.6193
6/17/2005	8.14775	10.1178	11.0454	12.0397
6/18/2005	7.90147	10.0004	10.9617	11.9677
6/19/2005	8.45357	10.616	11.5938	12.6236
6/20/2005	9.5515	11.8004	12.4082	13.1523
6/21/2005	10.4302	12.8071	12.9339	13.6276

APPENDIX E: WARMF SIMULATION RESULTS

Date	Base Simulation	2deg T Increase	3deg T Increase	4deg T Increase
6/22/2005	10.2988	12.8112	12.1495	12.9061
6/23/2005	10.2821	12.9058	12.2561	13.0413
6/24/2005	10.0282	11.6889	11.4659	12.1988
6/25/2005	9.89307	11.0011	11.2842	12.009
6/26/2005	9.89359	10.6356	11.0809	11.9121
6/27/2005	10.6649	11.0637	11.4694	12.3165
6/28/2005	11.2694	12.1781	12.5186	13.2887
6/29/2005	11.609	12.6499	12.922	13.628
6/30/2005	12.0329	12.5031	12.7826	13.4782
7/1/2005	12.2708	12.2407	12.5648	13.3127
7/2/2005	12.8937	13.0099	13.342	14.19
7/3/2005	13.5837	13.5372	13.808	14.7113
7/4/2005	14.0594	13.1608	13.3169	14.1995
7/5/2005	14.9917	13.4363	13.5425	14.3706
7/6/2005	15.8621	14.1674	14.2928	15.0915
7/7/2005	16.2155	15.0565	15.3526	16.2153
7/8/2005	15.607	15.0755	15.6812	16.6984
7/9/2005	14.9873	14.0955	14.8584	15.888
7/10/2005	15.1919	14.8624	15.7361	16.7372
7/11/2005	15.0829	15.681	16.7057	17.7456
7/12/2005	15.2334	16.1452	17.3772	18.5384
7/13/2005	15.3062	18.1751	19.7667	21.2041
7/14/2005	15.2877	18.5381	20.2923	21.7309
7/15/2005	15.6343	19.1042	20.9153	22.32
7/16/2005	16.1205	19.5396	21.3203	22.6762
7/17/2005	16.9521	20.0617	21.7158	23.0179
7/18/2005	17.7209	19.5599	20.834	21.922
7/19/2005	18.2186	17.5594	18.4143	19.2012
7/20/2005	18.2848	16.1832	17.0211	17.8514
7/21/2005	17.3065	15.8023	16.5982	17.3831
7/22/2005	15.5519	15.6897	16.466	17.2417
7/23/2005	14.0985	15.6874	16.4601	17.2278
7/24/2005	13.3418	15.2266	16.0434	16.8239
7/25/2005	13.3206	15.2917	16.1206	16.9121
7/26/2005	12.9388	14.9306	15.7366	16.5094
7/27/2005	13.2878	15.4881	16.3634	17.1553
7/28/2005	13.3902	15.5505	16.4233	17.1645
7/29/2005	13.2196	15.2941	16.1591	16.8283
7/30/2005	13.1621	15.3116	16.1863	16.8498
7/31/2005	13.2726	15.6241	16.5426	17.2372
8/1/2005	14.0248	16.6095	17.5801	18.3118

Appendix F – W-E Results

Raw Data

		1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Baseline (267 MGD)	Actual Freeport Delivery (TAF)	0.00	0.00	93.17	0.00	0.00	0.00	93.91	71.06	0.00	93.91	1.75	93.17	0.00	93.91	0.00	93.91	0.00	0.00	0.00	93.91	0.00	0.00	0.00
	Aggregate Demand (MGD)	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00
	Bayside Supply (TAF)	0.00	0.00	1.12	0.00	0.00	0.00	1.12	1.12	1.12	1.12	0.00	1.12	0.00	1.12	0.00	1.12	0.00	0.00	0.00	1.12	0.00	0.00	0.00
	Rationing	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.03%	13.71%	23.76%	8.32%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Freeport Counter	0.00	0.00	1.00	0.00	0.00	0.00	1.00	2.00	3.00	4.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
	Jan - Feb Flood Releases (TAF)	108.69	0.00	0.00	228.01	0.00	29.58	0.00	0.00	0.00	0.00	13.19	0.00	166.44	0.00	69.57	0.00	164.71	227.67	32.57	0.00	71.97	69.17	0.00
	Mokelumne Draft (MGD)	267.08	267.08	182.05	267.08	267.08	267.08	176.05	165.05	202.06	159.05	265.08	182.05	267.08	182.05	267.08	182.05	267.08	267.08	267.08	182.05	267.08	267.08	267.08
	Oct - Dec Flood Release (TAF)	0.00	0.00	27.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	21.69	85.37	9.83	0.00	0.00	0.00	0.00	38.06	0.00	0.00	95.08	0.00	0.00
	Total Additional Supply (TAF)	0.00	0.00	94.29	0.00	0.00	0.00	95.03	72.18	1.12	95.03	1.75	94.29	0.00	95.03	0.00	95.03	0.00	0.00	0.00	95.03	0.00	0.00	0.00
	EOS TSS (Thousand AF)	581.00	537.86	530.99	572.21	579.17	578.67	476.75	421.55	261.82	452.43	589.37	514.63	588.23	562.56	572.17	520.23	584.41	603.64	620.56	561.98	611.11	613.11	600.90
	Total Flood Release - Water Year (TAF)	108.69	0.00	27.24	228.01	0.00	29.58	0.00	0.00	0.00	0.00	34.88	85.37	176.27	0.00	69.57	0.00	164.71	265.73	32.57	0.00	167.05	69.18	0.00
	Total Shortage (Customer + LMR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CC 2.1																								
Shift spring runoff by 18.7%	Actual Freeport Delivery (TAF)	0.00	0.00	93.17	0.00	0.00	0.00	93.91	71.06	0.00	93.91	0.00	93.17	0.00	93.91	0.00	93.91	0.00	0.00	0.00	93.91	0.00	0.00	0.00
	Aggregate Demand (MGD)	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00
	Bayside Supply (TAF)	0.00	0.00	1.12	0.00	0.00	0.00	1.12	1.12	1.12	1.12	0.00	1.12	0.00	1.12	0.00	1.12	0.00	0.00	0.00	1.12	0.00	0.00	0.00
	Rationing	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.44%	15.80%	24.15%	11.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Freeport Counter	0.00	0.00	1.00	0.00	0.00	0.00	1.00	2.00	3.00	4.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
	Jan - Feb Flood Releases (TAF)	141.20	0.00	0.00	275.61	0.00	59.58	0.00	0.00	0.00	0.00	33.65	0.00	197.77	1.86	118.52	0.00	267.08	245.44	69.92	0.01	120.20	97.36	0.00
	Mokelumne Draft (MGD)	267.08	267.08	182.05	267.08	267.08	267.08	180.05	160.05	201.06	152.05	267.08	182.05	267.08	182.05	267.08	182.05	267.08	267.08	267.08	182.05	267.08	267.08	267.08
	Oct - Dec Flood Release (TAF)	0.00	0.00	44.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.69	117.63	17.58	0.00	0.00	0.00	5.70	49.30	0.00	0.00	134.11	0.00	1.29
	Total Additional Supply (TAF)	0.00	0.00	94.29	0.00	0.00	0.00	95.03	72.18	1.12	95.03	0.00	94.29	0.00	95.03	0.00	95.03	0.00	0.00	0.00	95.03	0.00	0.00	0.00
	EOS TSS (Thousand AF)	560.59	513.78	503.77	572.20	554.94	578.67	494.94	400.26	255.12	436.95	589.54	518.25	588.23	546.65	577.37	546.03	584.41	580.45	602.28	543.22	611.11	613.11	600.90
	Total Flood Release - Water Year (TAF)	141.20	0.00	44.22	275.61	0.00	59.58	0.00	0.00	0.00	0.00	73.35	117.63	215.35	1.86	118.52	0.00	272.78	294.74	69.92	0.01	254.31	97.36	1.29
	Total Shortage (Customer + LMR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CC 2.2																								
Shift spring runoff by 28.3%	Actual Freeport Delivery (TAF)	0.00	93.91	71.06	0.00	0.00	0.00	93.91	71.06	0.00	93.91	0.00	93.17	0.00	0.00	0.00	93.91	0.00	0.00	0.00	93.91	0.00	0.00	0.00
	Aggregate Demand (MGD)	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00
	Bayside Supply (TAF)	0.00	1.12	1.12	0.00	0.00	0.00	1.12	1.12	1.12	1.12	0.00	1.12	0.00	0.00	0.00	1.12	0.00	0.00	0.00	1.12	0.00	0.00	0.00
	Rationing	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.45%	25.00%	14.96%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Freeport Counter	0.00	1.00	2.00	0.00	0.00	0.00	1.00	2.00	3.00	4.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
	Jan - Feb Flood Releases (TAF)	142.20	0.00	0.88	298.07	0.00	61.54	0.00	0.00	0.00	0.00	60.39	1.03	221.35	6.65	84.17	0.00	276.07	251.70	77.98	0.00	127.10	121.12	0.00
	Mokelumne Draft (MGD)	267.08	182.05	202.06	267.08	267.08	267.08	182.05	182.05	199.06	142.04	267.08	182.05	267.08	267.08	267.08	182.05	267.08	267.08	267.08	182.05	267.08	267.08	267.08
	Oct - Dec Flood Release (TAF)	0.00	0.00	104.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	45.07	122.89	21.56	0.00	0.00	0.00	10.27	44.82	0.00	0.00	142.17	0.00	3.94
	Total Additional Supply (TAF)	0.00	95.03	72.18	0.00	0.00	0.00	95.03	72.18	1.12	95.03	0.00	94.29	0.00	0.00	0.00	95.03	0.00	0.00	0.00	95.03	0.00	0.00	0.00
	EOS TSS (Thousand AF)	531.56	533.53	536.55	572.20	525.14	578.67	500.86	414.80	229.41	414.40	589.54	534.21	588.23	500.95	577.37	541.60	584.41	561.80	576.79	533.82	599.21	613.11	600.89
	Total Flood Release - Water Year (TAF)	142.20	0.00	105.34	298.07	0.00	61.54	0.00	0.00	0.00	0.00	105.46	123.92	242.91	6.65	84.17	0.00	286.33	296.52	77.98	0.00	269.27	121.12	3.94
	Total Shortage (Customer + LMR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CC 2.3																								
Shift spring runoff by 37.9%	Actual Freeport Delivery (TAF)	0.00	93.91	71.06	0.00	0.00	0.00	93.91	71.06	0.00	93.91	0.00	93.17	0.00	93.91	0.00	93.91	0.00	0.00	0.00	93.91	0.00	0.00	0.00
	Aggregate Demand (MGD)	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00
	Bayside Supply (TAF)	0.00	1.12	1.12	0.00	0.00	0.00	1.12	1.12	1.12	1.12	0.00	1.12	0.00	1.12	0.00	1.12	0.00	0.00	0.00	1.12	0.00	0.00	0.00
	Rationing	0.00%	0.00%	0.65%	0.00%	0.00%	0.00%	0.00%	5.43%	24.92%	15.44%	0.00%	0.24%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Freeport Counter	0.00	1.00	2.00	0.00	0.00	0.00	1.00	2.00	3.00	4.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
	Jan - Feb Flood Releases (TAF)	158.89	0.00	0.00	331.81	8.17	83.28	0.00	0.00	0.00	0.00	98.78	12.93	252.34	9.81	182.34	0.00	328.74	274.27	91.86	0.00	126.14	127.13	8.63
	Mokelumne Draft (MGD)	267.08	182.05	200.06	267.08	267.08	267.08	182.05	188.06	199.06	140.04	267.08	182.05	267.08	182.05	267.08	182.05	267.08	267.08	267.08	182.05	267.08	267.08	267.08
	Oct - Dec Flood Release (TAF)	0.00	0.00	98.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.50	121.30	27.17	0.00	0.00	0.00	15.05	27.19	0.00	0.00	110.39	0.01	6.59
	Total Additional Supply (TAF)	0.00	95.03	72.18	0.00	0.00	0.00	95.03	72.18	1.12	95.03	0.00	94.29	0.00	95.03	0.00	95.03	0.00	0.00	0.00	95.03	0.00	0.00	0.00
	EOS TSS (Thousand AF)	517.61	532.87	492.60	572.20	502.70	578.67	500.41	437.92	241.66	406.49	589.55	497.27	588.23	546.36	577.37	514.49	584.41	529.13	544.48	523.54	562.19	613.11	600.89
	Total Flood Release - Water Year (TAF)	158.89	0.00	98.66	331.81	8.17	83.28	0.00	0.00	0.00	0.00	150.27	134.23	279.51	9.81	182.34	0.00	343.79	301.45	91.86	0.00	236.52	127.14	15.23
	Total Shortage (Customer + LMR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CC 3.1																								
Decrease precip by -10%	Actual Freeport Delivery (TAF)	0.00	93.91	71.06	0.00	0.00	0.00	93.91	71.06	0.00	93.91	14.95	93.17	0.00	93.91	5.58	93.91	0.00	0.00	0.00	93.91	0.00	0.00	0.00
	Aggregate Demand (MGD)	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00
	Bayside Supply (TAF)	0.00	1.12	1.12	0.00	0.00	0.00	1.12	1.12	1.12	1.12	0.00	1.12	0.00	1.12	0.00	1.12	0.00	0.00	0.00	1.12	0.00	0.00	0.00
	Rationing	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.42%	18.50%	25.00%	20.33%	0.00%	2.13%	0.00%	0.00%	0.00%	1.64%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Freeport Counter	0.00	1.00	2.00	0.00	0.00	0.00	1.00	2.00	3.00	4.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
	Jan - Feb Flood Releases (TAF)	104.58	0.00	0.00	189.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	137.35	0.00	9.37	0.00	105.80	190.30	28.62	0.00	29.03	58.15	0.00
	Mokelumne Draft (MGD)	267.08	182.05	202.06	267.08	267.08	267.08	170.05	153.05	199.06	127.04	253.08	177.05	267.08	182.05	262.08	177.05	267.08	267.08	267.08	182.05	267.08	267.08	267.08
	Oct - Dec Flood Release (TAF)	0.00	0.00	15.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.07	26.53	7.18	0.00	0.00	0.00	0.00	24.65	0.00	0.00	79.37	0.00	0.00
	Total Additional Supply (TAF)	0.00	95.03	72.18	0.00	0.00	0.00	95.03	72.18	1.12	95.03	14.95	94.29	0.00	95.03	5.58	95.03	0.00	0.00	0.00	95.03	0.00	0.00	0.00
	EOS TSS (Thousand AF)	562.34	565.23	512.04	573.12	520.03	579.06	449.38	353.42	192.55	321.54	588.98	475.67	588.76	518.83	574.85	481.25	585.52	583.17	620.88	530.93	611.75	613.42	603.09
	Total Flood Release - Water Year (TAF)	104.58	0.00	88.89	189.40	0.00	0.00	0.00	0.00	0.00	0.00	17.07	26.53	144.53	0.00	9.37	0.00	105.80	214.95	28.62	0.00	108.41	58.16	0.00
	Total Shortage (Customer + LMR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CC 3.2																								
Decrease precip by -20%	Actual Freeport Delivery (TAF)	0.00	93.91	71.06	0.00	93.91	14.95	93.91	71.06	0.00	93.91	71.09	0.00	0.00	93.91	14.95	93.91	0.00	0.00	0.00	93.91	14.95	0.00	0.00
	Aggregate Demand (MGD)	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00
	Bayside Supply (TAF)	0.00	1.12	1.12	0.00	1.12	0.00	1.12	1.12	1.12	1.12	1.12	1.12	0.00	1.12	0.00	1.12	0.00	0.00	0.00	1.12	0.00	0.00	0.00
	Rationing	0.00%	0.80%	13.24%	0.00%	0.00%	0.00%	5.45%	21.72%	25.00%	25.00%	0.00%	8.13%	0.00%	2.17%	0.00%	2.40%	0.00%	0.00%	0.00%	1.66%	0.00%	0.00%	0.00%
	Freeport Counter	0.00	1.00	2.00	0.00	1.00	0.00	1.00	2.00	3.00	4.00	5.00	6.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
	Jan - Feb Flood Releases (TAF)	97.72	0.00	0.00	160.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	114.57	0.00	0.00	0.00	50.15	150.20	0.00	0.00	0.00	51.43	0.00
	Mokelumne Draft (MGD)	267.08	180.05	167.05	267.08	182.05	253.08	167.05	144.04	199.06	115.03	202.06	244.07	267.08	176.05	253.08	175.05	267.08	267.08	267.08	177.05	253.08	267.08	267.08
	Oct - Dec Flood Release (TAF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	51.95	0.00	0.00
	Total Additional Supply (TAF)	0.00	95.03	72.18	0.00	95.03	14.95	95.03	72.18	1.12	95.03	72.21	1.12	0.00	95.03	14.95	95.03	0.00	0.00	0.00	95.03	14.95	0.00	0.00
	EOS TSS (Thousand AF)	528.18	490.86	424.25	574.03	545.77	578.18	437.68	297.32	142.84	237.83	540.09	392.23	589.30	475.16	574.57	472.52	586.63	538.77	574.17	480.96	599.23	613.73	605.28
	Total Flood Release - Water Year (TAF)	97.72	0.00	0.00	160.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	119.10	0.00	0.00	0.00	50.15	150.20	0.00	0.00	51.95	51.43	0.00
	Total Shortage (Customer + LMR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CC 1.0																								
Demand 274 MGD	Actual Freeport Delivery (TAF)	0.00	0.00	93.17	0.00	0.00	0.00	93.94	71.06	0.00	93.94	4.86	93.17	0.00	93.94	0.00	93.94	0.00	0.00	0.00	93.94	0.00	0.00	0.00
	Aggregate Demand (MGD)	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00
	Bayside Supply (TAF)	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
	Rationing	0.00%	0.00%	3.21%	0.00%	0.00%	0.00%	2.35%	14.33%	24.68%	9.48%	0.00%	1.67%	0.00%	0.00%	0.00%	0.16%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Freeport Counter	0.00	0.00	1.00	0.00	0.00	0.00	1.00	2.00	3.00	4.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
	Jan - Feb Flood Releases (TAF)	29.14	0.00	0.00	214.36	0.00	20.08	0.00	0.00	0.00	0.00	10.09	0.00	157.69	0.00	28.97	0.00	139.00	222.91	34.32	0.00	82.62	61.35	0.00
	Mokelumne Draft (MGD)	274.08	274.08	181.05	274.08	274.08	274.08	182.05	170.05	205.06	163.05	269.08	185.06	274.08	189.06	274.08	188.06	274.08	274.08	274.08	189.06	274.08	274.08	274.08
	Oct - Dec Flood Release (TAF)	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.47	48.50	11.60	0.00	0.00	0.00	0.00	38.95	0.00	0.00	88.26	0.00	0.00
	Total Additional Supply (TAF)	0.00	0.00	94.94	0.00	0.00	0.00	84.88	64.44	1.00	84.88	4.34	84.19	0.00	84.88	0.00	84.88	0.00	0.00	0.00	84.88	0.00	0.00	0.00
	EOS TSS (Thousand AF)	582.38	512.78	470.85	574.25	564.81	577.30	479.61	452.74	306.58	468.88	590.05	484.67	585.64	532.81	578.73	499.06	583.97	603.23	618.21	565.78	611.00	612.90	600.52
	Total Flood Release - Water Year (TAF)	29.14	0.00	0.00	214.36	0.00	20.08	0.00	0.00	0.00	0.00	25.56	48.50	169.28	0.00	28.97	0.00	139.00	261.86	34.32	0.00	170.88	61.35	0.00
	Total Shortage (Customer + LMR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CC 1.0																								
Demand 284 MGD	Actual Freeport Delivery (TAF)	0.00	0.00	93.17	0.00	0.00	0.00	93.94	71.06	0.00	93.94	14.95	93.17	0.00	93.94	0.00	93.94	0.00	0.00	0.00	93.94	0.00	0.00	0.00
	Aggregate Demand (MGD)	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00
	Bayside Supply (TAF)	0.00	0.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
	Rationing	0.00%	0.00%	5.02%	0.00%	0.00%	0.00%	3.25%	15.79%	25.00%	14.35%	0.00%	2.44%	0.00%	0.00%	0.00%	1.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	Freeport Counter	0.00	0.00	1.00	0.00	0.00	0.00	1.00	2.00	3.00	4.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
	Jan - Feb Flood Releases (TAF)	26.18	0.00	0.00	212.92	0.00	6.15	0.00	0.00	0.00	0.00	0.00	0.00	156.27	0.00	15.83	0.00	127.28	219.95	32.90	0.00	71.56	60.61	0.00
	Mokelumne Draft (MGD)	284.08	284.08	185.06	284.08	284.08	284.08	189.06	174.05	212.06	158.05	270.08	192.06	284.08	199.06	284.08	196.06	284.08	284.08	284.08	199.06	284.08	284.08	284.08
	Oct - Dec Flood Release (TAF)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.69	37.37	10.82	0.00	0.00	0.00	0.00	37.41	0.00	0.00	86.72	0.00	0.00
	Total Additional Supply (TAF)	0.00	0.00	84.19	0.00	0.00	0.00	84.88	64.44	1.00	84.88	13.35	84.19	0.00	84.88	0.00	84.88	0.00	0.00	0.00	84.88	0.00	0.00	0.00
	EOS TSS (Thousand AF)	583.29	502.76	455.58	575.16	554.74	578.21	472.15	440.69	288.76	454.75	590.14	478.62	586.54	523.55	579.64	490.75	584.88	604.13	619.12	558.60	611.90	613.81	601.43
	Total Flood Release - Water Year (TAF)	26.19	0.00	0.00	212.92	0.00	6.15	0.00	0.00	0.00	0.00	14.69	37.37	167.09	0.00	15.83	0.00	127.28	257.36	32.90	0.00	158.29	60.61	0.00
	Total Shortage (Customer + LMR)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Raw Data

		1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Baseline (267 MGD)	Actual Freeport Delivery (TAF)	75.89	83.05	6.06	82.39	0.00	93.91	0.00	0.00	0.00	93.91	0.00	93.17	71.83	0.00	66.45	78.28	20.28	0.00	93.91	14.95	0.00	0.00	0.00	0.00	0.00	93.91	71.06
	Aggregate Demand (MGD)	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00
	Bayside Supply (TAF)	1.12	1.12	1.12	1.12	0.00	1.12	0.00	0.00	0.00	1.12	0.00	1.12	1.12	1.12	1.12	1.12	1.12	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.12	1.12
	Rationing	8.61%	25.00%	25.00%	21.85%	0.00%	1.20%	0.00%	0.00%	0.00%	0.00%	0.00%	7.46%	25.00%	21.75%	23.29%	25.00%	25.00%	0.00%	5.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.90%	6.29%
	Freeport Counter	1.00	2.00	3.00	4.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00	2.00	3.00	4.00	5.00	6.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.00
	Jan - Feb Flood Releases (TAF)	0.00	0.00	0.00	0.00	91.81	0.00	208.49	183.33	95.63	0.00	250.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	99.52	398.84	109.21	77.04	27.84	0.00	0.00
	Mokelumne Draft (MGD)	175.05	125.04	99.55	134.04	267.08	178.05	267.08	267.08	267.08	182.05	267.08	162.05	135.04	207.06	144.04	129.04	181.05	267.08	168.05	253.08	267.08	267.08	267.08	267.08	267.08	179.05	185.06
	Oct - Dec Flood Release (TAF)	0.00	0.00	0.00	0.00	0.00	0.00	134.90	234.46	5.96	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	131.98	2.55	0.00	0.00	0.00	0.00	0.00
	Total Additional Supply (TAF)	77.01	84.17	7.18	83.51	0.00	95.03	0.00	0.00	0.00	95.03	0.00	94.29	72.95	1.12	67.57	79.40	21.40	0.00	95.03	14.95	0.00	0.00	0.00	0.00	0.00	95.03	72.18
	EOS TSS (Thousand AF)	375.68	104.95	85.38	295.07	579.54	486.33	545.00	560.81	615.47	512.60	594.60	414.70	236.91	296.89	270.00	223.99	211.48	602.27	441.19	566.16	625.68	620.82	593.83	611.43	621.52	489.65	464.01
	Total Flood Release - Water Year (TAF)	0.00	0.00	0.00	0.00	91.81	0.00	343.39	417.79	101.60	0.00	250.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	231.50	401.39	109.21	77.04	27.84	0.00	0.00
	Total Shortage (Customer + LMR)	0.00	0.00	125.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CC 2.1 **Shift spring runoff by 18.7%**	Actual Freeport Delivery (TAF)	75.89	83.05	6.06	82.39	0.00	93.91	0.00	0.00	0.00	93.91	0.00	93.17	71.83	0.00	66.45	78.28	20.28	0.00	93.91	0.00	0.00	0.00	0.00	0.00	0.00	93.91	71.06
	Aggregate Demand (MGD)	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00
	Bayside Supply (TAF)	1.12	1.12	1.12	1.12	0.00	1.12	0.00	0.00	0.00	1.12	0.00	1.12	1.12	1.12	1.12	1.12	1.12	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.12	1.12
	Rationing	8.40%	25.00%	25.00%	22.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.51%	25.00%	21.88%	22.89%	24.75%	25.00%	0.00%	4.38%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.84%	9.22%
	Freeport Counter	1.00	2.00	3.00	4.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00	2.00	3.00	4.00	5.00	6.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.00
	Jan - Feb Flood Releases (TAF)	0.00	0.00	0.00	0.00	126.78	0.00	296.67	238.37	100.84	0.00	250.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.05	136.91	431.67	193.95	134.27	81.13	0.00	0.00
	Mokelumne Draft (MGD)	175.05	125.04	105.42	133.04	267.08	182.05	267.08	267.08	267.08	182.05	267.08	162.05	135.04	207.06	145.04	130.04	181.05	267.08	170.05	267.08	267.08	267.08	267.08	267.08	267.08	171.05	177.05
	Oct - Dec Flood Release (TAF)	0.00	0.00	0.00	0.00	0.00	0.00	152.25	266.98	16.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	147.91	0.00	0.00	0.00	0.00	0.00	0.00
	Total Additional Supply (TAF)	77.01	84.17	7.18	83.51	0.00	95.03	0.00	0.00	0.00	95.03	0.00	94.29	72.95	1.12	67.57	79.40	21.40	0.00	95.03	0.00	0.00	0.00	0.00	0.00	0.00	95.03	72.18
	EOS TSS (Thousand AF)	382.92	122.08	84.84	290.46	578.85	511.57	541.82	560.75	615.47	542.66	594.60	413.87	237.83	294.68	277.09	244.66	207.80	605.04	449.92	573.58	624.86	592.60	593.83	611.43	558.90	456.09	447.23
	Total Flood Release - Water Year (TAF)	0.00	0.00	0.00	0.00	126.78	0.00	448.91	505.36	117.31	0.00	250.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.05	284.82	431.67	193.95	134.27	81.13	0.00	0.00
	Total Shortage (Customer + LMR)	0.00	0.00	123.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CC 2.2 **Shift spring runoff by 28.3%**	Actual Freeport Delivery (TAF)	75.89	83.05	6.06	82.39	0.00	93.91	0.00	0.00	0.00	93.91	0.00	93.17	71.83	0.00	66.45	78.28	20.28	0.00	93.91	0.00	0.00	0.00	0.00	0.00	0.00	93.91	71.06
	Aggregate Demand (MGD)	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00
	Bayside Supply (TAF)	1.12	1.12	1.12	1.12	0.00	1.12	0.00	0.00	0.00	1.12	0.00	1.12	1.12	1.12	1.12	1.12	1.12	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.12	1.12
	Rationing	8.14%	25.00%	25.00%	22.26%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.36%	24.82%	22.11%	23.07%	24.18%	25.00%	0.00%	4.68%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.61%	7.39%
	Freeport Counter	1.00	2.00	3.00	4.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00	2.00	3.00	4.00	5.00	6.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.00
	Jan - Feb Flood Releases (TAF)	0.00	0.00	0.00	0.00	152.13	0.00	348.97	285.25	104.34	0.00	267.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.64	149.24	455.60	192.68	159.40	106.68	0.00	0.00
	Mokelumne Draft (MGD)	176.05	125.04	110.36	133.04	267.08	182.05	267.08	267.08	267.08	182.05	267.08	165.05	135.04	206.06	145.04	131.04	181.05	267.08	169.05	267.08	267.08	267.08	267.08	267.08	267.08	164.05	182.05
	Oct - Dec Flood Release (TAF)	0.00	0.00	0.00	0.00	0.00	0.00	162.08	290.32	14.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	154.31	0.00	0.00	0.00	0.00	0.00	0.00
	Total Additional Supply (TAF)	77.01	84.17	7.18	83.51	0.00	95.03	0.00	0.00	0.00	95.03	0.00	94.29	72.95	1.12	67.57	79.40	21.40	0.00	95.03	0.00	0.00	0.00	0.00	0.00	0.00	95.03	72.18
	EOS TSS (Thousand AF)	391.98	120.17	85.81	288.01	578.85	511.27	541.82	560.75	598.71	551.98	594.60	427.28	243.45	290.56	273.97	254.67	209.02	605.05	446.41	573.58	624.87	556.59	593.83	611.43	526.35	424.41	457.73
	Total Flood Release - Water Year (TAF)	0.00	0.00	0.00	0.00	152.13	0.00	511.05	575.57	118.53	0.00	267.58	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	79.64	303.55	455.60	192.68	159.40	106.68	0.00	0.00
	Total Shortage (Customer + LMR)	0.00	0.00	121.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CC 2.3 **Shift spring runoff by 37.9%**	Actual Freeport Delivery (TAF)	75.89	83.05	6.06	82.39	0.00	93.91	0.00	0.00	0.00	93.91	0.00	93.17	71.83	0.00	66.45	78.28	20.28	0.00	93.91	0.00	0.00	0.00	0.00	0.00	0.00	93.91	71.06
	Aggregate Demand (MGD)	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00
	Bayside Supply (TAF)	1.12	1.12	1.12	1.12	0.00	1.12	0.00	0.00	0.00	1.12	0.00	1.12	1.12	1.12	1.12	1.12	1.12	0.00	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.12	1.12
	Rationing	7.93%	25.00%	25.00%	22.38%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.74%	23.97%	21.73%	23.02%	23.92%	25.00%	0.00%	3.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.54%	7.45%
	Freeport Counter	1.00	2.00	3.00	4.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00	2.00	3.00	4.00	5.00	6.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.00
	Jan - Feb Flood Releases (TAF)	0.00	0.00	0.00	0.00	193.96	0.00	402.13	322.46	111.20	0.00	265.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85.51	162.37	489.31	178.21	189.21	122.55	0.00	0.00
	Mokelumne Draft (MGD)	177.05	125.04	121.10	132.04	267.08	182.05	267.08	267.08	267.08	182.05	267.08	170.05	137.04	207.06	145.04	132.04	181.05	267.08	173.05	267.08	267.08	267.08	267.08	267.08	267.08	162.05	182.05
	Oct - Dec Flood Release (TAF)	0.00	0.00	0.00	0.00	0.00	0.00	182.17	313.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	155.35	0.00	0.53	0.00	0.00	0.00	0.00
	Total Additional Supply (TAF)	77.01	84.17	7.18	83.51	0.00	95.03	0.00	0.00	0.00	95.03	0.00	94.29	72.95	1.12	67.57	79.40	21.40	0.00	95.03	0.00	0.00	0.00	0.00	0.00	0.00	95.03	72.18
	EOS TSS (Thousand AF)	399.22	124.93	87.90	285.83	578.85	520.92	541.82	560.75	565.23	534.45	579.47	445.82	258.22	297.24	274.71	259.18	220.63	605.04	464.94	573.58	605.75	520.59	593.83	579.56	500.55	412.93	457.40
	Total Flood Release - Water Year (TAF)	0.00	0.00	0.00	0.00	193.96	0.00	584.30	636.26	111.20	0.00	265.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	85.51	317.72	489.31	178.74	189.21	122.55	0.00	0.00
	Total Shortage (Customer + LMR)	0.00	0.00	113.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CC 3.1 **Decrease precip by -10%**	Actual Freeport Delivery (TAF)	75.89	83.05	6.06	82.39	0.00	93.91	0.00	0.00	0.00	93.91	0.00	93.17	71.83	0.00	66.45	78.28	20.28	66.45	78.28	0.00	0.00	0.00	0.00	0.00	0.00	93.91	71.06
	Aggregate Demand (MGD)	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00
	Bayside Supply (TAF)	1.12	1.12	1.12	1.12	0.00	1.12	0.00	0.00	0.00	1.12	0.00	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.12	1.12
	Rationing	9.02%	25.00%	25.00%	25.00%	0.00%	2.69%	0.00%	0.00%	0.00%	0.58%	0.00%	8.08%	25.00%	25.00%	25.00%	25.00%	25.00%	1.49%	18.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.10%	17.18%
	Freeport Counter	1.00	2.00	3.00	4.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.00
	Jan - Feb Flood Releases (TAF)	0.00	0.00	0.00	0.00	22.42	0.00	178.53	162.17	81.26	0.00	185.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	71.82	347.88	104.88	59.58	10.92	0.00	0.00
	Mokelumne Draft (MGD)	174.05	125.04	90.70	125.04	267.08	174.05	267.08	267.08	267.08	180.05	267.08	161.05	135.04	199.06	139.04	129.04	181.05	202.06	147.04	267.08	267.08	267.08	267.08	267.08	267.08	168.05	156.05
	Oct - Dec Flood Release (TAF)	0.00	0.00	0.00	0.00	0.00	0.00	120.97	199.61	2.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	111.80	0.00	0.00	0.00	0.00	0.00	0.00
	Total Additional Supply (TAF)	77.01	84.17	7.18	83.51	0.00	95.03	0.00	0.00	0.00	95.03	0.00	94.29	72.95	1.12	67.57	79.40	21.40	67.57	79.40	0.00	0.00	0.00	0.00	0.00	0.00	95.03	72.18
	EOS TSS (Thousand AF)	361.35	114.51	83.68	230.89	579.44	469.19	550.10	561.82	615.94	493.39	594.73	393.89	195.21	203.54	181.74	122.28	84.00	491.50	358.14	570.96	626.19	609.22	594.59	611.59	580.77	441.65	376.28
	Total Flood Release - Water Year (TAF)	0.00	0.00	0.00	0.00	22.43	0.00	299.50	361.78	84.11	0.00	185.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	183.61	347.88	104.88	59.58	10.92	0.00	0.00
	Total Shortage (Customer + LMR)	0.00	0.00	145.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CC 3.2 **Decrease precip by -20%**	Actual Freeport Delivery (TAF)	75.89	83.05	6.06	82.39	0.00	93.91	0.00	0.00	0.00	93.91	0.00	93.17	71.83	0.00	66.45	78.28	20.28	66.45	78.28	0.00	0.00	0.00	0.00	0.00	0.00	93.91	71.06
	Aggregate Demand (MGD)	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00	267.00
	Bayside Supply (TAF)	1.12	1.12	1.12	1.12	0.00	1.12	0.00	0.00	0.00	1.12	0.00	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	0.00	0.00	0.00	0.00	0.00	0.00	1.12	1.12
	Rationing	9.55%	25.00%	25.00%	25.00%	0.00%	4.51%	0.00%	0.00%	0.00%	1.80%	0.00%	8.80%	25.00%	25.00%	25.00%	25.00%	25.00%	19.12%	24.75%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.54%	21.30%
	Freeport Counter	1.00	2.00	3.00	4.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.00
	Jan - Feb Flood Releases (TAF)	0.00	0.00	0.00	0.00	0.00	0.00	94.46	137.59	66.88	0.00	112.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.15	294.92	37.59	36.02	0.00	0.00	0.00
	Mokelumne Draft (MGD)	172.05	125.04	62.02	125.04	267.08	170.05	267.08	267.08	267.08	177.05	267.08	159.05	135.04	199.06	139.04	129.04	122.51	155.05	130.04	267.08	267.08	267.08	267.08	267.08	267.08	159.05	145.04
	Oct - Dec Flood Release (TAF)	0.00	0.00	0.00	0.00	0.00	0.00	103.88	164.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	91.62	0.00	0.00	0.00	0.00	0.00	0.00
	Total Additional Supply (TAF)	77.01	84.17	7.18	83.51	0.00	95.03	0.00	0.00	0.00	95.03	0.00	94.29	72.95	1.12	67.57	79.40	21.40	67.57	79.40	0.00	0.00	0.00	0.00	0.00	0.00	95.03	72.18
	EOS TSS (Thousand AF)	342.76	108.67	78.09	164.29	579.69	448.35	556.87	562.84	598.18	479.44	594.87	368.88	180.57	153.54	111.24	55.86	67.42	342.67	244.77	571.43	625.97	566.90	595.34	611.75	538.79	378.12	304.63
	Total Flood Release - Water Year (TAF)	0.00	0.00	0.00	0.00	0.00	0.00	198.35	302.35	66.88	0.00	112.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	137.77	294.92	37.59	36.02	0.00	0.00	0.00
	Total Shortage (Customer + LMR)	0.00	0.00	189.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	69.75	1.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CC 1.0 **Demand 274 MGD**	Actual Freeport Delivery (TAF)	75.89	83.05	6.06	82.39	0.00	93.94	0.00	0.00	0.00	93.94	0.00	93.17	71.83	0.00	66.45	78.28	20.28	0.00	93.94	14.95	0.00	0.00	0.00	0.00	0.00	93.94	71.06
	Aggregate Demand (MGD)	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00	274.00
	Bayside Supply (TAF)	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
	Rationing	9.00%	25.00%	25.00%	23.22%	0.00%	3.18%	0.00%	0.00%	0.00%	0.00%	0.00%	7.75%	25.00%	22.58%	24.48%	25.00%	25.00%	0.00%	7.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.96%	4.77%
	Freeport Counter	1.00	2.00	3.00	4.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00	2.00	3.00	4.00	5.00	6.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.00
	Jan - Feb Flood Releases (TAF)	0.00	0.00	0.00	0.00	75.76	0.00	226.15	173.24	106.99	0.00	265.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	90.95	423.01	110.40	85.65	23.60	0.00	0.00
	Mokelumne Draft (MGD)	180.05	130.04	98.32	135.04	274.08	180.05	274.08	274.08	274.08	189.06	274.08	168.05	140.04	211.06	146.04	134.04	186.06	274.08	168.05	260.08	274.08	274.08	274.08	274.08	274.08	186.06	196.06
	Oct - Dec Flood Release (TAF)	0.00	0.00	0.00	0.00	0.00	0.00	142.10	258.62	9.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	131.98	2.57	0.00	0.00	0.00	0.00	0.00
	Total Additional Supply (TAF)	68.76	75.15	6.41	74.57	0.00	84.88	0.00	0.00	0.00	84.88	0.00	84.19	65.13	1.00	60.33	70.89	19.10	0.00	84.88	13.35	0.00	0.00	0.00	0.00	0.00	84.88	64.44
	EOS TSS (Thousand AF)	386.13	190.05	84.62	305.46	580.12	472.03	544.13	555.16	611.92	529.82	588.81	425.53	283.43	313.43	297.61	247.71	210.08	575.62	433.98	574.31	622.25	619.97	593.76	609.38	618.86	491.78	484.31
	Total Flood Release - Water Year (TAF)	0.00	0.00	0.00	0.00	75.76	0.00	368.25	431.86	116.13	0.00	265.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	222.93	425.58	110.40	85.65	23.60	0.00	0.00
	Total Shortage (Customer + LMR)	0.00	0.00	137.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CC 1.0 **Demand 284 MGD**	Actual Freeport Delivery (TAF)	75.89	83.05	6.06	82.39	0.00	93.94	0.00	0.00	0.00	93.94	0.00	93.17	71.83	0.00	66.45	78.28	20.28	0.00	93.94	14.95	0.00	0.00	0.00	0.00	0.00	93.94	71.06
	Aggregate Demand (MGD)	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00	284.00
	Bayside Supply (TAF)	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	1.00
	Rationing	9.29%	25.00%	25.00%	23.73%	0.00%	4.07%	0.00%	0.00%	0.00%	0.00%	0.00%	8.04%	25.00%	23.99%	24.70%	25.00%	25.00%	0.00%	8.28%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.85%	7.85%
	Freeport Counter	1.00	2.00	3.00	4.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00	1.00	2.00	3.00	4.00	5.00	6.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	2.00
	Jan - Feb Flood Releases (TAF)	0.00	0.00	0.00	0.00	66.62	0.00	224.73	171.82	105.55	0.00	252.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	87.96	421.60	108.23	82.69	20.53	0.00	0.00
	Mokelumne Draft (MGD)	188.06	137.04	84.18	142.04	284.08	187.06	284.08	284.08	284.08	199.06	284.08	176.05	147.04	214.06	153.05	142.04	193.06	284.08	175.05	270.08	284.08	284.08	284.08	284.08	284.08	193.06	197.06
	Oct - Dec Flood Release (TAF)	0.00	0.00	0.00	0.00	0.00	0.00	140.57	257.08	8.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	130.45	1.79	0.00	0.00	0.00	0.00	0.00
	Total Additional Supply (TAF)	68.76	75.15	6.41	74.57	0.00	84.88	0.00	0.00	0.00	84.88	0.00	84.19	65.13	1.00	60.33	70.89	19.10	0.00	84.88	13.35	0.00	0.00	0.00	0.00	0.00	84.88	64.44
	EOS TSS (Thousand AF)	377.76	174.44	82.22	299.54	581.03	464.60	545.04	556.07	612.83	520.55	589.72	417.23	267.99	319.13	308.04	248.97	203.35	558.75	409.71	575.22	623.16	620.88	594.67	610.28	619.77	484.35	474.71
	Total Flood Release - Water Year (TAF)	0.00	0.00	0.00	0.00	66.62	0.00	365.30	428.90	113.91	0.00	252.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	218.41	423.38	108.23	82.69	20.53	0.00	0.00
	Total Shortage (Customer + LMR)	0.00	0.00	161.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Climate Change Study #1
Normalized Demand
Effect on Storage Rationing

	Rationing (%)								TSS (TAF)			
	274 MGD Demand		284 MGD Demand		Rationing Comparison (274 MGD Demand vs. 284 MGD)				EOS TSS Comparison (274 MGD Demand vs. 284 MGD)			
Year	Output (%)	Output (AF)	Output (%)	Output (AF)	Decrease (%)	Increase (%)	Decrease (AF)	Increase (AF)	274 MGD Demand (TAF)	284 MGD Demand (TAF)	Increase (AF)	Decrease (AF)
1953	0.00%	0	0.00%	0	-	-	-	-	582	583	0	0
1954	0.00%	0	0.00%	0	-	-	-	-	513	503	0	9,108
1955	3.21%	9,845	5.02%	15,979	-	1.82%	-	6,134	471	456	0	14,357
1956	0.00%	0	0.00%	0	-	-	-	-	574	575	0	0
1957	0.00%	0	0.00%	0	-	-	-	-	565	555	0	9,157
1958	0.00%	0	0.00%	0	-	-	-	-	577	578	0	0
1959	2.35%	7,227	3.25%	10,337	-	0.89%	-	3,110	480	472	0	6,552
1960	14.33%	43,973	15.79%	50,239	-	1.47%	-	6,265	453	441	0	11,141
1961	24.68%	75,731	25.00%	79,520	-	0.32%	-	3,789	307	289	0	16,904
1962	9.48%	29,077	14.35%	45,629	-	4.87%	-	16,552	469	455	0	13,215
1963	0.00%	0	0.00%	0	-	-	-	-	590	590	0	0
1964	1.67%	5,136	2.44%	7,765	-	0.77%	-	2,629	485	479	0	5,132
1965	0.00%	0	0.00%	0	-	-	-	-	586	587	0	0
1966	0.00%	0	0.00%	0	-	-	-	-	533	524	0	8,345
1967	0.00%	0	0.00%	0	-	-	-	-	579	580	0	0
1968	0.16%	491	1.05%	3,355	-	0.89%	-	2,864	499	491	0	7,404
1969	0.00%	0	0.00%	0	-	-	-	-	584	585	0	0
1970	0.00%	0	0.00%	0	-	-	-	-	603	604	0	0
1971	0.00%	0	0.00%	0	-	-	-	-	618	619	0	0
1972	0.00%	0	0.00%	0	-	-	-	-	566	559	0	6,277
1973	0.00%	0	0.00%	0	-	-	-	-	611	612	0	0
1974	0.00%	0	0.00%	0	-	-	-	-	613	614	0	0
1975	0.00%	0	0.00%	0	-	-	-	-	601	601	0	0
1976	9.00%	27,605	9.29%	29,545	-	0.29%	-	1,940	386	378	0	7,457
1977	25.00%	76,720	25.00%	79,520	-	-	-	2,800	190	174	0	14,705
1978	25.00%	76,720	25.00%	79,520	-	-	-	2,800	85	82	0	1,497
1979	23.22%	71,253	23.73%	75,472	-	0.51%	-	4,219	305	300	0	5,013
1980	0.00%	0	0.00%	0	-	-	-	-	580	581	0	0
1981	3.18%	9,761	4.07%	12,950	-	0.89%	-	3,189	472	465	0	6,519
1982	0.00%	0	0.00%	0	-	-	-	-	544	545	0	0
1983	0.00%	0	0.00%	0	-	-	-	-	555	556	0	0
1984	0.00%	0	0.00%	0	-	-	-	-	612	613	0	0
1985	0.00%	0	0.00%	0	-	-	-	-	530	521	0	8,363
1986	0.00%	0	0.00%	0	-	-	-	-	589	590	0	0
1987	7.75%	23,773	8.04%	25,571	-	0.29%	-	1,798	426	417	0	7,399
1988	25.00%	76,720	25.00%	79,520	-	-	-	2,800	283	268	0	14,524
1989	22.58%	69,282	23.99%	76,298	-	1.41%	-	7,016	313	319	4,787	0
1990	24.48%	75,126	24.70%	78,576	-	0.22%	-	3,450	298	308	9,521	0
1991	25.00%	76,720	25.00%	79,520	-	-	-	2,800	248	249	351	0
1992	25.00%	76,720	25.00%	79,520	-	-	-	2,800	210	203	0	5,819
1993	0.00%	0	0.00%	0	-	-	-	-	576	559	0	15,953
1994	7.50%	23,024	8.28%	26,350	-	0.78%	-	3,326	434	410	0	23,364
1995	0.00%	0	0.00%	0	-	-	-	-	574	575	1	0
1996	0.00%	0	0.00%	0	-	-	-	-	622	623	0	0
1997	0.00%	0	0.00%	0	-	-	-	-	620	621	0	0
1998	0.00%	0	0.00%	0	-	-	-	-	594	595	0	0
1999	0.00%	0	0.00%	0	-	-	-	-	609	610	0	0
2000	0.00%	0	0.00%	0	-	-	-	-	619	620	0	0
2001	0.96%	2,952	1.85%	5,890	-	0.89%	-	2,938	492	484	0	6,512
2002	4.77%	14,652	7.85%	24,971	-	3.08%	-	10,319	484	475	0	8,695

Climate Change Study # 2.1 - 2.3, 3.1 - 3.2
Shifted Spring Runoff
Effect on Storage

	VD_0	VD_1 Output	Comparison to VD_0 (Basline)				VD_2 Output	Comparison to VD_0 (Basline)			
Year	TAF	Shift Spring Runoff by 18.7%	Decrease (TAF)	Decrease (%)	Increase (TAF)	Increase (%)	Shift Spring Runoff by 28.3%	Decrease (TAF)	Decrease (%)	Increase (TAF)	Increase (%)
1953	580.995	560.588	20.407	4%	-	-	531.556	49.439	9%	-	-
1954	537.859	513.775	24.084	4%	-	-	534.084	3.775	1%	-	-
1955	531.845	504.624	27.221	5%	-	-	537.194	-	-	5.349	1%
1956	572.212	572.196	0.016	0%	-	-	572.196	0.016	0%	-	-
1957	579.17	554.937	24.233	4%	-	-	525.144	54.026	9%	-	-
1958	578.669	578.669	-	-	-	-	578.669	-	-	-	-
1959	482.733	497.509	-	-	14.776	3%	501.718	-	-	18.985	4%
1960	453.693	436.624	17.069	4%	-	-	432.667	21.026	5%	-	-
1961	316.346	310.215	6.131	2%	-	-	286.23	30.116	10%	-	-
1962	472.692	463.149	9.543	2%	-	-	448.95	23.742	5%	-	-
1963	589.369	589.542	-	-	0.173	0%	589.542	-	-	0.173	0%
1964	515.486	519.109	-	-	3.623	1%	535	-	-	19.514	4%
1965	588.229	588.229	-	-	-	-	588.229	-	-	-	-
1966	563.412	547.43	15.982	3%	-	-	500.947	62.465	11%	-	-
1967	572.165	577.372	-	-	5.207	1%	577.372	-	-	5.207	1%
1968	521.08	546.89	-	-	25.81	5%	542.243	-	-	21.163	4%
1969	584.409	584.409	-	-	-	-	584.409	-	-	-	-
1970	603.639	580.448	23.191	4%	-	-	561.801	41.838	7%	-	-
1971	620.557	602.282	18.275	3%	-	-	576.786	43.771	7%	-	-
1972	562.838	543.861	18.977	3%	-	-	534.467	28.371	5%	-	-
1973	611.108	611.107	0.001	0%	-	-	599.21	11.898	2%	-	-
1974	613.105	613.105	-	-	-	-	613.105	-	-	-	-
1975	600.895	600.895	-	-	-	-	600.894	0.001	0%	-	-
1976	396.39	403.634	-	-	7.244	2%	411.838	-	-	15.448	4%
1977	162.638	179.881	-	-	17.243	11%	178.066	-	-	15.428	9%
1978	82.006	81.464	0.542	1%	-	-	82.426	-	-	0.42	1%
1979	321.744	317.403	4.341	1%	-	-	314.977	6.767	2%	-	-
1980	579.538	578.852	0.686	0%	-	-	578.852	0.686	0%	-	-
1981	490.584	512.424	-	-	21.84	4%	512.133	-	-	21.549	4%
1982	545.002	541.822	3.18	1%	-	-	541.822	3.18	1%	-	-
1983	560.81	560.747	0.063	0%	-	-	560.747	0.063	0%	-	-
1984	615.468	615.468	-	-	-	-	598.705	16.763	3%	-	-
1985	513.457	543.518	-	-	30.061	6%	552.625	-	-	39.168	8%
1986	594.602	594.602	-	-	-	-	594.604	-	-	0.002	0%
1987	432.598	431.827	0.771	0%	-	-	442.685	-	-	10.087	2%
1988	292.796	294.108	-	-	1.312	0%	299.553	-	-	6.757	2%
1989	322.879	320.483	2.396	1%	-	-	317.352	5.527	2%	-	-
1990	311.25	316.857	-	-	5.607	2%	313.66	-	-	2.41	1%
1991	281.131	301.158	-	-	20.027	7%	298.605	-	-	17.474	6%
1992	267.581	263.572	4.009	1%	-	-	264.876	2.705	1%	-	-
1993	602.273	605.044	-	-	2.771	0%	605.049	-	-	2.776	0%
1994	454.05	461.047	-	-	6.997	2%	458.399	-	-	4.349	1%
1995	566.161	573.577	-	-	7.416	1%	573.577	-	-	7.416	1%
1996	625.681	624.864	0.817	0%	-	-	624.866	0.815	0%	-	-
1997	620.82	592.598	28.222	5%	-	-	556.587	64.233	10%	-	-
1998	593.833	593.833	-	-	-	-	593.833	-	-	-	-
1999	611.425	611.425	-	-	-	-	611.425	-	-	-	-
2000	621.523	558.897	62.626	10%	-	-	526.347	95.176	15%	-	-
2001	493.047	466.359	26.688	5%	-	-	440.66	52.387	11%	-	-
2002	479.287	469.435	9.852	2%	-	-	475.688	3.599	1%	-	-

Average			13	2.5%	11	3.0%		25	4.6%	11	2.8%
Maximum			63	10.1%	30	10.6%		95	15.3%	39	9.5%

Climate Change Study # 2.1 - 2.3, 3.1 - 3.2
Shifted Spring Runoff
Effect on Storage

	VD_0	VD_3 Output	Comparison to VD_0 (Basline)				VD_4 Output	Comparison to VD_0 (Basline)				VD_5 Output	Comparison to VD_0 (Basline)			
Year	TAF	Shift Spring Runoff by 37.9%	Decrease (TAF)	Decrease (%)	Increase (TAF)	Increase (%)	-10%	Decrease (TAF)	Decrease (%)	Increase (TAF)	Increase (%)	-20%	Decrease (TAF)	Decrease (%)	Increase (TAF)	Increase (%)
1953	580.995	517.609	63.386	11%	-	-	562.337	18.658	3%	-	-	528.181	52.814	9%	-	-
1954	537.859	533.428	4.431	1%	-	-	566.084	-	-	28.225	5%	493.409	44.45	8%	-	-
1955	531.845	494.535	37.31	7%	-	-	512.892	18.953	4%	-	-	454.869	76.976	14%	-	-
1956	572.212	572.196	0.016	0%	-	-	573.115	-	-	0.903	0%	574.027	-	-	1.815	0%
1957	579.17	502.698	76.472	13%	-	-	520.026	59.144	10%	-	-	546.622	32.548	6%	-	-
1958	578.669	578.669	-	-	-	-	579.062	-	-	0.393	0%	578.181	0.488	0%	-	-
1959	482.733	501.268	-	-	18.535	4%	460.518	22.215	5%	-	-	451.379	31.354	6%	-	-
1960	453.693	450.741	2.952	1%	-	-	396.345	57.348	13%	-	-	335.325	118.368	26%	-	-
1961	316.346	298.162	18.184	6%	-	-	250.025	66.321	21%	-	-	201.132	115.214	36%	-	-
1962	472.692	442.648	30.044	6%	-	-	368.115	104.577	22%	-	-	294.563	178.129	38%	-	-
1963	589.369	589.547	-	-	0.178	0%	588.975	0.394	0%	-	-	540.942	48.427	8%	-	-
1964	515.486	497.988	17.498	3%	-	-	480.792	34.694	7%	-	-	412.026	103.46	20%	-	-
1965	588.229	588.229	-	-	-	-	588.762	-	-	0.533	0%	589.296	-	-	1.067	0%
1966	563.412	546.92	16.492	3%	-	-	519.684	43.728	8%	-	-	481.111	82.301	15%	-	-
1967	572.165	577.372	-	-	5.207	1%	574.851	-	-	2.686	0%	574.57	-	-	2.405	0%
1968	521.08	515.132	5.948	1%	-	-	486.387	34.693	7%	-	-	479.365	41.715	8%	-	-
1969	584.409	584.409	-	-	-	-	585.52	-	-	1.111	0%	586.632	-	-	2.223	0%
1970	603.639	529.131	74.508	12%	-	-	583.17	20.469	3%	-	-	538.768	64.871	11%	-	-
1971	620.557	544.481	76.076	12%	-	-	620.875	-	-	0.318	0%	574.172	46.385	7%	-	-
1972	562.838	524.18	38.658	7%	-	-	531.785	31.053	6%	-	-	486.081	76.757	14%	-	-
1973	611.108	562.193	48.915	8%	-	-	611.746	-	-	0.638	0%	599.231	11.877	2%	-	-
1974	613.105	613.11	-	-	0.005	0%	613.418	-	-	0.313	0%	613.73	-	-	0.625	0%
1975	600.895	600.894	0.001	0%	-	-	603.086	-	-	2.191	0%	605.277	-	-	4.382	1%
1976	396.39	418.167	-	-	21.777	5%	382.92	13.47	3%	-	-	366.054	30.336	8%	-	-
1977	162.638	182.768	-	-	20.13	12%	172.165	-	-	9.527	6%	150.722	11.916	7%	-	-
1978	82.006	84.518	-	-	2.512	3%	80.299	1.707	2%	-	-	74.711	7.295	9%	-	-
1979	321.744	313.634	8.11	3%	-	-	288.663	33.081	10%	-	-	223.603	98.141	31%	-	-
1980	579.538	578.852	0.686	0%	-	-	579.442	0.096	0%	-	-	579.694	-	-	0.156	0%
1981	490.584	521.781	-	-	31.197	6%	476.865	13.719	3%	-	-	459.44	31.144	6%	-	-
1982	545.002	541.822	3.18	1%	-	-	550.098	-	-	5.096	1%	556.874	-	-	11.872	2%
1983	560.81	560.747	0.063	0%	-	-	561.823	-	-	1.013	0%	562.838	-	-	2.028	0%
1984	615.468	565.227	50.241	8%	-	-	615.938	-	-	0.47	0%	598.178	17.29	3%	-	-
1985	513.457	535.011	-	-	21.554	4%	495.952	17.505	3%	-	-	484.566	28.891	6%	-	-
1986	594.602	579.472	15.13	3%	-	-	594.734	-	-	0.132	0%	594.865	-	-	0.263	0%
1987	432.598	456.958	-	-	24.36	6%	412.815	19.783	5%	-	-	389.512	43.086	10%	-	-
1988	292.796	312.67	-	-	19.874	7%	252.014	40.782	14%	-	-	237.54	55.256	19%	-	-
1989	322.879	323.483	-	-	0.604	0%	261.318	61.561	19%	-	-	212.047	110.832	34%	-	-
1990	311.25	314.422	-	-	3.172	1%	239.855	71.395	23%	-	-	170.212	141.038	45%	-	-
1991	281.131	302.268	-	-	21.137	8%	181.116	100.015	36%	-	-	88.826	192.305	68%	-	-
1992	267.581	276.241	-	-	8.66	3%	141.767	125.814	47%	-	-	65.008	202.573	76%	-	-
1993	602.273	605.044	-	-	2.771	0%	495.736	106.537	18%	-	-	387.623	214.65	36%	-	-
1994	454.05	473.513	-	-	19.463	4%	401.909	52.141	11%	-	-	300.912	153.138	34%	-	-
1995	566.161	573.577	-	-	7.416	1%	570.962	-	-	4.801	1%	571.433	-	-	5.272	1%
1996	625.681	605.747	19.934	3%	-	-	626.186	-	-	0.505	0%	625.97	-	-	0.289	0%
1997	620.82	520.589	100.231	16%	-	-	609.216	11.604	2%	-	-	566.903	53.917	9%	-	-
1998	593.833	593.833	-	-	-	-	594.587	-	-	0.754	0%	595.341	-	-	1.508	0%
1999	611.425	579.557	31.868	5%	-	-	611.586	-	-	0.161	0%	611.745	-	-	0.32	0%
2000	621.523	500.551	120.972	19%	-	-	580.767	40.756	7%	-	-	538.794	82.729	13%	-	-
2001	493.047	430.892	62.155	13%	-	-	454.371	38.676	8%	-	-	399.356	93.691	19%	-	-
2002	479.287	475.423	3.864	1%	-	-	416.746	62.541	13%	-	-	352.842	126.445	26%	-	-

Average			33	5.8%	13	3.7%		43	10.7%	3	0.8%		78	19.1%	2	0.4%
Maximum			121	19.5%	31	12.4%		126	47.0%	28	5.9%		215	75.7%	12	2.2%

Climate Change Study # 2.1 - 2.3, 3.1 - 3.2
Shifted Spring Runoff
Effect on Rationing

	VD_0	VD_1 Output	Comparison to VD_0 (Basline)				VD_2 Output	Comparison to VD_0 (Baseline)			
Year	0.0%	Shift Spring Runoff by 18.7%	Decrease (%)	Decrease (AF)	Increase (%)	Increase (AF)	Shift Spring Runoff by 28.3%	Decrease (%)	Decrease (AF)	Increase (%)	Increase (AF)
1953	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1954	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1955	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1956	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1957	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1958	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1959	2.03%	0.44%	1.59%	4,881	-	-	0.00%	2.03%	6,238	-	-
1960	13.71%	15.80%	-	-	2.09%	6,414	7.45%	6.27%	19,228	-	-
1961	23.76%	24.15%	-	-	0.39%	1,183	25.00%	-	-	1.24%	3,791
1962	8.32%	11.02%	-	-	2.71%	8,306	14.96%	-	-	6.65%	20,401
1963	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1964	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1965	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1966	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1967	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1968	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1969	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1970	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1971	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1972	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1973	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1974	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1975	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1976	8.61%	8.40%	0.21%	639	-	-	8.14%	0.47%	1,438	-	-
1977	25.00%	25.00%	-	-	-	-	25.00%	-	-	-	-
1978	25.00%	25.00%	-	-	-	-	25.00%	-	-	-	-
1979	21.85%	22.12%	-	-	0.26%	813	22.26%	-	-	0.41%	1,245
1980	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1981	1.20%	0.00%	1.20%	3,668	-	-	0.00%	1.20%	3,668	-	-
1982	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1983	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1984	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1985	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1986	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1987	7.46%	7.51%	-	-	0.05%	168	6.36%	1.10%	3,374	-	-
1988	25.00%	25.00%	-	-	-	-	24.82%	0.18%	549	-	-
1989	21.75%	21.88%	-	-	0.13%	391	22.11%	-	-	0.36%	1,119
1990	23.29%	22.89%	0.41%	1,251	-	-	23.07%	0.23%	700	-	-
1991	25.00%	24.75%	0.25%	761	-	-	24.18%	0.82%	2,528	-	-
1992	25.00%	25.00%	-	-	-	-	25.00%	-	-	-	-
1993	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1994	5.14%	4.38%	0.76%	2,343	-	-	4.68%	0.46%	1,401	-	-
1995	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1996	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1997	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1998	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
1999	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
2000	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-
2001	0.90%	3.84%	-	-	2.93%	9,001	6.61%	-	-	5.70%	17,500
2002	6.29%	9.22%	-	-	2.93%	9,003	7.39%	-	-	1.10%	3,371

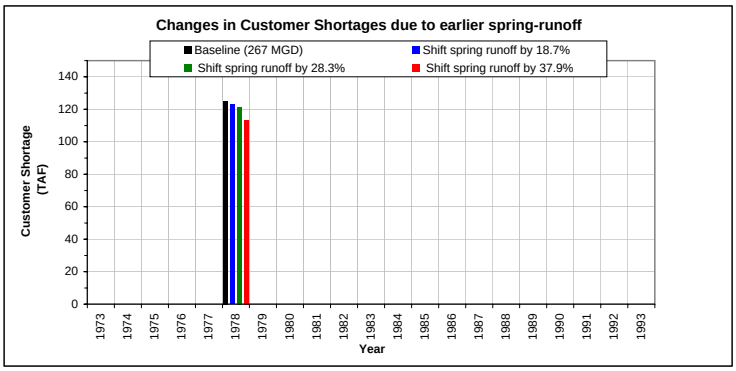
Average			0.7%	2,257	1.4%	4,410		1.4%	4,347	2.6%	7,904
Maximum			1.6%	4,881	2.9%	9,003		6.3%	19,228	6.6%	20,401

Climate Change Study # 2.1 - 2.3, 3.1 - 3.2
Shifted Spring Runoff
Effect on Rationing

	VD_0	VD_3 Output	Comparison to VD_0 (Basline)				VD_4 Output	Comparison to VD_0 (Basline)				VD_5 Output	Comparison to VD_0 (Basline)			
Year	0.0%	Shift Spring Runoff by 37.9%	Decrease (%)	Decrease (AF)	Increase (%)	Increase (AF)	-10% TNF	Decrease (%)	Decrease (AF)	Increase (%)	Increase (AF)	-20% TNF	Decrease (%)	Decrease (AF)	Increase (%)	Increase (AF)
1953	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1954	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.80%	-	-	0.80%	2,452
1955	0.00%	0.65%	-	-	0.65%	1,985	0.00%	-	-	-	-	13.24%	-	-	13.24%	40,637
1956	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1957	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1958	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1959	2.03%	0.00%	2.03%	6,238	-	-	4.42%	-	-	2.39%	7,340	5.45%	-	-	3.41%	10,477
1960	13.71%	5.43%	8.29%	25,431	-	-	18.50%	-	-	4.78%	14,680	21.72%	-	-	8.01%	24,581
1961	23.76%	24.92%	-	-	1.16%	3,559	25.00%	-	-	1.24%	3,791	25.00%	-	-	1.24%	3,791
1962	8.32%	15.44%	-	-	7.13%	21,878	20.33%	-	-	12.01%	36,871	25.00%	-	-	16.68%	51,201
1963	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1964	0.00%	0.24%	-	-	0.24%	733	2.13%	-	-	2.13%	6,525	8.13%	-	-	8.13%	24,957
1965	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1966	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	2.17%	-	-	2.17%	6,663
1967	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1968	0.00%	0.00%	-	-	-	-	1.64%	-	-	1.64%	5,028	2.40%	-	-	2.40%	7,371
1969	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1970	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1971	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1972	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	1.66%	-	-	1.66%	5,106
1973	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1974	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1975	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1976	8.61%	7.93%	0.68%	2,077	-	-	9.02%	-	-	0.41%	1,265	9.55%	-	-	0.95%	2,905
1977	25.00%	25.00%	-	-	-	-	25.00%	-	-	-	-	25.00%	-	-	-	-
1978	25.00%	25.00%	-	-	-	-	25.00%	-	-	-	-	25.00%	-	-	-	-
1979	21.85%	22.38%	-	-	0.53%	1,631	25.00%	-	-	3.15%	9,659	25.00%	-	-	3.15%	9,659
1980	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1981	1.20%	0.00%	1.20%	3,668	-	-	2.69%	-	-	1.50%	4,596	4.51%	-	-	3.32%	10,185
1982	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1983	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1984	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1985	0.00%	0.00%	-	-	-	-	0.58%	-	-	0.58%	1,773	1.80%	-	-	1.80%	5,515
1986	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1987	7.46%	4.74%	2.72%	8,346	-	-	8.08%	-	-	0.63%	1,932	8.80%	-	-	1.35%	4,138
1988	25.00%	23.97%	1.03%	3,156	-	-	25.00%	-	-	-	-	25.00%	-	-	-	-
1989	21.75%	21.73%	0.02%	62	-	-	25.00%	-	-	3.25%	9,981	25.00%	-	-	3.25%	9,981
1990	23.29%	23.02%	0.27%	832	-	-	25.00%	-	-	1.71%	5,234	25.00%	-	-	1.71%	5,234
1991	25.00%	23.92%	1.08%	3,325	-	-	25.00%	-	-	-	-	25.00%	-	-	-	-
1992	25.00%	25.00%	-	-	-	-	25.00%	-	-	-	-	25.00%	-	-	-	-
1993	0.00%	0.00%	-	-	-	-	1.49%	-	-	1.49%	4,561	19.12%	-	-	19.12%	58,661
1994	5.14%	3.06%	2.08%	6,372	-	-	18.23%	-	-	13.08%	40,154	24.75%	-	-	19.60%	60,163
1995	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1996	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1997	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1998	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
1999	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
2000	0.00%	0.00%	-	-	-	-	0.00%	-	-	-	-	0.00%	-	-	-	-
2001	0.90%	7.54%	-	-	6.63%	20,354	5.10%	-	-	4.20%	12,874	8.54%	-	-	7.63%	23,426
2002	6.29%	7.45%	-	-	1.16%	3,548	17.18%	-	-	10.89%	33,422	21.30%	-	-	15.01%	46,067
Average			1.9%	5,950	2.5%	7,670		-	-	3.8%	11,746		-	-	6.4%	19,675
Maximum			8.3%	25,431	7.1%	21,878		-	-	13.1%	40,154		-	-	19.6%	60,163

Climate Change Study # 1, 2.1-2.3, 3.1-3.2 Water Deficiencies

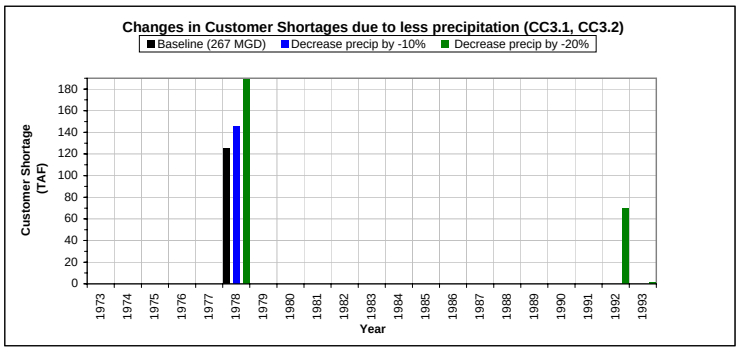
Changes in Customer Shortages due to earlier spring-runoff (CC2.1-2.3)



Fish Classifications

		Baseline (267 MGD)	18.70%	28.30%	37.90%
1976	Oct-Mar	4	4	4	4
	Apr-Sept	1	1	1	1
1977	Oct-Mar	2	2	2	2
	Apr-Sept	1	1	1	1
1978	Oct-Mar	1	1	1	1
	Apr-Sept	1	1	1	1
1979	Oct-Mar	1	1	1	1
	Apr-Sept	3	3	3	3

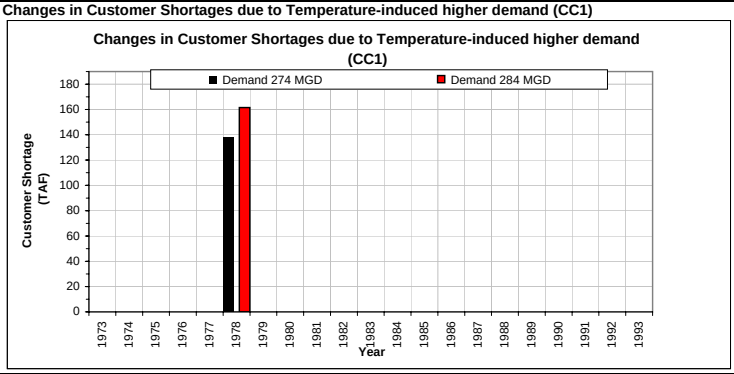
Changes in Customer Shortages due to less precipitation (CC3.1, CC3.2)



Fish Classifications

		Baseline (267 MGD)	-10%	-20%
1976	Oct-Mar	4	4	4
	Apr-Sept	1	1	1
1977	Oct-Mar	2	1	1
	Apr-Sept	1	1	1
1978	Oct-Mar	1	1	1
	Apr-Sept	1	1	1

Changes in Customer Shortages due to Temperature-induced higher demand (CC1)



Fish Classifications

		Baseline (267 MGD)	277 MGD
1976	Oct-Mar	4	4
	Apr-Sept	1	1
1977	Oct-Mar	2	2
	Apr-Sept	1	1
1978	Oct-Mar	1	1
	Apr-Sept	1	1
1979	Oct-Mar	1	1
	Apr-Sept	3	3

Appendix D TM-10

Proposed Method for Calculating Customer Shortage Costs for Use in WSMP 2040 Portfolio Evaluation & Addendum TM

POLICY ANALYSIS
FOR THE
PUBLIC AND PRIVATE
SECTORS
M.CUBED

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Date: October 18, 2007

From: M.Cubed
To: East Bay Municipal Utility District

Reviewed by: Marcia Tobin (EDAW), Leslie Dumas (RMC), Bill Maddaus, Dr. Michael Hanemann

Re: Proposed Method for Calculating Customer Shortage Costs for Use in WSMP 2040 Portfolio Evaluations

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1 Purpose and Scope of TM

The purpose of this TM is to recommend a practical, informative and defensible approach to calculating customer shortage costs for use in the WSMP 2040 portfolio evaluations. The TM briefly describes WSMP 2040 objectives with respect to EBMUD rationing policy. It then discusses ways in which customer shortage costs are typically represented in planning studies, both in terms of physical impacts and economic costs. Next, the TM reviews alternative approaches to calculating customer shortage costs. Following this review, the TM presents the recommended approach for calculating customer shortage costs for use in the WSMP 2040 portfolio evaluations, discusses the data and modeling requirements to implement the approach, and provides an example calculation of customer shortage costs using the proposed approach.

2 WSMP 2040 Evaluation of District Rationing Policy

One purpose of the economic modeling being done for WSMP 2040 is to evaluate and compare various levels of customer water rationing among the ensemble of water supply portfolios. In this regard, the evaluation will model customer impacts and costs for a range of rationing scenarios. This analysis is to be done within the broader context of water supply portfolio evaluation, such that the combined costs of supply augmentation and customer shortages can be taken into account. At the conclusion of the economic analysis, a rationing policy recommendation is to be made to the Board of Directors. The recommendation will address:

- rationing reduction goals for various levels of projected total system storage;
- water use reduction targets by customer class; and

- the expected frequency and severity of future customer rationing under the recommended rationing policy.

3 Representation of Customer Shortage Costs

Planning studies generally present impacts of water shortages in two ways. One way is to describe and quantify the physical adjustments and impacts resulting from a shortage. The other way is to estimate the economic costs incurred by customers as a result of a water shortage. Both approaches provide useful information for water supply planning and management decisions.

3.1 Physical Characterization of Impacts

Physical characterization of impacts provides policy makers with qualitative and quantitative information about the severity and duration of customer water shortages, customer responses to drought management policies, and the direct and indirect consequences of a shortage to the community. For example, physical characterization of impacts may show that under Portfolio A the likelihood of shortages in excess of 20% is twice that under Portfolio B; or that under Portfolio A the average magnitude of a shortage is 15% whereas under Portfolio B it is 10%. Additionally, likely adjustments in customer water use can be described and quantified. For example, physical characterization of impacts may show that under Portfolio A, shortages within the residential sector are twice as likely to require outdoor water use restrictions than under Portfolio B. Thus, physical characterization of impacts can be used to describe the impacts of alternative rationing policies in terms that are easily visualized and relatable to everyday experience, and therefore is a useful way to convey to policy makers the consequences of different rationing policies.

Physical characterization of water shortages also can be used to generate an ordinal ranking of portfolios in terms of expected shortage costs. That is, it allows for statements such as: "Portfolio A has higher expected shortage costs than Portfolio B." Importantly, however, it does not allow for statements such as: "Shortage costs under Portfolio A are three times those of Portfolio B." Nor does it allow one to compare the total cost of different portfolios (i.e. the combined cost of supply augmentation and customer shortages). Evaluating the relative magnitude of shortage costs under alternative rationing policies, or comparing the total costs of different portfolios, requires translating physical impacts into economic impacts.

3.2 Economic Valuation of Impacts

Water users incur economic losses when they reduce their water use in response to rationing policies (Griffin 2006). A measure of this loss widely used in the economics literature is willingness-to-pay, which is defined as the maximum dollar amount individuals would have been willing to pay to avoid the water shortage (Dixon, et al. 1996). The concept of willingness-to-pay is applicable to all sectors of water demand (Griffin 2006). The sum of willingness-to-pay across customer sectors provides a measure of the total amount water users would be willing to invest to avoid similar shortages in the future.

To see how willingness-to-pay relates to water utility rationing policy, consider some typical actions taken by water utilities during shortages.[1]

- *Type-of-Use Restrictions*. Many water agencies use type-of-use restrictions during shortages, such as prohibiting the washing down of hard surfaces or restricting outdoor watering to certain days or to certain times of the day. Water users observing the restrictions forgo the net benefits of some water uses. Water users choosing not to observe the restrictions typically risk financial penalties or may even have their water service cutoff. Consequently, those water users impacted by such restrictions would be willing to pay some amount to avoid them.
- *Price Increases*. During shortages it is also common for water utilities to increase their water rates both to deter water use and for financial reasons. Increasing water rates impacts water users in two ways. First, water users will reduce water purchases in response to the higher price and forgo the net benefits of this consumption. Second, water users will pay more for a given amount of water than they would have paid before the price increase, thereby further reducing the net benefits of water consumption. To avoid these impacts, customers would be willing to pay up to the sum of the increased water costs on units consumed plus the forgone net benefits of the reduced water use.
- *Quantity Restrictions*. Water agencies may restrict the amount of water a water user or class of users can buy during a shortage. Water users affected by the restriction lose the net benefits of the forgone water use and would be willing to pay a positive amount to avoid the restriction.

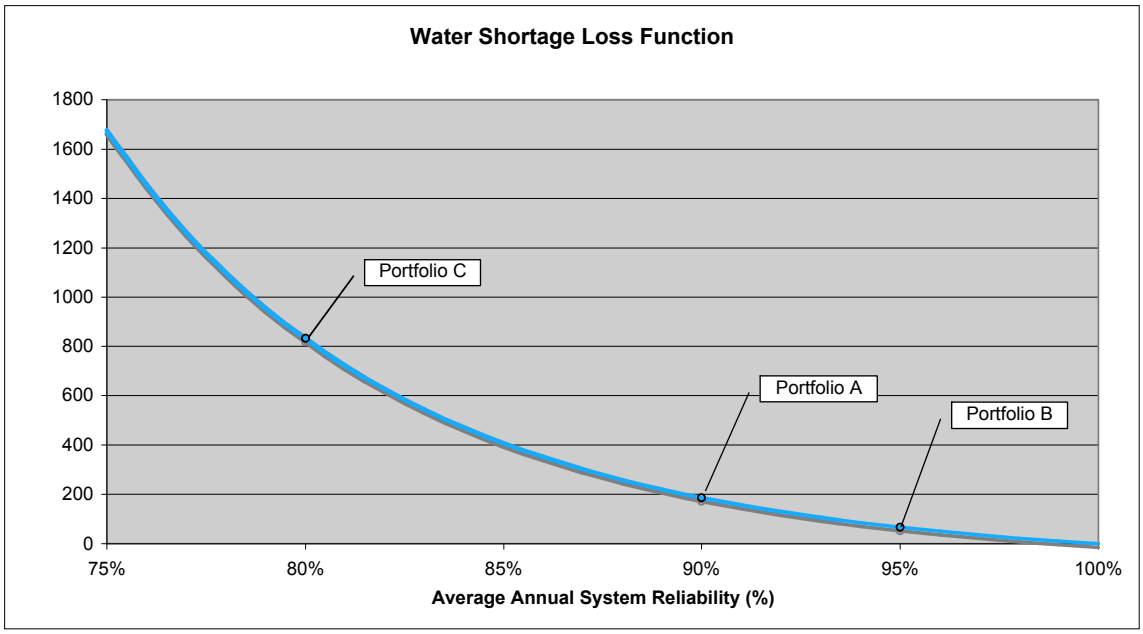
Information on willingness to pay can be used to construct economic loss functions. Such loss functions can be used to value water shortage costs associated with different amounts of water supply reliability. Figure 1 illustrates the concept. It shows the average annual customer losses as a function of water delivery reliability. At low levels of reliability, expected customer losses are high. Shortage costs decrease as system reliability increases, reaching zero when the system achieves 100% reliability.

Once shortage impacts are converted into economic losses, it becomes possible to not only rank order water supply portfolios in terms of shortage costs, but to evaluate the magnitude of shortage costs. This is useful in at least two respects. First, it allows policy makers to evaluate the relative magnitude of shortage costs. Looking at Figure 1, for example, it can be determined that shortage costs for Portfolio C are 4.5 times higher than Portfolio A's, which in turn are 2.8 times higher than Portfolio B's. Second, it enables policy makers to assess tradeoffs between imposing costs on customers to increase system reliability versus imposing costs on them through increased frequency and/or severity of water shortages. Policies that increase customer rationing allow customers to avoid costs of developing and providing new supplies to meet dry year demands. The benefits of avoiding system development costs, however, must be balanced against the increase in water shortage costs customers would incur as a result of the policy. For

[1] The following discussion is adapted from Dixon, et al., 1996.

example, the loss function depicted in Figure 1 indicates that customers would be willing to pay up to $645 per year to move from Portfolio C to Portfolio A (the difference in annualized shortage costs between Portfolios C and A). Moving from Portfolio C to A would make customers better off only if the annualized cost of doing so were less than this amount. If, on the other hand, avoided shortage costs were less than the costs of moving from C to A, customers would be better off forgoing the system improvements. This comparative assessment of portfolio costs requires not only characterizing the physical impacts of water shortages, but also valuing them.

Figure 1. Illustration of Economic Loss Function for Water Shortages



By combining information on supply costs with information on shortage costs, it becomes possible to evaluate portfolios in terms of the total resource costs to customers (California Department of Water Resources 2007).[2] This is depicted in Figure 2, which shows three separate cost curves. The first is the customer shortage cost curve taken from Figure 1. The second curve shows incremental supply costs as a function of system reliability.[3] The third curve, derived by summing the first two curves, shows the total

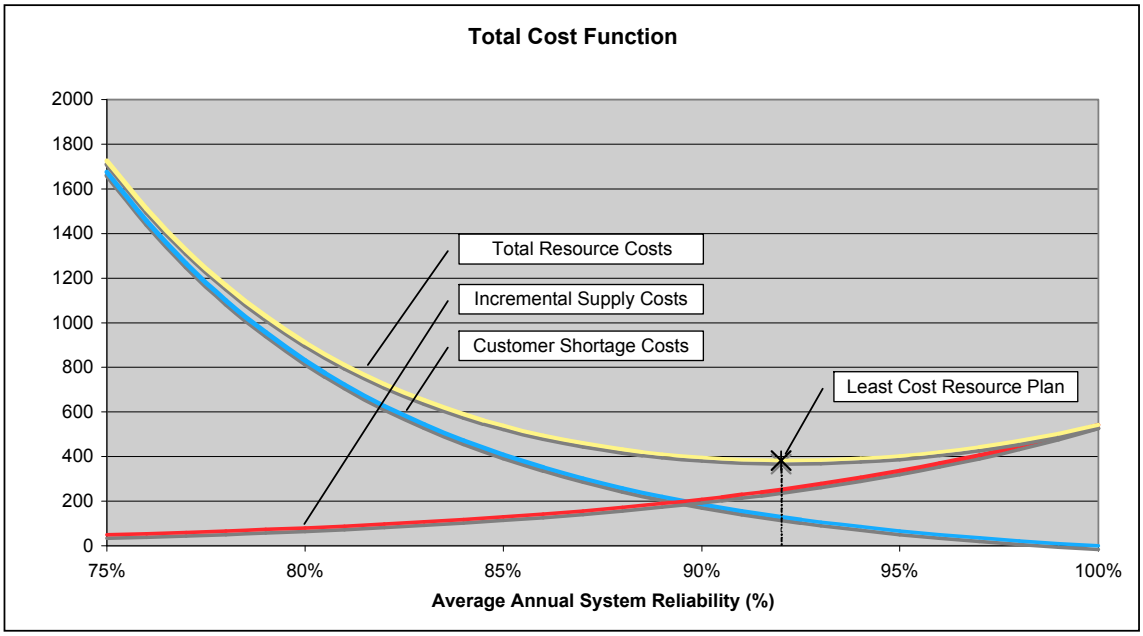
[2] This is the approach used by the Least-Cost Planning Simulation Model (LCPSIM) developed by the California Department of Water Resources. LCPSIM is a yearly time-step simulation/optimization model that was developed to assess the economic benefits and costs of enhancing urban water service reliability at the regional level.

[3] Note that the *incremental* cost is not the same as the *average* rate paid by a utility customer. Water utility rates are usually based on the total *average* cost to supply water, and the *incremental* cost may be only a small portion of these total costs. As a result, a large incremental cost may be reflected in a much smaller increase in the average utility rate.

incremental resource costs associated with each level of system reliability. The low point on this curve identifies the least cost resource plan, which defines the combination of system improvements and rationing policy yielding the lowest overall cost to customers. Portfolios will be located at different points along the total cost curve.

For WSMP 2040, WEAP will be used to estimate the incremental supply costs and the frequency, duration, and magnitude of water shortages for each portfolio. A shortage loss function can then be used to translate the physical shortages calculated by WEAP into economic costs. Shortage costs can then be added to incremental supply costs to calculate the total resource cost for each portfolio. Implementing this approach requires that we adopt a method for calculating customer willingness-to-pay to avoid water shortages.

Figure 2. Illustration of Total Resource Costs



4 Alternative Economic Valuation Methods

There are three basic approaches to quantifying the willingness-to-pay to avoid the consequences of water shortages (Brozovic, et al. 2007). One approach is to use survey techniques to directly elicit willingness-to-pay to avoid shortages from a representative sample of water customers. This is commonly referred to as the *stated preference method* in the economics literature. Another approach, the *mathematical programming method*, solves a cost minimization problem to identify the least cost combination of short- and long-term conservation measures that consumers could implement to avoid the impacts of water shortages. Estimated willingness-to-pay can be derived from the model solution values. A third approach uses demand curves to calculate the change in

consumer surplus resulting from quantity restrictions or price increases.[4] This approach is sometimes referred to as the *demand curve integration method or the demand point expansion method*. In the discussion that follows, we refer to it as the demand curve integration method.

4.1 Stated Preference Method

This method provides a direct means of estimating willingness-to-pay based on stated preferences of a representative sample of water users. Contingent valuation survey techniques are used to pose various water shortage scenarios to survey participants and to ask them questions about their willingness-to-pay to avoid these shortage events. Econometric analysis is then applied to the survey responses to estimate a willingness-to-pay function.

The stated preference method has been used to estimate residential willingness-to-pay for increased water supply reliability by several previous studies. Two of these studies (CUWA 1994 and Carson & Mitchell 1987) evaluated the willingness-to-pay of Bay Area and Southern California residential water users to avoid probabilistic water shortages. An advantage of this approach is that it directly focuses on the question of interest and can measure willingness-to-pay caused by all different types of shortage impacts (Dixon et al. 1996).

The cost and time required to implement this approach make it infeasible for WSMP 2040. This leaves the possibility of using results from previous stated preference studies to develop shortage loss functions for WSMP 2040. We do not recommend this approach for the following reasons:

- The relatively small set of shortage scenarios evaluated by previous studies is a limiting factor for transferring results outside of the original study context.
- Results of previous stated preference studies may be upwardly biased. Jenkins, et al. (2003) point out that the two studies focusing on California urban water shortages used a survey format that has been shown to upwardly bias estimates of willingness-to-pay. Findings from Hensher et al. (2006) also suggest results from previous stated preference studies may be upwardly biased.
- Griffin and Mjelde (2000), using a contingent valuation survey designed to avoid biased responses, still found significant inconsistencies in their willingness-to-pay estimates. In their study, respondents stated higher *monthly* willingness-to-pay to avoid future, probabilistic water shortages than *total* willingness to pay to avoid

[4] Consumer surplus is the excess that a consumer would be willing to pay for a commodity over the price that he does pay, rather than go without the commodity. It is a commonly used measure of the benefit consumers derive from consumption. As shown by Willig (1976), consumer surplus closely approximates willingness-to-pay under most circumstances.

immediate shortages of the same duration and severity, indicating that respondents did not have a clear understanding about what they were being asked to value.[5]

4.2 Mathematical Programming Method

The mathematical programming method sets up a cost minimization problem to select the least-cost mix of water savings alternatives to eliminate or manage a water shortage (Jenkins et al. 2003). Estimated willingness-to-pay can be derived from the model solution values. This approach can be combined with supply side cost information to solve the cost minimization problem previously illustrated in Figure 2.[6] Applications of this approach include Jenkins and Lund (2000), Wilchfort and Lund (1997), and Lund (1995).

The mathematical programming method is difficult to implement because it requires specification of the full costs of detailed conservation alternatives and actions, including non-market costs associated with changing habits and behaviors to reduce indoor and outdoor water use during shortages (Jenkins et al. 2003). In the absence of this data it is necessary to specify proxies for these costs. Jenkins and Lund (2000) note that estimates of consumer willingness-to-pay to avoid shortages can be used to approximate near-term shortage management costs. This strategy, however, makes willingness-to-pay an input to rather than output of the model, thereby defeating the purpose of using the method to estimate willingness-to-pay. We do not recommend the approach for this reason.

4.3 Demand Curve Integration Method

The demand curve integration method uses information on sector water uses, current water prices, and the price elasticity of demand to construct water demand functions. These functions are then used to analytically determine willingness-to-pay (Dixon et al. 1996).[7] This approach provides an economically robust and theoretically rigorous direct assessment of the value of water use (Jenkins et al. 2003). It has modest data requirements and can be implemented more quickly and cheaply than the other methods (Dixon et al. 1996).

The demand curve integration method relies on the basic theory of consumer demand to calculate consumer surplus losses associated with water shortages. Figure 3 illustrates the approach. The downward sloping line, MB(Q), in the Figure represents the demand schedule for water at alternative prices. It shows the quantity of water demanded at any given price P. It also shows the marginal benefit of water use for any usage Q. The area

[5] The results from Griffin and Mjelde (2000) seem to corroborate Dixon et al. (1996)'s concern that respondents to stated preference surveys may have little experience valuing water shortage impacts and may not give realistic answers.

[6] While this appears to be similar to our proposed use of WEAP, there is a fundamental difference. WEAP is not an optimization model. It is a simulation model. While WEAP can be used to identify the total resource cost of each evaluated portfolio it cannot be used to identify the least-cost option, other than by trial and error.

[7] The price elasticity of demand is defined as the percentage change in demand for a commodity given a one percent change in the price of the commodity.

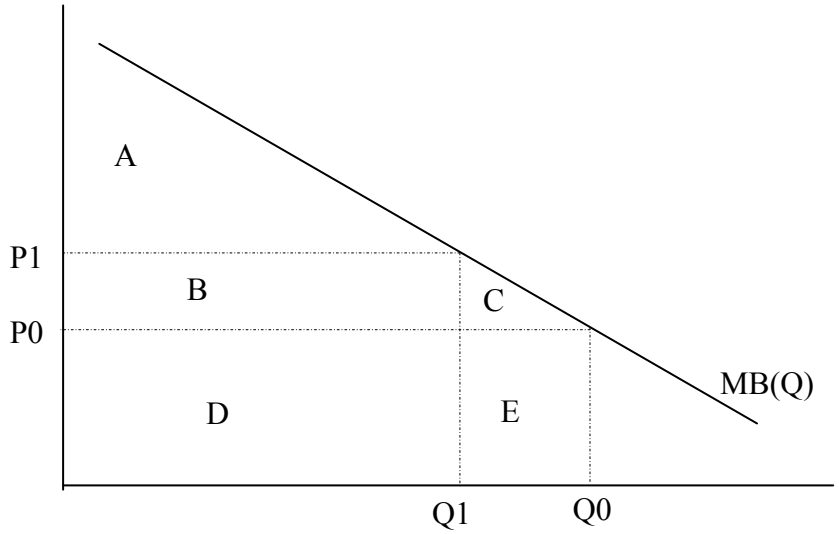
below the demand schedule and above the price line equals consumer surplus -- the excess that a consumers would be willing to pay for water over what they actually have to pay. Thus, at price P0 consumers would demand Q0 units of water and would derive consumer surplus equal to the area ABC in Figure 3. At price P1 consumers would demand Q1 units of water and consumer surplus would be reduced to area A.

The relationships illustrated in Figure 3 can be used to analytically determine what consumers would be willing to pay to avoid price increases or quantity restrictions on water use. For example, water users would be willing to pay at least an amount equal to the area C in Figure 3 to avoid a quantity restriction (assuming price remains unchanged) requiring them to reduce their usage from Q0 to Q1. Note however that most water agencies during the last drought cycle had to raise water rates either during or after the drought to make up for losses incurred due to quantity restrictions (Dixon et al. 1996). These rate increases would add to consumer losses resulting from a quantity restriction and thus the consumer surplus loss represented by the area C in Figure 3 should be viewed as a lower-bound estimate of willingness-to-pay to avoid the quantity restriction. If one assumes the utility will recover its revenue losses from customers in future periods, an approximate measure of the consumer surplus loss is given by an amount equal to area CE.[8] Willingness-to-pay to avoid a price increase can be assessed in a similar fashion. For example, water users would be willing to pay up to an amount equal to the area BC in Figure 3 to avoid an increase in price from P0 to P1.[9]

[8] The foregone revenue represented by area E in Figure 3 overstates the amount of revenue the utility would need to recover by an amount equal to the variable operating costs avoided by reducing water delivery from Q0 to Q1. Thus the area CE overstates to some extent customer losses.

[9] In the case of the price increase, the change in utility revenues equals B-E in Figure 3. When price elasticity is greater than -1, as is the case for water, this net change in revenue will be positive.

Figure 3. Illustration of Demand Curve Integration Method



Several studies have used the demand curve integration method to evaluate California urban water users' willingness-to-pay to avoid water shortages. Brozovic et al. (2007) estimated the willingness-to-pay of residential water users served by the Hetch Hetchy water system to avoid prolonged disruption of water service caused by natural or man-made catastrophes. Hanemann et al. (2006) used the method to evaluate water shortage impacts for San Joaquin Valley agricultural water users and Southern California urban water users under alternative climate change scenarios. Jenkins et al. (2003) used the approach to develop monthly economic loss functions for major urban water users throughout California. Dixon et al. (1996) used the method to evaluate shortage impacts of the 1987-92 drought for residential water users served by Alameda County Water District.

While the demand curve integration method is theoretically robust and pragmatic, it has several limitations. First, the method only provides a lower-bound estimate of willingness-to-pay because it implicitly assumes that rationing policies result in water users curtailing their lowest value water uses first. This is a reasonable assumption when pricing policies are used to curb demand, but may understate the willingness-to-pay to avoid quantity or type-of-use restrictions (Dixon et al., 1996). Second, the method relies on two-parameter specifications of demand – either linear or constant elasticity. While these specifications are mathematically convenient, it should not be presumed that water demand actually exhibits linearity or constant elasticity across the full range of water use (Griffin 2006). Third, the method requires price elasticity estimates for all water demand sectors. While there is a large body of research on residential price elasticity, estimates for commercial and industrial water demand are more limited (Jenkins et al. 2003).[10]

[10] However, an implicit WTP method was developed for the commercial and industrial sector in the Bay Area for a previous shortage cost study (Brozovic et al. 2007), and this

5 Recommended Approach

Of the three methods considered, we believe the demand curve integration method is the best approach for estimating customer shortage costs for WSMP 2040. While the method has several important limitations, as described in the previous section, it has fewer drawbacks than the other two methods reviewed. Moreover, it has three key advantages over the other approaches. First, it has been used in several urban water planning studies with specific application to California urban water use. Second, it is straightforward to implement and can be easily integrated into the WEAP modeling framework. And third, it has modest data requirements that can be easily satisfied with EBMUD system data.

A draft of this memorandum was provided to Dr. Michael Hanemann, Chancellor's Professor of Agricultural and Natural Resource Economics at UC Berkeley and member of the CLAC, on October 5, 2007. We requested Professor Hanemann review our proposed methodology, indicate if he agreed with the approach, and suggest modifications if he had any. A conference call with Professor Hanemann was held on October 18, 2007 to discuss his review. Professor Hanemann indicated he agreed with the recommended approach and offered the following comments:

1. The analysis should use short-run demand elasticities to account for the immediacy and more limited response options of unpredictable and temporary shortage events.
2. Adjusting the demand forecast for variations in weather conditions would improve the shortage estimates. Higher demand generally correlates with years with higher than average temperatures and dry conditions. Hence use of normalized demands may bias downward to some extent shortage magnitude and cost estimates. Professor Hanemann indicated that the additional complications in modeling this would entail might not justify this refinement, however.
3. Consider truncating the shortage cost functions so that zero shortage costs are counted below some shortage threshold. He suggested 5%.

6 Specification of Shortage Cost Functions

Using the demand curve integration method, shortage cost functions can be derived from linear or constant elasticity demand curve specifications. Figure 4 provides an example of both demand curve specifications for an average residential water user. The curves assume baseline consumption of 304 gallons/day, baseline price of $1.72/CCF, and a price elasticity of -0.25. From Figure 5 it is seen that marginal values of water are higher under the constant elasticity specification than under the linear specification, and that this difference increases with water scarcity. Consequently, willingness-to-pay estimates derived from the linear and constant elasticity specifications will diverge as water shortages increase in magnitude. As will be discussed in a following section, this fact

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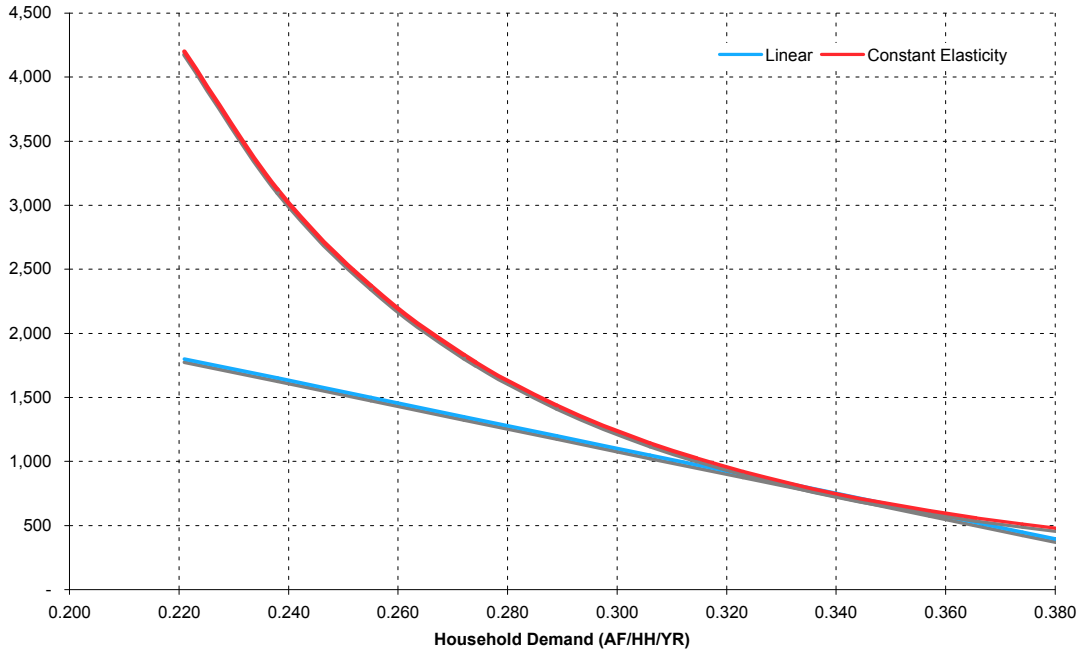
method may be an appropriate alternative if we are unsuccessful identifying suitable elasticity estimates for the commercial and industrial sectors. This method relied on estimates of regional economic output and the "resiliency" of specific industries to accommodate extended water shortages.

can be usefully exploited to construct lower and upper bound estimates of willingness-to-pay for use in WEAP.

Figure 4. Illustration of Linear and Constant Elasticity Household Demand Curves



6.1 Constant Elasticity Demand Specification

The price elasticity of demand for water at any price P and quantity Q is given by:

(1) $$\eta = \left(dQ/dP\right)\left(P/Q\right)$$

Rearranging terms in equation (1) and integrating gives an inverse demand function for water:

(2) $$P(Q) = e^{\frac{\ln Q}{\eta}+C},$$

where C is the integration constant, which can be expressed as a function of P0, Q0, and η:

(3) $$C = \frac{P0}{Q0^{\frac{1}{\eta}}}$$

The willingness-to-pay to avoid reducing water use from Q0 to Q1 is found by integrating equation (2) over the range [Q1,Q0]:

$$(4) \qquad WTP(Q1,Q0,P0,\eta) = \int_{Q1}^{Q0} P(Q)dQ = \frac{\eta}{1+\eta} P0Q0\left[1-\left(\frac{Q1}{Q0}\right)^{\frac{1+\eta}{\eta}}\right]$$

6.2 Linear Demand Specification

Under a linear specification of demand, the willingness-to-pay function to avoid reducing water use from Q0 to Q1 is given by equation (5)

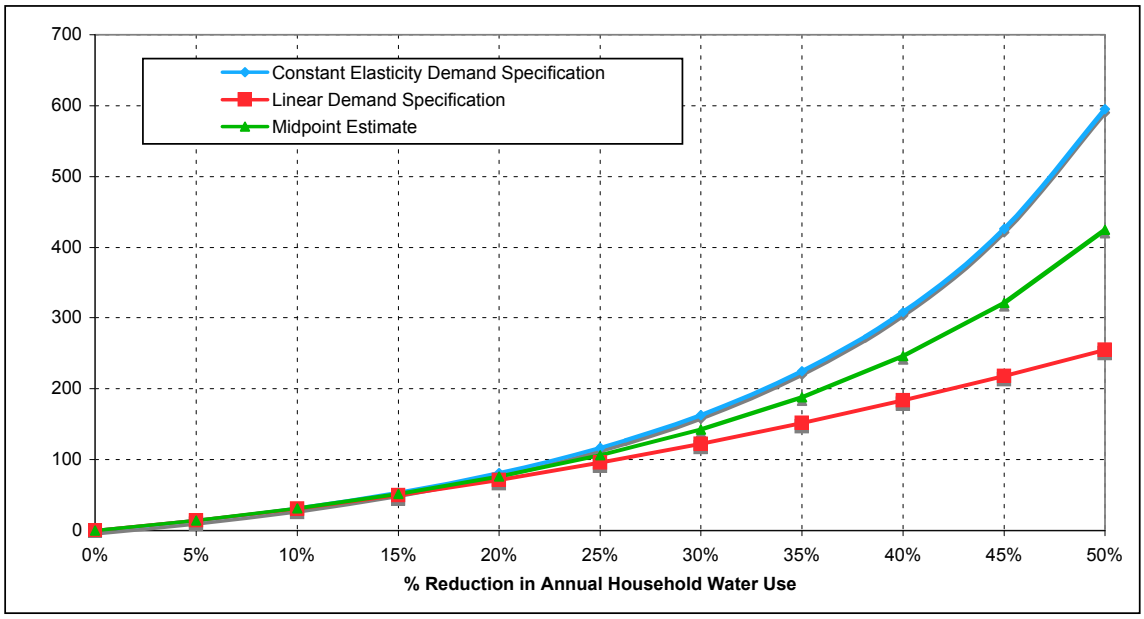
$$(5) \qquad WTP(Q1,Q0,P0,\eta) = P0\left(1-\frac{1}{\eta}\right)(Q0-Q1) + \frac{P0}{2\eta Q0}\left(Q0^2 - Q1^2\right)$$

6.3 Example Shortage Cost Curves

Figure 5 shows illustrative shortage cost curves for residential water users using the same baseline assumptions that were used to derive the demand curves in Figure 4. Shortage costs are expressed in Figure 5 in dollars per household per year, but they could just as easily be expressed in dollars per acre-foot of shortage per year. WSMP 2040 modeling and presentation requirements can dictate choice of units.

The divergence in shortage cost estimates can be usefully exploited to construct low, medium, and high shortage cost estimates, as shown in the figure. Information on shortage impacts for very large shortages (> 35%) is very limited and uncertainty about the magnitude of impacts is much greater. The increasing spread between the low and high estimates serves as a proxy for this uncertainty in the shortage cost modeling.

Figure 5. Illustration of Residential Shortage Cost Curves



7 Data Requirements

Implementing the recommended approach for calculating water shortage costs requires information on baseline water use (Q0) and water rates (P0), the reduction in water use during a shortage (Q1), and an estimate of demand elasticity (η). Sources for these data are discussed below.

7.1 Baseline and Shortage Event Water Use

The WSMP 2040 demand forecast will used to construct the schedule of annual demands over the planning period for each customer sector and pressure zone. WEAP model output will be used to calculate deviations from baseline water use during shortages.

7.2 Water Rates

Baseline water rate assumptions will be developed in consultation with EBMUD staff. Rate assumptions for each customer class will be required. Rate assumptions may also need to be differentiated by pressure zone if analysis shows average rates paid by customers significantly differ by zone.

7.3 Price Elasticity of Demand

Price elasticity estimates will be drawn from the urban water demand literature. Espey et al. (1997), Renzetti (2002), Jenks et al. (2003), and Griffin (2006) provide good reviews on residential water demands and elasticity. Renzetti (2002) also summarizes past research on commercial and industrial water demand price elasticity. Final assumptions about elasticity to be used in the modeling of shortage costs will be developed in consultation with EBMUD staff.

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POLICY ANALYSIS
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Cc: Richard McCann, Leslie Dumas

Re: Addendum to Shortage Cost TM

Introduction

EBMUD has requested that analysis of water shortage costs in WSMP 2040 include information on potential impacts to business output, income, and employment. It has also expressed concern that the proposed methodology for estimating direct shortage costs presented in M.Cubed's October 18, 2007 TM and illustrated in the document entitled "Order-of-Magnitude Estimate of EBMUD System-Wide Shortage Cost" will understate customer shortage costs. This memorandum addresses both issues.

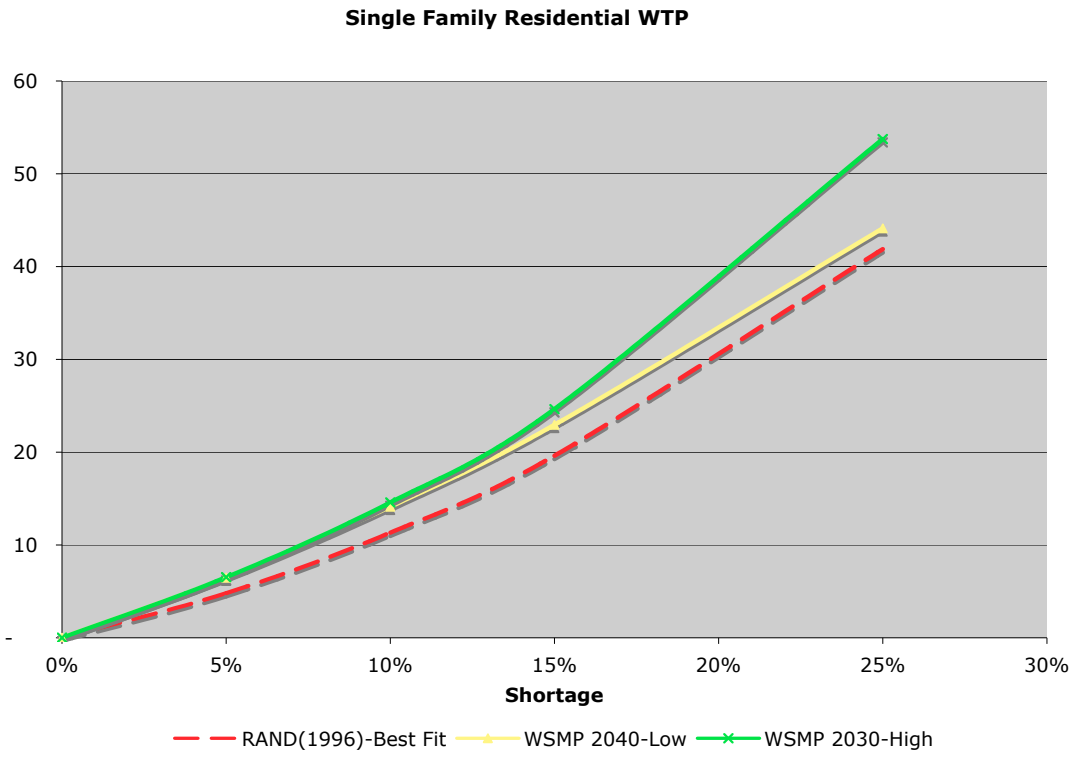
Magnitude of Direct Economic Impacts

RAND (1996) estimated demand functions for single family residential accounts served by the Alameda County Water District and used them to estimate the direct economic impacts of water shortages to this customer class for the period July 1991 to June 1992. This study provides the most comprehensive and rigorous statistical study of the economic impacts of the 1987-1992 drought of which we are aware. The statistical models were estimated using 10 years of bi-monthly consumption data for a randomized sample of 599 single-family accounts. Consumption and price data were combined with data on house size,

lot size, precipitation, temperature and other variables that drive household water use.

The direct economic impact derived from the demand function estimated for single-family accounts was compared to our preliminary estimates to determine if they were of similar order of magnitude. The results are shown in Figure 1. The estimates are similar in magnitude, though our preliminary estimates are approximately 5% to 35% higher for shortages in the range of 15% to 25%. The results suggest that the proposed methodology to estimate direct shortage costs to customers are consistent with empirical findings from California's last major drought cycle.

Figure 1



Estimating Impacts to Business Output, Income, and Employment

We have reviewed six studies that have estimated or examined the impact of water shortages on business activity. These studies were as follows:

- Spectrum Economics (1991). "Cost of Industrial Water Shortages: Preliminary Observations." Hereafter referred to as Spectrum(1991).
- Center for Regional Economy (2006). "East Bay Water Sources and a Pilot Study of User Response to a Potential Supply Disruption." Hereafter referred to as St. Mary's(2006).
- San Francisco Public Utilities Commission (2007). "Measures to Reduce the Economic Impacts of a Drought-Induced Water Shortage in the SF Bay Area." Hereafter referred to as SFPUC(2007).
- MHB Consultants, Inc. (1994). "The Economic Impact of Water Delivery Reductions on the San Francisco Water Department's Commercial and Industrial Customers." Hereafter referred to as MHB(1994). SFPUC(2007) utilized some of the results from MHB(1994) in its analysis.
- Brozovic, Nicholas, et al. (2006). "Estimating Business and Residential Water Supply Interruption Losses from Catastrophic Events." Hereafter referred to as Brozovic(2006).
- RAND (1996). "Drought Management Policies and Economic Effects in Urban Areas of California, 1987-1992."

The underlying data used for Spectrum(1991) is at least 20 years out of date (1987 base data and older industrial water use data from 1979). It also looks at only a 30% reduction scenario for a year, and respondents were told to ignore any measures they had instituted for the then-current drought (in 1990). This survey was primarily looking at impacts from permanent changes in Delta pumping requirements, not drought planning. The results are not directly applicable for the WSMP 2040.

St. Mary's(2006) attempted to update the Spectrum(1991) study. It added four scenarios, of which two or three are applicable to the WSMP, with 15% and 35% reductions for 6 months and 3 years. Unfortunately the report provides only a qualitative discussion of potential impacts. The study's author reported they received only a handful of survey responses and were unable to conduct any analysis. As a result this report is not usable for estimating shortage costs.

SFPUC(2007) and MHB(1994) estimated changes in output and payroll using output and payroll elasticities derived from survey responses from SFPUC industrial and commercial customers. Elasticities for aggregated commercial water use and aggregated industrial water use were estimated. Elasticities for specific industries or business were not estimated. The elasticities estimate the percentage change in output (or payroll) for a one percent reduction in water supply to the industry and can be used to estimate impacts of water shortage on output and payroll.

Brozovic(2006) estimated business output responses to reductions in water supply using estimates of business sector resiliency. The methodology closely follows that of Chang, et al. (2002), but employs a more refined business output response function. The resiliency factors used by Brozovic(2006), however, were taken directly from Chang et al. (2002). The business resiliency factors in Chang et al. (2002) were estimated with data from the 1994 Northridge and 1995 Kobe earthquakes. Resiliency factors were estimated at the 2-digit NAICS level of industrial classification, thus enabling more disaggregated impact estimates than SFPUC(2007). The output resiliency functions can be used to estimate impacts of water shortage on output.

The methods used by SFPUC(2007) and Brozovic(2006) are easily transferable to WSMP 2040 using data on business output (sales) and payroll from the 2002 Economic Census. This data is available for all cities and towns served by EBMUD, except Alamo, Castro Valley, Crockett, El Sobrante, Kensington, Rodeo, and Selby. These are small communities relative to other cities served by EBMUD, and excluding them is not expected to significantly bias results.

Using the 2002 Economic Census data will allow for impacts to be geographically disaggregated by city or by broader regions, such as West of Hills and East of Hills.

However, the change in output is not a good measure of regional impact because it does not account for imports of factors of production and intermediate goods into the region. Value-added, defined as the sum of regional labor, proprietor, and other income plus indirect business taxes, provides a better measure of regional impact. Value-added is the basis for the familiar gross domestic product (GDP) and gross state product (GSP) often reported in the press as a measure of national and state economic growth. We will be reporting a change in the business sector for the gross "regional" product (GRP) with this method. Changes in output can be converted into changes in value-added or GRP using Input-Output multipliers from a regional I-O model package such as IMPLAN. Likewise, changes in payroll can be combined with employment data from the 2002 Economic Census to roughly estimate changes in employment.

Figure 2 shows the percent reduction in baseline output for increasing levels of water shortage using the SFPUC(2007) and Brozovic(2006) methods. Commercial and industrial impact estimates under Brozovic(2006) are very similar, so only one curve is presented. Figure 3 shows the percent reduction in baseline payroll for increasing levels of water shortage using the SFPUC(2007) method. Table 1 shows payroll losses (millions of 2002 dollars)[1] for East of Hills and West of Hills for increasing levels of water shortage using the SFPUC(2007) method. Note that the shortage levels in the figures and table refer to the sector rather than the system-wide shortage. This is important to keep in mind since system-wide shortages may not be allocated proportionally across water customer classes.

[1] For the WSMP analysis, this will be converted to 2007 dollars using a GDP deflator.

Figure 2

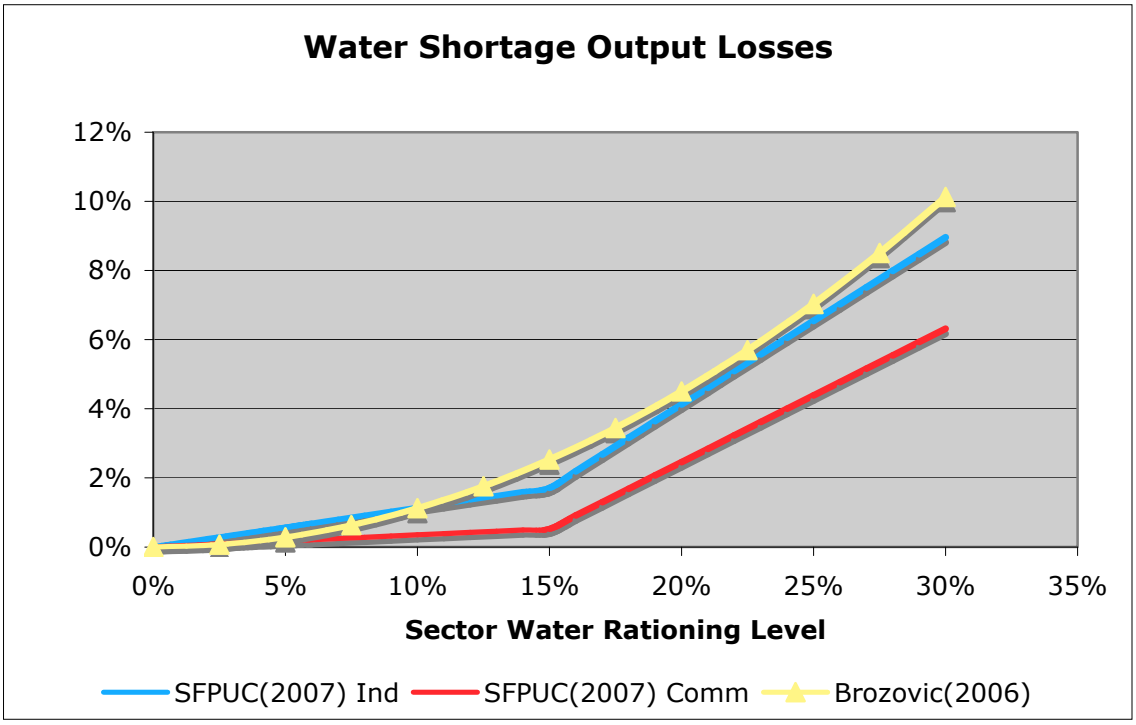


Figure 3

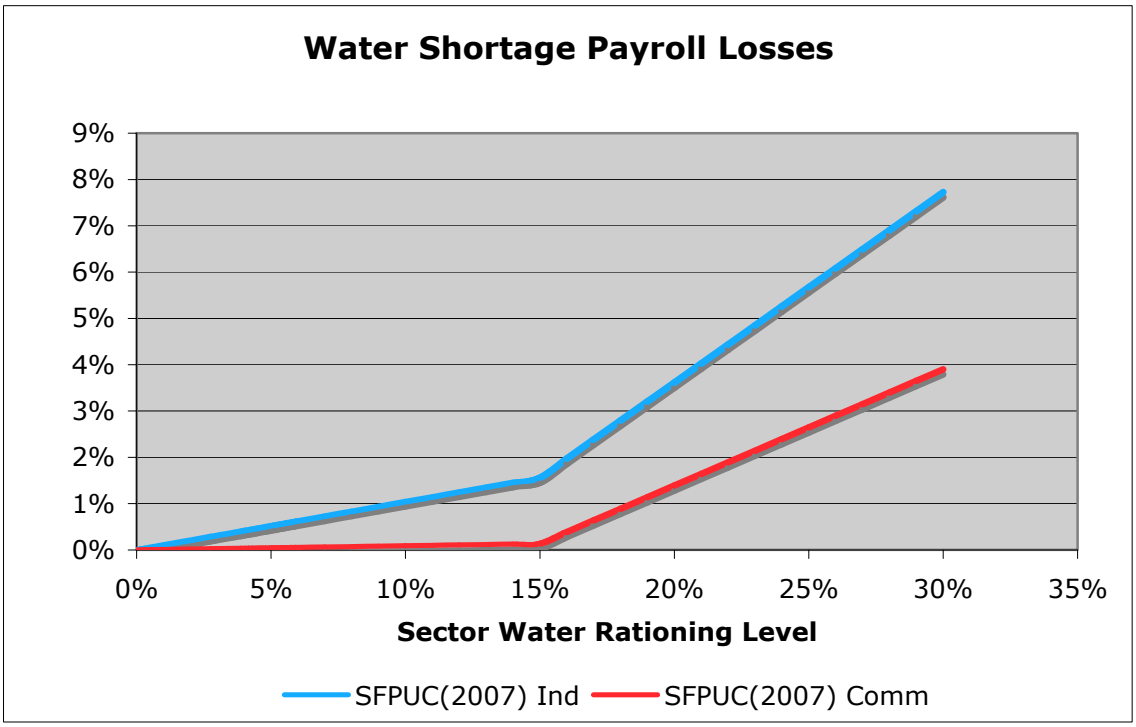


Table 1. Estimated Annual Payroll Impacts (Millions of 2002 $), SFPUC(2007) Method

	West of Hills			East of Hills		
Sector Shortage Level	Industrial	Commercial	Total	Industrial	Commercial	Total
5%	$10.6	$4.6	$15.2	$0.7	$1.8	$2.5
10%	$21.2	$9.2	$30.4	$1.4	$3.5	$4.9
15%	$31.9	$13.8	$45.6	$2.1	$5.3	$7.4
20%	$73.8	$141.7	$215.5	$4.8	$54.6	$59.4
25%	$115.8	$269.6	$385.4	$7.5	$103.9	$111.4

Industrial and Commercial Payroll: 1987-1991

RAND (1996) examined industrial and commercial water use over the period 1987-1991. As hypothesized by the SFPUC(2007) and Brozovic(2006) models, the study found a positive correlation between industrial water use and industrial payroll during the drought, shown in Figure 4, though changes in payroll were much less than proportional to changes in water use. Additionally, the latter part of the drought coincided with a broad economic recession, which also negatively impacted industrial payroll. While industrial water use in 1991 decreased by about 15% from the previous year, industrial payroll decreased by only 4%; however, most of this decrease probably was due to the economic recession as U.S. manufacturing employment decreased 3.5% in 1991.[2] The SFPUC(2007) model estimates that industrial payroll would decrease by 1.6% given a 15% reduction in industrial water use. Given that most of the decrease in industrial payroll between 1990 and 1991 probably was attributable to the recession, this estimate appears plausible.

The SFPUC(2007) predicts negligible impacts to commercial payroll for shortages of up to 15% and this appears consistent with changes in commercial payroll observed between 1987 and 1990 (Figure 5). During this period, while commercial water use decreased by about 4% from its 1986 level, commercial

[2] U.S. Census Bureau, *Statistical Abstract of the United States, 1993*, Table No. 647.

payroll continued to grow. Between 1990 and 1991 commercial water use fell by about 11% while commercial payroll decreased by about 2.6%. As with industrial payroll, given that the economic recession may account for much or most of this decrease the SFPUC(2007) payroll impact estimates appear plausible.

Figure 4

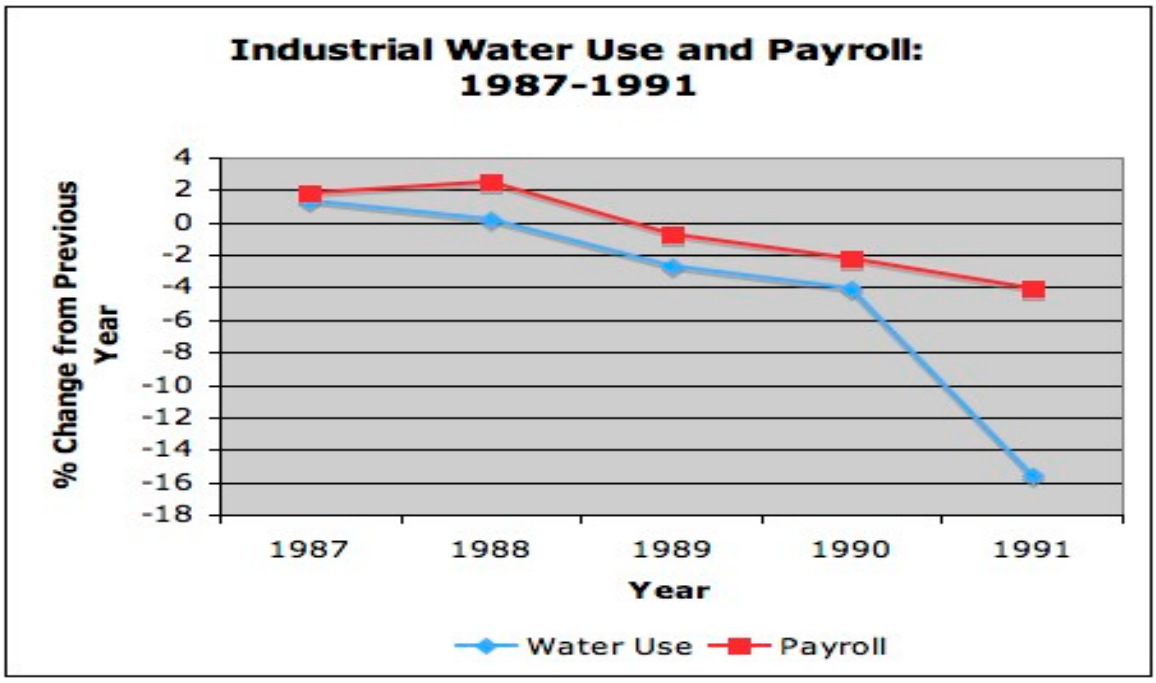
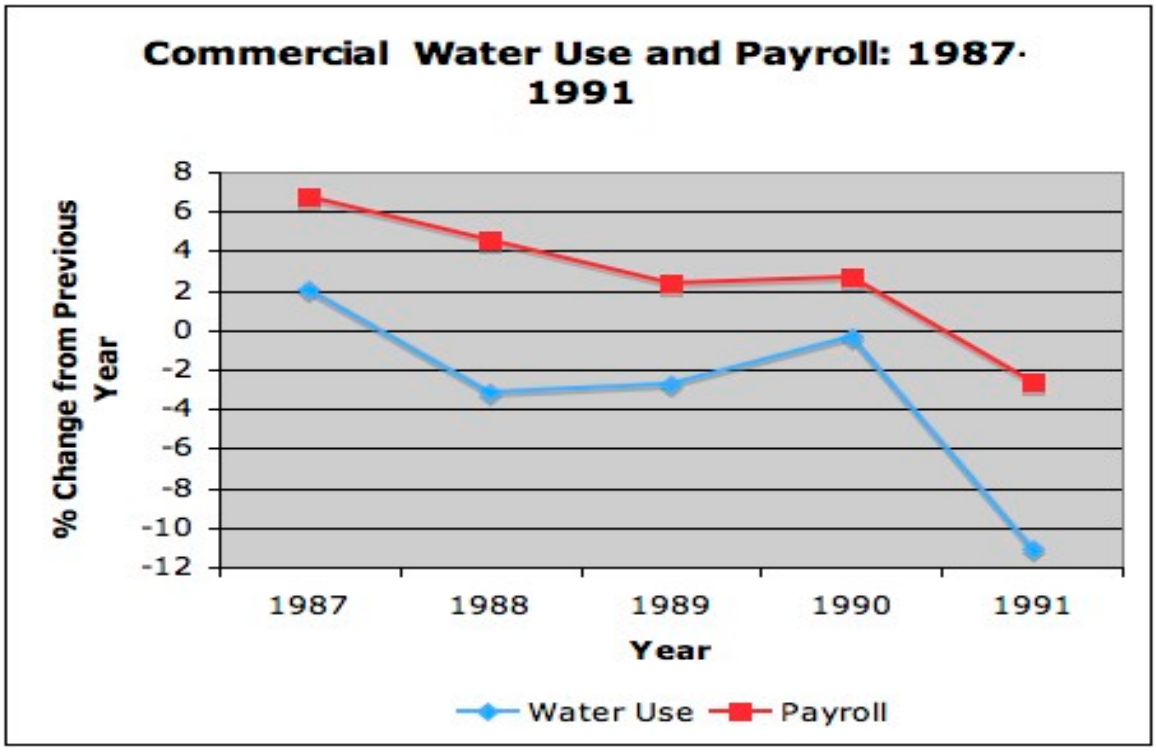


Figure 5



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Appendix D TM-11

Potential Impact of Water Shortages on Landscaping Services Sector within EBMUD Service Area TM

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MEMORANDUM

Date: April 11, 2008

From: EDAW (M.Cubed)
To: Mike Togonolini, Tom Francis

Re: Potential Impact of Water Shortages on Landscaping Services Sector within EBMUD Service Area

The current approach for estimating economic impacts of water shortages on EBMUD commercial and industrial water users relies on a 1994 SFPUC study. Using data from a survey of commercial and industrial water users served by SFPUC, this study estimated relationships between the magnitude of sector water shortages and changes in payroll and sales. WSMP 2040 uses these relationships to translate system water shortages into changes in commercial and industrial payroll, employment, and regional value added.

Implicit to this approach is the assumption that water is a primary input to production and constraints on the supply of this input limit production and hence employment and payroll. This is a reasonable way to describe how water shortages impact many water-intensive industries and businesses. For example, a chemical manufacturer uses water in its processes, as well as for cooling, heating, and sanitation. In the short-run, the ability to substitute other inputs for water in the production process may be limited and reductions in water supply may thus require changes in output and employment levels.

However, not all industry sectors considered vulnerable to water shortages follow this general model. The landscape services sector is one exception. Water shortages do not affect this sector's ability to supply its services. Rather, water shortages may reduce the demand for landscape services. Put another way, water shortages impact the landscape services sector indirectly through changes in demand. These indirect impacts are not presently accounted for in the WSMP 2040 shortage cost estimates.

Limited information on how water shortages impact the landscape services sector is available. We have identified two studies, the first sponsored by the State Water Contractors and the second sponsored by Metropolitan Water District, which examined the impact of drought on California's landscape services sector. The first study examined how the combination of drought and recession impacted statewide payroll and employment within the landscape services sector in 1991. Through a survey of landscape service sector employers, the second

study estimated how much of the total impact could be attributed to the drought alone, the recession alone, or was not separable.

Results are summarized in the following table. The study estimated that between 1990 and 1991 California's landscape service sector payroll fell by $217 million and that 11%, or about $23.9 million, was attributable to the drought alone. That is, the drought alone was estimated to reduce 1991 forecast payroll by 1.7%.

RAND (1996) estimated that water shortages in California's urban areas averaged 14% in 1991, implying a payroll elasticity of 0.12.[1]

1991 Statewide Landscape Services Sector Payroll Impact (Million $)

1991 Forecast Payroll	1991 Actual Payroll	Difference	% Drought Related	$ Drought Related	1991 Statewide Urban Water Shortage*	Implied Payroll Elasticity
$1,421.5	$1,204.5	-$217	11%	-$23.9	-14%	0.12

*RAND 1996. "Drought Management Policies and Economic Effects in Urban Areas of California, 1987-1992."

The following table shows the size of the landscape services sector in Alameda and Contra Costa counties, as reported in the 2002 Economic Census.

Landscape Services in Alameda and Contra Costa Counties, 2002

County	No. Establish.	Sales ($1,000)	Ann. Payroll ($1,000)	Employees
Contra Costa	306	$203,747	$63,166	2,593
Alameda	262	$338,827	$131,079	4,557
Total	568	$542,574	$194,245	7,150

The next table shows the potential impact to annual payroll, employment, and value added for 10%, 15%, 20%, and 25% shortages. These impacts are for all of Alameda and Contra Costa Counties. Impacts to EBMUD service area would need to be scaled down to account for portions of the counties that fall outside its service area.

Landscape Services Impacts in Alameda and Contra Costa Counties, 2002.

Water Shortage	Employment	Payroll (Mil. $)	Value Added (Mil. $)*

[1] Payroll elasticity is defined at the percentage change in landscape sector payroll given a one percent change in urban water supply. An elasticity of 0.12 means that a 10% urban shortage would reduce landscape sector payroll by 1.2%.

10%	71	$2.3	$3.3
15%	107	$3.5	$5.0
20%	143	$4.6	$6.6
25%	179	$5.8	$8.6

* Based on ratio of value added to payroll for IMPLAN sector 458 "Services to Building and Dwellings," which includes NAICS 5617 "Landscape Services."

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