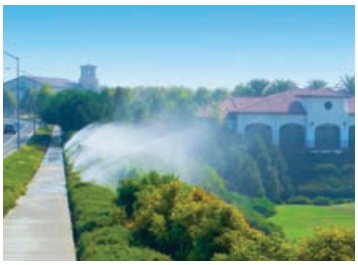
VOLUME I



FINAL PROGRAM ENVIRONMENTAL IMPACT REPORT
RESPONSE TO COMMENTS

SCH # 2008052006

WSMP 2040

WATER SUPPLY MANAGEMENT PROGRAM 2040

EBMUD

EAST BAY MUNICIPAL UTILITY DISTRICT

OCTOBER 2009

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1. Introduction

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1. Introduction

1.1 Purpose of the Response to Comments Document

This Response to Comments document responds to comments received on the Water Supply Management Program (WSMP) 2040 Draft Program Environmental Impact Report (Draft PEIR). The Draft PEIR identified the environmental consequences associated with the implementation of the WSMP 2040 Preferred Portfolio and alternative portfolios as well as mitigation measures to reduce potentially significant impacts. This Response to Comments document, together with the Draft PEIR, constitute the Final PEIR for the proposed WSMP 2040.

The Final PEIR is an informational document prepared by the lead agency that must be considered by decision-makers before approving or denying a proposed project.

CEQA Guidelines (Section 15132) specify that a Final EIR shall consist of:

(a) The Draft Program EIR or a revision of the draft.

(b) Comments and recommendation received on the Draft Program EIR, either verbatim or in summary.

(c) A list of persons, organizations, and public agencies commenting on the Draft Program EIR.

(d) The response of the lead agency to significant environmental points raised in the review and consultation process.

(e) Any other information added by the lead agency.

1.2 Environmental Review Process

On February 19, 2009, EBMUD released the WSMP 2040 Draft PEIR for public review (State Clearinghouse No. 2008052006). A Notice of Availability of the Draft PEIR was mailed to the individuals and organizations that have been involved in the WSMP 2040 planning effort as well as those who previously requested such notice in writing. The notice was also posted on the Project website (www.ebmud.com) and published in the following newspapers: Oakland Tribune, Contra Costa Times, Sacramento Bee, Stockton Record, and Amador Ledger-Dispatch. Multiple copies of the Draft PEIR, along with a Notice of Completion, were provided to the State Clearinghouse for distribution to state agencies.

Printed copies of the Draft PEIR were available for public review at the following locations:

EBMUD Administrative Center
Office of the District Secretary
375 11th Street, 8th Floor
Oakland, CA 94607

Oakland Public Library
125 14th Street
Oakland, CA 94612

San Leandro Main Library
300 Estudillo Avenue
San Leandro, CA 94577

Danville Public Library
400 Front Street
Danville, CA 94541

Orinda Public Library
26 Orinda Way
Orinda, CA 94563

Albany Public Library
1247 Marin Ave
Albany, CA 94706

Walnut Creek Public Library
1395 Civic Drive
Walnut Creek, CA 94596

Berkeley Public Library
2090 Kittredge
Berkeley, CA 94704

Sacramento Public Library
828 I Street
Sacramento, CA 95814

Lodi Public Library
212 W. Pine Street
Lodi, CA 95240

Amador County Public Library
530 Sutter Street
Jackson, CA 95642

San Andreas Central Library
1299 Gold Hunter Road
San Andreas, CA 95249

Stockton-San Joaquin Public Library
2370 E. Main Street
Stockton, CA 95205

Tehama County Public Library
645 Madison Street
Red Bluff, CA 96080

Shasta County Public Library
1100 Parkview Avenue
Redding, CA 96001

Yolo County Public Library
Davis Branch
315 E. 14th Street
Davis, CA 95616

Butte County Public Library
Oroville Branch Library
1820 Mitchell Avenue
Oroville, CA 95966

Fairfield Cordelia Library
5050 Business Center Drive
Fairfield, CA 94534

Yuba County Library
303 2nd Street
Marysville, CA 95901

Santa Clara County Library
14600 Winchester Blvd.
Los Gatos, CA 95032

Sutter County Library
2147 California Street
Sutter, CA 95982

Colusa County Library
738 Market Street
Colusa, CA 95932

Orland Free Library
333 Mill Street
Orland, CA 95963

Plumas County Library
455 Jackson Street
Quincy, CA 95971

San Francisco Public Library
100 Larkin Street
San Francisco, CA 94102

Additionally, the Draft PEIR was available for public review on EBMUD's website at www.ebmud.com.

The 45-day public review and comment period on the Draft PEIR began on February 19, 2009 and closed on April 6, 2009. To give the public further opportunity to comment, the end of the comment period was extended from April 6, 2009 to May 4, 2009, resulting in a 75-day comment period.

Five public meetings were held to receive public comment on the Draft PEIR:

- March 16, 2009 in Lodi, San Joaquin County

- March 16, 2009 in Sutter Creek, Amador County
- March 18, 2009 in Oakland, Alameda County
- March 23, 2009 in Walnut Creek, Contra Costa County
- March 30, 2009 in San Andreas, Calaveras County

Additionally, public comments on the Draft PEIR were received at the Board Workshop, held after the release of the Draft PEIR, on August 11, 2009 at EBMUD's office in Oakland.

1.2.1 PEIR Certification

All commenters on the Draft PEIR will be notified of the date, time and location of the EBMUD Board of Directors meeting at which certification of the PEIR and approval of the WSMP 2040 planning document are scheduled. An electronic version of the Final PEIR will be available on the EBMUD website prior to the certification hearing. Printed copies of the Final PEIR will be mailed at least ten days prior to the certification hearing to those public agencies that commented on the Draft PEIR, in accordance with CEQA Guidelines Section 15088(b). Copies will also be available for public review at the locations listed above and on EBMUD's website at www.ebmud.com.

1.3 Report Organization

Chapter 2 of this Response to Comments document contains copies of comments received during the comment period followed by the lead agency's responses to those comments. Each comment is alphanumerically coded in the margin of the comment letter, based on the initials assigned for each letter and the order of the comments (see Table 1). For example, the first comment in the letter from the Bureau of Land Management is BLM-1.

The comments and responses are presented as follows:

- Master Responses
- Comments from Federal, State and Local Agencies, Utilities and Elected Officials, and Responses
- Comments from Environmental and Community Groups and Responses
- Comments from Individuals Including Form Letters and Responses
- Comments from Public Meetings and Responses

- Late Comments Submitted After the Close of the Public Review Period and Responses

1.3.1 Master Responses and Responses to Form Letters

A number of comments that were received addressed similar concerns. Responses to these comments were consolidated into master responses. Four master responses are presented to address the following topics:

- WSMP 2040;
- Program-level EIR analysis;
- Water demand projections; and
- Enlarge Pardee Reservoir component.

Additionally, 441 people submitted comments using form letters. All of these comment letters are presented in this Response to Comments document. One set of responses is provided for each form letter.

1.3.2 Revisions to the Draft PEIR

Where a response includes a change to the text of the Draft PEIR, the text is revised in this Response to Comments document. Text changes are indented and shown in underline and ~~strikeout~~ format. Text shown in underline format is new text added to the Draft PEIR. Text shown in strikeout format is text deleted from the Draft PEIR. Indented text that is presented in normal format (no underline or strikeout) is original text excerpted from the Draft PEIR that will remain in the Final PEIR and is shown to provide context for the revisions.

All revisions to the Draft PEIR, including those made in response to comments as well as those made by EBMUD, are presented in Section 3.

A total of 1,060 comment letters were received. Table 1 lists all persons and organizations that submitted comments on the Draft PEIR during the comment period, the date of the letters, and the code used to identify each letter. It should be noted that 627 individuals, agencies and organizations submitted comments after the close of the comment period on May 4 (listed in Table 2). However, the late comment letters are included in this document and responses were prepared. Table 3 lists the persons who commented on the Draft PEIR at the five public meetings that were held to receive comments as well as a sixth public meeting, EBMUD Board Workshop 12, where the public was invited to submit comments.

Table 1 Persons and Organizations that Submitted Comments on the Draft PEIR During the Comment Period

Commenter	Code	Date
Federal Agencies		
El Dorado National Forest	EDNF	04/03/2009
National Oceanic and Atmospheric Administration National Marine Fisheries Service	NMFS	05/04/2009
State Agencies		
Caltrans District 10	CAL10	05/04/2009
Caltrans District 4	CAL4	04/02/2009
Governor's Office of Planning and Research	OPR1	04/07/2009
State Water Resources Control Board	SWRCB	05/04/2009
Local Agencies and Utilities		
Amador County Board of Supervisors	ACBOS1	03/31/2009
Amador County Board of Supervisors	ACBOS2	04/29/2009
Amador County Recreation Agency	ACRA	04/16/2009
Alameda County Water District	ACWD	04/06/2009
Amador Water Agency	AWA	03/27/2009
Calaveras County Public Utility District	CALCPUD	04/28/2009
Calaveras County Water District	CALCWD	05/01/2009
Calaveras-Amador Mokelumne River Authority	CAMRA	03/24/2009
Contra Costa County Flood Control (& Map)	CCCFC	05/04/2009
Central Contra Costa Sanitary District	CCCSD	04/30/2009
Contra Costa Water District	CCWD	04/02/2009
City of Ione	COI	04/10/2009
City of Jackson	COJ	03/09/2009
City of Lafayette	COL	04/27/2009
City of Plymouth	COP	04/23/2009
City of Sutter Creek	COSC1	04/23/2009
City of Sutter Creek	COSC2	04/20/2009
PG&E	PGE	04/28/2009
Stockton East Water District	SEWD	04/06/2009
San Joaquin Council of Governments	SJCOG	04/30/2009
San Joaquin Farm Bureau	SJFB	05/04/2009
San Joaquin Valley Air Pollution District	SJVAPCD	04/16/2009

Commenter	Code	Date
San Luis & Delta-Mendota Water Authority and Westlands Water District	SLDMWA - WWD	05/04/2009
Sacramento Municipal Utility District	SMUD	05/04/2009
Town of Danville	TODV	04/14/2009
Environmental and Community Groups		
Amador County Historical Society	ACHS	03/20/2009
American Whitewater	AW	03/07/2009
Community Action Project	CAP	05/04/2009
Contra Costa Council	CCC	03/20/2009
Central Sierra Environmental Resource Center	CSERC	04/30/2009
California Sportfishing Protection Alliance	CSPA	05/04/2009
Calaveras Youth Mentoring Program	CYMP	03/30/2009
Foothill Conservancy	FC1	02/23/2009
Foothill Conservancy	FC2	04/01/2009
Foothill Conservancy	FC3	05/04/2009
Friends of the River	FOR	05/04/2009
Golden West Women Flyfishers	GWWF	03/17/2009
Lafayette Homeowners Council	LHC1	03/31/2009
Lafayette Homeowners Council	LHC2	04/02/2009
Lafayette Homeowners Council	LHC3	04/03/2009
Sierra Club San Francisco Bay Chapter	SCSFB1	03/18/2009
Sierra Club San Francisco Bay Chapter	SCSFB2	05/04/2009
Sierra Club Tuolumne Group	SCTG	03/22/2009
Sierra Nevada Alliance	SNA	04/20/2009
Sierra Nevada Adventure Company	SNAC	05/03/2009
Tracy Fly Fishers	TFF	03/23/2009
Tri-Valley Flyfishers	TVF	03/23/2009
Upcountry Community Council	UCC	04/22/2009
Form Letter 1		
Pat Carter	PCart	03/18/2009
Patricia Law	PL1	03/18/2009
Form Letter 2		
Anna McGuire	AMcG1	03/07/2009
Ariane Rasori	ARa	04/03/2009
Alan Willard	AWi	05/04/2009
Barbara Farkas	BFa	04/11/2009
Christine Bey	CBey	03/30/2009
Cameron Brown	CBr	04/10/2009

Commenter	Code	Date
Charles Heimstadt	CHe	03/08/2009
Cara Moore	CMo	04/28/2009
Chris Storm	CSt	03/16/2009
Christine & Eric Taylor	CT	03/06/2009
Chris Wright	CWr	03/16/2009
Don Amo	DAm	03/10/2009
David Emery	DE	05/04/2009
Donna Fabiano	DF	05/04/2009
Deborah Hallford	DHa	03/03/2009
Dan Landreth	DLan	03/10/2009
Dena McAfee	DMc	03/16/2009
Don O'Brien	DOB	03/11/2009
Dennis Reeves	DRee	04/03/2009
Deborah Ricket	DRi	03/23/2009
Dane Stevens	DSte	03/11/2009
Ed Hobbs	EH	03/13/2009
Eric Kurtz	EK	03/08/2009
Eric Obrien	EO	03/09/2009
Galen Hazelhofer	GHa	04/10/2009
Gretchen Kingsbury	GK	03/08/2009
Glenna Larson	GL	03/19/2009
Geoff Martin	GMart	05/01/2009
Gary Rollinson	GRo	05/04/2009
Harry Dundore	HD	05/04/2009
Heather Willats	HW	03/27/2009
Janice Bassett	JBa	04/11/2009
Jamie Beutler	JBeu	03/13/2009
Joseph Dacid	JDa	03/16/2009
John Donovan	JDo	05/04/2009
Jody Ginsberg	JGin	05/04/2009
Joe Harvey	JHarv1	03/06/2009
John Knight	JKn	04/07/2009
JoAnn Levy	JLe	04/30/2009
Jessica Massoletti	JMa	03/18/2009
John Peckler	JPec	03/30/2009
John Pelletti	JPel	03/14/2009
Jesikah Maria Ross	JRoss	03/13/2009
Kevin Bethel	KBe	05/04/2009
Kevin Branstetter	KBr2	03/03/2009
Kathy Hamilton	KHam	04/10/2009
Kristin Hurley	KHu	03/06/2009
Kim Means	KMe	03/23/2009
Karen Smart	KS	03/04/2009
Lori Caires	LCa	03/17/2009
Lindsey Gulyas	LGul1	05/03/2009
Lorie Hale	LH	03/06/2009
Liane Roberts	LR	03/24/2009
Mikaela Bianchi	MBi	04/30/2009
Mark Bonar	MBon	03/22/2009
Martha Breed	MBr	04/28/2009
Michael Burtch	MBurt	04/10/2009
Maxine Clark	MCl	03/13/2009
Margaret Copenhaver	MCop2	04/10/2009

Commenter	Code	Date
Mary Elliot	ME1	03/16/2009
Michael Gerell	MGer	03/07/2009
Michael Haerr	MHae	04/01/2009
Margaret Hetherington	MHet	03/28/2009
Mike Nichols	MNi	05/04/2009
Matt Patwell	MPa	03/12/2009
Mavis Sare	MSar	03/03/2009
Mary Sidvers	MSi	03/23/2009
Mary Wehner	MWe	03/07/2009
Nathan Berner	NB	04/03/2009
Nancy Fort	NF	04/16/2009
Nick Lawson	NL	03/09/2009
Randy Bayne	RBa	03/14/2009
Richard Boylan	RBo	04/10/2009
Robert Currall	RCur1	03/13/2009
Robert Currall	RCur3	03/24/2009
Robin Gultez	RGu	05/04/2009
Robert Kenney	RKe	04/10/2009
Robert Mcteer	RMct	03/19/2009
Rob Means	RMean	03/23/2009
Ross Slayton	RSl	03/13/2009
Susan Bragstad	SBr	03/09/2009
Sean Collins	SCo	03/08/2009
Sharon Long	SLon2	03/09/2009
Stephen Markle	SMar	03/15/2009
Susan McMorris	SMc	03/07/2009
Steve Menicucci	SMen	04/02/2009
Susan Reycroft	SRey	03/04/2009
Sue Simmons	SSi	05/04/2009
Susan Tritch	STri	04/18/2009
Ted Ingalls	TI1	03/09/2009
Ted Ingalls	TI2	03/20/2009
Tamara Luckenbill	TLu	05/04/2009
Tom Saffell	TSa	04/11/2009
Vicki Snead-Hinkell	VS	03/14/2009
Yvonne Hobbs	YH	03/13/2009
Form Letter 3		
Alexandra Campbell	ACa	03/22/2009
Annabel Channell-Johnson	ACh	04/30/2009
Alison Clement	ACl	04/24/2009
Alan Goggins	AGog1	03/18/2009
Alan Goggins	AGog2	04/11/2009
Alicia Gonzalez	AGon	03/31/2009
Amos Hobby	AHo	03/18/2009
Alex McBroom	AMcB	04/19/2009
Amy Rea	ARe	05/04/2009
Aaron Smith	ASm	04/27/2009
Anthony Steuer	ASt	03/18/2009
Bill Britton	BBri	03/17/2009
Brad Findlay	BFin	04/01/2009
Brian Frias	BFr	04/16/2009
Brian Fugler	BFu	03/24/2009

Commenter	Code	Date
Bradley Gordon	BGo	03/24/2009
Ben Kishimoto	BKis	04/01/2009
Brooke Matteson	BMat	03/24/2009
Bob Mellinger	BMe1	03/17/2009
Bobbie North	BN	04/16/2009
Carolin Atchison	CAt1	04/01/2009
Carolin Atchison	CAt2	04/20/2009
Craig Cook	CCoo	03/17/2009
Craig Everhart	CEv1	03/17/2009
Craig Everhart	CEv2	04/01/2009
Charles Hammerstad	CHa	03/17/2009
Christa Lindsey	CL	03/17/2009
Cynthia Martz	CMa	03/26/2009
Carol W. McCormick	CMc	03/24/2009
Corley Phillips	CPh	03/18/2009
Charles Seidler	CSe	03/17/2009
Constance Sutton	CSu	03/18/2009
David Adams	DAd1	03/17/2009
Dan Bacher	DBac	03/18/2009
Deirdre Brownell	DBr	03/17/2009
Dennis P. Davie	DD	03/18/2009
Dana Heins-Gelder	DHe	03/18/2009
Drew King	DKi	03/25/2009
David Mierkey	DMi1	03/18/2009
Daniel O'Connor	DOC	04/18/2009
Dominic Perello	DPe	03/19/2009
Dana Reimer	DRei	03/18/2009
David Shorey	DSh	04/20/2009
Dan Silver	DSil	03/18/2009
David Simpson	DSim1	03/31/2009
David Simpson	DSim2	04/16/2009
David Strewer	DStr	03/24/2009
Evan Drath	EDr1	03/18/2009
Elisse De Sio	EDS	03/18/2009
Eric Newberg	EN1	03/18/2009
George C. Allerton	GA	04/01/2009
Gypsy Bandita	GB1	03/18/2009
Gypsy Bandita	GB2	03/26/2009
Geary Hund	GHu	03/19/2009
George Rawley	GRa	03/17/2009
Greg & Laurie Schwaller	GSch	03/27/2009
Greg Stock	GSt	04/14/2009
Gene R. Trappk & Jo Ellen Ryan	GT	03/17/2009
Henry Gutierrez	HG	03/17/2009
Ian Bailey	IB	04/21/2009
Ilona Karow	IK	03/17/2009
Jennifer Atkin	JAt	05/03/2009
Jaime Becker	JBec	03/18/2009
Jim Carpenter	JCa	03/18/2009
Joseph Celeste	JCe	04/29/2009
Janet Cook	JCo	03/24/2009
Jonathan Creighton	JCr	03/17/2009

Commenter	Code	Date
James R. Dwyer	JDw1	03/18/2009
James R. Dwyer	JDw2	03/24/2009
Jennifer Anderson	JeAn	03/19/2009
Julie Ford	JFor	03/17/2009
Janice Foss	JFos	03/18/2009
Judith & William Friedel	JFrie	03/17/2009
Janice Gloe	JG1	03/18/2009
Jim Genes	JGe	04/03/2009
James Harris	JHarr	03/18/2009
Joe Harvey	JHarv2	03/17/2009
John Holtzclaw	JHo1	03/17/2009
John Jerger	JJerg	03/18/2009
Jacqueline Lasahn	JLa1	03/17/2009
Jonathan McClelland	JMcCl	03/17/2009
Julie Mckee	JMck2	03/21/2009
Jack Meeks	JMe	03/19/2009
Jon Musacchia	JMu1	03/18/2009
Jon Musacchia	JMu2	03/24/2009
John Okulick	JO1	03/18/2009
Julie Poulton	JPo	04/01/2009
Jamie Rosenthal	JRose	03/18/2009
Jeff Salkas	JSa1	03/17/2009
Jeff Salkas	JSa2	03/24/2009
Joseph Sebatian	JSe1	03/18/2009
Jacqueline Shulters	JShu	03/17/2009
Jennifer Sims	JSims	03/18/2009
Jeffrey Stone	JSto	03/24/2009
James Jade Tippett	JTi	03/24/2009
Janette Tom	JTo	03/17/2009
Kenneth Bauer	KBa	03/17/2009
Kathleen Frank	KFr	03/21/2009
Kathy Hanson	KHan	03/27/2009
Kathleen Head	KHe	03/23/2009
Kirsten R. Holmquist	KHol	03/23/2009
KJ Linarez	KLi2	04/02/2009
Kit Lofroos	KLo	03/17/2009
Ken Maloney	KMa	03/17/2009
Kenneth Nemire	KN	03/17/2009
Kate Redburn	KRed	05/04/2009
Kelle Young	KY	04/29/2009
Laura Allen	LA	03/17/2009
Lang Dayton	LDa	04/27/2009
Lis Fleming	LF	03/28/2009
Lauren Kramer	LK	03/23/2009
Larry Lundberg	LL	03/17/2009
Lynn Murray	LMu	04/24/2009
Lois Yuen	LY	04/02/2009
Mallory Cremin	MCr	03/17/2009
Madeleine Flandreau	MFl	03/18/2009
Mary Frantz	MFrant1	03/18/2009
Marnie Gaede	MGae	03/17/2009
Max Greene	MGre	03/31/2009
Mike Gunderson	MGu	03/25/2009

Commenter	Code	Date
Mandi Hawley	MHaw	03/30/2009
Mark Hewell	MHew	03/31/2009
Megaen Kelly	MK1	04/28/2009
Michael Little	ML	03/18/2009
Meave O'Conner	MOC	03/17/2009
Michael Pinelli	MPi	03/25/2009
Michael Rifkind	MRi1	03/17/2009
Michael Rifkind	MRi2	03/25/2009
Mike Rogers	MRo	03/31/2009
Melissa Sackett	MSac	03/18/2009
M. Savino	MSav	03/26/2009
Mark Swoiskin	MSw	03/17/2009
Michael Taaffe	MTa	03/24/2009
Michael Tomlinson	MTo	03/24/2009
Mike Vandeman	MV1	03/31/2009
Marie Wadman	MWa1	03/25/2009
Mark Zimmerman	MZ	03/31/2009
Nick Aghazarian	NAg	05/01/2009
Nalatie Alpers	NAl	05/04/2009
Patricia Davis	PDa	03/18/2009
Philip Dinter	PDi	03/22/2009
Patrica Jones	PJon	03/24/2009
Patricia Law	PL2	03/25/2009
Patricia Matejcek	PMa	03/17/2009
Philip Simon	PS	03/20/2009
Reagan Bush	RBu	03/26/2009
Richard Cooper	RCo	03/24/2009
Robert DeVisscher	RD	04/01/2009
Richard Ely	REl1	03/17/2009
Randall Frank	RFra	03/18/2009
Robert Hammon	RH	04/01/2009
Robert McConachie	RMcC	03/17/2009
Dr. Robert Meagher	RMeag	03/17/2009
Roberta E. Newman	RN	03/18/2009
Richard Ober	RO	03/31/2009
Robin Miller	RobMil	04/18/2009
Richard Rawson	RR	03/17/2009
Rob Seltzer	RSe	03/24/2009
Rick Shreve	RSh	03/18/2009
Richard S. Weiss	RWe	03/17/2009
Rebecca Wu	RWu	03/29/2009
Serge Barbir	SBar	03/31/2009
Suzanne Ferroggiaro	SFe	03/17/2009
Scott Foster	SFo	03/31/2009
Steven Frie	SFr	03/20/2009
Sharon Gosselin	SGo	03/17/2009
Shirley Gregory	SGr	04/11/2009
Sara Keene	SK	05/02/2009
Scott Milener	SMi	03/17/2009
Sarah Parks	SP	03/19/2009
Sara Raskie	SRa	03/17/2009
Sharon Schumacher	SSchu	04/25/2009
Soleil Tranquilli	STra	04/01/2009

Commenter	Code	Date
Sherry Turner	STu	03/18/2009
Theresa Fagouri	TFag	03/24/2009
Tova Fleming	TFl	03/26/2009
Tara Hui	THu1	03/18/2009
Tanya Meyer	TMe	03/17/2009
Thomas Miro	TMi2	04/19/2009
Tim Stutz	TSt1	03/22/2009
Walter Baity	WB	03/31/2009
William Zemanek	WZ	04/06/2009
Individual Letters		
Alexander Gaguine	AGag	03/18/2009
Alice Giuliani	AGiu	04/23/2009
Ann Haruki-Pinedo	AHa	04/07/2009
Addie Jacobson	AJa	03/17/2009
Anna & Jay McGuire	AMcG2	03/25/2009
Alec Plauche	APl1	04/11/2009
Alec Plauche	APl2	04/13/2009
Andrew Ryan	ARy	03/10/2009
Agata A. Sulczynski	ASu	03/02/2009
Alice Trinkl	ATr	03/16/2009
Arlene Wong	AWo	03/21/2009
Ariel Zucker	AZ	05/04/2009
Brandt Andersson	BA	04/02/2009
Bill Brown	BBro	04/05/2009
Bunny Firebaugh	BFir	03/17/2009
Ben Gravitz	BGr	03/14/2009
Brian Jobson	BJo	05/01/2009
Brad Martin	BMar1	03/17/2009
Carol Aardal	CAa1	03/14/2009
Carol Aardal	CAa2	03/15/2009
Cristine Barsanti	CBa	03/16/2009
Constantina Economou	CEc	04/15/2009
Chris Gandolfi	CG	04/02/2009
Cynthia Kirby	CK	03/18/2009
Colleen Platt	CPl	04/03/2009
Carl Ramstrom	CRa	05/04/2009
Don Baker	DBak	03/15/2009
Donna Johnson	DJ	04/13/2009
Deanna Knickerbocker	DKn	03/31/2009
Deanna Lamb	DLam	04/16/2009
David & Trudy L. Rodriguez	DRo	04/06/2009
Diane Starner	DSta	04/02/2009
Douglas Thorley	DT	03/18/2009
David Walker	DWal	03/24/2009
Eric Arons	EA	03/03/2009
Elaine Baden	EBad	03/04/2009
Eric Bernhard	EBe	03/24/2009
Erin Devlin	EDe	03/27/2009
Eugenia Larson	EL	03/19/2009
Eugene Wier	EW	03/23/2009
Elaine Zorbas	EZ	04/28/2009
The Foxes Inn B&B	FI	03/07/2009

Commenter	Code	Date
Gail & Ted Bunge	GBu	03/19/2009
George Marro	GMarr	03/18/2009
Gregory Reis	GRe	03/26/2009
Hope Baird	HB	03/26/2009
Heidi Lawson	HL	03/30/2009
Holly Mines	HMi	05/04/2009
Mr. and Mrs. Irvin Luckman	IL	03/16/2009
Jay Anderson	JaAn	03/16/2009
Janet Brown	JBr	03/21/2009
Joanne Drabek	JDr	05/04/2009
Jonathan Fishman	JFi	04/12/2009
Jenny Fritz	JFrit	03/06/2009
Janice Gloe	JG1	03/18/2009
Janice Gloe	JG2	04/05/2009
Joan Jernegan	JJern	03/24/2009
Jim & Barbara Kavanagh	JKav	03/13/2009
Josh McCoy	JMcCo	03/31/2009
Jill North	JNo	03/17/2009
Julie Payne	JPa	03/18/2009
John Simpkin	JSimp	02/28/2009
Jana Staniford	JSta	03/31/2009
Julie Steury	JSte	03/18/2009
James D. Taylor	JTa	03/18/2009
Jeff Wasieslewski	JWa	03/03/2009
Jim & Tina White	JWh	05/03/2009
K. Ahola	KAh	03/17/2009
Kathleen Aldridge	KAl	05/04/2009
Kyle Caires	KCa	04/01/2009
Kiya Cote	KCo	04/01/2009
Kathleen duBois	KD	03/30/2009
KJ Linarez	KLi1	03/21/2009
Kimberly O'Connor	KOC	04/30/2009
Karen Orso	KOr	03/06/2009
Karen Pekarcik	KP	04/05/2009
Kenneth Renwick	KRen	03/25/2009
Kevin Wolf	KW	03/25/2009
Leonard Conly	LCo	03/24/2009
Lillian Davidson-Davis	LDD	03/18/2009
Larry Dennis	LDenn	03/24/2009
Laura Drath	LDr	03/18/2009
Lori & Claresa Mills	LMi1	03/27/2009
Lori Mills	LMi2	03/31/2009
Linda & Don Winn	LWin	03/29/2009
Marta Johnson	MaJo	04/29/2009
Margaret Copenhaver	MCop1	03/14/2009
Margy Cottriel	MCot	03/16/2009
Marguerite Dessornes	MDes	03/24/2009
Michael Fonda	MFo	04/05/2009
Marion Franck	MFranc	05/04/2009
Marion Gee	MGee	03/16/2009
Mary Jane Genochio	MGen	03/18/2009
Marlene Gideon	MGi	03/17/2009
Marge Grow	MGro	03/16/2009

Commenter	Code	Date
M.L. Heller	MHel	03/24/2009
Marci Hue	MHu	04/07/2009
Matthew Isles	MI1	03/31/2009
Matthew Isles	MI2	05/01/2009
Marla Morrissey	MMo	03/25/2009
Mary Murray	MMu	03/17/2009
Mike O'Dell	MOD	04/07/2009
Maren Sampson	MSam	03/30/2009
Mark A. Seedall	MSe	04/06/2009
Mark Sutherland	MSut	03/18/2009
Mike Vandeman	MV2	04/09/2009
Mark Whitehead	MWh	03/31/2009
Melinda Wright	MWr	04/04/2009
Natoma Ceramic	NC	03/06/2009
Noah Hughes	NH	03/06/2009
Nick Johnson	NJ	03/31/2009
Nancy Ellen McCraken	NM	03/14/2009
OARS	OARS1	05/01/2009
OARS	OARS2	05/04/2009
Patrick Carr	PCarr	03/20/2009
Peter B. Hansell	PH	03/20/2009
Patricia Pereira	PP	05/04/2009
Paul Tebbel	PT	03/31/2009
Rebecca Brown	RB	05/04/2009
Rose Craig	RCr	03/21/2009
Robert Currall	RCur2	03/18/2009
Richard Garcia-Kennedy	RGa	04/21/2009
R. Gillman	RGi	04/06/2009
Richard Mines	RMin	05/04/2009
Ron Platt	RP	03/31/2009
Ron Szymanski	RSz	03/16/2009
Steve Andrews	SA	03/24/2009
Susan Battersby	SBat	03/24/2009
Sharon Cavallo	SCa	03/17/2009
Sigmund and Gabrielle Csicery	SCs	04/07/2009
Steven Frie	SF	03/17/2009
Sally Finch	SFi	04/06/2009
Stuart Flashman	SFl	03/26/2009
Susan Jette	SJ	03/16/2009
Stan Logan	SLog	04/03/2009
Sharon Long	SLon1	02/25/2009
Steven Schlegel	SSchl	03/17/2009
Tyler Childress	TC	03/09/2009
Tom Gelder	TG	03/18/2009
Timothy Holton	THo	03/31/2009
Teresa Hylton	THy	03/03/2009
Thomas Miro	TMi1	03/25/2009
Tara Mueller	TMue	03/31/2009
Tim St	TSt2	03/24/2009
Virginie Corominas	VCo	03/18/2009
Vicky Farmer	VF	03/15/2009
Violet Jakab	VJ	04/01/2009

Commenter	Code	Date
Volcano Press	VP	03/12/2009
William Graham	WG	03/17/2009
Wendell Peart	WP	05/01/2009
Yee	Ye	04/06/2009
Yvonne Wood	YW	04/28/2009

Table 2 Persons and Organizations that Submitted Comments on the Draft PEIR after the Close of the Comment Period

Commenter	Code	Date
Federal Agencies		
Bureau of Land Management	BLM	05/05/2009
State Agencies		
Governor's Office of Planning and Research	OPR2	05/05/2009
Local Agencies, Utilities and Elected Officials		
Alameda County Board of Supervisors	ALCBOS1	06/03/09
Alameda County Board of Supervisors	ALCBOS2	06/11/09
Contra Costa County Board of Supervisors	CCCSup	08/11/09
Contra Costa County Water Agency	CCCWA	07/07/09
Daniel Lungren, Congressman	DLung	08/11/2009
Jackson Valley Irrigation District	JVID	05/18/09
Environmental and Community Organizations		
East Bay Economic Development Alliance	EDA	07/30/09
Foothill Conservancy	FC4	08/12/09
Form Letter 2		
Brady Kinnings	BKin	05/06/2009
Don Ahlert	DAh	05/05/2009
Gail Myers	GMy	05/05/2009
Kenna Foster	KFo	05/06/2009
Larry Brownson	LBr	05/05/2009
Matt Turner	MTu	05/05/2009
Rob Super	RSu	08/14/2009
Form Letter 3		
Andrea Ganz	AGan	06/10/2009
Alicia Taylor	ATa	06/10/2009
Brianna American River Recreation	BARR	06/10/2009
Brian Kallen	BKa2	06/10/2009
Brian Kohl	BKo	06/10/2009
Brad Martin	BMar2	06/10/2009

Commenter	Code	Date
Bob Mellinger	BMe2	06/14/2009
Bob Rosenberg	BR	06/11/2009
Brianna Tyler	BT	06/10/2009
Barbar Ungerma	BU	07/31/2009
Charles Bell	CBel	06/10/2009
Craig Bradshaw	CBrad	07/24/2009
Cathe Dietrich	CD	07/25/2009
Cheri Russell	CRu	06/06/2009
David Adams	DAd2	06/10/2009
Donna Carr	DCa1	06/10/2009
Donna Carr	DCa2	06/28/2009
Dale and Joanne Crandall-Bear	DCB	06/12/2009
Don Gustafson	DG	07/27/2009
David Mierkey	DMi2	06/10/2009
Don Mittelstaedt	DMit	06/10/2009
Daniel F. Ward	DWar	06/12/2009
Evan Drath	EDr2	06/12/2009
Edward Kikumoto	EKiku	07/24/2009
Eric Newberg	EN2	06/10/2009
Ed Van den Bossche	EV	06/10/2009
Francisco Costa	FCo	06/13/2009
Felipe Garcia	FG	06/11/2009
Frances Taylor	FT	06/11/2009
Gypsy Bandita	GB3	06/10/2009
Gary Feemster	GFe	06/11/2009
Gene Gantt	GG	07/06/2009
Gary Smith	GSmi	08/01/2009
Hunter Merritt	HMe	06/10/2009
Harold Thorne Jr.	HT	07/27/2009
Jennifer Adams	JAd	07/13/2009
James R. Dwyer	JDw3	06/15/2009
Janice Gloe	JG3	06/28/2009
June Gill	JGil	06/10/2009
Jake Harper	JHarp	07/07/2009
John Holtzclaw	JHo2	06/10/2009
Jim Hunt	JHu	06/19/2009
Janet Jamerson	JJam	07/27/2009
Jacqueline Lasahn	JLa2	06/12/2009
James McGrew	JMcG	06/10/2009
Julie McKee	JMck1	06/10/2009
Julie Mitravich	JMi	06/19/2009
Jon Musacchia	JMu3	06/13/2009
Jennifer Natali	JNa	06/23/2009
John Okulick	JO2	06/11/2009
Joseph Sebatian	JSe2	06/10/2009
Kevin Branstetter	KBr1	06/10/2009
Karen Dewald	KDew	07/31/2009
Kent MacIntosh	KMac	07/27/2009
Kevin Mather	KMat	07/27/2009
Kathleen Roberts	KRo1	06/10/2009
Kevan Urquhart	KU	06/10/2009
Linda Barrera	LBa	06/10/2009

Commenter	Code	Date
Lou Anna Denison	LDeni	06/10/2009
Linda Friedman	LFri	07/26/2009
Linda Morgan	LMor	07/29/2009
Lindsay Mugglestone	LMug	07/27/2009
Lucinda Olney	LOln	07/27/2009
Linda B. Taylor-Beck	LT	06/10/2009
Laura Willbanks	LWil	06/12/2009
Louis Zirelli	LZ	07/10/2009
Marilyn Bull	MBul	07/10/2009
Melissa Burnell	MBurn	07/08/2009
May-Lin Chang	MCh	06/11/2009
Mike Cox	MCox	06/10/2009
Margaretha Derasary	MDer	06/10/2009
Mary Elliot	ME2	06/10/2009
Miranda Everett	MEve	07/28/2009
Mary Eaton Fairfield	MFa	07/27/2009
Mary Frantz	MFrant2	06/10/2009
Martin Garcia	MGar	06/10/2009
Mitch Harper	MHar	07/02/2009
Megaen Kelly	MK2	07/01/2009
Michael P. Schefers	MSch	06/10/2009
Marie Wadman	MWa2	06/27/2009
Melanie Watson	MWat	06/19/2009
Nancy Price	NP	06/10/2009
Paul Jorjorian	PJor	06/10/2009
Patricia Law	PL3	06/11/2009
Patrick McCully	PMc	06/10/2009
Perry Robertson	PR	06/10/2009
Dr. and Mrs. Peter Seidman	PSeid	07/27/2009
Paul Switzer	PSwit	07/15/2009
Robert and Faith Cushman	RCus	06/10/2009
Richard Ely	REl2	06/10/2009
R. Fiske	RFis	07/02/2009
Rachel Friedman	RFri	06/11/2009
Roger Groghan	RGr	06/10/2009
Rebecca Ianieri	RIa	07/08/2009
Randy Kirkbride	RKi	06/10/2009
Renee Samuels	RSam	06/10/2009
Rebecca Sang	RSan	05/06/2009
Roberta and Amanda Sparkman	RSp	06/10/2009
Roger Williams	RWi	06/10/2009
Steven Holzberg	SHo	06/12/2009
Steven Magenheimer	SMag	06/11/2009
Sonja Malmuth	SMal	06/10/2009
Steve Mcintire	SMcin	07/26/2009
Steve Tyler	STyl	08/03/2009
Susan Schwartz	SSchw	06/10/2009
Tom Camara	TCam	07/28/2009
Tony Fabian	TFab	07/06/2009
Tara Hui	THu2	06/11/2009
Valerie Nesbitt	VN	06/16/2009
Walt Levitus	WL	06/10/2009

Commenter	Code	Date
Zeph Fishlyn	ZF	07/10/2009
Form Letter 4		
Alan Pong	APo	07/02/2009
C. Schott	CSch	08/19/2009
Christine Cox	CCox	07/13/2009
Chris Messier	CMes	08/03/2009
Craig Walling	CWa	07/04/2009
Fred Hammond	FH	07/02/2009
Gary Davis	GDa	07/08/2009
Gregory Forster	GFor	07/09/2009
Gabriel Lopez	GLo	07/13/2009
Hope Boije	HBo	08/07/2009
Henriette Henderson	HH	07/02/2009
Jeffrey Blanc	JBla	07/14/2009
Janice Cecil	JCec	08/10/2009
John Quigley	JQ	07/02/2009
Keli Steinhoff	KSte	07/18/2009
Lea Grundy	LGrund	07/17/2009
Leslie Jackson	LJa	08/04/2009
Mike Nicholson	MNich	07/31/2009
Michael Smith	MSm	08/01/2009
Peter Boffrey	PBof	08/31/2009
Rosemarie Jackson	RJ	06/22/2009
Ryan Matt	RMat	08/03/2009
Randall Tyers	RT	08/11/2009
Sharron James	SJa	08/09/2009
Steve Menicucci	SMen	07/21/2009
Tom Infusino	TIn	08/08/2009
Teresa Kurtzhall	TK	07/02/2009
William Jackson	WJa	06/22/2009
Warren Johnson	WJo	07/04/2009
Yuko Nakajima	YN	08/12/2009
Form Letter 5		
Christopher Lombardi	CLo	08/2009
Cris Pratt	CPr	08/2009
D.C.	DC	08/2009
Donald F. Carr	DCar	08/2009
Harriet E. Cleveland	HC	08/2009
Keri Atwood	KAtw	08/2009
Katherine Yoshi	KYo	08/2009
Loretta Ferraro	LFe	08/2009
Linda F. Johnson	LJoh	08/2009
Michael Ferraro	MFe	08/2009
Raziel Madden	RMad	08/2009
Theopouleos Kane	TKa	08/2009
Unknown 12	UN12	08/2009
Form Letter 6		
Diana Achegma	DAe	08/2009
Deborah Mauses	DMa	08/2009
Eduarda Gardarramas	EGa	08/2009

Commenter	Code	Date
Michelle Wooten	MWoo	07/30/09
Michal Zimring	MZi	08/2009
Individual Letters		
Ann Mangold	AMa	06/08/2009
A. Stuart	AStu	05/16/2009
Bronwyn Hogan	BH	05/05/2009
Bix Whitcomb	BW	06/10/2009
Dave Blake	DBl	05/06/2009
Deborah Dugger	DDug	05/27/2009
Dylan Silver	DSi	05/11/2009
Erica Jackson	EJ1	06/17/2009
Erica Jackson	EJ2	06/22/2009
Ivan Kyles	IK	05/08/2009
Jenna Bianchi	JBi	05/11/2009
Julie Ginsberg	JG	09/07/2009
Jessica Hayes	JH	06/08/2009
Jeffrey Ludwig	JL	06/24/2009
Joyce Smaragdis	JSm	05/06/2009
Justine Smith	JSmit	08/25/2009
Kevin Clark	KCl	07/27/2009
Kelley Jackson	KJa	06/20/2009
Kent Lewandowski	KLe	08/09/2009
Kathleen Roberts	KRo2	06/10/2009
Ken Tetzel	KT	07/04/2009
Lindsey Gulyas	LGul2	05/11/2009
Laurie Jurs	LJu	05/11/2009
Maura Baldwin	MBal	08/25/2009
Margaretha Derasary	MDe	06/10/2009
Marina & David Dobbie	MDo	06/16/2009
Mary McNamara	MMcN	08/25/2009
Monika Rose	MRose	08/03/2009
Olga Mandrussow	OM	06/28/2009
Roger Clark	RCl	06/20/2009
Robert & Faith Cushman	RCu	06/10/2009
Ronald Edgar	RE	06/12/2009
Robin Mitchell	RMit	07/22/2009
Roger Miller	RogMil	05/05/2009
RL Simpson	RSi	06/18/2009
Susan Garbarino	SGa	08/11/2009
Shannon Moore	SMoo	07/27/2009
Susan Schwartz	SSc	06/10/2009
Shane Stewart	SSte	05/10/2009
Handwritten Letters		
A.Amoroso	AAm	08/11/2009
Allie Amoscato	AAmo	08/11/2009
Anandamay Arnold	AAr	08/11/2009
Avenelle Archille	AArc	08/11/2009
Alicia Brite	ABr	08/11/2009
Alexandra Buschman	ABu	08/11/2009
Arlene Crooks	ACr	08/11/2009
Adam	AD	08/11/2009
Audrey Gi__	AGi	08/11/2009

Commenter	Code	Date
Alissa Gibbins	AGib	08/11/2009
A. Gwinski	AGwi	08/01/2009
Ashley Iverson	AI	08/11/2009
Annabel Johnson	AJo	06/09/2009
A. Rayiri Johnson	AJoh	08/11/2009
Amos Jones	AJon	08/11/2009
Andrew Klaus	AK	08/11/2009
Avery Leeland	ALee	08/11/2009
Angela Lewandowski	ALew	08/11/2009
Anna Lurea	ALu	08/11/2009
Andrew I. M….	AM	08/11/2009
Annette McCoubrey	AMc	08/11/2009
Ann McClair	AMcC	08/11/2009
Allison McManus	AMcM	08/11/2009
Andrew Miller	AMi	08/11/2009
Anonymous (Mokelumne Letter Talk1)	Anon1	06/09/2009
Anonymous (Mokelumne Letter Talk2)	Anon2	06/09/2009
Amy Oraftik	AO	08/11/2009
Amy Parente	AP	08/11/2009
Alex Roselle	ARo	08/11/2009
Alonea L. Rush	ARu	08/11/2009
Aure S__	AS	08/11/2009
Aaron Sanders	ASa	08/11/2009
Angel Sepulveda	ASe	08/11/2009
Alisa Rose Seidlitz	ASei	08/11/2009
Arlette Thibodeau	ATh	08/11/2009
Alyse Weijman	AWe	06/09/2009
Amy Williams	AWil	08/11/2009
Banhana Barbo…	BBa	08/11/2009
Beth Bringley	BBrin	08/11/2009
Barbarah Cooh	BC	08/11/2009
Brian Collins	BCo	08/11/2009
Beck Cowles	BCow	08/11/2009
Brandi DeCarli	BD	08/11/2009
B. G__	BG	08/11/2009
Brianna Horn	BHo	08/11/2009
Brittany Jones	BJon	08/11/2009
Brian Kallen	BKa1	06/09/2009
Bethlehem Kassaye	BKas	08/11/2009
B. Lam	BL	08/11/2009
Brianne O'Rourke	BOR1	06/09/2009
Brianne O'Rourke	BOR2	06/09/2009
Barbara Perry	BP	08/11/2009
Betsy Thagard	BTh	08/11/2009
Brandy & Loretta Varnado	BVa	08/11/2009
Becky Villagran	BVi	08/11/2009
Charla Barkley	CBar	08/11/2009
Colin Christy	CCh	08/11/2009
Carver Cordes	CCor	08/11/2009
Cynthia Denice	CDe	08/11/2009
Cindy Domingo	CDo	08/11/2009

Commenter	Code	Date
C. Ettling	CEt	08/11/2009
Charles A. Garfield	CGa	08/11/2009
Chris Gulli	CGu	08/11/2009
Carolyn Haller	CHal	08/11/2009
Celine Hollombe	CHo	08/11/2009
Christine Ippolito	CI	08/11/2009
Cathryn Johnston	CJ	08/11/2009
Carolyn Lex	CLe	08/11/2009
Corrina Marshall	CMar	08/11/2009
Chris Morin	CMor	08/11/2009
Claudette M. Peterson	CPe	08/11/2009
Carl Reichenbach	CRe	08/11/2009
Chen Rhodes	CRh	08/11/2009
Craig Riglin	CRi	08/11/2009
Christyn Rothburg	CRo	08/11/2009
Charlise Schneider	CSc	08/11/2009
Cindy Spring	CSp	08/11/2009
Charlie Stephens	CSte	08/11/2009
Cindy Valentine	CV	08/11/2009
Christina Windom	CWi	08/11/2009
Denise Allen	DAl	08/11/2009
Dominique Banuelos	DBan	08/11/2009
Dolores Bates	DBat	08/11/2009
Doug Borick	DBo	08/11/2009
Darla Brown	DBro	08/11/2009
David Burnett	DBu	08/11/2009
David L. Davis	DDa	08/11/2009
Don DeLaCruz	DDe	08/11/2009
Denny A. Drummond	DDru	08/11/2009
Dave Firestein	DFi	08/11/2009
Deborah F. Frank	DFr	08/11/2009
Don Grant	DGra	08/11/2009
David L. Helanney	DHel	08/11/2009
Diane Leavitt	DLe	08/11/2009
Denise Lillian	DLi	08/11/2009
David J. Loveall	DLo	08/11/2009
Dan McCloskey	DMcC	08/11/2009
Debbie McKitrick	DMcK	08/11/2009
Deborah Mos	DMo	08/11/2009
Daniel Ortiz	DO	08/11/2009
Denise Palya	DPa	06/09/2009
Doug M. Rush	DRu	08/11/2009
Daniel Schulman	DSc	08/11/2009
Deborah Thomas-Foe	DTF	08/11/2009
Dale Francis Trunk	DTr	08/11/2009
Destinee Vassey	DV	08/11/2009
David Wolf	DWo	08/11/2009
Emily A. Arnold	EAr	08/11/2009
Erin Barrett	EBar	06/09/2009
Edwin Batoytacal	EBat	08/11/2009
Evan Becchetti	EBec	08/11/2009
Eileen Dolan	EDo	08/11/2009

Commenter	Code	Date
Ellen R. Doudna	EDou	08/11/2009
E. Drigin	EDri	08/11/2009
Elizabeth Garcia	EG	06/09/2009
Erin Guess	EGu	08/11/2009
Emmet Hollins	EHo	08/11/2009
Ellen Levy	ELe	08/11/2009
Elizabeth Nichols	ENi	08/11/2009
Erin J. Pratt	EP	08/11/2009
Emily Wheeler	EWh	08/11/2009
Emily Wroe	EWr	08/11/2009
Fred B.	FB	08/11/2009
Felicia Betancourt	FBe	08/11/2009
Ferdinand C. Bowzon	FBo	08/11/2009
Fred C.	FC	08/11/2009
Frieda Harter	FHa	08/11/2009
Frank Peterson	FP	08/11/2009
Fred Werner	FW	08/11/2009
Fred Yngoy	FY	08/11/2009
Gail I. Bubman	GBub	08/11/2009
Genti Cuni	GC	06/09/2009
Gary M. Cohen	GCo	08/11/2009
Gregory Gordon	GGo	08/11/2009
Greg Jorgensen	GJ	06/09/2009
Greg Jalbert	GJa	08/11/2009
Greg McCarthy	GMc	08/11/2009
Georgina O'Connor	GO	08/11/2009
Gail Penso	GP	08/11/2009
Griffen	GRi	08/11/2009
Gail Saari	GSa	08/11/2009
G. Sille	GSi	08/11/2009
Gracie Velazquez	GV	08/11/2009
__ Haamid	Haa	08/11/2009
Helen Kozoriz	HK	08/11/2009
H. Ralston & Pattie Litton	HRa	08/11/2009
Hilda Rystrom	HRy	08/11/2009
Hayley Upshaw	HU	08/11/2009
Haroun Zuhir	HZ	08/11/2009
Irene Pimentel	IP	08/11/2009
Jessie Mae Blum	JBlu	08/11/2009
J. Buckley	JBuc	08/11/2009
Jolene Carnagey	JCar	08/11/2009
Janice H. Cecil	JCec	08/11/2009
Jeanne Chapeau	JCh	08/11/2009
Jorge Cortes & Rick Rantin	JCor	08/11/2009
Jay Corey	JCore	08/11/2009
Judy Cox	JCox	08/11/2009
Jeni Coxe	JCoxe	08/11/2009
Julie Dickinson	JDi	08/11/2009
John A. Donay	JDon	08/11/2009
Joanne Drabek	JDr2	08/11/2009
Jess	Jess	06/09/2009
Jared Fine	JFin	08/11/2009

Commenter	Code	Date
Jaime Finkel	JFink	08/11/2009
Joshua Gordon	JGo	08/11/2009
Jean Hausen	JHau	08/11/2009
Joanne Heath	JHe	08/11/2009
Jod__ J__	JJ	08/11/2009
Judy Job	JJo	08/11/2009
James Jones	JJon	08/11/2009
Jessica Karraker	JKar	06/09/2009
Jennifer Kidder	JKid	08/11/2009
Joshua Krinkin	JKr	06/09/2009
Janet Laughlin	JLau	08/11/2009
Joe Lewandowski	JLew	08/11/2009
Jonathan Larner-Lewis	JLL	08/11/2009
Jeff Lunzaga	JLu	08/11/2009
Judy MacLellan	JMac	08/11/2009
Jeannie McKenzie	JMcKe	08/11/2009
Janice E. Mignore	JMig	08/11/2009
Janice Moore	JMo	08/11/2009
Joy Moore	JMoo	08/11/2009
Jennifer Natali	JNa2	08/11/2009
Jean Oakley	JOa	08/11/2009
James Pettiot	JPet	08/11/2009
Jay Jaco Pope	JPop	08/11/2009
J.A. Powell	JPow	08/11/2009
Jaime Reyes	JRe	08/11/2009
Jessica Rothhaur	JRot	08/11/2009
Jeremy Ryan	JRy1	06/09/2009
Jeremy Ryan	JRy2	06/09/2009
Janet S__	JS	08/11/2009
Jason Scott	JSc	08/11/2009
Judith M. Scott	JSco	08/11/2009
Jodi Shepherd	JShe1	06/09/2009
Jodi Shepherd	JShe2	06/09/2009
Josh Shoemaker	JSho	08/11/2009
Jean Sirius	JSi	08/11/2009
Joseph P. Stone	JSt	08/11/2009
Joe Tale	JTal	08/11/2009
Julia M.	Julia	06/09/2009
Julie_	Julie	06/09/2009
Jane Vandenburgh	JVa	08/11/2009
John Van Eyck	JVE	08/11/2009
Jason Winnett	JWi	08/11/2009
Joseph P. Willis	JWil	08/11/2009
Kate__	KA	08/11/2009
Kim Adams	KAd	08/11/2009
Khung Aller	KAll	08/11/2009
Kate Anderton	KAn	06/09/2009
Keri Cain	KCai	08/11/2009
Katherine Chaitin	KCh	06/09/2009
Kathleen Cr__	KCr	08/11/2009
Kathy Donahue	KDo	08/11/2009
Kain Nyana Drayton-Yee	KDY	08/11/2009

Commenter	Code	Date
Kelsey Lee Forbes	KFor	08/11/2009
Kathy Grayson	KG	08/11/2009
Kenneth Garber	KGa	08/11/2009
Kurt Hoge	KHog	06/09/2009
Karen B. Jones	KJo	08/11/2009
Kelsie Kerr	KKe	08/11/2009
Kathleen Kinda	KKi	06/09/2009
Kirk Lumpkin	KLu	08/11/2009
Kareim McKnight	KMc	08/11/2009
K. McAfee	KMcA	08/11/2009
Keyaanaano Ma-Di	KMD	08/11/2009
Kris Mulls	KMu	08/11/2009
Keila Navarro	KNa	08/11/2009
Kerri Perksen	KPe	08/11/2009
Ken R__f	KR	08/11/2009
Karen Saeger	KSae	08/11/2009
Karla K. Stine	KSti	08/11/2009
Khalil Sullivan	KSu	08/11/2009
Kira Tolla	KTo	08/11/2009
K. Tortanice	KTor	08/11/2009
Krisztian Varsa	KV	08/11/2009
Karin Von May	KVM	08/11/2009
Karen L. Westhund	KWe	08/11/2009
Kathleen Whitney	KWh	08/11/2009
Laura J. Boytz	LBo	08/11/2009
Laura Carnagey	LCar	08/11/2009
Laura Dolorfino	LDo	08/11/2009
Larry and Elizabeth Edwards	LE	08/11/2009
Lance Gunnersen	LGun	06/09/2009
Linda Hansen	LHa	08/11/2009
Lori Hines	LHi	08/11/2009
Lena Hutson	LHu	08/11/2009
Lawrence Jones	LJo	06/09/2009
Larry Jones	LJon	08/11/2009
Lauren Justin	LJus	08/11/2009
Louis Simon Lang	LLa	08/11/2009
Lorene Miller	LMil	08/11/2009
Laura and Paul Murphy	LMur	08/11/2009
Luigi Oppid	LO	06/09/2009
Luz Marina Ruiz	LRu	08/11/2009
Leo Szumel	LS	06/09/2009
Laurie Salen	LSa	08/11/2009
Lisa Sandersen	LSan	08/11/2009
Lauren Schindell	LSc	08/11/2009
Ludy O. Som	LSo	08/11/2009
Larry Williams	LWi	08/11/2009
Lois M. Wood	LWo	08/11/2009
Lois Yuen	LY2	08/11/2009
Mari Angulo	MAn	06/09/2009
M. Aba-Rahim	MAR	08/11/2009
Marlena Willis	MaWil	08/11/2009
Marla Wilson	MaWilso	08/11/2009

Commenter	Code	Date
Martin Baber	MBa	08/11/2009
Mary Barnes	MBar	08/11/2009
Meg Bataria	MBat	08/11/2009
Martha Biebueski	MBie	08/11/2009
Manuel Bovea	MBov	06/09/2009
M. Brown	MBro	08/11/2009
Mike E. Burns	MBurns	08/11/2009
Michela Chesby	MChe	08/11/2009
Mark Coleman	MCo	08/11/2009
Marilyn Cossey	MCos	08/11/2009
Martin Crombie	MCro	08/11/2009
Mark Findlay	MFi	08/11/2009
Marta Folkman	MFol	08/11/2009
Marcy Greenhurst	MGree	08/11/2009
Marc Grip__	MGri	08/11/2009
Mariah Healy	MHea	08/11/2009
Mitchell Hughes	MHug	08/11/2009
Michael	Michael	06/09/2009
Michael Williams	MiWil	08/11/2009
Miriam Wilson	MiWils	08/11/2009
Maria Jay	MJa	08/11/2009
Michelle Johnston	MJon	06/09/2009
Mary Krueger	MKr	08/11/2009
Monica Lawler	MLa	08/11/2009
Mike Maher	MMa	06/09/2009
Matt Martin	MMar	08/11/2009
Matt McCormick	MMc	06/09/2009
Margot Mills	MMi	08/11/2009
Matt Pfannerstiel	MPf	08/11/2009
Myisha Privit	MPr	08/11/2009
Mary Prophet	MPro	08/11/2009
Michael D. Rashkin	MRa	08/11/2009
Monica Rosenthal	MRosen	08/11/2009
Madeline H. Solerberger	MSo	08/11/2009
Michael Surowier	MSur	08/11/2009
Michael Sweeney	MSwe	08/11/2009
Marge Taylor	MTay	08/11/2009
Martin Vadon	MVa	08/11/2009
Mike Wallin	MWa	08/11/2009
Masako Wickler	MWic	08/11/2009
M.F. Wogec	MWo	08/11/2009
Norma Brunsell	NBr	08/11/2009
Nancy Byers	NBy	08/11/2009
Nicky Conry	NCo	08/11/2009
Nelly Lozo	NLo	08/11/2009
Nancy McCaffrey	NMc	08/11/2009
Nils Ohlson	NO	08/11/2009
Nancy Page	NPa	08/01/2009
Nicolasa Robles	NR	08/11/2009
Nicole Santucci	NS	08/11/2009
Njemile Sauda	NSa	08/11/2009
Nancy Schimmel	NSc	08/11/2009

Commenter	Code	Date
Nina Serrano	NSe	08/11/2009
Nina Sprecker	NSp	08/11/2009
Ormando Bowman	OB	08/11/2009
Omar Ordaz T.	OT	08/11/2009
Penelope Allman	PA	08/11/2009
Phyllis Brown	PB	08/11/2009
Philomena Burkhardt	PBu	08/11/2009
Pat Eckhardt	PE	08/11/2009
Prince Hines	PHi	08/11/2009
Patricia Magysai	PMag	08/11/2009
Phil McGee	PMcG	08/11/2009
Pamela Mchombo	PMch	08/11/2009
Patrick O'Connor	PO	08/11/2009
Phyllis Roach	PRo	08/11/2009
Patricia Taveau	PTa	08/11/2009
Qa'id Sattl	QS	08/11/2009
River Ace__	RA	06/09/2009
Russell Andrews	RAn	08/11/2009
Rachele Huennekeus	RHu	08/11/2009
Roxanne Kellam	RKel	08/11/2009
R. Lacrier	RLac	08/11/2009
Robert B. Nelson	RNe	08/11/2009
Robert M. Neil	RNei	08/11/2009
Ron Sandstrom	RSand	08/11/2009
Robert Schuante	RSc	08/11/2009
Richard Weiss	RWe2	06/09/2009
Suzanne Allison	SAl	08/11/2009
Steve Asztalos	SAs	08/11/2009
Stephen B__	SB	08/11/2009
Sandy Baird	SBai	08/11/2009
Shiva Bezalel	SBe	08/11/2009
Susan Ch__	SCh	08/11/2009
Suzanna K. Cortes	SCor	08/11/2009
Suzanne Drolet	SD	08/11/2009
Sonia Diermayer	SDi	08/11/2009
Shiela Dolby	SDo	08/11/2009
Steven Garen	SGar	08/11/2009
Susan Gill	SGi	08/11/2009
Stephanie Griffin	SGri	08/11/2009
Stephen E. Gurne	SGu	08/11/2009
Steve Hixson	SH	08/11/2009
Sandra Hansa	SHa	06/09/2009
Stephen Helliwell	SHe	08/11/2009
S. Hook	SHoo	08/11/2009
Steven Lochler	SLoc	08/11/2009
Sharon Lutz	SLu	08/11/2009
S. Mattson	SMa	08/11/2009
Sal Maravilla	SMara	08/11/2009
Susan A. Meiter	SMei	08/11/2009
Sue Moys	SMoy	08/11/2009
Summer Parker	SPa	08/11/2009
Sofie Pavlova	SPav	08/11/2009

Commenter	Code	Date
Sarah Peters	SPe	08/11/2009
Sarah Pullman	SPu	08/11/2009
Sai__ S__	SS	08/11/2009
Stefan Schinzinger	SSchi	08/11/2009
Sid Stoffels	SSto	06/09/2009
Sherman G. Toals	STo	08/11/2009
Sam Urias	SU	08/11/2009
Sandra Whisler	SWh	08/11/2009
Sherel Whitfield	SWhi	08/11/2009
Stanford Williams	SWi	08/11/2009
Thia E. Artemis	TA	08/11/2009
Toby Bielawski	TB	08/11/2009
Tracie DeAngelis	TD	08/11/2009
The Dog	TDo	08/11/2009
Tasha Jones	TJ	08/11/2009
Todd Jones	TJo	08/11/2009
Terrence Kissack	TKi	08/11/2009
T. Konnell	TKo	08/11/2009
Thomas Kravitt	TKr	08/11/2009
Tom L__t	TL	08/11/2009
Tyana Maddock	TMa	06/09/2009
Terry Meyer	TMey	08/11/2009
Toni Lyn Morelli	TMo	08/11/2009
T. Muniyo	TMun	06/09/2009
Ted Pontiflet	TP	08/11/2009
Tim Robertson	TR	08/11/2009
Trevor	TRe	08/11/2009
Tari Simpson	TSi	08/11/2009
Tiffany Simpson	TSim	08/11/2009
Tony Sondag	TSo	08/11/2009
Uriel Mondoza	UM	08/11/2009
Unknown 1	UN1	08/11/2009
Unknown 2	UN2	08/11/2009
Unknown 3	UN3	08/11/2009
Unknown 4	UN4	08/11/2009
Unknown 5	UN5	08/11/2009
Unknown 6	UN6	08/11/2009
Unknown 7	UN7	08/11/2009
Unknown 8	UN8	08/11/2009
Unknown 9	UN9	08/11/2009
Unknown 10	UN10	08/11/2009
Unknown 11	UN11	08/11/2009
Virginia H. Augman	VA	08/11/2009
Virgnian Bellis Brandabur	VB	08/11/2009
Veronica Banyon	VBa	08/11/2009
Victoria Carpenter	VC	08/11/2009
Valia Evans & Chris Witebsky	VE	08/11/2009
The Voyvoda Family	VFa	08/11/2009
Virginia A. Poulter	VPo	08/11/2009
Vivian Warkentin	VW	08/11/2009
Wesley Engstrand	WE	08/11/2009
Wilma Jaffe	WJaf	08/11/2009

Commenter	Code	Date
Walter Thomason	WT	08/11/2009
Wanda Warkentin	WW	08/11/2009
Yobani Valdez	YV	08/11/2009
Zoe Belka	ZB	08/11/2009

Table 3 Comments Received During the Public Meetings

Commenter	Codes
Lodi Public Meeting – March 16, 2009 (Afternoon)	
Chuck Easterling	PM-L-1, -2
Patt Peirera	PM-L-3, -4
Richard Baines	PM-L-5, -6, -7
John Green, Stockton East Water District	PM-L-8,-9,-10
Mel Lytle, San Joaquin County Public Works	PM-L-11
Alan MacIsaac, Mokelumne River.com	PM-L-12
Ron Forbes, Delta Fly Fishers	PM-L-13
Sutter Creek Public Meeting – March 16, 2009 (Evening)	
Keith Sweet, City of Jackson	PM-SC-1
Chris Wright, Foothill Conservancy	PM-SC-2
Pete Bell, Foothill Conservancy	PM-SC-3,-4,-5,-6,-7,-8,-9
Theodore F. Novelli, Supervisor Amador County Board of Supervisors	PM-SC-10
Steve Wilensky, Calaveras Board of Supervisors, District 2	PM-SC-11, -12, -13
Theresa Simsiman, American Whitewater	PM-SC-14
Hank Willy, Jackson Valley Irrigation District	PM-SC-15
Darryl Rusk, Calaveras CWD	PM-SC-16
Jill North	PM-SC-17, -18, -19
Norman Kolstad	PM-SC-20
Addie Jacobson, Ebbetts Pass Forest Watch	PM-SC-21
George Wendt, O.A.R.S	PM-SC-22
Kathy Guletz	PM-SC-23
Steve Elias, Sierra Club, Motherlode Chapter	PM-SC-24
Pat Guttman	PM-SC-25, -26
Gayle Mendoza	PM-SC-27
Keith Franklin	PM-SC-28
Christine Coleman	PM-SC-29

Commenter	Codes
Suzy Ardito	PM-SC-30
Violet Jakab	PM-SC-31
Marge Grow, California Valley Miwok	PM-SC-32,
Michael Wier	PM-SC-33, -34, -35, -36
Joel Barnett	PM-SC-37
Zane Schoettgen	PM-SC-38
Aaron Chapman	PM-SC-39
Katherine Evatt	PM-SC-40, -41
Stein Eriksen	PM-SC-42
Joan Pipes	PM-SC-43
Franziska Schabram	PM-SC-44
Kathleen duBois	PM-SC-45, -46
Frank Tortorich, Amador County Historical Society	PM-SC-47
Anna Garrison	PM-SC-48
Jeff Garrison	PM-SC-49
Bob Dominick	PM-SC-50
Tyler Childress	PM-SC-51
Rebecca Wu	PM-SC-52
Oakland Public Meeting – March 18, 2009	
Katherine (Kate) Chaitin	PM-O-1, -2, -3
Richard Weiss	PM-O-5, -6, -7
Chris Shutes, California Sportfishing Protection Alliance	PM-O-8, -9, -10, -11
Ronald (Ron) Stork, Friends of the River	PM-O-12, -13
Pete Bell, Foothill Conservancy	PM-O-14, -15, -16, -17, -18, -19
Katherine Evatt, Foothill Conservancy Board President	PM-O-20, -21
Helen Burke, former EBMUD Director	PM-O-22, -23, -24
David Nesmith, Environmental Water Caucus	PM-O-25, -26, -27
Cindy Charles, Golden West Women Flyfishers & Northern California Council Federation of Fly Fishers	PM-O-28, -29
Ben Young	PM-O-30
Marguerite Young	PM-O-31, -32, -33, -34, -35
Juliet Lamont, Sierra Club	PM-O-36, -37, -38
John Trinkl, Ebbetts Pass Forest Watch	PM-O-39, -40
Bob Feinbaum	PM-O-41, -42, -43, -44,- 45
Sonia Diermayer, Sierra Club member	PM-O-46, -47, -48, -49, -50
Matt Morrison, Sierra Club	PM-O-51
Walnut Creek Public Meeting – March 23, 2009	
Gary Skrel, Mayor of Walnut Creek	PM-WC-1, -2, -3, -4

Commenter	Codes
Mike Doyle, Vice-Mayor of Danville	PM-WC-5, -6
Linda Best, Contra Costa Council	PM-WC-7
Liz Summer	PM-WC-8
Jeff Schroeder	PM-WC-9, -10
Charles Brydon, W.A.T.E.R	PM-WC-11, -12, -13, 14, 15
Brian Jobson	PM-WC-16, -17, -18, -19, 20, -21, -22, -23, -24
Keith Gale	PM-WC-25, -26, -27
Marcia Somers, Town of Danville Assistant Town Manager	PM-WC-28, -29
Richard Clark	PM-WC-30, -31
Lena Perkins	PM-WC-32, -33, -34, -35, 36
Pat Von Behren	PM-WC-37
Sigmund Esicsery	PM-WC-38
San Andreas Public Meeting – March 30, 2009	
Steve Wilensky, Calaveras Board of Supervisors, District 2	PM-SA-1, -2, -3, -4, -5, -6, -7, -8
Bill Condrashoff, Amador Water Agency	PM-SA-9, -10
Chris Wright, Foothill Conservancy	PM-SA-11, -12, -13, -14, 15
Bob Dean	PM-SA-16, -17, -18, 19
Judy Jebian, Board Member of Amador County Historical Society	PM-SA-20, -21
Violet Jakab	PM-SA-22
Dona Swanson	PM-SA-23, -24
Tom Infusino, Calaveras Planning Coalition	PM-SA-25, -26, -27, -28, -29
Marian Coahran	PM-SA-30, -31
Norman Kolstad	PM-SA-32
George Wendt, O.A.R.S.	PM-SA-33, -34, -35, -36
Christine Coleman	PM-SA-37, -38, -39, -40
Tillman Sherman	PM-SA-41., -42
Carol Phelps	PM-SA-43, -44
Patt Peirera	PM-SA-45, -46, -47, -47, -48, -49
Holly Mines, Calaveras Planning Coalition	PM-SA-50, -51
Joe David	PM-SA-52, -53
Angela Montes	PM-SA-54, -55
Jeff Aronson	PM-SA-56, -57
Katherine Evatt, Foothill Conservancy	PM-SA-58, -59, -60
Sean Kriletich	PM-SA-61, -62, -63, -64, -65, -66
Katherine Eustis	PM-SA-67
Michael Orrfelt	PM-SA-68, -69

Commenter	Codes
Joseph McCaster	PM-SA-70
Tyra Mcart	PM-SA-71, -72, -73
Marge Grow, California Valley Miwok	PM-SA-74, PM-SA-101
Fred Velasquez, Miwok	PM-SA-75, -76, -77, -78, -79
John Kramer	PM-SA-80, -81, -82, -83
Jill North	PM-SA-84, -85, -86, -87, -88, -89, -90
Sandra Billington, Crow Nation	PM-SA-91, -92, 93
Tyler Summersett	PM-SA-94, -95, -96
Mary Boblet	PM-SA-97
Arvada Fisher, Miwok	PM-SA-98, -99, -100
Michael Weir	PM-SA-102, -103, -104, -105
EBMUD Board Workshop, Oakland Public Meeting – August 11, 2009*	
Katherine Evatt & Pete Bell, Foothill Conservancy	PM-BW-1, -2, -3, -4, -5, -12, -13
John Trinkle	PM-BW-6
Juliet Lamont, Sierra Club	PM-BW-7, -8, -9
Yancy	PM-BW-10
Harvey Sherback	PM-BW-11
Paul Tuttle, Friends of the River Executive Director	PM-BW-14
Chris Shutes, California Sportfishing and Protection Alliance (CSPA)	PM-BW-15
Jim Eicher, BLM (Motherlode field office)	PM-BW-16
Lewandoski, Sierra Club	PM-BW-17
Omer, Mokelumne River Protection Alliance	PM-BW-18
Laura Allen, Graywater Guerrillas	PM-BW-19
Scott Armstrong	PM-BW-20
Michael Zimmering	PM-BW-21
Fred Velasquez	PM-BW-22
Kerry Atwood, W. Oakland	PM-BW-23
Jennifer Jackson, EBMUD employee	PM-BW-24
Len Connelly	PM-BW-25
Keith Miller	PM-BW-26
Erkki Kahkatolla	PM-BW-27
Anthony Myers	PM-BW-28
Andrew Klaus, Mokelumne River Protection Alliance	PM-BW-29
Tim Robertson, Save the Mokelumne	PM-BW-30
Maureen	PM-BW-31
Chris Wright, Foothill Conservancy	PM-BW-32
Sharon Romano	PM-BW-33

*This meeting was held after the close of the public comment period.

Key:

PM-L-1= Public Meeting Lodi Comment #1
PM-SC = Public Meeting Sutter Creek, Amador County
PM-O = Public Meeting Oakland, March 18, 2009
PM-WC = Public Meeting Walnut Creek
PM-SA = Public Meeting San Andreas, Calaveras County
PM-BW = Public Meeting Oakland, August 11, 2009

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2. Comments and Responses

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2.1 Master Responses

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2.1 Master Responses

2.1.1 Master Response on the WSMP 2040

Several comments indicated that it may be beneficial to more clearly explain the purpose of the Water Supply Management Program (WSMP) 2040 and the process that EBMUD used to develop the WSMP 2040. This master response provides a detailed description of the WSMP 2040.

As described in Chapters 1 and 2 of the Draft PEIR, the primary purpose of the WSMP 2040 is to identify and recommend solutions to meet EBMUD's dry-water needs through 2040. WSMP 2040 estimates EBMUD's water supply needs through the year 2040, and compares this to the supplies presently available to the District via existing rights, projects, and initiatives. Because there is a projected deficit in dry years, the WSMP 2040 proposes a program of both policy initiatives and proposed projects that can meet those needs.

The Preferred Portfolio for the WSMP 2040 includes a diverse range of components to meet the need for water in dry years, and it will also provide the District with flexibility to address uncertainties such as climate change and timing of droughts. The components of the Preferred Portfolio include an aggressive conservation goal and water recycling goal, a rationing policy to be used in dry years, and an assortment of potential supplemental supply components that will be pursued as necessary to meet anticipated water needs in dry years. In moving forward with the WSMP 2040, it is anticipated that EBMUD will pursue multiple supplemental supply components simultaneously, with the most cost effective and efficient projects being pursued first. The broad mix of projects provides EBMUD with the ability to adjust implementation schedules and resource commitments to minimize the risk associated with future water supply uncertainties.

As described in the Draft PEIR, one of the fundamental policies of WSMP 2040 is to continue the District's commitment to demand-side water management solutions by extending the current goals for conservation and recycled water provision and expanding these current goals through the year 2040. Rationing also continues to be part of the District's tools for demand-side management, but is incorporated at a level (10 percent) that has been determined to be more feasible to accomplish. In light of the water that is anticipated to be saved from conservation and the use of recycled water, and the goal of saving an additional 10 percent through rationing during droughts, the inclusion of supplemental supply components ensures that the District can reliably provide water into the future. It also ensures that the District can do this without placing an extreme burden on its customers in the form of rationing that is both extremely costly (from the perspective of economic hardships associated with water cutbacks) and difficult to achieve (in light of the significant savings that have already been realized to date within the District's service area). This also recognizes the added difficulty over time in imposing rationing as conservation and recycled water measures are phased in via the WSMP 2040 Preferred Portfolio implementation.

In developing the WSMP 2040, over 50 potential components were identified and reviewed. The District examined rationing levels of 0, 10, 15, 20 and 25 percent, conservation levels with savings ranging from 19 to 41 MGD, recycled water projects contributing up to 11 MGD, and supplemental supply components such as surface

storage (including new reservoirs and expansion of existing reservoirs), groundwater banking and exchange, water transfers, desalination, water bags, fog capture, and offshore desalination.

To evaluate the potential components, four primary categories of objectives were developed: (1) Operations, Engineering, Legal and Institutional; (2) Economic; (3) Public Health, Safety and Community; and (4) Environmental. For each category, certain secondary objectives were then established. For example, under the Operations, Engineering, Legal and Institutional primary category objective, the District included the secondary objective of providing water supply reliability. This is one of the fundamental objectives of the WSMP 2040.

Components were grouped under one of four "primary policy initiatives" – Rationing, Conservation, Recycled Water, and Supplemental Supply. Regarding those initiatives, the Preferred Portfolio was developed as follows:

Rationing

Rationing was considered at levels ranging from 0 to 25 percent. Following some review and deliberation, the 0 and 25 percent rationing levels were eliminated from further consideration. Eliminating rationing entirely (i.e., 0 percent) fails to require EBMUD customers to cut back water use during drought years, resulting in potential increases in environmental impacts and a need for EBMUD to obtain additional supplemental supplies. These concerns resulted in the elimination of the 0 percent rationing level. A 25 percent level of rationing, while presently set forth in EBMUD policy documents, was seen as difficult if not impossible to achieve in the years ahead, particularly with demand hardening, which is the reduced flexibility in moderating demand that has resulted as the EBMUD customers have increased the implementation of conservation measures, making further water use reductions more difficult to achieve in the future. The difficulty in the ability of customers to cut back water use during dry years was a significant factor in the decision to decrease the rationing level, primarily because analysis also shows that this high degree of additional reduction will place an impracticable burden on EBMUD customers in light of current savings that have already been achieved via existing programs.

To provide further detail, to achieve 25 percent average rationing system-wide, irrigation customers would have to cut back water use by 50 percent and single-family residential customers would have to decrease their water use by 31 percent. This cutback would be implemented in addition to the aggressive conservation goal selected by EBMUD, and is considered to be impracticable and far in excess of the goals established by other urban agencies.

The Preferred Portfolio is structured such that the combination of water conservation, recycling, and rationing in dry years offsets all anticipated future demand through the year 2040. The supplemental supplies set forth in the Preferred Portfolio will allow EBMUD to reduce the rationing target from 25 to 10 percent. As a practical matter, EBMUD will be unable to reduce rationing to the 10 percent level until it develops additional dry-year supplemental water supplies. In other words, as new supplemental supplies are secured, EBMUD will be able to gradually reduce the amount of rationing it imposes upon its customers. To the extent that uncertainties impede attainment of supplemental supplies, higher rationing restrictions may be required in specific drought

events. Thus, the benefit of a 10 percent rationing target is that it preserves the flexibility to increase rationing.

Conservation

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 Least Cost Planning Water Demand Management Decision Support System Model (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. Details regarding the DSS model are set forth in the Conservation Program Evaluation Technical Analysis, March 2009.

Over 100 different conservation measures considered potentially appropriate were initially reviewed including rebates, residential and commercial customer water surveys, automated metering, and artificial turf sports fields. The 100 measures were compared to evaluate the District cost as well as the cost to customers and were then pared down to just over 50 and combined into five conservation levels ranging in savings from 19 MGD to 41 MGD.

The lowest level of conservation, providing water savings of 19 MGD, is less costly to operate, but does not achieve the environmental benefits that were included in the objectives and considered in the alternatives screening analysis. This level was held from further consideration for this reason.

To implement the highest level of conservation, which would provide water savings of 41 MGD, the cost to EBMUD (present value of water utility cost) was determined to be approximately $394 million (i.e., it would cost an extra $120 million, above the $271 million cost of Level D, to get the additional 2 MGD of savings). The total difference in community cost between the highest level and the chosen Level D reaches approximately $260 million.

Due to the high costs to both the customer and the utility and associated impacts and minimal additional water savings, the District chose a conservation level of 39 MGD instead of the highest level of 41 MGD. This aggressive level of conservation (Conservation Level D), while having significant costs, will ensure that EBMUD will remain a leader in conservation and the demand management aspects of water supply planning into the future.

Graywater technology was evaluated as part of the WSMP conservation analysis. Three graywater programs were included as potential conservation measures: 1) require plumbing for future graywater use, 2) graywater retrofit of existing single-family residences, and 3) graywater installation by builders of new single-family residences. The first measure has been included as part of the conservation elements to be considered to achieve Level D. The second and third measures were estimated to have high costs and be capable of achieving only minimal savings, and as a result, these elements are not part of the Level D elements.

Recycled Water

Based on a review of the customer base and existing infrastructure 22 recycled and raw water projects were identified for inclusion in the WSMP 2040. Here, the District also chose to push this demand management component to the limits of cost effectiveness. Although not considered as part of the economic analyses performed for WSMP 2040, EBMUD staff anticipates that grant funding as well as technological changes that may be available during the planning period could be used to offset the District-funded portion of the cost of recycled water components.

Supplemental Supply

In addition to the policy initiatives described above, the WSMP 2040 also includes proposed supplemental supply projects. While the rationing, conservation, and recycled water components chosen as part of the Preferred Portfolio will reduce the District's dry-year potable water demand, these components alone would not enable the District to meet the projected need for water through 2040. Additional supplemental water supplies will be needed to address EBMUD's determination that rationing should be reduced from 25 percent to 10 percent and to make up for increased water use by senior water rights holders, which further reduces water availability in dry years.

In implementing the WSMP 2040, EBMUD will pursue multiple supplemental supply components simultaneously, with the most cost effective and efficient projects being pursued first. The success of one component could allow the District to delay other additional components over the course of the planning period. As a result, by 2040, it is possible that some of the supplemental supply components may not be constructed. The broad mix of projects provides EBMUD with the ability to adjust implementation schedules and resource commitments to minimize the risk associated with future water supply uncertainties.

A number of additional water supply sources for use by EBMUD customers were evaluated as part of the WSMP 2040. Supplemental supply components ranged from water transfers to surface water storage options to groundwater banking and exchange to desalination. The criteria that were used to evaluate components included whether the project would:

- Minimize adverse sociocultural impacts;
- Minimize disproportionate public health or economic impact to minority or low-income populations;
- Minimize the institutional and legal complexities and barriers; and/or
- Preserve and protect biological resources.

Any component that was unable to meet these criteria was eliminated from further consideration. Nine supplemental supply components were brought forward into development of the portfolios.

Two supplemental supply components were then removed from further consideration: LEAD at C&H Sugar and Buckhorn Canyon Reservoir. LEAD at C&H Sugar was removed from consideration because it would have a very small yield and future regulatory requirements that could affect operation of the project. Buckhorn Canyon Reservoir was removed because it would not accomplish the project objectives. While a Buckhorn Canyon Reservoir would potentially shift impacts that could potentially result from storage projects in the Upcountry region to the East Bay, this project would still result in impacts similar to those associated with the creation of a new reservoir, particularly in a previously undeveloped area. The District recognized that the Buckhorn Canyon Reservoir would not provide any benefits beyond the EBMUD service area and would not offer benefits to other regional partners that may be achieved through the Regional Upcountry Project components.

Alternative Portfolios

A range of water supply alternatives were combined into portfolios out of the components that remained after the component screening process.

From the initial fourteen alternatives, five primary alternatives were identified that were most promising in terms of meeting objectives. These five alternatives were carried forward for testing in the water supply model and analysis in the Draft PEIR. All five included rationing at levels of 10, 15 or 20 percent; conservation savings of either 37 or 39 MGD; recycled water at 5 or 11 MGD; and different combinations of supplemental supply projects.

Each of the alternatives had particular advantages and disadvantages. As an example, Alternative B (Groundwater/Conjunctive Use & Water Transfers) provided a high level of reliability and maximized partnerships but was not optimal in terms of minimizing institutional and legal complexities and barriers. Therefore, no single alternative was identified as superior to another.

The Board provided guidance for development of the Preferred Portfolio at public workshops based on the components included in the alternatives rather than selecting one of the five alternatives. In order to meet the project objectives and provide flexibility and a robust strategy to deal with uncertainties regarding institutional and legal complexities, as well as the uncertainties relating to global climate change, an adaptable and flexible alternative (the Preferred Portfolio) was developed. It includes rationing at 10 percent, Conservation Level D (39 MGD), Recycling Level 3 (11 MGD), and several potential supplemental supply components that would remain in consideration:

- Groundwater Banking/Exchange (Sacramento Basin)
- Northern California Water Transfers
- Bayside Phase 2 Groundwater Project
- Regional Desalination
- IRCUP/San Joaquin Banking

- Enlarge Lower Bear Reservoir
- Enlarge Pardee Reservoir

2.1.2 Master Response on Program-level EIR Analysis

This master response addresses the issues commenters raised concerning the level of detail presented in the Draft Programmatic EIR (Draft PEIR) about certain components of the Preferred Portfolio, including particularly the Enlarge Pardee Reservoir and Enlarge Lower Bear components. Many of the commenters expressed the opinion that the level of detail in the Draft PEIR was insufficient, that the evidence presented was insufficient to support the Draft PEIR's conclusions, or that the Draft PEIR failed to assess certain impacts at all.

Generally, the specific level of detail requested in several comments regarding the speculative impacts of particular projects is not required to evaluate the advantages and impacts of a program like the WSMP 2040 and its components. This is in part because, as noted in the PEIR, the document is examining the overall program, and EBMUD is not at this stage making any commitment to actually undertake the supplemental water supply component projects. The level of detail in the EIR "correspond[s] to the degree of specificity involved in the underlying activity which is described in the EIR." (In re Bay-Delta Programmatic EIR Coordinated Proceedings (2008) 43 Cal.4th 1143, 1176 (citing CEQA Guidelines, § 15146.) The WSMP 2040 Draft PEIR must be viewed in this context.

The WSMP 2040 constitutes a voluntary exercise undertaken by EBMUD to help evaluate, at a programmatic level, the projected demand in the service area and the alternatives that would be necessary to serve that demand. Because the District's existing supplies are insufficient in dry years, the WSMP 2040 proposes and evaluates a series of water supply alternatives to bridge the gap. But while the WSMP 2040 and the accompanying DEIR guide policy decisions in the future concerning supplemental supplies, the WSMP does not, in and of itself, constitute a decision to carry out or approve any single water supply component project. Certain components like the Enlarge Pardee Reservoir or Enlarge Lower Bear Reservoir components might not actually be carried out for years, if at all, and if EBMUD pursues those program components further, it will have to undertake a number of further feasibility, engineering, and planning studies, and prepare and certify a separate, project-level EIR.

By adopting the WSMP 2040, EBMUD is not committing to implement all of the components of the Preferred Portfolio. If, for example, service area demand is ultimately less than anticipated, or if the success of one component exceeds expectations, other supplemental water supply components could be delayed or deemed to be unnecessary.

The Program EIR prepared for the WSMP 2040 is intended to evaluate the WSMP at a broad, programmatic level, very early in the planning and feasibility process. The CEQA Guidelines encourage the use of a program EIR approach in this circumstance, in that the Guidelines allow the effects of a broad-scale program to be considered earlier, and more comprehensively, than would be allowed if EBMUD were to prepare separate EIRs for each individual portfolio action. CEQA Guidelines Cal. Code Regs., tit. 14 §15168(b). In situations like this, the program EIR is acting as the analytical basis for subsequent, more detailed analysis. It is intended to be the first tier EIR, with the advantage of

allowing EBMUD to identify probable environmental effects and cumulative effects that are capable of identification, while at the same time permitting the agency to defer analysis of impacts that cannot be examined without unreasonable speculation to a later point in the project-specific review and approval process.

Chapters 1 and 2 explain that the PEIR will function as a first-tier EIR, with later EIRs and/or environmental documentation to be prepared, as appropriate, for specific portfolio components as they are developed in further detail and implemented in accordance with EBMUD's water supply needs. This approach was endorsed by the California Supreme Court in Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings (2008) 43 Cal.4th 1143, a case involving a challenge to the PEIS/R for the CALFED Program. In that case, the court found the broad level of analysis in the programmatic document, which was intended to act as a first-tier EIR, to be sufficient, explaining that "water supply plans must remain flexible as they are subject to changing conditions." The court further noted:

> The purpose of tiering is to allow a lead agency to focus on decisions ripe for review. (Pub. Resources Code §21093, subd. (a); Cal Code Regs., tit. 14 §15385, subd. (b).) An agency that chooses to tier may provide analysis of general matters in a broader EIR, then focus on narrower project-specific issues in later EIRs. (Cal. Code Regs., tit. 14 §15152, subd. (a).) Future environmental documents may incorporate by reference general discussions from the broader EIR, but a separate EIR is required for later projects that may cause significant environmental effects inadequately addressed in the earlier report. (*Id.* §15152, subds. (a) & (f).)
>
> The PEIS/R complied with CEQA by identifying potential sources of water and analyzing the associated environmental effects in general terms. The level of detail contained in the PEIS/R's impact analysis was consistent with its first-tier programmatic nature. Although *later* project-level EIR's may not simply tier from the PEIS/R analysis and will require an independent determination and disclosure of significant environmental impacts (see Cal. Code Regs., tit. 14, §15152, subd. (f)), this stage of program development did not require a more detailed analysis of the Program's future water sources, nor did it appear practicable. . . . (43 Cal.4th at 1173.)

In the Bay-Delta decision, the court also distinguished the analysis required in Stanislaus Natural Heritage Project v. County of Stanislaus (1996) 48 Cal.App.4th 182, from the level of analysis required for the CALFED Program PEIS/R. The court noted that unlike the broad CALFED water supply program, the project at issue in Stanislaus Natural Heritage involved proposed commercial land development, with readily quantifiable water requirements on an identified site. The court stated that the project involved in Stanislaus Natural Heritage "was in no relevant sense comparable to the broad, general, multi-objective, policy-setting, geographically dispersed CALFED Program." Id. at 1171.

Arguably, EBMUD was not required to prepare an EIR and adopt accompanying mitigation at this stage, particularly for some program components – like the Enlarge Pardee Reservoir component. This is because the immediate action involves only the adoption of the program, and these particular components are not currently proposed for development. (See Rio Vista Farm Bureau Center v. County of Solano (1992) 5 Cal.App.4th 351, 373 ("An EIR is not required for an element of a master plan which has

not been proposed for development."); see also Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners of the City of Oakland (2001) 91 Cal.App.4th 1344, 1358 ("A project involving only feasibility or planning studies for possible future actions which the agency, board, or commission has not approved, adopted, or funded does not require the preparation of an EIR . . .").) The WSMP is a preliminary feasibility and planning study that evaluates demand and means of satisfying EBMUD's future demand, particularly in dry-years. EBMUD is not deciding, at this point in time, to "undertake" the Enlarge Pardee Reservoir or Enlarge Lower Bear Reservoir components, and there is no detailed design or development for this project, and so the EIR need not evaluate those components in any detail.

The WSMP 2040 is a broad, policy-setting program, guided by the objective of ensuring that EBMUD can meet its customers' water supply needs in the future. By necessity, this WSMP 2040 Program EIR cannot provide detailed, site-specific analysis of each portfolio component at this time. Instead, the WSMP was intended to take a broad-scale look at many of the known impacts of certain portfolio components, most notably the Bayside Groundwater Project Phase 2, Enlarge Lower Bear Reservoir, Enlarge Pardee Reservoir, and Regional Desalination components, and likewise provides a relatively broad-scale examination of alternatives (both alternative components, as well as alternative portfolios of grouped components). It is anticipated that in-depth analysis will be conducted in later project-specific EIRs at the time that there is greater certainty about whether EBMUD will pursue particular projects and when more detailed information is known for those projects.

2.1.3 Master Response on Water Demand Projections

Several comments raised questions about the projected water demand (demand) set forth in the Draft PEIR. This master response describes the demand projection methodology, land use trends, and resulting demands that are presented in the 2040 Demand Study and referenced in the Draft PEIR. The Response addresses, in whole or in part, the following comments:

- FC3/090504 - Foothill Conservancy, Comment Letter 3, Comments 7 and 9
- FOR/090504 - Friends of the River, Comment 2
- SCSFB2/090504 – Sierra Club San Francisco Bay, Comment Letter 2, Comment 9
- CSPA/090504 - California Sportfishing Protection Alliance, Comment 1
- ACBOS2/090429 - Amador County Board of Supervisors, Comment Letter 2, Comment 3

Methodology

As noted in the Draft PEIR on pages 2-18 and 7-1, EBMUD prepared a detailed study (entitled "2040 Demand Study") to project water demands through the year 2040. The study employed a land use-based approach to develop water use estimates.

The land use approach required developing a Geographic Information System (GIS) consisting of a map and database of land uses and land use unit demands (LUDs). The process begins by populating the GIS with a database of existing land uses and actual metered water consumption for the EBMUD service area. LUDs for each land use type and for different geographical regions within the service area were then developed to assist in calculating water demand projections on a per acre basis. Mapping land uses was next performed both for the Study's base year (2005) and the future. The future land use database reflects lands within the District service area and the Ultimate Service Boundary (USB) only, as planned by each of the communities through approved general plans and policies.

The land use maps for base year (2005) and future land uses were then presented to 19 city and county land use planning agencies to confirm their accuracy and determine the estimated phasing of future land uses. These agencies did not provide demand projections, but instead provided estimates of phasing of development in five-year increments. The phasing was used to calculate future land use acreages. To calculate future demands, the LUDs were applied to the future acreages for each land use. The resulting demands reflect the planning agencies' best estimate of timing of development through 2040.

The land use approach was used instead of population projections or growth rate projections to develop estimates for future water use. A land use approach is viewed within the field of water demand estimating as the most rigorous analysis methodology. The population based projection does not specifically account for non-residential demand whereas the land use approach reflects actual metered consumption specific to each land use type and geographical region, which EBMUD believes yields a more accurate prediction of future demand than a gross per capita consumption factor applied to population or a set of relational multipliers to estimate commercial and industrial demands as subsets of population projections. Land use inherently accounts for the population present in the land uses including whether it is residential living or work based demand.

Trends

EBMUD's service area is at the beginning stages of what appears to be a long-term trend toward increasing densities within developed urban areas. Smart growth (e.g., compact development along and near transportation corridors) and overall increased densities are occurring on vacant and redeveloped lands and much more is planned for in the future. Infill of smaller undeveloped lands and development of lands with difficult construction conditions is occurring. Warehousing, storage yards, and other marginally utilized lands are being replaced by more intense commercial and industrial uses or with high density mixed uses. Trends also include greater interest in reducing the distance traveled to work to reduce commuting costs and time, and multi-generational housing where the number of people per household is increasing.

With the majority of service area lands already developed, increasing population and employment results in growth of a type that EBMUD describes as "up not out" (i.e., taller and denser growth vs. a spreading-out growth as perhaps was seen in the past as development took place within the fringe, more open areas of EBMUD's USB). High land values also force low intensity businesses (e.g., warehousing, distribution, and

storage yards) to relocate out of the service area, and result in new uses and development at greater densities. For example, in the City of Oakland, there are several of these low-intensity commercial spaces where EBMUD has been asked to provide water supply assessments for higher density mixed-use developments. In addition, the City of San Ramon considers two-story office buildings in a campus-like setting to be outdated; these existing buildings are anticipated to be slowly replaced with mixed use, higher density developments. These higher residential densities and greater numbers of employees typically result a lower per capita or per employee demand estimate but a higher per acre unit demand.

Projected Demands

The table of demands presented in comment letter ACBOS2 does not correctly represent District demand. The demand projections should account for planned conservation and recycling. The correct demand projections (System Input-adjusted) are presented in the table below (Table 6.1 from the 2040 Demand Study). Once the proposed recycled water and conservation components selected as part of the Preferred Portfolio are subtracted from the projected demand, the demand is anticipated to increase at an overall average of approximately 0.21 percent annually between 2005 and 2040.

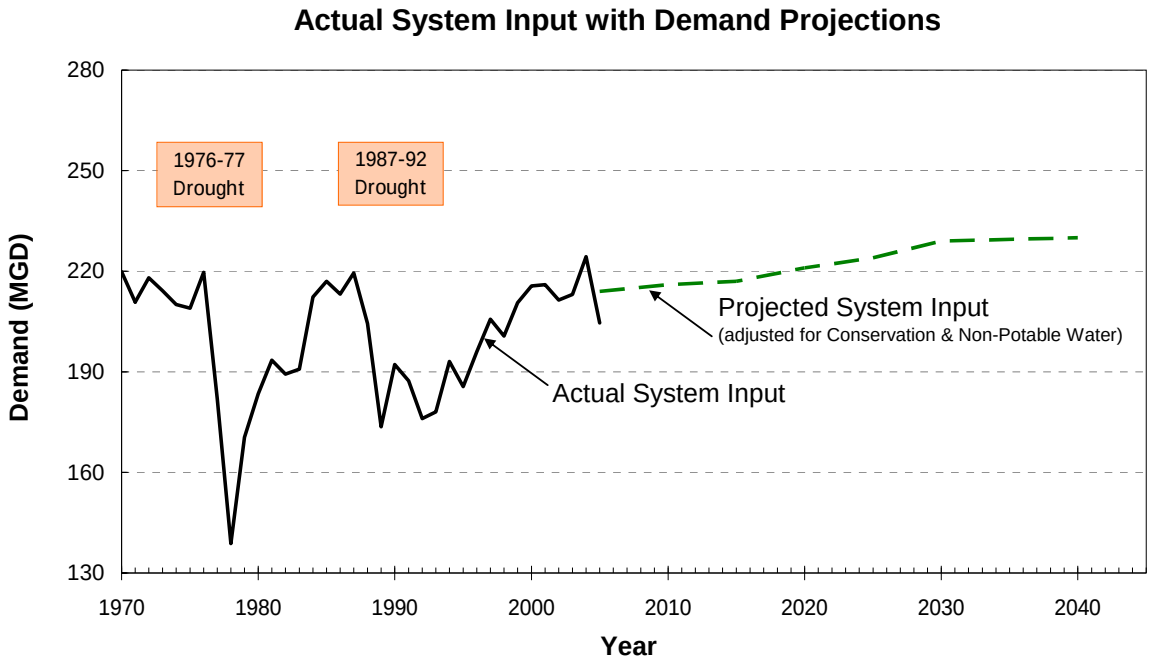
Actual annual demands fluctuate from year to year due primarily to weather factors and economic conditions. Timing of development (and associated demand) due to the current economic recession and impacts from mandatory conservation due to the recent drought will likely result in water demands increasing at a slower rate in the near term than originally projected. Nonetheless, development is projected to eventually increase and current data indicates that the demand numbers are accurate.

2040 District-wide Demand Projections

	Demand Projections (MGD)						
	2005	**2010**	**2015**	**2020**	**2025**	**2030**	**2040**
System Input (unadjusted)	238	251	266	280	291	304	312
Cumulative Conservation	-18	-25	-32	-40	-47	-55	-62
Cumulative Non-Potable Water	-6	-10	-17	-19	-20	-20	-20
System Input (adjusted)	214	216	217	221	224	229	230

As shown in the figure below (from Figure 6.2 of the 2040 Demand Study), actual historical demands fluctuate greatly and significant savings occurs once a drought response by the customers is perceived followed by a gradual rebound.

The WSMP 2040 Preferred Portfolio conservation level was used to reduce final demand projections such that conservation and recycled water will offset demand-based growth in a good portion of the USB. However, three regions within the USB, each with large employment centers and local agency plans for very high density residential development within EBMUD's "west of Oakland hills" areas, ranging from Richmond (to the north) to San Leandro (to the south), are still projected to experience an increase in demands.



The current 2040 Demand Study projections update the 2000 Demand Study projections, which reflect conditions in 1996. EBMUD's Urban Water Management Plan 2005 (UWMP) utilized the 2000 Demand Study projections. The 2010 UWMP will reflect the 2040 Demand Study. What has changed the most since the 2000 Demand Study is a significant increase in planned higher densities both east and west of the Oakland hills for both residential and non-residential uses. In addition, the 2040 Demand Study updated its base year to 2005 (vs. 1996) and enhanced the spatial accuracy of the distribution of conservation and recycling into the methodology. As with the 2000 study, staff met with each City/County planning agency to update what is projected in their jurisdictions.

Climate Change

Factors which could increase demands include warmer seasonal temperatures on average, although specific localized effects, including effects of an increase in marine layer, could potentially reduce temperatures in portions of the service area. Warmer maximum temperatures, and longer dry periods with more frequent heat waves also have the potential to increase demands, and earlier and more intense precipitation falling during the winter when demands are already low is also a possibility.

EBMUD believes that bay land inundation resulting from climate change is speculative with respect to its impacts and extent, and hence it was not factored into the Demand Study due to the uncertainty surrounding the topic and the fact that planning agencies have yet to consider the factor of the potential for bay land inundation in their general plans.

An estimated rise in sea level due to inundation of low lying lands adjacent to the Bay is one factor associated with climate change which could decrease service area water demand. Were inundation to occur, one could reasonably assume that counter / protective measures, such as levee construction, would be employed to prevent land inundation. Some, however, argue that such measures should not be used as mitigation until the science that surrounds the prediction is further advanced and the merits of mitigation vs. relocation vetted fully.

2.1.4 Master Response on the Enlarge Pardee Reservoir Component

Many of the comments received have expressed opposition to the Enlarge Pardee Reservoir component and have asked that that EBMUD not pursue either the Enlarge Pardee Reservoir or Enlarge Lower Bear Reservoir components.

As noted in Chapter 2 of the Draft PEIR, the WSMP 2040 is intended to be a program of policy and project initiatives to meet EBMUD's future water supply needs in dry years. The Preferred Portfolio selected by the Board includes a recommended 10 percent level of rationing, conservation savings of 39 MGD, and implementation of an additional 11 MGD of recycled water projects. The combination of these projects will more than satisfy the projected increases in demand in the District's service area over the next 30 years. These programs will help the District to meet the anticipated demands through year 2040, but conservation and recycled water projects will not be sufficient, standing alone, to meet the anticipated additional Need for Water during a prolonged drought. The 2040 Need for Water averages 92 MGD after rationing over the 3-year drought planning sequence. Of that 92 MGD, the District needs 42 MGD to come from supplemental supply projects. To address this need for 42 MGD in supplemental supplies, EBMUD has examined potential projects, including water transfers, groundwater banking/exchanges, regional desalination, various surface water projects, and enlargement of existing reservoirs.

It should be noted that it is anticipated that in implementing the WSMP 2040, EBMUD will pursue multiple supplemental supply components simultaneously, with the most cost effective and efficient projects being pursued first. The success of one component could allow the District to delay other additional components over the course of the planning period. In the end, not all of the proposed supplemental supply components will necessarily be constructed. The broad mix of projects nonetheless provides EBMUD with the ability to adjust implementation schedules and resource commitments to minimize the risk associated with future water supply uncertainties.

In developing the WSMP 2040 and the Draft PEIR, EBMUD made a number of assumptions regarding how particular supplemental supply projects would be configured. EBMUD, however, does not intend to use the PEIR to commit to a particular configuration for certain supplemental supply projects. The configuration assumptions were instead intended to assist in evaluating the impact each project component could have on the environment, based on assumptions regarding possible configurations, in comparison with other program components or suite of portfolio projects. These project-configuration assumptions allowed EBMUD to craft the analysis set forth in the Draft PEIR. In the case of the Enlarge Pardee Reservoir component of the Regional Upcountry Project, a past design (developed in the late 1990s) was used to evaluate the projected cost and impacts. The Draft PEIR, however, does not commit EBMUD to

implementing that specific configuration concept. On the contrary, EBMUD intends to evaluate a number of options as part of a future project-level review if and when the Enlarge Pardee Reservoir component moves to the project-specific planning stage.

As mentioned in Master Response on Program-level EIR Analysis, above, the Enlarge Pardee Reservoir or Enlarge Lower Bear Reservoir components might not actually be carried out for years, if at all. If EBMUD pursues those program components further, it will undertake a number of further feasibility, engineering, and planning studies, and prepare and certify a separate, project-level EIR. All of this will involve further opportunities for refinement and for public review. At the project-specific level, a broad array of alternative configuration assumptions would be analyzed. For example, the District would examine different options for siting of a new dam, evaluate the type of dam, identify suitable embankment elevations, and develop associated reservoir storage volumes and yields. As noted in the Draft PEIR, the District likely would also seek to involve potential partner agencies in the Regional Upcountry Project, providing regional benefits in terms of yield. EBMUD is not attempting to downplay, dismiss, or discount the impacts of the Enlarge Pardee Reservoir component by employing a broad, program-level review. At this stage, there is too much uncertainty regarding the impacts of the Enlarge Pardee Reservoir component to warrant any more detailed analysis. Nonetheless, at the project level, EBMUD will examine a broad range of configurations and the potential impacts and possible means of mitigating impacts to fish and wildlife, recreational uses, and other resource areas.

EBMUD has received comments requesting specifically that particular alternative configurations for the Enlarge Pardee Reservoir component that were developed in 1998 as part of a preliminary study performed for EBMUD be evaluated in detail in the PEIR and incorporated into alternative portfolios. While a description of the alternative configurations for the Enlarge Pardee Reservoir component has been added to the Draft PEIR (see Section 3 of this Response to Comments document), EBMUD does not believe analysis of each of these alternative configurations is needed in the PEIR.

CEQA Guidelines Section 15168, which addresses Program EIRs, states that a Program EIR has certain advantages, which include the possibility for a more exhaustive consideration of effects and alternatives. An EIR, however, need not consider every conceivable alternative to a project. Laurel Heights Improvement Assoc v. Regents of the Univ. of California (1993) 6 Cal.4th 1112. Instead, CEQA requires only the consideration of a reasonable range of feasible alternatives, with the goal of fostering informed decisionmaking and public participation. In the WSMP 2040 PEIR, five alternatives were evaluated. Several portfolios without the Enlarge Pardee Reservoir component were considered, and by including the Enlarge Pardee configuration that would allow maximum elevation, the PEIR has ensured that impacts have been evaluated to the maximum extent possible considering the broad program-level scope of this PEIR.

Finally, it should be noted that by adopting the WSMP, EBMUD is not committed to the further development of the Enlarge Pardee Reservoir component in the future. Indeed, if service-area demand is ultimately less than anticipated, or if the success of the earlier program components exceeds expectations, the Enlarge Pardee Reservoir component could possibly be delayed or determined to be unnecessary. For all of these reasons, the Draft PEIR's analysis of the Enlarge Pardee Reservoir component is sufficient under

CEQA, and no further analysis of the component or component alternatives is needed in the PEIR.

2.2 Individual Comments and Responses

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2.2.1 Federal Agencies

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EDNF
090309

USDA United States Department of Agriculture | Forest Service | Eldorado National Forest | 100 Forni Road
Placerville, CA 95667
(530) 622-5061 (Voice)
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File Code: 2770
Date: April 3, 2009

Mr. Thomas B. Francis
PE Water Supply Improvements Division
East Bay Municipal Utility District
375 11th Street MS 407
Oakland, CA 94607

SUBJECT: Comments on Draft Program Environmental Impact Report for the Water Supply Management Program 2040, East Bay Municipal Utility District

Dear Mr. Francis:

We are writing in relation to East Bay Municipal Utility District's (EBMUD's) Draft Program Environmental Impact Report (PEIR) for the Water Supply Management Program 2040. Specifically, there are portions of the project that, should they be implemented, would result in effects to National Forest System lands. Our comments relate primarily to the proposed enlargement of Lower Bear River Reservoir through raising Lower Bear River Dam by 32 feet. As a general comment, it does not appear that EBMUD consulted with the Forest Service in preparing the PEIR. In many cases, the project is not well-described, so it is difficult to provide specific comments and concerns. A specific project proposal that includes all aspects of the project during and after construction is necessary before detailed comments can be provided. In addition, consultation with the Forest Service is highly recommended. 1

Authorization to Utilize National Forest System Lands

The Lower Bear River Reservoir enlargement occurs on National Forest System lands. EBMUD may need to obtain an authorization from the Forest Service to utilize the National Forest System lands required to enlarge Lower Bear River Reservoir. Any such authorization is subject to an analysis pursuant to the National Environmental Policy Act. 2

Consistency with Eldorado National Forest Land and Resource Management Plan

The Eldorado National Forest is managed pursuant to the Eldorado National Forest Land and Resource Management Plan and its amendments, which is a multiple-use plan that includes resource direction for all locations on the Forest. EBMUD should consult with the Forest Service to understand Forest Plan direction for the area in the vicinity of the Lower Bear River Reservoir enlargement and to determine how to ensure any proposed project is consistent with Forest Plan direction. 3

Mokelumne River Hydroelectric Project Settlement Agreement and FERC License

The Lower Bear River Dam is part of the Mokelumne River Hydroelectric Project, FERC No. 137, licensed to Pacific Gas and Electric Company (PG&E). The dam occurs on National Forest System lands. The Forest Service, along with other agencies, non-governmental organizations, and individuals, worked collaboratively to develop the Mokelumne River Hydroelectric Relicensing Settlement Agreement in 2000. The Forest Service proposed as their license conditions, pursuant to Section 4(e) of the Federal Power Act, the parts of the Settlement Agreement that are in Forest Service jurisdiction. A license for the hydroelectric project was issued by the Federal Energy Regulatory Commission (FERC) in 2001. The license included the final Section 4(e) conditions submitted to FERC by the Forest Service. It appears that some of these license conditions in the vicinity of the Lower Bear River Reservoir would be affected by EBMUD's proposed enlargement of the reservoir, including upgraded recreation facilities and ecological streamflows. It is not clear to the Forest Service how EBMUD is proposing to coordinate any proposals with PG&E's existing FERC license at Lower Bear River Dam. The Forest Service is concerned that the proposal, if implemented, could have substantial effects on the existing license conditions at and below this reservoir. 4

Possible Pumped Storage Project

On July 10, 2008, FERC filed a notice that PG&E filed an application for a Preliminary Permit for the Mokelumne Pumped Storage Project, FERC No. 13221. The Forest Service filed a notice of intervention in regard to the preliminary permit application. One of the alternatives being explored by Pacific Gas and Electric Company in this application utilizes water from Lower Bear River Reservoir to operate a pumped storage project. It is not clear from the PEIR if EBMUD is coordinating with PG&E on this proposal as it relates to Lower Bear River Reservoir. 5

Aquatic Effects

As stated above, the Forest Service is concerned that enlarging Lower Bear River Reservoir could have effects on aquatic species at and below the reservoir. The PEIR states that river water quality downstream of the enlarged reservoir would be expected to improve following construction, primarily because the larger pools of cold water in the enlarged reservoir would contributed to cooler water downstream in the summer and autumn months as releases from these reservoirs occur. The PEIR states that this would be a beneficial impact.

When developing the Settlement Agreement and subsequent license conditions, one of the objectives that the Forest Service and others had was to manage as closely as possible to the unimpaired hydrograph. The streamflow requirements for the Mokelumne River Hydroelectric Project include a "shaped" hydrograph that attempts to mimic unimpaired conditions so that the higher flows occur in spring when runoff would normally occur and lower flows occur during the hotter summer period. One of the species the Forest Service and others are attempting to manage for in the North Fork Mokelumne River area is foothill yellow-legged frog (FYLF), a species designated "sensitive" by the Forest Service. Increasing colder temperatures in the summer and autumn could result in substantial effects to the management of this species, as temperature is a key factor in the FYLF breeding cycle. A water temperature model would need 6

to be developed to model water temperature in the North Fork Mokelumne River below Salt Springs Reservoir to ensure that FYLF breeding would be not adversely affected. 6

Hydrology and Soils

Since it is not clear what the enlarged reservoir would do to existing operations and streamflows, a reservoir simulation or operations model should be developed to evaluate impacts of the proposed project. 7

The project will need to include specific best management practices and mitigation measures to reduce hydrology and soil related effects. 8

Terrestrial Effects

The PEIR does not seem to include assessment of many of the species present in the area on National Forest System and other adjacent lands. Lower Bear River Reservoir is currently used by bald eagle and osprey. Although bald eagle nesting has not been documented, it may not have yet been detected. Osprey nesting has been documented. There are protected activity centers for California spotted owl and northern goshawk, both designated as Forest Service sensitive species, immediately adjacent to the reservoir.

The lower end of the reservoir is at the elevation band for both American marten and Pacific fisher, and American marten extends up in elevation. Both of these are designated as Forest Service sensitive species. 9

There is the potential that bat species may be foraging along the reservoir margins and roosting in the larger more decadent trees and snags along the reservoir shore.

In summary, enlarging the reservoir would likely result in the loss of nesting, denning, roosting, and foraging habitat for California spotted owl, northern goshawk, American marten, Pacific fisher if they exist in the area, and bats. The enlargement of the reservoir may result in a decrease in potential nest trees and habitat for bald eagles and osprey. There is also the possibility that there could be an increase in foraging habitat quantity or quality, though this is dependent on how the reservoir enlargement affects fish habitat and numbers. 10

The Forest Service also manages for Management Indicator Species, which for this project could include (in addition to species above) macroinvertebrates and tree frogs and their habitat. 11

It does not appear that game species would be substantially affected, since the project does not appear to change migration corridors or critical habitat, though more specific information would be necessary to fully assess these effects. 12

Sensitive Plants and Noxious Weeds

The PEIR discusses special-status plant species. It does not appear that Forest Service sensitive plants that may be affected by the enlargement of Lower Bear River Reservoir are discussed in 13

the PEIR, and it is not clear whether any populations would be affected by the enlargement. The PEIR should include an analysis of the potential effects related to Forest Service sensitive plants. 13

It appears that noxious weeds are only discussed as a potential mitigation measure to protect special-status plants. Construction-related activities and other ongoing activities can increase the likelihood of introduction and spread of noxious weeds. The Forest Service routinely has specific measures that must be implemented during and after any such activities. EBMUD should consult with the Forest Service to determine the specific measures appropriate to any proposed project that results from the PEIR. 14

Recreation

The PEIR discusses relocation of recreation sites above the shoreline of the new reservoir. There are several recreation sites in the vicinity of Lower Bear River Reservoir. As part of the FERC license for the Mokelumne River Hydroelectric Project, these facilities have recently been upgraded and improved. It is not clear how these facilities would be affected by the enlarged reservoir, and it may not be a simple matter to relocate these recreation sites to other locations. There are few areas around the reservoir where the physical characteristics of the land are conducive to construction of developed sites, so it may not be possible to re-locate the affected campgrounds, organization camps and private recreation developments around the reservoir. It is also inappropriate for the PEIR to assume that the impacts of relocating the recreation sites are less than significant. There may be substantial effects to other resources from relocation of these sites. 15

Visual

The PEIR states that there may be potentially significant visual effects as a result of the enlargement of Lower Bear River Reservoir. EBMUD states that they will use design elements to enhance visual integration of above ground facilities with their surroundings. It is not clear what the enlarged reservoir will look like. EBMUD should consult with the Forest Service to determine the appropriate method to assess visual effects. 16

Heritage Resources

Lower Bear River Reservoir is in the vicinity of the Mokelumne River Archaeological District, and there may be sites that will be affected by the enlargement of the reservoir. 17

Transportation/Construction Traffic

The PEIR indicates that there may be a need to relocate roads and bridges as a result of the proposal. The PEIR also indicates that construction traffic could be substantial at times. The PEIR should clearly describe the access needed for construction as well as any roads or bridges that need to be relocated as a result of reservoir enlargement. EBMUD will need to obtain a road use permit for use of any National Forest System roads needed for construction or operations. 18

Other Land Uses

There are numerous structures, utility lines, and other features mentioned in the PEIR. A specific description of each of these projects that occurs on or adjacent to National Forest System lands needs to be provided to adequately assess effects. 19

Noise

A noise study for construction and ongoing operations needs to be included to assess effects to Forest visitors and species that may be affected by noise from the proposed project. 20

If you have questions, please contact Beth Paulson at 925-407-7050.

Sincerely,

JEFFREY VAIL
Acting Forest Supervisor

cc: Douglas K Barber, Beth A Paulson, Jann O Williams, Kimberly A Morales, Chuck Loffland, Katy Parr, Paul G Sanders, Vicki Jowise, Matt R Brown

El Dorado National Forest (EDNF)

EDNF-1. The PEIR presents a program-level analysis of the Preferred Portfolio components. As noted on page 3-30 of the Draft PEIR, by 2030, either Regional Desalination or a combination of Upcountry projects (Enlarge Pardee Reservoir, Enlarge Lower Bear Reservoir, and IRCUP/San Joaquin Groundwater Banking / Exchange) would be required to meet the Need for Water. In other words, if the Regional Desalination component is implemented, then the Enlarge Lower Bear Reservoir component and the other Upcountry components may not be needed. The District did not undertake detailed consultations because of the programmatic nature of this document. Nonetheless, the District will consult with the Forest Service when and if it decides to move forward with project-level planning for the Enlarge Lower Bear Reservoir component. In addition, EBMUD will consult with the Forest Service regarding any required NEPA compliance. Please see the Master Response on Program-level EIR analysis.

EDNF-2. The District acknowledges that Forest Service authorization would be required for the Enlarge Lower Bear Reservoir component. Please see Response EDNF-1. The District will consult with the Forest Service when and if it decides to move forward with project-level planning for the Enlarge Lower Bear Reservoir component. In addition, EBMUD will consult with the Forest Service regarding necessary NEPA compliance. Please see the Master Response on Program-level EIR analysis.

EDNF-3. Please see Response EDNF-1. The District will consult with the Forest Service when and if it decides to move forward with project-level planning for the Enlarge Lower Bear Reservoir component. In addition, EBMUD will consult with the Forest Service regarding NEPA compliance and the El Dorado National Forest Land and Resource Management Plan and its amendments. Please see the Master Response on Program-level EIR analysis.

EDNF-4. EBMUD acknowledges that existing license conditions on both Projects 2916 and 137 would need to be evaluated, depending on the project-level proposals for the water supply storage components. During any project-level studies/analysis, the Forest Service will be invited to be a participating stakeholder to discuss potential impacts.

EDNF-5. EBMUD filed a Motion to Intervene in order to monitor the developments and preserve the opportunity to provide input into PG&E's evaluation of a Mokelumne Pumped Storage Project. EBMUD is an active stakeholder and has participated in two workshops and teleconferences with PG&E technical staff on water temperature impacts, and participated in a site visit. PG&E staff has acknowledged the interest by a regional partnership in looking at Lower Bear Reservoir as a potential water supply source, and those discussions are beginning to take place.

EDNF-6. The Draft PEIR acknowledges the potential occurrence of special-status amphibian species, including foothill yellow-legged frog, in the Upcountry region (please see Table 4.2.C-3 on page 4.2.C-15). Impact 5.2.C-4 on page 5.2.C-7 of the Draft PEIR recognizes the potential disturbance to special-status amphibians and their habitat or critical habitat, and Mitigation

Measures 5.2.C.4a through 5.2.C.4c are presented to minimize this impact to a less-than-significant level (please see pages 5.2.C-8 and 5.2.C-9). Additional site-specific analysis will be conducted and detailed mitigation measures developed for special-status amphibian species in the Lower Bear Reservoir vicinity when and if the District decides to move forward with project-level planning. Any temperature impacts that affect species would be considered at that time. EBMUD will consult with the appropriate regulatory agencies to determine any necessary detailed studies (e.g., water temperature modeling). Please see the Master Response on Program-level EIR analysis.

EDNF-7. Impact 5.2.A-11 on pages 5.2.A-22 and 5.2.A-23 of the Draft PEIR acknowledges the potential changes in Mokelumne River basin hydrologic conditions from the Enlarge Lower Bear Reservoir component. Additional site-specific analysis of hydrologic impacts will be conducted when and if the District decides to move forward with project-level planning. EBMUD will consult with appropriate regulatory agencies to determine which detailed studies are needed (e.g., reservoir simulation or operations modeling). Please see the Master Response on Program-level EIR analysis.

EDNF-8. Additional site-specific mitigation measures will be developed to reduce the potential impacts to hydrology and soils in the vicinity of Lower Bear Reservoir when and if the District decides to move forward with project-level planning for this component. Please see the Master Response on Program-level EIR analysis.

EDNF-9. Table 4.2.C-3 of the Draft PEIR acknowledges the potential occurrence of special-status bird and mammal species, including bald eagle, osprey, northern goshawk, several bat species, Pacific fisher, and Humboldt marten, a race of American marten, in the Upcountry region (please see pages 4.2.C-16 through 4.2.C-19). The Draft PEIR also recognizes the potential disturbance to or loss of nesting birds, special-status bat species and roosting habitat, and other special-status mammals and includes mitigation measures to reduce these impacts to less-than-significant levels (see Mitigation Measures 5.2.C-5a through 5.2.C-5d, 5.2.C-6a through 5.2.c-6d, and 5.2.C-7a through 5.2.C-7c on pages 5.2.C-9 through 5.2.C-14). Additional site-specific analysis will be conducted and mitigation measures developed for special-status bird and mammal species in the vicinity of Lower Bear Reservoir when and if the District decides to move forward with project-level planning. The District will coordinate with the Forest Service regarding sensitive species and NEPA compliance. Please see the Master Response on Program-level EIR analysis.

EDNF-10. Potential impacts, including beneficial and adverse impacts, to fish and wildlife species in the vicinity of Lower Bear Reservoir will be evaluated at the project level when and if the District decides to move forward with project-level planning for the Enlarge Lower Bear Reservoir component. Please see the Master Response on Program-level EIR analysis.

EDNF-11. Table 4.2.C-3 of the Draft PEIR acknowledges the potential occurrence of special-status invertebrate species in the Upcountry region, including a

number of macroinvertebrates (see pages 4.2.C-13 through 4.2.C-15). Impact 5.2.C-3 of the Draft PEIR identifies potential disturbance to or loss of special status invertebrates or their habitats (see page 5.2.C-6). The Draft PEIR also identifies Mitigation Measures 5.2.C-3a through 5.2.C-3c to reduce potential impacts to less-than-significant levels (see pages 5.2.C-6 and 5.2.C-7). Additional site-specific analysis will be conducted and detailed mitigation measures developed for special-status invertebrate species in the vicinity of Lower Bear Reservoir when and if the District decides to move forward with project-level planning for this component. The District will consult with the Forest Service regarding sensitive species and any required NEPA compliance. Please see the Master Response on Program-level EIR analysis.

EDNF-12. Potential impacts, including beneficial impacts, to wildlife species in the Lower Bear Reservoir vicinity will be evaluated at the project level when and if the District decides to move forward with project-level planning.

EDNF-13. Table 4.2.C-3 of the Draft PEIR acknowledges the potential occurrence of special-status plants in the Upcountry region, including those species listed as endangered, threatened, rare or proposed for listing by USFWS, CDFG, and the California Native Plant Society (please see pages 4.2.C-3 through 4.2.C-11). The Draft PEIR also identifies the potential temporary disturbance to or permanent loss of special-status plant species, sensitive plant communities, or protected trees as a result of the project, and includes Mitigation Measures 5.2.C.2a through 5.2.C.2e to minimize these impacts to less-than-significant levels (please see pages 5.2.C-3 through 5.2.C-6). Additional site-specific analysis will be conducted and mitigation measures developed for special-status plants in the vicinity of Lower Bear Reservoir when and if the District decides to move forward with project-level planning for this component. The District will consult with the Forest Service regarding sensitive plants and any required NEPA compliance. Please see the Master Response on Program-level EIR analysis.

EDNF-14. The District will coordinate with the Forest Service regarding noxious weeds when and if it decides to move forward with project-level planning for the Enlarge Lower Bear Reservoir component. Please see the Master Response on Program-level EIR analysis.

EDNF-15. Impacts to recreation in the vicinity of Lower Bear Reservoir will be fully examined and site-specific, feasible mitigation measures developed in a project-level EIR when and if the District decides to move forward with project-level planning for this component. The District will consult with the Forest Service regarding impacts on recreation facilities and activities and NEPA compliance. Please see the Master Response on Program-level EIR analysis.

EDNF-16. Impacts to visual resources in the vicinity of Lower Bear Reservoir will be fully examined and site-specific mitigation measures developed in a project-level EIR when and if the District decides to move forward with project-level planning for this component. The District will consult with the Forest Service regarding appropriate visual assessment methods and any required NEPA

compliance. Please see the Master Response on Program-level EIR analysis.

EDNF-17. The Draft PEIR acknowledges the high potential for discovery of prehistoric cultural resources in the vicinity of Lower Bear Reservoir (see page 4.2.H-6). Impact 5.2.H-1 on pages 5.2.H-3 and 5.2.H-4 identifies the project's potential to alter or damage known or unrecorded cultural resources in the vicinity of Lower Bear Reservoir during construction. Mitigation Measures 5.2.H-1a through 5.2.H-1d are identified to reduce potential impacts to cultural resources (see pages 5.2.H-3 - 5.2.H-7). Potential impacts to cultural resources in and around Lower Bear Reservoir will be fully examined and outreach to local Native American tribes will be conducted when and if the District decides to move forward with project-level planning for this component. Please see the Master Response on Program-level EIR analysis.

EDNF-18. Impacts to roads and bridges in the vicinity of Lower Bear Reservoir will be fully examined and access needs identified in a project-level EIR when and if the District decides to move forward with project-level planning for this component. The District will consult with the Forest Service regarding any necessary permits for construction and/or operations and any required NEPA compliance. Please see the Master Response on Program-level EIR analysis.

EDNF-19. Additional structures, utility lines, and other features in the vicinity of Lower Bear Reservoir will be fully examined in a project-level EIR when and if the District decides to move forward with project-level planning for this component. The District will consult with the Forest Service regarding any required NEPA compliance and potential effects on National Forest System lands. Please see the Master Response on Program-level EIR analysis.

EDNF-20. The Draft PEIR acknowledges the potential impacts to sensitive receptors from noise associated with construction and operations in the vicinity of Lower Bear Reservoir and includes Mitigation Measures 5.2.G.1a through 5.2.G.4b to reduce these impacts to less-than-significant levels (see pages 5.2.G-1 through 5.2.G-12). Additional site-specific analysis will be conducted and detailed mitigation measures developed in a project-level EIR when and if the District decides to move forward with project-level planning for this component. The District will consult with the Forest Service to determine which detailed studies are needed to assess impacts to Forest visitors and species. Please see the Master Response on Program-level EIR analysis.

NMFS
090504

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Sacramento Area Office
650 Capitol Mall, Suite 8-300
Sacramento, California 95814-4706

MAY 4 2009

Thomas B. Francis, P.E.
EBMUD Water Supply Improvements Division
375 11th Street MS 407
Oakland, California 94607

Dear Mr. Francis:

This letter is in response to the February 19, 2009, submittal of the Draft Program Environmental Impact Report (PEIR) for East Bay Municipal Utility District's (EBMUD's) Water Supply Management Program (WSMP) 2040 to NOAA's National Marine Fisheries Service (NMFS) for review. We have reviewed the relevant portions of the draft, as well as Appendix C (Biological Resources), which was sent from your agency on March 4, 2009.

The NMFS administers the Endangered Species Act (ESA) and manages ocean fisheries in the public trust under the Magnuson-Stevens Fishery Conservation and Management Act. Central valley Chinook salmon populations have historically contributed significantly to the West coast salmon fishery. This fishery is now failing due to low returns of adult Chinook salmon to the Sacramento and San Joaquin River systems. As NMFS evaluates the health of the West coast salmon fishery, we must consider estuarine/freshwater habitat conditions, including those in San Francisco Bay and the Mokelumne River, that have contributed to falling population numbers. The impacts of the proposed water operations must be evaluated within this context. 1

Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*) are listed as threatened under ESA (September 16, 1999, 64 FR 179). The Mokelumne River historically supported a robust spring-run Chinook salmon population. Pardee and Camanche Dams now preclude spring-run Chinook salmon from accessing their historic holding, spawning and rearing habitats. Central Valley steelhead (*O. mykiss*) are also listed as threatened under ESA (January 5, 2006, 71 FR 834), including the Mokelumne River population. Very few steelhead return to the Mokelumne River currently because this species historic spawning habitats are also blocked by Pardee and Camanche Dams. 2

Part of NMFS' responsibility under the ESA is to recover listed species so they no longer need special protections. Recovery of spring-run Chinook salmon and steelhead, as well as sustaining a viable fall-run Chinook salmon population in the Mokelumne River may require passing fish above Camanche and Pardee dams, allowing these species access to historical habitats. Within

this context, raising Pardee Dam and subsequently flooding suitable salmonid spawning habitat, doesn't support the recovery of these fish. A desalinization plant in the East Bay may affect the estuarine rearing habitat for spring-run Chinook and steelhead as well winter-run Chinook salmon and green sturgeon (*Acipenser medirostris*) which are also listed under the ESA. 3

It is unclear how fisheries were considered during the weighing process for the various water portfolios considered by EBMUD and its constituents. NMFS recommends that EBMUD re-evaluate the various portfolios within the context of Central Valley salmonid recovery and choose a portfolio that meets the water needs of EBMUD customers while improving salmonid habitat conditions. 4

We offer the following specific comments and suggestions:

- **Section 1.5, Areas of Controversy**
  Please add the following to the list in this section: 1) Impacts to ESA listed salmonids and their potential for recovery, from raising Pardee Reservoir; 2) Impacts to ESA listed fishes and their habitats in the San Francisco Bay estuary. 5

- **Section 2.1.1, 1993 WSMP, page 2-3:**
  "WSMP 2040 builds upon the foundation of programs and activities created in the process of implementing the 1993 WSMP, in order to meet water supply needs for the next 20 year planning horizon." This statement is somewhat confusing. An earlier paragraph (section 2.1 Purposed of and Need for WSMP 2040, page 2-1) states that "The primary purpose of WSMP 2040 is to identify and recommend solutions to meet dry-year water needs through 2040." The latter statement implies that the PEIR pertains to changes in water needs according to dry-year conditions. However, the first statement implies a broader range of water supply needs. Please clarify the purpose of the project. 6

- **Section 2.4.2 Mokelumne River Watershed and Hydrology, page 2-9:**
  As stated in paragraph 2, "Fourteen years of the last two decades were considered Below Normal to Critically Dry water years for the Mokelumne River…" If the Below Normal to Critically Dry year designation is so frequent, the potential for impact to the system to occur, and thus to the aquatic species present in the watershed, greatly increases if water demand should increase for Dry Year designations. 7

- **Section 4.2.A.1, Hydrology, Groundwater, and Water Quality; Regional Setting:**
  Please add information regarding the Central Valley Project Improvement Act (CVPIA), the Operations and Criteria Plan (OCAP) for the Central Valley Project (CVP), and the Anadromous Fish Restoration Program somewhere in the Regional Setting. How will the OCAP Biological Opinion affect water release requirements and availability on the Mokelumne River? 8

- **Section 4.2.A.3, Hydrology, Groundwater, and Water Quality; Regulatory Setting, Federal Regulations:**
  Please add a section discussing the Federal Endangered Species Act here. Hydrology alterations within the proposed project area could directly impact several species of fish that are listed under ESA. Please include NMFS along with the U.S. Fish and Wildlife 9

Service in the discussion in this section. The policies and responsibilities under the ESA are shared by both agencies. 9

- **Section 4.2.A.3, Hydrology, Groundwater, and Water Quality; Regulatory Setting, Regional/Local Regulations:**
  Please add a discussion here of the CVPIA and the CVP OCAP. It is important to tie the CVP operations to the proposed project in a regional context. 10

Section 4.2.C, Biological Resources:
To our knowledge, NMFS was not included when information was being gathered regarding special-status species lists for this section. Please add a note here detailing how information regarding listed anadromous fish species under NMFS jurisdiction was obtained. 11

- **Section 4.2.C.2, Biological Resources, Regional Setting, Upcountry:**
  Please add a section here describing the historical distribution of spring-run, fall-run and late-fall run Chinook salmon and steelhead within the Mokelumne River watershed. 12

- **Section 4.2.C.3, Biological Resources, Setting for Preferred Portfolio Components, Enlarge Pardee Reservoir:**
  Please add a section here describing the historical distribution of spring-run, fall-run and late-fall run Chinook salmon and steelhead within this section of the Mokelumne River. 13

- **Section 4.2.C.4, Biological Resources, Regulatory Setting, Federal Regulations:**
  Please add a discussion of the Anadromous Fish Restoration Program here. 14

- **Section 5.2.C.1, Biological Resources; Significance Criteria, page 5.2.C-1:**
  Please include NMFS with the agencies listed under the first bullet. 15

- **Section 5.2.C.3, Biological Resources; Potential Biological Resources Impacts, Mitigation Measure 5.2.C-1b, page 5.2.C-3:**
  Please include information on compliance with section 7 of the ESA. Consultation with US Fish and Wildlife Service (USFWS) and NMFS is required for impacts to special status species and their habitats. 16

- **Section 5.2.C.3, Biological Resources; Potential Biological Resources Impacts, Mitigation Measure 5.2.C-8, page 5.2.C-15:**
  This section appears to only address the construction-related activities of proposed facilities. You must also analyze the long term effects of implementing this proposal on the critical elements of anadromous fish habitat in this PEIR, as described below in the mitigation measures discussion. 17

The mitigation measures for potential loss of or impacts to fish and aquatic habitats are insufficient for implementing the Preferred Portfolio. The mitigation measures seem to address construction of only some of the components. What about the loss of water to the system (including the Delta, Mokelumne River segments) due to the increase in dam 18

height in the Mokelumne watershed and desalinization in the Delta? What are the prospective changes in flow at the project locations? What does modeling data show? What about changes in water quality? Are there changes in infiltration rates due to changes in groundwater from groundwater banking and well pumping? How do the project components mesh with the OCAP Biological Opinion? All of these potential impacts must be analyzed with regard to listed fish species and their habitats within the proposed project area. 18

- **Section 5.2.C.3, Biological Resources; Potential Biological Resources Impacts, Mitigation Measure 5.2.C-9, page 5.2.C-16:**
  Installing fish screens may be a sufficient mitigation measure to prevent impacts to larger juvenile and adult fish at the desalinization plant intake. NMFS, USFWS, and CDFG screening criteria must be met. The project impact analysis does not recognize impacts to larval and egg fish life history forms from entrainment. This impact requires mitigation like other similar project, such as once-through cooling water power plants. 19

  Changes in water quality should be considered as a potential impact, such as impacts to the Bay ecosystem from water withdrawals and constituents of the return water. How would water quality constituents change for each of the Preferred Portfolio components? What about modeling? Water quality impacts as they relate to fish habitat impacts must be thoroughly evaluated. 20

- **Appendix C, Biological Resources, Table C-8, page C-29**:
  Please include fish species occurring in the Proposed Regional Desalinization Project. 21

- **Appendix C, Biological Resources, Table C-9, page C-30:**
  Please include fish species that may be impacted (temporarily or otherwise) due to any change in flows. 22

- **Appendix C, Biological Resources, Table C-10, page C-31:**
  Please include fish species that may be impacted (temporarily or otherwise) to due to change in flows during construction. 23

- **Appendix C, Biological Resources, Table C-11, page C-31:**
  Please include fish species that may be impacted (temporarily or otherwise) to due to change in water quality during construction. 24

- **Appendix C, Biological Resources, page C-47:**
  Under the Special-Status Fish section and under the paragraph entitled Central Valley Rivers and Upcountry Reservoirs: Please include any affects the project would have on the San Joaquin River. 25

- **Appendix C, Biological Resources, page C-49:**
  Under the green sturgeon paragraph, please double-check the life history information. Much is still unknown regarding sturgeon life history. However, resources indicate that sturgeon spawn in deep, fast-moving water in river mainstems. 26

NOAA Fisheries appreciates the opportunity to provide input on the Draft EBMUD WSMP 2040 PEIR. We look forward to working with the applicants to ensure that this PEIR adequately addresses and analyzes potential project related impacts to salmonids from the Mokelumne River to the Delta, as well as green sturgeon residing in the Bay and Delta region.

If you have any questions regarding this correspondence, please contact Ms. Leslie Mirise in our Sacramento Area Office, by telephone at (916) 930-3638 or email at Leslie.Mirise@noaa.gov.

Sincerely,

Maria Rea
Sacramento Area Office Supervisor

cc: Copy to file: ARN 151422SWR2009SA00136
NOAA Fisheries-PRD, Long Beach, CA

National Marine Fisheries Service (NMFS)

NMFS-1. EBMUD acknowledges the commenter's role in administering the Endangered Species Act and the Magnuson-Stevens Fishery Conservation and Management Act. EBMUD shares the concern and interest in addressing habitat conditions and recognizes the decline of the West Coast salmon fishery, which is the result of many factors.

NMFS-2. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component. Impacts to fisheries will be fully examined in a project-level EIR when and if the District decides to move forward with project-level planning for this component. This would include an evaluation of the suitability of habitat upstream of Pardee Reservoir in areas that could potentially be affected by the project. Consultation and coordination with NMFS will ensure that NMFS can meet its recovery responsibilities.

NMFS-3. Please see the Master Response on Program-level EIR analysis. Impacts to fisheries and estuarine habitat will be fully examined in a project-level EIR when and if the District decides to move forward with project-level planning for the Regional Desalination component. Until then, without greater detail on siting and project design, impacts to Chinook salmon, steelhead, and green sturgeon habitat cannot be examined in detail.

NMFS-4. EBMUD will consult with NMFS during project-level planning for any components that would potentially affect fisheries and EBMUD will also continue the efforts undertaken by EBMUD to improve salmonid habitat conditions, and decisions with regard to future projects will include consideration of benefits and impacts, including impacts to salmonid habitat conditions and recovery objectives.

NMFS-5. EBMUD intends to analyze fisheries in detail and address impacts at the project level. Nonetheless, in response to the request, Section 1.5, Areas of Controversy, on page 1-11 of the Draft PEIR is revised as follows:

> Section 15123 of the CEQA Guidelines requires that an EIR identify areas of controversy. The following issues and concerns were raised by agencies or the public:
>
> - Reliability of water transfers
> - Preferred Portfolio components should reduce Mokelumne demand
> - Potential impacts on Delta water quality
> - Potential impacts on Sacramento Water Forum Agreements from ASR components
> - Potential degradation of groundwater from ASR components
> - Potential impacts on endangered species from water transfers
> - Opposition to cross-Delta water transfers
> - Opposition to Buckhorn Reservoir
> - <u>Potential impacts to Endangered Species Act-listed salmonids and their potential for recovery, from raising Pardee Reservoir</u>

- Potential impacts to Endangered Species Act-listed fishes and their habitats in the San Francisco Bay estuary

NMFS-6. See the Master Response on the WSMP 2040. The WSMP 2040 effort includes a detailed examination of District demands and assumes the continued availability of existing water supplies, including the Freeport project. In normal years, these Mokelumne supplies are sufficient to meet projected demands. The WSMP 2040 is intended to meet the District's Need for Water in dry years.

NMFS-7. Figure 2-2 demonstrates that annual precipitation and streamflow vary in a cyclical pattern, and thus the statement cited does not fully represent the hydrology. The third paragraph on page 2-9 of the Draft PEIR is revised as follows:

> Annual precipitation and streamflow in the Mokelumne River watershed are highly variable from year to year. ~~Fourteen years out of the last two decades were considered Below Normal to Critically Dry water years for the Mokelumne River (see Figure 2-2 which depicts flow by water year).~~ Figure 2-2 shows that, from 1921 to the present, approximately one-third of the water years were above normal, approximately one-third of the water years were normal, and approximately one-third of the water years were dry or critically dry.

NMFS-8. Please see the Master Response on Program-level EIR analysis. The OCAP Biological Opinion is addressed on pages 8-6 and 8-7 of the Draft PEIR. Subsequent CEQA documentation will be prepared, as appropriate, for specific portfolio components when and if the District decides to move forward with project-level planning. At that point, a detailed analysis of operational effects and necessary measures will be undertaken to ensure that project components are consistent with the Biological Opinions and operational plans, as well as other mitigation and restoration measures in effect at the time. Presently, no changes are necessary to EBMUD's existing Mokelumne operations to respond to the OCAP Biological Opinions.

NMFS-9. Please see the Master Response on Program-level EIR analysis. EBMUD recognizes the shared responsibilities of NMFS and USFWS in implementing the ESA. Subsequent EIRs and/or environmental documentation will be prepared, as appropriate, for specific portfolio components when and if the District decides to move forward with project-level planning. At that point, EBMUD will be able to fully examine the projects in the context of CVP operations and Delta requirements.

NMFS-10. Please see the Master Response on Program-level EIR analysis and NMFS-14. The PEIR includes a brief discussion of the CVPIA and CVP OCAP. EBMUD recognizes that certain portfolio components may need to be analyzed in the context of CVP operations. Subsequent EIRs and/or environmental documentation will be prepared, as appropriate, for specific portfolio components when and if the District decides to move forward with project-level planning.

NMFS-11. EBMUD will consult with NMFS regarding fisheries impacts when the District decides to move forward with project-level planning for components that would potentially affect fisheries and their habitat. Regulations identifying listed species were reviewed during preparation of the Draft PEIR to develop this section.

NMFS-12. The following description of spring-run, fall-run, and late fall-run Chinook salmon and steelhead within the Mokelumne River watershed is added to the end of Section 4.2.C.2 on page 4.2.C-23 of the Draft PEIR:

> Historically, the Mokelumne River supported fall- and spring-run Chinook salmon, and Yoshiyama et al (2001) suggest that a late-fall run also occurred, at least until the mid-19th century. There is debate as to whether there were indigenous steelhead in the Mokelumne River prior to releases of out-of-basin hatchery stocks (Cramer et al. 1995, McEwan and Jackson 1996). Bald Rock Falls (about 7 miles upstream of Electra Powerhouse) on the Mokelumne River is a complete fish barrier and was the upstream limit for anadromous salmonids according to Woodhall (1946). An examination of historical river flows at Mokelumne Hill (USGS Gauge #11319500) suggests that spring-run were probably the dominant Chinook salmon run since fall flows were relatively low and water temperatures may have created a migratory barrier in the lower river. However, as a result of mining activities in the Mokelumne River, by 1884 it was reported that "This [San Joaquin River] is a very good stream for the Fall run of salmon, the ascent being not very steep, and the current, especially the first seventy-five miles, not very strong. The different branches form fine spawning grounds, providing the fish could reach their headwaters. The only stream emptying into the San Joaquin not dammed is the Mokelumne." (CFC 1884). Collins (1892) reported that "Salmon do not run into the San Joaquin River in large numbers. In the fall, when the fishery is at its best, fishermen go a few miles up to the Mokolumne, a small stream that empties into the San Joaquin, about 20 miles above Black Diamond."
>
> Since the mid 1800s, mining, agriculture, and water diversion has affected salmonids in the Mokelumne River. Pollution from winery, cannery, and mining operations; construction of dams; and water diversions have resulted in loss of habitat, physical barriers and direct mortality. CDFG determined that by 1952, steelhead were "virtually non-existent" in the Mokelumne River below Pardee Dam (CDFG 1959). From 1953 to 1959, CDFG released over 1,250,000 steelhead fingerlings between Pardee Dam and Thornton. There appear to be no steelhead-bearing rivers in the Sacramento River Basin that have not received releases of multiple hatchery stocks (CDFG 1995, Cramer et al. 1995). Prior to the establishment of the Mokelumne River Fish Hatchery there were numerous releases of steelhead from the Mt. Shasta, Mt. Whitney, Basin Creek, Fern Creek, Kaweah, and Mormon Creek hatcheries into the San Joaquin River Basin (West Cost Steelhead Biological Review Team 1998). Since there is no

documentation of egg collections from San Joaquin River basin sources, it is presumed that these fish came from sources in the Eel River and Scott Creek/San Lorenzo basins. However, the exact origin of the released steelhead is unknown.

NMFS-13. Please see Response NMFS-12 above.

NMFS-14. In response to the comment, the following text is added to the bottom of page 4.2.C-28 of the Draft PEIR, under the discussion of Lower Mokelumne River Joint Settlement Agreement:

On October 30, 1992, President George H.W. Bush signed into law the Reclamation Projects Authorization and Adjustment Act of 1992 (Public Law 102-575), including Title XXXIV, the Central Valley Project Improvement Act CVPIA. The CVPIA directed the Secretary of the Interior to amend previous authorizations of California's Central Valley Project to:

"include fish and wildlife protection, restoration, and mitigation as project purposes having equal priority with irrigation and domestic use and fish and wildlife enhancement as a project purpose equal to power generation."

Section 3406(b)(1) of the CVPIA directs the Secretary of the Interior to develop and implement a program that makes all reasonable efforts to at least double natural production of anadromous fish in California's Central Valley streams on a long-term, sustainable basis. The major resulting program is known as the Anadromous Fish Restoration Program. Since 1995, the AFRP has helped implement over 195 projects to restore natural production of anadromous fish.

NMFS-15. In response to the comment, the text on page 5.2.C-1 of the Draft PEIR, under Section 5.2.C.1, Significance Criteria, is revised as follows:

In accordance with Appendix G of the CEQA Guidelines, a significant impact on biological resources would occur if the WSMP 2040 Preferred Portfolio would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game (CDFG) or National Marine Fisheries Service (NMFS) or U.S. Fish and Wildlife Service (USFWS);

NMFS-16. Page 3-53 of the Draft PEIR acknowledges that Section 7 consultation with the U.S. Fish and Wildlife Service and NMFS may be required. Information regarding Section 7 of the Federal Endangered Species Act is presented on pages 4.2.C-27 and 4.2.C-28 of the Draft PEIR. EBMUD acknowledges the comment and will undertake a Section 7 consultation

on specific projects to ensure that aquatic species and habitats are protected.

NMFS-17. EBMUD will study all project-specific impacts, including flow changes and Delta impacts and other impacts from operations as part of the specific project-level review for the portfolio components and will examine impacts of operations on anadromous fish and habitat.

NMFS-18. Please see Response NMFS-17 above. As noted in the Draft PEIR, Mokelumne River contribution to the Delta is relatively small. The Mokelumne River constitutes just 1.5 percent of the Delta watershed area. Based on the Department of Water Resources' average annual unimpaired flow data from 1921-1994, the Mokelumne River provides just 2.9 percent of Delta unimpaired flow, and the other Eastside streams provide only 3.1 percent. EBMUD's diversions constitute less than one percent of total diversions. EBMUD has not stated that this relatively small contribution of to the Delta would mean that any impacts would not be significant. Instead, EBMUD has acknowledged the potential for impacts to species and habitats and will study these in detail at the project level to determine the significance. This data was presented to the Delta Vision Task Force and other groups involved in analyzing the Delta.

NMFS-19. Please see the Master Response on Program-level EIR analysis. Subsequent CEQA documentation for the Regional Desalination component will address impacts on fisheries and their habitat, when and if the District decides to move forward with project-level planning. EBMUD will also consult with NMFS regarding impacts on fisheries during project-level planning and will consider all life stages of species at that time.

NMFS-20. Please see the Master Response on Program-level EIR analysis. Subsequent CEQA documentation for the Regional Desalination component will address impacts on fisheries and their habitat, when and if the District decides to move forward with project-level planning. This would include an assessment of water quality impacts from withdrawals and discharges. This cannot be developed in detail in advance of specific project-level evaluation and design. EBMUD will also consult with NMFS regarding impacts on fisheries during project-level planning.

NMFS-21. Please see the Master Response on Program-level EIR analysis. Special-status fish species that occur within San Francisco Bay, where the Regional Desalination plant will be sited, are discussed on pages 48-51 of Appendix C of the Draft PEIR. These species include Central Valley steelhead, Chinook salmon, green sturgeon, delta smelt, longfin smelt, Sacramento splittail, hardhead, and San Joaquin roach. Subsequent CEQA documentation for the Regional Desalination component will address impacts on fisheries and their habitat, including when and if the District decides to move forward with project-level planning.

NMFS-22. Please see the Master Response on Program-level EIR analysis. Subsequent CEQA documentation will identify impacts on fisheries and mitigation measures to reduce those impacts, when and if the District

decides to move forward with project-level planning. This would examine any impacts from changes in flows.

NMFS-23. Please see the Master Response on Program-level EIR analysis. Subsequent CEQA documentation will identify impacts on fisheries as well as mitigation measures to reduce those impacts, when and if the District decides to move forward with project-level planning. This would examine any impacts from flow changes during construction, and efforts would be made to avoid flow disruptions during construction.

NMFS-24. Please see the Master Response on Program-level EIR analysis. Subsequent CEQA documentation will identify impacts on fisheries and mitigation measures to reduce those impacts, when and if the District decides to move forward with project-level planning.

NMFS-25. Please see the Master Response on Program-level EIR analysis. Subsequent CEQA documentation will identify impacts on fisheries in the San Joaquin River and mitigation measures to reduce those impacts, when and if the District decides to move forward with project-level planning for components that would affect the San Joaquin River. At this point, impacts on the San Joaquin River are expected to be less than significant.

NMFS-26. Please see the Master Response on Program-level EIR analysis. EBMUD recognizes that much is still unknown regarding green sturgeon life history. Subsequent CEQA documentation will identify impacts on fisheries, including green sturgeon, and mitigation measures to reduce those impacts, when and if the District decides to move forward with project-level planning.

2.2.2 State Agencies

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CAL10
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STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
P.O. BOX 2048, STOCKTON, CA 95201
(1976 E. DR. MARTIN LUTHER KING JR. BLVD. 95205)
PHONE (209) 948-7112
FAX (209) 948-7164
TTY 711

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May 4, 2008

10-AMA-49-PM 0.1
10-CAL-12- PM 9.93
East Bay MUD
2040 Water Supply
Management Plan
DPEIR
SCH 2008052006

Mr. Thomas B. Francis
East Bay Municipal Utility District
375 Eleventh Street, MS 407
Oakland, CA 94607

Dear Mr. Francis,

The Department of Transportation District 10 (Caltrans) appreciates the opportunity to review and comment Draft Program Environmental Impact Report for the Water Supply Management Program 2040 (WSMP 2040). Previous comments have been provided by The Department of Transportation District 4 (April 2, 2009, enclosed). Our comments should be understood to amend, but not replace those comments. 1

Potential for Growth Inducing Impacts:

The stated primary purpose of the WSMP 2040 is to "…identify and recommend solutions to meet dry year water demand needs through 2040. (p. 1-1)" The proposed preferred alternative is to include: 2

- 10% water rationing
- Conservation of 39 Million Gallons a Day
- Increase available recycled water to 11 Million Gallons a Day
- Supplemental Water Supply including
  1. Water Transfer from Northern California
  2. Expansion of the Bayside Groundwater Project (Phase 2)
  3. Sacramento Basin Groundwater Banking/Exchange
  4. Regional Desalinization
  5. Enlarge Pardee Reservoir
  6. Enlarge Bear River Reservoir
  7. Mokelumne Inter-regional Conjunctive Use Project/ San Joaquin Groundwater Banking/Exchange (pp1-3:1-5)

What the current and future water demand may be are unclear, and would assist in delineating the intensity and effectiveness of the proposed actions within the preferred alternative. EBMUD estimates a 2040 average water demand of 312 million gallons per day. Current delivery of 415,000 acre feet from the Mokelumne watershed translates roughly to 370 million gallons per day. So the average supply of this one source exceeds average future water demand by 58 million gallons. But when rationing is incurred, the supply from the Mokelumne is indicated to equal 116 million gallons per day, which is about 31% of the average. If one tries to fit this what is shown in Figure 2-2, it would appears that 0.9 million acre feet divides 'normal and above' from 'below normal'; that 0.5 million acre feet divides 'below normal' from 'dry'; and that 0.3 million acre feet divides 'dry' from 'critically dry'. However, 31% of 0.9 is 0.3, therefore rationing would only be implemented during critically dry years.

The need for the project is characterized three factors—increased water demand by other agencies with Mokelumne watershed dependence, expected population growth in EBMUD's service area, and climate change (p1-1). Current climate studies indicate no significant change in amounts of precipitation associated with global greenhouse warming, other than a reduction in snow pack (p 8-22). This would imply changes in water delivery and flood control release schedules, and increased losses due to evaporation. Historic evidence in Figure 2.2 does not show a trend indicative of a significant decline in water availability for the Mokelumne River, but a higher annual variability about the mean. Without more substantial data, Caltrans would have to conclude that in the issue of EBMUD's future water supply planning efforts, the primary factor would not be climate change increasing water scarcity, but increases in water demand. 2

In further reviewing Figure 2-2, there are only 39 years out of 87 years of record where the Mokelumne River Runoff is normal or above, which suggests that even in a normal to slightly above normal rainfall year, a dry year is the outcome. This diagram seems to further reinforce the unsustainability of relying upon a water supply exclusively from the Mokelumne watershed, however, it is not clear that the 'normal or above' category is defined by a natural pattern, or from a contemporary water demand. Coupled with Figure 2.4 showing a normal and above year delivery of 415,000 acre feet at the Woodbridge Gage (sic) along with 563,000 acre feet for diversions to storage, there would not appear to be much chance for implementation of a 25% rationing program except in period of prolonged and extreme drought. Of this, only 151,000 acre feet are provided to other riparian and appropriate right users. Although the rights of the EBMUD to water from the Mokelumne are clear, the maximum appropriative and riparian rights of other users is unstated. 3

Included in the preferred portfolio is a conservation effort to reduce consumption by 39 million gallons a day. What is unclear is will the effort be implemented only during dry 4

years, or would be an ongoing effort. Further, what is also unclear is whether this conservation effort is in addition to the existing conservation effort (22.5 million gallons a day), leading to a net saving of 61.5 million gallons a day, or is that an increased conservation reduction of 16.5 million gallons a day (see p 1-4). 4

EBMUD seeks to require water rationing to 25% of demand in dry years, though noting that water supply shortfalls may require a greater rationing effort (2-7). Although the history of water rationing in the Bay Area extends to the drought years of the mid 1970's though the 1980's, the need for rationing should be considered the typical expectation for an urban area in a Mediterranean climate, in which rainfall variability can exceed the mean. If the purpose and need are clear, the proposal to increase storage at Pardee and Bear River Reservoirs is an effort to reduce or eliminate the risk of dry years exceeding the need for 25% water rationing, and to stabilize water availability by a storage increase of 370,000 acre feet from the current 210,000 acre feet. This would constitute a 75% increase in storage capacity, and would in all likelihood prevent most instances of water rationing except in the most severe of multi year droughts. This effort would help to stabilize the water availability for other holders of water rights on the Mokelumne River. By stabilizing water availability to where water rationing will not be required could be a growth inducing impact for the Bay area, but such would have a growth inducing impact within smaller outlying land use planning jurisdictions. 5

Further Caltrans notes that only those supplemental water supply projects deemed feasible will be the projects to move forward. What is not defined is what constitutes "dry year water demands" that can be reliably quantified, which can then be employed to evaluate the feasibility and reasonability of the proposed projects, singly or in aggregate, that meet this demand, or that may exceed the demand, with opportunity for EBMUD to sell the water to other providers under any water demand condition, which may constitute a growth inducing impact. 6

Impacts to Local Highways and Local Services:

The proposed improvement to Pardee Reservoir will require an increase of maximum water elevation of 33 feet, with the maximum flood elevation raised 55 feet. The raised level will inundate the two bridges—the Middle Bar Bridge and the Mokelumne River Bridge on State Route 49. As Caltrans is responsible agency for maintaining bridges through out the state, replacements for both bridges will require that their elevations be above the proposed maximum flood elevation. Currently, no work at either bridge is contemplated in local transportation planning, and that a recent project was completed at the Middle Bar Bridge. As the proposed action includes bridge replacement, such work on the State Highway would require a Preliminary Study Report (PSR) undertaken with project management oversight, as it would require special engineering expertise and would exceed one million dollars. 7

Irreversible and Irretrievable Environmental Impacts/ Cumulative Traffic Impact:

Caltrans is concerned with the impact implementation of the efforts to expand reservoir capacity at both Pardee and Bear River will have to the state transportation system. Both would require importation of substantial concrete, earth, rock, and aggregate supplies that would compete with supplies for the currently funded levee maintenance and improvements, as well as Proposition 1A bond funded transportation projects. Further, as many rock and aggregate quarries are located in our district, we are currently overseeing renegotiating of highway encroachment permits. This potentially significant impact should be discussed further in the section discussing irreversible and irretrievable environmental impacts, as well as cumulative traffic impacts. 8

One local circulation effect will be inundation of the Middle Bar Bridge with the proposed expansion of Pardee Reservoir. Middle Bar Bridge was recently upgraded to permit traverse by car, and is a feasible emergency evacuation and detour route crossing the Mokelumne River. 9

Consistency with Local and Regional Planning

Discussion in Section 7 (Growth Inducement) suggests the development of the Preferred Portfolio is a separate study from the DPEIR referred to as the 2040 Demand Study. Although the 2040 Demand Study found that the future trend in local land use planning was a shift to "infill and redevelopment of lands west of the Oakland Hills. (7-3)", there was no indication whether this change resulted in significant changes in the aggregate land use unit demand, which we assume differs based upon the housing and density. Given the lack of indication that the proposed plan has been coordinated with the local blueprint planning efforts, we are not certain that the proposed plan is consistent with the 'Business as Usual' scenario, or incorporates land use planning compatible with the preferred land use scenario. This would apply equally with the Amador County's current 'U Plan' effort. 10

If you have any questions or would like to discuss our comments in more detail, please contact Michael Robinson at (209) 948-7575 (e-mail: Michael_robinson@dot.ca.gov) or me at (209) 948-7112.

Sincerely,

DANIEL H. BREWER, Chief
Office of Rural Planning & Administration

c: ACTC, Calaveras COG, SJ COG

bc: Design (Mike Hutchinson)
Traffic Operations (Mike Honma)
Headquarters (Gary Arnold)

Caltrans District 10 (CAL10)

CAL10-1. EBMUD acknowledges receipt of the letter from District 4 dated April 2, 2009.

CAL10-2. Please see the Master Responses on the WSMP 2040 and the Demand Study. The cited figure of 415,000 acre-feet is not the Mokelumne watershed average runoff and thus is not the Mokelumne River delivery as this term is used in the comment. The average runoff from the Mokelumne River is about 728,000 acre-feet, as indicated by the Mokelumne Hill gage upstream of Pardee Reservoir. After diversions and losses upstream of the Woodbridge gage, the average flow below Woodbridge Dam is about 415,000 acre-feet per year. On average, approximately 400,000 acre-feet of that amount flows into the Delta.

EBMUD's current rationing triggers (of up to 25 percent) are based on the projected end of September total system storage. During years with below normal runoff, EBMUD implements conservation efforts to preserve and maximize the amount of water stored for the next water year in case the next year is also below normal or worse. EBMUD does not wait until water conditions are critical in order to use water more efficiently, because that would not be prudent planning.

Figure 2-2 shows that in 30 out of 88 years (1/3 of the years) Mokelumne River runoff is dry or critically dry. This is the reason why EBMUD has recognized the need for additional supplies to be available in dry years and why EBMUD is building the FRWP and why it is seeking other supplemental supply projects. EBMUD's demand does not create a dry or critically dry condition on the river. The "normal and above" categories are based on nature and not on EBMUD demand. Through aggressive conservation efforts and other measures, EBMUD seeks to ensure that demand can be met so that the chance for implementation of rationing at 25 percent can be avoided.

CAL10-3. Mokelumne River water rights held by EBMUD and other users are presented in Table 4.2.A-1 on page 4.2.A-4 of the Draft PEIR. The actual estimated amounts of diversion by riparian and senior diverters are presented as a total amount in this table, and separately listing the "maximum appropriative and riparian right" of each water user would not be possible.

CAL10-4. Conservation measures would be implemented continuously in both dry and wet years. The 39 MGD of water that would be conserved under the WSMP 2040 would be in addition to current conservation goals.

CAL10-5. Please see Response FC-5, the Master Response on the WSMP 2040, and Response CAL10-2 above. The WSMP 2040 is intended to meet the District's need for water in dry years; it is not intended to support growth in other outlying jurisdictions and it is not clear how ensuring that EBMUD demands can be met in dry years will induce growth or remove an impediment to growth in areas outside the EBMUD service area.

CAL10-6. Please see the Master Response on the WSMP 2040. The WSMP 2040 is intended to meet the District's Need for Water in dry years; it is not intended to support growth. Present dry-year water availability, as well as projected demand, are both set forth in the document. The difference in the demand and the estimated water availability in a dry year constitutes the additional dry-year need that the WSMP 2040 planning effort seeks to satisfy.

CAL10-7. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component. Impacts to highways, bridges, and access will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with project-level planning for this component.

CAL10-8. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component. Impacts to highways, bridges, and access will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with project-level planning for this component.

CAL10-9. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component. Impacts to highways, bridges, and access will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with project-level planning for this component.

CAL10-10. The methodology used in the WSMP 2040 Demand Study to project water demands relied on the development of a land use database and the determination and application of land use unit demands (LUDs). The land use mapping reflects each community's vision for the future and planned land uses from the respective general plans. LUDs reflect actual metered water consumption on a per acre basis specifically for each of the land use categories. No attempt was made to generate an aggregate LUD, since the process used was meant to be rigorous and detailed, not a generalization of all land uses and consumption patterns. However, if the total base year and projected demands were divided by developed acreage for those years, the aggregate base year unit demand would be 1,684 gallons per day per acre (gpd/ac) for base year and 1,697 gpd/ac for 2040, which is an insignificant difference. These 2040 aggregate unit demands reflect the aggressive conservation savings associated with the WSMP Preferred Portfolio.

Water demand projections, which provided the basis for the preferred portfolio, were coordinated with all of the 22 City and County planning agencies responsible for land use within the EBMUD service area. The local blueprint planning effort (associated with Caltrans-administered California Regional Blueprint Planning Program) proximate to EBMUD's service area, is the Inter-Regional Partnership (IRP) established for five counties including Alameda and Contra Costa counties. Only one IRP zone is within the EBMUD service area: a housing project in unincorporated San Lorenzo, which was most likely designated in the

Alameda County general plan land uses. The methodology used for the Demand Study ensures consistency and compatibility with the preferred land use scenario selected for each general plan which was also analyzed in all related California Environmental Quality Act required documents. Although only one IRP zone is relevant to the EBMUD service area, most of the IRP pilot project goals provide a good summary of land use trends observed in the service area, and documented in the Demand Study.

Inter-Regional Partnership Pilot Project Goals

1. Encourage economic investment, including job creation near available housing.
2. Encourage housing to be located near major employment centers.
3. Encourage development along corridors served by transit and near transit stations
4. Encourage more sustainable and effective transportation between jobs and housing centers.
5. Mitigate the impacts that may be associated with the regional Jobs/Housing imbalance

Source: Inter-Regional Partnership, Jobs/Housing Opportunity Zone On-Going Monitoring Program Methodology (March 2004)

Amador County's UPlan Blueprint Project, funded by Caltrans, uses a GIS-based model to analyze general plan land use alternatives, showing where and how much development is likely to occur under each scenario. The intent is to link land use and transportation planning by helping select a preferred alternative for general plan adoption by identifying where it may be too expensive to supply transportation infrastructure. Since the demand projections reflect the EBMUD service area in portions of Alameda and Contra Costa counties, local land use planning in Amador County would not influence the projections.

CAL 4
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STATE OF CALIFORNIA—BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
111 GRAND AVENUE
P. O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 622-5491
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Flex your power!
Be energy efficient!

April 2, 2009

BAG0010
SCH # 2008052006

Mr. Thomas B. Francis
East Bay Municipal Utility District
375 Eleventh Street, MS 407
Oakland, CA 94607

Dear Mr. Francis:

East Bay Municipal Utility District (EBMUD) Draft Program Environmental Impact Report (PEIR) for the Water Supply Management Program 2040 (WSMP 2040) Project

Thank you for continuing to include the California Department of Transportation (Department) in the environmental review process for the EBMUD WSMP 2040 project. The following comments are based on the PEIR.

As lead agency, the EBMUD is responsible for all project mitigation, including improvements to State highways. The project's fair share contribution, financing, scheduling, and implementation responsibilities as well as lead agency monitoring should be fully discussed for all proposed mitigation measures. This information should also be presented in the Mitigation Monitoring and Reporting Plan of the environmental document. Any required roadway improvements should be completed prior to issuance of the project's building permit. 1

While an encroachment permit is only required when the project involves work in the State Right of Way (ROW), the Department will not issue an encroachment permit until our concerns have been adequately addressed. We strongly recommend that EBMUD work with the Department to ensure that our concerns are resolved during the California Environmental Quality Act (CEQA) process and in any case prior to submittal of a permit application. Further comments will be provided during the encroachment permit process; see the end of this letter for more information regarding encroachment permits. 2

Traffic Impact Study (TIS)

The Department is primarily concerned with impacts to the State Highway System. Specifically, a TIS should identify impacts to the State Highway System. Please see the Department's "*Guide for the Preparation of Traffic Impact Studies*" at the following website for more information: http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/report/tisguide.pdf 3

We look forward to reviewing the TIS, including Technical Appendices for each future project tiered under this project. Please send two copies to the address at the top of this letterhead, marked ATTN: Lisa Courington, Mail Stop #10D. 3

Additionally, future tiered environmental documents should analyze the potential near-term and long-term degradation of pavement conditions due to construction activities on State highways, especially in heavily used areas in the vicinity of project sites. 4

Cultural Resources

If construction activities are proposed within the State's ROW, the Department requires documented results of a current archaeological record search from the Northwest Information Center (NIC) of the California Historical Resources Information System before an encroachment permit can be issued. Current record searches must be no more than five years old.

The Department requires the records search, and if warranted, a cultural resource study by a qualified, professional archaeologist, to ensure compliance with NEPA (if there is federal action on the project), CEQA, Section 5024.5 of the California Public Resources Code (for state-owned historic resources) and Volume 2 of the Department's "*Standard Environmental Reference*", available at http://www.dot.ca.gov/hq/env/index.htm). Work subject to these requirements includes, but is not limited to: lane widening, channelization, auxiliary lanes, and/or modification of existing features such as slopes, drainage features, curbs, sidewalks and driveways within or adjacent to State ROW. 5

Transportation Permit

Project work that requires movement of oversized or excessive load vehicles on State roadways requires a transportation permit that is issued by the Department. To apply, a completed transportation permit application with the determined specific route(s) for the shipper to follow from origin to destination must be submitted to the address below.

Office of Transportation Permits
California DOT Headquarters
P.O. Box 942874
Sacramento, CA 94274-0001

See the following website link for more information:
http://www.dot.ca.gov/hq/traffops/permits/. 6

Encroachment Permit

Any work or traffic control within the State ROW requires an encroachment permit that is issued by the Department. Traffic-related mitigation measures will be incorporated into the construction plans during the encroachment permit process. See the following website link for more information: http://www.dot.ca.gov/hq/traffops/developserv/permits/ 7

To apply for an encroachment permit, submit a completed encroachment permit application, environmental documentation, and five (5) sets of plans which clearly indicate State ROW to the address at the top of this letterhead, marked ATTN: Michael Condie, Mail Stop #5E. 7

Should you have any questions regarding this letter, please contact Lisa Courington of my staff at (510) 286-5505 or via email at lisa.ann.courington@dot.ca.gov.

Sincerely,

lisa Carboni

LISA CARBONI
District Branch Chief
Local Development - Intergovernmental Review

c: State Clearinghouse

CAL4-1. EBMUD acknowledges that it is responsible for implementing project mitigation, including improvements to state highways as necessary to mitigate impacts of projects. Please see the Master Response on Program-level EIR analysis. EBMUD will consult with Caltrans and will thoroughly evaluate potential impacts to state highways in project-level CEQA documentation if and when the District decides to move forward with project-level planning.

CAL4-2. EBMUD will consult with Caltrans regarding any work that would occur within the State right-of-way and associated encroachment permits. The District will thoroughly evaluate potential impacts to state highways in project-level CEQA documentation if and when the District decides to move forward with project-level planning. Please see the Master Response on Program-level EIR analysis.

CAL4-3. EBMUD will consult with Caltrans to determine what studies will be needed, including a traffic impact study. The District will thoroughly evaluate potential impacts to the state highway system in project-level CEQA documentation if and when the District decides to move forward with project-level planning. Please see the Master Response on Program-level EIR analysis.

CAL4-4. Caltrans is responsible for maintaining state highways, including pavement conditions. The District will identify potential impacts involving near-term and long-term degradation of pavement conditions due to construction activities on State highways, especially in heavily used areas in the vicinity of the project sites, in project-level CEQA documentation if and when the District decides to move forward with project-level planning. Please see the Master Response on Program-level EIR analysis.

CAL4-5. The Draft PEIR acknowledges the need to conduct site-specific analysis of cultural resource impacts as part of project-level review for specific components when and if the District decides to move forward with project-level planning (please see page 4.2.H-1). This level of analysis would include records searches, similar to that conducted for cultural resources in and around Pardee Reservoir included in Appendix E of the Draft PEIR (please see pages E-10 through E-22). Please see the Master Response on Program-level EIR analysis.

CAL4-6. EBMUD will consult with Caltrans regarding any work that would occur within the State right-of-way to determine what permits would be needed, including transportation permits and encroachment permits. The District will thoroughly evaluate potential impacts to state highways in project-level CEQA documentation if and when the District decides to move forward with project-level planning. Please see the Master Response on Program-level EIR analysis.

CAL4-7. EBMUD will consult with Caltrans regarding any work that would occur within the State right-of-way to determine what permits would be needed, including transportation permits and encroachment permits. The District will thoroughly evaluate potential impacts to state highways in project-level CEQA documentation if and when the District decides to move forward with project-

level planning. Please see the Master Response on Program-level EIR analysis.

OPR1
090407

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

April 7, 2009

Tomas B. Francis
East Bay Municipal Utility District
375 Eleventh Street MS407
Oakland, CA 94607

Subject: Water Supply Management Program 2040
SCH#: 2008052006

Dear Tomas B. Francis:

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on April 6, 2009, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation."

1

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Terry Roberts

Terry Roberts
Director, State Clearinghouse

Enclosures
cc: Resources Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2008052006
Project Title Water Supply Management Program 2040
Lead Agency East Bay Municipal Utility District

Type EIR Draft EIR

Description The EBMUD proposes to adopt and implement WSMP 2040 which estimates water supply needs to the year 2040, and proposes a program of policy and project initiative to meet those needs. WSMP 2040 identifies and recommends a Preferred Portfolio of solutions to meet dry-year water needs through 2040.
In Normal and Above Normal water years there is sufficient precipitation in the Mokelumne River Basin to provide EBMUD with an adequate supply of water under its Pardee and Camanche municipal water rights. In drier years, there is inadequate Mokelumne River flow conservations and recycling programs. Therefore, it is essential for EBMUD to develop dry-supplies would supplement - but not replace - EBMUD's existing water rights and supply from Mokelumne River.
Increased water demand through 2040 by other water agencies that rely on the Mokelumne Basin for their supply, expected growth within EBMUD's own service area, and the potential effects of climate change on river flow or primary drivers behind why EBMUD cannot rely in the future only upon stored water in its existing reservoirs during times of drought. ESMP 2040 has been prepared to counteract future dry year water supply shortages.

Lead Agency Contact

Name Tomas B. Francis
Agency East Bay Municipal Utility District
Phone (510) 287-1303 **Fax** (510) 287-1295
email tfrancis@ebmud.com
Address 375 Eleventh Street MS407
City Oakland **State** CA **Zip** 94607

Project Location

County
City
Region
Lat / Long
Cross Streets Various locations
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways
Airports
Railways
Waterways
Schools
Land Use

Project Issues

Reviewing Agencies Resources Agency; Department of Conservation; Department of Fish and Game, Region 2; Department of Fish and Game, Region 3; Department of Parks and Recreation; San Francisco Bay Conservation and Development Commission; Caltrans, Division of Transportation Planning; Department of Health Services; State Water Resources Control Board, Division of Water Rights; Department of Toxic Substances Control; Native American Heritage Commission; State Lands Commission; Caltrans, District 4

Note: Blanks in data fields result from insufficient information provided by lead agency.

Document Details Report
State Clearinghouse Data Base

Date Received 02/18/2009 *Start of Review* 02/19/2009 *End of Review* 04/06/2009

Note: Blanks in data fields result from insufficient information provided by lead agency.

Governor's Office of Planning and Research 1 (OPR1) – April 7, 2009

OPR1-1. This comment confirms the dates of the public review period on the Draft PEIR. It does not address the content of the WSMP 2040 Draft PEIR.

State Water Resources Control Board

SWRCB 090504

Division of Water Rights
1001 I Street, 14th Floor ♦ Sacramento, California 95814 ♦ 916.341.5300
P.O. Box 2000 ♦ Sacramento, California 95812-2000
Fax: 916.341.5400 ♦ www.waterrights.ca.gov

Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

In Reply Refer To:
KDM:13156

MAY 4, 2009

Thomas B. Francis
East Bay Municipal Utility District
375 11th Street MS407
Oakland, CA 94607

Dear Mr. Francis:

WATER SUPPLY MANAGEMENT PROGRAM 2040 DRAFT PROGRAM ENVIRONMENTAL IMPACT REPORT (PEIR), SCH# 2008052006

Division of Water Rights (Division) staff has reviewed the PEIR for the Water Supply Management Program 2040. The East Bay Municipal Utility District (EBMUD) has indicated to the Division that it has not fully developed beneficial use at the Pardee Reservoir, and is seeking a time extension for water right Permit 10478 (Application 13156). Consequently, it is unclear whether EBMUD needs additional water supply in the near term. Please clarify this issue. The PEIR does not state a basis for failing to consider use of storage in Comanche Reservoir to offset future needs. This issue should be addressed. 1

The PEIR does not analyze water quality concerns associated with constructing the enlarged Pardee Reservoir. The PEIR indicates that a new dam will be built, and the existing dam breached or removed. The issues of concern are mine waste, mercury, construction related turbidity, etc. The PEIR does not address the scenic issues associated with enlarging Pardee Reservoir, filling the reservoir, and then reducing storage for white water rafting. EBMUD should evaluate how this would change the character of the streambank vegetation and whether a bathtub effect of denuded area would be created. 2 3

The PEIR impacts summary Table 1-1 does not identify whether enlarging Pardee Reservoir, enlarging Lower Bear Reservoir, surface storage in the Eastern San Joaquin Groundwater Basin and Northern California water transfers will have potential impacts to Sacramento and Delta downstream water users. The table entry is blank. The same comment applies to potential impacts to downstream Mokelumne River water users. The table entry is blank. The water supply issues should be covered in the project EIR. It is premature to make findings on water supply issues because these issues are not identified and are not discussed in this document. The project EIR should discuss the issues of alteration of flow pattern, changes in channel forming flows and availability of unappropriated water for the proposed new projects. 4 5

Table 1-1 indicates that the disruption of downstream flow releases associated with enlarged Pardee Reservoir and enlarged Lower Bear River Reservoir are less than significant with mitigation. This conclusion was based on meeting the conditions of the existing fishery agreement (Joint Settlement Agreement) for operation of Pardee and Camanche Reservoirs. New species have been listed as threatened or endangered since the flow agreement was 6

developed and there is no detailed analysis of impacts to newly listed species in the PEIR. Therefore, the conclusion is premature. This issue should be evaluated in the project EIR. 6

The PEIR indicates that issues such as impacts to biological resources have been addressed to the less than significant level by agreeing to conduct surveys later to determine whether identified resources exist, applying to the appropriate permitting agencies, and implementing whatever action the permitting agencies require. Since the PEIR is not based on biological surveys and does not incorporate actual mitigation measures, it is premature to find that impacts to biological resources (both instream resources and terrestrial resources), wetlands, cultural resources, etc. have been mitigated to a less than significant level. The analysis must be conducted in the project EIR. 7

The PEIR should list the State Water Resources Control Board, Division of Water Rights as a responsible agency. A water right permit is needed for enlargement of Pardee Reservoir, enlargement of Lower Bear River Reservoir, storage in a new reservoir in Buckhorn Canyon and surface storage in the Eastern San Joaquin Groundwater Basin. Also, the Division must approve any water transfers. 8

Mitigation measure 5.2.C-11 states that a re-operation plan will be developed later to avoid disruption of downstream flow releases during construction of the enlarged upstream reservoirs. Per the PEIR, the re-operation plan shall note specifically those seasonal restrictions on construction-related outages that cannot be accommodated due to inadequate capacity in Camanche Reservoir to maintain habitat-sensitive flow and temperature regimes. This comment indicates that there may be times that adequate flows and temperatures for maintenance of steelhead at the base of Camanche Reservoir will not occur. This would be an impact to a threatened or endangered species. A detailed mitigation plan should be developed that prevents all impacts to threatened or endangered species prior to finding that the impact is less than significant. 9

Mitigation Measure 5.2.A-4 states that a groundwater monitoring program will be implemented for surface storage in the Eastern San Joaquin Groundwater Basin. Mitigation Measure 5.2.A-5 states that a numerical model will be designed to operate the storage and extraction project such that saltwater intrusion is minimized during project operations. The two mitigation measures reduce impacts to less than significant. The finding of non-significance is premature because the monitoring program does not have any provisions to prevent water quality degradation and the modeling program regarding project operation has not yet been designed. Impacts to water quality need to be evaluated in the project EIR. Moreover, there is no information provided on whether providing surface water in-lieu of using groundwater would better prevent water quality degradation associated with banking high quality surface water in a lower water quality groundwater basin. 10

If you have questions regarding this matter, please contact me at (916) 341-5363.

Sincerely,

Original Signed by:

Katherine Mrowka, Chief
Inland Streams Unit

cc: State Clearinghouse
P.O. Box 3044
Sacramento, CA 95814

KMrowka:dcc: 05/04/09
U:\PERDRV\KMrowka\east bay mud PEIR.doc

State Water Resources Control Board (SWRCB)

SWRCB-1. This comment appears to confuse two water rights that EMBUD has to allow diversions from the Mokelumne River for municipal purposes. They are commonly referred to as: (1) Pardee License (Application 4228, License 11109) and (2) the Camanche Permit (Application 13156, Permit 10478). (See Table 2-2 on page 2-13 of the Draft PEIR for a listing of the two rights and their primary parameters.)

The Pardee municipal right was licensed by the SWRCB in 1981, as License Number 11109. Thus, the process as to the Pardee municipal right is complete, and EBMUD has demonstrated that it has fully developed beneficial use at Pardee Reservoir under the License 11109 right. The SWRCB accordingly issued License 11109 almost thirty years ago, in 1981.

The permit for the Camanche municipal right (Permit 10478) was issued in 1956. While EBMUD has made use of that right, constructing Camanche Dam and Reservoir and other necessary facilities as needed to fully develop water under the Camanche municipal right, and while it has at times directly diverted at the maximum rate and diverted to storage virtually all the maximum annual amount allowed under that water right, because of various factors, EBMUD has not made full use of water under the permit. Consequently, EBMUD filed a time extension petition with the SWRCB seeking additional time to fully use water allowed under Camanche municipal Permit 10478. EBMUD is preparing separate environmental documentation for the extension.

In response to the comment that it is unclear whether EBMUD needs additional water supply in the near term, in normal and above years, sufficient precipitation occurs in the Mokelumne River basin to provide EBMUD an adequate supply of water under its existing rights. However, as noted in the Draft PEIR, in drier years there is inadequate Mokelumne River basin precipitation and river flow to meet EBMUD's needs, even after accounting for demand reductions from EBMUD's aggressive water conservation and recycling programs. EBMUD has developed the WSMP 2040 to ensure that it can meet this dry year water supply shortfall. Thus, the primary purpose of the WSMP 2040 is to identify and recommend solutions to meet dry year water needs through 2040. (Draft PEIR, page 1-1.) By definition, these supplies would supplement – but not replace – EBMUD's existing Mokelumne River water rights. (Draft PEIR, page 2-1). In addition, as reflected in the Draft PEIR and the analysis done for the WSMP 2040, as the projected quantity to be obtained from rationing is lowered to more realistic levels, EBMUD's current as well as projected future dry-year needs necessitate a search for supplemental supplies to meet demand in dry years.

SWRCB-2. Please see the Master Response on Program-level EIR analysis. Impacts on water quality will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with the Enlarge Pardee Reservoir component.

SWRCB-3. Please see the Master Response on Program-level EIR analysis. Impacts on visual resources will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with the Enlarge Pardee Reservoir component.

SWRCB-4. If and when a future supplemental supply project, including Enlarge Pardee Reservoir, Enlarge Lower Bear Reservoir, surface storage in Eastern San Joaquin Groundwater Basin, or a Northern California water transfer, is proposed by EBMUD, project-level CEQA documentation will be completed. That documentation will analyze any potentially significant downstream environmental impacts resulting from the project and impacts to biological resources. Please see the Master Response on Program-level EIR analysis.

The dashed line in Table 1-1 indicates that at this program-level of analysis, a particular Preferred Portfolio component is not expected to have a significant impact with respect to the impact identified in the left column. The key at the bottom of page 1-13 of the Draft PEIR explains the table markings. The entries were not left blank.

SWRCB-5. If and when a future supplemental supply project, including enlarging Pardee Reservoir, enlarging Lower Bear Reservoir, surface storage in the Eastern San Joaquin Groundwater Basin, or a Northern California water transfer is proposed by EBMUD, project-level CEQA documentation will be completed. That documentation will analyze any potentially significant environmental impacts to hydrology, including flow patterns and the environmental benefits provided by existing flows. The future project-level documentation will include detailed information regarding the source of water for the future proposed project.

SWRCB-6. If and when EBMUD moves forward with the Enlarge Pardee Reservoir and/or Enlarge Lower Bear Reservoir components, a project-level EIR will address potentially significant environmental impacts caused by the project, including the project's impacts to downstream flow releases and listed species, as well as species of concern. At this point, any detailed discussions of fishery impacts or mitigation would be speculative, but this will be evaluated in a project-level EIR.

SWRCB-7. If and when EBMUD moves forward with supplemental supply projects, project-level CEQA documentation will be completed. That documentation will analyze any potentially significant environmental impacts caused by the specific project to biological resources, including instream resources and terrestrial resources, wetlands, cultural resources, and other impact areas as required by CEQA and will propose specific mitigation that will include compliance with requirements established by resource agencies pursuant to their authority to protect species and habitat.

SWRCB-8. The Draft PEIR is a program-level CEQA document. EBMUD is not seeking any discretionary approvals from the SWRCB, or any other regulatory agency, at this stage. If and when a future supplemental

supply project is undertaken by EBMUD, project-level CEQA documentation will be completed. At that stage, EBMUD will be in position to determine the specific regulatory approvals needed, and will be able to identify responsible agencies. EBMUD recognizes, for example, that if a long-term water transfer of post-1914 appropriative water rights is proposed, SWRCB approval of the transfer would be required pursuant to the California Water Code. For a future project involving a new reservoir, water rights actions and approvals likely would be required.

SWRCB-9. If and when a future supplemental supply project is undertaken, EBMUD will prepare a detailed analysis of potential fishery impacts and prepare plans to prevent or mitigate impacts to threatened or endangered species. Please see Response NMFS-18.

SWRCB-10. EBMUD concurs with the comment regarding the need to study potential impacts to water quality from the storage of surface water in the Eastern San Joaquin Groundwater Basin. If and when a future supplemental supply project is proposed to be undertaken by EBMUD involving surface water stored in the Eastern San Joaquin Groundwater Basin, project-level CEQA documentation will be completed. That documentation will analyze any potentially significant environmental impacts on groundwater quality caused by the project. EBMUD would also obtain any necessary water quality authorizations. Please see the Master Response on Program-level EIR analysis.

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2.2.3 Local Agencies and Utilities

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OFFICE OF
BOARD OF SUPERVISORS
810 COURT STREET • JACKSON, CA 95642 • (209) 223-6470 • FAX (209) 257-0619

ACBOS1
090331

March 31, 2009

Thomas B. Francis, PE
EBMUD Water Supply Improvements Division
375 11th Street MS 407
Oakland, CA 94607
tfrancis@ebmud.com

Dear Mr. Francis:

The Board of Supervisors for Amador County regrets it is unable to establish a firm position on the WSMP 2040 due primarily to time constraints and insufficient opportunities for public participation for the residents of Amador County. Lacking the time and citizen involvement, we must at this time oppose the preferred portfolio and the draft programmatic EIR. We acknowledge and appreciate the public forum held at the Amador Water Agency office in Sutter Creek on March 16, but unfortunately it was inadequate to accommodate many who desired to participate in the process. However, these factors can be remedied in the following ways. 1

1. We request an extension of the public comment period.

The PEIR exceeds 1000 pages and is a portfolio of four elements: 1) usage conservation, 2) rationing in dry periods, 3) recycling, and 4) supplemental supply. In order for our comments to be meaningful, it is important for us to consider each of the elements and understand their interaction. Reviewing the 1000 page document is therefore not a "once through" experience. Additionally, many Amador residents have had difficulty in obtaining copies of the document. For example, only one copy was delivered to the main County library in both Amador and Calaveras Counties. That copy could not be checked out. Availability was therefore limited. This plan is a thirty year plan. We ask you to allocate an extra thirty or sixty days to provide meaningful public comments. 2

2. We request additional public forums.

The Amador Water Agency office was filled to capacity and many were forced to stand outside, observing through closed windows. Many residents were excluded from the process due to inadequate meeting space. From those participating, many positive ideas were suggested. We are confident that additional public involvement will provide balanced solutions. We extend an offer to help arrange a suitable meeting space for at least one additional public meeting in Amador County to provide an opportunity for all residents to participate.

The residents of Amador County are concerned with the potential loss of recreational, historic and cultural areas with the enlargement of Pardee Reservoir. 3

At the same time, we praise you for your conservation and ground water storage elements. We desire to work with you to establish a portfolio of measures that will provide certainty to the water needs within the EBMUD service area without significant impacts to the residents of Amador, Alpine and Calaveras Counties. 3

Sincerely,

Theodore F. Novelli
Chair, Amador County Board of Supervisors

cc: Senator Dianne Feinstein
Senator Barbara Boxer
Senator Dave Cox
Congressman Dan Lungren
Chuck Cole, Advocation, Inc.
David French, E.N.S. Resources

ACBOS1-1. EBMUD also acknowledges the commenter's opposition to the Preferred Portfolio.

ACBOS1-2. EBMUD extended the public review period for an additional 4 weeks beyond the original 45-day review period. The comment period ended on May 4. The Draft PEIR is available on the EBMUD website. Additional public meetings were held in the Amador and Calaveras County area to receive public comment.

ACBOS1-3. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component. EBMUD will continue to work with the communities in Amador, Alpine, and Calaveras counties.

OFFICE OF
BOARD OF SUPERVISORS
810 COURT STREET • JACKSON, CA 95642 • (209) 223-6470 • FAX (209) 257-0819

ACBOS2
090429

April 29, 2009

Thomas B. Francis, PE
EBMUD Water Supply Improvements Division
375 11th Street MS 407
Oakland, CA 94607
tfrancis@ebmud.com

Dear Mr. Francis:

The Amador County Board of Supervisors appreciates the opportunity to comment on the WSMP 2040 Draft Program Environmental Impact Report (PEIR). We appreciate the extensive effort that has been undertaken, and the vision presented. We commend EBMUD for considering a variety of options to water availability. We support the proposed conservation, recycling, groundwater storage, water transfers, and rationing measures. We also support the exploration and development of the Inter-Regional Conjunctive Use Project under discussion, referred to as "IRCUP Plus." Our chief concern is the proposed enlargement of Pardee Reservoir. Based upon the estimates in the PEIR, it appears the aforementioned measures will be sufficient to meet the water demands during a prolonged drought. Therefore, we cannot support the enlargement of Pardee Reservoir as currently proposed. 1 2

Projected Water Demand

The primary purpose of the WSMP 2040 is to identify and recommend solutions to meet dry-year water needs through 2040. The PEIR estimates that existing supplies in concert with planned conservation and recycled water use would provide sufficient water to meet normal demands through 2040. It is only in a prolonged drought that additional supply is needed. That projection is based upon two factors that need careful examination and consideration in emergency planning. 3

1. The water demand is based upon an assumption that the customer base will increase primarily from infill and higher density occupation. Higher density occupation will increase the water consumption per acre estimate factor.

2. The prolonged drought is based upon a fabrication of the three worst years of historical drought lined up consecutively, an event which has never occurred before.

Planning for a worst case scenario is essential in emergency preparation, but must be evaluated against the measures proposed to protect against the worst case scenario, especially one that has never happened before. Unfortunately, it is difficult from the information publically available to determine just how extreme the planned demand is. The table below compares the historical to the projected demand.

Historical Demand

EBMUD	1930	1940	1950	1960	1970	1980	1990	2000	2005
District Population	460,000	519000	851,000	978,000	1,100,000	1,100,000	1,200,000	1,300,000	1,300,000
MGD	35	44	109	153	220	184	192	205	208
Population Growth		12.8%	64.0%	14.9%	12.5%	0.0%	9.1%	8.3%	0.0%
Annual Pop Growth		1.3%	6.4%	1.5%	1.2%	0.0%	0.9%	0.8%	0.0%
MGD Growth		25.7%	147.7%	40.4%	43.8%	-16.4%	4.3%	6.8%	1.5%
Annual MGD Growth		2.6%	14.8%	4.0%	4.4%	-1.6%	0.4%	0.7%	0.1%
GD/Population	76	85	128	156	200	167	160	158	160

Projected Demand

EBMUD	2010	2020	2030	2040
District Population				
MGD	225.3	251	273	280
Population Growth				
Annual Pop Growth				
MGD Growth	9.90%	11.41%	8.76%	2.56%
Annual MGD Growth				
GD/Population				

* Historical Demand from EBMUD website, Projected Demand from WSMP 2040 PEIR

Unfortunately, current and future population estimates within the EBMUD service area are not available, but from the information that is available, the million gals per day (MGD) growth projection far exceeds the historical growth since 1970. Moreover, population growth for Alameda and Contra Costa Counties which contain the EBMUD district, averaged 0.58 percent per year during the first 8 years of this century. Projecting a water usage based upon a 6% per decade growth, which still exceeds historical consumption, would project a 2040 water demand of 266 MGD without the 32 MGD conservation & recycle measures expected to be implemented by 2020. Adding in the planned conservation & recycle measures, the projected demand based upon a 6% population increase per decade would be 234 MGD or an increase of just 26 MGD over current demand compared to the 280 MGD estimated in the PEIR. 3

Setting aside accuracy of the projected demand, the key to the planning effort is to build off of the expected water availability in a three-year extreme drought. That information appears to vary with reports. From a presentation to the EBMUD Board of Directors on April 24, 2007, the available water supply from the Mokelumne and local runoff would be 131 MGD. The PEIR Figure 2-5 lists the Mokelumne supply as 116 MGD. Perhaps the difference is in local runoff, but if it is, it is should be included in the total water supply. Added to the Mokelumne supply is the 49 MGD drought delivery from the Central Valley Project through the Freeport Regional Water Project. The total baseline supply during a prolonged drought would then range between 165 and 180 MGD. The balance must be found from alternative measures and sources to meet a demand somewhere between the 234 and the 280 MGD estimates or an extra 54 - 115 MGD.

Alternative Water Sources

Alternative sources should be considered based upon a priority. We recommend top priority be given to rationing (22 -53 MGD), conservation (39 MGD), recycling (11 MGD), and Bayside groundwater Phase 2 (9 MGD). Together these projects would yield a potential range from 81 – 4

112 MGD. These sources would be entirely within the control of EBMUD and would provide sufficient water to meet the future demand with the possible exception of an extraordinary population growth combined with an extensive extreme drought.

A comment is warranted on rationing. The range of 22-53 is based upon that proposed across the alternative portfolios. The premise is a range of 10% - 25% rationing. However, the percentage appears calculated from a 212 MGD demand, not the 312 listed as the actual demand or even the 280 MGD after 2020 conservation and recycling measures are deducted. If it were calculated from either the 312 or the 280 MGD, the 10% rationing would actually be 7% or 8% respectively, and the 25% level would actually be 17% or 19% respectively. A small footnote in the Table 2-5 states the "reduction goals are based on the projected average minimum monthly demand for year 2020". The minimum is apparently not the expected. The base demand for the rationing level should be clarified and any additional water savings due to actual percentages should be noted. Notwithstanding the actual percentage, we understand that it is the desire of EBMUD to avoid or at least minimize rationing, but it must be remembered that rationing is only proposed in an extreme condition that has never existed before. 4

Second Level Priority Water Sources

Second level priorities would be the Northern California Water Transfers, the Sacramento Basin Groundwater Banking/Exchange, and the Mokelumne Inter-Regional Conjunctive Use Project/San Joaquin Groundwater Banking/Exchange projects. Northern California Water Transfers could generate between 4.5 to 28.5 MGD. Only Portfolio E fully adopts the transfer potential. We recommend EBMUD diligently seek water transfer partners for dry-year supplies.

Establishing regional partners is not only cost effective, but can provide rich benefits to the environment such as with the Sacramento Basin and the San Joaquin Groundwater Banking/Exchange projects. Declining water tables in underground aquifers provide natural storage facilities for drought years and filling aquifers help prevent saltwater intrusion. The Sacramento Basin Groundwater Banking/Exchange project can provide 4.2 MGD and the San Joaquin Groundwater Banking/Exchange project can provide up to 17.4 MGD. The same water planned to fill an enlarged Pardee could be used to fill the San Joaquin groundwater aquifer. 5

Implementation of the second level priority projects would yield between 26 and 50 MGD. Combined with Level One priorities, the projects would yield a range of 107 to 162 MGD, more than enough to minimize water rationing.

Lowest Priority Water Sources

Least in priority would be the construction of new facilities, namely a desalination plant, construction of the Buckhorn Canyon Reservoir, and enlarging Bear River and Pardee reservoirs. Of these low priority projects, we would recommend beginning with the desalination plant if additional security for water is desired. The desalination plant would be a joint partnership with other regional partners and yield a potential 71 MGD; more than the yield from construction of new or expanded reservoirs. The EBMUD district share would be 20 MGD. If environmental concerns can be mitigated, additional benefits would accrue from removing water from the salinity side of the Bay and gaining experience in future technology for desalination plants. 6

Since the pilot study for the desalination plant is scheduled for completion in June 2009, we recommend waiting the two months for the results before finalizing this PEIR.

Following a desalination plant in priority would be consideration for an enlarged Bear River Reservoir. This too would be considered through regional partnerships. However, numerous concerns surround enlargement of this reservoir, but perhaps fewer than construction of the Buckhorn Canyon Reservoir or enlargement of Pardee.

Enlarging Pardee Reservoir has many of the same challenges as Buckhorn Canyon, including public opposition. The land surrounding Pardee is habitat to a variety of species, including some threatened and endangered species. Providing habitat exchanges through a Safe Harbor agreement does not guarantee the created habitat will be of the same quality as the natural habitat. During the filling years, the extra water retained in the expanded dam would be stored at the expense of downstream flows to the Delta. The surrounding lands have cultural and historic values that are irreplaceable, such as the Middle Bar Bridge and the dam itself. We appreciate the commitment to keep the water level low during the white water rafting season, but as with the Buckhorn Canyon Reservoir, the scenic quality will be diminished due to the ring of bare soil exposed below the high water level. The high water rings will also be visible by the hundreds of motorists that use the scenic Highway 49. Like Buckhorn Canyon, enlarging Pardee Reservoir would involve a long and complex permitting process even if the public concerns could be remedied. While it is hoped that the added water to the Pardee storage facility will be rarely needed, the alteration to the land and its uses will be permanent. 6

Additionally, it would appear that the 1998 Joint Settlement Agreement for the Mokelumne River entitlements would reduce EBMUD entitlement by about 18 MGD if Pardee Reservoir was expanded. We recommend treating the Pardee expansion as you have the Buckhorn Canyon Reservoir: remove it from the preferred portfolio.

Final Thoughts

We would invite EBMUD to join us in a partnership for watershed health. Thousands of gallons of water are taken up by over-dense forests. Forest thinning would also reduce wildfire risk, and thereby reduce soil erosion and debris flowing into the upcountry reservoirs following wildfires. Amador County is forming a Federal Advisory Committee (RAC) that will develop and invest in forest projects. We would invite EBMUD to consider partnership investments with the Amador County RAC when it is organized later this spring or summer.

We appreciate your coming to our special Board meeting on April 24, 2009 to discuss the draft WSMP. We are encouraged by statements made by you at the meeting that you would not go forward with a proposed expansion of Pardee Reservoir without the support of your upcountry partners in Amador and Calaveras Counties. 7

In summary, we support the conservation, recycling, groundwater storage, water transfers, and rationing measures. Based upon EBMUD estimates in the PEIR, we believe construction of additional reservoir storage capacity at Pardee Reservoir is unnecessary. We oppose (1) enlargement of Pardee Reservoir as currently proposed in the draft WSMP, and (2) construction of another reservoir that would have similar negative impacts to those described in

the PEIR for the Pardee Reservoir enlargement. We support the concept of IRCUP Plus, and encourage EBMUD to continue to work with affected stakeholders in furtherance of that project. Finally, we request that your commitment not to proceed with the expansion of Pardee Reservoir without local support be included as a mitigation measure in the PEIR. 7

Thank you for the opportunity to comment on the draft WSMP 2040 PEIR.

Sincerely,

Theodore F. Novelli
Chairman, Amador County Board of Supervisors

cc: Amador Water Agency
file

ACBOS2-1. EBMUD acknowledges the commenter's support for the conservation, water recycling, groundwater storage, water transfer and rationing components of the WSMP 2040 Preferred Portfolio.

ACBOS2-2. EBMUD acknowledges the commenter's opposition to the Enlarge Pardee Reservoir component.

ACBOS2-3. Please see the Master Response on the Demand Study.

ACBOS2-4. EBMUD appreciates the commenter's suggestions regarding the implementation order of projects included in the WSMP 2040 Preferred Portfolio and acknowledges the opposition to the Enlarge Pardee Reservoir component. As stated on page 3-28 of the Draft PEIR, "EBMUD's approach to carrying out the Preferred Portfolio is to develop the supplemental water supply components that are most feasible and environmentally responsible according to circumstances that arise during the 2010 – 2040 planning period". Hence decisions regarding the implementation order of the projects will not be made at the present time, but it is recognized that these projects will be undertaken in phases.

Please see Response FC-5 regarding rationing.

ACBOS2-5. EBMUD appreciates the commenter's suggestions regarding the implementation order of projects included in the WSMP 2040 Preferred Portfolio and acknowledges the opposition to the Enlarge Pardee Reservoir component. Decisions regarding the implementation order of the projects will not be made at the present time, but it is recognized that these projects will be undertaken in phases.

ACBOS2-6. EBMUD appreciates the commenter's suggestions regarding the implementation order of projects included in the WSMP 2040 Preferred Portfolio and acknowledges the opposition to the Enlarge Pardee Reservoir component. As stated on page 3-28 of the Draft PEIR, "EBMUD's approach to carrying out the Preferred Portfolio is to develop the supplemental water supply components that are most feasible and environmentally responsible according to circumstances that arise during the 2010 – 2040 planning period". Hence decisions regarding the implementation order of the projects will not be made at the present time, but it is recognized that these projects will be undertaken in phases.

A potential Buckhorn Canyon Reservoir (Buckhorn Reservoir) was evaluated for consideration in the Preferred Portfolio. Chapter 6 of the Draft PEIR, and specifically the discussion beginning on page 6-12 and continuing through page 6-15, details environmental issues that were identified surrounding a Buckhorn Reservoir element. EBMUD's Board of Directors took that information into account when they made the recommendation, as given during WSMP 2040 Board Workshop Number 9 held on June 24, 2008, not to include Buckhorn Reservoir in the Preferred Portfolio. As with other projects, however, if circumstances change, EBMUD could revisit the project in the future if and when more information is known regarding its feasibility and benefits and impacts.

Regarding the reference to the 1998 Joint Settlement Agreement, the Draft PEIR discusses the JSA, including certain gainsharing provisions applicable to supplemental supplies. EBMUD acknowledges that if and when an Enlarge Pardee Reservoir component enters the project-specific stage, terms of the JSA Agreement could be revisited to determine if and how the project would be operated to comply with the goals of the JSA, which include managing temperatures to protect Mokelumne River fisheries.

ACBOS2-7. EBMUD acknowledges the commenter's support for the conservation, recycling, groundwater storage, water transfers, and rationing components of the Preferred Portfolio as well as for IRCUP+. EBMUD also acknowledges the commenter's opposition to the Enlarge Pardee Reservoir component and another reservoir that would have similar negative impacts.

EBMUD's commitment to not proceed with the Enlarge Pardee Reservoir component without local support is not included as a mitigation measure in the Draft PEIR because obtaining local support does not reduce a physical environmental impact. If and when the District decides to move forward with project-level planning for this component, a project-level EIR will be prepared to identify impacts and mitigation measures to reduce those impacts. Please see the Master Response on Program-level EIR analysis and the Enlarge Pardee Reservoir component.

ACRA
090416

Resolution 2008-09-16

A RESOLUTION OF THE AMADOR COUNTY RECREATION AGENCY, JOINT POWERS AUTHORITY FOR RECREATION IN AMADOR COUNTY RECOMMENDS EAST BAY MUD PRESERVE EXISTING RECREATION OPPORTUNITIES ON THE MOKELUMNE RIVER

WHEREAS, the Amador County Recreation Agency recognizes the Mokelumne River as a valuable local and regional recreational and natural resource; and

WHEREAS, there are many Amador County residents who visit and use the Mokelumne River for family picnics, kayaking, boating, swimming, fishing , birding, photography, gold panning, and other activities each year; and

WHEREAS, the Mokelumne River attracts many visitors to our area for recreation and historical tourism; and

WHEREAS, many visit the historic Middle bar Bridge and its surroundings; and

WHEREAS, substantial sums of public and private money have been spent improving the recreational facilities on the Mokelumne River and restoring the historic Middle Bar Bridge; and

WHEREAS, one of the most beautiful places in Amador County year round is the Mokelumne River Canyon; and

WHEREAS, the City of Jackson, a member of the Amador County Recreation Agency, endorsed the opening of the Mokelumne River's Middle Bar reach to public access for river-based recreation, historical and natural resource; and

WHEREAS, East Bay Municipal Utility District's plan to expand Pardee Reservoir would inundate the Middle Bar Bridge, Middle Bar Run, and part of the Electra Run, reducing the river's value as a recreational, historical, and natural resource; and

1

WHEREAS, the loss of these priceless resources would directly impact the tourism based economy in Jackson and the surrounding communities, taking away these convenient recreational opportunities for locals and visitors alike; and

WHEREAS, the East Bay Municipal Utility District has other options for meeting its 2040 water needs.

NOW, THEREFORE, BE IT RESOLVED the Amador County Recreation Agency Board of Directors recommends the East Bay Municipal Utility District preserve existing recreation opportunities on the Mokelumne River by adopting higher conservation levels and explore other options for creating new sources of water for East Bay Municipal Utilities District customers and Amador County citizens in its 2040 Water Management Plan instead of expanding Pardee Reservoir and destroying the Middle Bar reach of the Mokelumne River

The foregoing resolution was duly passed and adopted by the Board of Directors of the Amador County Recreation Agency at a regular meeting on the 16th day of April, 1009 by the following vote:

AYES: Lee Ard, Debbie Dunn, Richard Forster, Wayne Garibaldi, John Plasse, Tom Sheppard, Linda Rianda, Michael Vasquez
NOES: Pat Fordyce
ABSENT: Karl Knobelauch
ABSTAIN:

Amador County Recreation Agency

Lee Ard, Chairman

ATTEST

Debbie Dunn, Board Clerk

Amador County Recreation Agency (ACRA)

ACRA-1. EBMUD acknowledges the Amador County Recreation Agency resolution opposing the Enlarge Pardee Reservoir component. EBMUD agrees with the commenter that the Mokelumne River is a valuable local and regional recreational and natural resource. Please see the Master Response on the Enlarge Pardee Reservoir component. Project impacts, including recreation impacts and impacts on Middle Bar Bridge, will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with project-level planning for this component.

Please see the Master Response on the WSMP 2040. The Preferred Portfolio includes the second highest level of conservation (Level D) that was considered in the alternatives development process. To implement the next highest conservation level (Level E) and gain the additional 2 MGD in water savings, the cost (total present value) to EBMUD was modeled at approximately $120 million. The total difference in cost between Levels D and E, which includes both costs to the District and costs to the customer, would be approximately $260 million. The additional measures that differentiate Conservation Levels D and E produce increasing incremental costs for the amount of water savings gained and thus, there are apparent diminishing returns in moving from Level D to Level E.

Conservation Level D was selected for inclusion in the Preferred Portfolio because it establishes a conservation goal that is greater than the District's current level of investment and, though it too comes at a high cost, clearly demonstrates that the District is willing to push conservation to the limit of cost-effectiveness. Such an investment ensures that the District will remain a leader in the demand management aspects of future water supply planning.

ACWD 090406

ALAMEDA COUNTY WATER DISTRICT

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April 6, 2009

Mr. Tom Francis
Water Supply Improvements Division
East Bay Municipal Utility District
375 - 11th Street
Oakland CA 94607

Dear Mr. Francis:

Subject: ACWD comments on the Draft Program EIR for the EBMUD Water Supply Management Program 2040

Thank you for the opportunity to comment on the EBMUD Water Supply Management Program 2040 Draft Program EIR (Draft PEIR). ACWD has reviewed the Draft PEIR, and is concerned with one component of the Water Supply Management Program, specifically the Phase 2 Bayside Groundwater Project. As you may be aware, ACWD has had a longstanding concern that the Bayside Project may have significant adverse impacts on ACWD's water supplies in the Niles Cone Groundwater Basin. 1

Background

The Bayside Project facility is located within an alluvial unit that has come to be known as the Southeast Bay Plain Groundwater Basin (SEBP), which includes units previously referred to in past Department of Water Resource Bulletins as the San Lorenzo Cone and San Leandro Cone. The SEBP is hydraulically interconnected with the Niles Cone Groundwater Basin (NCGB) which has been, and will continue to be, a critical source of water supply and water storage for ACWD.

EBMUD first proposed a large scale, 10 to 15 mgd Aquifer Storage and Recovery operation at the Bayside facility. EBMUD released a draft EIR prepared in 2001, to which ACWD expressed significant concerns, citing the interconnection between the SEBP and NCGB, and the expected adverse impacts on the NCGB and ACWD's water supply. As a result of these concerns, ACWD and EBMUD jointly developed a common SEBP-NCGB numeric groundwater model that was used by EBMUD to evaluate Bayside Project impacts on ACWD groundwater supplies in the NCGB. The model demonstrated that a 5 to 10 mgd Bayside Project would have significant impacts on ACWD's groundwater supplies, even with the injection component 2

considered, and thus would necessitate mitigation. Uncertainties in the model calibration were a basis of disagreement between the two agencies over the course of this effort, with ACWD concerned that the model may have under-predicted the impacts that would result from actual Bayside Project operations.

In 2005, EBMUD withdrew the 2001 DEIR in favor of the smaller Phase 1 Bayside Groundwater Project involving 1 mgd of ASR operations, with a potential Phase 2 expansion planned for a later date. The 2005 EIR for the revised Bayside Project included a detailed evaluation of the Phase 1 project. Because of uncertainties regarding the configuration of a future Phase 2 project, the 2005 EIR reviewed the Phase 2 component on a programmatic basis. ACWD had significant concerns regarding both the Phase 1 project and potential Phase 2 expansion and submitted extensive comments on the Project's EIR. As a result, EBMUD made commitments not to proceed with a Phase 2 expansion until the Phase 1 project had been fully tested and the resulting groundwater impacts fully evaluated through a re-calibrated regional groundwater model. EBMUD also committed to developing a separate, project-specific EIR for any Phase 2 expansion of the Bayside Project. 2

ACWD's general comments on the Draft PEIR are provided below, and specific comments are provided in Attachment 1 to this letter. In addition, ACWD's comments on the 2005 Draft EIR for the Bayside Project are relevant to the WSMP Draft PEIR, and are resubmitted as Attachment 2 to this letter.

General Comments

1. The Draft PEIR fails to provide an adequate description of the Phase 2 Bayside Project environmental setting, potential impacts and mitigation measures.

   The 2005 Bayside Project EIR recognized that the Bayside Project may result in significant impacts to ACWD's groundwater supplies in the adjacent Niles Cone Groundwater Basin (NCGB). Accordingly, the 2005 EIR included a description of the NCGB, its importance as an ACWD water supply, and a discussion of the proven hydraulic inter-connection between the SEBP and NCGB. In the programmatic analysis of the Phase 2 project impacts, the 2005 EIR also recognized that the Phase 2 project would have: 1) potentially significant impacts on NCGB groundwater levels such that ACWD operations would be adversely affected; and 2) potentially significant impacts on water quality in NCGB as a result of seawater intrusion and/or movement of pre-existing plumes of brackish groundwater. The 2005 EIR also committed to implementing measures to ensure that these potential impacts to the NCGB would be mitigated to acceptable levels. Potential mitigation measures included, but were not limited to: providing ACWD with potable water or make-up water at its recharge facilities, changing Bayside pumping or injection strategies, operating at lower pumping rates, or stopping Bayside operations altogether. 3

The WSMP Draft EIR fails to provide a description of the Niles Cone Groundwater Basin, potential impacts of the Phase 2 Project on ACWD's water supplies and seawater intrusion in the NCGB, and potential mitigation measures that may be required for the Project. This information is readily available from EBMUD's 2005 Bayside EIR, and the omission of this information in the WSMP Draft PEIR results in an incomplete description and an incomplete evaluation of the potential impacts and mitigation needs for this Project. 4

2. The Draft PEIR fails to recognize the previous EBMUD commitments regarding the analysis of impacts and development of mitigation measures for the Phase 2 Bayside Project.

The 2005 Bayside Project EIR pledges that if EBMUD was to proceed with a Phase 2 Bayside Project, a separate Phase 2 project-specific EIR would be developed following a detailed re-assessment of the feasibility of such a Phase 2 Project. Moreover, the 2005 EIR commits EBMUD to operating the Phase 1 Project for one year and monitoring the actual groundwater level response to these operations prior to conducting such an assessment (and the required project-specific Phase 2 Bayside EIR). These measured groundwater levels (among other information) would then serve as a basis for recalibrating the existing SEBP-NCGB groundwater model. The re-calibrated groundwater model would then be used to estimate impacts on the NCGB under hypothetical Phase 2 operations, and to evaluate mitigation measures for the Phase 2 project-specific EIR. As required under EBMUD's Board of Directors Findings Regarding the Bayside Groundwater Project (November 2005), the recalibration of the groundwater model for Phase 2 Bayside modeling analyses, must be made in coordination with ACWD. Similarly, the determination of the Phase 2 Bayside project–specific EIR's significance criteria for impacts on the NCGB and ACWD water supplies must also be developed in consultation with ACWD. 5 6

As described above, the 2005 Bayside EIR also identified that the Phase 2 Bayside Project could have potentially significant impacts on the groundwater levels that would adversely affect ACWD operations in the NCGB. The 2005 EIR indicated that potential mitigation measures could include providing potable water to the ACWD distribution system or recharge water to ACWD's recharge facilities. 7

The PEIR should list all of these commitments made in the 2005 Bayside Project EIR regarding the development of a Phase 2 Bayside Project. All of these commitments must be honored prior to EBMUD proceeding with the development of the Phase 2 Bayside Project. 8

3. The identification of any net water supply benefits from a Phase 2 Bayside Groundwater Project is premature.

As described in the Draft WSMP PEIR, the Phase 2 Bayside Project is a component of the "Preferred Portfolio" and would provide up to 9 mgd of additional dry year yield for EBMUD. In the analysis of the Preferred Portfolio's ability to meet EBMUD's future dry year needs, the WSMP Draft PEIR assumes that a full 10 mgd (including the 1 mgd from 9

Phase 1) would be available after the Phase 2 Project facilities are constructed. However, Phase 1 operations at the Bayside facility are not expected to commence until September 2009, and as described in Comment No. 2 above, a detailed study on the actual effects of Phase 1 operations on groundwater conditions (monitoring and modeling) in the SEBP and NCGB is a prerequisite to attempts to predict additional net yield (considering possible water supplies that would have to be provided by EBMUD, as mitigation, to ACWD in dry to normal years) from a Phase 2 expansion. Moreover, a separate, project-specific EIR is required for such a Phase 2 Bayside Project, and that EIR would have to focus on a detailed study of potential impacts on the NCGB and associated mitigations. Since the Phase 1 Bayside Project has not even begun operations, it is very premature for the Draft PEIR to assume that a Phase 2 Bayside Project would be feasible or could reliably be expected to produce 9 mgd of water over Phase 1 levels. Instead, the Draft PEIR should correctly characterize the potential Phase 2 yield as ranging from zero to 9 mgd, and develop other components of the Preferred Portfolio to take into account the uncertainties of the Phase 2 yield. 9

Thank you again for the opportunity to comment on the Draft Program EIR for EBMUD's Water Supply Management Program 2040. If you have any questions regarding the general comments in this letter, please contact Eric Cartwright, ACWD's Water Resources Planning Manager, at (510) 668-4206. If you have questions regarding technical comments on groundwater modeling and/or monitoring please contact Steven Inn, ACWD's Groundwater Resources Manager at (510) 668-4441.

Sincerely,

Paul Piraino
General Manager

Attachments

Attachment 1

ACWD's Specific Comments on the EBMUD Water Supply Management Program 2040 Draft Environmental Program EIR

Specific Comments

1. **Page 1-5 (2nd Paragraph), and Page 3-14 (1st Paragraph):**

   The PEIR states that "*the WMSP 2040 Preferred Portfolio would build upon successful operation of the Bayside Groundwater Project Phase 1 by expanding storage capacity by as much as 9 mgd.*"

   ACWD comments:

   - Because Phase 1 has not yet commenced, referring to Phase 1 as "successful" is premature. At least a year of Phase 1 operation, including injection and pumping, would need to ensue before success of Phase 1 can be ascertained in terms of short-term effects on water level responses on the aquifer system among other operational considerations. Even more time could be needed to determine long-term groundwater storage effects, trends in water quality, and subsidence. 10

   - Also, because a Phase 2 project would be an order of magnitude increase in operational intensity from Phase 1, Phase 2 does not merely "build upon" Phase 1, but would be a scale-change in stress on the aquifer system. Accordingly, although monitoring of Phase 1 operations is appropriate and necessary for any contemplation of increasing levels of operation, it will be limited in its usefulness to predict (via a model calibration target or otherwise) effects of a Phase 2 project on the aquifer system because of the order of magnitude difference in stress between Phase 1 and Phase 2. 11

2. **Page 1-11 (Section 1.5 Areas of Controversy)**

   The following should be included in the list of Areas of Controversy:

   - Potential water level and water quality impacts on the Niles Cone Groundwater Basin (NCGB).
   - Adequacy of EBMUD-constructed nested wells to monitor water level responses of Bayside Project operations, in reference to construction difficulties, common with nested wells, in achieving a satisfactory annular seal, particularly, 1) meeting the state standard of two inches of separation distance between adjacent casings and between the casings and adjacent borehole wall, and 2) completely filling with grout the void space between adjacent casings, and between casings and the borehole wall. ACWD communicated these concerns to EBMUD in August 2007 (while the new EBMUD monitoring wells were still in the design phase) and reiterated them in ACWD's May 29, 2008, letter that responded to the Notice of Preparation of this PEIR. 12
   - Parameterization/ calibration of an updated SEBP-NCGB groundwater basin flow model.

3. **Page 1-12**

The following should be added as issues to be resolved:

- Update and recalibration of the SEBP-NCGB groundwater model, in cooperation and coordination with ACWD, after at least one year of operation of Bayside Phase 1
- Analysis of impacts on water supplies in the NCGB
- Procurement of dry year water supplies to ACWD, in anticipation that a good faith analysis of impacts would conclude that such mitigation will be necessary

13

4. **Pages 1-25, 5.2 A-14, and 5.2 A-15 (Potential for Salt Water Intrusion from the Operation of Groundwater Wells)**

According to the PEIR, mitigation for this impact would involve "*numerical modeling to properly design the groundwater storage and extraction project such that salt water intrusion is minimized during project operations.*" The PEIR also refers to monitoring as mitigation for salt water intrusion.

ACWD comment:

14

- It should be acknowledged in the PEIR that salt-related impacts could occur in the Niles Cone as well as in the SEBP, as a result of Bayside Groundwater Project Phase 2. Salt impacts in the Niles Cone, relative to the no-Phase 2 Project alternative, could arise from a loss of water supply (see Specific Comment No. 5, below) and could include, but would not necessarily be limited to, increased new salt water intrusion during drought periods and/or reduced progress of cleanup of pre-existing brackish water in wetter years. Also, pending proper analysis, it would be appropriate to consider, as a potentially significant impact, the aggravation or alteration of pre-existing brackish water plumes in the NCGB as a consequence of Phase 2 injection and/or extraction operations.
- The word "minimized", used on Page 1-25, should be replaced with "reduced to insignificant levels".

15

- Numerical modeling and monitoring are useful tools to predetermine and verify impacts; however, they are not really mitigation unto themselves. The PEIR should make clear that modeling would be a technique employed to pre-determine Project feasibility, capacity, necessary levels of mitigation, and restrictions on levels of operation. The PEIR should also better identify the role of monitoring data; that is, use pre-Phase 2 Project data to help calibrate the model, and then after startup, use data collected over time to help regularly verify impacts and evaluate accuracy of the model under conditions of actual operation.

16

5. **Pages 1-25, 5.2 A-15, and 5.2 A-16 (Potential Effects on Groundwater Supplies and Production of Existing Wells from Recharge and/or Extraction Operations)**

The PEIR states that potential effects on groundwater supplies would be mitigated by inventorying existing wells, modifying these existing wells to accommodate changes in pressure caused by Phase 2 Bayside operations (lower pumps or install pressure-resistant caps), and/or modifying Bayside Phase 2 operations. Furthermore, the language in the PEIR suggests that modification of Bayside Phase 2 operations would be contingent on (post-Phase 2 start-up) discovery of adverse effects determined through monitoring conducted after start-up of the Phase 2 Bayside Project. 17

ACWD Comment:

- The mitigation approach discussed above would not adequately address loss of water supply to ACWD, and does not include any effort to estimate, as part of the process of preparing a future project-specific Phase 2 EIR prior to construction of Phase 2 Project facilities, the effects of Phase 2 operations on the NCGB and ACWD's use thereof.

- Although the above-noted language in the above-referenced pages in the PEIR may be aimed strictly at local well users in the SEBP, discussion on impacts to water supply should be expanded to include impacts on the NCGB and ACWD's groundwater operations. An appropriate expanded discussion should be aimed to address General Comments 1 and 2 of this letter, with discussion of or appropriate reference to 1) the interconnection between the NCGB and the SEBP basin as the physical means for the Bayside Project to affect groundwater conditions in the NCGB, 2) ACWD's use and management of the NCGB, 3) potential impacts of a Phase 2 Project on said ACWD use and management of the NCGB, and 4) commitments in the 2005 EIR to reanalyze impacts and develop mitigation measures for the Phase 2 Project as part of preparation of a future project-specific EIR for the Bayside Phase 2 Project. 18

6. **Page 3-14 (1st Paragraph)**

The PEIR notes that in the 2005 Bayside EIR *2005, "EBMUD sought to assure the local community and other East Bay water interests that the District would proceed with a Phase 2 initiative after gathering operating data on water quality and groundwater level effects that demonstrate that a larger capacity groundwater project could be safely developed in the basin. EBMUD remains committed to that obligation."* 19

ACWD Comment:

The wording above conveys the notion that EBMUD *would proceed* with a Phase 2 Project after gathering data. This is not the same connotation of the language that appears in the 2005 Bayside EIR; i.e., that EBMUD does not know whether or not it would proceed with a Phase 2 Project, but if EBMUD were interested in so proceeding, it would do so only after 1)

reviewing data gathered from actual Phase 1 operations, 2) incorporating said data in recalibration of the SEBP-NCGB groundwater model, 3) recalibrating the SEBP-NCGB model in cooperation with ACWD, and 4) using said model to be estimate impacts on the NCGB in preparation of a future project-specific EIR for Bayside Phase 2. Thus, the wording in the PEIR should be changed to be consistent with that in the 2005 Bayside EIR. 19

7. Page 3-14 (2nd and Final Paragraphs) and Page 3-32

The second paragraph on Page 3-14 makes reference to an assumed water supply yield from a Phase 2 Bayside Project. The operation of Phase 2 is described as extracting water during a drought and injection in years when water is *available*. Page 3-32 includes a brief description of use of water supply model to determine operational feasibility of the preferred portfolio, which includes Bayside Project Phase 2. 20

ACWD Comment:

- With reference to General Comment No. 3 and modeling analysis that predates the 2005 EIR, assumption of a 10 mgd water supply benefit is premature and probably unrealistic, if it considers mitigation to ACWD in the form of dry to normal year water supplies to be un-necessary.

- Injection in wet years would not constitute mitigation, or preclude the need for mitigation to ACWD, because the limitation on groundwater storage capacity in the NCGB would likely limit the potential benefit of the injection component of the Phase 2 Project to offset impacts of the extraction component. However, with that said, adverse water supply impacts to ACWD could be aggravated if injection were to not occur at the appropriate times, rates, and durations. The water supply model, discussed on Page 3-32, should have quantitatively taken into account the effect of a commitment to inject water during non drought periods on availability of its various sources, excluding Bayside Phase 2, during drought periods. However, the PEIR did not discuss injected water in quantitative terms, and did not indicate that injected water quantities were included in the water supply modeling used to evaluate the portfolios. Also, no mention was made of the assumed yield from the Phase 2 Project as being a "net" number, after potential mitigation to ACWD is considered. 21

8. Page 5.2K-14 (Bottom of 3rd Paragraph)

ACWD Comment 22

The words "CEQA documentation" should be replaced by the word "EIR".

Attachment 2

ACWD Comments on the EBMUD 2005 EIR for the Bayside Project

ACWD
ALAMEDA COUNTY WATER DISTRICT

EBMUD Bayside GW Project

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April 28, 2005

East Bay Municipal Utility District
Attn: Angela Knight (MS 407)
375 Eleventh Street
Oakland, CA 94607-4240

Dear Ms. Knight:

Subject: ACWD Comments on the Draft Environmental Impact Report for the Proposed Bayside Groundwater Project

This letter and its attachments provide Alameda County Water District's comments on the Draft Environmental Impact Report (DEIR) for the proposed Phase 1 and Phase 2 Bayside Groundwater Project (Project). ACWD appreciates the effort that EBMUD has taken over the past four years to work cooperatively with ACWD to address many of the concerns that ACWD expressed regarding the original Bayside Project proposal. However, given the DEIR's inadequate description of the impacts associated with an expanded Phase 2 project, as well as the uncertainties about the size, location and timing of this possible second phase, we believe that limiting the EIR, and EBMUD's approval of a "project," to Phase 1 is the only legally appropriate step for EBMUD at this time. As described in this comment letter, ACWD remains concerned with potential impacts of both the Phase 1 and Phase 2 components of the Bayside Project on ACWD water supplies and the Niles Cone groundwater basin.

Organization of this Letter

In order to provide a context for ACWD's concerns with the proposed Bayside Project, this letter provides an overview of ACWD, the Bayside Project history, ACWD's concerns regarding potential Project impacts and recent technical studies to address the potential Project impacts. This letter also includes detailed comments oonthc following concerns with respect to the Bayside Project DEIR:

1. The Phase 1 and Phase 2 project descriptions do not adequately describe the proposed Project;

2. The Significance Criteria do not adequately address drawdown impacts in the Niles Cone groundwater basin and associated ACWD water supply losses;

3. The Phase 1 Monitoring/Modeling Program is inadequate to determine actual Project impacts and effectiveness of mitigation measures;

4. The Phase 1 Impact Assessment incorrectly classifies impacts to ACWD and the Niles Cone groundwater basin as "Less than Significant" and lacks the appropriate mitigation measures;

5. The inclusion of Phase 2 Analysis is inappropriate in the DEIR;

6. The Commitment for Phase 2 Project EIR is inadequate;

7. The Phase 2 Impact Assessment of Niles Cone groundwater basin and ACWD water supply impact is inadequate; and

8. The DEIR Summary of ACWD's 2001 DEIR comments is inadequate.

Each of these items is discussed in greater detail below.

ACWD Background

Alameda County Water District ("ACWD") delivers drinking water to a population of over 320,000 residents in the cities of Newark, Fremont and Union City. ACWD was formed in 1913 for the purpose of protecting underground water in the Niles Cone groundwater basin and conserving the waters of the Alameda Creek watershed. The formation of ACWD was largely in response to a water shortage that occurred as a result of outside entities' exporting local groundwater to the cities of Oakland and San Francisco. Historical over-pumping of the Niles Cone groundwater basin and adjacent groundwater basins resulted in significant seawater intrusion, contaminating much of the aquifer system. Since our inception, ACWD has worked diligently to protect and restore this critical, but vulnerable, resource. The Niles Cone groundwater basin currently provides up to 50% of the water supplies in the ACWD service area. Understandably, protection of this vital resource continues to be of utmost importance to ACWD.

Summary of Project History and Project Understanding

In 2001 EBMUD released a Draft Environmental Impact Report ("2001 DEIR") that stated that EBMUD planned to develop a new well field (7 to 10 wells) in the City of San Leandro and the unincorporated area of San Lorenzo. This well field would tap the deeper aquifer system in what is referred to as the South East Bay Plain groundwater basin. This well field would provide a dry year supply of up to 15 million gallons per day (10,000 to 15,000 acre-feet per year) to the EBMUD service area. The 2001 DEIR presented two operating alternatives: an injection/extraction alternative (utilizing aquifer storage and recovery wells); and an extraction-only alternative (groundwater extraction without recharging the groundwater system). According to the 2001 DEIR, the preferred operating alternative was the injection/extraction alternative.

Substantial concerns were expressed by ACWD, the City of Hayward and others prior to and during the public review of the 2001 DEIR (see Attachment A, ACWD's Comment Letter on the 2001 DEIR). As a result of those concerns, EBMUD worked cooperatively with ACWD and Hayward from 2001 through 2004 to further evaluate the proposed project (see description below of technical studies completed to date). Rather than finalize or re-circulate the 2001 DEIR, EBMUD has chosen to develop and circulate a new Draft EIR for the proposed project ("2005 DEIR" or "DEIR"). As described in the 2005 DEIR, EBMUD is proposing a two phased approach to develop the Bayside Groundwater Project. Under Phase 1, an existing EBMUD well will be utilized to provide a maximum annual dry year water supply of 1,100 acre-feet. This well will have a capacity of 2 million gallons per day (mgd), but extraction will be limited to 6 months per year, resulting in an extraction amount of no more than 1,100 acre-feet per year. The Phase 1 operations will also include injection of 1 mgd at this well when EBMUD's water supplies in the Mokelumne and local watershed are sufficient to allow for injection of excess water.

The 2005 DEIR also includes a Phase 2 Bayside Project that will allow for an expansion of the extraction capacity of the project up to 10 mgd. As stated in the DEIR, EBMUD plans to use information gained during the Phase 1start-up operations to further evaluate the potential for a Phase 2 expansion. The DEIR acknowledges that currently the Phase 2 component is uncertain in terms of location of the facilities, their capacities and operations. As such, the DEIR states that in the event that EBMUD chooses to move forward with a Phase 2 Bayside Project, a new DEIR will be developed and circulated to address potential impacts of the expanded project.

Summary of Niles Cone Groundwater Basin Operations and ACWD Concerns Regarding Project Impacts

ACWD's concerns with the proposed Project relate to potential impacts to the adjacent Niles Cone groundwater basin, underlying ACWD's service area. Groundwater from the Niles Cone groundwater basin is one of three primary sources of supply for ACWD, along with imported water supplies from the State Water Project (SWP) and San Francisco's Hetch-Hetchy system. ACWD replenishes the groundwater basin at our groundwater recharge facilities with local runoff supplemented by imported SWP supplies. ACWD recovers this stored water for potable use at our production wells. Recharge water not only ensures an adequate supply for our production wells but also maintains flow gradients necessary to prevent a recurrence of seawater intrusion, keep brackish groundwater away from our well fields, and flush existing brackish water from the groundwater basin. ACWD manages the Niles Cone groundwater basin such that groundwater elevations in the upper aquifer (Newark Aquifer) are typically maintained between 10 feet and 20 feet above mean-sea-level (msl) under normal hydrologic conditions. During dry years the groundwater elevations may be lowered below 10 feet msl. However, because of concerns about seawater intrusion from the adjacent San Francisco Bay, the minimum operating groundwater elevation in the Newark Aquifer is approximately 3 feet msl. Based on a maximum operating range of between 3 feet and 20 feet msl, the maximum usable storage in the Niles Cone groundwater basin is limited to approximately 17,000 acre-feet (1 foot of groundwater in the Newark Aquifer equates to approximately 1,000 acre-feet of usable storage in the groundwater basin).

Because of the proven hydraulic connection between the Niles Cone and the South East Bay Plain groundwater basins, ACWD has long been concerned about potential water supply and water quality impacts to ACWD and the Niles Cone groundwater basin that may occur as a result of the proposed Bayside Project.

Examples of potential long-term impacts to the Niles Cone groundwater basin include:

- Saltwater Intrusion: The Niles Cone groundwater basin is in direct hydraulic connection with San Francisco Bay. Under historical conditions, a significant amount of contamination of the aquifers occurred due to saltwater intrusion. ACWD has long managed the groundwater basin to prevent additional saltwater intrusion, and to reverse these impacts through ACWD's Aquifer Reclamation Program and groundwater recharge program. Groundwater extraction at the Bayside Project may cause a decline in Niles Cone groundwater levels to below sea-level, potentially inducing renewed saltwater intrusion.

- Brackish Groundwater Movement: Large pockets of trapped brackish groundwater currently exist in all of the major aquifers in the Niles Cone groundwater basin. ACWD operates the groundwater basin to ensure that this trapped brackish water does not migrate toward ACWD's well fields, and to reclaim contaminated portions of the aquifers through the Aquifer Reclamation Program. Groundwater extraction (or injection) activities by the Project may change groundwater levels and gradients in the Niles Cone groundwater basin, thereby resulting in the lateral or vertical (i.e. from one aquifer to another) movement of the brackish groundwater.

Examples of potential impacts to ACWD operations include:

- Loss of ACWD Water Supplies: Groundwater extraction at the Bayside Project may result in a decline in groundwater levels in the Niles Cone groundwater basin, resulting in a direct loss of ACWD's water supplies. For example, a decline in groundwater levels may compel ACWD to reduce groundwater pumping at either our Mowry Wellfield or Aquifer Reclamation Program wells in order to: (1) prevent seawater intrusion; (2) prevent the spreading of existing plumes of trapped brackish groundwater; and/or (3) maintain target groundwater levels in the Niles Cone in order to ensure adequate supplies for subsequent years.

- Overflow/Artesian Conditions: ACWD currently operates the Niles Cone groundwater basin to ensure that the basin is not recharged beyond its capacity to store water. Over-filling of the basin as a result of the Bayside Project's injection activities may result in (1) water supply losses through groundwater "overflows" to Alameda Creek and/or excessive groundwater outflows to San Francisco Bay and/or (2) artesian conditions in local wells or springs and possible damage to overlying properties.

- Increased Pumping Costs, Energy Use and Loss of Production Capacity: Groundwater level declines within the Niles Cone groundwater basin that occur as a

result of the Bayside Project will result in increased groundwater pumping costs for ACWD as well as increasing our demand for electric energy needed to power the pumps, and a potential loss in well output due to increased lift requirements.

Summary of Technical Studies Completed Since Release of the 2001 Draft EIR

As part of ACWD's review of the 2001 Draft EIR, substantial concerns were expressed by ACWD regarding the adequacy of the technical evaluation of potential impacts on the Niles Cone groundwater basin and ACWD water supplies. A key comment made by ACWD on the 2001 Draft EIR was that, in order to comply with CEQA for the Bayside Project, EBMUD should conduct additional technical studies to evaluate these potential impacts. Specifically, ACWD indicated that the technical studies should include:

- A hydrogeologic assessment of the boundary between Niles Cone and South East Bay Plain groundwater basins;
- Aquifer pump tests to further characterize the nature of this boundary;
- Development and utilization of a regional groundwater model covering both the Niles Cone and South East Bay Plain groundwater basins; and
- Evaluation of potential impacts on ACWD and the Niles Cone under a range of hydrologic and Project operating conditions.

From 2001 through 2004, EBMUD worked cooperatively with ACWD and the City of Hayward to conduct technical studies to address these concerns. The following studies were completed under the oversight of a Technical Review Committee consisting of ACWD, EBMUD and City of Hayward staff:

Hydrogeologic assessment and aquifer pump test project (2002-2003): In April 2003, Luhdorff and Scalmanini Consulting Engineers completed a hydrogeologic assessment and aquifer pump tests in the boundary area between the South East Bay Plain and Niles Cone groundwater basins. A key conclusion from the hydrogeologic assessment was that there appeared to be a "transition zone" within which the deep aquifers in both groundwater basins converged. The subsequent aquifer pump tests confirmed that there is a "definite hydraulic connection" between the deep aquifers in the South East Bay Plain and Niles Cone groundwater basin. Specifically, pumping test wells in the South East Bay Plain groundwater basin resulted in groundwater level declines in the adjacent Niles Cone groundwater basin.

Development of a regional groundwater model (2003-2004): Based on the results of the hydrogeologic assessment and aquifer pump tests, EBMUD and ACWD worked together to develop a single, regional groundwater model that covered the Niles Cone and South East Bay Plain groundwater basins and the inter-connection between these basins. In order to develop this model, the consulting firms of WRIME and CH2M Hill were retained to expand ACWD's existing groundwater model of the Niles Cone groundwater basin into the South East Bay Plain groundwater basin. This new, expanded groundwater model is based on the Integrated

Groundwater Surface Model (IGSM) code and is called the Niles-East Bay Plain Integrated Groundwater Surface Water Model (NEBIGSM). The NEBIGSM is capable of simulating groundwater flow and groundwater levels in all of the major aquifers in both groundwater basins. Key input data to the model include aquifer thicknesses and hydraulic characteristics, land and water use, rainfall, groundwater pumping and artificial recharge. Based on these and other input data, the model simulates groundwater recharge, groundwater flow, and groundwater levels throughout the groundwater basins. Although much of the data needed to develop the regional groundwater model in the South East Bay Plain Basin was not readily available (i.e. information on aquifer characteristics, historical groundwater pumping, etc.), the study team used the best available information and engineering judgment to estimate missing information. In addition, through a model calibration process, input data to the model was further refined in order to match historically measured groundwater elevations from 1964-2000 with model-simulated groundwater elevations.

A key limitation of the NEBIGSM is that, because there has not been a significant pumping stress on the groundwater basin in the Bayside project area within the model calibration period (1964-2000) and that there are significant data gaps in the South East Bay Plain groundwater basin, it is not presently possible to verify the accuracy of the model in simulating the proposed extraction/injection operations of the Bayside Project. ACWD has recognized that the NEBIGSM, in its current state, is a valuable tool for estimating potential groundwater impacts of the proposed smaller Bayside Project (Phase 1 – 1 mgd), but that the model may not be entirely accurate and will require updating and re-calibration as more information is learned from the Phase 1 project operations.

Evaluation of 5 mgd and 10 mgd Bayside Groundwater Project Effects and Mitigation (2003-2004): The Technical Review Committee and its consultants used the NEBIGSM to conduct a preliminary evaluation of the potential impacts of the Bayside Project on the Niles Cone groundwater basin and ACWD's water supplies. The focus of these technical analyses was on two Bayside Project scenarios: 5 mgd extraction scenario and 10 mgd extraction scenario. Both of these scenarios were based on "conjunctive use" operations whereby EBMUD would also inject water in wet years. The modeling analyses was based on 1922-2000 historical hydrologic conditions superimposed with projected future water supply operations in both the Niles Cone and South East Bay Plain groundwater basins. The results of this preliminary evaluation indicated that either Bayside Project scenario (5 mgd or 10 mgd) would have significant impacts on ACWD's water supplies and the Niles Cone groundwater basin. For example, under the 5 mgd scenario, the modeling analyses indicated that the Bayside Project would result in a decline in groundwater levels of 3.7 feet in the Newark Aquifer in the Niles Cone groundwater basin. Under the 10-mgd scenario a peak groundwater level decline of 7.7 feet was estimated. Based on operating levels of 3 to 20 feet mean-sea-level in the Newark Aquifer, these impacts would result in a 22% and a 45% loss in local groundwater supplies available to ACWD in dry years under the 5 mgd and 10 mgd Bayside Project scenarios, respectively. These impacts would occur during drought conditions when the local groundwater supply is most critical to ACWD.

Utilizing the NEBIGSM, EBMUD and its consultant (CH2M Hill) also conducted preliminary analyses of mitigation measures. This mitigation analysis indicated that EBMUD would have to provide ACWD with a new, supplemental water supply during the dry years when the ACWD's

groundwater supplies would be impacted by the Bayside Project. In order to prevent a significant impact, ACWD indicated that mitigation should include providing sufficient water supplies to ACWD such that there would be no resultant groundwater declines in the Newark Aquifer in the Niles Cone groundwater basin. To meet this criterion, an annual modeling analysis would be required to determine the amount of mitigation water needed under the specific hydrologic conditions occurring in that year.

As an alternative, EBMUD requested that ACWD consider receiving a uniform quantity of dry year mitigation water. The modeling analyses indicated that under this alternative approach, ACWD would receive adequate dry year supplies, as estimated within the range of accuracy for the groundwater model. ACWD concurred with this request, with the proviso that the model-simulated cumulative drawdown impact does not exceed one-half foot (0.5 feet) in any given year, and that this model-simulated drawdown does not last for greater than 12 consecutive months. With this proviso, the modeling analyses indicated that EBMUD would need to provide ACWD with up to 1.6 mgd and 3.2 mgd of new, supplemental dry year supplies to mitigate for the drawdown impacts of a 5 mgd and 10 mgd Bayside Project, respectively. It should be noted that these analyses were preliminary. After completion of the draft analyses, ACWD provided significant comments to EBMUD and CH2M Hill on the methodology and results presented in the draft memorandum, "Bayside Groundwater Project–Evaluation of Project Effects and Mitigation Measures" (CH2M Hill, January 22, 2004). However, to our knowledge these analyses and memorandum were never finalized. Rather, EBMUD chose to move forward with a smaller (Phase 1 - 1 mgd) Bayside Project while still considering a larger project (Phase 2 – up to 10 mgd) for implementation at a later date.

ACWD Comments on the 2005 Bayside Project DEIR

1. <u>The Phase 1 and Phase 2 project descriptions do not adequately describe the proposed Project:</u> CEQA Guidelines require that a project description include the precise location of the project, a clearly written statement of objectives and a "general description of the project's technical, economic and environmental characteristics." CEQA Guidelines § 15124. "An accurate project description is necessary for an intelligent evaluation of the potential environmental effects of a proposed activity." *McQueen v. Board of Directors of the Mid-Peninsula Regional Open Space District*, (6th Dist. 1988) 202 Cal. App. 3d 1136, 1143; *see also County of Inyo v. City of Los Angeles* (3rd Dist. 1977), 71 Cal. App. 3d 185, 192-93 (holding that "A curtailed or distorted project description may stultify the objectives of the reporting process. Only through an accurate view of the project may affected outsiders and public decision-makers balance the proposal's benefit against its environmental cost, consider mitigation measures, assess the advantage of terminating the proposal (i.e., the "no project" alternative) and weigh other alternatives in the balance.")

   As described below, the DEIR does not adequately describe the proposed project. EBMUD should revise the project description to fully describe the proposed Phase 1 and Phase 2 Bayside Project, as noted below, or simply delete Phase 2 from the document.

   A. <u>Extraction Capacity is inconsistently described</u>. The DEIR is inconsistent in how the Phase 1 Bayside Project extraction capacity is characterized. In some cases, the

capacity is characterized as "average 1 mgd" (Table ES-1) and in other cases the project capacity is described with the statement that the "average annual extraction would not exceed 1 mgd," suggesting that the average capacity would not exceed 1 mgd over a long-term period (i.e., multiple years). The latter description could be interpreted to mean that the extraction could exceed 1 mgd (1,100 acre-feet) in any given year, as long as the average annual extraction did not exceed 1 mgd over the long-term.

The DEIR should be very clear and consistent throughout the document in describing the Phase 1 project capacity as having a maximum annual extraction capacity of no greater than 1 mgd (1,100 acre-feet). Similarly, the DEIR should correctly characterize the Phase 2 project description. The DEIR describes the Phase 2 project as having an "average" capacity of up to 10 mgd. This should be clarified to state that the maximum annual extraction capacity of the Phase 2 project will be no greater than 10 mgd.

B. The injection component of the project is improperly characterized in the project description. The DEIR project description states that, "The Bayside Groundwater Project involves the injection of local runoff and water conserved in the Mokelumne River in wet years into the SEBPB for later recovery and use during a drought." This implies that the Bayside Project would be a groundwater banking project whereby water is "banked" in the groundwater basin prior to being extracted for use in dry years. Actually, the project operations has no such requirement that water be banked prior to extraction, nor is there a requirement that a long-term balance be maintained such that the amount of "injected" water be equal to the amount of extracted water. In fact, the extraction component of the project may become operational before any water is injected. As such, the project description should be modified to correctly and completely describe the project operations.

C. The project description misrepresents the uses of the Phase 1 yield. The project description implies that the Phase 1 project would provide up to 1 mgd of new, dry year supplies to EBMUD customers. However, as described in Section 1.4.4 (Mokelumne River Water Supply), 20% of the Bayside Project's yield "will result in a corresponding reduction in Mokelumne water import during droughts..." under a "gainsharing" provision in EBMUD's Mokelumne River FERC hydropower license. This means that 20% of the Bayside Project yield will effectively support Mokelumne River fisheries in lieu of providing dry year supply for EBMUD customers. The project description should be very clear on this point.

D. The conditions triggering the extraction and injection components of the project are not clearly specified. The DEIR's description of the extraction and injection operations is not adequate to determine when these operations may occur. On page 2-15 "Sustained Operation" the DEIR states that, "During dry years, EBMUD would recover both injected water and native groundwater....". However, no other description of what constitutes a "dry year" is provided in the text. In Table 2-1, under "Operational Parameters," it is stated that, "Drought Supply - May initiate operation when October reservoir storage is projected to decline below 500,000 AF". Neither of these

descriptions is sufficient to determine when actual extractions would occur. The DEIR should provide more specifics on what conditions will trigger extraction at the Bayside Project, and at what frequency EBMUD anticipates these conditions to occur.

Similarly, the description of the injection component of the operation is not adequate to determine when these operations would occur. The DEIR states that conditions in which injection would take place include "1) active flood releases on the Mokelumne River, and 2) sufficient runoff in the local watershed." (page 2-15) However, the DEIR does not provide definitions of what constitutes "active flood releases" on the Mokelumne nor what constitutes "sufficient runoff" in the local watershed. The DEIR should provide more detailed descriptions of these conditions, and specifically, how EBMUD proposes to determine if these conditions are met, and what guarantees will be in place that commit EBMUD to injection at the Bayside Project when these conditions are met.

2. The Significance Criteria do not adequately address drawdown impacts in the Niles Cone groundwater basin and associated ACWD water supply losses. CEQA requires that an EIR consider and discuss all significant environmental impacts of the project. Pub. Resources Code §§ 21100, et seq., CEQA Guidelines §§ 15126 and 15126.2. As lead agency, EBMUD is "encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect . . . ." CEQA Guidelines § 15064.7(a).

   Although ACWD appreciates EBMUD's desire to improve the dry year reliability for its service area, this improvement in dry year reliability should not be made at the expense of ACWD's dry year groundwater supplies. As such, it has long been the position of ACWD that the Bayside Project should not result in the drawdown of the Newark Aquifer in the Niles Cone groundwater basin. The description of what constitutes a significant impact (Section 3.1.4.1) should specifically state that any groundwater level decline in the Newark Aquifer in the Niles Cone groundwater basin would result in a significant impact to ACWD.

   ACWD has long managed the Niles Cone groundwater basin to maintain groundwater levels in the Newark Aquifer above sea-level. This is required to prevent seawater intrusion from the adjacent San Francisco Bay and to provide for annual and dry year water supplies. Through ACWD's long-term management of this groundwater basin and through groundwater modeling, a relationship between usable groundwater storage and Newark groundwater levels has been developed, in which every foot of decline in Newark Aquifer levels equates to a water supply loss of approximately 1,000 acre-feet.

   Because of the importance of the Niles Cone groundwater supplies for meeting ACWD's dry year needs, the 2005 DEIR should state that any drawdown in the Newark Aquifer levels in dry year conditions is a significant impact and EBMUD must provide mitigation to ACWD to address this impact. For the purpose of modeling of impacts and developing and analyzing mitigation measures only, and in recognition of the limitations of the model's accuracy, ACWD has stated that a model-simulated cumulative drawdown of no greater than 0.5 feet in

the Newark Aquifer would be acceptable to use as a significance criterion. In addition this model-simulated drawdown should not last for more than 12 consecutive months. This significance criterion should apply to both the Phase 1 proposed project and any future Phase 2 Bayside Project.

3. The Phase 1 Monitoring/Modeling Program is Inadequate to Determine Actual Project Impacts and Effectiveness of Mitigation Measures. Due to the impacts of the Bayside Project on the Niles Cone, a comprehensive monitoring program is required to assess actual effects/impacts of the Bayside Groundwater Project over the life of the Project. Monitoring should include the following major elements: 1) regular periodic collection of water level data throughout the Niles Cone and South East Bay Plain groundwater basins, 2) regular periodic collection of groundwater quality data in the Niles Cone groundwater basin, and 3) groundwater flow modeling. Groundwater modeling of updated historical conditions should be performed each year to distinguish Bayside Project impacts from other phenomena that may have affected measured water levels in the Niles Cone groundwater basin since startup of Bayside Project operations. Hence, modeling should be considered an element of the Monitoring Program. The model will also be needed to simulate future conditions under Phase 2 operations if EBMUD determines to proceed with a Phase 2 project. Future use of the model to re-predict future Phase 1 impacts will also be required if the model requires recalibration.

   Achievement of these objectives requires verification that the groundwater flow model is sufficiently accurate under actual Bayside Project operations over the short and long-term. Annual verification would confirm model accuracy or would trigger the need to recalibrate/improve the model, thereby providing the process by which confidence replaces uncertainty in the model over time. This verification should be achieved by a comparison of model-simulated results of the updated historical period and the model under Bayside Project operations. In order for the model to be reliable, it should demonstrate accuracy in simulating groundwater peizometric heads (water levels) in the South East Bay Plain groundwater basin (from which the stresses would emanate) as well as in the Niles Cone groundwater basin. Hence, a sufficient network of monitoring wells, and a program for reasonably frequent measurements of water levels in these wells, are required in both the South East Bay Plain and Niles Cone groundwater basins. In addition to providing the means to assess accuracy, such water level data over time, under actual Bayside Project operations, would also provide the knowledge base for recalibrating the model.

   Water quality should also be monitored in the Niles Cone to ensure that the Project is not causing, or contributing to, unexpected water quality impacts, such as migration of salts in abandoned wells, or mobilization of a brackish water plume. Such impacts could be evidenced by unusual or unexpected water quality trends in individual wells or water quality patterns given by plume maps. Potentially, a solute transport model could be employed in the future to aid in interpretation of water quality data.

   The DEIR pledges monitoring, model verification, and cooperation with the City of Hayward and ACWD in performing this work and sharing data. The DEIR also pledges to recalibrate the model at least one time between Phase 1 and Phase 2. However, the DEIR is too vaguely

worded on how these tasks are to be carried out, and lacks key procedures, schedule, and details of how the different elements of the monitoring program fit together. In addition, the level of effort pledged in the DEIR toward these tasks is insufficient. For example, in Section 2.4.1.2 (page 2-6 to 2-15), the DEIR pledges regional water level monitoring for the start-up period, but is vague on whether or not it would be also be carried out long-term. Also, the DEIR pledges model recalibration only once, sometime between Phase 1 and Phase 2. However, the model may need to be recalibrated more than once, depending on: (1) the results of an assessment of model accuracy under actual Bayside Project Phase 1 operations over the life of the Project and (2) new information developed on the groundwater basin by USGS or others.

Another deficiency in the monitoring program is that the network of monitoring wells in the SEBP is too sparse to meet future recalibration needs. Uncertainty in the current model calibration stems in part from limitations in available water level data over the calibration period of 1964-2000. Moreover, some of the wells that were used in the calibration may not exist today. ACWD has a robust water quality and water level monitoring program within the Niles Cone groundwater basin, and EBMUD should commit to utilizing monitoring data collected by ACWD as part of the overall monitoring of the Bayside Project. EBMUD should also focus most of its water level and quality data collection effort on the South East Bay Plain groundwater basin. Attachment B provides additional details on how the deficiencies in the DEIR's Monitoring Program could be addressed by EBMUD.

4. <u>The Phase 1 Impact Assessment incorrectly classifies impacts to ACWD and the Niles Cone groundwater basin as "Less than Significant" and lacks the appropriate mitigation measures.</u> In addition to identifying all significant impacts of a project, as a lead agency EBMUD also has a duty to provide measures that will avoid or mitigate all significant adverse environmental impacts that may occur as a result of the proposed project. CEQA Guidelines state that: "An EIR shall describe feasible measures which could minimize significant adverse impacts . . . ." CEQA Guidelines § 15126.4(a)(1). "Mitigation" as defined under CEQA Guidelines § 15370, includes:

    - Avoiding the impact altogether by not taking a certain action;
    - Minimizing impacts by limiting the degree or magnitude of the action;
    - Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment;
    - Reducing or eliminating the impact over time by preservation and maintenance operations;
    - Compensating for the impact by replacing or providing substitute resources or environments.

In evaluating the groundwater–related impacts to ACWD and the Niles Cone Groundwater Basin (Phase 1 Impact 3.1-2 and Phase 1 Impact 3.1-5), the DEIR relies solely on the results of groundwater modeling to determine the potential significance of the impacts. Based on this modeling, the DEIR concludes that there would be no significant impacts to Niles Cone groundwater basin or ACWD under the Phase 1 Project.

However, the DEIR should recognize that the model (NEBIGSM), as currently calibrated, may not be entirely accurate and may be under-predicting the actual impacts. The DEIR recognizes the potential inaccuracies in the model when it states that the model will be re-calibrated after the Phase 1 start-up operations are complete. Therefore, the DEIR should classify the potential groundwater-related impacts to ACWD and the Niles Cone (Impacts 3.1-2 and 3.1-5) as "potentially significant". Correspondingly, the DEIR should also include provisions for mitigation in the event that the actual impacts are greater than that currently predicted by the model.

The actual impacts should be determined through monitoring and by updating and re-calibrating the model to the most recent operational and hydrologic conditions. Specifically, in the event that, through groundwater monitoring and subsequent groundwater modeling, it is determined that the actual groundwater level declines in the Newark Aquifer exceed the significance criterion, as stated by ACWD in Comment No. 2 above, then EBMUD should commit to providing mitigation to ensure that this significance criterion is not exceeded. Similarly, EBMUD should commit to mitigate in the event that monitoring and/or modeling indicate that the Project has resulted in saltwater intrusion, long-term movement of brackish water plumes in the Niles Cone groundwater basin, vertical movement of salts or other contaminants between aquifers, and/or impacts related to artesian conditions during Bayside Project injection. Potential mitigation measures that should be included in the DEIR include the following:

- Potential mitigation measures for drawdown impacts that should be incorporated into the DEIR include: (1) reducing and/or terminating Phase 1 Project extraction and/or (2) providing ACWD with a new, supplemental dry year water supply.

- Potential mitigation measures for impacts related to artesian conditions due to Bayside injection include: (1) capping of artesian wells and (2) limiting injection rates to prevent other adverse impacts that may occur as a result of Bayside injection.

- Potential mitigation for the vertical movement of contaminated water between aquifer layers in the Niles Cone groundwater basin include: (1) identification and destruction of abandoned wells that may be allowing for cross-contamination between the aquifer layers and (2) reducing and/or terminating Phase 1 Project operations to prevent vertical migration of contaminants through leaky aquifers.

- Potential mitigation for the lateral movement of contaminated water within an aquifer includes reducing and/or terminating Bayside Project operations to prevent significant movements of the existing plumes. In addition, because groundwater modeling has shown that the Bayside Project injection operations are required to offset an increase in plume movement due to the Project's extraction operations, the DEIR needs to commit EBMUD to injection operations at the frequency and rate currently anticipated in the DEIR. In the event that EBMUD does not inject according to these plans, the extraction operations should be reduced correspondingly such that there will be no impact to the later movement of plumes in the Niles Cone groundwater basin.

5. The inclusion of Phase 2 Analysis is inappropriate in the DEIR. The inclusion of the "Phase 2" analysis in the DEIR is inappropriate. EBMUD has stated that it is not certain when, or even whether, it will proceed with Phase 2 of the project. If it were to proceed, the scope could be as small as 2 mgd or as large as 10 mgd. (ES 2.2) It is even unknown where the project will be located, what facilities would be required and how it would be operated. (ES 2.4) Furthermore, EBMUD has indicated that it does not intend to expand the 1 mgd project in the immediate future. Given the uncertainty about whether Phase 2 will ever come to pass, and if so, its timing, size and location, it is neither legally necessary nor appropriate for EBMUD to prepare an expanded EIR for this uncertain future project.

   In similar circumstances, courts have upheld EIRs focused on the impacts of the immediate project, and have not required detailed discussion of possible (but uncertain) future expansions. See, e.g., *Lake County Energy Council v. County of Lake* (1977) 70 Cal. App. 3d 851; *No Oil, Inc. v. City of Los Angeles* (1987) 196 Cal. App. 3d 223. This is particularly the case where the initial EIR does address the impacts of a possible future project in general terms under the "cumulative impacts" section and where a subsequent project-specific EIR will be prepared before any expansion actually occurs. (See, e.g., *Big Rock Mesas v. Board of Supervisors* (1977) 73 Cal. App. 3d 218; *Del Mar Terrace Conservancy v. San Diego* (1992) 10 Cal. App. 4th 712.) EBMUD can satisfy both of those conditions by limiting its project-specific EIR to the 1 mgd project.

   However, rather than addressing potential Phase 2 impacts in the Cumulative Impacts section, EBMUD has instead decided to address uncertain impacts on groundwater quality, levels and saltwater intrusion, among other impacts, even though there is no data on which to base the discussion of impacts. (Section 4.0) Not surprisingly, the discussion is vague and does not include any details on the proposed monitoring program nor the methodology for evaluating impacts that would require mitigation. Furthermore, the DEIR discusses the possibility of mitigation measures, but, due to lack of information and analysis, is unable to define an "adverse impact," or provide any details about the form of mitigation that EBMUD will commit to. The CEQA guidelines provide that "If, after thorough investigation, a Lead Agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact." See CEQA Guidelines § 15145. Based on the uncertainty and speculative nature of Phase 2, EBMUD should not include an analysis of Phase 2 in this DEIR.

6. The Commitment for Phase 2 Project EIR is Inadequate: Despite the minimal analysis of Phase 2 in the DEIR, EBMUD must unequivocally commit to preparation of a comprehensive project-specific EIR on the entirety of the Phase 2 project, including all impacts, alternatives analysis and mitigation, in the event it decides to proceed with Phase 2. Since Phase 2 extraction at levels as high as 10 mgd could be achieved with minimal additional construction, pipeline or infrastructure, ACWD is concerned that EBMUD will not engage in a full project-specific EIR analysis for a Phase 2 and may be tempted to limit the scope of a future EIR. However, the impacts of Phase 2 could be vastly different than those created by the currently proposed 1 mgd project and the cursory analysis of impacts in this DEIR is insufficient to comply with CEQA. Furthermore, in the event the current

groundwater model predictions for Phase 1 impacts to ACWD and Niles Cone groundwater basin prove to be incorrect, the impacts of a Phase 2 project must be analyzed with an updated model and included in a subsequent EIR. Therefore, if EBMUD decides to proceed with a Phase 2 project, it is essential that, at that time, EBMUD complete a project-specific EIR that adequately analyzes the impacts of the specific injection and extraction program on Niles Cone groundwater basin and ACWD.

In addition to providing a complete Phase 2 EIR for any new facilities and their operations, a Phase 2 EIR should also be prepared for any operational changes of Phase 1 facilities even if no new Phase 2 facilities are constructed. Specifically, a Phase 2 EIR will be needed to account for groundwater and water supply-related impacts to ACWD and the Niles Cone groundwater basin should EBMUD choose to expand extraction operations at the Phase 1 facilities beyond the 1-mgd annual extraction limit and/or change injection operations from what is described in the Final EIR (see Comment No. 1 above regarding project description).

7. The Phase 2 Impact Assessment of Niles Cone Groundwater Basin and ACWD Water Supply Impact is Inadequate:

A. The Phase 2 impact assessment commitment to monitoring and analysis is inadequate. CEQA requires that an EIR consider and discuss all significant environmental impacts of the project. Pub. Resources Code §§ 21100, et seq., CEQA Guidelines §§ 15126 and 15126.2. "'Significant effect on the environment' means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project . . . ." CEQA Guidelines § 15382; *see also Goleta Union School District v. Regents of University of California* (2nd Dist. 1995) 37 Cal. App. 4th 1025, 1030-31.

The DEIR's description of Phase 2 impacts does not meet these CEQA requirements for identifying and classifying impacts to ACWD and the NCGWB. The DEIR (1) fails to adequately identify and describe potential impacts to ACWD and the NCGWB from Phase 2, presumably because EBMUD simply has not completed sufficient analysis to understand Phase 2 operation; and (2) the DEIR does not properly classify the significance of the potential Phase 2 impacts that are identified. *See Stanislaus Natural Heritage Project v. County of Stanislaus* (5th Dist. 1996) 48 Cal. App. 4th 182. A decision to augment environmental review through future EIRs "does not excuse a governmental entity from complying with CEQA's mandate to prepare, or cause to be prepared, an environmental impact report on any project that may have a significant effect on the environment, with that report to include a detailed statement setting forth '[all] significant effects on the environment of the proposed project.'" *Stanislaus* at 197, citing Pub. Resources Code § 21100. Even if future environmental analysis is planned to take place, and additional mitigation measures might be adopted, deferring a comprehensive analysis of the impacts of Phase 2 simply does not comply with CEQA's requirements to analyze impacts. *See Stanislaus* at pp. 199-200. Furthermore, since the impacts are not fully analyzed and their potential significance is not classified, there are no performance measures to apply to any measures designed to mitigate the potential impacts. Specific deficiencies in the Phase 2 impact assessment include the following:

- Potential impact 4.1-1 identifies the potential adverse effect on groundwater quality. The DEIR states that data from Phase 1 will be used to analyze this impact; however, the DEIR does not contain a detailed monitoring program or a description of the level of significance (except that it is potentially significant). In fact, Table ES-1 indicates that all Phase 2 monitoring is unknown at this time. Furthermore, the reliance on Phase 1 data for future Phase 2 impact evaluation does not take into account the fact that Phase 2 impacts may not have a linear relationship to Phase 1 impacts.

- Potential impact 4.1-2 states that extraction could affect ACWD operations through declines and increases in water levels in the NCGWB. However, no effort has been made to estimate the level of decline or increase or to set specific limits on a change in the level of the aquifer. For example, an increase in levels could significantly impact ACWD's own recharge operations or salinity management program. Even though EBMUD describes its future commitment to mitigation to maintain groundwater in the Newark aquifer within a "scientifically reasonable range," this commitment is inadequate since this term is not a recognized standard nor sufficiently definitive for ACWD or EBMUD to determine whether or not mitigation is adequate. Rather, EBMUD should commit to mitigation such that the maximum drawdown criterion of 0.5 feet (to be used for monitoring and modeling only) for the Newark Aquifer is not exceeded. See Comment No. 2 above for discussion on significance criteria for Niles Cone drawdown impacts and the associated ACWD water supply losses.

- Potential impact 4.1-5, EBMUD does not include any detailed information about how Phase 2 injection and extraction could directly impact saltwater intrusion or the movement of existing saltwater plumes in the aquifer. The potential impacts are unclear and the suggested monitoring plans and mitigation measures are vague. There are no levels of significance, performance measures, standards or plans for effectively avoiding or mitigating impacts. In short, EBMUD has not committed to anything certain in terms of evaluation, monitoring, or mitigation concerning Phase 2.

Prior to any determination to proceed with Phase 2, EBMUD should review the information gathered from Phase 1 and conduct groundwater modeling to predict the effects of increased groundwater extraction and injection on the Niles Cone groundwater basin and ACWD under the combined Phase 1 and Phase 2 operational scenarios. Similar to the Phase 1 project analyses, the review of information and groundwater modeling should be conducted in close coordination with ACWD. This information should be used to (a) determine the feasibility of proceeding with Phase 2, (b) identify the best location for additional production wells, and (c) design extraction, injection and mitigation strategies to maintain groundwater levels in the Newark Aquifer of the NCGWB.

B. <u>The formulation of detailed mitigation measures is inadequate</u>: CEQA Guidelines require that lead agencies formulate detailed mitigation measures. "Where several measures are

available to mitigate an impact, each should be discussed and the basis for selecting a particular measure should be identified. Formulation of mitigation measures should not be deferred until some future time. For example, even when an approved project is general in nature, such as in the case of the proposed Phase 2 project, a lead agency must develop and approve whatever mitigation measures are feasible to lessen or avoid the project's impacts. *See Citizens for Quality Growth v. City of Mount Shasta* (3rd Dist. 1988) 198 Cal. App. 3d 433, 442 (stating that "passing references to the mitigation measures are insufficient to constitute a finding [adopting the measures]").

Formulation of a mitigation measure may only be deferred if (i) the adopted mitigation measure will commit the lead agency to a performance standard and (ii) the measure will prohibit changes to the environment unless the standard is satisfied. CEQA Guidelines § 15126.4 (a)(1)(B). In addition, if a mitigation measure would itself cause other additional significant effects on the environment, those effects must be discussed as well. CEQA Guidelines § 15126.4(a)(1)(D). Even though formulation of mitigation measures may be deferred through use of performance measures, a mitigation measure is not adequate if it is based on a requirement that the lead agency adopt mitigation measures recommended in a future study. *See Sundstrom v. County of Mendocino* (1st Dist. 1988) 202 Cal. App. 3d 296. In fact, the court has stated that when "devising more specific mitigation measures early in the planning process is impractical, 'the agency can commit itself to eventually devising measures that will satisfy specific performance criteria articulated at the time of project approval. Where future action to carry a project forward is contingent on devising means to satisfy such criteria, the agency should be able to rely on its commitment as evidence that significant impacts will in fact be mitigated.'" *Rio Vista Farm Bureau Center v. County of Solano*, (1st Dist. 1992) 5 Cal. App. 4th 351, 377 citing *Sacramento Old City Association v. City Council of Sacramento* (3rd Dist. 1991) 229 Cal. App. 3d 1011, 1029.

However, regarding the Phase 2 analysis in the DEIR, the impacts described in Section 4.0 of the DEIR are vague and ill-defined and the proposed "mitigation measures" are not actually measures or commitments on the part of EBMUD at all; they are simply suggestions. Therefore, the proposed mitigation measures fail to meet the above criteria for formulating detailed mitigation measures because: (1) the description of the method for determining impacts is overly vague (i.e. no details are provided on the proposed monitoring program); (2) the description of what constitutes an "adverse impact" is not provided; (3) the mitigation measures do not specify what actions EBMUD will take to mitigate for these adverse impacts, but rather state merely that the District will take some unspecified future actions; and (4) the proposed mitigation measures are flawed because they do not specify performance measures. "[I]n the absence of overriding circumstances, the CEQA process demands that mitigation measures timely be set forth, that environmental information be complete and relevant, and that environmental decisions be made in an accountable arena." *Gentry v. City of Murrieta* (4th Dist. 1995) 36 Cal. App. 4th 1359, 1393-1394. The incomplete Phase 2 analysis included in the DEIR simply does not meet CEQA standards.

If EBMUD decides to proceed with Phase 2, it should adopt operating and design criteria, and mitigation measures, to ensure that groundwater level impacts in the Newark Aquifer of the Niles Cone groundwater basin do not exceed the threshold criterion identified by ACWD (see Comment No. 2 above). Maintaining groundwater level changes within this range is necessary to ensure that there are no significant adverse impacts to ACWD and Niles Cone groundwater basin including: (1) no significant adverse impacts to ACWD water supplies in the Niles Cone groundwater basin; (2) no significant adverse impacts to groundwater quality in the Niles Cone groundwater basin as a result of seawater intrusion and/or movement (vertical or lateral) of existing plumes of brackish groundwater; (3) no significant adverse impacts to ACWD's ability to flush salts from the Niles Cone groundwater basin by providing groundwater outflows; and (4) no significant adverse impacts as a result of higher groundwater levels during injection operations. The operating and design criteria and mitigation measures could include providing potable water to ACWD's distribution system or recharge water to the ACWD groundwater recharge facilities, changing the Project's pumping/injection strategies (operating at a lower pumping and/or injection rate), or stopping operations altogether. The specific mitigation measures identified by ACWD for Phase 1 impacts (see Comment No. 4) should also be incorporated as potential Phase 2 mitigation measures.

C. The DEIR fails to provide adequate Phase 2 enforcement measures for mitigation and monitoring: CEQA Guidelines also state that: "Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally-binding instruments." CEQA Guidelines § 15126.4(a)(2); see also Pub. Resources Code § 21081.6(b). "The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation." Pub. Res. Code § 21081.6(a)(1).

However, Section 4.0 of the DEIR fails to provide any enforcement measures since the mitigation measures for Phase 2 are not fully developed. The DEIR offers no conditions, agreements or other legally-binding instruments which will ensure that the mitigation measures will actually be carried out.

As discussed in Comment No. 2 above, ACWD proposes that EBMUD commit, for monitoring and modeling purposes, to a maximum model-simulated drawdown of 0.5 feet over a 12 month period for both the Phase 1 and Phase 2 Projects. The DEIR should also recognize that the groundwater model, even with updated calibration for Phase 1, might under-predict impacts, particularly for an expanded Phase 2. Therefore, the DEIR should include provisions for additional mitigation in the event that actual impacts are greater than predicted by the model. Actual impacts should be determined by evaluating, monitoring, updating and recalibrating the model to most recent operational hydrologic conditions. Finally, EBMUD should commit to a detailed monitoring program, in consultation with ACWD, to analyze the impacts of Phase 2 operations.

8. The DEIR Summary of ACWD's 2001 DEIR comments is Inadequate: ACWD provided detailed comments on the 2001 Draft Environmental Impact Report for the Proposed Bayside

Groundwater Project in a letter to EBMUD dated August 3, 2001 (see Attachment A for a copy of ACWD's 2001 comment letter). CEQA Guidelines § 15088(b) requires that the lead agency's "written response [to comments] shall describe the disposition of significant environmental issues raised (e.g., revisions to the proposed project to mitigate anticipated impacts or objections). In particular, the major environmental issues raised when the Lead Agency's position is at variance with recommendations and objections raised in the comments must be addressed in detail giving reasons why specific comments and suggestions were not accepted. There must be good faith, reasoned analysis in response. Conclusory statements unsupported by factual information will not suffice."

EBMUD's response to ACWD's comments on the 2001 DEIR is inadequate in light of the CEQA guidelines. (ES 7 and Appendix B) Appendix B to the DEIR, which summarizes comments on the 2001 DEIR, simply directs the reader to various sections of the DEIR in which comments were purportedly addressed. Although the project has changed, and EBMUD has issued a new DEIR, the CEQA regulations concerning a lead agency's response to comments on a DEIR is still applicable and EBMUD should provide substantive responses to ACWD's 2001 comments.

Conclusion

ACWD hopes to continue to work cooperatively with EBMUD to allow EBMUD's water supply reliability goals to be achieved while ensuring that ACWD's interests in protecting its water resources are met. However, because of the incomplete and inadequate nature of the 2005 DEIR, we believe that it will require substantial revisions and additions to adequately address ACWD concerns and to meet CEQA's requirements. In summary, EBMUD should address the comments provided in this letter, including:

- The discussion of Phase 2 should be removed from the 2005 DEIR. Until the scope, location, necessary facilities and operating criteria are developed, Phase 2 is simply too speculative a project to be analyzed under CEQA. And, since so many details about Phase 2 are unknown, the impact assessment and formulation of mitigation measures is inadequate to comply with CEQA requirements.

- The significance criteria related to drawdown impacts in the Niles Cone groundwater basin is inadequate and should be revised. Simply put, EBMUD should not develop a new dry year water supply for itself at the expense of ACWD's existing local dry year water supplies. Any Bayside Project drawdown in the Newark Aquifer in the Niles Cone groundwater basin should be classified as a significant water supply impact to ACWD and should be fully mitigated by EBMUD. Please see Comment No. 2 above for the related modeling criteria for Newark Aquifer drawdown impacts.

- The DEIR improperly relies entirely upon the NEBIGSM groundwater model to conclude that there are no significant Phase 1 impacts to ACWD operations or Niles Cone groundwater basin, even when the DEIR recognizes that the model may not be entirely accurate and will need re-calibration after Phase 1 start-up activities. Rather, the DEIR should classify these impacts as "potentially significant" and commit to mitigation in the event that future modeling and monitoring indicate that these impacts have been under-predicted by the current version of the model.

- The Phase 1 Monitoring/Modeling Program as described in the DEIR is inadequate to determine actual project impacts and effectiveness of mitigation measures. EBMUD must commit to ongoing monitoring and a rigorous program of model updating and recalibration to adequately determine the true impacts to ACWD and the Niles Cone groundwater basin.

We appreciate the efforts EBMUD has made to work with ACWD on the Bayside Project and look forward to continue working with EBMUD to ensure that the concerns expressed in this letter will be addressed in the Final EIR.

Sincerely,

Paul A. Piraino
General Manager

Attachments

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August 3, 2001

East Bay Municipal Utility District
Attn: Angela Knight (MS 305)
375 Eleventh Street
Oakland, CA 94607-4240

Dear Ms. Knight:

Subject: Draft Environmental Impact Report for the Proposed Bayside Groundwater Project

This letter and its attachments provide Alameda County Water District's (ACWD's) comments on the Draft Environmental Impact Report (DEIR) for the proposed Bayside Groundwater Project (Project). This letter summarizes ACWD's concerns regarding (1) potential impacts on ACWD operations and on the Niles Cone groundwater basin that may occur as a result of the proposed Project and (2) the adequacy of the DEIR. The following attachments provide additional detail:

Attachment 1: Adequacy of description of regional environmental setting
Attachment 2: Adequacy of impact identification and assessment
Attachment 3: Adequacy of technical analysis
Attachment 4: Adequacy of mitigation measures
Attachment 5: Adequacy of Project alternatives

ACWD Background

Alameda County Water District ("ACWD") delivers drinking water to a population of over 320,000 residents in the cities of Newark, Fremont and Union City. ACWD was formed in 1913 for the purpose of protecting underground water in the Niles Cone groundwater basin and conserving the waters of the Alameda Creek watershed. The formation of ACWD was largely in response to a water shortage that occurred as a result of outside entities exporting local groundwater to the cities of Oakland and San Francisco. Historical over-pumping of the Niles Cone groundwater basin and adjacent groundwater basins resulted in significant seawater intrusion, contaminating much of the aquifer system. Since our inception, ACWD has worked diligently to restore and protect this vital but vulnerable resource, and will continue to do so in the future.

Summary of Project Understanding

The DEIR states that EBMUD plans to develop a new well field (7 to 10 wells) in the City of San Leandro and the unincorporated area of San Lorenzo. This well field will tap the deeper aquifer

system in what is referred to as the South East Bay Plain basin. This well field will provide a dry year supply of up to 15 million of gallons per day (10,000 to 15,000 acre-feet per year) to the EBMUD service area. The DEIR presents two operating alternatives: an injection/extraction alternative (utilizing aquifer storage and recovery wells); and an extraction-only alternative (groundwater extraction without recharging the groundwater system). According to the DEIR, the preferred operating alternative is the injection/extraction alternative.

Summary of ACWD Concerns Regarding Project Impacts

ACWD's concerns with the proposed Project relate to potential impacts to the adjacent Niles Cone groundwater basin, underlying ACWD's service area. Because the Niles Cone groundwater basin is hydraulically connected with the South East Bay Plain basin, ACWD is deeply concerned about potential water supply and water quality impacts (including seawater intrusion) to the Niles Cone groundwater basin. Groundwater from the Niles Cone groundwater basin is one of three primary sources of supply for ACWD, along with imported water supplies from the State Water Project (SWP) and San Francisco's Hetch-Hetchy system. ACWD replenishes the groundwater basin at our groundwater recharge facilities with local runoff supplemented by imported SWP supplies. ACWD recovers this stored water for potable use at our adjacent well fields. Recharge water not only ensures an adequate supply for our production wells but also maintains flow gradients necessary both to prevent a recurrence of seawater intrusion and to flush existing brackish water from the groundwater basin.

As stated in ACWD's previous letters (May 14, 1997 comments on EBMUD's Groundwater Injection/Extraction Pilot Project; October 16, 2000 comments on EBMUD's Notice of Preparation of an Environmental Impact Report for the Bayside Groundwater Project; and December 20, 2000 preliminary comments on EBMUD's proposed Bayside Groundwater Project), EBMUD's staff and consultant agree that the deep aquifer system to be tapped by the Project is in direct hydraulic connection with the deep aquifer system in the Niles Cone groundwater basin. The DEIR confirms this stating, "Current data suggest that only the Deep Aquifer is hydraulically continuous between the SEBPB [South East Bay Plain basin] and NCGWB [Niles Cone groundwater basin]" (page 3.8-7).

In light of this hydraulic connection between the South East Bay Plain basin and the Niles Cone groundwater basin, ACWD's comments on the Notice of Preparation recommended specifically that the DEIR should address the potential impacts of EBMUD's Project on ACWD's operation of the Niles Cone groundwater basin and commit to measures to fully mitigate any impacts to ACWD. Examples of potential ACWD operational impacts and long-term impacts on the Niles Cone groundwater basin are described below. In addition, the attached schematic cross-sections provide conceptual illustrations of the inter-relationship between the Niles Cone and South East Bay Plain groundwater basins (Figure 1), and how both the Bayside Project operating alternatives may impact the Niles Cone groundwater basin (Figures 2 and 3).

Examples of potential long-term impacts to the Niles Cone groundwater basin include:

- Saltwater Intrusion: The Niles Cone groundwater basin is in direct hydraulic connection with San Francisco Bay. Under historical conditions, a significant amount of contamination of the aquifers occurred due to saltwater intrusion. ACWD has long

managed the groundwater basin to prevent additional saltwater intrusion, and to reverse these impacts through ACWD's Aquifer Reclamation Program. Groundwater extraction at the Project may cause a decline in Niles Cone groundwater levels to below sea-level, potentially inducing renewed saltwater intrusion.

- Brackish Groundwater Movement: Large pockets of trapped brackish groundwater currently exist in all of the major aquifers in the Niles Cone groundwater basin. ACWD operates the groundwater basin to ensure that this trapped brackish water does not migrate near ACWD's well fields, and to reclaim contaminated portions of the aquifers through the Aquifer Reclamation Program. Groundwater extraction (or injection) activities by the Project may change groundwater levels and gradients in the Niles Cone groundwater basin, thereby resulting in the lateral or vertical (i.e. from one aquifer to another) movement of the brackish groundwater.

Examples of potential impacts to ACWD operations include:

- Loss of ACWD Water Supplies: Groundwater extraction at the Project may result in a decline in groundwater levels in the Niles Cone groundwater basin. This decline in groundwater levels may, in turn, compel ACWD to reduce groundwater pumping at either our Mowry Wellfield or Aquifer Reclamation Program wells in order to: (1) prevent seawater intrusion; (2) prevent the spreading of existing plumes of trapped brackish groundwater; and/or (3) maintain target groundwater levels in the Niles Cone in order to ensure adequate supplies for subsequent years.

- Overflow/Artesian Conditions: ACWD currently operates the Niles Cone groundwater basin to ensure that the basin is not recharged beyond its capacity to store water. Over-filling of the basin as a result of the Project's injection activities may result in (1) water supply losses through groundwater "overflows" to Alameda Creek and/or excessive groundwater outflows to San Francisco Bay and/or (2) artesian conditions in local wells or springs and damage to overlying properties.

- Increased Pumping Costs and Energy Use: Groundwater level declines within the Niles Cone groundwater basin that occur as a result of the Bayside Project will result in increased groundwater pumping costs for ACWD as well as increasing our demand for electric energy needed to power the pumps.

Summary of ACWD Comments on the DEIR

Based on our review of the DEIR and in light of potential impacts described above, we believe that the DEIR does not meet the requirements of the California Environmental Quality Act (CEQA) and is not legally adequate. The deficiencies are summarized below and addressed in more detail in the corresponding attachments.

1. **The DEIR does not adequately describe the environmental conditions in the adjacent Niles Cone groundwater basin.** The DEIR recognizes that the South East Bay Plain groundwater basin is in direct connection with the Niles Cone groundwater basin. However, the DEIR fails to describe the Niles Cone groundwater basin and completely omits any description of ACWD operations in the Niles Cone groundwater basin. An understanding of the hydrogeology of the Niles Cone groundwater basin and ACWD's management of this resource is absolutely essential to address the potential impacts that may occur as a result of the Project. Attachment 1 provides a summary of the Niles Cone groundwater basin and ACWD groundwater operations. In addition, Attachment 1 also provides a summary of information indicating a high degree of hydraulic inter-connection between the Niles Cone and South East Bay Plain groundwater basins. In order to comply with CEQA standards regarding the description of the regional environmental setting and in order to adequately assess potential Project impacts to ACWD and the Niles Cone groundwater basin, the EIR must acknowledge and describe: (1) the adjacent Niles Cone groundwater basin and ACWD operations and (2) the previous studies and historical information which provide substantial evidence of a high degree of communication between Niles Cone groundwater basin and the SEBP groundwater basin.

2. **The DEIR fails to address impacts to ACWD operations and the Niles Cone groundwater basin that may occur as a result of the Project.** As discussed previously, potential operational impacts to ACWD include water supply losses, water quality impacts at our well fields, increased pumping costs, and overflow and artesian impacts due to over-filling of the aquifers. Potential long-term impacts include saltwater intrusion and movement of trapped, brackish water plumes. The DEIR fails to address any of these potential impacts which are discussed in detail in Attachment 2. Furthermore, the DEIR improperly characterizes the significance of impacts to the Niles Cone groundwater basin and fails to identify specific criteria used to evaluate their significance.

   The DEIR also completely fails to consider the cumulative impacts of ACWD groundwater operations (pumping and recharge) and others who utilize the Niles Cone and South East Bay Plain groundwater basins as a water supply source. Other groundwater users include private well owners in the Niles Cone groundwater basin and the City of Hayward's emergency groundwater supply system. The analysis of cumulative impacts on ACWD operations and the Niles Cone groundwater basin is especially critical given that ACWD's current operation of the groundwater system is to maximize the use of local groundwater supplies in dry years (when our imported water supplies may be significantly cut back). It is during these dry periods that EBMUD also will likely be extracting groundwater from the proposed Bayside Project, thereby adding additional stresses on the Niles Cone groundwater basin. Potential cumulative impacts include groundwater level declines and subsequent ACWD water supply losses, saltwater intrusion, and movement of contaminants in the Niles Cone groundwater basin. Similarly, under current operating conditions, during wet periods ACWD maximizes the recharge into Niles Cone groundwater basin with local and imported State Water Project supplies. However, the amount of ACWD recharge is limited by the overall storage capacity of the Niles Cone groundwater basin. Based on information provided in the DEIR, it will be during the same wet periods that EBMUD will be injecting water into the Deep Aquifer. Because of the limited storage capacity of the Niles Cone groundwater basin, this additional injection of water by EBMUD may result in water

supply losses due to excessive Niles Cone groundwater outflows to San Francisco Bay and potential artesian conditions with subsequent property damage. Therefore, the EIR should identify, evaluate and provide mitigation for these cumulative impacts, as required under CEQA.

3. **The technical analysis of impacts to Niles Cone groundwater basin provided in the DEIR is incomplete and inadequate.** As discussed in Attachment 3, the DEIR relies on a "reconnaissance level" groundwater model to analyze potential groundwater impacts in the Niles Cone groundwater basin. However, this model is not capable of adequately evaluating potential impacts in the Niles Cone because (1) the model does not extend south into the Niles Cone groundwater basin, but rather relies on an artificial "boundary condition" which is not capable of adequately simulating potential impacts to the Niles Cone groundwater basin and (2) the model is based on overly broad assumptions regarding the hydrologic and hydrogeologic conditions which make it inadequate for determining impacts due to the pumping and injection stresses which the Project would create.

   In addition, in the groundwater modeling report referenced in the DEIR, EBMUD's consultant (CH2M Hill) identifies the boundary condition between the Niles Cone and South East Bay Plain groundwater basins as an area for improvement. The report states that, "If the District [EBMUD] decides to better define the characteristics of this boundary, then local water level and water construction data should be collected and select pumping tests performed. If the boundary appears to be hydraulically continuous with the SEBP, then the District [EBMUD] should consider extending the model into the NCGWB [Niles Cone groundwater basin]. Subsequent model simulation should be able to more accurately define potential impacts of the District's [EBMUD's] proposed Bayside Project on water levels and water quality in the NCGWB [Niles Cone groundwater basin.]"

   We agree with CH2M Hill's recognition of the inadequacies of the model on which the DEIR relies and with the suggested approach for conducting the technical studies and developing the analytical tools necessary to assess these potential impacts. Unfortunately, EBMUD chose not to perform a complete technical analysis for the DEIR, and rather has relied on a groundwater model which is not capable of addressing impacts to ACWD operations or to the Niles Cone groundwater basin.

4. **The DEIR fails to provide feasible and reasonable mitigation for impacts to ACWD operations and the Niles Cone groundwater basin.** In order to mitigate groundwater related impacts to the Niles Cone groundwater basin resulting from extraction operations of the proposed Bayside Project, the DEIR suggests the following proposed mitigation measure (Measure 3.8-8, page 3.8-25):

   > "The District will implement a Deep Aquifer water-level monitoring program that will include the boundary between the NCGWB [Niles Cone groundwater basin] and the SEBPB [South East Bay Plain basin]. Resulting water-level data will be used to assess impacts on gradient magnitude and direction near this boundary. Flux values will be estimated based on historical pumpage from the SEBPB to assess the significance of future impacts relative to past impacts. If adverse impacts are detected, the District will take appropriate

actions to limit them to the groundwater basin and/or local groundwater users."

The proposed mitigation measure fails to meet the CEQA Guidelines criteria for formulating detailed mitigation measures because: (1) the description of the method for determining impacts is overly vague (i.e. no details are provided on the proposed monitoring program and the methodology for the estimation of flux values); (2) the description of what constitutes an "adverse impact" is not provided; (3) it does not specify what actions EBMUD will take to mitigate for these adverse impacts, but merely states that the District will take some unspecified "appropriate" actions; and (4) the measure addresses only impacts due to increased fluxes across the Niles Cone groundwater basin and ignores other potential impacts to ACWD and the Niles Cone groundwater basin, including groundwater level declines, seawater intrusion, movement of contaminants, and impacts to ACWD's water supplies.

In addition, the DEIR fails to provide the necessary enforcement measures to ensure that Mitigation Measure 3.8-8 will be implemented. The DEIR offers no conditions, agreements or other legally-binding instruments which will ensure that the mitigation measure is actually carried out. Please see Attachment 4 for ACWD's recommendations for a more specific mitigation program.

5. **The DEIR does not adequately develop and evaluate Project alternatives.** The DEIR does not consider an appropriate range of alternatives to the proposed Project, as required by CEQA Guidelines. Rather it is limited to a relatively narrow range of alternatives, all of which are very minor variations of the proposed Project, and all of which are located within the boundary area of the Project as defined in the DEIR. As discussed in the Attachments, there are many other alternatives to the Project potentially available to EBMUD, some of which may be environmentally superior to those considered in the DEIR. Alternatives that should be described and evaluated in the EIR include: (1) EBMUD's proposed Freeport Regional Diversion Project; (2) alternative locations for the Project' s wells (i.e. sites located further north in the SEBP may have less of an impact on the Niles Cone groundwater basin as would spreading the wells out over a larger geographic area within the SEBP); (3) a smaller project; (4) desalination (with brackish groundwater or Bay water as the source water); (5) dry year water purchases/transfers; and (6) off-site groundwater storage programs in the Central Valley or other areas within the EBMUD service area. As is the case with the proposed Project, these other potential dry year supply alternatives can be configured to meet a portion of EBMUD's dry year needs.

In order for EBMUD to adequately meet CEQA Guidelines, EBMUD must take the following steps prior to finalization of the EIR:

A. **Conduct the technical investigations necessary to adequately evaluate the potential Project impacts to ACWD and the Niles Cone Groundwater Basin.** As described in Attachment 3, this technical evaluation should include: (1) a hydrogeologic assessment of the boundary between Niles Cone groundwater basin and South East Bay Plain groundwater basin; (2) aquifer tests to further characterize the nature of the

boundary; (3) monitoring of groundwater levels and quality; (4) the development and utilization of an expanded regional groundwater model covering both the Niles Cone and South East Bay Plain groundwater basins; and (5) the evaluation of Project impacts under a range of hydrologic and Project operating conditions.

B. **Develop mitigation measures sufficient to ensure that there are no significant unmitigated impacts to ACWD operations and no long-term adverse impacts to water quality in the Niles Cone groundwater basin.** As discussed in Attachment 4, the mitigation measures should meet the CEQA criteria for detailed and enforceable mitigation measures, and should be developed in conjunction with ACWD.

C. **Develop and evaluate a broader range of Project alternatives.** These alternatives should not be artificially limited to alternative facility locations within the immediate Project area, but rather should include a broader geographic area and a feasible range of water supplies.

While this letter is focused specifically on the inadequacy of the DEIR, compliance with CEQA is not the only legal issue implicated by the Project. Fundamental principles of California water law must also be considered. Two such principles are particularly relevant here:

- The rights of public agencies pumping from a groundwater basin are appropriative in nature and therefore determined by the long-established rule "first in time, first in right." *See City of Lodi v. East Bay Municipal Utility District*, 7 Cal. 2d 316, 334 (1936). Accordingly, ACWD has priority to the groundwaters of the basin by virtue of its extractions, which long predate the proposed Bayside Project wells.

- Agencies which, like ACWD, replenish a groundwater basin with imported water have superior proprietary rights to recover those imported supplies. See *City of Los Angeles v. City of San Fernando*, 14 Cal. 3d 199, 259-61 (1975).

Significantly, water law principles were brought into play 75 years ago in litigation involving pumping at virtually the same location as the Project. In the early 1920s, the East Bay Water Company (a predecessor of EBMUD) operated wells at Robert's Landing. These wells were 300 to 800 feet deep and thus also utilized the same deep aquifer that EBMUD plans to tap with the Bayside Project.

In 1922 both ACWD and the Eden Township County Water District, which served an area now within the boundaries of Hayward, sued the EBWC in Alameda County Superior Court seeking to enjoin the pumping. This litigation led to the cessation of pumping at Robert's Landing. In May 1925 EBWC entered into a settlement agreement with the Eden Township Water District under which the company agreed to absolutely cease pumping at Robert's Landing no later than January 1, 1930 and to "abandon its said Robert's Landing wells and pumping plants as part of its water system" and promised that "thereafter it will not under any circumstances pump and divert water therefrom."

The wells were shut down shortly after the settlement agreement was signed. A few years later, Cyril Williams, Jr., a San Francisco based civil and hydraulic engineer, published an article chronicling the history of groundwater use within ACWD. He attributed the rise in groundwater levels that had been observed since pumping ceased at Robert's Landing to the abandonment of those wells.

> "When these pumps ceased operating, there was an almost immediate rise in a large number of wells in Alameda County Water District. A part of the leak in the Niles Cone has been stopped and the great cone of depression caused by the pumping at Robert's Landing was refilled."

(Cyril Williams, Jr., "The Water Situation in Alameda County Water District," The Township Register, March 18, 1930.)

It is important to recognize that the Roberts Landing wells, which were operated between the years of 1918 and 1929, were pumped at levels that varied between 770 and 4,750 acre-feet per year (C.H. West, "Groundwater Resources of the Niles Cone, Alameda County, Calif.," Nov. 1937). That rate is substantially less than the proposed Bayside Project pumping rate of 10,000 to 15,000 acre-feet per year.

The Board of Directors and management of ACWD are no less committed to protection of its water rights, and the well being of its customers and its local environment, than were our predecessors decades ago.

ACWD hopes to work cooperatively with EBMUD to allow EBMUD's water supply reliability goals to be achieved while ensuring that ACWD's interests in protecting our water resources are met. However, because of the incomplete and inadequate nature of the existing DEIR, we believe that it will require substantial revisions and additions to adequately address ACWD concerns and to meet CEQA criteria. Therefore, a revised draft EIR should be circulated with adequate time for additional public review and comment.

Very truly yours,

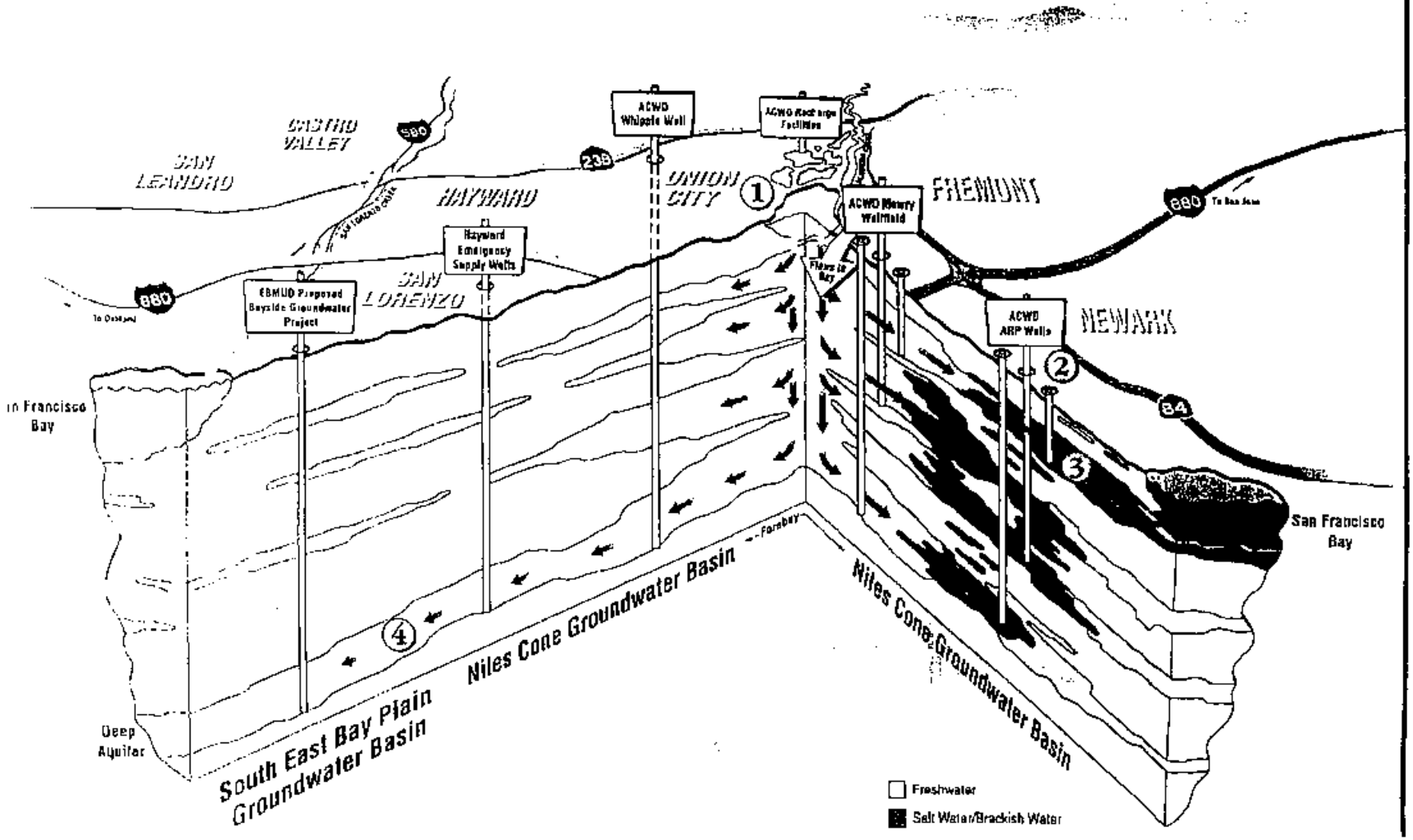
Paul Piraino
General Manager

Attachments

Figure 1

South East Bay Plain and Niles Cone Groundwater Basins Schematic

Existing Conditions



① ACWD recharges the Niles Cone Groundwater Basin with water diverted from Alameda Creek and water purchased from the State Water Project. A portion of the water recharged is captured at ACWD's Mowry Wellfield for direct potable use.

② ACWD's Aquifer Reclamation Program (ARP) wells (a) remove trapped brackish groundwater from the aquifers and (b) prevent this brackish water from migrating towards ACWD's freshwater wells.

③ Groundwater elevations are maintained above sea level to prevent seawater intrusion in the Newark Aquifer. As a result, groundwater flows towards San Francisco Bay.

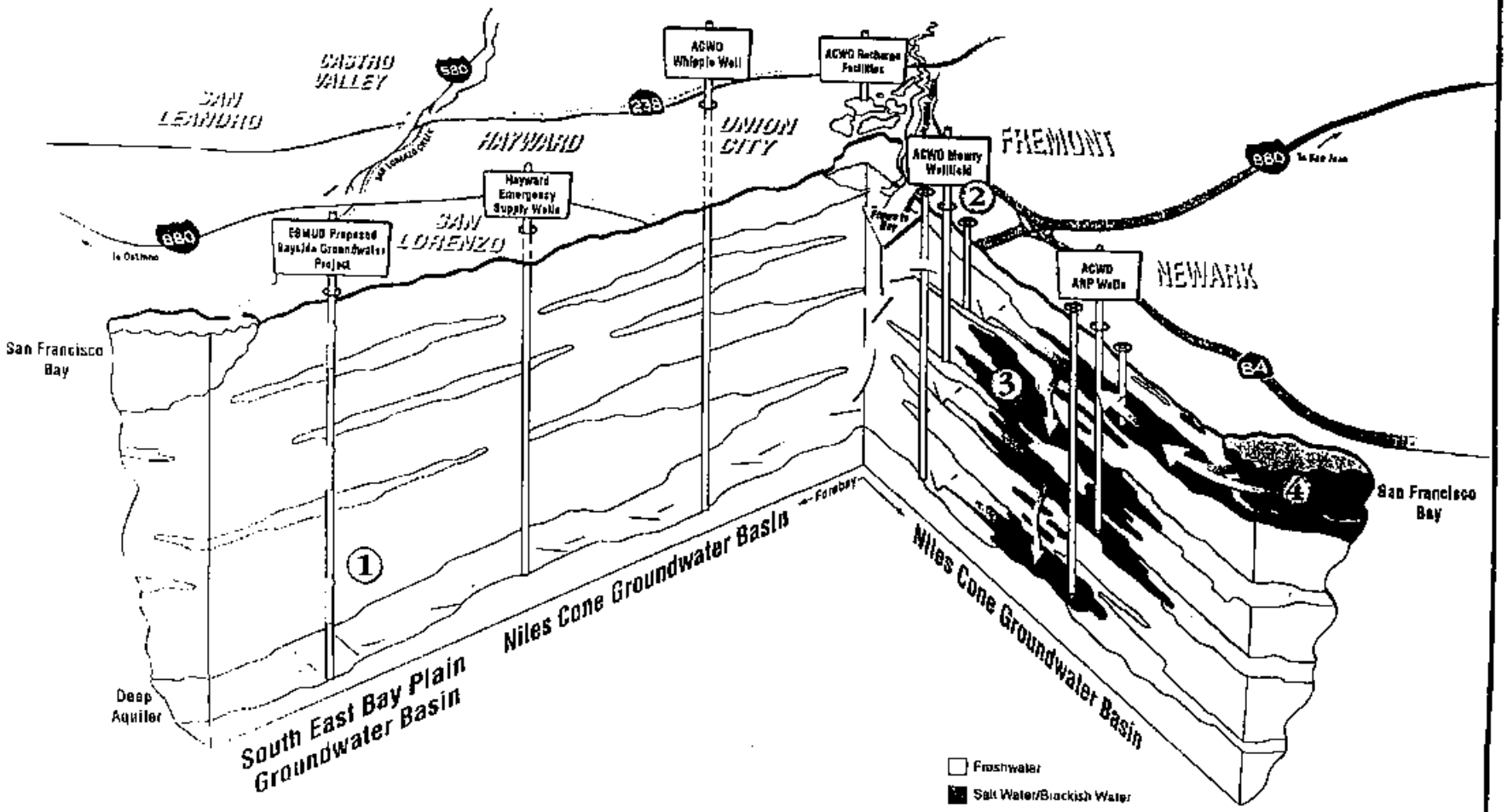
④ As a result of the groundwater recharge through Alameda Creek and adjacent percolation ponds, there is a relatively small net outflow in the Deep Aquifer from the Niles Cone to the South East Bay Plain.

ACWD

Figure 2

South East Bay Plain and Niles Cone Groundwater Basins Schematic Showing Potential Impacts Due to Proposed Bayside Project

Extraction Conditions



(1) Groundwater ex tion in dry years the Bayside Project ma result in groundwater level declines of over 1 feet in the Deep Aquife in the area adjacent to Wellfield, and of up to feet in the Niles Cone Groundwater Basin. Th will result in significant greater groundwater ou flows (losses) from the Niles Cone to the Sout East Bay Plain.

(2) Groundwater le declines in the D Aquifer will then result groundwater level decli in the upper aquifers in the Niles Cone Forebay area. This may signific limit ACWD's ability to pump due to concerns regarding sea water intrusion and moveme of brackish groundwat

(3) Groundwater le declines in the Deep Aquifer may indu the vertical or lateral spreading of trapped brackish groundwater plumes in the Niles Co

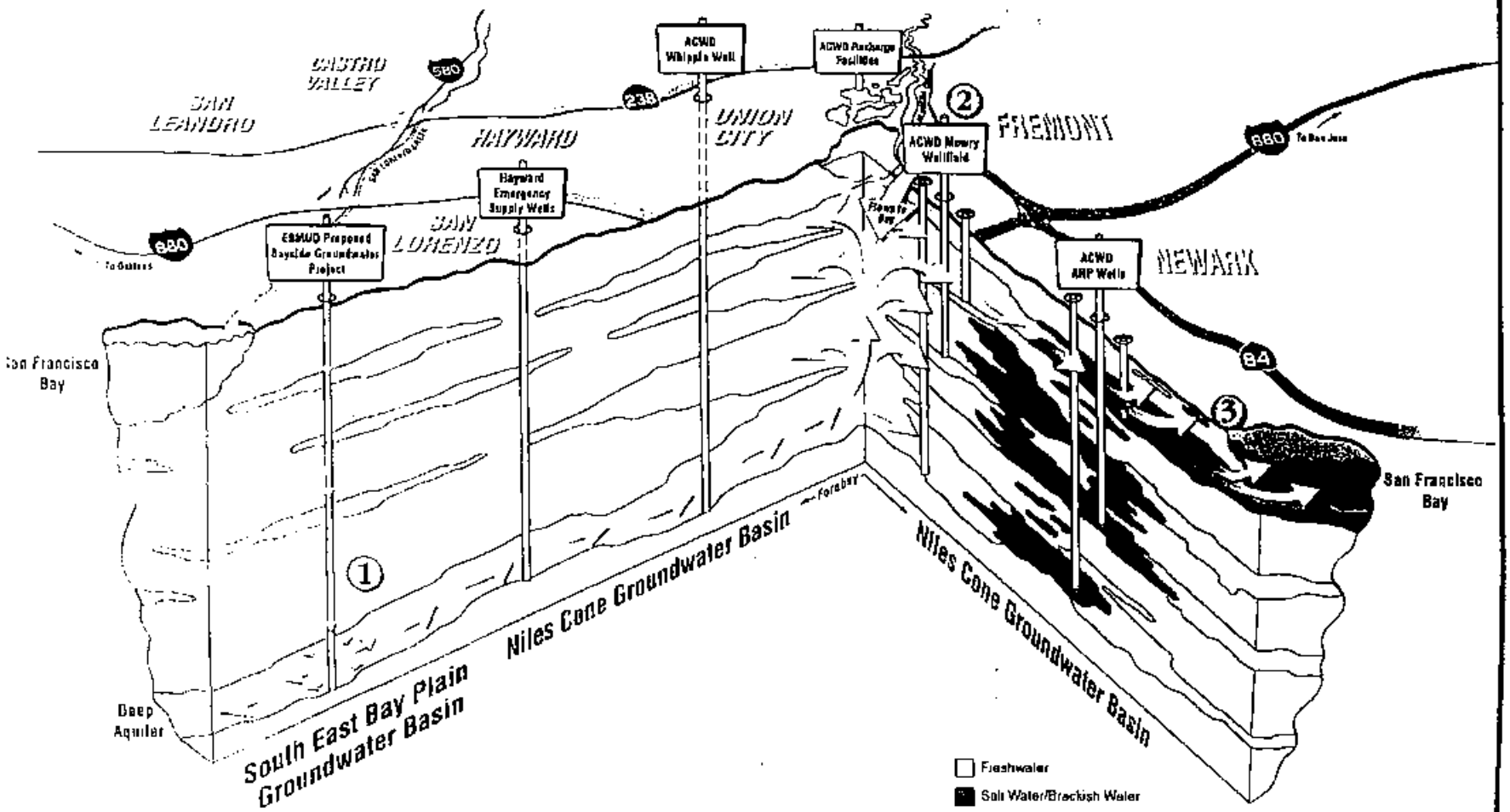
(4) Seawater intrusic may occur if grou water levels in the upper aquifer are drawn below sea level for an extended period of time.

ACWA

Figure 3

South East Bay Plain and Niles Cone Groundwater Basins Schematic Showing Potential Impacts Due to Proposed Bayside Project

Injection Conditions



1 Groundwater injection at the Bayside Project will significantly increase the groundwater levels in the Deep Aquifer, resulting in the reversal of the groundwater flow direction. An increase in levels in the Deep Aquifer will subsequently result in an increase in levels in the upper aquifers in the Niles Cone Forebay area.

2 Increased groundwater levels in the Forebay area may limit ACWD's ability to recharg the groundwater basin during wet periods when water is available to ACWD.

3 Increased groundwater levels in the Niles Cone Groundwater Basin may result in excessive groundwater outflow losses to Alameda Creek and San Francisco Bay. In addition, increased levels may also result in artesian conditions and/or discharge through springs to low-lying areas, causing flooding or other adverse impacts.

ACWD

ATTACHMENT 1 – ADEQUACY OF DESCRIPTION OF REGIONAL ENVIRONMENTAL SETTING

CEQA Guidelines state that an EIR "must include a description of the physical environmental conditions in the vicinity of the project." CEQA Guidelines § 15125(a). "Knowledge of the regional setting is critical to the assessment of environmental impacts. . . . The EIR must demonstrate that the significant environmental impacts of the proposed project were adequately investigated and discussed and it must permit the significant effects of the project to be considered in the full environmental context." CEQA Guidelines § 15125(c).

The DEIR provides a description of the South East Bay Plain ("SEBP") groundwater basin and also recognizes that the SEBP is hydraulically connected with the Niles Cone groundwater basin. However, the DEIR does not provide an adequate description of the Niles Cone groundwater basin, nor does it recognize ACWD's management of the Niles Cone groundwater basin as a source of drinking water to over 300,000 Alameda County residents. Since the two groundwater basins are hydraulically connected, a thorough understanding of Niles Cone groundwater basin and ACWD's management of this resource is absolutely essential to fully assess potential impacts to Niles Cone groundwater basin and ACWD operations, and to develop appropriate mitigation measures. The following provides (1) an overview of the Niles Cone groundwater basin and ACWD operations and (2) a summary of the documentation of the connection between the Niles Cone and South East Bay Plain groundwater basins.

Overview of the Niles Cone Groundwater Basin and ACWD Operations

ACWD's management and use of the Niles Cone groundwater basin is well documented in our Groundwater Management Policy, annual Groundwater Survey and Monitoring Reports, and the ACWD Integrated Resources Planning Study (1996). The hydrogeologic characteristics of the Niles Cone groundwater basin are also well documented by ACWD, Kolterman, California Department of Water Resources, and others. The following provides an overview of the groundwater basin and ACWD management of this important local resource. The Niles Cone groundwater basin is separated into two "sub-basins" by the Hayward Fault. The following overview is focused on the "Below Hayward Fault" (BHF) sub-basin since it is this portion of the Niles Cone groundwater basin that is connected with the SEBP Basin.

The BHF portion of the groundwater basin is comprised of three primary water producing zones (i.e., aquifers). The Newark Aquifer is the shallowest aquifer and is connected hydraulically with San Francisco Bay. Below the Newark Aquifer is the Centerville/Fremont Aquifer, and below the Centerville/Fremont Aquifer is the Deep Aquifer. In most areas these aquifers are separated from each other by layers of clay which impede the movement of water vertically between aquifer layers. An exception to this is in the inland area adjacent to Alameda Creek (Forebay Area). In this area the layers of clay become thinner and are discontinuous, allowing for a hydraulic connection between all three aquifers. This inter-connection between the Deep Aquifer and upper aquifers in the Niles Cone groundwater basin is well documented by the DWR and others and should be accounted for in the DEIR analysis of potential impacts to ACWD operations and the Niles Cone groundwater basin. However, this inter-connection differs significantly from the DEIR conceptualization of the Deep Aquifer as "hydrogeologically isolated" (Chapter 3.8).

ACWD has long managed the Niles Cone groundwater basin to ensure a safe, reliable source of supply for our customers, and to prevent contamination from seawater intrusion and other sources. Most of ACWD's groundwater recharge and production facilities are located in the Forebay Area. It is in this area that ACWD recharges the groundwater basin with water diverted from Alameda Creek, as well as imported water from the State Water Project. Water that is percolated by ACWD recharges all three aquifers, and ACWD production wells also tap all three aquifers to recover the recharged water. ACWD has operated the groundwater basin in a balanced "put and take" operation whereby water is recharged into the aquifers prior to being pumped out. In general, ACWD operates the groundwater basin in a seasonal conjunctive use manner, with groundwater supplies used to meet peak summer demands (as well as a smaller portion of ACWD's year-round base demand).

Two inter-related factors which are key to understanding ACWD's operations of the Niles Cone groundwater basin (and which are highly relevant to potential impacts from the Bayside Project) are (1) the potential for seawater intrusion and the movement of existing trapped brackish water plumes in the Niles Cone groundwater basin, and (2) the very limited storage capacity in the Niles Cone groundwater basin. These factors are described below.

Prior to the importation of surface water from the State Water Project and San Francisco Hetch-Hetchy system in the 1960's, the Niles Cone groundwater basin was heavily overdrafted, with groundwater levels in the Newark aquifer up to 60 feet below sea-level. Historically there have also been other periods of overdraft throughout the region, including in the South East Bay Plain groundwater basin. The overdraft in the Niles Cone groundwater basin also resulted in significant contamination of aquifers in the ACWD service area due to seawater intrusion. The mechanism for this seawater intrusion was through the inland movement of salt water from San Francisco Bay through the Newark Aquifer (the top aquifer layer). Salt water from the Newark Aquifer then migrated downward to contaminate the Centerville/Fremont and Deep Aquifers. This seawater intrusion was effectively halted when ACWD began importing supplies, which were used to both replenish the groundwater basin as well as reduce reliance on groundwater pumping. Over the past thirty years ACWD has effectively maintained water levels within the groundwater basin to prevent any further seawater intrusion. However, much of the salt water still remains trapped in the groundwater basin. In 1974, ACWD initiated an Aquifer Reclamation Program (ARP) with the purpose of (1) preventing the brackish water plumes from migrating towards ACWD's wellfields; and (2) reclaiming the portions of the groundwater basin that have been impacted by salt water intrusion. ACWD utilizes a series of wells to pump out the trapped brackish water and replace it with fresh water from our recharge facilities. Starting in 2003, the brackish groundwater pumped from ACWD's ARP wells will be treated at a desalination facility and used for potable supplies.

Because the groundwater basin is hydraulically connected with San Francisco Bay, the usable storage of the basin is also very limited. In general, operating groundwater levels in the Newark Aquifer in the Forebay Area are limited to elevations of between 3 feet mean-sea-level (msl) and 20 feet msl, which provides total usable storage capacity of approximately 17,000 acre-feet within the BHF portion of the Niles Cone groundwater basin. Groundwater levels above 20 feet msl result in "overflow" losses to San Francisco Bay (through groundwater outflows or discharges to Alameda Creek which flows to the Bay). That is, any additional groundwater recharge that occurs when

groundwater levels are above 20 feet is subsequently lost to San Francisco Bay as overflow spills. In addition, under normal operating conditions groundwater elevations are maintained above 3 feet msl to provide a bayward groundwater gradient, necessary to prevent seawater intrusion. Groundwater modeling analysis conducted by ACWD has indicated that during critical drought conditions, groundwater levels in the Forebay Area may be lowered temporarily to –5 feet msl without long-term impacts to the groundwater basin. However, because of concerns with migration of brackish groundwater plumes and seawater intrusion, this level of drawdown cannot be maintained other than for the short-term. Because the Newark, Centerville/Fremont and Deep Aquifers are all inter-connected, it is not possible to pump heavily from the deeper aquifers without impacting the Newark Aquifer (and potentially inducing seawater intrusion). Within the limits described above, the groundwater basin provides a vital source of water supply for ACWD under both normal and dry year conditions.

ACWD's existing and future reliance on the Niles Cone groundwater basin is described in our Integrated Resources Plan (IRP). The IRP, adopted by our Board in 1996, provides a master plan of the water supply and demand management programs ACWD has implemented, or will be implementing, to meet future demands and to ensure adequate dry year water supply reliability. Because of limitations on the availability of imported supplies (up to 85% deficiency of SWP supplies in dry years), water supplies from the Niles Cone groundwater basin are vital for ACWD, especially during dry and critically dry years. In addition to local groundwater supplies, ACWD's IRP program also includes off-site storage, desalination, recycled water, and an aggressive demand management program. A cornerstone of our long-term water supply strategy is off-site storage (or banking) of excess SWP supplies, such as our existing program with the Semitropic Groundwater Banking Program. In wet years, SWP supplies are stored in the Semitropic groundwater basin in Kern County. These supplies can then be recovered by ACWD for use during dry years. Although participation in this banking program is much more expensive than storing water in the Niles Cone groundwater basin, ACWD's need for this off-site banking program is due to the very limited operational storage capacity of our own groundwater basin, as described above.

Interconnection Between the Niles Cone Groundwater Basin and the San Lorenzo Cone

The interconnection between the Niles Cone Groundwater Basin and the SEBP is recognized in the DEIR (page 3.8-1). As indicated in the DEIR, the interconnection occurs mainly through the Deep Aquifer. This interconnection is depicted in geologic cross-sections appearing in DWR Bulletins 81 and is referenced in DWR Bulletin 118-1: Appendix A:

> The aquifers below 400 feet, called the 400-foot and 500-foot aquifers, may extend beyond the limits in the Niles subarea and thus act as conductive layers for the migration of ground water out of the Niles subarea. The configuration of water levels in wells tapping the deeper aquifers shows a gradient toward the north. This suggests that ground water moves toward the north beneath the boundary between the Niles subarea and the adjacent San Leandro Cone.

The impact on groundwater in the Niles Cone groundwater basin due to historical pumping at East Bay Water Company's (EBWC's) Roberts Landing well field also serves as an indication of the degree of inter-connection between the Niles Cone and South East Bay Plain groundwater basins. The Robert's Landing well field was located in the same location as the proposed Bayside Project. This was confirmed by EBMUD, when at most of the public meetings on the proposed Bayside Project, EBMUD project engineers have stated that the Bayside Project site is located on the same site as the Roberts Landing well field. EBWC's Roberts Landing wells were deep wells, 300 to 800 feet deep, thus utilizing the same deep aquifer EBMUD plans to develop for the Bayside Groundwater Project (Norfleet Consultants, *Groundwater Study and Water Supply History of the East Bay Plain, Alameda and Contra Costa Counties, California*, 1998, page 51.)

The San Francisco-based civil and hydraulic engineer, Cyril Williams, Jr. published an article chronicling the water levels in the ACWD from 1913 to 1930. In explaining the causes of the extreme lowering of ACWD groundwater levels that occurred in 1924, he stated that "[t]he pumping by the Eastbay (sic) Water Company at Roberts Landing also contributed to the lowering of the water table in Alameda County Water District." (Cyril Williams, Jr., *The Water Situation in Alameda County Water District*, The Township Register, March 18, 1930, page 5.) This conclusion that pumping at Robert's Landing depleted the Niles Cone groundwater basin is reiterated in a recent study by Norfleet Consultants, which stated "[b]y 1913, it was known that pumping of the Roberts and Alvarado Well Fields caused a noticeable depression in the Niles Cone water table." (Norfleet Consultants, *Groundwater Study*, page 51.)

Eventually, pressures from ACWD and its neighboring district, Eden Township County Water District ("Eden District"), led to the cessation of pumping at Roberts Landing. EBWC entered into an agreement with the Eden District, dated May 18, 1925 ("Agreement"), whereby EBWC agreed to cease pumping from the Roberts Landing wells until at least April 1st, 1926, and then to pump only in the event of an emergency. (Agreement, paragraph 7).

After pumping ceased at Roberts Landing, Engineer Williams attributed the rise in ACWD's water table to the abandonment of Robert's Landing wells. He wrote:

> Through a compromise between the Eden Township County Water District, and the Eastbay (sic) Water Company, Roberts Landing pumps have been abandoned. When these pumps ceased operating, there was an almost immediate rise in a large number of wells in Alameda County Water District. A part of the leak in Niles Cone has been stopped and the great cone of depression caused by the pumping at Roberts Landing was refilled.

(Cyril Williams, Jr., *The Water Situation in Alameda County Water District*, page 5.)

In addition, in a 1928 letter to ACWD's President of its Board of Directors, discussing proposals to raise the water table in Niles Cone, Mr. Williams that:

> One of the most serious offsets to any proposed methods of raising the water table is the pumping at . . . the Roberts Landing wells of the East Bay Water Company. As to the Roberts Landing wells I have the practical assurance of the Water Company that these will never be used again. Under a contract with the Eden Township County Water District these wells must be abandoned on Jan. 1, 1930. For over one year these wells have not been operating, and there has been a marked rise in the deep wells of that District.

(Letter from Cyril Williams, to Mr. J. C. Shinn, President, Board of Directors of Alameda County Water District, June 1, 1928.)

More recent research has borne out Cyril Williams' conclusions. A 1955 evaluation of the Niles Cone area by the State Water Resources Board determined that the deep aquifer underlying the San Leandro and San Lorenzo cones "appeared to be hydrologically connected throughout the east bay area." (Norfleet Consultants, *Groundwater Study*, page 8.)

Furthermore, a 1984 groundwater supply report to the Alameda County Flood Control and Water Conservation District stated that:

> The lower zone [of the San Leandro and San Lorenzo aquifers], which occurs below a depth of 400 feet, contains considerably more water-bearing deposits than the upper zone. Geologic cross sections through the San Leandro and San Lorenzo cones show a thickening of the deeper aquifer towards the south. This thickening suggests that the source of aquifer material in the lower zone may be the ancestral Niles cone of Alameda Creek.

(Dennis P. Maslonkowski, *Groundwater in the San Leandro and San Lorenzo Alluvial Cones of the East Bay Plain of Alameda County*, June 1984, page 1) In addition, research into these deep aquifers led this researcher to the conclusion that "[t]he deeper aquifers in the study area are believed to be replenished by subsurface inflow from the south . . . . Subsurface inflow may be attributable to their interconnection with deeper aquifers of the Niles Cone." (Dennis P. Maslonkowski, *Groundwater in the San Leandro and San Lorenzo Alluvial Cones*, page 16.)

This conclusion has also been stated by EBMUD's own groundwater consultant. At the May 15th Public Comment meeting, the CH2M Hill groundwater consultant stated that the actual source of the Deep Aquifer was outside of the EBMUD service area and flowed North to the SEBP. Furthermore, at that same meeting, the consultant presented a chart of well logs from the SEBP indicating that the Deep Aquifer is much more productive closer to Hayward as compared to Oakland. Additionally, at most of the Public Comment meetings, when describing the Deep Aquifer, EBMUD project engineers have stated that the Deep Aquifer underlying the Bayside Project site becomes more productive in the southern portion of the SEBP.

Another compelling indication of not only the interconnection but also the degree of "communication" between the two basins is provided through a comparison of historical water-level-versus-time plots for wells in both the Niles Cone and San Leandro Cone. Historical water level plots were reviewed for wells 4S/1W-28D02, a Newark Aquifer indicator well in the forebay area of the Niles Cone; 4S/1W-30E03, a Deep Aquifer well that is within or close to the forebay of the Niles Cone; 4S/2W-12C01, a Deep Aquifer well located in northern part of the NCGWB; and 3S/3W-01K01, a Deep Aquifer well located in the San Lorenzo Cone (as documented in Figure 3.8-2 in the DEIR). The important common feature among the water level data from these wells is that they include data back to at least the 1960s, when groundwater levels were depressed due to heavy agricultural pumping and the absence of an effective recharge operation using both imported and local waters. All the plots have a similar signature, the most obvious part thereof being the recovery of water levels in the 1970s. The Newark forebay well's recovery was in response to development of ACWD's recharge operation, including the importation of supplemental state water beginning in 1962, the acquisition of gravel quarries for use as recharge ponds in the 1960s and 1970s, and the construction of rubber dams in Alameda Creek the 1970s and 1980s. The fact that the deep aquifer wells have this similar signature as the Newark Aquifer forebay well offers strong evidence of vertical movement of water and communication between the Newark and Centerville-Fremont and Deep Aquifers within the Niles Cone. The close resemblance in signature between the San Lorenzo Cone well 3S/3W-01K01 and Niles Cone Deep Aquifer wells, and ultimately the Newark Aquifer Forebay well, is evidence that there is a high degree of communication between the NCGWB and SEBP. As such, we believe the recovery of water levels in San Lorenzo Cone (as evidenced by the water level trends in well 3S/3W–01K01) is largely a consequence of ACWD's recharge operation.

In order to comply with CEQA standards regarding the description of the regional environmental setting and in order to adequately assess potential Project impacts to ACWD and the Niles Cone groundwater basin, the EIR must acknowledge the previous studies and historical information which provide substantial evidence of a high degree of communication between Niles Cone groundwater basin and the SEBP groundwater basin.

ATTACHMENT 2 – ADEQUACY OF IMPACT IDENTIFICATION AND ASSESSMENT

CEQA requires that an EIR consider and discuss all significant environmental impacts of the project. CEQA Guidelines § 15126 and 15126.2. "'Significant effect on the environment' means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project . . . ." CEQA Guidelines § 15382.

CEQA Guidelines also state that "Direct and indirect significant effects of the project on the environment shall be clearly identified and described [in the EIR], giving due consideration to both the short-term and long-term effects." CEQA Guidelines § 15126.2(a). The EIR must describe the significant impacts that would lead to irreversible changes in the environment. CEQA Guidelines § 15126.2(c). Finally, in assessing impacts, "[w]hile foreseeing the unforeseeable is not possible, an agency must use its best efforts to find out and disclose all that it reasonably can." CEQA Guidelines § 15144.

As lead agency, EBMUD is also "encouraged to develop and publish thresholds of significance that the agency uses in the determination of the significance of environmental effects. A threshold of significance is an identifiable quantitative, qualitative or performance level of a particular environmental effect . . . ." CEQA Guidelines § 15064.7(a).

The DEIR does not meet these CEQA requirements for identifying and classifying impacts to ACWD and the Niles Cone groundwater basin. As described below, the DEIR (1) fails to adequately identify and describe potential impacts to ACWD and the Niles Cone groundwater basin; (2) improperly minimizes the significance of the impacts that are identified; and (3) does not address cumulative impacts on the Niles Cone groundwater basin due to pumping and recharge operations by ACWD and others in the Niles Cone groundwater basin and South East Bay Plain basin.

1. The DEIR fails to adequately identify and describe impacts to ACWD operations and the Niles Cone Groundwater Basin

As described below, the proposed Bayside Groundwater Project may have significant negative impacts on the Niles Cone groundwater basin and ACWD's operation of the Basin as a water supply source for our customers. ACWD's concerns with the proposed Bayside Project is due to the fact that the Niles Cone groundwater basin is in direct hydraulic connection with the South East Bay Plain groundwater basin (San Leandro Cone). In fact, previous studies by the California Department of Water Resources (see Attachment 1) characterize the Deep Aquifer as one continuous aquifer system connecting Niles Cone and San Leandro Cone. The Department of Water Resources (DWR) Bulletin goes on to state that the source of water for wells pumping from the deep aquifer in the San Leandro Cone is likely from recharge in Alameda Creek (i.e. through the Niles Cone groundwater basin).

Potential impacts to the Niles Cone groundwater basin and ACWD may occur as a result of (A) extracting groundwater from the deep aquifer in dry years, and (B) injecting water during normal and wet years, as detailed below.

A. Impacts due to extraction

As stated in the DEIR, EBMUD proposes to extract up to 15,000 AF/Yr from the deep aquifer on a continuous basis during dry years. During a long term drought the duration of this pumping could be as long as 7 years. Based on the existing pumping rate of 1,704 AF/Yr by non-EBMUD wells (source: CH2M Hill, February 2001), EBMUD's proposed program would increase pumping during dry and critically dry years by over 900% in the South East Bay Plain basin. Impact 3.8-8 (page 3.8-25) in the DEIR states that the pumping of wells as part of the Bayside Project may result in groundwater level declines of up to 40 feet in the Deep Aquifer at the northern boundary of the Niles Cone groundwater basin. With groundwater levels currently maintained at approximately sea-level in the Deep Aquifer in the northern portion of the Niles Cone groundwater basin, this would mean resulting groundwater levels of 40 feet <u>below</u> sea-level (-40 feet msl) in ACWD's service area. The DEIR also indicates that the Bayside Project would induce about 3,500 acre-feet of groundwater outflow from the Niles Cone groundwater basin to the South East Bay Plain basin. However, the DEIR fails to address how this magnitude of groundwater level decline and groundwater outflows would impact ACWD and the Niles Cone groundwater basin, including loss of ACWD water supplies, seawater intrusion, movement of contaminants, and land subsidence.

<u>The DEIR incorrectly states that there would be "no net impact" to the Niles Cone groundwater basin if the Project were used in the ASR mode:</u> On page 3.8-25 (Impact 3.8-8) and on page 6-3 (Table 6-1, Comparison of Operating Alternatives), the DEIR states that over the long-term (i.e. 75 years) there would be no net impact to Niles Cone groundwater basin assuming that the amount of water injected by the Bayside Project is approximately equal to the amount of water extracted by the Project. However, this assertion is incorrect for two reasons.

First, the limited operational storage within the Niles Cone groundwater basin is already fully utilized by ACWD. Additional water "stored" by EBMUD in the Niles Cone groundwater basin would spill to San Francisco Bay during the times when ACWD is maintaining the basin at high levels. As previously described, this "spill" would occur because the Deep Aquifer is hydraulically connected with the upper aquifers in the Niles Cone groundwater basin. Increased groundwater levels in the Deep Aquifer may result in increased groundwater levels in the upper Newark Aquifer, with subsequent "overflows" to the Bay. Without the available storage capacity within the Niles Cone groundwater basin, subsequent extraction by EBMUD during dry years would result in groundwater outflows from the ACWD service area, resulting in a long-term net loss from the Niles Cone groundwater basin, with potentially significant impacts on ACWD's water supplies.

Second, the groundwater modeling conducted by EBMUD has indicated that, even with the ASR operations, the proposed Project would still result in significant groundwater level declines and groundwater outflows from Niles Cone groundwater basin during dry years. That is, similar to the extraction-only alternative, in the ASR mode the Niles Cone groundwater basin will still be impacted by groundwater level declines and groundwater outflows during dry years when the Bayside Project is in extraction mode (i.e. during dry and critically dry years). Therefore, the comments below regarding ACWD water supply losses, seawater intrusion, movement of contaminants and land subsidence should be considered as applicable to both the extraction-only and injection/extraction alternatives.

In addition, rather than using the incorrect assumption of only considering "net" impacts for the ASR operating alternatives over a long-term hydrologic period, the EIR should consider impacts to ACWD and the Niles Cone groundwater basin separately for dry year operating conditions (extraction) and wet year operating conditions (injection).

The DEIR fails to identify the impacts to ACWD due to the loss of water supplies from the Niles Cone groundwater basin: Previous modeling by EBMUD's consultant has indicated that under existing conditions there is a flow of approximately 300 to 700 AF/Yr from the Niles Cone groundwater basin to SEBP basin. Additional reconnaissance level modeling by EBMUD has indicated that the proposed Bayside Project would result in an increase in "inflows" from the Niles Cone groundwater basin to the South East Bay Plain basin for a total of 2,500 AF/Yr during the first year of Bayside Project pumping, and up to 3,500 AF/Yr during the last year of a three year pumping period. From an ACWD perspective, this increase in "inflows" to the SEBP basin is actually an increase in "outflows" from the Niles Cone groundwater basin, representing a loss of ACWD water supplies previously recharged by ACWD. Over a seven year drought up to 20,000 AF of critical water supply would be lost from the Niles Cone groundwater basin due to groundwater outflows as a result of the operation of the Bayside Project (based on EBMUD's modeling analysis). Because the Deep Aquifer is hydraulically connected with the Centerville/Fremont and Newark aquifers in the ACWD service area, the groundwater outflows from the Deep Aquifer and related groundwater drawdown (estimated to be up to 40 feet in the Deep Aquifer) that occur as a result of Project operations would directly impact ACWD's water supplies. This would represent a significant water supply impact to ACWD, especially since ACWD will be relying on water previously stored by ACWD in the Niles Cone groundwater basin to make up for deficiencies in imported supplies during drought years. In addition, if ACWD needs to curtail pumping because of seawater intrusion concerns or concerns regarding movement of brackish groundwater plumes, the water supply impacts to ACWD would be even greater. Therefore, the EIR should evaluate the potential impacts on water supply to ACWD due to the Bayside Project and provide appropriate mitigation.

The DEIR fails to consider seawater intrusion impacts in the Niles Cone groundwater basin: The DEIR considers the potential for seawater intrusion in the SEBP groundwater basin (Impact 3.8-6, page 3.8-24) but does not consider potential seawater intrusion impacts in the adjacent Niles Cone groundwater basin. As discussed above, the DEIR indicates that there may be drawdown impacts of up to 40 feet in the Deep Aquifer in the Niles Cone Groundwater basin as a result of the Bayside Project's pumping. ACWD's modeling analyses have indicated that this level of drawdown in the Deep Aquifer would also result in lower groundwater levels at ACWD's well field in the Centerville/Fremont and Newark Aquifers. ACWD's analysis has also indicated that when EBMUD's planned dry year pumping from the proposed Bayside program is superimposed over ACWD's pumping from the Niles Cone groundwater basin, groundwater elevations in the Newark Aquifer will decline at a significantly accelerated rate (compared to without the Bayside Project). Finally, this analysis indicates that this accelerated rate of decline in the Newark Aquifer water levels will also result in potentially significant seawater intrusion through the Newark Aquifer, which would not have occurred absent the Bayside Project.

The DEIR fails to consider the movement of contaminants in the Niles Cone groundwater basin: The DEIR considers the potential for movement of contaminants in the SEBP groundwater basin (Impact 3.8-2, page 3.8-21) but does not consider the potential for similar impacts in the adjacent Niles Cone groundwater basin. As

documented in ACWD's annual Groundwater Survey reports, even though ACWD has managed the groundwater basin to prevent further seawater intrusion, a significant amount of brackish water remains trapped in the aquifers. Over the past 25 years, ACWD has been removing this trapped brackish water through our Aquifer Reclamation Program. The purpose of this program is to reclaim to fresh water conditions the portions of the groundwater basin that have been previously impacted by seawater intrusion.

Based on the potential groundwater level declines and groundwater contour maps provided in the DEIR, the groundwater gradients in the Deep Aquifer, and possibly Centerville/Fremont and Newark Aquifers, will be significantly altered by the operation of the Bayside Project. In general, pumping from the Bayside Project will result in a significantly steeper groundwater gradient with a corresponding increase of groundwater flows to the north. This change in direction and magnitude of the groundwater gradient in the Niles Cone groundwater basin may cause the existing plumes of trapped brackish groundwater to also spread further north, thereby contaminating areas in the aquifer system that either have not previously been impacted, or areas that have been previously reclaimed by ACWD's Aquifer Reclamation Program.

The DEIR fails to consider land subsidence potential in the ACWD service area: ACWD is concerned with land subsidence impacts in the ACWD service area due to potential impacts on ACWD water supply infrastructure, as well as potential impacts on the residences and businesses which we serve. The DEIR estimates that there may be significant groundwater level declines in the ACWD service area, but does not provide an analysis of potential subsidence impacts in the ACWD service area. This analysis should be provided in the EIR and should be based on projected groundwater level declines and the local hydrogeologic conditions in the Niles Cone groundwater basin. Mitigation should be provided for any significant impacts.

B. Impacts due to injection

The preferred operating alternative identified in the DEIR is for an injection/extraction program. The DEIR states that under this operating scenario EBMUD will inject treated Mokelumne River supplies into the groundwater basin in approximately 40% of the years, in any month in which there are flood control releases from EBMUD's Pardee or Camanche Reservoirs. The DEIR also states that under this operating alternative, the amount of water extracted from the basin would approximately equal the water injected into the basin (assuming future hydrologic conditions similar to those of the past 75 years). The DEIR also indicates that the injection program will result in groundwater flows from the SEBP basin into the Niles Cone groundwater basin (resulting in higher groundwater levels in the Deep Aquifer). Because the Deep Aquifer system is inter-connected with the Newark and Centerville/Fremont Aquifers in the Forebay area, it is likely that the Bayside injection operations will impact groundwater levels in all three of these aquifers, and not just the Deep Aquifer. ACWD concerns with the groundwater injection operations are related to potential impacts on ACWD's ability to store water in the Niles Cone groundwater basin and impacts on water quality in the Niles Cone groundwater basin.

The DEIR fails to consider impacts due to the limited storage capacity of the Niles Cone groundwater basin: As described above, ACWD recharges the Niles Cone groundwater basin through the capture and percolation of local runoff and imported supplies from the SWP. However, as also described above, the amount of useable storage in the Niles Cone Groundwater basin is limited to approximately 17,000 AF due to (1) seawater intrusion concerns if the water levels drop significantly below sea-level, and (2) groundwater "overflow" losses to San Francisco Bay if the groundwater levels are too high. In order to optimize the conjunctive use of the basin, ACWD typically recharges the maximum amount possible to maintain high groundwater conditions when water supplies are available (within the operating parameters described above). This allows ACWD to have the maximum amount stored for future dry year conditions, as well as providing fresh water to displace brackish groundwater in contaminated portions of the aquifer system.

One of ACWD's concerns with the proposed injection operations is that, given the relatively small quantity of useable storage in the Niles Cone groundwater basin (approximately 17,000 AF), there is not sufficient capacity to provide storage for the Bayside Project. Given that it is ACWD's operational practice to maximize recharge (and storage) in the Niles Cone groundwater basin, any additional water stored through the Bayside Project would either (a) limit ACWD's subsequent use of this storage capacity or (b) result in "overflow" conditions in which recharged water would be lost to San Francisco Bay or cause damage to property through artesian conditions. In either case, the DEIR should consider the impacts the proposed injection operations may have on ACWD's ability to utilize the Niles Cone groundwater basin for storage of water supplies, and provide appropriate mitigation.

The DEIR fails to consider water quality impacts on the Niles Cone groundwater basin that would occur as a result of injection operations: A potential water quality impact of concern to ACWD is the movement of existing contaminant plumes due to changes in the direction and magnitude of groundwater gradients which will occur as a result of the injection operations. As discussed above, there are significant trapped brackish groundwater plumes in all of the aquifers, including Deep Aquifer, in the Niles Cone groundwater basin. Changes of groundwater pressures or gradients as a result of Bayside injection may cause these trapped plumes to migrate, adversely affecting adjacent potable waters. In addition, the DEIR indicates that the native groundwater to be extracted from the Deep Aquifer by the proposed Bayside Project will need to be treated to remove high levels of manganese and radon. The DEIR also indicates that, with the injection program, the water to be extracted may be of improved quality since EBMUD will be recovering, in part, the treated water that had previously been injected. ACWD's concern with this proposed operation is that while the injection program may result in improving groundwater quality in the vicinity of the Bayside wells, it may also displace the native groundwater in the SEBP basin, causing it to flow into aquifers in the ACWD service area. This may result in degrading groundwater water quality in the ACWD service area, especially since ACWD's wells tapping the Deep Aquifer do not currently have elevated concentrations of either manganese or radon. Both of these potential impacts should be addressed in the EIR, and appropriate mitigation should be provided.

2. The DEIR incorrectly classifies the significance of the impacts that are identified

CEQA Guidelines (CEQA Guidelines § 154065) state that finding a significant effect on the environment is mandatory whenever any of the following apply:

- The project has the potential to substantially degrade the quality of the environment;
- The project has the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals;
- The project has possible environmental effects which are individually limited but cumulatively considerable; or
- The project will cause substantial direct or indirect adverse effects on humans.

The DEIR's evaluation of Impact 3.8-8 (Extraction of water could affect the Niles Cone groundwater basin) indicates that the impact to Niles Cone groundwater basin would be "less than significant with mitigation", but also indicates that there may be a "residual" impact of increased net inflows from Niles Cone groundwater basin to the SEBP groundwater basin. The proposed mitigation for these impacts is addressed in Attachment 4. As discussed below, the classification of the resulting level of significance as "less than significant" is incorrect and inappropriate.

A. The threshold for "significance" is inappropriate

The proposed mitigation for impacts to the Niles Cone groundwater basin indicates that the District will implement a groundwater monitoring network in the Deep Aquifer to assess impacts on the direction and magnitude of flows from the Niles Cone groundwater basin. The proposed mitigation also states that "Flux values will be estimated based on historical pumpage from the SEBPB to assess the *significance* of future impacts relative to past impacts. If adverse impacts are detected the District will take appropriate actions....". This description of what is considered "significant" is vague and confusing, especially regarding the determination of what constitutes "future impacts relative to historical impacts". The DEIR does not meet the CEQA Guidelines requirement to provide a threshold of significance that is an "identifiable quantitative, qualitative or performance level of a particular environmental effect".

In addition, the determination of what constitutes a significant impact to ACWD and the Niles Cone groundwater basin should not be based on "historical" groundwater conditions when both the SEBP and Niles Cone groundwater basin were heavily overdrafted. It was precisely under these unfortunate historical conditions that the Niles Cone groundwater basin was so significantly impacted by seawater intrusion. In addition, the historic overdraft in the SEBP and subsequent lowering of the Niles Cone water table and damage to ACWD operations led to litigation whereby ACWD sought to enjoin East Bay Water Company's pumping at Roberts Landing, the same site as the Bayside Project. We are concerned that EBMUD intends to pump groundwater to the level of historic conditions. At the May 1st Public Comment meeting, the CH2M Hill subsidence consultant stated that subsidence would not occur because EBMUD "will only lower the water table to historical levels." A lowering of the water table to levels seen in the early part of this century will seriously damage ACWD's groundwater basin. Rather, significance must be assessed based on changes from the existing groundwater

conditions of Niles Cone groundwater basin and on how the proposed Project would impact ACWD's existing operation and balanced use of this resource.

B. Residual impact would be significant

The DEIR states that even with mitigation, there may be a residual impact of a net outflow within the Deep Aquifer from the Niles Cone groundwater basin to the SEBP Basin. As previously discussed, any increase in groundwater outflows from the Niles Cone groundwater basin due to extraction by the Bayside Project would constitute a loss of ACWD water supply, a potentially significant impact to ACWD, especially in dry years. Therefore, the DEIR should recognize this impact as significant and provide appropriate mitigation, as discussed in Attachment 4 below.

C. Significant and irreversible impacts may occur prior to mitigation

The DEIR states that it will monitor groundwater levels at the boundary between the Niles Cone groundwater basin and SEBPB, and, based on this monitoring data, will estimate flux values between the groundwater basins. The DEIR goes on to state that "If adverse impacts are detected, the District will take appropriate actions...". However, the DEIR fails to recognize that impacts that occur prior to the proposed mitigation actions may be environmentally significant. These impacts may include loss of ACWD dry year supplies, seawater intrusion, or movement of contaminants. The potential for salt water contamination and movement of contaminants triggers a mandatory finding of significance under CEQA. Therefore, the EIR should classify those impacts to ACWD and the Niles Cone groundwater basin which occur prior to the proposed mitigation as potentially significant and provide appropriate mitigation. Given that the movement of contaminants or salt water intrusion would cause long lasting harm to the Niles Cone groundwater basin, potentially taking decades to repair, the mitigation should be developed to ensure that such impacts will not occur as a result of the Bayside Project operations.

3. The DEIR does not address cumulative impacts due to pumping and recharge operations by ACWD and others in the Niles Cone groundwater basin and South East Bay Plain basin.

CEQA Guidelines state that "An EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable" CEQA Guidelines § 15130(a). "'Cumulatively considerable' means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects . . . ." CEQA Guidelines § 15065.

An adequate discussion will include: a list of past, present and future projects, including those outside the lead agency's control, that produce cumulative impacts. CEQA Guidelines § 15130(b)(1).

However, the DEIR completely fails to consider the cumulative impacts of ACWD groundwater operations (pumping and recharge) and others who utilize the Niles Cone and South East Bay Plain groundwater basins as a water supply source. Other groundwater users include private well owners in the Niles Cone groundwater basin and the City of Hayward's emergency groundwater supply system. The analysis of

cumulative impacts on ACWD operations and the Niles Cone groundwater basin is especially critical given that ACWD's current operation of the groundwater system is to maximize the use of local groundwater supplies in dry years (when our imported water supplies may be significantly cut back). It is during these dry periods that EBMUD also will likely be extracting groundwater from the proposed Bayside Project, thereby adding additional stresses on the Niles Cone groundwater basin. Potential cumulative impacts include groundwater level declines and subsequent ACWD water supply losses, saltwater intrusion, and movement of contaminants in the Niles Cone groundwater basin. Similarly, under current operating conditions, during wet periods ACWD maximizes the recharge into Niles Cone groundwater basin with local and imported State Water Project supplies. However, the amount of ACWD recharge is limited by the overall storage capacity of the Niles Cone groundwater basin. Based on information provided in the DEIR, it will be during the same wet periods that EBMUD will be injecting water into the Deep Aquifer. Because of the limited storage capacity of the Niles Cone groundwater basin, this additional injection of water by EBMUD may result in water supply losses due excessive Niles Cone groundwater outflows to San Francisco Bay and potential artesian conditions with subsequent property damage. Therefore, the EIR should identify, evaluate and provide mitigation for these cumulative impacts, as required under CEQA.

ATTACHMENT 3 – ADEQUACY OF TECHNICAL ANALYSIS

ACWD has reviewed in detail the DEIR's technical analysis of groundwater related impacts. As discussed below, the DEIR relies on a "reconnaissance level" groundwater model to analyze potential groundwater impacts in the Niles Cone groundwater basin. This approach is not adequate to determine impacts to Niles Cone groundwater basin or ACWD operations because of: (1) deficiencies in the groundwater model to analyze such impacts, and (2) the lack of technical studies to evaluate the hydrogeologic conditions in the area between Niles Cone groundwater basin and the South East Bay Plain groundwater basin. This attachment provides: (1) ACWD's comments regarding the groundwater model used for the DEIR technical analysis, and (2) ACWD's recommended approach for conducting the technical studies needed to evaluate the potential impacts on the Niles Cone groundwater basin and ACWD operations. As discussed in ACWD's summary letter, these technical studies and impact analyses should be completed by EBMUD prior to finalization of the EIR.

1. Limitations of EBMUD's Reconnaissance Model

CH2M Hill, EBMUD's consultant, developed a "reconnaissance level" computer model for the SEBP. Our comments on the modeling effort are based on the DEIR and additional information provided to ACWD. This included extensive discussions between ACWD and EBMUD staff and model documentation that appears in a draft calibration report.

The model was used to estimate the impacts on the Niles Cone by noting model-predicted flows across the southerly boundary of the model grid. The model results demonstrate a potential impact on the Niles Cone which, based on our analysis discussed in other sections of these comments, would be unacceptable to ACWD. But we are concerned that the actual impacts to ACWD could be even more severe because of uncertainties inherent in the reconnaissance level of effort. Accordingly, we do not share EBMUD's confidence that the model findings are "conservative." "Reconnaissance level" means that the level of effort was limited with respect to model calibration and the selection and distribution of aquifer parameters. Limiting the level of effort enables a "first-cut" examination of feasibility of installing a well field to be done quickly and economically. With reference to such an objective, we have no reason to believe that CH2M Hill did not do a reasonable job in both the modeling work and in recognizing the model's limitations. But in our opinion, the level of refinement is inadequate to predict impacts on the NCGWB with any confidence. The following inadequacies of the model for reliable calculation of the amount of water that would flow from the NCGWB to the SEBP (or vice versa) and the associated groundwater level impacts in the Niles Cone groundwater basin are discussed below.

- Unrealistic assumption of a constant head at the interface between the NCGWB and SEBP/ inadequate grid coverage;
- Lack of variability in aquifer parameter values with respect to geographic location;
- Over-reliance on a steady-state approach for calibration;
- Simplistic approach for selecting recharge parameters;
- Inadequate levels of "stress" on the aquifer system for model calibration; and

- Inconsistency between EBMUD's assertion that there will be little or no subsidence as a result of the Project and its assumption that clay aquitards will compress, yielding considerable local water for the Project.

Incorrect Assumption of a Constant Head at the Interface between the NCGWB and the SEBP/ Inadequate Grid Coverage. Ideally, a model grid should extend horizontally to the actual limits of a flow domain whose boundaries either truly represent the physical limits of an aquifer system or an actual hydraulic divide (a no-flow boundary or constant-head boundary). When aquifers physically extend appreciably beyond the "area of interest", a modeler may elect to limit the geographic area of the grid by assignment of an artificial no-flow, general head, or constant head boundary. This approach may be acceptable, provided that the boundary is placed significantly beyond the influence of sources and sinks which could be located either within or outside the model grid.

EBMUD's model has an artificial constant head boundary whose location extends near the interface between the Niles Cone and the SEBP. In the Deep Aquifer, the "interface" is imaginary, not a true hydrogeologic interface. The Deep Aquifer is continuous across this arbitrary line, and there is no river or stream in direct communication with the Deep Aquifer at this location to render a constant-head type of hydraulic divide. What is problematic with assignment of a constant head boundary at this location is that there are substantial sources (i.e., ACWD's recharge ponds and potentially EBMUD's proposed injection wells) and sinks (ACWD's wells and the proposed Bayside Project's wells) that will likely cause the actual head to fluctuate appreciably over time. Hence, assignment of a constant head boundary at this "interface" is invalid, and the exchange of water from the NCGWB to SEBP cannot be reliably calculated with this model. Instead, a common model grid that encompasses both the NCGWB and the SEBP basins is needed.

Potentially, use of an artificial constant-head boundary may influence the simulation toward over-prediction of inflow from the NCGWB. Partially on this basis, EBMUD contends that the model, although a "reconnaissance level" of effort, is "conservative" with respect to impacts on the NCGWB. However, this contention assumes that the assigned head is appreciably higher in value than actual heads over the duration of time when EBMUD wells would be in operation, and consequently, that the actual gradient across the interface would be less than the model-predicted value. There can be no confidence in this potential outcome until the model grid is extended to include the NCGWB (and sources and sinks therein) and other limitations of the model are addressed. Essentially, we remain concerned that the model may over-predict the amount of water that the Bayside wells can derive from sources within the SEBP itself. The consequence of such an over-prediction would be an under-prediction of the amount of water that would be drawn from the Niles Cone. The following paragraphs provide additional bases for this concern.

Lack of Variability in Aquifer Parameter Values With Respect to Geographic Location. In real aquifer systems, aquifer parameter values can be expected to vary with geographic location as well as depth. For example, the Deep Aquifer's hydraulic conductivity may drop off with distance (north) from the Niles Cone. The ease of horizontal groundwater flow in the Deep Aquifer, both within the Niles Cone and SEBP, toward the Bayside Project wells would be governed by the parameter *transmissivity*, which is the product of hydraulic conductivity and saturated aquifer thickness. In the

SEBP model, layer thickness does vary with horizontal geographic location but hydraulic conductivity does not. This unrealistic uniformity in hydraulic conductivity may skew the simulated direction of water flow to the Bayside wells relative to flow direction that would be actually be induced. If hydraulic conductivity is, in reality, greater in the southerly portions of the SEBP than in the northerly areas, then the model may over-predict the availability of water from the northerly areas within the grid to satisfy Bayside Project's demand. This, in turn, would mean an under-prediction of the amount of water exported from the Niles Cone.

We have similar concerns with the assumption of geographic uniformity in other parameters, such as vertical hydraulic conductivity and storage coefficients. Vertical hydraulic conductivity was taken simply as 10 percent of the value of horizontal conductivity. Such an assumption is common in "reconnaissance level" modeling. However, a greater level of effort to calibrate this parameter is necessary because the amount of water exported from the Niles Cone may be dependent on the amount of water in shallow layers of the SEBP that is fluxed to the Deep Aquifer, as estimated based on the parameters discussed above.

Over-Reliance on a Steady-State Approach for Model Calibration. Use of a steady-state approach is a common first-cut toward calibrating a model, but transient simulations are needed for calibrating parameters associated with fluctuations in conditions over time. Unless pump tests have been conducted throughout the model grid (not the case here), the values of storage coefficients (specific storage and specific yield), in particular, cannot easily be calibrated without considering temporal fluctuations in water levels. To EBMUD's credit, a transient simulation with the model was run to test the model predictions against measurements of local drawdown and "draw-up" at the Farmhouse Observation Well in response to pumping and injecting, respectively, at the Bayside Well. A comparison of model output with measured drawdown –even that induced from a single, short-term pump test- can serve to provide some feedback on the accuracy of certain model parameters over a localized area. However, achievement of model reliability for evaluating impacts on the NCGWB requires a transient approach for calibration/verification over a much greater expanse of time and geographic area. Essentially, the model should be calibrated against a long history (e.g., 40 years) of recorded water levels. Such levels should be measured at a large number of wells screened at various depths and located over a wide area throughout the model grid. This would give more confidence in the distribution of key input parameters. Accuracy with respect to these parameters, in turn, would allow for a more accurate estimate of the relative importance of various sources of supply (one being the NCGWB) that would feed the Bayside wells in times of drought.

Simplistic Selection of Recharge Parameters. The approach taken to select input parameters for recharge was too simplistic to achieve reliable predictions of impacts to the Niles Cone, especially during drought periods. Parameters for the recharge budget (stream seepage, pipe leakage, rainfall percolation) were input as average annual values heavily based on a document prepared by Muir (1993). The model has no routines to calculate these values independently from measured quantities such as rainfall and urban water use. No documentation in the form of measured data was provided supporting the estimated stream seepage. Another concern is that the recharge values were not reduced to appropriate levels for model simulations in drought years, when actual amounts of rainfall, stream seepage, and urban water use

would be lower. Use of lower values, in line with actual drought conditions, is important because reduced recharge would coincide with times when the Bayside wells are pumping and groundwater drawn to those wells from the NCGWB. Without a basis for confidence in recharge values, the reliability of the model as a predictive tool in estimating the potential flux from the NCGWB to the SEBP is limited.

Inadequate Levels of "Stress" on the Aquifer System for Calibration. The model was run to test possible impacts on the Niles Cone in response to scenarios involving full-scale operation of the Bayside Project. However, the "stress" (e.g., severe pumping, drawdown, etc.) on the aquifers that would result from actual full-scale operation at the Bayside Project would likely be far greater than those considered in the calibration. The steady-state condition to which the model was calibrated was inherently stress-free. The only real stresses considered were the pumping and injection tests at the Bayside test well. However, these tests represent only a fraction of the stresses that would be induced under full-scale operation. This greatly limits the reliability of the "what-if" scenarios run by this model. The CH2M Hill February 22, 2001, draft document, which details Bayside Project simulation results, admits to data gaps which "center on response of the aquifer system to long-term, large scale pumping and injection stresses." Moreover, "these gaps will only be able to be addressed through operation of full-scale facilities." In other words, there are significant limitations on the model's reliability in attempting to predict the impact of the Project on the NCGWB. Rather than waiting until the Project is built to verify the reliability of the model, the calibration should consider the severe overdraft condition during and prior to the 1950's and 1960's and the subsequent rebound observed in the late 1970s and 1980s. The influence of the establishment and expansion of ACWD's recharge operation on this rebound should be considered, as similar hydrographic signatures between wells in the NCGWB and SEBP strongly suggest ACWD's recharge operation was largely responsible for recovery of aquifer pressures in the Deep Aquifer within the SEBP. Consideration of these stresses will increase the model's reliability in forecasting the responses of the aquifers to the Bayside Groundwater Project.

Inconsistency between EBMUD's assertion that there will be little or no subsidence as a result of the Project and its assumption that clay aquitards will compress, yielding considerable local water for the Project. According to the results of simulations with the SEBP and discussions with EBMUD staff, 15,000 acre-feet per year of pumping at the Bayside Project would induce approximately 3,000 acre-feet/year of water from the NCGWB via the Deep Aquifer. The other 12,000 acre-feet per year would be supplied by sources within the SEBP, mainly clay layers. Because of the thickness of the clay layers (the 400 feet of soil overlying the Deep Aquifer within the SEBP is mostly clay), the amount of water stored in such clays is substantial. According to EBMUD, these clay layers would yield sufficient water to supply the Bayside well demand so as to minimize the impact on the NCGWB, even during droughts when rates of recharge within the SEBP are reduced. In short, the clay layers were presumed to act as a big reservoir, yielding water to the Deep Aquifer when piezometric heads in the Deep Aquifer drop.

When the piezometric head of the underlying Deep Aquifer is lowered, the upward buoyant force on the overlying clay would be reduced, increasing the inter-granular stress within the aquifer and the overlying clay. If the soils are compressible, then subsidence could result. Fine-grained soils, especially clay, are much more compressible than sand and gravel. Without this compression, clay would not yield

much stored water. Hence, the amount of water per unit area yielded from clay equals the amount of subsidence at that location. The amount of subsidence, and hence the amount of water yielded, has been demonstrated to be dependent on the coefficient of compressibility (logarithmic theory), the initial layer thickness, initial void ratio, and initial and final values of inter-granular stress, as provided by the following equation:

$$s_c = C_c H_o \frac{H_o}{1+e_o} \log \frac{P_{i2}}{P_{i1}}$$

where:

C_c= the coefficient of compressibility,
e_o= the initial void ratio
P_{i1}= the initial intergranular stress
P_{i2}= the final intergranular stress
s_c= the amount of subsidence and water yielded per unit area

The amount of compression or subsidence depends on the historical levels of intergranular stress. The value of Cc in the above equation will be lower with intergranular stress levels that have already been experienced by the clay layer. Hence, for a clay that is stressed to levels less than the historical maximum (for example, if piezometric heads were lowered but not as low as the historical minimum), the subsidence may be reduced relative to what could be experienced with record stress levels. Previous years of pumping and associated drawdown were cited by EBMUD as probable reasons why subsidence would not likely occur to any significant degree. The corollary of this, however, is that the amount of water that can be stored and released from the clays will be very minimal.

Therefore, ACWD is concerned with the assumption used by EBMUD that the clays can serve as a significant reservoir that yield water in dry years and bank water in wet years. We contend that one should not expect to recover water stored in clay without some compression (subsidence). EBMUD claims no significant subsidence would occur from clays. Hence, in the course of selecting input parameters for the model, water storage capacity of the clay may have been overestimated, and this may have led to an underestimation of water imported to the SEBP from the Niles Cone and other groundwater impacts in the Niles Cone.

To address this concern, EBMUD should quantitatively reconcile the amount of water that is released from storage within clay layers with the expected amount of subsidence. The two should match reasonably well. We understand consolidation is a time dependent process, and for certain soil systems, it could take tens of years to realize the full yield of water for a given incremental increase in intergranular stress. The yield of water is limited by the low hydraulic conductivity of clay, limiting the rate of drainage to the underlying aquifer. It may be useful, therefore, to couple time-dependent subsidence calculations with (time-dependent) model predicted releases of water from storage.

Prediction of impacts on the Niles Cone in response to hypothetical pumping at the proposed Bayside Project requires a model that includes both the SEBP and NCGWB, developed and calibrated with an appropriately high level of refinement. The serious

limitations of EBMUD's modeling effort to date need to be remedied before the final EIR is certified.

Impacts Indicated by ACWD's Modeling Efforts

To better characterize the impact of the Bayside Project, ACWD's own model, the *Integrated Groundwater Surface Water Model* (IGSM), was used to simulate drought conditions with and without pumping at the proposed Bayside Project in San Lorenzo. Although the IGSM does not extend beyond the Niles Cone groundwater basin, it can serve as a preliminary tool to identify potential impacts to ACWD operations and Niles Cone groundwater basin as a result of the projected groundwater level declines and outflows that are estimated by EBMUD to occur as a result of the proposed Bayside Project.

In summary, ACWD's modeling efforts indicate that even if the flux between the two groundwater basins were to exactly match EBMUD model predictions, the impact on both the Niles Cone groundwater basin and ACWD's operation of the basin would be significant and unacceptable. The negative impacts to the Niles Cone groundwater basin would include new seawater intrusion from San Francisco Bay and aggravation of the existing brackish water conditions. Although sea water constituents (i.e. chlorides) were not modeled by IGSM as state variables, certain water quality impacts can be anticipated through consideration of historical water quality patterns, especially when (prior to the mid 1970s) the aquifers were overdrafted and the Newark Aquifer was below sea level. ACWD modeling analysis has indicated that, with the additional groundwater outflow and drawdown as a result of the Bayside Project, the perimeter of the existing brackish water plumes would expand, possibly threatening ACWD's Mowry Wellfield, contaminating areas that have always had favorable water quality, or re-contaminating areas whose water quality has been reclaimed since the mid 1970s. In connection with this, modeling analysis indicates that leakage from the more contaminated Newark Aquifer would move downward to the Centerville-Fremont and Deep Aquifers, which would increase chlorides in ACWD's Aquifer Reclamation Program wells. This in turn, will increase treatment costs at ACWD's new desalination facility. In addition, lower aquifer levels could translate into lower well yields and/or higher power costs. Because of dispersive effects and the slow speed of groundwater, it's not easy to reclaim a portion of an aquifer once it has become contaminated. It takes a substantial amount of fresh water applied over many years to flush through the aquifer system and reclaim even a small area.

As indicated from the above description of the IGSM modeling results, the groundwater levels in the NCGWB will be drawn down in dry years, even if EBMUD's Bayside Project were not in operation during such times. The head in the Newark Aquifer may drop to a level as low as 5 feet below sea level by the end of a multi-year drought, assuming EBMUD's Bayside Project is <u>not</u> operated in such a period. ACWD is seeking additional dry year supplies for groundwater recharge to minimize the potential for operating the Newark Aquifer below sea level. Another draw on the NCGWB during dry years, which we believe would be the consequence of the Bayside Project, would aggravate an already serious situation. As discussed in Attachment 2, these potential impacts need to be adequately evaluated in the EIR, and appropriate mitigation provided.

2. Recommended Approach for Analyzing Potential Impacts to ACWD Operations and Niles Cone groundwater basin

In the groundwater modeling report referenced in the DEIR, EBMUD's consultant (CH2M Hill) identifies the boundary condition between the Niles Cone and South East Bay Plain groundwater basins as an area for improvement. The reports states that, "If the District [EBMUD] decides to better define the characteristics of this boundary, then local water level and water construction data should be collected and select pumping tests performed. If the boundary appears to be hydraulically continuous with the SEBP, then the District [EBMUD] should consider extending the model into the NCGWB [Niles Cone groundwater basin]. Subsequent model simulation should be able to more accurately define potential impacts of the District's [EBMUD's] proposed Bayside Wellfield Project on water levels and water quality in the NCGWB [Niles Cone groundwater basin]."

We agree with CH2M Hill's recognition of the inadequacies of the model on which the DEIR relies and with the suggested approach for conducting the technical studies and developing the analytical tools necessary to assess these potential impacts. Unfortunately, EBMUD chose not to perform a complete technical analysis for the DEIR, and rather has relied on a groundwater model which, as discussed above, is not capable of addressing impacts to ACWD operations or to the Niles Cone groundwater basin.

Prior to finalization of the EIR, EBMUD should conduct the appropriate technical studies needed to adequately evaluate the potential impacts to ACWD operations and the Niles Cone groundwater basin. The results from these impact analyses should be included in the EIR and used to develop the appropriate mitigation measures for potential impacts (see Attachment 4 for further discussion regarding mitigation measures). The technical studies should include, at a minimum, the following components: (1) a detailed assessment of the hydrogeologic conditions in the area between the Niles Cone and SEBP; (2) aquifer pump tests utilizing existing wells to further define this inter-connection; (3) monitoring of existing wells for water levels and water quality in this area; (4) the development of a regional groundwater model (which includes both the South East Bay Plain and Niles Cone groundwater basins) with capabilities to adequately assess potential impacts to ACWD operations and the Niles Cone groundwater basin (as described in Attachment 2); and (5) the evaluation of potential Project impacts utilizing the groundwater model and monitoring results. Each of these items is outlined briefly below. However, detailed scopes for each of these items should be prepared in close coordination with ACWD and other appropriate agencies.

1. Hydrogeologic Assessment: Available hydrogeologic and hydrologic data related to the hydraulic connection between Niles Cone groundwater basin and the South East Bay Plain Basin should be collected and analyzed for the purpose of providing a better understanding of the inter-connection between these groundwater basins. This information should include: well logs and geophysical logs, pump tests, historical groundwater levels and groundwater quality data, and historical groundwater pumping. Groundwater contour maps should be prepared showing historical and current groundwater levels between the Niles Cone forebay area and the Bayside Project area. Geologic and aquifer cross-sections and maps of this area should be prepared to delineate the occurrence of the major aquifer units.

2. Aquifer Tests: Aquifer tests with existing City of Hayward, EBMUD and ACWD wells should be conducted to better characterize aquifer properties and inter-connection between Niles Cone and SEBP. Aquifer tests should be of sufficient duration and magnitude to develop adequate information on the inter-connection between Niles Cone and South East Bay Plain groundwater basins for use in subsequent groundwater modeling analyses.

3. Groundwater Level and Quality Monitoring: A groundwater monitoring network of key wells should be established within Niles Cone groundwater basin and South East Bay Plain basin to determine groundwater elevations and the groundwater gradient between Niles Cone and SEBP. To the extent possible, existing wells with well defined construction characteristics should be included in the monitoring network. Monitoring points should be established between the Niles Cone and SEBP groundwater basins. ACWD is prepared to work cooperatively with EBMUD and Hayward to establish a monitoring network adequate to assess the impact of current and anticipated Bayside Project operations. A groundwater quality monitoring program should also be conducted to establish baseline groundwater quality data in Niles Cone and SEBP, including delineation of seawater intrusion, and to provide additional information on groundwater migration. Key wells should also be identified for this purpose.

4. Groundwater Modeling: A regional groundwater model (which includes both the South East Bay Plain and Niles Cone groundwater basins) should be developed with capabilities to adequately assess potential impacts to ACWD operations and the Niles Cone groundwater. As an alternative to EBMUD's existing model, ACWD's Integrated Groundwater-Surface Water Model (IGSM) could be extended to cover the South East Bay Plain Basin, including the proposed Bayside well field. The regional groundwater model should be developed to simulate Bayside operations and their impacts on ACWD operations and the Niles Cone Groundwater Basin. The model should cover the SEBP and Niles Cone area utilizing information developed from the hydrogeologic assessment, aquifer tests, and groundwater monitoring sub-tasks described above. The model should be calibrated and verified with historical hydrologic and pumping conditions to ensure that the model adequately simulates the groundwater basins under a wide range of hydrologic conditions, operating conditions and aquifer stresses. Historical monitoring data as well as monitoring data collected as part of this mitigation/monitoring program should be utilized to ensure accuracy of calibration.

5. Impact Analysis: The regional groundwater model should then be utilized to evaluate potential impacts on ACWD operations and the Niles Cone groundwater basin that may occur as a result of the Bayside Project operations under a range of hydrologic and Bayside Project operating conditions. Bayside Project impacts should be determined by modeling groundwater conditions with and without the Bayside Project operations. Any differences in Niles Cone groundwater conditions between these two scenarios should be attributed to the Bayside Project operations. Impacts to be evaluated include any and all ACWD operational impacts and long-term impacts to Niles Cone groundwater basin, as described in the summary letter and Attachment 2.

As previously discussed, the DEIR's impact analysis on Niles Cone groundwater basin and ACWD operations is both inadequate and incomplete. Therefore, EBMUD should conduct the appropriate impact analysis, as defined above, prior to the finalization of the EIR. The results of the analysis should be included in the EIR, and appropriate mitigation measures should be developed, as discussed in the summary letter and Attachment 4.

ATTACHMENT 4 – ADEQUACY OF MITIGATION MEASURES

As a lead agency EBMUD has a duty to provide mitigation measures for adverse environmental impacts that may occur as a result of the proposed Bayside Project. CEQA Guidelines state that: "An EIR shall describe feasible measures which could minimize significant adverse impacts . . . ." CEQA Guidelines § 15126.4(a)(1). "Mitigation" as defined under CEQA Guidelines § 15370, includes:

- Avoiding the impact altogether by not taking a certain action;
- Minimizing impacts by limiting the degree or magnitude of the action;
- Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment;
- Reducing or eliminating the impact over time by preservation and maintenance operations;
- Compensating for the impact by replacing or providing substitute resources or environments.

In order to mitigate for groundwater related impacts to Niles Cone groundwater basin as a result of extraction operations from the proposed Bayside Project, the DEIR provides the following proposed mitigation measure (Measure 3.8-8, page 3.8-25):

> "The District will implement a Deep Aquifer water-level monitoring program that will include the boundary between the NCGWB [Niles Cone groundwater basin] and the SEBPB [South East Bay Plain basin]. Resulting water-level data will be used to assess impacts on gradient magnitude and direction near this boundary. Flux values will be estimated based on historical pumpage from the SEBPB to assess the significance of future impacts relative to past impacts. If adverse impacts are detected, the District will take appropriate actions to limit them to the groundwater basin and/or local groundwater users."

However, as described below, the proposed mitigation measure does not meet CEQA requirements for formulating detailed and enforceable mitigation measures.

Formulate Detailed Measures

CEQA Guidelines require that lead agencies formulate detailed mitigation measures. "Where several measures are available to mitigate an impact, each should be discussed and the basis for selecting a particular measure should be identified. Formulation of mitigation measures should not be deferred until some future time. However, measures may specify performance standards which would mitigate the significant effect of the project and which may be accomplished in more than one specified way." CEQA Guidelines § 15126.4(a)(1)(B). If a mitigation measure would cause other significant effects in addition to the effects of the project as proposed, those effects must be discussed as well. CEQA Guidelines § 15126.4(a)(1)(D).

Formulation of a mitigation measure may only be deferred if (i) the adopted mitigation measure will commit the lead agency to a performance standard and (ii) the measure will prohibit changes to the environment unless the standard is satisfied. CEQA Guidelines

§ 15126.4 (a)(1)(B). Even though formulation of mitigation measures may be deferred through use of performance measures, a mitigation measure is not adequate if it is based on a requirement that the lead agency adopt mitigation measures recommended in a future study.

The proposed mitigation measure fails to meet the above criteria for formulating detailed mitigation measures because: (1) the description of the method for determining impacts is overly vague (i.e. no details are provided on the proposed monitoring program and the methodology for the estimation of flux values); (2) the description of what constitutes an "adverse impact" is not provided; (3) the mitigation measure does not specify what actions EBMUD will take to mitigate for these adverse impacts, but rather states that the District will take some unspecified future actions; (4) the measure only addresses impacts due to increased fluxes across the Niles Cone groundwater basin and fails to address other potential impacts to ACWD and the Niles Cone groundwater basin, including groundwater level declines, seawater intrusion, movement of contaminants, and impacts to ACWD's use of Niles Cone groundwater basin for water storage; and (5) the proposed mitigation measure is flawed because it does not specify performance measures for mitigating impacts to Niles Cone groundwater basin.

Enforceability of Measures

CEQA Guidelines also state that: "Mitigation measures must be fully enforceable through permit conditions, agreements, or other legally-binding instruments." CEQA Guidelines § 15126.4(a)(2). "The public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation." Pub. Res. Code § 21081.6(a)(1).

However, the DEIR fails to provide the necessary enforcement measures to ensure that Mitigation Measure 3.8-8 will be implemented. The DEIR offers no conditions, agreement or other legally-binding instruments which will ensure that the mitigation measure is actually carried out.

ACWD's Suggested Framework for Mitigation

As discussed above and in Attachment 2, both EBMUD's technical analysis of groundwater-related impacts and the subsequent proposed mitigation program are flawed for a number of reasons. The following presents the proposed framework for EBMUD to (1) evaluate, monitor, and mitigate impacts on ACWD's water supply operations and (2) prevent any long-term impacts to the Niles Cone groundwater basin that may occur as a result of the operation of EBMUD's proposed Bayside Groundwater Project. The descriptions of tasks described within this framework are general in nature, and will require detailed scoping as part of the development of a mitigation/monitoring plan. This effort should be done in close coordination with ACWD, and should be completed prior to the finalization of the EIR.

The purpose of the development of this mitigation framework is to ensure that EBMUD can and will fully mitigate any and all adverse impacts to ACWD's water supply operations that occur as a result of the proposed Bayside Groundwater Project, and that

the Project will not result in any long-term, adverse impacts to the Niles Cone groundwater basin.

The development of these mitigation measures will require that EBMUD first conduct the technical studies and analyses necessary to determine the potential impacts to ACWD operations and Niles Cone groundwater basin (as described in Attachment 2). As part of that effort, a regional groundwater model should be developed that will be capable of adequately assessing groundwater-related impacts to ACWD operations and the Niles Cone groundwater basin (as described in Attachment 3). This regional groundwater model should then be used to develop the initial operating rules for the Bayside Project and subsequently to refine the operating rules for the Project once the Project is operational. The development of initial operating rules should be completed prior to finalization of the EIR, and included in the EIR as part of the mitigation program.

1. **Develop Bayside Project Operating Rules:** Based on the results of evaluation of the Bayside Project impacts on ACWD operations and the Niles Cone groundwater basin, operating rules for the proposed Project should be developed to ensure that there are no long-term adverse impacts to the Niles Cone groundwater basin. Absent other mitigation for impacts to ACWD operations (as defined under task 4 below), the operating rules for the Bayside Project should also be developed to ensure no impacts to ACWD operations. Specific items which should be included in the Bayside Project operating rules are limitations on: (1) pumping and injection rates; (2) timing of the pumping and injection; and (3) duration of pumping and injection. The regional groundwater model should be utilized to develop these operating rules and potential impacts should be determined based on the difference between modeling scenarios with and without Bayside Project operations.

   Schedule: The development of initial operating rules should be completed prior to finalization of the EIR, and included in the EIR as part of the mitigation program.

2. **Develop and Implement Long-Term Monitoring Program:** The purpose of this mitigation component is to monitor the groundwater-related impacts of the Project after Project construction to ensure that the Project is performing as anticipated.

   - Groundwater Level Monitoring: Groundwater level monitoring should be performed at all wells previously identified as monitoring wells during the baseline monitoring program. Water level elevation measurements should be taken at sufficient intervals to accurately assess potential Project impacts on groundwater elevations both within Niles Cone Groundwater Basin and at the interface between Niles Cone and the South East Bay Plain Basin.

   - Groundwater Quality Monitoring: Groundwater quality monitoring should be performed at all wells previously identified as groundwater quality monitoring wells during the baseline monitoring program. Water quality sampling should be taken at sufficient intervals to accurately assess potential Project impacts on groundwater quality both within Niles Cone Groundwater Basin and at the interface between Niles Cone and the South East Bay Plain Basin.

- Groundwater Modeling: The groundwater monitoring discussed above will provide information on the Bayside Project's impacts on groundwater levels and quality. However, this monitoring data will not directly provide information on other groundwater impacts such as groundwater outflows and loss of storage capacity. Therefore, the regional groundwater model should be utilized to quantify these actual Project impacts on the Niles Cone Groundwater Basin and ACWD operations. The modeling analysis should be based on actual Bayside Project operations (i.e., pumping and injection rates), and the results should be verified with groundwater data collected during the monitoring program. In order to isolate impacts of the Bayside Project, the modeling analysis should also include groundwater management activities of ACWD, Hayward and other private pumpers in the basins.

Schedule: Agreement to be incorporated in Project conditions and made part of the Project approval process. On-going activity to be initiated after Bayside Project start-up

3. **Modify Project Operation Rules based on Long-Term Monitoring Program:** The purpose of the long-term monitoring program described above is to ensure that the impacts of the Bayside Project operations on ACWD and Niles Cone are consistent with those previously estimated when the operating rules for the Project were developed. If the long-term monitoring program indicates that previous estimates of potential Project impacts were underestimated (i.e., impacts occur sooner or with greater magnitude than previously estimated), then EBMUD will immediately mitigate by reducing or halting the Bayside Project injection and/or extraction activities. New operating rules will then be developed with the goal of ensuring no adverse long-term impact to the Niles Cone Groundwater Basin and no unmitigated impacts to ACWD operations.

   Schedule: Agreement to be incorporated in Project conditions and made part of the Project approval process. On-going activity to be initiated after Bayside Project start-up.

4. **Alternative Mitigation for Impacts to ACWD Operations:** As an alternative to operating the Bayside Project such that there are no impacts to ACWD operations (i.e., loss of groundwater supplies, loss of storage capacity, increased treatment costs), EBMUD may propose alternative mitigation measures that fully compensate ACWD for any lost water supplies. These alternative mitigation measures may include purchase of additional off-site banking (e.g., EBMUD purchase of Semitropic Water Bank supplies), providing treated water supplies to ACWD (e.g., EBMUD treated water conveyance to ACWD through the City of Hayward), or providing raw water supplies to ACWD for use by ACWD (e.g., EBMUD provision of treated water to the Alameda County Zone 7 Water District to free up Zone 7's State Water Project water for ACWD water use), or providing raw water supplies to ACWD for recharge through ACWD facilities. If these alternative mitigation measures cannot be made available to match the quality, quantity, and timing of lost ACWD water supplies, or if these alternative measures do not fully mitigate impacts to ACWD, then EBMUD should reduce or terminate Bayside operations per item 3, such that impacts to ACWD operations

are fully mitigated. However, under no circumstances will ACWD accept alternative measures to mitigate for long-term adverse impacts to the Niles Cone Groundwater Basin. The only acceptable mitigation for potential long-term adverse impacts is to prevent such impacts by developing and modifying Project operations as indicated in items 1 - 3 above.

Schedule: Alternative mitigation measures to be identified and evaluated prior to final EIR.

ATTACHMENT 5 – ADEQUACY OF PROJECT ALTERNATIVES

CEQA Guidelines state that, "The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives." CEQA Guidelines § 15126.6(a). Alternatives to a project are also a form of mitigation and they have the same function: diminishing or avoiding adverse environmental effects. The description of different methods used or rejected in carrying out the project are not alternatives to the project, they are steps taken in mitigation. An alternative to a proposed activity is just that–a description of *another* activity or project that responds to the major environmental issues identified during the planning process.

[A]n EIR for any project subject to CEQA review must consider a reasonable range of alternatives to the project, *or to the location of the project*, which: (1) offer substantial environmental advantages over the project proposal; and (2) may be 'feasibly accomplished in a successful manner' considering the economic, environmental, social and technological factors involved. CEQA Guidelines § 15126.6.

"[T]he discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." CEQA Guidelines § 15126.6(b). The EIR must describe alternatives in sufficient detail to serve the informational purpose of the report to the governmental body which will act and the public which will respond to the action through the political process.

The DEIR states that the objective of the Project is to provide 10,000 to 15,000 AF of water supply during droughts, and to implement this program "at the earliest possible opportunity". The alternatives evaluated by EBMUD include operational alternatives for injection/extraction and a treatment plant, as well as siting alternatives for pipelines, wells and treatment facilities. However, these alternatives only considered sites located within the limited area defined in the DEIR as the "Bayside Groundwater Project Area". Other alternatives considered by EBMUD, but rejected during the scoping process, included alternative facility locations located within the Bayside Groundwater Project Area.

Based on the CEQA Guidelines discussed above, the DEIR does not consider an appropriate range of alternatives to the proposed Project, but rather is limited to a relatively narrow range of alternatives, all of which are very minor variations of the proposed Project, and all of which are located within the boundary area of the Bayside Project (as defined in the DEIR). There are numerous other alternatives to the proposed Project potentially available to EBMUD, many of which may be environmentally superior to those considered in the DEIR. A partial list of alternatives that should be included in the Bayside EIR is provided below.

Freeport Regional Diversion Project: On January 21, 2001, the EBMUD Board of Directors unanimously voted to enter into a Memorandum of Understanding with the U.S. Bureau of Reclamation and City and County of Sacramento to develop the Freeport Regional Diversion Project. In a January 23, 2001 EBMUD press release John Coleman, EBMUD Board President, stated that "This is a historic accord that puts aside many years of legal and political battles. It will provide the District with a supplemental

water supply that achieves all water quality standards. During dry years we will have adequate water supply to meet our customer needs." The press release also states that, "Under the plan, the project would be completed through construction by September 30, 2005." In a June 1st statement to the *Lodi News Sentinel*, spokesman for EBMUD, Charles Hardy, stated: "This is a drought project. We have enough water to serve our customers now."

The Freeport Regional Diversion Project (Freeport Project) and the Bayside Groundwater Project both have objectives of improving EBMUD's dry year water supply reliability. Assuming successful resolution of the recent challenges to the Freeport Project, that project will provide adequate supplies to ensure that EBMUD's dry year supplies are met (making the Bayside Project unnecessary). Given that the Freeport Project is planned to be operational in a relatively short time frame (i.e. by the year 2005), the DEIR should evaluate the Freeport Project as an alternative to the Bayside Groundwater Project.

Alternative Locations: On page S-2 the DEIR states that studies by EBMUD have concluded that the best site for storage and extraction of groundwater "in the local aquifer" is in unincorporated San Lorenzo and the City of San Leandro. However, the proposed Bayside Groundwater Project site is located as close as possible to the Niles Cone groundwater basin (while still remaining in the EBMUD service area). ACWD's concern is that while this location may provide the best site (in terms of hydrogeologic conditions), there may be other sites within the SEBP basin (and other groundwater basins in EBMUD's service area) that would be environmentally superior (i.e. sites located further north in the SEBP would likely have less of an impact on the Niles Cone groundwater basin). Therefore, the EIR should identify and evaluate alternative site locations, both within the SEBP basin as well as other local groundwater basins located throughout the EBMUD service area.

In addition, as presented in the DEIR, all Project alternatives are focused on placing the extraction wells in one concentrated area within the Bayside Groundwater Project boundaries. An alternative Project configuration would be to have the wells located over a much larger area throughout the SEBP groundwater basin (extending as far north as Alameda and Oakland). By spreading the wells out over a larger area, EBMUD could likely minimize the drawdown impacts that occur with the existing Project configuration. This may also reduce impacts to the Niles Cone groundwater basin and ACWD, as discussed above.

Smaller project: As documented in the DEIR, EBMUD requires an additional dry year water supply of up to 185,000 over a three year period to make up for deficiencies in its existing supplies. However, the DEIR sets an objective for the Bayside Project to provide a dry year supply of "10,000 to 15,000 AF/Yr" (up to 25% of the total additional dry year needs) without providing any rationale for why this particular project capacity is specified. The DEIR also recognizes that even with the Project sized at 15,000 AF/Yr, EBMUD would still require an additional supplemental supply project, other than from the Bayside Project, to meet its dry year needs. As such, as an alternative, the DEIR should consider smaller project sizes that would still meet EBMUD's general objective of increasing dry year supplies while likely significantly reducing the subsequent environmental impacts to ACWD and the Niles Cone groundwater basin.

Other Potential Dry Year Supply Alternatives: Other potential dry year water supply alternatives that may be available for EBMUD, but not considered in the DEIR include: (1) desalination (with brackish groundwater or bay water as the source water), (2) dry year water purchases/transfers and (3) off-site storage programs in the Central Valley. As with the proposed Bayside program, these other potential dry year supply alternatives can be configured to meet a small portion of EBMUD's dry year needs.

Attachment B – ACWD Specific Recommendations for Bayside Project Monitoring Program

The following should be specified in Section 2.4.1.3 Phase I Monitoring Program (Page 2-16 to 2-19) for the SEBP.

- During the start-up period, monitoring wells will be monitored for water levels no less frequently than weekly. In the first year of sustained long-term operation, the wells will be monitored no less frequently than monthly. For subsequent years, at least two wells per aquifer layer will be monitored monthly, and the remaining wells shall be monitored no less frequently than quarterly. Monitoring will continue for each year until Bayside facilities are decommissioned, even in those years when there is no extraction or injection since it is important to maintain a continuous data set for groundwater modeling purposes. EBMUD will consider the limitations of dedicated equipment (i.e., transducers) for measuring water levels, and will verify the accuracy of dedicated monitoring equipment using hand held methods (e.g., electronic probe) at appropriate times. [ACWD's recent experience with transducers for monitoring wells is that they tend to be reliable only on a very short-term scales (1 month or less), and have proven to be unreliable in longer time frames. The problems experienced include unreliable values (drift), battery failure, and water leakage in the components. For this reason, ACWD recommends that EBMUD use hand held methods at least once per month for all wells monitored weekly, and at each visit to wells monitored at time scales of 1 month or greater.]

- Any new EBMUD-owned monitoring wells will be installed according to state well standards. Any EBMUD-owned monitoring wells that are abandoned will be abandoned in conformance to state well standards.

- Acquisition of sufficient water level data in the SEBP will be particularly important for future recalibration of the model and in determining feasibility of a possible Phase II expansion of the Bayside Project. The monitoring well network for the SEBP, even after installation of the currently proposed wells, may not be adequate for future model recalibration. Therefore, in addition to the proposed facilities, EBMUD should consider installing a cluster of wells (Shallow, Intermediate, and Deep) to be placed in the area near the hills, but sufficiently west of the Hayward Fault, where the groundwater model simulated the greatest drawdown in shallower aquifers, and flow from shallow aquifers to the Deep Aquifer, in response to hypothetical Bayside Project pumping.

- During the start up period, EBMUD will provide ACWD Bayside pumping data and injection data on a monthly basis. Water level data will also be provided on a monthly basis. After the start up period, such operational and water level data, though collected on a monthly basis, may be provided to ACWD on an annual basis.

- In order to ensure that ACWD is prepared to monitor the Niles Cone groundwater basin's response to Bayside operations, EBMUD will notify ACWD of any planned changes to

Bayside actual operating conditions 5 working days in advance of such operational changes.

- On an annual basis, ACWD will coordinate with ACWD to append model time dependent data files with new historical operational and hydrologic data, and to run the groundwater model to compare model simulated heads with actual observations. A model run will also be conducted that includes the updated historical data but with Bayside Project operations set to zero. The heads of the two model runs will be compared as a means to discern Bayside-related effects (on the Niles Cone) from other sources and sinks.

- EBMUD understands that number of monitoring wells in the NCGB, not including City of Hayward Emergency supply wells, for use in model verification could be as high as 55.

- The model code will be IGSM 6.0, or EBMUD will consult ACWD if it desires to use a different code.

- In addition to recalibration between Phase 1 and Phase 2, the NEBIGSM model will be recalibrated if overall model accuracy for the Niles Cone (considering all calibration wells in the Niles Cone, which may not be the same as those used for the 1964-2000 calibration), after appending with data from September 2000 and beyond, is determined to be less accurate than the original calibration for the 1964-2000 period (considering all Niles Cone calibration wells used for the 1964-2000 calibration), unless ACWD concurs that no recalibration is necessary.

- When the model requires recalibration, EBMUD will recalibrate the NEBIGSM in cooperation with ACWD and the City of Hayward. For re-analysis of future impacts, EBMUD will use ACWD and the City of Hayward's projection of groundwater operations and water demands, understanding that such projections may be updated since the impact analysis performed for this DEIR.

Alameda County Water District (ACWD)

ACWD-1. Comment acknowledged.

ACWD-2. The hydrologic assessment and aquifer pump test project (2002-2003) demonstrated a hydraulic connection between the South East Bay Plain Basin (SEBPB) and the Niles Cone Groundwater Basin (NCGWB). However, the degree of this connection is not clear, and some impediment to flow may exist between the two basins. (Bayside Project FEIR, page 5-41, Response to Comment L5-21)

Phase 2 of the project includes potential future expansion of groundwater facilities up to additional 9 MGD capacity and would involve the installation of additional injection/extraction wells to provide the additional capacity. As included in the Phase 1 design, EBMUD would collect extensive groundwater level and water quality data during the first year of Phase 1 operations and would use this data to verify and refine the groundwater model, matching the modeled results to observed conditions. This would result in an updated model to (a) use in determining the feasibility of implementing Phase 2, and (b) to assist in designing Phase 2 to minimize the potential effects on water level changes, salt water intrusion, and subsidence. EBMUD would also collect extensive extensometer, water level, and ground surface elevation data to evaluate the potential occurrence of land subsidence in response to pumping. (Bayside Project DEIR, Section 4.1.3, Paragraph 1)

With implementation of Phase 2, water levels in the NCGWB would be expected to decline in response to increased pumping in the SEBPB, and water levels would increase in response to increased rates of injection. Declines in water levels in the NCGWB could directly affect operations of ACWD's Below Hayward Fault production wells and reduce supplies for public and private use. ACWD operations also could be affected if increased water levels in response to injection reach ACWD's maximum working or operating limit or any maximum elevation imposed on ACWD. The degree of these effects would be dependent on Phase 2 well locations, the quantity/rate of water extracted or injected, and the pumping or injection strategy used. However, at this time, the location and capacities of Phase 2 facilities have not been determined. Therefore, expected specific water level changes and the extent of effects on ACWD operations as a result of pumping during Phase 2 cannot be identified at this time.

Prior to any determination to proceed with Phase 2, EBMUD would review the information gathered from Phase 1 and conduct groundwater modeling to predict the effects of increased groundwater extraction and injection on ACWD and the NCGWB. Similar to the Phase 1 analysis, the modeling would be conducted in close coordination with ACWD. This information would be used to (1) determine the feasibility of proceeding with Phase 2, (2) identify the best location for additional production wells, and (3) design extraction, injection, and mitigation strategies to maintain water levels in the Newark Aquifer of the NCGWB.

> If EBMUD decides to proceed with Phase 2, it would adopt criteria and, if necessary, mitigation measures to ensure that groundwater would be maintained in the Newark Aquifer of the NCGWB within a scientifically reasonable range, consistent with the approach used to evaluate Phase 1 impacts. The Phase 2 criteria and mitigation measures could include providing potable water to the ACWD distribution system or make-up or recharge water to ACWD recharge facilities, changing pumping or injection strategies, operating at lower pumping rates, or stopping operations. Any such criteria and mitigation measures would be fully reviewed in the subsequent Phase 2 EIR that EBMUD would complete in the future to proceed with Phase 2. (Bayside Project DEIR, Section 4.1.3, Phase 2 Potential Impact 4.1-2, page 4.1-2)

ACWD-3. Please see Response ACWD-2 and the Master Response on Program-level EIR analysis.

ACWD-4. Please see Response ACWD-2 and the Master Response on Program-level EIR analysis.

ACWD-5. Please see Response ACWD-2.

ACWD-6. Please see Response ACWD-2.

ACWD-7. Please see Response ACWD-2.

ACWD-8. The Bayside Project Phase 1 EIR lists and describes detailed mitigation measures and commitments. EBMUD is committed to and in the process of fulfilling mitigation obligations described in Bayside Project Phase 1 EIR. Please also see Response ACWD-2.

ACWD-9. As a supplemental supply component of the Preferred Portfolio, the capacity of the Bayside Project Phase 2 would be as much as an additional 9 MGD (WSMP 2040 Draft PEIR, page 1-5, second paragraph). The Preferred Portfolio is composed of programs and projects with ranges of potential capacities. The intent of the portfolio is to give EBMUD the ability to respond flexibly to an uncertain water future. These uncertainties include changes in water supply and/or demand, the effect of global climate change, project and program funding availability, legal and institutional barriers, and changing technology. (WSMP 2040 Draft PEIR, Section 1.3, page 1-3)

ACWD-10. Comment acknowledged.

ACWD-11. Comment acknowledged.

ACWD-12. Comment acknowledged. Section 1.5, Areas of Controversy, on page 1-11 of the Draft PEIR is revised as follows:

> Section 15123 of the CEQA Guidelines requires that an EIR identify areas of controversy. The following issues and concerns were raised

by agencies or the public:

- Reliability of water transfers
- Preferred Portfolio components should reduce Mokelumne demand
- Potential impacts on Delta water quality
- Potential impacts on Sacramento Water Forum Agreements from ASR components
- Potential degradation of groundwater from ASR components
- Potential impacts on endangered species from water transfers
- Opposition to cross-Delta water transfers
- Opposition to Buckhorn Reservoir
- Potential impacts on local groundwater basins
- Technical details of groundwater monitoring and modeling

ACWD-13. Please see the Master Response on Program-level EIR analysis.

ACWD-14. Please see the Master Response on Program-level EIR analysis.

ACWD-15. Comment acknowledged. Mitigation Measure 5.2.A-5, on page 5.2.A-15 of the Draft PEIR is revised as follows:

> Mitigation Measure 5.2.A-5: Use numerical modeling to properly design the groundwater storage and extraction project such that the potential saltwater intrusion ~~is minimized during project operations~~ impact caused by the project is less than significant.

ACWD-16. Please see the Master Response on Program-level EIR analysis.

ACWD-17. Please see the Master Response on Program-level EIR analysis.

ACWD-18. Please see Response ACWD-2.

ACWD-19. Comment acknowledged. The text on page 3-14 of the Draft PEIR, first paragraph is revised as follows:

> The WSMP 2040 Preferred Portfolio would build upon successful operation of the Bayside Groundwater Project Phase 1 by expanding its extraction and storage capacity by as much as an additional 9 MGD. In the Phase 1 project's certified EIR (November 2005), EBMUD sought to assure the local community and other East Bay water interests that the District would proceed with a Phase 2 initiative after gathering and analyzing operating data on water quality and groundwater level effects that demonstrate that a larger capacity groundwater project could be safely developed in the basin. EBMUD remains committed to that obligation.

ACWD-20. Please see the Master Response on Program-level EIR analysis.

ACWD-21. Please see the Master Response on Program-level EIR analysis.

ACWD-22. Please see Response ACWD-2 and the Master Response on Program-level EIR analysis.

Please note that the comments provided in Attachment 2 to the ACWD letter were addressed in the Final EIR for the Bayside Phase 1 Project.

AWA
090327

A Public Agency

AMADOR Water Agency FOUNDED 1955

12800 RIDGE ROAD, SUTTER CREEK, CA 95685-9630 • (209) 223-3018
FAX: (209) 257-5281

March 27, 2009

Mr. Tom Francis
EBMUD
375 11th Street
Oakland, CA 94607

Re: Water Supply Management Program 2040

Dear Mr. Francis:

The Agency Staff has reviewed the draft program Environmental Impact Report on the EBMUD's Water Supply Management Program 2040. The Agency is opposed to the enlargement of the Pardee Reservoir as currently proposed, especially the water back-up, past the Hwy 49 Bridge. It appears that this project is greater in scope and the water back-up is more significant than previously proposed. There are significant environmental, aesthetics, biological and recreational impacts that the public raised that need to be addressed. However, the Agency supports continuing discussion on the concept of the IRCUP+. The IRCUP project is in the IRWMP plan adopted by Amador Water Agency, Amador County, CCWD, and the Cities of Jackson and Ione in 2006. 1

As part of the IRCUP+ discussions, the Agency has indicated a need for an additional 20,000 acre feet of water to meet the general plan build-out of the County. This future demand should be indentified in the draft program EIR as a potential water resource demand for Amador County. 2

In addition, the draft program EIR does not address the water rights that may be needed in order to carry out the enlarged Pardee Reservoir alternative or the new Buckhorn Canyon Reservoir alternative. Section 3.5 of the draft program EIR discusses the various governmental approvals needed to implement the project alternatives. There is no mention in this section regarding the need for State Water Resources Control Board permit approval for the enlarged Pardee Reservoir alternative, the Buckhorn Canyon Reservoir alternative, or the banking of Mokelumne River water in the San Joaquin Groundwater Basin. This requires explanation. It also would be helpful to address whether or not there are any legal constraints respecting such alternatives. One such constraint that should be considered is the 1958 agreement between EBMUD and Amador County. The draft program EIR indicates that the Bayside Groundwater Project Phases 1 and 2 involve the use of "conserved" Mokelumne River water. The Agency 3

assumes that the referenced "conserved water" is that water addressed in the agreement among the Agency, Amador County and EBMUD respecting the Agency's Amador Transmission Project, dated August 16, 2000. Please confirm whether or not the Agency's understanding is correct. Lastly, Figure 2-4 on page 2-15 and Table 4.2.A-1 on page 4.2A-4 provide that of the 47,000 acre-feet of water associated with Amador and Calaveras Counties, only 13.1 acre-feet are available in a dry year. The Agency assumes that this refers to the amount of water referenced in the 1959 Release from Priority granted to EBMUD in connection with its Camanche Reservoir Project. The Agency requests an explanation as to how EBMUD arrived at the 13.1 acre-foot maximum in dry years. The Agency believes that at the very least, the 15,000 acre-feet of water associated with the Amador Water System with a priority dating back to approximately 1850 would be available in a dry year. 3 4

As indicated in the PEIR, the Agency encourages EBMUD to pursue all reasonable conservation and water re-use projects for their water supply portfolio. 5

Finally, as you continue your public input on the draft program EIR, the Agency requests that you fully respond to the questions and comments raised at the public meeting at the Agency's office on March 16, 2009. The Agency is requesting EBMUD hold a second meeting in Amador County and extend the comment period due to the lack of adequate space for all attendees to participate in the presentation and discussion. 6

In summary, the Agency is opposed to the proposed Pardee Reservoir enlargement; however, the Agency is open to discussions regarding the IRCUP with EBMUD to secure additional water supplies for the benefit of Amador and EBMUD.

Sincerely,

Jim Abercrombie
General Manager

c.c. AWA Board of Directors

Amador Water Agency (AWA)

AWA-1. Please see the Master Response on the Enlarge Pardee Reservoir component. EBMUD has chosen to use a project that is large in scope for this program-level analysis of the WSMP 2040 and its portfolio components. If and when a project is pursued, EBMUD would further refine the project design and would analyze in detail the environmental impacts, including impacts to aesthetics, biological resources, and recreation.

AWA-2. EBMUD acknowledges the inclusion of the IRCUP in the 2006 IRWMP and Amador Water Agency's continuing participation in the discussions regarding the IRCUP+.

AWA-3. EBMUD acknowledges that the State Water Resources Control Board would likely be involved in the approval process if EBMUD moves forward with the Enlarge Pardee Reservoir portfolio component, groundwater banking in San Joaquin County, or the Buckhorn Canyon Reservoir alternative. The nature of this involvement would be determined in more detail at the project level. It is possible that EBMUD's existing water rights would be used as part of the Enlarge Pardee Reservoir component, but it is also possible that this component, or certain other portfolio components may require EBMUD to apply to the SWRCB for new water rights.

The Bayside Groundwater Project portfolio component may involve the use of conserved Mokelumne River water and may also use EBMUD's local watershed supplies or supplies developed elsewhere. EBMUD agrees that an examination of the 1958 Agreement between EBMUD and Amador County would be relevant at the point that EBMUD decides to move forward with specific portfolio components.

AWA-4. The 13.1 TAF amount was included in the "dry year maximum" column of the table in figure 2-4 because this is the most water that AWA has diverted in a dry year (2004).

AWA-5. EBMUD acknowledges the comment and refers AWA to the discussion in the WSMP 2040 regarding the aggressive conservation and recycled water efforts that will be undertaken as part of the WSMP 2040.

AWA-6. EBMUD conducted extensive outreach as part of the development of the WSMP 2040. In addition to the Draft PEIR public review meeting held on March 16, 2009, in Amador County as referenced in the letter, EBMUD held four other public meetings, two of which were held within counties near Amador County (Calaveras County and San Joaquin County). The purpose of the above-referenced March 16, 2009 WSMP Draft PEIR public meeting in Amador County (as well as of the other four public meetings) was to receive comments from the public regarding EBMUD's WSMP 2040 effort as detailed in the environmental document. All comments received at the meetings were recorded by EBMUD staff, and EBMUD has responded to these comments as part of the Final PEIR.

Beyond the five public meetings noted above, EBMUD staff gave presentations on WSMP 2040 during a City of Plymouth City Council meeting (March 30, 2009), and staff were present during the March 2009 meeting of

the Amador County Board of Supervisors (on April 16, 2009) as well as the meeting of the Amador Water Agency (on April 23, 2009). In addition, during this same period, EBMUD staff participated in several interviews with local media (the Amador Ledger Dispatch, The Calaveras Enterprises, as well as the local Jackson, CA television station, in an attempt to further address local (Foothill) questions.

CALCPUD
090428

CALAVERAS PUBLIC UTILITY DISTRICT

506 W. St. Charles Street
P.O. Box 666
SAN ANDREAS, CALIFORNIA 95249

TELEPHONE: 209-754-9442 FAX: 209-754-9432

April 28, 2009

Thomas B. Francis
EBMUD
Water Supply Improvements Division
375 11th St., MS 104,
Oakland, CA 94607

Re: Proposed 2040 Plan

Mr. Francis,

As you may have heard, Gary Goffe has retired after 23 years of distinguished service to the District. Allow me to introduce myself. My name is John Ornellas, the new manager for Calaveras Public Utility District (CPUD). I have been directed by our Board to establish communication with you regarding the proposed 2040 plan and the potential raising of Pardee Reservoir in particular. We would like to know what, if any, benefit CPUD would derive from raising the Pardee Dam level as proposed. Please recall that CPUD holds Pre-1914 rights to the Mokelumne River and we are concerned that additional withdraw from the river could adversely impact our reservation(s). We would be willing to meet with you or your staff to discuss the project and how it may affect CPUD's rights, titles and interests. 1

I look forward to hearing from you,

Sincerely,

John Ornellas
District Manager

Cc: Director Jaich
Director Lavaroni
Director Moore
Director Ortegel
Director Overmier

Calaveras County Public Utility District (CALCPUD)

CALCPUD-1. Please see the Master Response on the Enlarge Pardee Reservoir component. The District will seek to involve regional partners for this component to share costs and provide regional benefits in terms of water yield. By law, the District cannot undertake projects that would interfere with pre-1914 water rights held by Calaveras Public Utility District. Impacts will be thoroughly examined in a project-level EIR when and if the District decides to move forward with project-level planning for this component.

CALCWD 090501

CALAVERAS COUNTY WATER DISTRICT

BUSINESS OFFICE
423 East St Charles Street
Post Office Box 846
San Andreas, California 95249
(209) 754-3543
Fax (209) 754-1069

May 1, 2009

Mr. Thomas B. Francis
East Bay Municipal Utility District
Water Supply Improvements Division-M/S 407
PO Box 24055
Oakland, CA 94623

Re: Water Supply Management Program (WSMP) 2040
Draft Programmatic Environmental Impact Report (DPEIR)

Dear Mr. Francis:

The Calaveras County Water District (CCWD) appreciates the opportunity to comment on East Bay Municipal Utility District's Water Supply Management Plan (WSMP) 2040 program. Based on our review, CCWD supports the inclusion of the Regional Up-Country Project elements in the WSMP 2040 Preferred Portfolio, including the evaluation of additional storage in Lower Bear and Pardee Reservoirs, conjunctive use in the Eastern San Joaquin Groundwater Basin, and projects to restore and protect the Mokelumne River and the environment. Additional related information and comments are provided below. 1

Since 2005, CCWD, Amador Water Agency (AWA), San Joaquin County (SJC), and the East Bay Municipal Utility District (EBMUD), have been working with the Mokelumne River Forum to develop an Inter-Regional Conjunctive Use Project (IRCUP) for water users on the Mokelumne River. The IRCUP would provide an opportunity for water from the Mokelumne River that is sporadically available in wet years to be stored, regulated, and recharged into the Eastern San Joaquin Groundwater Basin (ESJGWB) for future use by project partners through exchanges during all water year types. The project would increase long-term water supply reliability for Calaveras and Amador Counties, improve the condition of the ESJGWB underlying Calaveras and San Joaquin Counties, and provide drought protection for all project partners. In addition, significant environmental restoration and improvement projects will ensure that all stakeholders on the Mokelumne River will benefit. 2

The joint efforts by the project partners and the Mokelumne River Forum to develop the IRCUP are well documented. The IRCUP was described conceptually in the *2006 Mokelumne Amador and Calaveras Integrated Regional Water Management Plan (IRWMP)* and the *San Joaquin County Groundwater Banking Authority IRWMP of July 2007*. In December 2007, a preliminary *Draft IRCUP Work Plan* was prepared by the Mokelumne River Forum with funding from the Department of Water Resources. In

November 2008, AWA, CCWD, EBMUD and SJC joined together to share in the cost of evaluating the feasibility of increasing surface storage in Lower Bear Reservoir. The results of this study are expected later this year.

CCWD understands that WSMP 2040 is EBMUD's future water supply planning document. CCWD is developing similar planning documents to meet future water supply needs for its customers, including the west county area where the IRCUP area exists. Similarly, AWA, SJC, and other water agencies that rely on the Mokelumne River are developing water supply planning documents. CCWD understands that the individual planning documents fit within the umbrella IRCUP concept. Given that these water supply planning documents are simply planning for the future water supply needs of each agency's area and that no project is 'cast in stone' at this early planning and feasibility stage, the Preferred Portfolio that EBMUD recommends that includes the IRCUP as a part of the Regional Up-Country Project is supported by CCWD. 2

CCWD needs project partners to develop Mokelumne River water storage facilities to meet future demands, which as a result, understands and expects that any future project in Calaveras County will be explored in an open and transparent public planning process and that separate project specific environmental documentation will be prepared at the appropriate time. With this understanding, CCWD supports the inclusion of the Regional Up-Country Project and the Raise Lower Bear, Enlarge Pardee, and conjunctive use elements, in the WSMP 2040 Preferred Portfolio. We look forward to continuing to work with EBMUD and the many other stakeholders in a regional partnership to create a regional project with regional benefits.

Please contact me or Edwin Pattison at (209) 754-5846 Ext. 29, if you have any questions.

Sincerely,

CALAVERAS COUNTY WATER DISTRICT

David J. Andres
General Manager

cc: CCWD Board
Edwin Pattison, CCWD
Amador Water Agency
San Joaquin County

Calaveras County Water District (CALCWD)

CALCWD-1. EBMUD acknowledges the commenter's support for inclusion of the Regional Upcountry Project components in the WSMP 2040.

CALCWD-2. EBMUD shares the desire to work on regional projects with regional benefits. Please see Response FC-14.

CAMRA
090324

Chair: Phil McCartney
V. Chair: Bertha Underhill
Secretary: Mona Walker

c/o Calaveras County Water District
PO Box 846
San Andreas, CA 95249

CALAVERAS – AMADOR
MOKELUMNE RIVER AUTHORITY

March 24, 2009

Thomas B. Francis, P.E.
EBMUD Water Supply Improvements Division
East Bay Municipal Utility District
375 11th St. MS 407
Oakland, CA 94607

Re: Water Supply Master Plan 2040 - Draft Program Environmental Impact Report
Extension of Time for Comment Period

Dear Mr. Francis,

The Calaveras-Amador Mokelumne River Joint Power Authority (CAMRA) is a collaborative group of Amador and Calaveras County Supervisors and Water Agencies. The Authority was formed to preserve and protect water rights of the Mokelumne River for the benefit of the watershed counties.

At its recent meeting, the CAMRA Board unanimously agreed that the public interest in the foothill counties have not been adequately informed of East Bay Municipal Utility District's (EBMUD) Water Supply Master Plan 2040 and request EBMUD to extend its period for comment to the Draft Program Environmental Impact Report. The CAMRA urges the elected officials of EBMUD to extend the comment period to the Draft Program EIR an additional 4-6 weeks from the April 6, 2009 deadline. Allowing the additional time to comment will increase public awareness to the foothill communities and is beneficial to all interests on the Mokelumne River. 1

Thank you for your consideration.

Sincerely,

Phil McCartney, Chair
Calaveras-Amador Mokelumne River Authority

cc: All CAMRA Members

CAMRA Member Agencies

Calaveras County Board of Supervisors
Amador County Board of Supervisors
Calaveras Public Utility District
Calaveras County Water District
Amador Water Agency
Jackson Valley Irrigation District

Calaveras - Amador Mokelumne River Authority (CAMRA)

CAMRA-1. The 45-day public review period for the Draft PEIR extended from February 19 through April 6, 2009. In response to requests for additional review time, the District extended the public review period until May 4, 2009.

CCCFC
090410

Contra Costa County
Flood Control
& Water Conservation District

Julia R. Bueren,
ex officio Chief Engineer
R. Mitch Avalon,
Deputy Chief Engineer

May 4, 2009

Tom Francis
East Bay Municipal Utility District
Water Supply Improvement Division
375 Eleventh Street, MS 407
Oakland, CA 94607

Our File: Utilities — 2003, EBMUD

Dear Mr. Francis:

We reviewed the Draft Program Environmental Impact Report (DPEIR) for East Bay Municipal Utility District (EBMUD) Water Supply Management Program 2040. Please incorporate our comments and recommendations for this DPEIR and for any subsequent project-level CEQA documents.

1. Contra Costa County Flood Control and Water Conservation District (FC District) regulates construction work in the natural water courses within the County. Please note in the DPEIR that any EBMUD project within the FC District's right-of-way will require an encroachment permit from the FC District. Projects affecting local drainage outside the FC District's right-of-way may require a drainage 1010 Permit, per Title 10 of Contra Costa County Code, Chapter 1010-08, Ordinance 89-27. 1

2. We recommend that the project-level Environmental Impact Report (EIR) for each subsequent project provide a map of the watershed where the project would be located, including the watershed boundaries. Each EIR should discuss the project's hydrology impacts and mitigation measures. 2

3. The FC District should be included in the review of all drainage facilities that have a region-wide benefit, that impact region-wide facilities, or that impact FC District-owned facilities. 3

4. The Regional Desalination Plant may be in one or more of the following formed Drainage Areas (DA): DA 29G, DA 29H, DA 29J, DA 48B, DA 48C, DA 48D, DA 55, and/or DA 56. Any increase in impervious surfaces in these DAs would require EBMUD to pay DA fees per Ordinances 2006-49, 2006-50, 2002-29, 2002-28, 93-73, 93-53, 2002-23, and 2002-24, respectively. Enclosed is a map indicating the boundaries of these Drainage Areas. 4

5. The Potential Regional Desalination Location map (Figure 3-8) shows that the proposed project may be located within the watersheds of Kirker Creek, West Antioch Creek, and/or East Antioch Creek, for which there are known drainage problems. The FC District is available to provide technical assistance during the development of the Draft EIR, including hydrology and hydraulic information, under our Fee-for-Service program. 5

We appreciate the opportunity to comment on the DPEIR and welcome continued coordination. If you have any questions, please e-mail me at (trie@pw.cccounty.us) or call me at (925) 313-2363. You may also contact George Kabaivanov at gkaba@pw.cccounty.us or (925) 313-2352.

Sincerely,

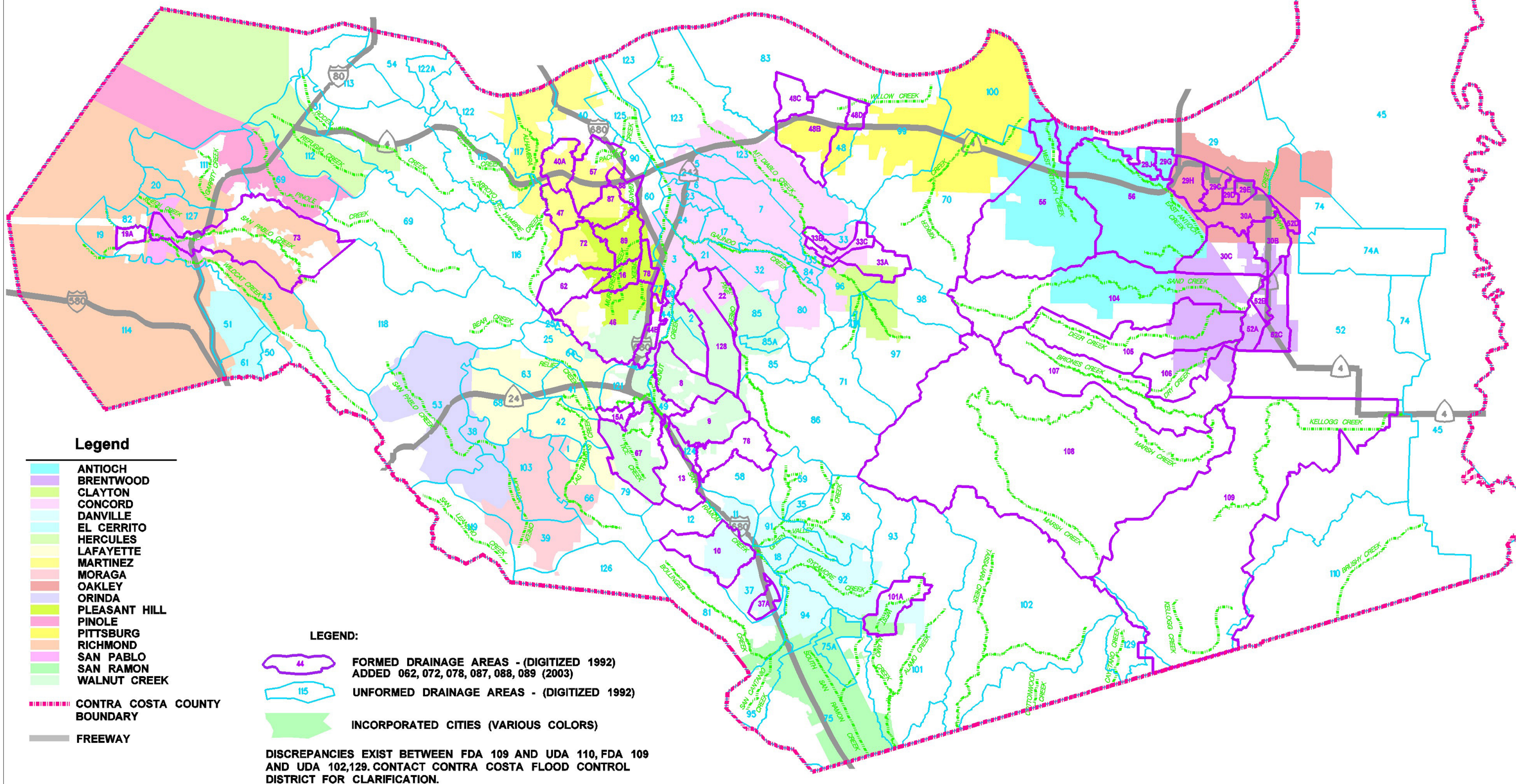
Tim Jensen

for Teri E. Rie
Associate Civil Engineer
Contra Costa County Flood Control
& Water Conservation District

TR:GK:cw
G:\fldctl\CurDev\County Wide Projects\Utility Projects\EBMUD WSPM 2040 DPEIR.doc
Enclosure: Formed & Unformed Drainage Areas with Cities Map

c: Greg Connaughton, Flood Control
Tim Jensen, Flood Control

CONTRA COSTA COUNTY



Legend

- ANTIOCH
- BRENTWOOD
- CLAYTON
- CONCORD
- DANVILLE
- EL CERRITO
- HERCULES
- LAFAYETTE
- MARTINEZ
- MORAGA
- OAKLEY
- ORINDA
- PLEASANT HILL
- PINOLE
- PITTSBURG
- RICHMOND
- SAN PABLO
- SAN RAMON
- WALNUT CREEK

CONTRA COSTA COUNTY BOUNDARY

FREEWAY

LEGEND:

44 — FORMED DRAINAGE AREAS - (DIGITIZED 1992) ADDED 062, 072, 078, 087, 088, 089 (2003)

115 — UNFORMED DRAINAGE AREAS - (DIGITIZED 1992)

INCORPORATED CITIES (VARIOUS COLORS)

DISCREPANCIES EXIST BETWEEN FDA 109 AND UDA 110, FDA 109 AND UDA 102,129. CONTACT CONTRA COSTA FLOOD CONTROL DISTRICT FOR CLARIFICATION.

FORMED & UNFORMED DRAINAGE AREAS WITH CITIES

0 1 2 3 4 5 6 7 MILES

G.I.S. DISCLAIMER

NO GEOGRAPHIC INFORMATION SYSTEM PROGRAM SOFTWARE WAS USED TO PRODUCE THIS MAP.

PREPARED BY:
CONTRA COSTA COUNTY
PUBLIC WORKS DEPARTMENT
COMPUTER SERVICES - MAPPING SCIENCES SECTION
255 GLACIER DRIVE
MARTINEZ, CALIFORNIA 94553

DATE: 9-11-2003 FILENAME: da_index2.dgn BY: S. Yu PLOT DATE : BY :

Contra Costa County Flood Control & Water Conservation District (CCCFC)

CCCFC-1. EBMUD will consult with Contra Costa County Flood Control and Water Conservation District if and when it decides to move forward with project-level planning for any components that would affect water courses or drainages in Contra Costa County. Please see the Master Response on Program-level EIR analysis.

CCCFC-2. EBMUD will consult with Contra Costa County Flood Control and Water Conservation District if and when it decides to move forward with project-level planning for any components that would affect water courses or drainages in Contra Costa County. Please see the Master Response on Program-level EIR analysis. Project-level CEQA documentation for specific components will include a map of the watershed where the project would be located and will evaluate hydrology impacts and identify mitigation measures to reduce impacts.

CCCFC-3. EBMUD will consult with Contra Costa County Flood Control and Water Conservation District if and when it decides to move forward with project-level planning for any components that would affect water courses or drainages in Contra Costa County. The Contra Costa County Flood Control and Water Conservation District will be included in the review of all drainage facilities that have a regionwide benefit or that impact regionwide facilities or District-owned facilities.

CCCFC-4. EBMUD will consult with Contra Costa County Flood Control and Water Conservation District if and when it decides to move forward with project-level planning for the Regional Desalination component.

CCCFC-5. EBMUD will consult with Contra Costa County Flood Control and Water Conservation District if and when it decides to move forward with project-level planning for the Regional Desalination component.

CCCSD
090430

Central Contra Costa Sanitary District

Protecting public health and the environment
5019 Imhoff Place, Martinez, CA 94553-4392

FAX: (925) 228-4624

JAMES M. KELLY
General Manager

KENTON L. ALM
Counsel for the District
(510) 808-2000

ELAINE R. BOEHME
Secretary of the District

April 30, 2009

Mr. Tom Francis, PE
Senior Civil Engineer
East Bay Municipal Utility District
375 Eleventh Street, MS 407
Oakland, CA 94607-4240

Dear Mr. Francis:

COMMENTS ON DRAFT EIR FOR WATER SUPPLY MANAGEMENT PROGRAM 2040

The Central Contra Costa Sanitary District (CCCSD) appreciates the opportunity to review and comment on the Draft Environmental Impact Report (EIR) for the East Bay Municipal Utility District (EBMUD) Water Supply Management Program 2040. The Water Supply Management Program seeks to accommodate planned growth in the EBMUD service area and an anticipated decrease in water supplies due to climate change. The Preferred Alternative described in the Draft EIR identifies a portfolio of different water resources that includes increased storage, water transfers, conservation, desalination, and water recycling to be able to supply a projected demand of 280 million gallons per day (MGD) in 2040.

An important and sustainable element of the 2040 water supply portfolio is recycled water. EBMUD already provides, or by 2010 will provide, a total of 9.3 MGD of recycled water. Under the Preferred Alternative, EBMUD proposes to increase the use of recycled water by an additional 11 MGD by 2040. The Draft EIR identifies the Reliez Valley Recycled Water Project as a possible joint project between EBMUD and CCCSD to provide landscape irrigation. In addition, certain golf courses and other large water users that are located in the EBMUD and CCCSD service areas could obtain recycled water from satellite treatment plants using wastewater from the CCCSD collection system. 1

One of the components of the Supplemental Water Supply Option described in the Draft EIR is water transfers. A possible water transfer that is not specifically listed in the Draft EIR involves development of a project to supply recycled water from CCCSD's wastewater treatment plant to two petroleum refineries in Martinez. Contra Costa Water District (CCWD) currently provides water to these refineries. By using recycled water for cooling tower and other purposes at the refineries, up to 20 MGD of CCWD water could be made 2

available for other uses. Some of this water could be transferred to EBMUD through the Freeport Regional Water Project intertie or the existing intertie between EBMUD and CCWD facilities that is located in eastern Contra Costa County.

To implement the refinery recycled water project, new institutional arrangements and new treatment facilities for ammonia removal, demineralization and filtration would be needed. However, the pipelines and storage tanks to deliver recycled water to the refineries are already in place. 2

CCCSD requests that EBMUD consider the refinery recycled water project and possible CCWD-EBMUD water transfer described in this letter as part of the Preferred Alternative for the Water Supply Management Program 2040. If you would like additional information about the refinery recycled water project, please contact me at (925) 229-7336.

Sincerely,

Curtis W. Swanson
Environmental Services Division Manager

CWS/nap

Central Contra Costa Sanitary District (CCCSD)

CCCSD-1. EBMUD acknowledges the commenter's support for the Recycled Water component of the WSMP 2040.

CCCSD-2. EBMUD plans to pursue water transfer agreements with various partners. Recycled water from Central Contra Costa Sanitary District's wastewater treatment plant is a potential source of water that could be transferred to the District. This would involve a water transfer agreement with Contra Costa Water District (CCWD). While EBMUD is not currently pursuing a water transfer agreement with CCWD, EBMUD may decide to pursue it in the future. Please see the Master Response on the WSMP 2040.

CCWD
090402

CONTRA COSTA
WATER DISTRICT

1331 Concord Avenue
P.O. Box H2O
Concord, CA 94524
(925) 688-8000 FAX (925) 688-8122
www.ccwater.com

April 2, 2009

Tom Francis
Water Supply Improvements Division
East Bay Municipal Utility District
375 Eleventh Street, MS 407
Oakland, California 94607

Re: EBMUD Water Supply Management Program 2040 Draft PEIR

Dear Mr. Francis:

Contra Costa Water District (CCWD) appreciates this opportunity to provide comments on East Bay Municipal Utility District's (EBMUD's) February 19, 2009 Draft Program Environmental Impact Report (PEIR) for EBMUD's Water Supply Management Program (WSMP) 2040. The primary purpose of WSMP 2040 is to identify solutions to meet EBMUD's dry-year water needs through 2040.

CCWD supports EBMUD's program to improve its ability to meet future demands and continue to provide a safe and reliable water supply to its customers through a diverse portfolio of water conservation measures, recycled water projects, supplemental water supplies, and drought period rationing. CCWD has the following comments on the Draft PEIR:

1

Freeport Regional Water Project

Potential WSMP 2040 components listed in the Draft PEIR include water transfer agreements with northern California water agencies and Sacramento basin groundwater banking and exchange, with diversion of water at EBMUD's new Freeport Regional Water Project (FRWP). Additional water may also be diverted at the FRWP to recharge groundwater basins as part of other regional groundwater partnerships.

These water transfers and groundwater projects could involve diversions at greater rates, at different times, or in greater total amounts than those analyzed in the March 2004 Final Environmental Impact Report / Environmental Impact Statement (EIR/EIS) for the FRWP. While the Draft WSMP 2040 PEIR indicates that the FRWP is authorized and funded, and that "all major environmental compliance steps have been completed," these additional diversions envisaged in the WSMP 2040 have not yet been analyzed or environmentally reviewed. Once the actual water transfer partners have been identified, the project-level EIR will need to include detailed analysis and disclosure of environmental effects and impacts on endangered fish species, water

2

quality in the Delta, and water supply reliability caused by diversions beyond those analyzed in the FRWP DEIR/EIS.

As discussed on page 2-15 of the Final EIR/EIS for the FRWP, the Freeport Regional Water Authority (FRWA) and EBMUD have also agreed to wheel 3,200 acre-feet/year of CCWD's CVP contract supply for CCWD as mitigation for water quality impacts on CCWD's Delta diversions. Under this agreement, water that would otherwise be diverted in the Delta will be diverted instead at the FRWP intake and conveyed to CCWD through FRWP facilities, Reclamation's Folsom South Canal, and EBMUD's Mokelumne Aqueduct. CCWD water will be wheeled every year, upon request by CCWD, unless there are unavoidable conditions that reduce the capacity of the system to the extent that FRWA and EBMUD are unable to wheel the water. The project-level EIR should include analysis and disclosure of whether the proposed water transfers and groundwater banking/exchanges would affect EBMUD's ability to wheel water to CCWD as agreed. 2

CCWD's Los Vaqueros Expansion Project

The Draft PEIR, on page 3-50, states that CCWD's Los Vaqueros Reservoir Expansion Project (referred to as "Raise Los Vaqueros Reservoir") will not be considered for inclusion as a component in the WSMP 2040 due to a "lack of definition of partners, benefits, and timeline for implementation." This information is in fact available, and an analysis of participation in an expansion project should be included in the Final PEIR. The release of the Draft EIS/EIR for the Expansion Project on February 20, 2009 clearly indicates the project is sufficiently advanced for consideration, and a WSMP 2040 component with EBMUD's participation in an expanded Los Vaqueros could be evaluated. CCWD and EBMUD staff have discussed possible arrangements, including storage of CVP water which can be moved to EBMUD either directly through existing interties or by exchange with CCWD's CVP supply delivered to the Freeport intake, while CCWD takes the same amount out of storage in lieu of diverting CVP water from the Delta. Details regarding amounts, rates of diversion, water quality and institutional arrangements are available and CCWD suggests further discussion with EBMUD on the potential of the Expansion Project to help meet EBMUD's dry-year supply goals, on a schedule consistent with the WSMP 2040. Please call Marguerite Naillon, Special Projects Manager, at (925) 688-8018 to continue the discussion. 3

San Joaquin Groundwater Banking/Exchange

The Draft PEIR discusses "potentially significant impacts" to Delta downstream water users as a result of the IRCUP/San Joaquin Groundwater Banking/Exchange components. Any adverse impacts will need to be quantified and fully disclosed in a project-level EIR. 4

CCWD would like to be kept informed throughout the PEIR process. Please send all materials regarding the WSMP 2040 to:

Dr. Leah Orloff
Water Resources Manager
Contra Costa Water District
P.O. Box H2O
Concord, CA 94524

5

If you would like any additional information, or would like to discuss these comments, please call me at (925) 688-8083.

Sincerely,

Leah Orloff
Water Resources Manager

LO/SK:wec

cc: Alex Coate

CCWD-1. EBMUD acknowledges the commenter's support for the WSMP 2040.

CCWD-2. To the extent that EBMUD engages in water transfers or other transactions involving the FRWP facilities that were not analyzed in the March 2004 FEIR/EIS for the FRWP, EBMUD would undertake additional analysis as required by state and federal law. This would include any required analysis of impacts to species and water quality, and, to the extent that a project involves water that would otherwise flow to the Delta, associated impacts to the Delta would be analyzed and addressed. EBMUD would also ensure that terms of the settlement agreement executed with CCWD continue to be met.

CCWD-3. Release of EBMUD's Draft PEIR, on February 19, 2009, predated CCWD's release of its Los Vaqueros Expansion (LVE) Project Draft EIS/EIR. For this reason, EBMUD's Draft PEIR did not refer to the information in the LVE Project Draft EIS/EIR. EBMUD has been aware of CCWD's LVE project plans, in general, over the past three years, and has discussed this project with CCWD representatives on multiple occasions. Information that EBMUD was provided during these discussions was the basis for including LVE in the initial suite of supplemental supply components evaluated and to decide if LVE should be carried forward as part of the WSMP 2040 portfolio element development process. While LVE has merits, it was concluded during that exercise that, based on the information available regarding LVE, LVE did not appear to best address the EBMUD's WSMP 2040 objectives. As a result it was not carried forward for further consideration as part of the WSMP 2040 preferred portfolio.

The more recent publication of the LVE Draft EIS/EIR does not provide new information that would cause EBMUD to reconsider these earlier decisions. In particular, the LVE Draft EIS/EIR does not provide specific water supply or cost information and provides no indication of the quantity and reliability of dry-year water supply that could be made available to EBMUD. In addition, at this time there is no indication which, if any, of the alternatives presented in the LVE Project Draft EIS/EIR will be considered for approval and financing by potential participants.

The staff-level discussions referred to by CCWD regarding wheeling and potential use of CCWD existing storage, the emergency intertie, and the Freeport Project to provide alternative ways for both districts to make full use of their CVP contract supplies have been valuable. They have provided a better understanding of how the existing systems might be operated to provide flexibility and mutual support for supply in emergencies. EBMUD does not regard these discussions as relevant in the context of a dependable supplemental supply for EBMUD, because of factors and constraints that these discussions and recent experiences have demonstrated regarding operational and regulatory constraints that limit the ability to rely on this option in dry years.

Given the uncertainty about when and whether the overall LVE project will be approved and whether it could provide specific benefits to EBMUD under mutually agreeable terms and conditions, the LVE Project has not been incorporated into EBMUD's WSMP 2040 preferred portfolio. Nonetheless,

EBMUD will continue to monitor information as it becomes available from CCWD and appreciates CCWD's willingness to meet to review details of the LVE Project. The WSMP 2040 implementation process provides sufficient flexibility that it can be adjusted to incorporate further evaluation of LVE should information become available in the future that indicates an improved ability to meet WSMP 2040 objectives.

CCWD-4. Please see the Master Response on Program-level EIR analysis. Subsequent project-level CEQA documentation will be prepared, as appropriate, for specific portfolio components when and if the District decides to move forward with project-level planning. Impacts on Delta downstream water users will be thoroughly evaluated and all feasible mitigation measures will be identified.

CCWD-5. EBMUD will ensure that the commenter is kept informed of all actions or decisions related to the WSMP 2040 PEIR.

City of Ione

COI
090410

April 10, 2009

Mr. Tom Francis
East Bay Municipal Utility District
375 11th Street
Oakland, CA 94607

RE: PARDEE RESERVOIR

Dear Mr. Francis:

Enclosed is Resolution No. 1710 urging the East Bay Municipal Utility District to increase conservation levels instead of expanding Pardee Reservoir. Please see that this resolution is directed to the proper person.

Thank you.

Sincerely,

Janice Traverso
City Clerk

jmt

#1 Main Street • P.O. Box 398 • Ione, California 95640-0398
209.274.2412 • Fax 209.274.2830 • www.ione-ca.com

RESOLUTION NO. 1710

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF IONE URGING THE EAST BAY MUNICIPAL UTILITY DISTRICT TO INCREASE CONSERVATION LEVELS INSTEAD OF EXPANDING PARDEE RESERVOIR

WHEREAS, the City of Ione recognizes the Mokelumne River as a valuable local and regional recreational and natural resource; and

WHEREAS, many Ione residents visit and use the Mokelumne River for family picnics, boating, swimming, fishing, birding, photography, gold panning, and other activities each year; and

WHEREAS, the Mokelumne River attracts many visitors to our area for recreation and historical tourism; and

WHEREAS, many visitors to our county visit the historic Middle Bar Bridge and its surroundings; and

WHEREAS, commercial whitewater rafting on the Mokelumne River, which would add to local recreation revenue and attraction, is feasible on a combined Electra-Middle Bar run but not on the Electra Run alone; and

WHEREAS, visitors to the Mokelumne River spend money in businesses in the City of Ione, adding to local incomes and tax revenue; and

WHEREAS, substantial sums of public and private money have been spent improving the recreational facilities on the Mokelumne River and restoring the historic Middle Bar Bridge; and

WHEREAS, the City of Ione previously endorsed the opening of the Mokelumne River's Middle Bar reach to public access for river-based recreation because of the benefit to the city; and

WHEREAS, East Bay Municipal Utility District's plan to expand Pardee Reservoir would inundate the Middle Bar Bridge, Middle Bar Run, and part of the Electra Run, reducing the river's value as a recreational, historical and natural resource; and

WHEREAS, the loss of these priceless resources would directly impact the tourism based economy in Ione and the surrounding communities, taking away these convenient recreational opportunities for locals and visitors alike; and

WHEREAS, the East Bay Municipal Utility District has other options for meeting its 2040 water needs.

1

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Ione urges the East Bay Municipal Utility District to adopt higher conservation levels in its 2040 Water Management Plan instead of expanding Pardee Reservoir and destroying the Middle Bar reach of the Mokelumne River.

The foregoing resolution was duly passed and adopted by the City Council of the City of Ione at their meeting on the 2nd day of April, 2009 by the following vote:

AYES:	**Plank, Bonham, Ulm, Schaufel**
NOES:	**None**
ABSENT:	**Ulm**
ABSTAIN:	**None**

Lee Ard, Mayor

ATTEST:
Janice Traverso, City Clerk

THE FORGOING INSTRUMENT
IS A CORRECT COPY OF THE
ORIGINAL ON FILE IN
THIS OFFICE.
ATTEST: 4-10-09
JANICE TRAVERSO
CLERK OF THE CITY COUNCIL.
CITY OF IONE, CALIFORNIA,
AMADOR COUNTY

City of Ione (COI)

COI-1. EBMUD acknowledges the City of Ione resolution opposing the Enlarge Pardee Reservoir component. EBMUD agrees with the commenter that the Mokelumne River is a valuable local and regional recreational and natural resource. Please see the Master Response on the Enlarge Pardee Reservoir component. Project impacts, including recreation impacts and impacts on Middle Bar Bridge, will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with project-level planning for this component.

Please see the Master Response on the WSMP 2040. The Preferred Portfolio includes the second highest level of conservation (Level D) that was considered in the alternatives development process. To implement the next highest conservation level (Level E) and gain the additional 2 MGD in water savings, the cost (total present value) to EBMUD was modeled at approximately $120 million. The total difference in cost between Levels D and E, which includes both costs to the District and costs to the customer, would be approximately $260 million. The additional measures that differentiate Conservation Levels D and E produce increasing incremental costs for the amount of water savings gained and thus, there are apparent diminishing returns in moving from Level D to Level E.

Conservation Level D was selected for inclusion in the Preferred Portfolio because it establishes a conservation goal that is greater than the District's current level of investment and, though it too comes at a high cost, clearly demonstrates that the District is willing to push conservation to the limit of cost-effectiveness. Such an investment ensures that the District will remain a leader in the demand management aspects of future water supply planning.

COJ
090309

CITY OF JACKSON

MEMORANDUM

TO: Honorable Mayor and Members of the City Council

FROM: Michael Daly, City Manager

DATE: March 9, 2009

SUBJECT: Resolution Urging East Bay Municipal Utilities District to Increase Conservation Levels Instead of Raising Pardee Reservoir as Identified in the District's 2040 Water Supply Management Program Environmental Documentation

RECOMMENDATION

That the City Council consider adoption of Resolution No. 2009-16, urging EBMUD to increase conservation levels instead of raising Pardee Reservoir.

DISCUSSION

Councilmember Keith Sweet has requested that this item be brought forth for City Council consideration. East Bay Municipal Utilities District recently released a document titled, "Draft Program Environmental Impact Report (PEIR) for the Water Supply Management Program (WSMP) 2040." As stated in the Purpose and Need of the of the WSMP 2040, "The WSMP 2040 estimates water supply needs to the year 2040, and proposes a program of policy and project initiatives to meet those needs. The primary purpose of the WSMP 2040 is to identify and recommend solutions to meet dry-year water needs through 2040."

One of the initiatives included within the WSMP is raising the level of Pardee Reservoir to increase the storage capacity at this facility. In addition to creating more water storage, the higher elevation of the dam would also inundate the Middle Bar Bridge Take-Out Facility constructed by EBMUD six years ago to increase recreation opportunities on the Mokelumne River. This project was endorsed by the Jackson City Council with Resolution No. 2000-10. A copy of this resolution as well as Councilmember Sweet's request to the Council to adopt the resolution in 2000 is attached. The Middle Bar take out facility was built by EBMUD and dedicated in 2003.

1

The project to enlarge Pardee Reservoir is included in the Mokelumne, Amador and Calaveras Integrated Regional Water Management Plan (IRWMP), a plan that was adopted in 2006 to review all potential projects in this vast watershed area that may be eligible for financing from Proposition 50 or other future funding sources. In the "Inter-Regional Conjunctive Use Project" section of the IRWMP, there is discussion of how water storage projects could benefit water supply needs of all water systems within the region, including Amador Water Agency.

The City of Jackson is a stakeholder agency in the 2006 IRWMP and is currently working with other agencies on an update to this plan.

Other options for increasing water supply are possible, including conservation measures and other water supply projects. Concerns have been raised that raising the Pardee Reservoir would have the following impacts:

- Flood the entire Middle Bar reach of the Mokelumne River, destroying the river for whitewater recreation and stream fishing use.
- Flood the new whitewater boating takeout and parking area soon to be constructed below the Highway 49 Bridge.
- Flood up to 4,000 feet of the Mokelumne Electra Run in high flow periods.
- Inundate the historic Middle Bar Bridge, restored by local governments just a few years ago, cutting off a critical emergency route for local residents.
- Inundate the historic and cultural resources of the Middle Bar area.
- Require construction of a new Highway 49 Bridge.

1

The entire Draft Program Environmental Impact Report (PEIR) for the Water Supply Management Program (WSMP) 2040 can be viewed at the following web site address (all one line):

http://www.ebmud.com/water_&_environment/water_supply/water_supply_management_program/CEQA/default.htm

/attachments
cc: Tom Francis, EBMUD
Jim Abercrombie, Amador Water Agency

Resolution No. 2009-16

A Resolution of the City Council of the City of Jackson Urging East Bay MUD to Increase Conservation Levels Instead of Expanding Pardee Reservoir

WHEREAS, the City of Jackson recognizes the Mokelumne River as a valuable local and regional recreational and natural resource; and

WHEREAS, many Jackson residents visit and use the Mokelumne River for family picnics, boating, swimming, fishing, birding, photography, gold panning, and other activities each year; and

WHEREAS, the Mokelumne River attracts many visitors to our area for recreation and historical tourism; and

WHEREAS, many visitors to our county visit the historic Middle Bar Bridge and its surroundings; and

WHEREAS, commercial whitewater rafting on the Mokelumne River, which would add to local recreation revenue and attraction, is feasible on a combined Electra-Middle Bar run but not on the Electra Run alone; and

WHEREAS, visitors to the Mokelumne River spend money in businesses in the City of Jackson, adding to local incomes and tax revenue; and

WHEREAS, substantial sums of public and private money have been spent improving the recreational facilities on the Mokelumne River and restoring the historic Middle Bar Bridge; and

WHEREAS, the City of Jackson previously endorsed the opening of the Mokelumne River's Middle Bar reach to public access for river-based recreation because of the benefit to the city; and

WHEREAS, East Bay Municipal Utility District's plan to expand Pardee Reservoir would inundate the Middle Bar Bridge, Middle Bar Run, and part of the Electra Run, reducing the river's value as a recreational, historical and natural resource; and

WHEREAS, the East Bay Municipal Utility District has other options for meeting its 2040 water needs.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Jackson urges the East Bay Municipal Utility District to adopt higher conservation levels in its 2040 Water Management Plan instead of expanding Pardee Reservoir and destroying the Middle Bar reach of the Mokelumne River.

The foregoing resolution was duly passed and adopted by the City Council of the City of Jackson at a regular meeting on the 9th day of March, 2009 by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

CITY OF JACKSON

Connie Gonsalves, Mayor

ATTEST:

Gisele L. Cangelosi, City Clerk

1

Resolution No. 2000-10

A Resolution of the City Council of the City of Jackson Supporting the Right of Public Access to the Middle Bar Reach of the Mokelumne River from Highway 49 West to Pardee Reservoir

WHEREAS, the Mokelumne River is a public trust asset owned by the people of California; and

WHEREAS, the Mokelumne River is a local and regional asset, appreciated and used by anglers, boaters, swimmers, bird watchers, and others; and

WHEREAS, under federal, state, and local law, the public has a right to use and enjoy the Mokelumne River for swimming, fishing, hunting, boating, and other reasonable uses; and

WHEREAS, increased recreational use of the Mokelumne River will enhance the economic well-being of the City of Jackson; and

NOW, THEREFORE, BE IT RESOLVED, that the City Council of the City of Jackson does hereby:

1. Support the right of public access to the Middle Bar Reach of the Mokelumne River from Highway 49 west to Pardee Reservoir.

2. Request the East Bay Municipal Utility District immediately allow such access.

3. Request the East Bay Municipal District begin immediate discussions with local governments and other stakeholders to develop a plan for full recreational use of the Middle Bar Reach.

The foregoing resolution was duly passed and adopted by the City Council of the City of Jackson at a regular meeting on the 27th day of March, 2000, by the following vote:

AYES:	Carleton, Lewis, Sweet, Nunes
NOES:	None
ABSENT:	Pietronave
ABSTAIN:	None

CITY OF JACKSON

Alfred Nunes

Alfred A. Nunes, Mayor

ATTEST:

Gisele L. Cangelosi

Gisele L. Cangelosi, City Clerk

MR MAYOR ---MEMBERS OF THE COUNCIL

FOR SOME TIME NOW I HAVE BEEN WATCHING AND LISTENING TO THE CONTROVERSY AND ISSUES SURROUNDING THE RIGHT OF INGRESS AND EGRESS FROM THE MIDDLE BAR REACH OF THE MOKELUMNE RIVER.

I HAVE ALWAYS FELT THAT THERE WAS SOMETHING WRONG WHEN PEOPLE LIVE IN THIS AREA BECAUSE OF THE QUALITY OF LIFE AND THEN CANNOT ENJOY ONE OF THE COUNTY'S MOST SCENIC AREAS.

IT IS ALSO TRUE THAT CURRENT CITIZENS WHO USED TO FISH, SWIM AND OTHERWISE FROLIC IN THE RIVER AS YOUTH, HAVE BEEN DENIED ACCESS TO THE RIVER IN THIS AREA FOR ALMOST FIFTY YEARS. IT IS ALSO TRUE THAT EAST BAY MUNICIPAL DISTRICT ALLOWS ACCESS TO THEIR BAY AREA WATERWAYS YET REFUSES TO DO SO HERE. IT SEEMS STRANGE THAT A FISHERMAN HERE POLLUTES MORE THAN A FISHERMAN THERE.

AT THE ECONOMIC SUMMIT HELD IN JACKSON IN 1996, IT WAS DETERMINED BY A MAJORITY OF THE COUNTIES VARIOUS STAKE HOLDERS, THAT CLEAN, RECREATIONAL,TOURIST BUSINESS WAS ONE OF THE MAJOR INDUSTRIES THAT WE AS A COUNTY AND CITY NEEDED TO SEE DEVELOP. IN A SUBSEQUENT STUDY IT WAS PREDICTED THAT IT MIGHT MEAN AS MUCH AS $2MILLION DOLLARS TO THE COMMUNITY EACH YEAR IN ADDED ECONOMIC BENEFIT. CERTAINLY WE AS A COUNCIL SHOULD TAKE INTEREST IN THAT WHICH MAY BENEFIT THE ENTIRE COMMUNITY FINANCIALLY

JACKSON IS THE MAJOR CITY IN THE COUNTY AND WE AS ELECTED OFFICIALS SHOULD TAKE A LEADERSHIP ROLE IN THE DIRECTION AND FUTURE OF THE CITY. THIS IS AN OPPORTUNITY FOR THE COUNCIL TO ASSUME A LEADERSHIP ROLE REGARDING THIS ISSUE.

IS THIS A SIMPLE ISSUE--BEING ABLE TO GET IN AND OUT OF A RIVER?? PARTICULARLY AT A JUNCTION OF A RIVER AND A ROAD? YES IT IS. IS IT A COMPLEX ISSUE--THAT INVOLVES ASSUMED PROPERTY RIGHTS, NATIVE AMERICAN CONCERNS, ENVIRONMENTAL CONCERNS, WATER QUALITY, HEALTH AND SAFETY CONCERNS, LAW ENFORCEMENT ISSUES --YES IT IS. TOO COMPLEX TO SOLVE? I THINK NOT.

THE REAL ISSUE AT THE MOMENT IS WHO IS GOING TO STAND ON PUBLIC RECORD AND ACKNOWLEDGE THAT NO ISSUE CAN BE RESOLVED UNTIL ALL THE PARTIES BEGIN TO WORK TOWARD A COMMON GOAL--THAT OF ACCESS. THE STATE ATTORNEY GENERAL'S OFFICE IS WORKING TOWARD THIS GOAL, THE BLM IS, THE FISH AND GAME FOLKS ARE, THE LOCAL DISTRICT ATTORNEYS ARE, VARIOUS SPORT AND ENVIRONMENTAL ACTIVIST GROUPS ARE. SHOULDN'T WE BE ALSO? IT IS IN OUR BACKYARD.

SUPERVISOR BAMERT, A GENTLEMAN FOR WHOM I HAVE A LOT OF RESPECT, IS QUOTED IN THE STOCKTON RECORD AND THE LEDGER THAT HE VIEWS THE POOR ROAD WAY AS AN IMPEDIMENT TO ACCESS BUT IF THIS WERE FIXED HE WOULD HAVE NO PROBLEM. SURELY A ROADWAY IS NOT AN INSURMOUNTABLE PROBLEM ESPECIALLY IF IT WERE VIEWED LESS AS A PROBLEM AND MORE OF A CHALLENGE!
THERE ARE A NUMBER OF CHALLENGES HERE AND ONE OF THEM IS GO ON RECORD AS SAYING TO EBMUD--LETS TALK AND RISE TO THE CHALLENGE OF MAKING THE RIVER ONCE AGAIN A PLACE WHERE OLD TIMERS CAN REVISIT THEIR YOUTHFUL EXPERIENCES AND YOUNG PEOPLE CAN EXPERIENCE WHAT HAS TOO LONG BEEN DENIED.

I AM HOPEFUL THAT THE OTHER MEMBERS OF THE COUNCIL WILL JOIN ME IN VOTING FOR THIS RESOLUTION AND THAT OUR DISTRICT 1 SUPERVISOR WILL TAKE NOTE AND ASSUME A LEADERSHIP ROLE AT THE COUNTY LEVEL WHERE HE COULD JOIN SUPERVISOR BOITANO AND SOON TO BE SUPERVISOR FORRESTER WHO I AM TOLD HAVE BOTH STATED THEY ARE IN FAVOR OF MIDDLE BAR ACCESS.

AND ONE FINAL NOTE--IN ELECTIONS AND ON ISSUES IMPORTANT TO THE COMMUNITY--IT SEEMS TO ME THAT THE PEOPLE WHO ARE AGAINST SOMETHING USUALLY SPEAK OUT THE LOUDEST-- FOR THE RECORD--ALL OF THE INPUT THE CITY HAS RECEIVED OVER THE LAST TWO WEEKS WHEN IT WAS SUGGESTED THAT THIS ISSUE MIGHT COME BEFORE US --HAS BEEN POSITIVE.
A GOOD SIGN THAT THIS ISSUE HAS GREAT POPULAR SUPPORT AND ONLY INSTITUTIONAL OPPOSITION.
MAYBE IT IS TIME WE FOUND OUR OWN ERIN BROCKOVITCH!!

THANK YOU MR MAYOR

5.4.14 Enlarge Pardee Reservoir

Enlarging the Pardee Reservoir, located 38-miles northeast of Stockton on the Mokelumne River, is one option to ensure adequate water supply for the development of Amador and Calaveras Counties. Pardee Reservoir is owned and operated by EBMUD and provides EBMUD almost all of its water supply. The reservoir is used primarily for municipal water supply and hydroelectric power generation, producing approximately 110 million-kilowatt-hours of electrical energy every year. Several studies identify capturing the Mokelumne River flows in an expanded Pardee Reservoir to later use the water elsewhere for beneficial use. The Pardee Reservoir would be raised 33 feet and maximum capacity will increase from 197,950 AF to a total of 371,000 AF. EBMUD, AWA, CCWD and San Joaquin County entities could benefit from this additional water capacity with the improvement of water supply reliability and increased water supply. This project is potentially linked to the Bear River Reservoir Expansion Project and the Inter-Regional Conjunctive Use Project as an integrated project with multiple benefits.

There will be improved flood control which will aid in water conservation and protect existing infrastructure from flood damage. Recharging the groundwater basin and preventing saline intrusion will also protect groundwater from contamination.

Pre-design, design, and construction activities are expected to take 7 years. A replacement dam will be constructed, followed by the breaching of the existing dam. By constructing a replacement dam downstream of the existing dam, the Reservoir will be able to continue normal operations during construction. A new intake tower, powerhouse, bridge, and saddle dams at Pardee and Jackson Creek will also be constructed. The height of the existing intake tower will be increased by 35 feet to accommodate water surface elevation increases. The existing powerhouse will be replaced with a 30-MW powerhouse facility, in which annual energy generation would increase from 83 GWh/year to approximately 102 GWh/year. Construction is expected to take approximately 3 to 4 years, year round.

Table 5-18: Enlarge Pardee Reservoir Summary

Project: Enlarge Pardee Reservoir
Project Type: Water Supply
Implementing Agency: Joint Authority - Amador Water Agency (AWA)/East Bay Municipal Water District (EBMUD)/ Calaveras County Water District (CCWD)/ San Joaquin (SJ) County

Design Status: Conceptual
Environmental Documentation Status: Not started
Permitting Status: Not started
Estimated Implementation Dates: 2013 (7 years to complete)
Estimated Cost (year): Not yet determined
Funding Sources Available: Not yet identified

Water Management Strategies Employed:

- Water supply reliability
- Flood management
- Groundwater management
- Stormwater capture and management
- Water conservation
- Conjunctive use
- Surface storage

M/A/C IRWMP Goals:	Objectives:
Water Supply	1, 2, 3, 4, 5, 7, 8, 9
Flood Protection	1, 4
Water Quality	7
Environmental Protection and Enhancement	
Regional Communication and Cooperation	1, 2, 3, 4, 5, 8

5.4.21 Inter-Regional Conjunctive Use Project

San Joaquin County currently relies on groundwater for 60% of its supplies and surface water for the other 40%. The Eastern San Joaquin sub-basin groundwater is overdrafted at a rate of 150,000 to 200,000 AFY. Numerous conjunctive use projects have been proposed to restore the groundwater aquifer in the San Joaquin Basin. This project proposes to form a partnership between two IRWMP regions, the M/A/C region and the Northeastern San Joaquin County Groundwater Banking Authority (GBA), to bank surplus surface water from the Mokelumne River in the San Joaquin ground water basin and recharge the aquifer. The purpose of the Inter-Regional Conjunctive Use Project (IRCUP) is to provide inter-regional water supply reliability benefits in Amador, Calaveras, and San Joaquin Counties, and within the East Bay Municipal Utility District service area. The project will also demonstrate the feasibility of incremental conjunctive management of the Eastern San Joaquin Groundwater Basin and could serve as the basis for future projects. The project description included in this section reflects a version of the IRCUP. A final project description will be developed through coordination with the GBA and other organizations as appropriate.

The concept is that Amador and Calaveras Counties secure new Mokelumne water rights with a portion of the water for use within those counties with the balance stored in the San Joaquin groundwater basin. In wet years some water will be diverted for use by Amador and Calaveras with the remaining water to be conveyed through EBMUD facilities for storage in the Eastern San Joaquin and Cosumnes sub-basins. In dry years water stored in San Joaquin will be available to San Joaquin and via exchange to Amador, Calaveras and EBMUD. Further detail is provided below.

Through multi-lateral agreements among the parties, EBMUD's water supply facilities could be used to regulate the flow of water into the regional groundwater bank in San Joaquin County and exchange the banked water to Amador and Calaveras Counties. San Joaquin County would develop agreements with individual farmers that would be a participant in this inter-regional project. These farms would use surface supplies during the wet years and groundwater during dry years.

This IRCUP would be consistent with the San Joaquin County's groundwater basin management objectives and contribute towards 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 parties could pursue additional stages to expand the groundwater banking project. It could contribute to a salinity barrier or it could recharge the regions where the groundwater is most depleted. The groundwater extraction facilities would be located in an area where they would have the least impact on the groundwater overdraft.

To accomplish this, a number of facilities would need to be constructed. First, diversion facilities would be necessary on the Mokelumne River or the EBMUD aqueduct in order to divert surface water from the river or aqueduct to San Joaquin County. Also, transportation structures will be constructed between the diversion location and the storage location to transfer the water. Aquifer storage and recovery facilities will be constructed to aid in groundwater recharge and extraction. These facilities could be either spreading ponds and wells or injection/extraction wells, depending on the depth at which the water will be stored. There are many alternatives to be considered and they are classified into five categories. These include:

- On-stream storage;
- Off-stream storage;
- Direct diversions;
- Additional diversions; and
- Non-structural groundwater management.

The *EBMUD Updated Water Supply Management Program – Final Environmental Impact Report* describes a range of recharge mechanisms and a range of withdrawal mechanisms used in coordination

with surface supplies. There are indirect and direct methods to extract groundwater. Indirect yield will be obtained by supplying downstream agriculture and instream fisheries whose priorities are senior to the agencies with groundwater in dry years, reducing required releases from upstream reservoirs. By supplying the senior surface water rights holders or instream needs with groundwater in the dry years, it would allow the same amount of water to be withheld in upstream reservoirs for diversion to agency service areas. The Agricultural Exchange Method is an indirect yield method in which the agricultural surface water users with water rights senior to the agencies switch to banked groundwater in dry years. The direct method will deliver yield to the agencies by pumping banked groundwater directly into conveyance systems, such as the Mokelumne Aqueduct. The two primary methods identified to recharge groundwater are in-lieu recharge and spreading/infiltration. A yield of at least 15,000 to 150,000 AF may be supplied to agencies during dry years.

A collaborative planning process will take place in which the Mokelumne River Forum could serve as the collaborative process that coordinates the water resources planning efforts across regional boundaries with respect to river hydrology, facilities, infrastructure and institutional arrangements required for the Inter-Regional Conjunctive Use Project.

This conjunctive use project will allow greater water supply reliability planning, drought management protection, operational flexibility, and help to meet water supply needs of a growing demand for both agriculture and increasing urbanization. The Inter-Regional Conjunctive Use Project may someday include other proposed projects to aid in diverting and storing water, such as the Bear River Reservoir Expansion and Enlargement of Pardee Reservoir.

The diversion facilities, transportation structures, and groundwater recharge facilities will need to be constructed for a successful project. The project is still in the conceptual phase though and construction dates have not been determined. The project is estimated to cost between $2 million and $5 million. Possible funding sources have not yet been identified.

Table 5-25: Inter-Regional Conjunctive Use Project Summary

Project: Inter-Regional Conjunctive Use Project **Project Type:** Water Supply **Implementing Agency:** Amador Water Agency (AWA)/Calaveras County Water District (CCWD)/East Bay Municipal Utility District (EBMUD)/San Joaquin GBA **Design Status:** Conceptual **Environmental Documentation Status:** Not started **Permitting Status:** Not started **Estimated Implementation Dates:** Not yet determined **Estimated Cost (year):** $2 million to $5 million (2006) **Funding Sources Available:** Not yet identified
Water Management Strategies Employed: ▪ Water supply reliability ▪ Groundwater management ▪ Stormwater capture and management ▪ Water quality protection and improvement ▪ Conjunctive use ▪ Imported water ▪ Land use planning ▪ Surface storage ▪ Watershed planning ▪ Water transfers

M/A/C IRWMP Goals:	Objectives:
Water Supply	1, 2, 3, 4, 5, 7, 8, 9, 10
Flood Protection	
Water Quality	
Environmental Protection and Enhancement	1, 4
Regional Communication and Cooperation	1, 2, 3, 4, 5, 6, 8

5.5.3 Inter-regional Project Summaries

This section describes the inter-regional aspects of some projects that have been identified as having significant benefits to both the GBA and M/A/C regions. Project details and prioritization are described elsewhere in this IRWMP.

Inter-Regional Conjunctive Use Project (IRCUP)

The purpose of the Inter-Regional Conjunctive Use Project (IRCUP) is to provide inter-regional water supply reliability benefits in Amador, Calaveras, and San Joaquin Counties, and within the East Bay Municipal Utility District (EBMUD) service area. The project will also demonstrate the feasibility of incremental conjunctive management of the Eastern San Joaquin and Cosumnes Sub-Basins and could serve as the basis for future projects.

The concept is that the area-of-origin counties – Amador and Calaveras Counties, secure new Mokelumne water rights with a portion of the water for use within those counties with the balance stored in the San Joaquin Valley Groundwater Basin. In wet years some water will be diverted for use by Amador and Calaveras with the remaining water to be conveyed through EBMUD facilities for storage in Eastern San Joaquin and Cosumnes Sub-Basins. In dry years water stored in San Joaquin will be available to San Joaquin and via exchange to Amador, Calaveras and EBMUD. Further detail is provided below. Figure 5-3 is a schematic of the different operations in wet and dry years.

- **New Surface Water Supply:** Amador County and Calaveras County water purveyors would have lead responsibility in securing additional surface water right 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 assignment would allow diversions from the river to be used within Amador and Calaveras Counties, and other water diversions could be banked in groundwater for later use in Amador, Calaveras, and San Joaquin Counties and in EBMUD's service area.
- **Wheeling Facilities:** Through multi-lateral agreements among the parties, EBMUD's water supply facilities could be used to regulate the flow of water into the regional groundwater bank in San Joaquin County. The parties would rely on EBMUD's existing facilities to exchange the banked water to Amador and Calaveras Counties. San Joaquin County's groundwater basin would be used for banking the water in wet years for use in dry years. San Joaquin County would develop agreements with individual farmers that would be a participant in this inter-regional project. These farms would use surface supplies during the wet years and groundwater during dry years.
- **Storage in the Eastern San Joaquin and Cosumnes Sub-Basins:** This IRCUP would be consistent with the Eastern San Joaquin and Cosumnes Sub-Basins management objectives and contribute towards the goal of solving the groundwater overdraft in the critical areas within San Joaquin. If the project proves to be feasible in helping to reverse the overdraft condition in the groundwater basin, some or all of the parties could pursue additional stages to expand the groundwater banking project. During wet years, the water could be banked within the San Joaquin basin aquifer in a region where it would be most effective in meeting groundwater management goals. For example, it could contribute to a salinity barrier, or it could recharge those regions where the groundwater is most depleted. The groundwater extraction facilities could be located in an area where they could have the least impact on the groundwater overdraft.
- **Institutional Arrangements and Financing:** Each participating agency would negotiate institutional arrangements that would enable the IRCUP to proceed:

  Sources of Water Entitlement – Amador County and Calaveras County water purveyors would secure surface water rights through their 1927 State Filings in accordance with Water Code

Section 10500, et seq. and the participating agencies shall respect such county of origin water rights.

Water Transfer & Exchange Projects – An IRCUP variation may be proposed where the source of water is developed from proposed and existing water rights or contracts. This type of IRCUP will likely contain most, if not all, of the common project components discussed previously (local diversions, groundwater storage, transfers, and exchanges).

Groundwater Export Ordinance – San Joaquin County will grant permits enabling Amador, Calaveras and EBMUD to store water in the groundwater basin during wet years for use in dry years.

Infrastructure Facilities Usage and Ownership – The parties shall develop agreements for water transfer and/or exchanges that respect the use and ownership of EBMUD's storage and conveyance facilities and the Eastern San Joaquin and Cosumnes Sub-Basins.

Securing Funding – The parties shall jointly participate in a cost-sharing agreement, and seek state and federal grant funding to offset the cost of the IRCUP.

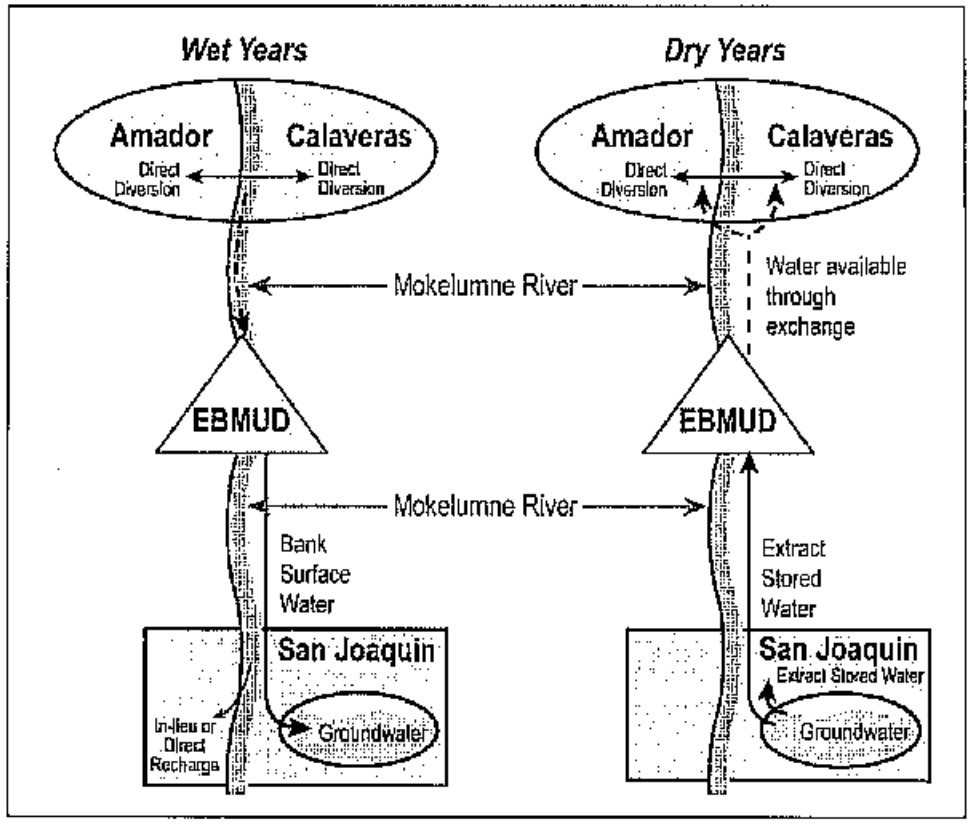


Figure 5-3: Inter-Regional Conjunctive Use Project Schematic

The IRCUP does not have to be limited to existing facilities. The IRCUP is flexible and expandable and could take many forms or be split into several different projects. As an example of this flexibility and

expandability, the IRCUP could be integrated with a new off-stream surface storage facility such as the proposed MORE WATER Project – Duck Creek Reservoir in San Joaquin County[1]. The IRCUP could also be integrated with new inter-ties to adjacent basins such as the Calaveras River system, or by using unassigned capacity from the Freeport Regional Water Project in Sacramento County. These facilities could link the Mokelumne River watershed to these adjacent basins. New facilities could be constructed to selectively divert high flows on the Mokelumne or nearby river systems where they could be regulated for an integrated system of conjunctive use projects. Integrating the IRCUP with these other facilities could increase the inter-regional benefits from this project.

Bear River Reservoir Expansion Project

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. While any of the three alternative projects listed would be constructed entirely within the M/A/C region, coordination is desirable with entities within the GBA region. The additional 26,407 AF of storage could impact the releases from the Bear River which in turn could impact downstream entities and the environment but if done properly, it could be beneficial. 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.

Based on a preliminary review of the concept as developed to date, the Bear River Reservoir Expansion Project would benefit both regions by providing additional control over stream flow, reservoir release timing, and release magnitude. There are obvious benefits to a conjunctive use project. Releases can be timed to not overwhelm diversion and recharge facilities while still allowing for habitat and pathways for natural species.

Enlarge Pardee Reservoir

Enlarging the Pardee Reservoir achieves similar but greater benefits for both regions as the Bear River Reservoir Expansion Project. The Pardee Reservoir is completely within the M/A/C region but modifications to the reservoir or operations would impact or benefit the downstream GBA region. Benefits include additional storage, greater flood protection, and better control over reservoir release timing and magnitude. This last benefit of enlarging the Pardee Reservoir has trickle down benefits for environmental resources and additional conjunctive use projects.

[1] The MORE WATER Project – Duck Creek Reservoir in San Joaquin County is discussed in the San Joaquin GBA IRWMP.

City of Jackson (COJ)

COJ-1. EBMUD acknowledges the City of Jackson resolution opposing the Enlarge Pardee Reservoir component. EBMUD agrees with the commenter that the Mokelumne River is a valuable local and regional recreational and natural resource. Please see the Master Response on the Enlarge Pardee Reservoir component. Project impacts, including recreation impacts and impacts on Middle Bar Bridge, will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with project-level planning for this component.

Please see the Master Response on the WSMP 2040. The Preferred Portfolio includes the second highest level of conservation (Level D) that was considered in the alternatives development process. To implement the next highest conservation level (Level E) and gain the additional 2 MGD in water savings, the cost (total present value) to EBMUD was modeled at approximately $120 million. The total difference in cost between Levels D and E, which includes both costs to the District and costs to the customer, would be approximately $260 million.

Conservation Level D was selected for inclusion in the Preferred Portfolio because it establishes a conservation goal that is markedly greater than the District's current level of investment. This demonstrates that the District is willing to push conservation to the limit of cost-effectiveness. Such an investment ensures that the District will remain a leader in the demand management aspects of future water supply planning.

COL
090427

LAFAYETTE
SETTLED 1848 — INCORPORATED 1968

April 27, 2009

Mr. Thomas B. Francis, PE
EBMUD Water Supply Improvements Division
East Bay Muncicipal Utilities District
MS 407
375 11th Street
Oakland, CA 94607

Dear Mr. Francis:

Please consider our comments regarding EBMUD's proposed Water Supply Management Plan (WSMP) and forward them to the Board of Directors.

Given expected growth of EBMUD's service region during the next 30 or more years and forecasts for global warming that may have an unpredictable effect on the volume and predictability of rainfall, we believe the District should pursue projects that reduce the need for water, use water more efficiently, provide more storage capacity that has minimal environmental hazards, and provide more water sources.

We believe the Preferred Portfolio described in the WSMP provides these benefits and encourage the Board to adopt it. Eliminating one or more components of this option would reduce EBMUD's flexibility at a time when an unnecessarily constrained approach to serving the needs of your constituency does not make sense.

1

Best regards,

Don Tatzin
Mayor

3675 MT. DIABLO BLVD., SUITE 210, LAFAYETTE, CA 94549
TELEPHONE: (925) 284-1968 FAX: (925) 284-3169
http//:www.ci.lafayette.ca.us

City of Lafayette (COL)

COL-1. EBMUD recognizes and appreciates the commenter's support for the WSMP 2040 Preferred Portfolio.

COP
090423

Resolution No. 2009-05

**A Resolution of the City Council of the City of Plymouth
Urging East Bay MUD to Increase Conservation Levels
Instead of Expanding Pardee Reservoir**

WHEREAS, the City of Plymouth recognizes the Mokelumne River as a valuable local and regional recreational and natural resource; and

WHEREAS, many Plymouth residents visit and use the Mokelumne River for family picnics, boating, swimming, fishing, birding, photography, gold panning, and other activities each year; and

WHEREAS, the Mokelumne River attracts many visitors to our area for recreation and historical tourism; and

WHEREAS, flooding of historic mine shafts would result in possible contamination by hazardous waste from the 1800 mining operations, and

WHEREAS, many visitors to our county visit the historic Middle Bar bridge and its surroundings; and

WHEREAS, commercial whitewater rafting on the Mokelumne River, which would add to local recreation revenue and attraction, is feasible on a combined Electra-Middle Bar run but not on the Electra run alone; and

WHEREAS, substantial sums of public and private money have been spent improving the recreational facilities on the Mokelumne River and restoring the historic Middle Bar bridge; and

1

WHEREAS, East Bay Municipal Utility District's plan to expand Pardee Reservoir would inundate the Middle Bar bridge, Middle Bar run, and part of the Electra run, reducing the river's value as a recreational, historical and natural resource; and

WHEREAS, the loss of these priceless resources would directly impact the tourism based economy in Amador County and the surrounding communities, taking away these convenient recreational opportunities for locals and visitors alike; and

WHEREAS, the East Bay Municipal Utility District has other options for meeting its 2040 water needs.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Plymouth urges the East Bay Municipal Utility District to adopt higher conservation levels in its 2040 Water Management Plan instead of expanding Pardee Reservoir and destroying the Middle Bar reach of the Mokelumne River.

The foregoing resolution was duly passed and adopted by the City Council of the City of Plymouth at a regular meeting held on the 23rd day of April, 2009 by the following vote:

AYES: Pat Fordyce, Patricia Shackleton, Greg Baldwin, Jon Colburn
NOES: Michael O'Meara
ABSENT: None
ABSTAIN: None

Mayor

ATTEST:

City Clerk

City of Plymouth (COP)

COP-1. EBMUD acknowledges the City of Plymouth resolution opposing the Enlarge Pardee Reservoir component. EBMUD agrees with the commenter that the Mokelumne River is a valuable local and regional recreational and natural resource. Please see the Master Response on the Enlarge Pardee Reservoir component. Project impacts, including recreation impacts and impacts on Middle Bar Bridge, will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with project-level planning for this component.

Please see the Master Response on the WSMP 2040. The Preferred Portfolio includes the second highest level of conservation (Level D) that was considered in the alternatives development process. To implement the next highest conservation level (Level E) and gain the additional 2 MGD in water savings, the cost (total present value) to EBMUD was modeled at approximately $120 million. The total difference in cost between Levels D and E, which includes both costs to the District and costs to the customer, would be approximately $260 million.

Conservation Level D was selected for inclusion in the Preferred Portfolio because it establishes a conservation goal that is markedly greater than the District's current level of investment. This demonstrates that the District is willing to push conservation to the limit of cost-effectiveness. Such an investment ensures that the District will remain a leader in the demand management aspects of future water supply planning.

COSC1
090423

-----Original Message-----
From: Jeff Gardner [mailto:jgardner@ci.sutter-creek.ca.us]
Sent: Thursday, April 23, 2009 9:29 PM
To: Francis, Thomas
Subject: Comments on WSMP 2040

In the preferred portfolio EBMUD is interested in moving forward to supply water to it's constituents and other regional partners, what are the expected growth rates used to support the need for these projects. 1

What are the expected impacts to crop production from the loss of arable land as a result of the growth supported by this portfolio of projects. 2

Has there been any evaluation of the possibility of the population in the expected service area actually decreasing over the next 30 years 3

Jeff Gardner
Sacramento, CA

Official City of Sutter Creek Correspondence
www.ci.sutter-creek.ca.us

City of Sutter Creek (COSC1)

COSC1-1. Please see the Master Response on the Demand Study for a discussion of demand assumptions and projections in the EBMUD service area. The Upcountry components (Enlarge Pardee Reservoir, Enlarge Lower Bear Reservoir, IRCUP/San Joaquin Groundwater Banking/Exchange) of the Preferred Portfolio are likely to involve regional partners and provide regional benefits. At this stage, however, the project is focused on EBMUD's demand and means of meeting that demand in dry years.

COSC1-2. Please see the Master Response on the WSMP 2040. The Preferred Portfolio is intended to meet the District's projected Need for Water in dry years. It is not intended to support growth outside of the EBMUD service area. If and when project-level planning moves forward, EBMUD will prepare project-level CEQA documentation to identify potential impacts and possible means of mitigating impacts to agriculture, fish and wildlife, recreational uses, and other resource areas.

COSC1-3. Please see the Master Responses on the WSMP 2040 and the Demand Study. EBMUD developed the estimated demand for 2040 based on detailed analysis and discussions with local agencies within the EBMUD service. The analysis conducted by EBMUD indicates that the population within the EBMUD service area will likely increase and that even with aggressive conservation efforts, demand is likely to increase.

COSC2
090420

RESOLUTION 08-09-25
A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SUTTER CREEK URGING EAST BAY MUNICIPAL UTILITY DISTRICT TO INCREASE CONSERVATION LEVELS INSTEAD OF EXPANDING PARDEE RESERVOIR

WHEREAS, the City of Sutter Creek recognizes the Mokelumne River as a valuable local and regional recreational and natural resource; and

WHEREAS, many Sutter Creek residents visit and use the Mokelumne River for family picnics, boating, swimming, fishing, birding, photography, gold panning, and other activities each year; and

WHEREAS, the Mokelumne River attracts many visitors to our area for recreation and historical tourism; and

WHEREAS, commercial whitewater rafting on the Mokelumne River, which would add to local recreation revenue and attraction, is feasible on a combined Electra-Middle Bar run but not on the Electra Run alone; and

WHEREAS, visitors to the Mokelumne River spend money in businesses in the City of Sutter Creek, adding to local income and tax revenue; and

WHEREAS, substantial sums of public and private money have been spent improving the recreational facilities on the Mokelumne River and restoring the historic Middle Bar Bridge; and

1

WHEREAS, the City of Sutter Creek previously endorsed the opening of the Mokelumne River's Middle Bar reach to public access for river-based recreation because of the benefit to the city; and

WHEREAS, East Bay Municipal Utility District's plan to expand Pardee Reservoir would inundate the Middle Bar Bridge, Middle Bar Run, and part of the Electra Run, reducing the river's value as a recreational, historical and natural resource; and

WHEREAS, the loss of these priceless resources would directly impact the tourism based economy in Sutter Creek and the surrounding communities, taking away these convenient recreational opportunities for locals and visitors alike; and

WHEREAS, the East Bay Municipal Utility District has other options for meeting its 2040 water needs.

WHEREAS, The City of Sutter Creek encourages the construction of the high elevation 49 bridge, which will greatly benefit regional traffic flow; and

WHEREAS, The City of Sutter Creek strongly encourages East Bay Municipal Utility District to give Amador County access to a reasonable amount of the newly created storage capacity that utilizes the outstanding quality of water available in the Mother Lode Foothills.

WHEREAS, the City of Sutter Creek also encourages East Bay Municipal Utility District to work with the surrounding counties (Alpine, Calaveras, Amador, San Joaquin) in recognition of the resources shared with this region. Local agencies have developed the Integrated Regional Water Management Plan; therefore, the City of Sutter Creek encourages East Bay Municipal Utility District to work in cooperation to enhance and meet our regional goals along with theirs.

WHEREAS, The City of Sutter Creek supports East Bay Municipal Utility District's need to continually find ways to increase their potable water sources for their customers. 1

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Sutter Creek urges the East Bay Municipal Utility District to adopt higher conservation levels in its 2040 Water Management Plan instead of expanding Pardee Reservoir and destroying the Middle Bar reach of the Mokelumne River.

The foregoing resolution was duly passed and adopted by the City Council of the City of Sutter Creek at a regular meeting on the 20th day of April, 2009, by the following vote:

AYES: Council Members Anderson, Murphy, Rianda and Wooten
NOES: Council Member Crosby
ABSENT: None
ABSTAIN: None

CITY OF SUTTER CREEK

Gary R. Wooten, Mayor

ATTEST:

Natalie Doyle, Deputy City Clerk

City of Sutter Creek 2 (COSC2) – May 1, 2009

COSC2-1. EBMUD acknowledges the City of Sutter Creek resolution opposing the Enlarge Pardee Reservoir component. EBMUD agrees with the commenter that the Mokelumne River is a valuable local and regional recreational and natural resource. Please see the Master Response on the Enlarge Pardee Reservoir component. Project impacts, including recreation impacts and impacts on Middle Bar Bridge, will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with project-level planning for this component.

Please see the Master Response on the WSMP 2040. The Preferred Portfolio includes the second highest level of conservation (Level D) that was considered in the alternatives development process. To implement the next highest conservation level (Level E) and gain the additional 2 MGD in water savings, the cost (total present value) to EBMUD was modeled at approximately $120 million. The total difference in cost between Levels D and E, which includes both costs to the District and costs to the customer, would be approximately $260 million.

The WSMP 2040 identifies solutions for EBMUD's dry-year water needs; it is not intended to address water supply or infrastructure needs in Amador and Calaveras Counties, or any other area outside EBMUD's service area. The District has identified the potential for the Enlarge Pardee component to be undertaken as a regional project with partners and community support.

EBMUD will consult with agencies, including the Bureau of Land Management and Caltrans, and will coordinate with local residents when and if project-level planning moves forward for this component.

Conservation Level D was selected for inclusion in the Preferred Portfolio because it establishes a conservation goal that is markedly greater than the District's current level of investment. This demonstrates that the District is willing to push conservation to the limit of cost-effectiveness. Such an investment ensures that the District will remain a leader in the demand management aspects of future water supply planning.

PGE
090428

Pacific Gas and Electric Company

Power Generation

245 Market Street
San Francisco, CA 94105

Mailing Address
Mail Code N11C
P.O. Box 770000
San Francisco, CA 94177

April 28, 2009

Mr. Tom Francis
East Bay Municipal Utility District
375 Eleventh Street
Oakland, CA 94607

RE: Comments on the Draft Program Environmental Impact Report (PEIR) for EBMUD Water Supply Management Program 2040 (WSMP 2040)

Dear Mr. Francis:

The Pacific Gas and Electric Company (PG&E) was pleased to attend the recent public meetings in Walnut Creek and San Andreas to review East Bay Municipal Utility District's (EBMUD) WSMP 2040. PG&E was not notified of the comment period for this project until late March 2009, and would prefer to have had additional notice and opportunity for discussion with EBMUD's staff and consultant, to more effectively understand and comment on how the WSMP 2040 may impact PG&E facilities, operations, and future plans. Please add my contact information to your notification list, so that in the future PG&E has the full amount of time to adequately develop comments according to CEQA guidelines. 1

Based on our initial review, PG&E has the following general comments:

While we recognize the need for EBMUD to have a long term plan for reliable water supply, and a portfolio of alternatives to meet its customer needs, at this time PG&E cannot agree to the feasibility of the alternative to raise Lower Bear Dam. This alternative represents a substantial modification to a PG&E-owned asset that is part of a Federal Energy Regulatory Commission (FERC) licensed project, and PG&E and EBMUD have not engaged in the substantive discussions required to fully understand the implications of this part of the WSMP 2040 proposal. 2

Additionally, PG&E cannot at this time agree to the feasibility of the alternative to raise Pardee Dam. This alternative would affect the North Fork Mokelumne River below PG&E's Electra Powerhouse, particularly with regard to its continued use as a whitewater boating run, and may impact the instream flows required to comply with PG&E's FERC license. PG&E and EBMUD have not yet discussed and understood the implications of this part of the WSMP 2040 proposal. 3

Additional review by PG&E must reflect compliance with the state and federal regulations under which PG&E provides energy services to its customers. For your reference, I am enclosing a summary description of the pertinent California Public Utilities Commission and FERC regulations, and areas of particular focus for additional review.

PG&E recognizes the need for water supply that balances environmental concerns, and remains committed to working with EBMUD to provide timely, reliable, and cost-effective water supply and electric service to our respective customers. In particular, in the spirit of the Shared Objectives Agreement EBMUD and PG&E entered into in 2002, we are committed to working together to understand your analysis of potential environmental impacts and your preliminary ratings of their significance, as described in the draft PEIR. Because facility modifications require long lead times and are not always feasible, we request that EBMUD's Project Coordinator consult with PG&E as early as possible in the planning stage. We also request that you copy PG&E on future correspondence regarding this subject. 4

If you have any questions or concerns, please contact Alan Soneda at (415) 973-4054.

Sincerely,

David Moller, Director
Hydro Licensing

DWM/JTS/AAS/msp

Enclosure

cc: Attached ERC and Forest Service Distribution List

cc: Ecological Resources Committee and Forest Service Distribution

U. S. Forest Service
Ms. Beth Paulson
Eldorado National Forest
100 Forni Road
Placerville, CA 95667

U. S. Bureau of Land Management
Mr. Jim Eicher
BLM Folsom Resource Area
63 Natoma Street
Folsom, CA 95630

U. S. Fish and Wildlife Service
Ms. Deborah Giglio
2800 Cottage Way, Room W-2605
Sacramento, CA 95825

California Dept. of Fish and Game
Mr. Ken Kundargi
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670

California Dept. of Boating and Waterways
Mr. Mike Ammon
2000 Evergreen St., Suite 100
Sacramento, CA 95815-3896

Foothill Conservancy
Mr. Pete Bell
20123 Shake Ridge Rd.
Volcano, CA 95689

American Whitewater /Chico Paddleheads
Dave Steindorf
LP Stewardship Director
4 Baroni Drive
Chico, CA 95928

Friends of the River
Ms. Kelly Catlett, Policy Advocate
915 20th Street
Sacramento, CA 95814

Natural Heritage Institute
Richard Roos-Collins, Esq.
100 Pine St., Ste. 1550
San Francisco, CA 94111-5117

Mr. Ron Adhya, Regional Director
Federal Energy Regulatory Commission
901 Market Street, Room 350
San Francisco, CA 94103

Summary Description of Pertinent State and Federal Regulations and Additional PG&E Comments on EBMUD Water Supply Management Plan 2040

The Pacific Gas and Electric Company (PG&E) owns and operates power generation facilities which are located within and adjacent to the proposed EBMUD project. To promote the safe and reliable maintenance and operation of utility facilities, the California Public Utilities Commission (CPUC) and the Federal Energy Regulatory Commission (FERC) have mandated specific clearance requirements between utility facilities and surrounding objects or construction activities. To ensure compliance with these standards, project proponents should coordinate with PG&E early in the development of their project plans. Any proposed development plans should provide for unrestricted utility access and prevent encroachments that might impair the safe and reliable maintenance and operation of PG&E's facilities.

The California Constitution vests in the CPUC exclusive power and sole authority with respect to the regulation of privately owned or investor owned public utilities such as PG&E. This exclusive power extends to all aspects of the location, design, construction, maintenance and operation of public utility facilities. Nevertheless, the CPUC has provisions for regulated utilities to work closely with local governments and give due consideration to their concerns. PG&E must balance its commitment to provide due consideration to local concerns with its obligation to provide the public with a safe, reliable, cost-effective energy supply in compliance with the rules and tariffs of the CPUC.

5

The FERC has jurisdiction under the Federal Power Act to issue licenses for the development, operation and maintenance of hydroelectric project works, including dams, reservoirs and other works for power. PG&E holds a FERC hydroelectric license for the Mokelumne River Project, FERC Project No. 137, issued in 2001 and expiring in 2031. In addition, PG&E holds a FERC preliminary permit to evaluate potential development of a new Mokelumne pumped storage project, FERC Project No. 13221, issued in 2008 and expiring in 2011. Any proposed development plans must address all potential impacts to PG&E's Mokelumne River Project facilities, recognize PG&E's ongoing development evaluation of the Mokelumne Pumped Storage Project, and support the continued safe and reliable maintenance and operation of any PG&E facilities. In particular, locations within the identified FERC project boundaries, including, but not limited to, the area of the Cole Creek Diversion and its facilities, the area around Lower Bear River Reservoir and Upper Bear Reservoir, Salt Springs Powerhouse, affected areas along the Mokelumne River that impact PG&E facilities, and the area along the electrical distribution line and tunnel alignment between Lower Bear and Salt Springs must be carefully reviewed for potential impacts from EBMUD's proposed development plans.

Additionally, FERC's regulations affirm the circumstances under which federal land management agencies such as the U.S. Forest Service, oversee the use of federal lands for licensed hydropower projects; this may include authority to issue mandatory conditions for FERC licenses. Any of the EBMUD proposed development plans that may affect federal lands, such as the EBMUD alternative to raise Lower Bear Dam, must be evaluated with an understanding of federal land ownership. 5

PG&E (PGE)

PGE-1. Prior correspondence regarding the District's WSMP 2040 effort was sent to the attention of Ms. Carey Madill of PG&E's Stockton operations. Mailings included initial notices (the Notice of Preparation as mailed to Ms. Madill on May 1, 2008 as well as the Notice of Availability of the Draft PEIR as mailed to Ms. Madill on Feb. 19, 2009). Upon receiving the commenter's letter (which requested you be added to the contact list) we have since updated the contact list for WSMP 2040. We assume that from this point forward that David Moller is the primary PG&E contact for WSMP 2040 matters, and he will be notified of future actions and/or decisions regarding the WSMP 2040.

PGE-2. The Draft PEIR acknowledges PG&E ownership of Lower Bear Dam and the FERC license issued for this project (please see page 4.2.D-6). The WSMP 2040 Draft PEIR is a programmatic EIR, and raising Lower Bear Dam to enlarge the Lower Bear River Reservoir is one component of a possible regional conjunctive use project that is identified in this document. If EBMUD and other partner agencies elect in the future to pursue additional water storage projects involving the Lower Bear Reservoir, EBMUD and its regional partners will engage in discussions with PG&E and all other stakeholders regarding the project-level studies and potential impacts.

PGE-3. The Enlarge Pardee Reservoir component is one of several supplemental water supply projects identified in the Draft PEIR. Please see the Master Response on Program-level EIR analysis. If, after further analysis, EBMUD pursues a supplemental water supply involving Pardee Reservoir, EBMUD will engage in discussions with PG&E and other stakeholders regarding project level studies, potential impacts, and implications of the proposal.

PGE-4. EBMUD appreciates that PG&E recognizes that environmental concerns were among the factors considered as the WSMP 2040 was crafted and a preferred portfolio assembled. EBMUD further appreciates PG&E's willingness to work together.

EBMUD also wants to maintain the positive working relationship fostered since the signing of the referenced Shared Objectives Agreement in 2002. While the agreement expired in 2007, the parties continue to maintain their respective intent to maintain a positive, supportive relationship and recognize the importance of Mokelumne River watershed resources.

The WSMP 2040 is a program-level effort. There are no immediate plans to begin the project-specific planning stage for either the Enlarge Lower Bear Reservoir component or the Enlarge Pardee Reservoir component of the Preferred Portfolio. However, EBMUD appreciates that PG&E wants to have discussions with the District when and if project-specific planning occurs. EBMUD commits to holding said discussions early on following the commencement of project-specific planning.

EBMUD originally sent notice of the Draft PEIR availability to Ms. Carey Madill of PG&E's Stockton, California operations. However, as requested, Mr. Alan Soneda of PG&E's San Francisco, California operations will be listed as the point of contact for matters pertinent to WSMP 2040.

PG&E (PGE)

PGE-5. EBMUD acknowledges the rules and regulations that apply to PG&E's hydroelectric projects, including agreements with specific terms and conditions, such as the Lodi Decree, that will need to be incorporated into the project-level analysis of the Preferred Portfolio components discussed in the Draft PEIR. PG&E will be invited to be a participating stakeholder to discuss potential impacts if and when project-level planning moves forward.

SEWD
090406

April 6, 2009

Mr. Thomas B. Francis, P.E.
East Bay Municipal Utilities District
Water Supply Improvements Division
375 11th Street, MS407
Oakland, CA 94607

Re: Water Supply Management Program 2040 – Comments on Draft PEIR

Dear Mr. Francis:

By this letter, this water district provides its comments on the above referenced draft PEIR.

1. SEWD 2008 Water Bank Proposal. At Section 1.3 of the Executive Summary and other locations throughout the document an assumption suggests that the Freeport Regional Water Project (FRWP) facilities will be used to accomplish water transfers. It is this water district's opinion that use of these facilities may not always be necessary.
As we and others have learned, partially through the Mokelumne Forum process, our region has many opportunities to use the depleted portion of Eastern San Joaquin County Basin to individually or jointly bank surface water to conjunctively manage our water resources. Multi-county, multi-participant banking projects proposed by the Mokelumne Forum will have the potential of providing significant benefits to the people and environment of this region through a significant increase of yield from the Mokelumne River water supply.

Our water district has proposed a demonstration project that includes the sale of our banked surface water (from non-Mokelumne sources) to some of the Mokelumne Forum participants. The conceptual design of such a banking project suggests that this water district could provide a dry-year supply of 15,000 acre-feet per year for three consecutive dry years. Delivering source water to this conceptual water bank and extracting the same for sale to a Mokelumne Forum participant will not require the use of the FRWP facilities. 1

This water district therefore requests that our November 26, 2008 proposal to the East Bay Municipal Utility District be considered as part of your Preferred Portfolio of projects throughout the draft PEIR process, and survive any consideration towards eliminating alternatives. We consider our proposal to be included as part of the Mokelumne IRCUP/San Joaquin Groundwater Banking/Exchange component of the portfolio components discussed in the Executive Summary and described in more detail in Chapter 3 of the draft PIER.

2. Build Pardee Dam as Part of a Joint Project. This water district respectfully requests that any joint-project on the Mokelumne River should include raising Pardee 2

Dam as a component. We further request that your CEQA process discourage any attempt to exclude the raising Pardee Dam component from further consideration. This request is made for the benefit of all the regional water interests, all of which are likely represented in the Mokelumne Forum.

This water district serves a population of approximately 300,000 people in and around the City of Stockton. Our request is from the representatives that these people have elected to help meet their water resource needs. If you requested our assistance, we would be willing to ask the residents we serve to write letters in support of this project component on an individual basis. Clearly, Stockton area support of this project will be able to compete with any letter campaign waged by special interest opposed to such a project. For now, please consider this letter as representing the thousands of letters you could be receiving from the residents in and around the City of Stockton. 2

Regulatory storage of surface water is the key component of any large scale conjunctive use/management project/program. A raised Pardee Dam and the proposed Duck Creek and South Gulch Reservoirs are examples of the regulatory storage that is needed on or in the vicinity of the Mokelumne River in order to assure the success of our regional projects/programs.

Thank you for this opportunity to comment.

Sincerely,

KEVIN M. KAUFFMAN, P.E. 5/4/09
General Manager

cc: Board of Directors

Stockton East Water District (SEWD)

SEWD-1. While Stockton East Water District's 2008 Water Bank Proposal is not included in the WSMP 2040 Preferred Portfolio, this does not preclude the District from considering this project in the future.

SEWD-2. The District acknowledges the commenter's support for the Enlarge Pardee component.

SJCOG 090430

S J C O G, Inc.

555 East Weber Avenue • Stockton, CA 95202 • (209) 468-3913 • FAX (209) 468-1084

San Joaquin County Multi-Species Habitat Conservation & Open Space Plan (SJMSCP)

SJMSCP RESPONSE TO LOCAL JURISDICTION (RTLJ) ADVISORY AGENCY NOTICE TO SJCOG, Inc.

To: Tom Francis, East Bay Municipal Utility District

From: Anne~Marie Poggio-Castillou, Regional Habitat Planner, SJCOG, Inc.

Date: April 30, 2009

Local Jurisdiction Project Title: Water Supply Management Program

Local Jurisdiction Project Number: SCH # 2008052006

Assessor Parcel Number(s): Multiple

Total Acres to be converted from Open Space Use: Undetermined

Habitat Types to be Disturbed: Agriculture, Natural and Vernal Pool Habitat Land

Species Impact Findings: Findings to be determined by SJMSCP biologist.

Dear Mr. Francis:

SJCOG, Inc. has reviewed the EBMUD Water Supply Management Program 2040 Draft EIR. This project consist to maintain and improve the District's water supply reliability to its customers and help meet the growing need for water in the future. WSMP 2040 will also adapt the District's water planning approach to circumstances that have changed since WSMP 2020 was adopted, such as competing and changing demands for water, the availability of Freeport water after 2009, and long-term climate change. The project will impact the multiple sites within San Joaquin County. This includes but not limited to Eastern San Joaquin County. Specific site location in San Joaquin County and project descriptions of those project activities will have to be provided to the SJMSCP. 1

San Joaquin County is a signatory to San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). Participation in the SJMSCP satisfies requirements of both the state and federal endangered species acts, and ensures that the impacts are mitigated below a level of significance in compliance with the California Environmental Quality Act (CEQA). The LOCAL JURISDICTION retains responsibility for ensuring that the appropriate Incidental Take Minimization Measure are properly implemented and monitored and that appropriate fees are paid in compliance with the SJMSCP. Although participation in the SJMSCP is voluntary, Local Jurisdiction/Lead Agencies should be aware that if project applicants choose against participating in the SJMSCP, they will be required to provide alternative mitigation in an amount and kind equal to that provided in the SJMSCP. 2

It should be noted that two important federal agencies (U.S. Army Corps of Engineers and the California Regional Water Quality Control Board) have not issued permits to the SJCOG and so payment of the fee to use the SJMSCP will not modify requirements that could be imposed by these two agencies. Potential waters of the United States [pursuant to Section 404 Clean Water Act] are believed to occur on the project site. It may be prudent to obtain a preliminary wetlands map from a qualified consultant. If waters of the United States are confirmed on the project site, the Corps and the Regional Water Quality Control Board (RWQCB) would have regulatory authority over those mapped areas [pursuant to Section 404 and 401 of the Clean Water Act respectively] and permits would be required from each of these resource agencies prior to grading the project site. 3

This Project is subject to the SJMSCP. Per requirements of the SJMSCP, this project must seek coverage due to required Army Corp permitting and Section 7 consultation. This project is subject to a case-by-case review. This can be a 90 day process and it is recommended that the project applicant contact SJMSCP staff as early as possible. It is also recommended that the project applicant obtain an information package. http://www.sjcog.org
After this project is approved by the Habitat Technical Advisory Committee and the SJCOG Inc. Board, the following process must occur to participate in the SJMSCP:

- Schedule a SJMSCP Biologist to perform a pre-construction survey ***prior to any ground disturbance***
- Sign and Return Incidental Take Minimization Measures to SJMSCP staff (given to project applicant after pre-construction survey is completed)
- Pay appropriate fee based on SJMSCP findings. **Fees shall be paid in the amount in effect at the time of issuance of Building Permit**
- Receive your Certificate of Payment and release the required permit

4

If you have any questions, please call (209) 468-3913.

SJCOG-1. Impacts to sites within San Joaquin County will be thoroughly examined in project-level CEQA documentation when and if the District decides to move forward with project-level planning. Please see the Master Response on Program-level EIR analysis.

SJCOG-2. EBMUD will consult with SJCOG, Inc. regarding the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan when and if the District decides to move forward with project-level planning for components that would affect San Joaquin County. Impacts to sites within San Joaquin County will be thoroughly examined in project-level CEQA documentation. Please see the Master Response on Program-level EIR analysis.

SJCOG-3. EBMUD will consult with the U.S. Army Corps of Engineers, the Regional Water Quality Control Board, and other regulatory agencies as appropriate, when and if the District decides to move forward with project-level planning. Impacts to sites within San Joaquin County will be thoroughly examined in project-level CEQA documentation when and if the District decides to move forward with project-level planning. Please see the Master Response on Program-level EIR analysis.

SJCOG-4. EBMUD acknowledges that WSMP 2040 components may be subject to the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan. The District will consult with SJCOG, Inc. when and if it decides to move forward with project-level planning for components that would have impacts within San Joaquin County.

SAN JOAQUIN FARM BUREAU FEDERATION

MEETING TODAY'S CHALLENGES / PLANNING FOR TOMORROW

SJFB
090504

May 4, 2009

Thomas B. Francis, PE
EBMUD Water Supply Improvements Division
375 11th Street, MS 407
Oakland, CA 94607

RE: Water Supply Management Program 2040 Programmatic EIR

Dear Mr. Francis:

The San Joaquin Farm Bureau represents 4,200 farming and ranching families across San Joaquin County. While your proposed projects would be regional in concept, we believe it is important to comment on the local impacts that may be felt should any of these components be implemented.

We are in support of your regional approach and plan that is multifaceted in scope, and applaud you for the foresight you have demonstrated for future supply needs. However, we have concerns over the following issues. 1

Given the generality of this PEIR, we are concerned with the lack of detail that comes with this process. We first and foremost encourage you to be vigilant in notifying any landowner that may be impacted by this and future actions of your plan, and allow them ample opportunity to comment on your process.

Second, we support the concept of enlarging Pardee Reservoir, but request that you address willing sellers in a way that acknowledges the owners' property rights, and properly compensates them for any land that may be needed for this project. 2

Additionally, with the suite of portfolio components suggested including: rationing; conservation; recycled water; supplemental water supply through northern California Water Transfers, the Bayside Groundwater Project Phase 2, the Sacramento Basin Groundwater Banking/Exchange, Regional Desalinization, enlargement of Pardee Reservoir, enlargement of Lower Bear Reservoir, and Mokelumne Interregional Conjunctive Use Project (IRCUP), we ask that you not take water away from current and future agricultural uses. Should you identify supplies that are from agriculture, EBMUD should pay fair market urban use values for the supply. Additionally EBMUD should not rely on those waters as a consistent source for dry year waters. Furthermore, should landowners off the Mokelumne River be identified for water recharge sites, they should be compensated justly for the benefit their land will be providing. 3 4 5

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WWW.SJFB.ORG

SAN JOAQUIN FARM BUREAU FEDERATION

MEETING TODAY'S CHALLENGES / PLANNING FOR TOMORROW

Should you have any questions regarding this letter please contact me at (209) 931-4931.

Sincerely,

Joseph J Valente

Joe Valente
President

3290 NORTH AD ART ROAD • STOCKTON, CA • 95215 • (209) 931-4931 • (209) 931-1433 Fax

WWW.SJFB.ORG

San Joaquin Farm Bureau Federation (SJFB)

SJFB-1. Please see the Master Response on Program-level EIR analysis. Subsequent CEQA documentation will be prepared, as appropriate, for specific portfolio components when and if the District decides to move forward with project-level planning.

SJFB-2. Comment acknowledged. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component. Project impacts will be fully examined in a project-level EIR when and if the District decides to move forward with project-level planning for this component.

SJFB-3. Impact 5.2.D-1 on pages 5.2.D-2 through 5.2.D-6 of the Draft PEIR identifies potential reduction of agricultural productivity and conversion of farmland to non-agricultural uses. Please see the Master Response on Program-level EIR analysis. Impacts on agriculture will be thoroughly evaluated in project-level CEQA documentation when and if the District decides to move forward with project-level planning. The project-level documentation will also identify all feasible mitigation measures to reduce these impacts.

SJFB-4. Please see the Master Response on the WSMP 2040. EBMUD selected the Preferred Portfolio because it includes a wide range of components that would allow the District to meet the Need for Water in dry years.

SJFB-5. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component. Impacts to properties along the river will be fully examined in a project-level EIR when and if the District decides to move forward with project-level planning for this component.

SJVAPCD
090416

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

April 16, 2009

Tom Francis
East Bay Municipal Utility District
Water Supply Improvements Division
375 Eleventh Street, M.S. 407
Oakland, CA 94607

Project: Draft Program Environmental Impact Report (Draft PEIR) as prepared for Water Supply Management Program 2040 (WSMP 2040)

District Reference No: 20080303

Dear Mr. Francis:

The San Joaquin Valley Unified Air Pollution Control District (District) has reviewed the subject project. The analysis of future sites will not have an impact on air quality. However, if approved, future development will contribute to the overall decline in air quality due to construction activities, increased traffic, and ongoing operational emissions. The District offers the following comments: 1

1. Future development may require further environmental review and mitigation. Referral documents for those projects should include a project summary detailing, at a minimum, the land use designation, project size, and proximity to sensitive receptors and existing emission sources. 2
2. Individual development projects would be subject to District Rule 9510 (Indirect Source Review) if upon full build-out the project would include or exceed any one of the following: 3

   - 50 dwelling units
   - 2,000 square feet of commercial space;
   - 25,000 square feet of light industrial space;
   - 100,000 square feet of heavy industrial space;
   - 20,000 square feet of medical office space;
   - 39,000 square feet of general office space; or
   - 9,000 square feet of educational space; or

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061
www.valleyair.org

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: (661) 392-5500 FAX: (661) 392-5585

- 10,000 square feet of government space; or
- 20,000 square feet of recreational space; or
- 9,000 square feet of space not identified above

3. District Rule 9510 is intended to mitigate a project's impact on air quality through project design elements or by payment of applicable off-site mitigation fees. Any applicant subject to District Rule 9510 is required to submit an Air Impact Assessment (AIA) application to the District no later than seeking final discretionary approval, and to pay any applicable off-site mitigation fees before issuance of the first building permit.

4. For future projects, the District recommends that demonstration of compliance with District Rule 9510, including payment of all applicable fees, be made a condition of project approval. Information about how to comply with District Rule 9510 can be found online at: http://www.valleyair.org/ISR/ISRHome.htm.

5. Individual development projects may also be subject to the following District rules: Regulation VIII, (Fugitive PM10 Prohibitions), Rule 4102 (Nuisance), Rule 4601 (Architectural Coatings), and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations). In the event an existing building will be renovated, partially demolished or removed, the project may be subject to District Rule 4002 (National Emission Standards for Hazardous Air Pollutants).

6. The above list of rules is neither exhaustive nor exclusive. To identify other District rules or regulations that apply to this project or to obtain information about District permit requirements, the applicant is strongly encouraged to contact the District's Small Business Assistance Office at (559) 230-5888. Current District rules can be found online at: www.valleyair.org/rules/1ruleslist.htm.

If you have any questions or require further information, please call David McDonough, at (559) 230-5920.

Sincerely,

Dave Warner
Director of Permits Services

for,

Arnaud Marjollet
Permit Services Manager

DW:dm

Cc: File

San Joaquin Valley Air Pollution Control District (SJVAPCD)

SJVAPCD-1. EBMUD acknowledges that WSMP 2040 Preferred Portfolio components would potentially contribute to overall decline in air quality due to construction activities, increased traffic, and ongoing operational emissions. EBMUD will consult with the San Joaquin Valley Air Pollution Control District (SJVAPCD) when and if it decides to move forward with project-level planning for components that would have impacts within the San Joaquin Valley.

SJVAPCD-2. The Draft PEIR acknowledges that further analysis of all potential air quality impacts would be required during environmental review of each specific component when and if EBMUD decides to move forward with project-level planning (please see pages 5.2.F-12 – 5.2.F-17 of the Draft PEIR). Future project-specific analysis would include, but not be limited to, land use designation of the project site, project size, and proximity to sensitive receptors and existing emission sources.

SJVAPCD-3. The Draft PEIR acknowledges in Mitigation Measure 5.2.F-2b that all projects would be subject to the applicable local air district mitigation measure requirements (please see page 5.2.F-10 of the Draft PEIR). This includes the Indirect Source Review and Fee Program for those project components occurring within the SJVAPCD's jurisdiction.

SJVAPCD-4. Project-level analysis of specific portfolio components occurring within the SJVAPCD's jurisdiction would include an Air Impact Assessment (AIA) application to the SJVAPCD prior to seeking final discretionary approval, when and if EBMUD decides to move forward with project-level planning. Any applicable off-site mitigation fees would be paid before issuance of the first building permit.

SJVAPCD-5. Please see Response SJVAPCD-3 above.

SJVAPCD-6. The PEIR acknowledges in Mitigation Measure 5.2.F-2a that all dust control practices required by the rules and regulations of the applicable air district (e.g., Regulation VIII) must be implemented during construction of specific portfolio components, when and if EBMUD decides to move forward with project-level planning (please see page 5.2.F-9 of the Draft PEIR). For project components occurring within the SJVAPCD's jurisdiction, Regulation VIII will be the minimum required dust control measures. Mitigation Measure 5.2.F-2a also includes additional dust control mitigation measures that will be implemented during construction of each project component.

SJVAPCD-7. EBMUD will consult with the SJVAPCD if construction activities and emissions associated with specific portfolio components continue to exceed the SJVAPCD's thresholds of significance with implementation of required mitigation measures, when and if EBMUD decides to move forward with project-level planning. Any question regarding the applicability of the SJVAPCD's rules and regulations will be clarified through direct consultation with the SJVAPCD.

SLDMWA-WWD 090504

diepenbrock+harrison
A PROFESSIONAL CORPORATION

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B. JAMES DIEPENBROCK
(1929 - 2002)

May 4, 2009

Via E-mail: tfrancis@ebmud.com
And U.S. Mail

Thomas B. Francis, PE
EBMUD - Water Supply Improvements Division
375 11th Street MS 407
Oakland, CA 94607

Re: Draft Program Environmental Impact Report
Water Supply Management Program 2040 (SCH# 2008052006)

Dear Mr. Francis:

The San Luis & Delta-Mendota Water Authority ("Authority") and Westlands Water District ("Westlands") reviewed East Bay Municipal Utility District's ("East Bay MUD") Draft Program Environmental Impact Report for the Water Supply Management Program 2040 ("WSMP 2040 Draft PEIR"). The WSMP 2040 Draft PEIR is inadequate because it fails to provide the level of evaluation required by the California Environmental Quality Act ("CEQA"). (Pub. Resources Code, § 21000 et seq.) The Authority and Westlands therefore ask East Bay MUD to either commit to developing project specific environmental documents that do not rely upon the WSMP 2040 Draft PEIR when it considers any of the water supply options proposed, or that it correct the errors noted in this letter and re-circulate a revised Draft PEIR for public review. 1

The Authority was established in 1992 as a joint powers authority and consists of 29 water agencies. Each of the Authority's member agencies contract with the United States Bureau of Reclamation ("Reclamation") for water supplied from the federal Central Valley Project ("CVP"). In total, the Authority's members are entitled to receive approximately 3.3 million acre-feet of CVP water annually. Approximately 2.7 million acre-feet are for use on agricultural lands within California's western San Joaquin Valley, San Benito County, and Santa Clara County, 200,000 to 250,000 acre-feet are 2

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for municipal and industrial uses, including those within the Silicon Valley, and approximately 300,000 to 350,000 acre-feet are used for environmental purposes, including for waterfowl and wildlife habitat in the San Joaquin Valley, California.

Westlands, a member of the Authority, is a California water district with a right to receive up to 1,193,000 acre-feet of CVP water annually. Westlands uses this water for irrigation of approximately 500,000 acres on the west side of the San Joaquin Valley in Fresno and Kings Counties, as well as for municipal and industrial purposes within those Counties. Westlands' farmers produce more than 60 high quality commercial food and fiber crops sold for the fresh, dry, canned, and frozen food markets, both domestic and export. More than 50,000 people live and work in the communities that are dependent on Westlands' agricultural economy. 2

A programmatic or "first tier" environmental impact report is used to provide "more exhaustive consideration of effects and alternatives than would be practical in an [environmental impact report] on an individual action," and to "[e]nsure consideration of cumulative impacts that might be slighted in a case-by-case analysis." (CEQA Guidelines, § 15168, subd. (b)(1); see also Pub. Resource Code, § 21068.5 (defining "tiering").) When preparing a programmatic or first tier CEQA document, the lead agency is not permitted to defer analysis of important environmental issues. "Tiering does not excuse the lead agency from adequately analyzing reasonably foreseeable significant environmental effects of the project and does not justify deferring such analysis to a later tier EIR or negative declaration." (CEQA Guidelines, § 15152, subd. (b); *Stanislaus Natural Heritage Project v. County of Stanislaus* (1996) 48 Cal.App.4th 182, 197-199 ("*Stanislaus Natural Heritage Project*").)[1] Under CEQA's standards for programmatic or first tier environmental documents, the lead agency is not excused from conducting adequate analysis simply because "[e]ach WSMP component . . . will 3

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[1]/ As the Court of Appeal explained in *Stanislaus Natural Heritage Project, supra*:

> [A] decision to "tier" environmental review does not excuse a governmental entity from complying with CEQA's mandate to prepare, or cause to be prepared, an environmental impact report on any project that may have a significant effect on the environment, *with that report to include a detailed statement setting forth "[a]ll significant effects on the environment of the proposed project."* (Pub. Resources Code, § 21100.)

(48 Cal.App.4th at p. 197 [italics added]; see also *id.* at p. 199 ("the environmental consequences of supplying water to [a] project would appear to be one of the most fundamental and general 'general matters' to be addressed in a first-tier EIR"); CEQA Guidelines, § 15152, subd. (b).)

undergo project-level CEQA review." (WSMP 2040 Draft PEIR, p. 3-53.) Rather, a programmatic or first tier environmental impact report must adequately identify and mitigate the significant environmental effects of the planning approval at hand. (CEQA Guidelines, § 15152, subd. (c).) 3

The WSMP 2040 Draft PEIR evaluates "portfolios" of water supply management options, including a "Preferred Portfolio" and six alternatives. (WSMP 2040 Draft PEIR, pp. 1-3 – 1-8; see also *id.* at pp. 3-1 – 3-53.)[2] The Preferred Portfolio consists of rationing, conservation, use of recycled water, and supplemental water sources. (*Id.* at pp. 1-3 – 1-4.) The supplemental water supply projects include Northern California Water Transfers, for which "the sources of water are not yet known," but are likely to include "partners in the Sacramento Valley," or "supplies that originate north of the Delta." (*Id.* at pp. 1-4 – 1-5.) Also proposed are the Sacramento Basin Groundwater Banking/Exchange, enlargement of Pardee and Lower Bear Reservoirs, and the Mokelumne Inter-Regional Conjunctive Use Project (IRCUP)/San Joaquin Groundwater Banking/Exchange. (*Id.* at pp. 1-5– 1-6.) Each of these program elements proposes to increase water storage and/or water use in and around the Delta. (*Id.* at pp. 1-4 – 1-6; see also pp. 3-1 – 3-33.) 4

The WSMP 2040 Draft PEIR does not meet the legal standards established under CEQA because it fails to provide analysis, or identify mitigation for, potentially significant impacts (i.e., hydrodynamics and biological resources) within the lower San Joaquin River and Delta, to Central Valley Project or State Water Project operations (including potential reoperation of facilities on the Sacramento River or its tributaries), or to the water supply of the Authority's member agencies or others that depend upon water conveyed through the Delta. The information provided is of insufficient detail to be meaningful, even for a program-level analysis. (See WSMP 2040 Draft PEIR, pp.

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[2]/ The WSMP 2040 Draft PEIR identifies Portfolio D as the "environmentally superior" alternative under CEQA. (WSMP 2040 Draft PEIR, p. 1-10; see CEQA Guidelines, § 15126.6, subd. (e)(2).) As such, Portfolio D must be adopted unless the lead agency properly finds, on the basis of substantial evidence, that the alternative is not feasible. (*Mountain Lion Foundation v. Fish and Game Commission* (1997) 16 Cal.4th 105 (describing CEQA's substantive mandate).) To comply with CEQA, the lead agency must ensure adequate analysis of this alternative's potential effects on south Delta hydrodynamics, water supply, and biological resources (particularly within the Delta and areas served by water conveyed through the Delta, like the areas represented by the Authority). In its current form, the WSMP 2040 Draft PEIR fails to provide sufficient information concerning the potential impacts of Alternative Portfolio D to enable the lead agency to adopt it. (See CEQA Guidelines, § 15151.)

5.2.A-19 – 5.2.A-21, 5.2.A-22 – 5.2.A-24, 5.2.C-14 – 5.2.C-17, 8-27, 8-28.)[3] Furthermore, by taking an impermissibly narrow view of the potentially affected environment and excluding or improperly abbreviating consideration of impacts to the water supply of the CVP and SWP, including water otherwise available to the Authority's member agencies,[4] the WSMP 2040 Draft PEIR fails to "demonstrate that the significant environmental impacts of the proposed project were adequately investigated and discussed"; nor does the document "permit the significant effects of the project to be considered in the full environmental context." (CEQA Guidelines, § 15125, subd. (c).)[5] 4

East Bay MUD cannot rely on a programmatic environmental impact report that does not analyze foreseeable impacts and draws conclusions based on speculation and devoid of any detail concerning the project, its impacts, or necessary mitigation measures. To comply with CEQA's basic requirements, the WSMP 2040 Draft PEIR must therefore be substantially revised to include analyses of the reasonably foreseeable direct, indirect and cumulative impacts of the WSMP 2040's management proposals. Alternatively, if East Bay MUD were to commit to preparing future project-specific environmental review for each proposed water supply management option, including appropriate analyses and mitigation of all reasonably foreseeable impacts to south of the Delta water supplies, without relying on the WSMP 2040 PEIR, the Authority and Westlands' concerns at this time regarding CEQA compliance would be satisfied. 5

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[3]/ The WSMP 2040 Draft PEIR concludes, without sufficient analysis or adequately detailed mitigation measures and performance standards, all of the project's impacts to biological resources will be "less than significant with mitigation." (WSMP 2040 Draft PEIR, pp. 5.2.C-18 – 5.2.C-19.) Contrary to the requirements of laws, no evidence, much less evidence that is substantial, supports these conclusions, and the impacts of the project on biological resources are likely to be significant and potentially unavoidable. The WSMP 2040 Draft PEIR must analyze and disclose such impacts to other agencies and the public as well as its own decision-makers. (See CEQA Guidelines, § 15151.)

[4]/ *Ibid.*; see also Draft PEIR, Chapter 4.2.A (Environmental Setting, Hydrology, Groundwater, and Water Quality) and Chapter 4.2.C (Environmental Setting, Biological Resources), Section 8.3 (Cumulative Setting).

[5]/ CEQA requires a full description of the environmental setting in which the project's impacts may occur. (CEQA Guidelines, § 15125; *San Joaquin Raptor v. County of Stanislaus* (1994) 27 Cal. App. 4th 713, 722-723; *Santiago County Water Dist. v. County of Orange* (1981) 118 Cal. App.3d 818, 829; see also *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal. App.3d 692, 712 (the lead agency's omission is prejudicial "if the failure to include relevant information precludes informed decision making and informed public participation, thereby thwarting the statutory goals of the EIR process").)

Thank you for your consideration of the above comments. Please feel free to contact me with any questions or concerns.

Very truly yours,

DIEPENBROCK HARRISON
A Professional Corporation

Valerie C. Kincaid

VCK/jvo

Westlands Water District and San Luis & Delta-Mendota Water Authority (SLDMWA-WWD)

SLDMWA-WWD-1. Please see the Master Response on Program-level EIR analysis. EBMUD plans to prepare project-level CEQA analysis prior to undertaking the supplemental supply projects identified by the comment, including the Sacramento Basin Groundwater Banking/Exchange component and the Enlarge Pardee Reservoir and Lower Bear Reservoir components.

SLDMWA-WWD-2. The facts set forth in the comment are noted.

SLDMWA-WWD-3. Please see the Master Response on Program-level EIR analysis. The Draft PEIR discusses impacts and mitigation to the extent possible at a program level, with a degree of specificity that is appropriate to the programmatic nature of this activity. CEQA allows the development of detailed, site-specific information to be deferred, in instances where it is not feasible because of the degree of speculation involved, until the agency prepares future project-level environmental documentation in connection with the decision to move forward with a project. CEQA Guidelines §15152(c).

SLDMWA-WWD-4. Please see the Master Response on Program-level EIR analysis. The Draft PEIR has recognized the potential for environmental impacts to downstream water users, including water users dependent on the Delta, and this will be discussed in project-level documentation when specific projects are undertaken. At that time, biological impacts from the operation of facilities and implementation of projects will also be discussed in detail. Portfolio D was discussed as being environmentally superior to other alternatives because of its ability to minimize carbon emissions as a result of the potential to increase hydropower generation connected with Pardee Dam. As noted in the Draft PEIR, however, Portfolio D scored lower on certain criteria with regard to accomplishing certain objectives of WSMP 2040. Additionally, it includes lower conservation levels and recycled water levels than the Preferred Portfolio, and places heavy reliance on being able to permit, construct and implement an enlarged Pardee Reservoir by 2020.

SLDMWA-WWD-5. As noted in the Draft PEIR, EBMUD plans to prepare future project-specific environmental review for the identified dry-year supplemental water supply projects, and this will include an analysis of impacts to Delta water supplies.

SMUD
SACRAMENTO MUNICIPAL UTILITY DISTRICT
The Power To Do More.℠

SMUD 090504

P.O. Box 15830, Sacramento, CA 95852-1830; 1-888-742-SMUD (7683)

May 4, 2009
ET&C 09-050

Thomas B. Francis
East Bay Municipal Utility District
375 Eleventh Street, MS 407
Oakland, CA 94607

RE: East Bay Municipal Utility District Water Supply Management Program 2040 Draft Programmatic Impact Report (PDEIR)

SMUD is one of the largest water contractors in the American River Division of the Central Valley Project (CVP). SMUD has significant interest in the prudent management of CVP facilities and, in particular, the Folsom South Canal (FSC). SMUD is concerned about any new proposal under consideration that may modify the operations, management, and/or physical facilities of the FSC.

SMUD appreciates the opportunity to comment on the East Bay Municipal Utility District Water Management Program 2040 PDEIR.

Since 1973, SMUD has utilized water from the CVP delivered via the FSC for its facilities at the Rancho Seco Nuclear Generating Station, Rancho Seco Lake, and Cosumnes Power Plant (Facilities) pursuant to its municipal and industrial water service contract with the United States (Contract No. 14-06-200-5198A). SMUD currently relies on CVP water to support the operations of the Cosumnes Power Plant, a 500 MW combined cycle facility licensed by the California Energy Commission in September 2003, which became commercial in February 2006. 1

During the permitting and approval of the Freeport Regional Water Project (Freeport Project), SMUD had numerous meetings with EBMUD to address the issue of impacts to water quality of the FSC. On July 30, 2004, SMUD, EBMUD, the Freeport Regional Water Authority (FRWA), and the Sacramento County Water Authority (SCWA) entered into a Financial Settlement Agreement (Settlement Agreement) for the mitigation of water quality impacts associated with the Freeport Project. SMUD's support for the Freeport Project was contingent upon mitigation of the water quality impacts to operations of SMUD's Rancho Seco Facilities as provided in the Settlement Agreement.

Further, EBMUD, FRWA, and SCWA agreed that SMUD should not bear significant increased operation / maintenance costs or capital costs for operation of its Rancho Seco facilities as a result of changed water quality related to operation of the Freeport Project. Thus, the Settlement Agreement required financial remuneration to SMUD for certain

capital costs as well as incremental costs associated with operations and maintenance and sediment removal.

Section 6 of the Settlement Agreement is particularly relevant to the PDEIR; it addresses different and/or additional uses of the Freeport Project that would result in different and/or additional discharges to the FSC for the benefit of FRWA, any of its members, or third parties. Prior consultation with SMUD regarding potential impacts to the Facilities and environmental review are required. Further, Section 6 states, in pertinent part: 1

> . . .The parties agree that any such different and/or additional discharges to the FSC through the Freeport Project will trigger a re-opener of this settlement agreement for the purpose of reaching consensus on mitigation for any impacts to SMUD due to changes in FSC water quality. To the extent permitted by law, FRWA and its members may not permit or undertake such different and/or additional use unless and until impacts to SMUD associated with the different and/or additional use are mitigated.

General comments on the PDEIR

The PDEIR takes a programmatic approach, addressing six alternative portfolios and the relative impacts of each portfolio. Each alternative portfolio includes a quantity of Northern California transferred water which will be diverted through the Freeport Project.

- *The PDEIR document does not address any water quality impacts to the FSC.*

EBMUD has used the portfolio concept to address the need for flexibility to meet future water needs. Each portfolio has as a part of it a Northern California Water Transfer component, which assumes utilizing the Freeport Project.

Because the document does not identify specific information, such as the parties to the prospective water transfers, the duration of such transfers, and when the transfers are expected to commence, there is no detail regarding water quality impacts to the FSC and SMUD facilities for *any* amounts of Sacramento River water imported into the FSC utilizing the unused capacity of Freeport Project. Therefore, SMUD believes that the PDEIR inadequately addresses the potential impacts upon SMUD's existing Rancho Seco Facilities. 2

Since SMUD's intake for its Rancho Seco Facilities is downstream of the Freeport outlet into the FSC, the receiving water will be incrementally degraded, particularly with higher levels of suspended solids that are present in the Sacramento River water. This action will require increased use of influent treatment works at a higher cost in order for SMUD to use its CVP water via the FSC. 3

SMUD requests a specific water quality impact discussion of FSC water showing a range of water imported from 3.6 Million gallons per day to 44.6 Million gallons per day, as noted in the scenarios and model runs conducted for this PDEIR.

- *The PDEIR does not mention the FSC as a "specific component" in any of the scenarios identified in the PDEIR.* 4

- *Would transfers from Northern California increase if other components of the preferred portfolio do not take place, such as the enlargement of Pardee Reservoir?* 5

- *The use of the Freeport Project and/or impacts to the water quality were not identified as an area of controversy. Nor were impacts to existing water quality in the FSC addressed as an issue that must be resolved.* 6

SMUD wishes to avoid any controversy regarding the use of the FSC. In the spirit of good faith and in keeping with the Settlement Agreement, SMUD requests immediate discussion with EBMUD to openly discuss the water transfers into the FSC.

- *It is properly noted that each new project will have supportive environmental documentation. Since Reclamation and the State Water Resources Control Board must approve each transfer, SMUD suggests that identification of water quality impacts to the FSC be addressed early and mitigated.* 7

This assumes that each new water transfer will have its separate supporting CEQA and NEPA environmental evaluation.

- *The technical references relating to water quality of the FSC that are contained in the above mentioned Settlement Agreement should be included in the final PDEIR.*

The parties to the Settlement Agreement relied on a substantial technical foundation to determine the extent of the water quality impacts of Freeport Project operations on the FSC. These included a February 2004 report prepared by GE Water Technologies Inc., and other technical analyses specifically set forth in the Settlement Agreement. These analyses should be included in the final PDEIR. 8

As previously discussed, any EBMUD future action that will import Sacramento River water into the FSC will require discussion with SMUD. SMUD considers the expanded operation of the Freeport Project a changed condition which will require additional capital costs and an increase in operational costs to SMUD.

Since SMUD and EBMUD are signatories to the Settlement Agreement, this agreement should become the basis for any new mitigation that will be required as a result of the additional water imported into the FSC as a result of imported Northern California water included in the 2040 Program.

- *The PDEIR should address: 1) the vulnerability of the FSC from the introduction of nonnative dreissenid mussel species via the Freeport Project, and, 2)* 9

specifically, what program EBMUD plans to implement to prevent the introduction of nonnative dreissenid mussel species into the FSC.

Not addressed in the PDEIR as an "area of potential controversy" is the acknowledgement that the expected expanded future operation of the Freeport Project could act as a pathway for the introduction of non-native dreissenid mussels (Quagga/zebra mussels) into the FSC.

Quagga/zebra mussels have the potential to significantly alter aquatic ecosystems and obstruct or seriously compromise water intake and transport facilities in rivers, reservoirs and man-made conveyance systems. An invasion of non-native dreissenid mussels into the FSC would constitute a serious impact to water quality.

In recent years mussels have invaded the Lower Colorado River system and have been found in the Metropolitan Water District's water transport and storage facilities in southern California. In northern California there is an isolated mussel population in San Justo Reservoir near Hollister. Nationwide the cost to control zebra/Quagga mussel populations by the power industry for the period 1993-1999 has been estimated at $3.1 billion. 9

In September 2008, Governor Arnold Schwarzenegger signed into law Assembly Bill 2065, an action designed to stop the spread of non-native dreissenid mussels throughout California.

Although currently not present in the Sacramento River System, many agencies are stepping up their effort to combat the invasion of the non-native dreissenid mussels. SMUD has been working with the Bureau of Reclamation Central California Area office on a cooperative plan for protecting the FSC from an unwanted invasion of non-native dreissenid mussels. Reclamation staff is being proactive in this effort.

As previously noted, SMUD relies heavily upon its facilities at Rancho Seco. The invasion of non-native dreissenid mussels would impair SMUD's power generation by clogging the water conveyance and cooling systems. Additionally, the 160–acre Rancho Seco Lake is fed via a pumping plant located adjacent to the FSC and maintained at a constant level year round. Public recreation and fishing would also be impaired by non-native dreissenid mussels.

We appreciate the opportunity to comment. If you have any questions, please contact me.

Sincerely,

Paul Olmstead

Paul Olmstead
Water and Power Specialist
916-732-5716

cc: Jim Shetler
Scott Flake
Corporate Files
Rob Schroeder -US Bureau of Reclamation, CCAO

SMUD-1. In implementing the WSMP2040, EBMUD fully intends to comply with the "Financial Settlement Agreement for Mitigation of the Freeport Regional Water Project" (Settlement Agreement) between SMUD, the Freeport Regional Water Authority (FRWA), EBMUD and the Sacramento County Water Agency (SCWA) dated June 30, 2004. To the extent additional volumes of water from the Sacramento Valley are conveyed through the Folsom South Canal (FSC) as a result of implementing Northern California water transfers, EBMUD will comply with Section 6 of the Settlement Agreement in addressing the potential for increased incremental operating costs to SMUD

SMUD-2. As noted, this is a Program EIR and additional project-level CEQA review of certain individual portfolio components is anticipated. As discussed in Chapter 3, page 3-11 of the Draft PEIR, it is assumed that conveyance (by EBMUD) of transferred water would be accomplished through the completed FRWP. The operation of the FRWP and introduction of water from the Sacramento Valley into the FSC has the potential to change the quality of water in the FSC. EBMUD's elements of the FRWP have been sized for flows up to 100 MGD. Water quality changes in the FSC due to EBMUD's conveyance of flows up to 100 MGD were addressed in Section 4.6 of the FRWA's Draft EIR/EIS for the FRWP (FRWP EIR). This FRWP flow rate was also the basis for sizing the treatment improvements at SMUD's facilities funded per the Settlement Agreement.

SMUD-3. The District will use a portion of the 100 MGD FRWP capacity to convey water transfers to its service area. At this point, it is not anticipated that an additional water quality impact discussion relative to water imports in the range of 3.6 to 44.6 MGD is necessary because potential water quality impacts up to 100 MGD have already been analyzed under the FRWA EIR/EIS. Nonetheless, once specific long-term water transfer projects are identified, EBMUD will prepare an Initial Study in accordance with the CEQA Guidelines to determine if the project is within the scope of the transaction discussed in the FRWP EIR or if additional environmental documentation would be required to analyze any changes to the circumstances surrounding EBMUD's use of the FSC, as well as the effects of these changes and additional mitigation.

SMUD-4. The Draft PEIR states that the completed FRWP would be used to convey Northern California Water Transfers to EBMUD (please see page 3-11 of the Draft PEIR). The certified FRWP EIR/EIS identified the FSC as part of the FRWP water conveyance system. The Draft PEIR reference to the FRWP facilities was intended to include the FSC.

SMUD-5. The Draft PEIR addresses the full range of supplemental supply water yield that EBMUD presently plans to obtain from the Northern California Water Transfers component. The Preferred Portfolio includes a variety of supplemental water supply components and, while 13 MGD was used for modeling, a range of component yields was examined to address future uncertainties, such as the effects of global climate change and other factors stated in Section 3.1 of the Draft PEIR. The District may modify the quantity or timing of water transfers needed to address these future uncertainties within the full range described in the Draft PEIR. As noted in Response SMUD-3, additional environmental analysis would be conducted if

there are any changes that would cause additional impacts or increase the severity of impacts.

SMUD-6. Using the principles and approach already established in the Settlement Agreement referred to by SMUD in Comment SMUD-1, the incremental water quality impacts to SMUD's operations will be addressed in a timely and straightforward fashion when and if specific water transfer proposals are advanced. In committing to address impacts to SMUD resulting from a future water transfer project, EBMUD expects that there should not be any public controversy regarding the issue of incremental water quality impacts to the FSC within the meaning of CEQA Guidelines Section 15064(f)(4).

SMUD-7. EBMUD will analyze project-specific water quality impacts associated with any future water transfer projects. However, the necessity of mitigation and the entities involved cannot be foreseen until the transfers are developed and potential significance of those impacts is determined. Water transfers conveyed to EBMUD through FRWP facilities would tend to increase the amount of time that water quality in the FSC would be affected by Sacramento River water, potentially increasing SMUD's operating costs for treatment beyond the costs due to "Exhibit A" discharges as defined in the Settlement Agreement, but likely would not increase the magnitude of the water quality change evaluated in the FRWP EIR/EIS. Water quality impacts that have not been addressed previously would be identified and mitigated.

SMUD-8. Please see Response SMUD-1.

SMUD-9. EBMUD has been very involved in addressing the potential threat of quagga/zebra mussel invasion of its water system, including the FSC and FRWP facilities. The District has taken early action to prevent invasion of its water system facilities by nonnative mussel species, and has successfully sponsored legislation (AB 2065) to help prevent the spread of these introduced species.

In 2008, EBMUD funded an invasive mussel vulnerability assessment that concluded that quagga and zebra mussels require mean calcium concentrations above 12-25 mg/L to establish reproducing populations. USGS water quality data from Sacramento River samples collected at Freeport found that the average calcium concentration at that location has been 11.9 mg/L. This value indicates low vulnerability to quagga and zebra mussel presence at the Freeport Project intake. Calcium concentrations in the lower American River, the source of the FSC, are even lower, and thus the quality of blended water in the FSC is even less likely to support these invasive mussel species.

Nevertheless, EBMUD and FRWA have examined how a chemical barrier could be implemented at the FRWP intake to eliminate any potential threat. The conceptual facility might include a chlorine injection system, and fittings have been already been placed to facilitate rapid installation of equipment to enhance protections at that location, if warranted. The California Department of Fish and Game has established a statewide quagga and zebra mussel monitoring program, including a sampling site at the Freeport Project intake. The District is poised to respond to protect FRWA and EBMUD facilities and the Folsom South Canal if invasive mussels are detected.

TODV
090414

DANVILLE
Celebrating 150 Years
1858 - 2008

"Small Town Atmosphere
Outstanding Quality of Life"

April 14, 2009

Thomas B. Francis, PE
EBMUD Water Supply Improvements division
375 11th Street, MS 407
Oakland, CA 94607

Dear Mr. Francis:

The Town of Danville has reviewed the Preferred Portfolio that has resulted from the Water Supply Management Plan (WSMP) 2040 study and would like to go on record in support of the Preferred Portfolio.

The Preferred Portfolio will meet long-term water supply needs and stretch the use of existing water supplies to the greatest extent possible. It includes conserving existing supplies to the maximum cost-effective amount, an aggressive water recycling program, water transfers that will maximize the use of existing infrastructure, and a regional desalination project in partnership with three other Bay Area water agencies. It also includes several groundwater storage projects both locally and in San Joaquin and Sacramento Counties, as well as an enlargement of two existing surface water supplies in the Mokelumne River watershed, which limits rationing levels during severe drought to no more than 10%. 1

We request that all of the elements of the Preferred Portfolio be retained. Eliminating any of the Preferred Portfolio components would reduce the flexibility and reliability of long-term water supplies.

The Preferred Portfolio is a strong plan that will provide our residents with long-term water supply reliability and flexibility to adapt to future climate change uncertainties.

Sincerely,

TOWN OF DANVILLE

Newell Arnerich
Mayor

510 LA GONDA WAY, DANVILLE, CALIFORNIA 94526

Administration (925) 314-3388 | Building (925) 314-3330 | Engineering & Planning (925) 314-3310 | Transportation (925) 314-3310 | Maintenance (925) 314-3450 | Police (925) 314-3700 | Parks and Recreation (925) 314-3400

Town of Danville (TODV)

TODV-1. The District acknowledges and appreciates the commenter's support for the WSMP 2040 Preferred Portfolio.

2.2.4 Environmental and Community Organizations

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ACHS
090320

AMADOR COUNTY HISTORICAL SOCIETY
PO Box 761, Jackson, CA 95642

March 20, 2009

Thomas B. Francis
EBMUD Water Supply Improvements Division
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis:

The Amador County Historical Society would like to thank you for the opportunity to comment on the EBMUD PEIR for the Water Supply Management Plan 2040.

We are opposed to the destruction of significant cultural and historical resources. Raising Pardee Dam will destroy both prehistoric as well as historically significant artifacts along the Middle Bar reach of the Mokelumne River.

The Middle Bar Bridge was listed with NRHP in 1985. It is a single lane truss bridge which was restored and seismically retrofitted in 2000 by local governments. The destruction of this historic structure presents a cultural loss but it would also eliminate a critical emergency access and escape route for local residents. Documentation will not mitigate the loss of this significant local landmark. 1

Appendix E lists an inventory of 42 separately identified and/or potential cultural resources, 18 of which are either recommended or are potentially eligible for listing with the California Register of Historic Resources. Most of those sites and artifacts pertain to prehistoric Native American occupations, in keeping with the iconic uses of important rivers. Additionally, the earliest historic Gold Rush activities also occurred in this area. Again, documentation, while important, is insufficient mitigation.

The Middle Bar reach of the Mokelumne River is still widely used by visiting tourists, local residents, and even by native people who are again gathering the specific variety of willow needed for their traditional basket weaving. The cultural significance of the Middle Bar of the Mokelumne River cannot be overstated. 2

The PEIR states on page 2-1 that EBMUDs water supplies "are estimated to be sufficient during the planning period (2010-2040) in normal and wet years." EBMUD proposes to destroy significant local historical and cultural resources at great cost in terms of local economies and environment for a paltry 51 MGD over 3 dry years. But, EBMUD customers will only be asked to cut back water use by 10%. 3

How much potable water is used for such things as irrigation, swimming pools, or golf courses? How much potable water is consumed in such activities as car washing and sidewalk cleaning? Why ration during dry years only? Why not instill conservation as a principle and bank the savings? 3

Archaeological and historical documentation is certainly important in preserving history, but it cannot mitigate the importance of having these resources available for study and experience in situ. These sites must be preserved for everyone to enjoy and experience as part of our shared heritage. Raising Pardee Dam is not an acceptable proposition, especially when necessity has not been shown. 4

The Historical Society of Amador County is opposed to further destruction of the historical and cultural resources associated with the Mokelumne River which will be the result of raising the reservoir levels and storage capacity for customers of EBMUD. There are other options, conservation being primary.

Sincerely,

Judith A. Jebian

Judith A. Jebian, Board Member

Amador County Historical Society (ACHS)

ACHS-1. EBMUD acknowledges the commenter's opposition to the Enlarge Pardee Reservoir component. Page 4.2.H-5 of the Draft PEIR recognizes that Middle Bar Bridge is listed on the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR). Section 5.2.H-1 of the Draft PEIR identifies potential impacts on Middle Bar Bridge. As noted in Mitigation Measure 5.2.H-1d (see page 5.2.H-6), where avoidance to historic structures is impossible, typical mitigation to reduce the impact would be to develop and implement a data recovery plan including preparation of Historic American Engineering Record (HAER) documentation.

When and if EBMUD decides to move forward with project-level planning for the Enlarge Pardee Reservoir component, a project-level EIR will be prepared that will thoroughly examine impacts on cultural resources, including historic structures, and emergency access. The project-level EIR will also identify all feasible mitigation measures to reduce or avoid these impacts. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component. At that time, an effort will be undertaken to avoid damaging impacts to Middle Bar Bridge, and consistent with CEQA, the ability of mitigation measures, including documentation, to reduce impacts will be thoroughly examined.

EBMUD does not plan to eliminate access in the Upcountry region. The following text is added to page 4.2.J-5 of the Draft PEIR, in a new second paragraph under the heading "Enlarge Pardee Reservoir":

> Local residents and people recreating along the Mokelumne River would use Middle Bar Bridge as an evacuation route in the event of an up-canyon wildfire. This bridge also provides first responder access for law enforcement, fire and medical emergencies.

ACHS-2. Page 4.2.H-6 of the Draft PEIR acknowledges the historic significance of the Big Bar and Middle Bar mining sites. EBMUD further recognizes the importance of the Me-wuk people and their ongoing cultural practices. In Section 4.2.H.2 of the Draft PEIR, Cultural Resources Setting for Preferred Portfolio Components, a new first paragraph is added to the text under the heading Enlarge Pardee Reservoir, as follows:

> The native Me-wuk people still live in Amador and Calaveras counties, and they have a black willow gathering site in the Middle Bar area that they consider sacred. The Me-wuk manage the willow stand and gather material there for baskets and cradleboards as well as for traditional tribal medicines. The tribal elders use the experience to teach the Me-wuk language and culture to their grandchildren.

EBMUD will consult with the Me-wuk and will conduct a thorough evaluation of cultural resources impacts, including impacts on current cultural practices and any sacred sites, in a project-level EIR when and if project-level planning moves forward for the Enlarge Pardee Reservoir component. Furthermore, it is likely that NEPA documentation will be required for this component, in which case Section 106 consultation with the State Historic Preservation Office would be required.

As noted in Mitigation Measure 5.2.H-1d (see page 5.2.H-6), where avoidance to historic structures is impossible, typical mitigation to reduce the impact would be to develop and implement a data recovery plan including preparation of Historic American Engineering Record (HAER) documentation.

When and if EBMUD decides to move forward with project-level planning for the Enlarge Pardee Reservoir component, the project-level EIR will identify all feasible mitigation measures to reduce or avoid impacts on cultural resources. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component.

ACHS-3. EBMUD conducted an extensive alternatives development process for the WSMP 2040, as described in Section 2.3 of the Draft PEIR (see pages 2-4 through 2-7). EBMUD held a series of public meetings throughout this process to get input from the public. As part of the WSMP 2040 effort, the EBMUD Board of Directors decided to move forward with plans to achieve an additional water savings through conservation of 39 MGD between the year 2010 and 2040. (Conservation Level D). This was selected along with a 10 percent rationing level.

As stated on page 2-7 of the Draft PEIR, the benefit of targeting a 10 percent rationing level in the WSMP 2040 is that it is not only considered more feasible in light of demand hardening and the aggressive conservation efforts already undertaken by EBMUD, but it also preserves the flexibility to increase rationing above 10 percent as one of several responses to dry-year conditions that may occur before supplemental supplies are made adequate. As new supplemental supplies are secured, EBMUD will be able to gradually reduce the level of rationing it imposes on its customers. Until supplemental supplies are secured, higher rationing restrictions may be imposed in a specific drought event.

ACHS-4. Comment noted. Please see Responses ACHS-1 ACHS-2, and ACHS-3 above.

AMERICAN WHITEWATER

Dave Steindorf
California Stewardship Director
4 Baroni Drive
Chico, CA 95928
dave@amwhitewater.org

AW
090307

March 7, 2009

Thomas B. Francis
EBMUD Water Supply Improvements Division
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis:

American Whitewater is writing in opposition to the proposed enlargement of Pardee Reservoir.

American Whitewater is a national non-profit 501(c)(3) river conservation organization founded in 1954. We have over 6,500 members and 100 local-based affiliate clubs, representing approximately 80,000 whitewater paddlers across the nation. American Whitewater's mission is to conserve and restore America's whitewater resources and to enhance opportunities to enjoy them safely. As a conservation-oriented paddling organization, American Whitewater has an interest in the Mokelumne River given our extensive experience working on restoration efforts in the watershed. A significant percentage of American Whitewater members reside in Central California—a short driving distance from this watershed for recreation.

Enlargement of Pardee Reservoir as proposed would drown a segment of the Mokelumne River popular with our membership for whitewater boating. This section known as the Electra Run provides an outstanding section of whitewater suitable for beginning paddlers. The run is important because it provides dependable summer flows and features beautiful scenery. The proposed project would also destroy existing and proposed public access facilities (including the Middle Bar Bridge). Our organization has spent more than two decades on river restoration efforts to mitigate impacts of existing water development projects in the watershed and this project will ameliorate those efforts. The project would inundate nearly a mile of the Mokelumne River proposed for Wild & Scenic River protection by the Bureau of Land Management. 1

We believe that given the costs of the project and the impacts to the environment, including existing and highly valued recreational opportunities, the best solution is increased investment in water conservation and recycling.

Sincerely,

Dave Steindorf
California Stewardship Director

cc: Chico Paddleheads
Gold Country Paddlers
River Touring Section, Angeles Chapter Sierra Club
Sierra Club Loma Prieta
California Canoe and Kayak
The River Store

AW-1. As noted on page 5.2.D.7 of the Draft PEIR, EBMUD has committed to operating an Enlarge Pardee Reservoir component so that it would not inundate the Electra Run in the spring and summer months. Project impacts on the Electra Run and recreation activities will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with the component. This evaluation will take into consideration the input of American Whitewater and other groups with an interest in the Mokelumne River and will evaluate the recreational activities that occur in each season.

In its 2008 Sierra Resource Management Plan, the BLM recommended 20 miles of the Mokelumne River for designation as a Wild and Scenic River. The BLM recommended the recreation classification for 2.94 miles of river approximately between the State Route 49 Bridge and the Electra Afterbay, also known as the Electra Run. The recreation classification applies to "those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past".

BLM's recommendation of Wild and Scenic River designation for the Mokelumne River is currently awaiting Congressional approval, and at the project level the District will collaborate with BLM regarding the Mokelumne River and management of lands adjacent to the River and will conduct all evaluations required by law, when and if project-level planning moves forward.

EBMUD recognizes the value of water conservation and recycling and has included them as components in the Preferred Portfolio. Please see the Master Response on the WSMP 2040.

CAP
090504

Community Action Project
P.O. Box 2633
Murphys, CA 95247

May 4, 2009

Thomas B. Francis, PE
EBMUD Water Supply Improvement Division
375 11th Street MS 407
Oakland, CA 94607

RE: Community Action Project Comments on the
Draft PEIR for the EBMUD 2040 WSMP.

Dear Sir:

My name is Ward La Valley, and I am submitting these comments on behalf of the Community Action Project.

The mission of the Community Action Project (CAP) is to promote community-based democracy in Calaveras County so that local citizens have the maximum possible control of quality of life issues that affect them. Our vision is that by promoting and participating in the democratic process, CAP will serve to facilitate adoption of plans and policies that protect natural resources, and so maintain a high quality of life both in the county and in the region.

1

We thank EBMUD for changing your scheduled number of meetings to hold a hearing in Calaveras County on March 30, 2008. This gave the people of Calaveras County an opportunity to express their strong opposition to the Pardee expansion.

On that day, some 185 people crowded into the San Andreas Town Hall to express their opinions. Over 30 people spoke in opposition to the EBMUD plan, often to thunderous applause.

Calaveras County Supervisor Steve Wilensky expressed concerns over both EBMUD's flawed proposal and its insensitive process. He told EBMUD about the evacuation risks of removing the Middle Bar Bridge, the high costs of the water from such a project, and the need to look at viable alternatives. Concerning the EBMUD process that developed this project without consultation with up-country counties, he said "Real partners don't treat each other this way." The Final PEIR should note that the loss of the Middle Bar Bridge poses is significant impact on the public safety of our community.

2

Local resident and Foothill Conservancy Executive Director Chris Wright reminded EBMUD that the Mokelumne River is already a hard working river, and that the remaining free flowing stretches need to be protected for recreation and wildlife. The Final PEIR should acknowledge that the degradation of this year-round recreation resource is a significant impact on our community. 3 4

San Andreas Sanitation District Director Tillman Sherman read off a long list of groups opposed to the Pardee expansion, and asked EBMUD to "find a path of less resistance." The Final PEIR should note that the Pardee expansion is very controversial. 5

Railroad Flat resident and CAP Board member Holly Mines reminded EBMUD that their mission statement calls on them to "support the well-being of communities and benefits to society." The Final EIR should support the well being of our community by removing the Pardee expansion from the preferred portfolio. 6

Marge Broe of the Calaveras Miwok, and other members of the Native American community asked EBMUD not to flood their sacred willow gathering grounds. "I want my grandchildren to teach their children of the sacred willow gathering spot," she said. The Final PEIR should acknowledge that the loss of this cultural resource is significant. 7

The significance of some Pardee expansion impacts can be numerically estimated in terms of miles of river inundated, number of lost visitor days, etc.; and CAP encourages EBMUD to do so in the Final PEIR. In other cases (like the loss of sacred sites, the loss of current cultural practices, the loss of places for local families and friends to recreate, the anxiety of having an emergency evacuation route cut off, or the loss of family time because parents are stuck in traffic) the magnitude and significance of the physical impacts on the environment must also be measured in terms of the social disruption they cause in our community. (CEQA Guidelines, sec. 15131, subd. (b).) CAP encourages EBMUD to do so in the Final PEIR. 8

I assure you that the people of Calaveras County appreciate your challenges, and are willing and able to help find mutually beneficial solutions. For example, EBMUD wants to squeeze more use out of our Mokelumne River water; and so do we. Calaveras County has thousands of homes that would conserve water if EBMUD would provide the plumbing retrofits. Our new homes could use far less water if EBMUD would help us. We have effluent that can be treated and put to beneficial use again, freeing up water for both future growth and in-stream benefits. (The water's so nice; we'd like to use it twice!) While you are considering greenhouse gas emission mitigation measures, please consider some measures that will also improve the storage capacity of your watershed. For example, EBMUD can increase both carbon sequestration and water storage by reforesting the clearcut areas the Mokelumne watershed, and by providing incentives to retain forest canopy while reducing the risk of catastrophic wildfires. In Calaveras County, we have a united group of green professionals at your disposal who can build this future with local businesses and local labor. 9 10 11

Expanding Pardee is applying a nineteen twenties solution to a twenty twenties problem, complete with all the adverse side effects. We ask you to shift away from that.

Instead, we offer EBMUD the opportunity to meet its challenges by investing today, and in the years to come, in a resilient variety of solutions, using the time honored strength and productivity of the good people of Calaveras County.

We ask you to consider this alternative project component in your Final PEIR. We encourage you to meet with all stakeholders to craft a 2040 WSMP that meets the needs of all concerned, with the least harm to our communities.

12

Sincerely,

(signed)

Ward La Valley
CAP Coordinator

Community Action Project (CAP)

CAP-1. EBMUD acknowledges the commenter's opposition to the Enlarge Pardee Reservoir component as well as the commenter's summary of the March 30, 2009 public meeting to receive comments on the Draft PEIR.

CAP-2. Impacts to public safety will be thoroughly examined in a project-level EIR when and if the District decides to move forward with project-level planning for the Enlarge Pardee Reservoir component. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component.

CAP-3. This comment is acknowledged. Impacts to recreation and wildlife will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with project-level planning for the Enlarge Pardee Reservoir component. The project-level EIR will also identify specific mitigation measures to reduce significant impacts. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component.

CAP-4. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component. Impacts to year-round recreation will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with project-level planning. The project-level EIR will also identify specific mitigation measures to reduce significant impacts.

CAP-5. As stated in the Master Response on the Enlarge Pardee Reservoir component, EBMUD recognizes the numerous local concerns regarding the Enlarge Pardee Reservoir component, and has elevated it to an area of controversy.

Section 1.5, Areas of Controversy, on page 1-11 of the Draft PEIR is revised as follows:

> Section 15123 of the CEQA Guidelines requires that an EIR identify areas of controversy. The following issues and concerns were raised by agencies or the public:
>
> - Reliability of water transfers
> - Preferred Portfolio components should reduce Mokelumne demand
> - Potential impacts on Delta water quality
> - Potential impacts on Sacramento Water Forum Agreements from ASR components
> - Potential degradation of groundwater from ASR components
> - Potential impacts on endangered species from water transfers
> - Opposition to cross-Delta water transfers
> - Opposition to Buckhorn Reservoir
> - <u>Opposition to the Enlarge Pardee Reservoir component</u>
> - <u>Opposition to Enlarge Lower Bear Reservoir component</u>

CAP-6. EBMUD's mission statement is as follows:

To manage the natural resources with which the District is entrusted; to provide reliable, high quality water and wastewater services at fair and reasonable rates for the people of the East Bay; and to preserve and protect the environment for future generations.

Please see the Master Response on the Enlarge Pardee Reservoir component. Impacts to the local community will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with project-level planning for this component. The project-level EIR will also identify specific mitigation measures to reduce significant impacts.

CAP-7. EBMUD recognizes the importance of the Me-wuk people and their cultural practices. The Me-wuk tribe is discussed on page E-9 of Appendix E, Cultural Resources, to the Draft PEIR. EBMUD will consult with the Me-wuk and will conduct a thorough evaluation of cultural resources impacts, including impacts on current cultural practices and any sacred sites, in a project-level EIR when and if the District decides to move forward with the Enlarge Pardee Reservoir component. In Section 4.2.H.2 of the Draft PEIR, Cultural Resources Setting for Preferred Portfolio Components, a new first paragraph is added to the text under the heading Enlarge Pardee Reservoir, as follows:

> The native Me-wuk people still live in Amador and Calaveras counties, and they have a black willow gathering site in the Middle Bar area that they consider sacred. The Me-wuk manage the willow stand and gather material there for baskets and cradleboards as well as for traditional tribal medicines. The tribal elders use the experience to teach the Me-wuk language and culture to their grandchildren.

CAP-8. EBMUD agrees with the commenter that physical, socioeconomic, and other impacts can be measured in different terms. If and when EBMUD decides to move forward with project-level planning for this component, the District will thoroughly evaluate potential impacts and possible means of mitigating impacts to fish and wildlife, recreational uses, and other resource areas. These impacts will be presented in a project-level EIR that will be subject to public review. Please see the Master Responses for the Enlarge Pardee Reservoir component and Program-level EIR analysis.

CAP-9. EBMUD supports increased water conservation and recycling, and the WSMP 2040 includes high levels of both water conservation and recycling. There are legal and institutional hurdles to EBMUD paying for plumbing retrofits in Calaveras County, in part because it is outside of the EBMUD service area, and this was not considered in the PEIR for this and other reasons. However, EBMUD currently funds programs in the Upcountry region through its participation in the Upper Mokelumne River Watershed Authority. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component. Impacts to the local community will be thoroughly evaluated in a project-level EIR if and when the District decides to move forward with project-level planning for this component.

CAP-10. If and when EBMUD decides to move forward with project-level planning for the Enlarge Pardee Reservoir component, the District will thoroughly evaluate potential impacts of that project and possible means of mitigating impacts to fish and wildlife, recreational uses, and other resource areas. These impacts will be presented in a project-level EIR that will be subject to public review. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component. EBMUD strives to be a good steward of the watershed and this comment addresses activities undertaken by other entities on lands outside of the EBMUD-owned properties.

CAP-11. Please see Response CAP-10 above. EBMUD will consider hiring local businesses for construction and implementation of the Enlarge Pardee Reservoir component if and when planning for this project moves forward.

CAP-12. EBMUD acknowledges the commenter's opposition to the Enlarge Pardee Reservoir component. EBMUD conducted an 18-month-long alternative development process prior to preparing the Draft PEIR. The public was invited to a series of workshops to provide input on the Preferred Portfolio and alternatives. Public input will also be sought for future project-level actions.

CCC
090320

March 20, 2009

Mr. Doug Linney, President
East Bay Municipal Utility District
375 11th Street
Oakland, CA 94607

Dear President Linney and Members of the Board:

The Contra Costa Council supports the Water Supply Management Plan (WSMP) 2040 and specifically the Preferred Alternative analyzed in the Environmental Impact Report. We believe the Preferred Alternative provides the flexibility that will be needed to deal with the uncertainties of the future, including climate change and dry-year water supply shortages.

The Contra Costa Council is a non-profit public policy organization, with members from business and industry, labor, education, local government, and non-profit community organizations. Our mission is economic vitality for the region and quality of life. We recognize that a predictable, adequate supply of water is essential for both of these goals and we commend the District for developing a long-term plan to meet the needs of both business and industry and local residents.

The WSMP 2040 EIR provides a balanced approach by analyzing several components, including conservation, rationing, water transfers, recycling, regional desalinization, and enlarging reservoirs that can be implemented in future years as needs become clearer.

1

It is very important that all of these elements remain in the preferred portfolio. To remove any option now reduces the ability of the District to respond to future needs. If implemented, more environmental analysis will be required of the options as appropriate, but for now all should remain in the toolkit.

We support the 10% rationing goal. This will provide future flexibility for additional rationing if needed in a severe drought. It also provides certainty to business and industry, which are so important to our economy and provide jobs for our residents. Desalinization and reservoir enlargements should remain as options, as they are important sources of an increased water supply to meet service area growth and ensure reliability in multi-year dry periods.

In conclusion, we support the District's preferred alternative and urge you to maintain all options for the future. Thank you for your consideration.

Sincerely yours,

Linda Best

Linda Best
President and CEO

1355 Willow Way, Ste. 253, Concord, CA 94520 925.246-1880 925.674-1654 fax info@contracostacouncil.com www.contracostacouncil.com

Contra Costa Council (CCC)

CCC-1. The District acknowledges the commenter's support for the WSMP 2040 Preferred Portfolio.

CSERC
090430

Central Sierra Environmental Resource Center
Box 396 Twain Harte, CA 95383 (209) 586-7440 FAX (209) 586-4986
Visit our website at: www.cserc.org or contact us at: johnb@cserc.org

April 30, 2009

Thomas B. Francis, PE
EBMUD Water Supply Improvements Division
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis.

This letter is in response to the East Bay Municipal Utility District's Water Supply Management Program 2040 Draft Program Environmental Impact Report. Based on the available information our Center opposes the preferred alternative to build a new Pardee Dam and expand the Pardee Reservoir to meet the East Bay's increased projected water demand in 2040.

California already has 1400 dams on rivers, which has resulted in a loss of 90% of the associated river environment. Building a new Pardee Dam and expanding Pardee Reservoir as part of the 2040 water plan would increase the inundation area by more than 1,200 acres, flooding the shoreline around Pardee Reservoir as well as miles of valuable river habitat (for wildlife and recreation alike) along the shoreline of the Mokelumne River. Raising the dam would inevitably create a substantial dead-zone (bathtub ring) around the reservoir and miles upstream on the affected river system. Additionally, raising the dam would inundate almost a mile of the Mokelumne River that is currently eligible for Wild & Scenic designation by the Bureau of Land Management.

With the uncertainties associated with climate change (amount of future precipitation, and extent of temperature rise), it is unclear if there will be enough water to continue to fill this reservoir even without the dam expansion. Additionally, in an area with summer daytime temperatures that are often over 100 degrees Fahrenheit, increasing the surface area of the reservoir is going to increase the amount of water lost to evaporation. Increasing the size of the Pardee Reservoir cannot be the best solution to meeting the predicted increase in water demand of the East Bay Area.

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Based on the above, CSERC strongly encourages EBMUD to consider less destructive, costly and wasteful alternatives in order to meet the 2040 projected demand for water -- including alternatives such as higher levels of water conservation, improvement of old and leaking infrastructure in this system, or using the available American River water supply more efficiently. 4

Thank you for taking the time to consider our comments.

Sincerely,

Lindsey Myers
Staff Biologist

CSERC-1. Please see the Master Responses on the Enlarge Pardee Reservoir component and Program-level EIR analysis. EBMUD acknowledges the commenter's opinion that the Enlarge Pardee Reservoir component will impair the Mokelumne River watershed. At this stage, there is no certainty regarding the impacts of the potential Enlarge Pardee Reservoir component. If and when the District decides to move forward with project-level planning for this component, the potential impacts will be thoroughly examined in a project-level EIR that will be subject to public review. EBMUD will examine a broad range of configurations and the potential impacts and possible means of mitigating impacts to fish and wildlife, recreational uses, visual and other resource areas.

Please see the Master Responses on the Enlarge Pardee Reservoir component and Program-level EIR analysis.

CSERC-2. Please see Response BLM- 1. The District will collaborate with BLM regarding Mokelumne River management and management of lands adjacent to the River in accordance with applicable laws when and if project-level planning moves forward for the Enlarge Pardee Reservoir component.

CSERC-3. The WSMP 2040 alternative development process and the Demand Study considered the effects of global climate change on water supply and demand. The evaluation of Preferred Portfolio surface water components considered how streamflow, reservoir storage and yield could be impacted by temperature and evaporation. Because the WSMP 2040 identifies solutions to meet dry-year needs over the long term (through 2040), the Preferred Portfolio includes a diverse range of components to meet those needs as well as to provide the District with flexibility to address uncertainties such as climate change and timing of droughts. This flexibility will allow the District to respond quickly to ensure that sufficient water is available to meet dry year needs.

CSERC-4. The recommendation is noted. As noted in the PEIR, the alternative development process included an in-depth evaluation of over 50 components and a range of portfolios before the Board selected the Preferred Portfolio. High levels of conservation are part of the WSMP 2040.

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CSPA
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California Sportfishing Protection Alliance

"An Advocate for Fisheries, Habitat and Water Quality"

COMMENTS
Programmatic Environmental Impact Report
East Bay Municipal Utilities District
Water Supply Management Program 2040

Filed by:

Chris Shutes
FERC Projects Director
California Sportfishing Protection Alliance
1608 Francisco St.
Berkeley, CA 94703
blancapaloma@msn.com
May 4, 2009

Thomas B. Francis, PE
EBMUD Water Supply Improvements Division
375 11th Street MS 407
Oakland, CA 94607
tfrancis@ebmud.com
(via e-mail)

Dear Mr. Thomas:

The California Sportfishing Protection Alliance respectfully submits these comments on the District's Draft Programmatic Environmental Impact Report for its Water Supply Management Program 2040.

CSPA has hundreds of members in California, many of whom have long been active in issues relating to planning and conservation on the Mokelumne River. CSPA also has many members in the EBMUD service area, including the author of this comment letter.

Water Demand Assumptions

The Water Supply Management Program is built around two overriding assumptions: first, that the District should base its planning on a worst-case scenario, three-year extended drought; and second, that water supply demand in the EBMUD service area will grow at an annual rate of 2% from now until 2040. These are neither valid assumptions, nor responsible ones. 1

Should the District face extended drought, those of us in the East Bay will have to tighten our water belts, as we have in the past. The District is blessed with a ratepayer base that is

willing and able to make necessary sacrifices in drought, or even dry year situations; indeed, the District just announced a water rate increase because its customers are using water (*SF Chronicle*, April 15, 2009). Should the District, however, base its planning on extreme, emergency demand, it will have rather incentivized development that will only further increase future drought condition water demand. The District has not even finished its latest program to meet demand during dry year or drought conditions. Yet before a single drop of water has been moved through the Freeport connection, the drought reserve is already cast in WSMP 2040 as part of the future's baseline water supply. Will the District even reach 2040 before the projected new storage in an expanded Pardee is transformed in the same way?

The projected 2% annual increase in demand is not supported by historic use, as many verbal comments, and the written comments by the Amador County Board of Supervisors, have pointed out. Demand projection by city officials in the service area, on which much of the 2% figure is based, depends as much as anything on who one asks and how one frames the question.

We suggest that the Board ask a different question: Since we have reached the point where the District can no longer count on additional water supplies, how will your city manage both severe drought conditions and future growth?

The District's Board should reflect and in fact direct the political will and environmental morality of its constituency. The revolving door must stop.

1

Water Accounting in the Mokelumne Watershed

California is in a situation where water is allocated for use, under riparian, pre-1914, or appropriative water rights, at a level that is about five times the average annual runoff in the state. Even the State Water Resources Control Board acknowledges that it does not know how much water is diverted under most of the riparian and pre-1914 rights. The Mokelumne watershed is no exception to the general trend.

2

"Channel losses" between Camanche Dam and Woodbridge are estimated in Table 4.2.A-1 of the draft PEIR at as much as 120 TAF in normal years and 56 TAF in dry years. This is in part an already-existing conjunctive use program, by which the lower Mokelumne River aquifer is recharged. It is also doubtless an artifact of riparian pumping of the aquifer at an unaccounted-for level. Given the existing and reasonably foreseeable future water supply demands on the Mokelumne watershed, it is irresponsible as well as inadequate under CEQA not to quantify and identify more precisely what happens to this water, and to ascertain how much of that water is being illegally or wastefully diverted or consumed. Existing demands on the Mokelumne system must be rigorously accounted for, not approximated under a catch-all category, particularly in a programmatic EIR. The District cannot evaluate the impacts of its instream flow releases to the Mokelumne River if it cannot determine how much water is left in the river at any given time.

3

Impacts to Mokelumne River Fisheries

Neither baseline nor future impacts to the fishery downstream of Camanche are described in the draft PEIR, but are rather simply assumed to be fully mitigated by the Joint Settlement Agreement (JSA) signed by the District, California Department of Fish and Game, and the U.S. Fish and Wildlife Service in 1996. But existing instream flow levels are not adequate to protect lower Mokelumne River fishery resources. On the contrary, the anadromous salmonids in the lower Mokelumne are in imminent danger of extirpation.

The fact that the District cannot account for the actual instream flow at any given point downstream of Camanche is only the beginning. Beyond that, no information is provided about fish screens or the degree of entrainment into diversions downstream of Camanche. No information is provided about successful escapement of naturally spawning salmon and steelhead, or about returns to the Mokelumne River hatchery. The draft PEIR contains no discussion of precipitous decline over the last three years of salmon and steelhead in the lower Mokelumne, or of the consequent need to provide passage past Camanche and Pardee dams to over 40 miles of habitat in the Mokelumne River upstream of Pardee. No information is provided about the inadequacy of the flows below Woodbridge, which, with a dry year requirement for June through September flows of 20 cfs, and a critically dry year requirement for May through September flows of 15 cfs, must be augmented beyond the given minimum flow requirement simply in order to maintain connectivity between Woodbridge and the mouth of the Cosumnes. No information is provided about the effects of these inadequate flows on the riverine ecosystem downstream of Woodbridge. No information is provided about how these inadequate flows below Woodridge, especially in September, leave salmon unable to ascend the fish ladder at Woodbridge due to inadequate flow through that ladder, or how they are thus picked off by various predators. In spite of growing evidence of the importance of high spring flows for the juvenile rearing of salmon and steelhead, the draft PEIR equally says nothing about the inadequacy of spring flows under the JSA, even in normal and wet year conditions. 4

In discussing a possible raise of Pardee Dam, the draft PEIR makes no mention of the impacts to possible volitional fish passage past that facility, and does not even contemplate a trap and haul solution past both Camanche and Pardee. As such, it fails to analyze the impacts of the program to the recovery of threatened Central Valley steelhead, whose historic habitat in the Mokelumne system was almost completely blocked by Pardee, and then Camanche dams. An existing, albeit inadequate, trap and haul program is provided for under some circumstances in the Joint Settlement Agreement; the impacts to that aspect of the settlement agreement of a Pardee raise are not evaluated. 5

Water Availability

The water that EBMUD seeks to impound behind a new Pardee Dam is the same water that the Mokelumne River Joint Powers Authority, in water rights Application 29835, 6

seeks to siphon off to a proposed Duck Creek Reservoir for ground water recharge in eastern San Joaquin County and for other purposes. Following conventional limited thinking about the need to divert more water at high flows, EBMUD, in the footsteps of San Joaquin County and many others, seeks to cut the off the top of the Mokelumne hydrograph, much as proponents of a peripheral canal believe they can conjure mysteriously available water off of high flows to capture before it reaches an ever-increasingly squeezed Bay-Delta estuary.

The theory that high flows will waste away to the sea under climate change, in spite of increasing evidence of the importance of high flows for salmon outmigration, and for restoring the Delta ecosystem and Delta water quality by increasing Delta outflows, is faithfully reproduced in the draft PEIR. As if this were not bad enough, the draft PEIR contemplates removing high flows from the Sacramento River system at Freeport, when low flow conditions are not in effect that would require the already-approved use of Freeport to convey dry year water from the American River. The use of water transfers from upstream in the Sacramento system explicitly promotes increased groundwater pumping in the Sacramento Valley, tapping one of the last remaining areas of California not yet brutalized by over-exploitation of finite groundwater resources. This proposed use of Freeport is also effectively a mini-peripheral canal that will further choke the Delta, degrade its water quality, destroy its pelagic fisheries, and rob it of critical high flows necessary for the outmigration and upstream migration of anadromous fish. 6

The final PEIR should analyze the environmental consequences of what will happen if leading Bay Area entities like the East Bay Municipal Utilities District do not stand up politically to save and restore the Bay-Delta estuary.

The District's cooperation with the Intra-Regional Conjunctive Use Program (IRCUP) that is promised in the draft PEIR is so vague that it amounts to little more than lip service meant to placate San Joaquin and upcountry entities. Eastern San Joaquin County has been subject to immense overdraft, and has become literally a hole in the ground that numerous entities are clamoring to throw water into. County agriculture, which has lived on borrowed water for fifty years or more, continues to bleed both available surface and groundwater resources dry. Having failed to realize the Auburn Dam dream, and refusing to take on the State Water Project and Central Valley Project head on, the County seeks to exploit the very same water that EBMUD proposes to conjure in order to fill up an expanded Pardee Reservoir. 7

Building a bigger bathtub does not fill it with water. A water availability analysis conducted in 2002 by Mokelumne River Water and Power Authority for a competing water right application (28935) showed that there is no water available for appropriation in the Mokelumne system in 51 out of 75 years in a period of record. That analysis also made the same assumption as does the draft PEIR, that the JSA adequately protects the anadromous fish of the lower Mokelumne. A complete analysis of the cumulative impacts on both the lower Mokelumne and the Bay-Delta of removing more of the high flows from Mokelumne watershed can only show that the number of years that water 8

might actually be available for appropriation in the watershed is less than the one third figure arrived at in the MRWPA water availability analysis. 8

Finally, should the district partner with San Joaquin entities in a conjunctive use program, how does it propose that the water stored in the ground will be accounted for? Or will water that goes into the ground simply disappear to a dozen or a hundred competing uses, as surely as water in the lower Mokelumne aquifer disappears with no evident accounting or so much as a faretheewell from the District? 9

Conclusion

EBMUD should take an aggressive leadership role in restoring the anadromous fisheries of the Mokelumne River, including improved lower river flows and passage upstream of Camanche and Pardee Dams to 40 miles of excellent habitat. 10

EBMUD should institute a management plan that controls water demand starting today. Control of demand requires a clear policy, buy-in from ratepayers, and the political will to put the policy into practice. Control of demand is the only way that the District in the next thirty will be able to live within the means of its already over-allocated hydrologic system. Failing clear vision, the leadership to achieve buy-in, and the and the courage to implement its political will, EBMUD will be looking, by 2030, at a new water supply management program for 2060 to find a dry year water supply to supplement the water that rarely came to a raised Pardee. 11

To the degree that such documents are necessary, EBMUD should issue new draft EIRs to reflect these policy changes. The District should abandon the current draft document and the program it contemplates.

Thank you for the opportunity to comment on the Draft Programmatic EIR for the Water Supply Management Plan 2040.

Respectfully submitted,

_____/s/_____
Chris Shutes
FERC Projects Director
California Sportfishing Protection Alliance

California Sportfishing Protection Alliance (CSPA)

CSPA-1. EBMUD's existing drought planning sequence was reviewed as part of the WSMP 2040 development effort. This work concluded that the three-year drought sequence which is currently used for planning is valid in light of the Mokelumne River hydrologic record, taking into consideration future uncertainties such as climate change and other pressures which could impact the Mokelumne water supply.

Please see the Master Responses on the Demand Study and the WSMP 2040. EBMUD's effort to determine future demand was extensive and is described in detail in documents that accompany the PEIR. EBMUD does not have land use authority and does not control development in the service area. Using statutory authorities and processes, EBMUD works in cooperation with local agencies within the service area to encourage good decisions concerning development and to encourage wise water practices. The water demand study prepared in conjunction with WSMP 2040 estimates that once the proposed recycled water and conservation components selected as part of the Preferred Portfolio are subtracted from the projected demand, the demand is anticipated to increase at an overall average of approximately 0.21 percent annually between 2005 and 2040.

CSPA-2. EBMUD has invested valuable resources to establish and maintain a database on the historical hydrology and diversions on the Mokelumne River. EBMUD has collected and continues to collect flow data along the Lower Mokelumne River, between Camanche Dam and Woodbridge Dam. Water diversions by senior appropriators and riparian landowners are measured or estimated. The releases from Camanche Dam are measured at Camanche Dam, and the resultant flow rates below Camanche Dam and below Woodbridge Dam are measured. Flow rates at three intermediate points between Camanche and Woodbridge Dam are also measured. From this extensive dataset, collected over 40 years, channel loss values are developed which mimic the reality along the Lower Mokelumne River. It is because of this extensive measurement and monitoring system that we are able to accurately estimate inflow and demands on the river and were able to achieve the 1998 the Joint Settlement Agreement (JSA) with the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (DFG), which was later approved and adopted by the Federal Energy Regulatory Commission and the State Water Resources Control Board (SWRCB). The JSA includes a schedule of releases for the fishery that is proportionate to reservoir levels and the natural flow of the river during the normal to critically dry years.

The WSMP 2040 Draft PEIR presents a first tier, program-level analysis of the various components included in the Preferred Portfolio to meet EBMUD's dry-year need through 2040. Please see the Master Response on Program-level EIR analysis. Project impacts on the Mokelumne River will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with project-level planning, and detailed mitigation measures will be developed and included in the project-level EIR.

CSPA-3. Please see Response CSPA-2 above.

CSPA-4. There are multiple factors affecting the population numbers of naturally spawning salmon and steelhead. While EBMUD has a firm understanding of hydrology and actions that impact flow in the lower Mokelumne River, particularly in the area downstream of Camanche Dam, there is relatively little understanding at present regarding the effects of the physical disturbances within the Delta, combined with multiple other environmental challenges to the ecosystem (including altered hydrological conditions, contaminants, predation and food web competition by non-native species, and declines in floodplain and riparian habitat) have contributed to declines in anadromous species, as well as other fish, wildlife, and plant species and other organisms upon which they depend. In addition, declines in ecological conditions in the ocean continue to be studied.

For 100 years (1900-2000), annual Mokelumne River flow, as measured at a point immediately upstream of Pardee Reservoir, has ranged from 129,000 to 1.8 million acre-feet. Since implementation of the JSA in 1998, annual releases from Camanche Dam to the lower Mokelumne River have ranged from 198,000 to 1.2 million acre-feet. From 1940 through 1997, fall-run Chinook salmon escapement in the lower Mokelumne River ranged from 137 to 15,861. Since implementation of the JSA in 1998, fall-run Chinook salmon escapement has ranged from 412 to 16,144. Based on data gathered to date, EBMUD considers flow releases from Camanche Dam adequate to protect lower Mokelumne River fishery resources.

EBMUD operates and maintains four gauging stations below Camanche Dam that monitor flow (stage height) and can account for actual instream flow.

There are approximately 62 agricultural riparian diverters from Camanche Dam downstream to river mile 10. Most of these diversions provide agricultural irrigation water during the late spring, summer, and early fall and divert from 0.4 to 10.0 cfs. In addition, the North San Joaquin Water Conservation District and the Woodbridge Irrigation District divert from the lower Mokelumne River. The Woodbridge Irrigation District installed a new fish screen on their diversion in 2008. There is no information on the degree of entrainment resulting from these diversions.

The following table provides information on the escapement of naturally spawning fall-run Chinook salmon and returns to the Mokelumne River Fish Hatchery since 1998.

YEAR	TOTAL ESCAPEMENT	NATURAL SPAWNERS	HATCHERY RETURNS
1998	7,213	4,122	3,091
1999	5,333	2,183	3,150
2000	7,423	1,973	5,450
2001	8,116	2,307	5,809
2002	10,759	2,804	7,919
2003	10,239	2,122	8,117
2004	11,944	1,588	10,356
2005	16,144	10,406	5,738
2006	5,861	1,723	4,138
2007	1,519	470	1,049

2008	412	173	239

Because of suitable year-round river conditions (flows, temperature, habitat, food), steelhead anadromy in the lower Mokelumne River is limited, probably similar to that reported by Zimmerman et al (2008) in the Calaveras, Stanislaus and Tuolumne rivers (about one percent). In 2005 EBMUD developed a population estimate of naturally-produced *O. mykiss* (anadromous and resident) in the lower Mokelumne River from Camanche Dam downstream to the Woodbridge Irrigation District Dam using a mark/recapture study. That estimate was 9,215 ± 1,877.

For a discussion of the precipitous decline of salmon over the last three years, EBMUD refers the commenter to *Moyle, P.B., J.A. Israel, and S.E. Purdy. 2008. Salmon, Steelhead and Trout in California. Center for Watershed Sciences. University of California, Davis. Davis, CA.*

In 2005, the Woodbridge Dam was replaced and three new fish passage structures were installed. These new ladders provide passage for salmon and steelhead under all current flow conditions in the lower Mokelumne River, including flows lower than 15 cfs.

EBMUD believes that high spring flows do provide benefits to juvenile salmon and steelhead. The availability of high spring flows is dependent on winter/spring precipitation. Since implementation of the JSA in 1998 several high spring (February through June) flows have occurred in the lower Mokelumne River.

YEAR	MINIMUM FLOW (cfs)	AVERAGE FLOW (cfs)	MAXIMUM FLOW (cfs)
1998	1,030	2,256	3,670
1999	607	1,523	3,100
2000	398	1,029	2,400
2003	251	492	2,000
2005	441	1,598	2,530
2006	508	2,656	5,150

CSPA-5. Project impacts to fish passage along Mokelumne River will be fully examined in a project-level EIR when and if the District decides to move forward with project-level planning. EBMUD will consult with NMFS to determine appropriate detailed mitigation measures to reduce impacts on fisheries and fish passage, and will present an analysis of impacts, mitigation measures, and alternatives in the project-level EIR. Please see the Master Response on Program-level EIR analysis.

CSPA-6. EBMUD has diverted to storage virtually the entire maximum allowed under its water rights with its existing reservoirs. An Enlarged Pardee Reservoir project may be undertaken by using EBMUD's existing water rights. The Mokelumne River Joint Powers Authority's water right Application 29835 has been filed but not yet acted upon by the SWRCB. The Authority must be able to show that unappropriated water is available in the river. In other words, the Authority's application seeks water that is in addition to the water provided to EBMUD pursuant to its existing water rights, and because this is a recently

filed application, the Mokelumne River JPA must establish that water other than the water currently held under EBMUD's water rights or the rights of other existing users is available.

With regard to the Northern California Water Transfers component, EBMUD has not yet proposed a specific water transfer, and thus it is premature to assume that the transfer would necessarily involve groundwater substitution. EBMUD will conduct a thorough review of any long-term transfer when and if it moves forward with project-level planning and will address potential impacts to pelagic fisheries and anadromous fish at that time.

CSPA-7. Please see the discussion of the IRCUP+ provided in Response FC3-14. EBMUD understands that there are issues surrounding San Joaquin County's use of groundwater and their basin management. When and if a project-specific plan for a San Joaquin County conjunctive use project and/or a project-specific plan for any of the other Upcountry projects moves forward, EBMUD will work with local stakeholders to develop project-specific operations and governance plans and will consider the issues raised with respect to overdraft of the eastern San Joaquin groundwater basin. The alternative development process for the WSMP 2040 included an in-depth evaluation of over 50 components and a range of portfolios that led to the selection of the Preferred Portfolio. Regional efforts were considered as part of the components because of the advantages of undertaking projects with a broad range of beneficiaries. As the regional efforts move forward, EBMUD will help in furthering efforts, where possible, to address local issues.

CSPA-8. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component. As part of project-level planning, EBMUD will prepare a project-level EIR for the Enlarge Pardee Reservoir component that will examine options for siting of a new dam, evaluate the type of dam, identify suitable embankment elevations, and develop associated reservoir storage volumes and yields as well as operational plans with the goal of ensuring that habitat conditions would not be adversely affected. EBMUD considered historic streamflows as part of the WSMP 2040 effort, and used that information to estimate the potential yield of Preferred Portfolio surface water components that would be sited on the Mokelumne River. In addition, at this programmatic level during the alternatives screening, a review was conducted to determine whether or not these surface water elements would have environmental benefits.

CSPA-9. Please see the Master Response on Program-level EIR analysis. Subsequent CEQA documentation will be prepared, as appropriate, for specific portfolio components when and if the District decides to move forward with project-level planning. At the project-level stage, detailed plans would be developed to ensure that there is an accounting of surface water that is banked in the eastern San Joaquin groundwater basin. As part of the project development discussion, participants will discuss the issues raised in the comment.

CSPA-10. EBMUD has had a leadership role in protecting the anadromous fisheries of the Mokelumne River since the 1960s. EBMUD is a partner in the JSA and

has not only provided flows to benefit anadromous fish but has also undertaken measures to improve habitat in the river and restore riparian vegetation. Potential impacts on fisheries will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with this component.

CSPA-11. Please see the Master Response on the WSMP 2040 and in particular the description of the development of the conservation component. EBMUD has engaged in extensive programs to promote conservation and will move forward with aggressive demand management in the future. The alternatives development process for the WSMP 2040 included an in-depth evaluation of over 50 components and a range of portfolios that led to selection of the Preferred Portfolio.

CYMP
090325

From: Kathryn Eustis [mailto:KEustis@ccoe.k12.ca.us]
Sent: Mon 3/30/2009 6:11 PM
To: Francis, Thomas
Cc: John Brophy; george@oars.com; katherine@mokeriver.com; Lewis, Lynelle
Subject:

March 25, 2009

Tom Francis

EIR Comments

EBMUD Water Supply Improvements Division

375 11th Street MS 407

Oakland, CA 94607

Dear Mr. Francis:

This letter is to urge your reconsideration of expanding the Pardee Reservoir in the 2040 plan.

As you know, every year EBMUD grants a special use permit for O.A.R.S. to run our "Mokelumne River Rafting Adventure" in June. The event is an important fundraiser for the Calaveras Youth Mentoring Program and it sells out every year. More than 70 people, almost all of them Calaveras residents, turn out to enjoy the gorgeous scenery on the river between Electra and Middle Bar. Community members love to raft a local river and they treasure the unspoiled beauty of the area. Youth and mentors in our program who are too young or are physically unable to go on other rafting trips join us for this special opportunity to learn about wildlife ecology, history and water conservation. Tim Cox has greeted our rafters before each trip for the past few years, and last year was able to spread the word about the snail and pest problem to a group of very interested and concerned citizens.

The Mokelumne River Rafting Adventure has raised over $20,000 for the Calaveras Youth Mentoring Program in the past five years. The Electra-Middle Bar stretch of the river is an invaluable outdoor recreational resource for our youth and our county; many of our mentor/mentee matches go fishing and hiking in the area almost weekly. There are no comparable rivers nearby. Please don't flood it.

1

In reading the article in the Calaveras Enterprise, I thought the idea for desalinization plants was truly far-sighted and sustainable, and I hope you will consider that long-term strategy instead. 2

Thank you for your care and consideration of Calaveras County ecology and our community. Please feel free to contact me with any questions at (209) 736-6078.

Sincerely,

Kathryn Eustis, Director,

Calaveras Youth Mentoring Program

CC: John Brophy, Superintendent, Calaveras County Office of Education

George Wendt, President, O.A.R.S.

Katherine Evatt, Foothill Conservancy

Calaveras Youth Mentoring Program (CYMP)

CYMP-1. As stated in Mitigation Measure 5.2.D-2b of the Draft PEIR, at this program level EBMUD has committed to preserving the Electra Run for spring and summer whitewater boating (see page 5.2.D-8). Project impacts on the Electra Run and recreation activities will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with the component. Please see the Master Response on Program-level EIR analysis.

CYMP-2. The District acknowledges the commenter's support for the Regional Desalination component of the WSMP 2040.

FC1
090223

-----Original Message-----
From: Foothill Conservancy, Katherine Evatt
[mailto:kke@foothillconservancy.org]
Sent: Monday, February 23, 2009 10:44 AM
To: Francis, Thomas
Cc: Pete Bell
Subject: Couple of questions related to Pardee Raise and WSMP

Hi, Tom: Hope all is well with you. Isn't the rain and snow great?

We're looking at the PEIR for the water supply plan, and I have a couple of questions I hope you can answer.

1

One's just mechanics -- can we get an unprotected version of the full document and appendices? I'd like to excerpt and turn pages to put on our website, send to people, etc, but can't do that with the version available online. We won't alter the content.

The second question is this: The EIR says local growth-inducing impacts (as in local here, not East Bay) were not studied because EBMUD will not provide water locally. Does that mean that none of the water to be stored in the expanded reservoir (even temporarily) will be used in Amador or Calaveras? That seems to be what it's saying, but I can't tell. Of course, I have yet to read the entire document, but it would help to have that clarified.

2

Thanks much,

Katherine

Katherine K. Evatt, President

Foothill Conservancy

P.O. Box 1255

Pine Grove, CA 95665

kke@foothillconservancy.org

209.295-4900

Foothill Conservancy 1 (FC1)

FC1-1. This comment does not address the content of the WSMP 2040 Draft PEIR.

FC1-2. The WSMP 2040 identifies solutions for EBMUD's dry-year water needs; it is not intended to address water supply or infrastructure needs in Amador and Calaveras Counties, or any other area outside EBMUD's service area. Although the District has identified the potential for the Enlarge Pardee Reservoir component to be undertaken as a regional project with partners and community support, as stated in the Draft PEIR, discussions regarding regional participation (e.g., which agencies would take part, potential yield partners would receive, etc.) would be made at the project-level stage.

Please see Response FC3-62 for further discussion of the growth-inducing impact analysis conducted for WSMP 2040.

FC2
090401

From: Foothill Conservancy, Katherine Evatt [mailto:kke@foothillconservancy.org]
Sent: Wednesday, April 01, 2009 7:53 AM
To: Diemer, Dennis
Cc: Francis, Thomas; Coate, Alexander
Subject: Is EBMUD extending WSMP PEIR comment period?
Importance: High

Dear Dennis: Hope all is well with you. Spring is off to a beautiful start here in the foothills. The poppies in the Mokelumne River canyon are especially wonderful this year. 1

We know that several public agencies (CAMRA, Amador Water Agency, soon Amador Board of Supervisors) and many local individuals here have asked EBMUD to extend the comment period for the draft PEIR for the WSMP 2040.

Can you please let me know *today* whether the deadline will be extended, or whether it will remain April 6?

Individuals and agencies in the foothills clearly feel they have not been given time to adequately review the 1,500 page document.

At Monday's public hearing in San Andreas, Pat Pereira of Campo Seco testified that there is only one print copy of the PEIR in Calaveras County, at the public library in San Andreas. It was made available to the library late and they only got it on the research shelves on Saturday, March 28. It cannot be checked out. Pat checked out the one available CD. 2

A friend of mine went looking for the draft document at the Walnut Creek main library last Wednesday. It was not available.

Many foothill residents became aware of the PEIR only because of articles and advertising we have done regarding the WSMP, especially the Pardee expansion, which is very unpopular locally. Most of that information didn't hit the media until after March 12.

See below for today's news coverage of Monday's hearing in San Andreas. We will send you and your directors a videotape of the meeting soon.

http://www.recordnet.com/apps/pbcs.dll/article?AID=/20090401/A_NEWS/904010313/-1/A_NEWS

We hope to hear from you today regarding the comment period. Thank you.

Best regards,
Katherine

Katherine K. Evatt, President
Foothill Conservancy
P.O. Box 1255

Pine Grove, CA 95665
kke@foothillconservancy.org
209.295-4900

Foothill Conservancy 2 (FC2)

FC2-1. This comment does not address the content of the WSMP 2040 PEIR.

FC2-2. EBMUD extended the public review period for an additional 30 days beyond the original 45-day review period. The extended comment period ended on May 4, 2009. The Draft PEIR is available on the EBMUD website at www.ebmud.com.

EBMUD conducted extensive outreach as part of the development of the WSMP 2040. EBMUD conducted an 18-month-long alternative development process prior to preparing the Draft PEIR. The public was invited to a series of workshops to provide input on the Preferred Portfolio and alternatives. In addition, five public meetings were held in March 2009 to solicit input regarding the Draft PEIR.

Regarding library postings and Draft PEIR document availability, copies of the Draft PEIR were mailed to twenty-five public libraries, including the San Andreas Public Library and the Walnut Creek Library, on February 19, 2009.

In response to the comment by Ms. Pereira, EBMUD included a statement in the notice of extension offering to provide Draft PEIR CD's free of charge to any individual requesting one.

FC3
090504

From: Tom Infusino [mailto:tomi@volcano.net]
Sent: Monday, May 04, 2009 10:01 AM
To: Francis, Thomas
Cc: 'Chris Wright'; katherine@mokeriver.com; pete@mokeriver.com
Subject: Comments on EBMUD 2040 WSMP Draft PEIR

Dear Sir,

Attached are the comments of the Foothill Conservancy on the EBMUD 2040 WSMP DEPIR.

So that you can understand the context of our comments, we ask you to review the photos on our web site
of the Electra – Middle Bar area (http://www.foothillconservancy.org/pages/gallery.cgi?galcatid=11),
and on the web site of the Amador Council of Tourism
(http://touramador.com/act/pages/adventures.cgi?galcatid=13), before you read the attached comments.

Please let us know when the Final PEIR is complete, and when the EBMUD Board has scheduled
a meeting to consider 2040 WSMP approval.

1

Sincerely,

Tom Infusino

From: Foothill Conservancy, Katherine Evatt [mailto:kke@foothillconservancy.org]
Sent: Monday, May 04, 2009 10:59 AM
To: Doug Linney; Diemer, Dennis
Cc: sph@volcano.net; Lewis, Lynelle
Subject: Foothill Conservancy comments on EBMUD 2040 WSMP Draft PEIR

Dear President Linney and Mr. Diemer:

Attached are Foothill Conservancy's comments on the WSMP 2040 draft PEIR. We have submitted them to Mr. Francis, but wanted you to see them as well.

We are also attaching the County of Amador's comment letter, which clearly states the county's opposition to the Pardee expansion proposal or "another reservoir that would have similar negative impacts...".

Please share this full message, including the transmittal with links below, with all of the EBMUD directors at your earliest convenience. We trust the directors have already received the DVDs and CD of the Amador and Calaveras hearing testimony.

Also, we would appreciate it if you would let us know when the WSMP 2040 will next be discussed by the EBMUD board or any committee.

Respectfully,
Katherine Evatt

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May 4, 2009
Dear Sir,

Attached are the comments of the Foothill Conservancy on the EBMUD 2040 WSMP DEPIR.

So that you can understand the context of our comments, we ask you to review the photos on our web site of the Electra – Middle Bar area (http://www.foothillconservancy.org/pages/gallery.cgi?galcatid=11), and on the web site of the Amador Council of Tourism (http://touramador.com/act/pages/adventures.cgi?galcatid=13), before you read the attached comments.

Please let us know when the Final PEIR is complete, and when the EBMUD Board has scheduled
a meeting to consider 2040 WSMP approval.

Sincerely,

Tom Infusino

Katherine K. Evatt, President
Foothill Conservancy
P.O. Box 1255
Pine Grove, CA 95665
kke@foothillconservancy.org
209.295-4900

1

Thomas P. Infusino, Esq.
P.O. Box 792
Pine Grove, CA 95665
tomi@volcano.net
(209) 295-8866

May 4, 2009

Thomas B. Francis, PE
EBMUD Water Supply Improvement Division
375 11th Street MS 407
Oakland, CA 94607

Electronic submittal
RE: Foothill Conservancy Comments on the Draft PEIR for the WSMP 2040 project.

Dear Mr. Francis:

My name is Thomas Infusino, and I am submitting these comments on behalf of the Foothill Conservancy.

I. Introduction

As you know, the proposed project includes expanding the size of Pardee and Lower Bear reservoirs by building a new dam (Pardee) and raising the heights of the existing dam (Lower Bear). The reservoirs are located in Amador and Calaveras counties. The project also includes allocating 13,800 acre feet per year of the water yielded from the Lower Bear expansion to uses in Amador, Calaveras, and San Joaquin counties. (DPEIR, pp. 3-19 to 3-24.) These program elements directly affect the members of the Foothill Conservancy.

The Foothill Conservancy is a nonprofit organization with members who live and work in the Mokelumne River watershed. The Foothill Conservancy seeks to restore, protect, and sustain the natural and human environment in and around Amador and Calaveras Counties. The Foothill Conservancy believes that by working together we can bring communities to prosperity without needless destruction of that which is unique and special about the area. 1

The Foothill Conservancy's vision for this area includes protected scenic quality, conserved forest lands, restored natural diversity of native plants and animals, free-flowing rivers, coordinated land use planning, and balanced economic development that is ecologically and socially sustainable. Our Infrastructure Planning and Development Principles ask agencies to employ demand-side management techniques, including conservation and efficiency, before taking on expensive expansion projects, and to

develop infrastructure with minimal harm to the natural and built environment. Our River and Watershed Principles

- Recognize that the ecological health of our rivers and watersheds is of primary importance,
- Support National Wild and Scenic River designation for the Mokelumne River,
- Oppose on-stream dams,
- Encourage safe public access and recreational use of rivers, and
- State a preference to work collaboratively with others interested in the health of our rivers and watersheds.

These principles are more than currently popular platitudes. They are the culmination of wisdom learned through nearly two decades of conservation work by the Foothill Conservancy in the Mokelumne River Watershed. Over those years we played a key role in negotiating a settlement agreement for the relicensing of PG&E's hydroelectric project on the Mokelumne River, which set a national precedent; led to the breaching, dismantling or removal of three dams on North Fork Mokelumne tributary streams; and began improvements to river health and recreation. We sponsor annual Mokelumne River Cleanups. We helped secured public access to the Middle Bar reach of the Mokelumne River (below Highway 49 to Pardee Reservoir), which had been closed to public access for more than 30 years. We helped protect more than nine miles of the North Fork of the Mokelumne River by stopping the proposed Devil's Nose Dam project. 1

The Foothill Conservancy has its headquarters in Amador County. Members of the Foothill Conservancy and their families have taken their place in the Sierra Nevada foothills. Like the many shoots that form a willow basket, their diverse lives and cherished memories are interwoven with the multifaceted landscape of this unique region. It is the place they work and struggle, where they stick out the hot summers and the muddy winters. They endure lower incomes, limited career opportunities and inadequate levels of public service because they love our landscape and quality of life.

The Mokelumne River is one of the special places that bind our members to the land. Members of the Foothill Conservancy rely on the Mokelumne River and its watershed not only as a source of water, but as a place of residence, business, recreation and spiritual renewal. It is where young couples meet and fall in love. It is where they take long walks to discuss their future. It is where they run the rapids. It is where their children will catch their first trout, and learn about rivers and nature. It is where they live today, and where they will be buried tomorrow.

The uses made of the Mokelumne River watershed by members of the Foothill Conservancy, and by the public at large, will be impaired by the proposed project.

The preferred portfolio in EBMUD's water supply plan includes expanding Pardee Reservoir. Expanding Pardee as proposed would inundate the Electra Run and Middle Bar Reach recreation areas, valued for whitewater rafting and kayaking, gold panning, wildflower viewing, family picnics, bird watching, and for their historic and cultural 2

resources. Expanding Pardee would remove the Middle Bar Bridge, eliminating a first responder access and resident evacuation route in the event of a wildland fire, putting lives and property at grave risk, and increasing the likelihood of catastrophic wildland fire on EBMUD's watershed lands.

Members of the Foothill Conservancy currently suffer from the lack of commitment by the local water agencies to timely implement cost-effective water conservation programs and recycling projects. The proposed EBMUD project would provide yet another supply of raw water to these agencies without making any enforceable requirements that they first achieve responsible and cost effective levels of water conservation and recycling. This is contrary to both the water conservation goals of the state and the best interests of the local water customers.

Members of the Foothill Conservancy also suffer as local cities and counties routinely approve development projects with significant and unmitigated impacts including traffic congestion, air pollution, declining levels of public services, loss of agricultural lands, and harm to fish and wildlife. The proposed water project would provide these jurisdictions with additional supplies of water without any enforceable commitment from them to reduce the impacts of the urban development that water facilitates. 2

Thus, the proposed project will not only delay the day when our local water agencies will implement needed and cost-effective water conservation programs and recycling projects, but also will exacerbate the magnitude and intensity of existing problems suffered as a result of poorly planned urbanization.

Finally, members of the Foothill Conservancy suffer from local political arenas too often focused on divisive debate over controversial projects thrust upon us by outside interests, and too infrequently focused on making progress in our broad fields of agreement for the good of the local citizenry. EBMUD's proposed projects drag our communities' energies away from making progress on water supplies we agree on and force us to focus time and money on fighting another colonial raid on our resources.

On July 20, 2008, the Foothill Conservancy submitted a scoping letter and an e-mail in response to EBMUD's notice of intent to prepare a program EIR for the WSMP 2040 project. The purposes of scoping include, "identifying the range of actions, alternatives, mitigation measures, and significant effect to be analyzed in depth in an EIR," and resolving the concerns of affected persons "who might not be in accord with the action on environmental grounds." (CEQA Guidelines, sec.15083.) Our review of the draft PEIR indicates that EBMUD has neither completed an EIR in accordance with our scoping comments, nor resolved our environmental concerns. Below we note many flaws in the draft PEIR, including those issues discussed in our scoping comment that were not properly analyzed, evaluated, and mitigated. 3

The California Environmental Quality Act is designed to help local governments identify and mitigate the potentially significant impacts of their actions. We hope that EBMUD will take this round of comments to heart and change the project description to eliminate

the project's damage to the Mokelumne River watershed, its valuable resources, and its good people.

We especially urge EBMUD to withdraw the Pardee expansion from further consideration as a component of its Water Supply Management Plan 2040. The project is included in the plan to meet water needs that are not adequately demonstrated, using water that will likely not be available for diversion above the Sacramento-San Joaquin Delta. It will harm the communities, economy, and natural environment of our foothill counties. And it plainly conflicts with many of the stated objectives in the WSMP 2040. 3

II. Basic Premises of CEQA

Before getting into the details of the draft PEIR, we would first like to review the basic CEQA requirements, so that we are all on the same page.

"[T]he 'foremost principle' in interpreting CEQA is that the Legislature intended the act to be read so as to afford the fullest possible protection to the environment within the reasonable scope of the statutory language." (Communities for a Better Environment v. California Resources Agency (2002) 103 Cal.App.4th 98, 110; citing Laurel Heights Improvement Association v. Regents of University of California (1988) 47 Cal.3d 376, 390.)

An environmental impact report or "EIR" should employ "an inter-disciplinary approach that will ensure the integrated use of the natural and social sciences and the consideration of qualitative as well as quantitative factors." (CEQA Guidelines, sec. 15142.) That is why the lead agency consults with other agencies that are responsible for managing water quality, air quality, wetlands, highways, and other resources affected by a project. 4

The EIR analyzes the environmental impacts of the project. (CEQA Guidelines, sec. 15126.) The "environment" that is analyzed includes both the natural and built environment. (CEQA Guidelines, sec. 15360.) Thus, in addition to impacts on water quality that affect fish and wildlife habitat, an EIR looks at impacts like noise and traffic that affect our human habitat.

A program EIR is supposed to, "Provide an occasion for a more exhaustive consideration of effects and alternatives than would be practical in an EIR on an individual action." A program EIR is supposed to, "Ensure consideration of cumulative impacts that might be slighted in a case-by-case analysis." A program EIR is supposed to, "Allow a Lead Agency to consider broad policy alternatives and program-wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts." (CEQA Guidelines, sec. 15168.)

Drafting an EIR involves forecasting, and an agency must use its best efforts to find out and disclose all that it reasonable can. (CEQA Guidelines, sec. 15144.)

An EIR must evaluate a range of reasonable alternatives to the project capable of eliminating any significant adverse environmental effects of the project, or reducing them to a level of insignificance, even though the alternatives may somewhat impede attainment of project objectives, or may be more costly. (Pub. Resources Code, sec. 21002; CEQA Guidelines, sec. 15126, subd. (d); Citizens for Quality Growth v. City of Mount Shasta (3d Dist. 1988) 198 Cal.App.3d 433, 443-445 [243 Cal.Rptr. 727].) "The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decisionmaking." (CEQA Guidelines, sec. 15126.6 subd. (f).) CEQA requires a "quantitative, comparative analysis" of the relative environmental impacts and feasibility of project alternatives. (Kings County Farm Bureau et al. v. City of Hanford (5th Dist. 1990) 221 Cal.App.3d 692, 730-737 [270 Cal.Rptr. 650].)

CEQA requires the lead agency to respond in writing to comments made on the draft EIR. The response must "describe the disposition of the significant environmental issue raised in the comment," must give "reasons why specific comments and suggestions were not accepted," and must provide the same level of detail as the comment. (CEQA Guidelines, sec. 15088.)

4

CEQA requires agencies to adopt feasible mitigation measures in order to substantially lessen or to avoid otherwise significant environmental effects. (Pub. Resources Code, secs. 21002, 21081, subd. (a); CEQA Guidelines, secs. 15002, subd. (a)(3), 15021, subd. (a)(2), 15091, subd. (a)(1).)

Prior to project approval, the lead agency must adopt a reporting and monitoring program that is designed to ensure compliance during project implementation. "[U]ntil mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program." (Pub. Resources Code, sec. 21081.6, CEQA Guidelines, sec. 15097.)

In determining the adequacy of an EIR, one looks for completeness and a good-faith effort at full disclosure of the impacts by the lead agency. (CEQA Guidelines, sec. 15151.) "A prejudicial abuse of discretion occurs if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process." (Kings County Farm Bureau et al. v. City of Hanford (5th Dist. 1990) 221 Cal.App.3d 692, 712 [270 Cal.Rptr. 650].)

With these precepts in mind, we can now see the flaws in the draft PEIR.

III. Executive Summary

The Executive Summary describes the preferred portfolio and its action alternatives. (DPEIR, pp. 1-7 & 1-8.) Only the no project alternative includes the current 25 percent rationing policy. None of the action alternatives include the 25 percent rationing policy. Why has this low-impact, low-cost policy been abandoned? Why is EBMUD too afraid to

5

evaluate its preferred portfolio on economic and environmental grounds against any action alternative that includes the current 25 percent rationing policy? Without an action alternative that includes this 25 percent rationing policy, the PEIR will not evaluate a reasonable range of action alternatives. 5

CEQA requires that the summary section of the EIR list "Areas of controversy known to the Lead Agency including issues raised by agencies and the public." (CEQA Guidelines, sec. 15123, subd. (b)(2).)

Because the Pardee and Lower Bear expansions are opposed by regional, statewide, and national conservation, fish, and recreation organizations, our July 20, 2008, e-mail asked that the PEIR consider less contentious and less damaging alternatives. The desire to explore less damaging alternatives was echoed by the scoping comment of former EBMUD director Stuart M. Flashman.

Since our July 20, 2008, e-mail, the controversy over the Pardee expansion has motivated a number of organizations and government entities to formally express their opposition to the proposal. These include the County of Amador, City of Jackson, City of Ione, City of Sutter Creek, City of Plymouth, Amador Water Agency, Amador County Historical Society, Amador County Recreation Agency, Community Action Project, CalTrout, American Whitewater, California Sportfishing Protection Alliance, Ebbetts Pass Forest Watch, Friends of the River, Sierra Nevada Alliance, Sierra Club Mother Lode Chapter, Sierra Club Bay Chapter, and Loma Prieta Paddlers. More than 350 people attended two DPEIR comment meetings in Amador and Calaveras counties in March 2009. All speakers but one were opposed to the Pardee expansion. In addition, over 80 businesses and 2,000 individuals have signed on to support National Wild and Scenic River Designation for a 37-mile stretch of the Mokelumne River, including the portion affected by the Pardee expansion proposal. 6

The list of Areas of Controversy in the DPEIR is rather truncated. (DPEIR. p. 1-11.) For example, it does not mention two controversies that we raised in our scoping comments. It does not mention the controversies associated with the loss of scenic whitewater recreation associated with the Pardee expansion. It does not mention opposition to inundating more of the Mokelumne River canyon associated with the Pardee expansion. Also, it does not mention the controversy raised in scoping comments by the Mokelumne River Water and Power Authority, which allege that EBMUD's new demand figures are unnecessarily inflated. Please rectify these omissions in the final PEIR.

IV. Background

On page 2-1, the draft PEIR indicates that the EBMUD 2040 program is partly in response to potential changes in water supply and demand as a result of global climate change. On page 2-18, the draft DPEIR indicates that water demand was projected from land uses identified in general plans for communities in the service area. Did the projected growth in the service area consider the impacts of rises in sea level associated 7

with global warming? Was it assumed that no such rises would occur? Was it assumed that residential and other development rates would remain constant in the service area, even if large amounts of the service area were under water? What is the basis for that assumption? Have post-Katrina growth rates remained the same as pre-Katrina growth rates in New Orleans, or have people and investors chosen to move elsewhere?

A recent state study evaluates anticipated sea-level rises in the San Francisco Bay Area of 16 inches by mid century and 55 inches by the end of the century. The latter rise would put at risk of flooding up to 230,000 acres, $62 billion worth of shoreline development, 270,000 people, and significant roadway, railway, and airport facilities. (BCDC, *Living with a Rising Bay,* April 2009.) If EBMUD wants to consider the effects of global climate change on customer demand, it must look objectively, comprehensively, and consistently at the potential affects of global climate change on demand in the service area. Otherwise, the EIR is not an objective analysis, but merely a promotional toll to let EBMUD use global climate change as an excuse to inflate its estimated water needs in 2040. 7

On page 2-2 the draft PEIR lists the objectives of the WSMP. We note that the Pardee expansion is inconsistent with many of the WSMP planning objectives:

- It will cause serious sociocultural and environmental justice impacts in our communities.
- It will increase risks to local public health and safety.
- It will destroy, not protect and preserve, the environment for future generations.
- It will destroy, not preserve and protect, biological resources.
- It will destroy, not promote, recreational opportunities.

Considering the degree to which the Pardee expansion conflicts with EBMUD's WSMP 2040 planning objectives, EBMUD should remove it from the plan. If that does not take place, the PEIR should acknowledge these inconsistencies. 8

On page 2-18 and 2-19, the draft PEIR has a brief discussion of future water demand for EBMUD. The water needs are not well explained, and conflict with other published EBMUD documents. For example:

- The 2005 EBMUD Urban Water Mgmt. plan says the need is 232 MGD by 2030.
- The draft PEIR says 312 MGD need by 2040 – that would be a 34% increase in only 10 years!

In its comment letter, the County of Amador also calls into question the accuracy of the water demand projections in the DPEIR. If the demand projections are indeed overstated, the Pardee Reservoir expansion is completely unnecessary. The final PEIR must fully explain the details of the water need assessment and what has changed in the four years since approval of EBMUD's last Urban Water Management Plan. It must also explain why the increase in water demand is so much higher than the historic and current population growth rates in Alameda and Contra Costa Counties. 9

V. Project Description

A project description must include, **"**A general description of the project's technical, economic, and environmental characteristics, considering the principal engineering proposals if any and supporting public service facilities." (CEQA Guidelines, sec. 15124, subd. (c).) The technical and engineering data is essential to the project description, because they in turn allow the agency to estimate the environmental impacts of a project. Without this data, true impact analyses are impossible, and neither the decisionmakers nor the public can perform their appropriate CEQA functions. "A curtailed or distorted project description may stultify the objectives of the reporting process. Only through an accurate view of the project may affected outsiders and public decisionmakers balance the proposal's benefit against its environmental costs, consider mitigation measures, assess the advantage of terminating the proposal (i.e. the 'no project' alternative) and weigh other alternatives in the balance." (County of Inyo v. City of Los Angeles (3d Dist. 1977) 71 Cal.App.3d 185, 192-193.) Such a "curtailed …project description draws a red herring across the path of public input." (Id., at pp. 197-198.)

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The most serious flaw in the project description is its failure to include estimates of even the most basic technical and engineering data regarding program components. There is no indication of how massive the new dams will be for Pardee and Bear River Reservoir, no indication of what amount of material will be used in their construction, where the material will come from, how much transportation equipment will be needed to move it, or how the enlarged project will operate. (DPEIR, pp. 3-19 to 3-24.) This basic information is needed to determine the transportation, air quality, fish and wildlife, greenhouse gas emissions and other impacts of the 2040 program. Without this basic information, it is impossible to compare the program alternatives with regard to these critical environmental impacts. Future project-specific EIRs, occurring in piecemeal fashion over the decades, and long after basic program commitments have been made, will be an inadequate substitute for a completing a proper program EIR today. EBMUD should come back to the public with a new draft PEIR when EBMUD is prepared to provide descriptions of project components that are detailed enough to allow for real impact analysis.

Throughout the draft PEIR, there are casual references to different levels of system-wide water rationing. They are simply referred to as 10 percent, 15 percent, 25 percent, etc. This implies that the rationing is evenly applied across the board to all customers. However, the discussion on page 3-5 and 3-6 indicates that this rationing policy does not apply evenly to all customers. The system-wide "10 percent" rationing policy turns out to ration industrial users 3 percent, institutional users 6 percent, residential users 12 percent, and irrigation users 19 percent. The draft PEIR should consider alternative formulas for proportioning the burdens of rationing, to see if higher rationing levels can be more easily achieved.

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Page 3-24 states that the Pardee expansion will flood the Electra Run only "during winter storms" and that the "water levels would be lowered to expose the Electra Run in time for rafting." This is one of many statements in the draft PEIR that mislead the reader about

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the use of the Electra Run. As we explained in our July 20, 2008, scoping comment, the Electra Run is used ***all year round.*** Flooding it at any season of the year damages this recreational use. Concealing this fact is not a good-faith effort at full disclosure of the impacts of the preferred portfolio. Please correct this error in your final PEIR. 12

The draft PEIR describes the preferred portfolio as providing a supply option in 2030 between Regional Desalination (yielding 20 mgd), and a combination of "Upcountry projects" (yielding from 2.2 to 70.8 mgd). (DPEIR, pp. 3-30 to 3-31.) The estimated EBMUD yield for expanding Bear River Reservoir is 2.2 mgd. The estimated EBMUD yield for the Interregional Conjunctive Use Project (IRCUP) is 17.4 mgd. The estimated EBMUD yield for expanding Pardee Reservoir is 51.2 mgd. (DPEIR, pp. 3-30 to 3-31.) Given those numbers, it would seem that either Lower Bear expansion and IRCUP's combined 19.6 mgd *or* Expanded Pardee's 51.2 mgd are equivalent or more than equivalent to the yield of the Regional Desalination plant in the preferred portfolio. The independence of IRCUP and expanding Pardee is further reflected in Alternatives A and B, that include IRCUP and exclude expanding Pardee. (DPEIR, Table 3-3.) 13

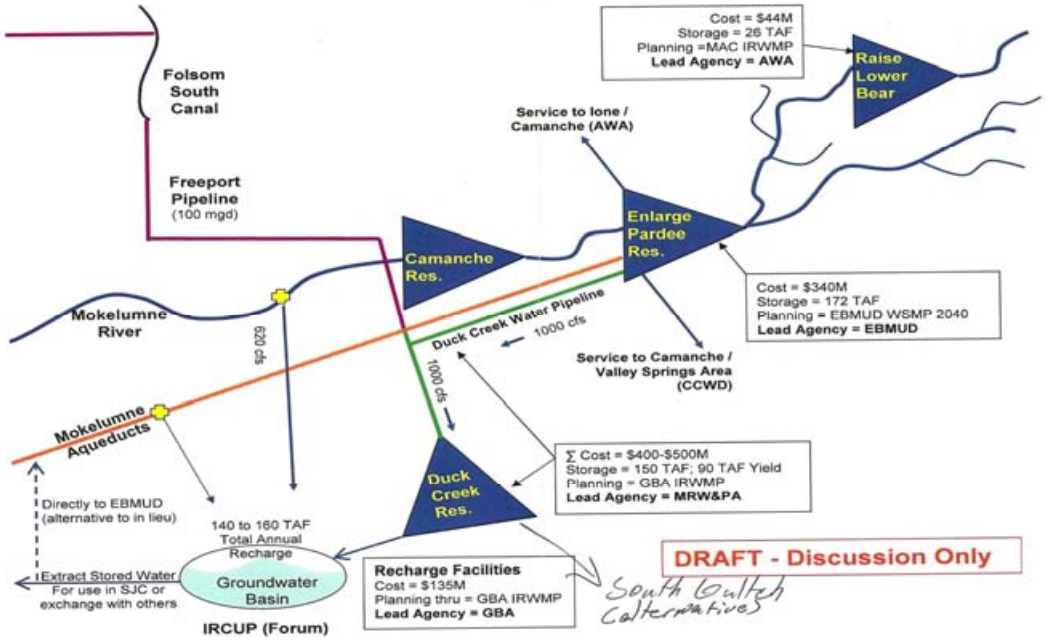
However, recent representations from EBMUD to Amador County officials have called into question the degree to which IRCUP and expanding Pardee are feasible and independent program components.

At a meeting of the Amador Water Agency on April 23, 2009, EBMUD board vice president John Coleman took issue with AWA's letter indicating support for IRCUP and opposition to expanding Pardee as proposed. He indicated that AWA's letter opposing the Pardee expansion was "not helpful" to IRCUP. He indicated that not expanding Pardee would kill the IRCUP component as well. If IRCUP and the Pardee expansion are not independent options for meeting program demand, but are in fact both inexorably linked, the final EIR should be clear on this. On the other hand, if Mr. Coleman's statement was just a political threat indicating that EBMUD will pull out of IRCUP if the Amador County Water Agency opposes expanding Pardee, then the EIR is accurate as written. Please clarify this in the final PEIR. 14

Another source of confusion is the recent re-description of the IRCUP project component. The draft PEIR describes the project as delivering Mokelumne River water to "San Joaquin County groundwater banking facilities." Now, EBMUD and the IRCUP "participants" are describing IRCUP as:

> "capturing high water flows in the Mokelumne during winter and storing the additional water in a groundwater basin and/*or in additional storage at Lower Bear River, Pardee or Duck Creek Reservoirs.* The multi-agency study is designed to increase a firm water supply for Amador and Calaveras Counties, recharge groundwater in San Joaquin County and provide drought protection for EBMUD." (From AWA press release on *Amador Ledger Dispatch* website, 4/29/09, emphasis added.)

Similarly, the IRCUP planning group has distributed a map that includes the expansion of the Upcountry reservoirs and the construction of Duck Creek Reservoir.



These are two very different project descriptions. The latter description now links IRCUP to expansion of Upcountry reservoirs. The latter description now links IRCUP to a new reservoir at Duck Creek, which is not mentioned in the draft PEIR as a facility associated with IRCUP. This is of special concern, for construction of the Duck Creek facility would involve the condemnation of private property on which the California Department of Fish and Game holds a conservation easement. Such opportunistic condemnation of property undervalued as a consequence the sale of a conservation easement to the state, will create a huge disincentive for other landowners to enter into conservation easements and could totally undermine one of the most effective land conservation tools employed by nonprofit corporations as well as local, state, and federal agencies. As such, it would be a significant area of controversy. If the revised version of IRCUP is under consideration as a project component, this potential impact would have to be thoroughly disclosed and evaluated in the final PEIR. Please clarify the description of the IRCUP component in the final PEIR, and analyze its impacts accordingly.

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While the draft PEIR is under public review, we encourage EBMUD, its staff, and its directors to refrain from meeting with individual stakeholders and redefining the preferred portfolio and alternatives. It only confuses matters. “An accurate, stable, and finite project description is the sine qua non of an informative and legally sufficient EIR.” (County of Inyo v. City of Los Angeles (3d Dist. 1977) 71 Cal.App.3d 185, 193.)

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After the public comment period on the draft PEIR, it would be appropriate to meet *together with all interested stakeholders* to try to craft *a new, feasible alternative* for

EBMUD's future water supply that will not harm communities and the environment. That new alternative could be analyzed in the final PEIR prior to EBMUD adoption. 15

Figure 3-14 on page 3-32 provides a very nice visual representation of the preferred portfolio meeting EBMUD's projected water needs *without* development of the Upcountry projects. We like that graphic. Please keep it in the final PEIR. 16

Pages 3-53 and 3-54 list the agencies that will have to provide permits or other approvals for the project components. Absent from the list is the Federal Energy Regulatory Commission. They have jurisdiction over the hydroelectric components of the program. Please add them to the list in the final PEIR. 17

This section of the draft PEIR does not specifically indicate if EBMUD will need an easement to inundate the BLM lands upstream of the Highway 49 Bridge with the Pardee expansion. It is unclear to us how such an easement could be obtained when the BLM's management plan indicates that it will manage this area to protect the values that make the area eligible for Wild and Scenic designation and recreation classification. (BLM 2008 SRMP, p. 38.) This calls into question the feasibility of a major component of the preferred portfolio that has significant impacts Upcountry. Please clarify this in the final PEIR. 18

VI. Setting

" 'An EIR must contain an accurate description of the project's environmental setting. An EIR "must include a description of the physical environmental conditions in the vicinity of the project ... from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant.' (Guidelines, § 15125, subd. (a).) There is good reason for this requirement: 'Knowledge of the regional setting is critical to the assessment of environmental impacts.... The EIR must demonstrate that the significant environmental impacts of the proposed project were adequately investigated and discussed and it must permit the significant effects of the project to be considered in the full environmental context.' (Guidelines, § 15125, subd. (c).) We interpret this Guideline broadly in order to 'afford the fullest possible protection to the environment.' (*Kings County Farm Bureau, supra*, 221 Cal.App.3d 692, 720.) In so doing, we ensure that the EIR's analysis of significant effects, which is generated from this description of the environmental context, is as accurate as possible." Among the other relevant aspects of the environmental setting, the agency must divulge harm to the environment caused by current and past mismanagement, and any efforts being made to remedy that harm that might affect the proposed project. (See, Friends of the Eel River v. Sonoma County Water Agency (2003) 108 Cal.App.4th 859, 874.) 19

While the environmental setting section does list the relevant regulatory agencies and their responsibilities, it does not provide the reader with any idea of the effectiveness of their regulatory efforts on the physical environment. How often and why are the water

quality standards in the Basin Plans breached in the Mokelumne River watershed? Why have the county and regional air boards failed to achieve ambient air quality standards for human health in the San Joaquin Valley and Upcountry? How often have California Department of Fish and Game and the U.S. Fish and Wildlife Service provided incidental take permits in the habitat range for the threatened and endangered species in the Mokelumne watershed, and what cumulative effect has this had on their habitat? What is the current state of Delta fisheries, and what impacts have past water diversions had on them? What is relevant for environmental review purposes is the current state of the environment, and what has caused it. Only with this complete environmental setting information can the lead agency evaluate the significance of proposed program impacts and craft methods to successfully mitigate those impacts. 19

On page 4-3, Table 4.1 lists the locations of preferred portfolio components. The table lists the IRCUP as located in part in Alpine County. We have yet to see any version of the IRCUP that includes a component in Alpine County. Is this an error in the table, or is there something else about IRCUP that is not being fully disclosed in the draft PEIR? Please clarify this in the final PEIR. 20

A) Hydrology

On page 4.2.A-3, the draft PEIR mentions the Joint Settlement Agreement. Does the gain-sharing provision of the JSA apply to the Freeport Project? 21

The table on page 4.2.A-4 lists system channel losses. Is channel loss exacerbated by over-pumping of the aquifer in San Joaquin County? 22

On pages 4.2.A-14 and 4.2.A-15, the Federal Regulatory Setting section neglects to mention that a FERC license is required for each hydroelectric component of the program. It also fails to mention the current FERC license for PG&E's Mokelumne River Project (FERC no. 137) and related settlement agreement that have established a flow regime for the portion of the Mokelumne that may be affected by the raise of Lower Bear Reservoir. 23

B) Land Use & Recreation Setting

Pages 4.2.D-5 and 4.2.D-6 describe recreation in the Electra recreation area of the Mokelumne River. In addition to the uses noted, that area is also used for wildflower viewing and bird watching, especially in the spring. The area's proximity to the Amador County seat of Jackson, its relatively flat terrain, and its road access make it an especially valuable recreation area for local families, local seniors, and the physically challenged. Please add this information to the final PEIR. 24

Page 4.2.D-6 describes the use of the Electra Run for whitewater rafting and kayaking. One important piece of information missing from the setting section is that the Middle Bar Reach/Run combines with the Electra Run to create a whitewater reach down to the Middle Bar Bridge. Another key piece of information is left out of this description of the 25

setting. As we explained in our July 20, 2008, scoping comment, the Electra Run is used ***all year round.*** Flooding it at any season of the year harms and could curtail this recreational use. Concealing these facts is not a good-faith effort at full disclosure of the impacts of the preferred portfolio. Please correct this error in you final PEIR. 25

Page 4.2.D-7 references policies in the 1988 BLM management plan that encourage "water-based recreation." That plan is obsolete and has been superseded by the February 2008 Sierra Resources Management Plan, that has much stronger recommendations regarding ***river-based*** recreation. Appendix E in the EIS for that plan is a National Wild and Scenic River Eligibility and Suitability Study. That study confirms that the portion of the Mokelumne River from 300 feet below the Electra Afterbay to 100 feet below the Highway 49 Bridge is eligible for National Wild and Scenic River designation. Page 38 of the Sierra Resources Management Plan recommends to Congress that a 20.2-mile segment of the Mokelumne River (including the aforementioned section) be designated as a National Wild and Scenic River. Map 8b of the 2008 Sierra Resources Management Plan confirms the BLM's recommendation that this area be designated as a Wild and Scenic River, under the recreation classification. Please make this correction in the final PEIR. 26

Page 4.2.D-9 provides a two-sentence summary of efforts in the Delta to protect water quality and biological resources, which are among the most significant environmental problems in California today. It refers readers to Sections 8.3.4 through 8.3.6 for further information. Those sections provide no details on the causes of the problems, the physical efforts underway to solve them, and the impact of the proposed EBMUD program in those contexts. Could the efforts to protect the Delta limit the future diversions of the Mokelumne River, upon which so many of EBMUD's 2040 program components depend? This is critical information that the public and decisionmakers need. While summarizing technical details and incorporation of documents by reference is allowed by the CEQA guidelines, such incorporation is conditioned on providing a summary of the critical information in the document, and an explanation of its relevance to the EIR. (CEQA Guidelines, secs. 15147 & 15150.) In contrast, the draft PEIR provides little more than reprinting of an abstract or a library index card. In the final PEIR, provide a more detailed description of the existing physical setting, the past mismanagement that has caused the problems, and the ongoing management changes in the Delta, where so many of the impacts of the proposed EBMUD program will contribute to already significant cumulative impacts. 27

B) Transportation Setting

Page 4.2.E-3 of the draft PEIR states that, "No major highways extend through the Upcountry region of the WSMP 2040 Preferred Portfolio Study Area (in the counties of Plumas, Calaveras, Amador, and Alpine)." This is a totally misleading statement regarding the traffic setting, and the additional information on page 4.2.E-4 does little to correct it. In fact, State Route 49 passes through Calaveras and Amador counties, and is the transportation spine that links the gold country counties from north to south. In 28

addition, State Highway 88 in Alpine and Amador counties is a key east-west interstate transportation corridor linking Nevada and the Central Valley of California.

The one-paragraph setting section goes onto discount the importance of our local road system, characterizing it as merely "a variety of public and private roadways." Again this is a total mischaracterization of the importance of local roadways in the rural foothill counties.

Upcountry residents rely upon their roads as the arteries of commerce, public service, community relations, and family life. It is through these highways they commute, supply their businesses, and receive their customers. Safe and free-flowing thoroughfares are the difference between life and death when law enforcement, fire, and ambulance services are called into action. Their rural roads take them to the potlucks, dances, churches, and volunteer endeavors through which distant strangers, isolated by rural acreage, are transformed into communities of caring neighbors. It is on these roads that children return home from school, that parents return home from work, and that the entire spectrum of life's errands is run. 28

Upcountry residents are currently suffering from declining levels of service on their roads, due to the repeated failures of local governments to mitigate the impacts of their land use actions. Upcountry residents use now congested and often unsafe county roads. Traffic increases are threatening them with the noisy disruption of their treasured peace and quiet. Upcountry residents breathe unhealthy air, polluted by motor vehicles stuck in traffic. The ills identified above would be exacerbated by the lengthy dam construction and growth-inducing water supply projects that are part of the EBMUD 2040 preferred portfolio. Please add this additional information to the transportation setting section of the final PEIR. Please also provide a map of relevant highways and their congested intersections, and a table reflecting the level of service at those intersections. Please note the current accident rates on the relevant stretches of those highways. Please note the funding shortfalls in the Regional Transportation Plans in Calaveras and Amador Counties that make significant road upgrades unlikely in the foreseeable future.

Page 4.2.E-4 states, "No railroads, bus services or airports occur in the vicinity of Pardee Reservoir." Actually, there is a regionally important airport right in Martell, Westover Field. The Airport Manager, David Sheppard, wants to know if EBMUD has circulated the draft PEIR to the Federal Aviation Administration. His next question is whether the increased size of Pardee Reservoir would add more water and shorebirds to the area. He is concerned about the increased risk of bird strikes. The VOR/DME instrument approach requires aircraft to fly over Pardee reservoir at 3,000 ft msl. The reservoir is a landmark used to set up approaches. Please add this information to the setting section of the final PEIR and evaluate the impact. 29

C) Air Quality Setting

The Air Quality setting of the draft PEIR does provide information on the current ozone non-attainment status of the Sacramento, San Joaquin, and Mountain Counties air basins. 30

However, it fails to explain why, after over 35 years since the passage of the Federal Clean Air Act, and millions of dollars invested in clean air technologies, and huge reductions in the amount of emissions from individual stationary sources (e.g. industries) and mobile sources (e.g. motor vehicles), people in these locations continue to breathe unhealthy air for two to four months of each year.

What the draft PEIR does not mention is that these efforts have failed to result in compliance with health-based ambient air quality standards, because local governments (including Calaveras County) have made no effort to limit the number of stationary and mobile sources they add on an annual basis. In fact, from the year 2000 to 2006, neither emissions of nitrogen oxides (ozone precursors) nor ambient levels of ozone (a key smog component) in Calaveras County show a trend toward improvement. (See California Air Resources Board, Almanac of Emission Projection Data, Calaveras County; California Air Resources Board, Ozone Trends Summary: San Andreas-Gold Strike Road.) Thus, despite huge personal financial investments in air pollution reduction, lack of local government accountability has prevented Calaveras County and the region from achieving health-based air quality standards. To make matters worse, decades of research indicate the productivity of agricultural crops key to Calaveras County (pine trees and wine grapes) are also harmed by these substandard air pollution levels. 30

In addition, the setting section does not disclose that Calaveras County has been issuing building permits for 400 to 800 units of housing consistently over the years from 2000 - 2005, without the benefit of air pollution mitigation, and that the County has developed an inventory of over 15,000 similar vacant parcels, posing a huge potentially significant impact on air pollution when they build out. Clearly the unmitigated cumulative impacts are potentially huge, and must be addressed for this and all future projects. Please include this information in the air quality setting section of the final PEIR. Also, provide similar easily available data for the other Upcountry counties. This setting information is relevant because the EBMUD 2040 preferred portfolio will add air pollution emissions to these areas from project construction, from project operations, and from growth induced by providing water to Amador and Calaveras counties.

D) Visual Setting

Pages 4.2.I-5 and 4.2.I-6 uses technical jargon to characterize the visual setting of Pardee Reservoir and the Mokelumne River, while providing no pictures that show the visual setting. At no point in the discussion of the setting does this section mention the incredible profusion of wildflowers that draw so many visitors to Electra Road in the spring. No photos of this display are provided in the draft PEIR. Please include a discussion of the wildflowers in the visual setting section of the final PEIR. Please include an appendix to the EIR with a photo display of the wildflowers, riparian zone, beaches, scenic vistas, and the Mokelumne River itself. We would be glad to provide a CD with a selection from which you may choose. A good-faith effort at full disclosure of the impacts to the visual setting would include photos of the visual setting. This information is needed in the EIR so that members of the public and decisionmakers, who 31

may be unfamiliar with the site, have the information they need to make an informed decision regarding its regular inundation.

Page 4.2.I-6 also describes the summer visual quality of Pardee Reservoir. It states, "As summer progresses, reservoir drawdown typically exposes a ring of bare soil along the shoreline, negatively affecting the visual quality." We agree. It would be both a significant impact and a tragedy to drown any part of the Electra Road wildflower display or riparian zone and to convert the area into "a ring of bare soil … negatively affecting visual quality" in the summer. As pointed out in the County of Amador's letter, the ugly bathtub ring would be highly visible from Highway 49, used every day by visitors who visit our counties in large part because of their scenic beauty. 31

E) Hazards

While this setting section is supposed to cover fire hazards, the setting section does not mention that the Middle Bar Bridge currently provides a critical evacuation route from an up-canyon wildfire for local residents and people recreating along the river. It also provides first responder access for law enforcement, fire and medical emergencies. This is relevant since the preferred portfolio proposes to remove this bridge. Please add this information to the final PEIR. 32

F) Public Services Setting

Page 4.2.K-3 describes the fire protection and law enforcement setting Upcountry. This page only states who is responsible for providing the service. There is no indication of the adequacy of existing services in these Upcountry locations. In Calaveras County, the Sheriff's recent staffing study showed a current staff shortage of 9 percent, and a projected growing shortage so long as impact mitigation fees are not established to help services meet growing demand. (Calaveras County Sheriff's Department, Staffing Analysis and Strategic Plan, Dec. 20007.) In Amador County, the current LAFCO Municipal Service Review found a host of legal violations by a chaotic assortment of CSDs performing unauthorized services and serving outside their district boundaries. It also noted the severely limited wastewater treatment capacity in the county, and identified areas with minimal and inadequate fire protection services. (Amador County LAFCO, Municipal Service Review Findings, August 2008.) This is relevant to the PEIR, because the preferred portfolio includes providing growth-inducing construction projects and water supplies to these counties, where public services are already stretched far too thin. Please review the aforementioned reports (available online), and include the relevant setting information in the final PEIR. 33

G) Energy Setting

On page 4.2.K-12 a paragraph on the setting for solid waste management is inserted into the section otherwise devoted to the energy setting. While this seems like an odd location for the topic, for the Upcountry area there is a connection. Amador County has closed its landfill, and trucks its solid waste to Nevada for disposal. This is relevant to the PEIR, 34

because the preferred portfolio includes providing growth inducing construction projects and water supplies to a county with a solid waste management system that wastes a lot of energy in long-haul waste transportation. 34

VII. Impacts and Mitigation

We first note that we concur with the excellent environmental impact comments submitted to EBMUD by Mr. Brian Jobson.

Page 5-2 indicates that most of the impact analyses are qualitative rather than quantitative because of a lack of project description details. It concludes that this approach is consistent with program-level CEQA evaluation. This is incorrect.

A program EIR is not supposed to be a document devoid of quantitative impact analysis and filled with promises for future studies. A program EIR is supposed to, "Provide an occasion for a ***more exhaustive*** consideration of effects and alternatives than would be practical in an EIR on an individual action." A program EIR is supposed to, "Ensure consideration of cumulative impacts that might be slighted in a case-by-case analysis." A program EIR is supposed to, "Allow a Lead Agency to consider broad policy alternatives and program-wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts." (CEQA Guidelines, sec. 15168.)

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As the courts have said:

"Calling it a 'program' does not relieve the County from having to address the significant environmental effects of that project. Respondents are therefore incorrect in asserting that the County may (1) deem the environmental effects of adopting the specific plan, whatever those effects may be, to be significant, then (2) approve the specific plan, and then (3) at some later time determine what the significant environmental effects are of the specific plan that has already been approved." (Stanislaus Natural Heritage Project v. County of Stanislaus (1996) 48 Cal.App.4th 182, 202-203.)

"[A] decision to 'tier' environmental review does not excuse a governmental entity from complying with CEQA's mandate to prepare, or cause to be prepared, an environmental impact report on any project that may have a significant effect on the environment, with that report to include a detailed statement setting forth '[a]ll significant effects on the environment of the proposed project.' (Pub. Resources Code, § 21100.)" (Stanislaus Natural Heritage Project v. County of Stanislaus (1996) 48 Cal.App.4th 182, 197.)

"'[T]iering' is not a device for deferring the identification of significant environmental impacts that the adoption of a specific plan can be expected to cause." (Stanislaus Natural Heritage Project v. County of Stanislaus (1996) 48 Cal.App.4th 182, 199.)

Even up here in the remote Sierra foothills, a county like El Dorado, with the help of EDAW, provided quantitative comparative analyses of alternatives in a program EIR for impacts such as loss of agricultural lands, traffic, habitat loss, and air pollution. (See EIR for El Dorado County 2004 General Plan.) We do not understand why a sophisticated urban agency like EBMUD, with the help of EDAW, has failed to do so here. It is not as if EBMUD is at the mercy of another agency that refuses to provide the needed information. Providing (or not providing) this project description information is entirely within the control of EBMUD. 35

EBMUD should come back to the public with a draft PEIR when EBMUD is prepared to provide descriptions of project components that are detailed enough to allow for real impact analysis. We are not saying that they need final technical drawings or exact estimates. We are saying that they need enough information with which to forecast impacts. (CEQA Guidelines, sec. 15144.) Because the foundational project description information is missing, all the remaining steps in the environmental review process (i.e. impact assessment, evaluation of significance, impact mitigation, re-evaluation of significance, findings of fact, and statement of overriding considerations) are all prejudicially tainted.

Page 5-2 also states that the PEIR will conservatively characterize impacts as potentially significant because detailed information concerning the project component was not available. However, as noted below, in some cases the PEIR actually assumes that potentially significant impacts will be mitigated in the future without any factual basis for making that conclusion. Please correct this in the final PEIR. 36

A) Hydrology Impacts

Regarding treatment facility wastes, page 5.2.A-5 indicates that "All wastes would be treated to comply with individual treatment plant permits … and would not exceed any discharge limits designed to protect water quality." While the draft PEIR relies on this statement to conclude the impacts are less than significant (See page 5.2.A-7), the draft PEIR provides no data to back up the assumption. Is it true that no EBMUD facility, or sanitary sewer system they discharge to, has ever exceeded a discharge limit designed to protect water quality? In the final PEIR, please provide the data to support the assertion. Please provide a list of the sanitary systems that EBMUD would discharge to, and a list of any permit violations they have had in the past. Please revise the final PEIR to reflect the facts revealed by your investigation. 37

Page 5.2.A-6 states that an expanded Pardee Reservoir would provide cooler water downstream in the summer and autumn months, and concludes that this would be a beneficial impact. This conclusion is repeated on page 5.2.A-7. This conclusion is not supported by any site-specific study or evidence and is premature. 38

On pages 5.2.A-13 and 5.2.A-14, the draft PEIR describes a program to monitor water quality and groundwater levels in well networks. Based upon this "mitigation measure" the draft PEIR concludes that the water level and contamination impacts of storing 39

surface water in the aquifers are less than significant. This is incorrect. As noted on page 5- 2, a mitigation measure is something that avoids, minimizes, rectifies, reduces, eliminates, or compensates for an impact. The proposed mitigation measures commits EBMUD to do nothing more than monitor impacts. Mere monitoring does nothing to mitigate an impact. If EBMUD wants to mitigate the impact it would have to marry the monitoring to an action plan that would trigger specific mitigation actions when specified conditions or events are discovered by the monitoring. Mere monitoring is an insufficient basis for a conclusion that the impacts will be insignificant. In the final PEIR, please commit to a real mitigation program, or change the conclusion that the impact will be insignificant.

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The most glaring problem with this section of the EIR is its failure to comprehensively address the impacts of the preferred portfolio on the lower Mokelumne River and the Delta.

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For example, page 5.2.A-20 reviews, in isolation, the impacts of the Sacramento Basin Groundwater Banking component on the Delta. In doing so, it incorrectly assumes that yet another extraction of 4.2 mgd from the Delta will not be significant, because it is small relative to the existing extractions. This misguided line of illogical impact analysis has been discredited by the courts. An EIR must not estimate the significance of an impact on the environment by comparing it to the impact of other projects. An EIR instead looks at the significant cumulative impact of all the projects, and must acknowledge any substantial contribution of a proposed project to the cumulative impact. (Communities for a Better Environment v. California Resources Agency (2002) 103 Cal.App.4th 98.) In fact, the more severe the existing environmental problems are, the lower the threshold for treating the project's cumulative impacts as significant. (Kings County Farm Bureau et al. v. City of Hanford (5th Dist. 1990) 221 Cal.App.3d 692, 718-721 [270 Cal.Rptr. 650].) The Delta is one of the most seriously impaired ecosystems in the state of California. Given the impaired condition of the Delta ecosystem, it is prejudicially misleading for the draft PEIR to make the unsupported statements that further water removals are “not anticipated to be significant” and “likely not substantial.” (DPEIR, pp. 5.2.A-20 and 5.2.A-21.) Please correct these errors in the final PEIR.

The draft PEIR again repeats the invalid excuse that the impact analysis cannot be performed because the project component has not been designed, and defers the impact analysis to subsequent project-level EIRs. As noted above, EBMUD should come back to the public with a new draft PEIR when EBMUD is prepared to provide descriptions of project components that are detailed enough to allow for real impact analysis. On page 5.2.A-21, the PEIR makes the same analytical errors (discounting impacts, refusing to do impact analysis due to lack of project details, and deferring analysis to future project-level EIRs) when evaluating the impacts of the IRCUP on the Delta. Please correct these errors in the final PEIR.

The discussions in the draft PEIR on pages 5.2.A-23 and 5.2.A-24 do not address the effect on the health of the river system below Camanche Reservoir and in the Delta, from

reducing wet-year pulse flows, as may occur with the Pardee expansion or the IRCUP components. Instead, the draft PEIR simply admits that "specific impacts resulting from these hydrologic changes have not been evaluated." The draft PEIR again makes the analytical mistake of saying the impact is insignificant because it is only 2.4% of the total diversions, and assumes that the impacts will be insubstantial and insignificant. (5.2.A-24.) Please correct these errors in the final PEIR. 40

The bottom line is that EBMUD's removal of more water from the Mokelumne River would divert more water from the ailing Delta ecosystem at a time when other local, state, and federal agencies are struggling to save it. The final PEIR needs to admit that significant impact.

B) Geology Impacts

This section of the draft PEIR is puzzling. The setting section did a good job of identifying Pardee Reservoir as in the Bear Mountain Fault Zone, and explaining the possibility of reservoir-induced seismic activity. (DPEIR, Sec. 4.2.b.). However, the impact assessment in this section simply punts. It does no risk assessment and makes no recommendations for mitigation measures to reduce the risk. The people who live Upcountry have lives and property at stake should a reservoir-induced earthquake hit the area. They deserve to have the risks assessed, reported, and mitigated. Please correct these errors in the final PEIR. 41

C) Fish and Wildlife Habitat Impacts

Our scoping comment asked for the PEIR to evaluate impacts on a number of fish and wildlife species. The Pardee expansion may harm populations of trout and other river-dependent species. The Lower Bear expansion may destroy spotted owl and goshawk habitat, harm mountain yellow-legged frogs, and disturb breeding patterns of other species, including Peregrine falcons. Project-induced changes to the flow regimes in the North Fork and Main Mokelumne River may harm aquatic resources, including breeding populations of rare foothill yellow-legged frogs. Raising Pardee may change the timing, temperature, and volume of flows in the Lower Mokelumne River and the Delta, resulting in harm to wildlife inconsistent with WSMP objectives. Pardee expansion would destroy potential restoration habitat for Mokelumne River salmon and steelhead. 42

Section 5.2.C of the DPEIR assesses fish and wildlife habitat impacts and identifies mitigation measures.

Some of the mitigation measures in this section call for surveys and mitigation plans to be developed "prior to implementation of any project." (See Mitigation Measures 5.2.C-1a, 5.2.C-2b, 5.2.C-2c, 5.2.C-4a, 5.2.C-5a, 5.2.C-7a, and 5.2.C-8a.) One mitigation calls for field surveys only "if suitable habitat for special-status invertebrates is found" by some unspecified person engaged in unspecified activities at an unspecified time. (See Mitigation 5.2.C-3b.) One mitigation calls for a "pre-construction survey." (See Mitigation 5.2.C- 6a.) While surveys of suitable habitat will occur "prior to 43

implementation of any project," we would like to remind EBMUD that the appropriate time for surveys of habitat and proposals for mitigation is also prior to the project-level environmental reviews. It is one thing to fail to include site specific impact analyses and mitigation plans in the program EIR. It is quite another to skip them again at the project level CEQA review. In the final PEIR, please at least commit to conducting surveys and propose specific mitigation in the project level CEQA reviews. 43

Section 5.2.C does claim to mitigate stream flow changes during the proposed project's construction phases for the Pardee and Lower Bear expansions. (DPEIR, p. 5.2.C-17.) However, the draft PEIR makes no analysis of the impacts to fish and wildlife associated with the long-term Mokelumne River flow changes from operation of the expanded Pardee and Lower Bear reservoirs. Please rectify this prejudicial omission in the final PEIR. 44

Section 5.2.C proposes to mitigate construction impacts on breeding bird populations by avoiding construction during the breeding season. In the case of Lower Bear Reservoir, the construction season is the same as the breeding season due to the reservoir's high elevation. 45

D) Recreation & Commerce Impacts

Because the proposed project involves flooding areas of public recreation in the Mokelumne River Canyon, in our July 20, 2008, scoping comment, we asked EBMUD to evaluate the impacts of the proposed project on recreation and commerce.

The DPEIR analyses these recreational impacts on pages 5.2.D-7 and 5.2.D-8. The analysis underestimates the project impacts and overestimates the benefits of the proposed mitigation.

First, the analysis is disturbingly contradictory regarding the impacts of seasonal flooding of the Electra whitewater run and the degree of mitigation proposed. On page 5.2.D-7 the draft PEIR states that, "water levels would be lowered to expose the Whitewater Run in time for rafting in the spring and summer months." However, on the very next page, the proposed mitigation states that an operation plan for the enlarged Pardee Reservoir would preserve the Electra whitewater run only "during the summer months." This is confusing. Will the run be available in both the spring and summer, or only during the summer? An EIR must be written in plain language "so that decision-makers and the public can rapidly understand the documents." (CEQA Guidelines, sec. 15140.) An EIR that makes a promise on one page, and then revokes half the promise on the next page, cannot be understood by anyone. 46

Second, the mischaracterization of the Electra Run as used only in the spring and summer underestimates the impacts of the Pardee expansion. As we explained in our July 20, 2008, scoping comment, the Electra Run is used ***all year round.*** The Mokelumne's Electra Run is considered one of the best, if not the best, places to learn to kayak in the 47

state. It's valued for its scenic beauty. If there's a large bathtub ring around the river, or the only real Class III rapid (below Hwy 49) is inundated, or miles of the river are turned into a flat lake, kayaker use of the river will drop, as will corresponding benefits to the local economy. A 1997 economic study based on El Dorado County figures estimated that boaters spend $70 a day in a local economy. Flooding this area in any season of the year significantly harms this recreational use. Concealing this fact is not a good-faith effort at full disclosure of the impacts of the preferred portfolio. Please correct this error in your final PEIR. 47

Third, increasing the size of Pardee Reservoir will create a larger inundation zone within which state law will ban "body-contact" recreation. That means places where people can now swim, inner tube, wade, and fish in the river will be off-limits to them unless they're in a boat or wearing full chest waders. Since the state Department of Health Services considers the no-contact zone to be the *extent of the reservoir when full*, recreation would be limited even if the reservoir is drawn down in summer. Concealing this fact is not a good-faith effort at full disclosure of the impacts of the preferred portfolio. Please add this critical impact information to your final PEIR. 48

Fourth, as we explained in our July 20, 2008, scoping comments, the combined Electra-Middle Bar run provides the opportunity for commercial rafting. That's one reason local residents and governments supported access to the Middle Bar Reach. Negotiations to arrange permits are currently underway, and BLM is seeking an MOU with EBMUD to manage recreation on the river. OARS, a local rafting outfitter, is interested in conducting commercial trips. Commercial rafting would provide both economic development for upcountry communities (jobs, revenue, spending in local businesses, and resulting multiplier effect income and revenue) and a river experience for young children and older rafters who may not be capable of running more-difficult rivers. Elimination of this potential is a significant impact. 49

Fifth, the section makes no mention of the fact that, after decades of work by various agencies including BLM, PG&E, and nonprofits (including the Foothill Conservancy), a new legal access point and boating takeout will be constructed this year just west of the Highway 49 Bridge at a cost of about $700,000. Flooding of this facility would be a significant impact. 50

Sixth, the mitigation for flooded recreation sites is particularly general and vague: "Replace recreational features displaced by enlargement of reservoirs." There is no list of features that will be replaced. There is no commitment to replace the features with ones of equivalent quality and capacity to the inundated facilities. There are therefore no standards to which EBMUD can be held accountable for replacing the lost recreational features. To ensure that mitigation is adequate, a lead agency "'[S]hall provide that measures to mitigate or avoid significant effects on the environment are fully enforceable through permit conditions, agreements, or other measures' (§ 21081.6, subd. (b)) fn. 4 and must adopt a monitoring program to ensure that the mitigation measures are implemented (§ 21081.6, subd. (a)). The purpose of these requirements is to ensure that feasible mitigation measures will actually be implemented as a condition of development, 51

and not merely adopted and then neglected or disregarded." (Federation of Hillside & Canyon Associations v. City of Los Angeles (2000) 83 Cal.App.4th 1252, 1261.)

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Seventh, the replacement of the access facilities at the Electra and Middle Bar runs as described is inadequate mitigation. The recreational facilities ***are the river runs themselves***, not merely the parking lots and bathrooms. ***Free-flowing river reaches cannot be replaced or re-created.*** Thus, the impact on river recreation after mitigation is still significant.

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Please rectify these errors in the final PEIR

E) Transportation and Public Safety

Because the Pardee expansion would include removal of the Middle Bar Bridge, restored in 2000 in part because of its value to local traffic circulation and emergency evacuation, our scoping comment asked that the PEIR evaluate the public safety and traffic circulation impacts of the project. Removal of the Middle Bar Bridge makes Gwin Mine and Middle Bar roads dead ends. This would increase driving by local residents to work and shopping, and eliminate a critical wildland fire escape/emergency vehicle access route. Removing the bridge would put lives and property at grave risk and increase the likelihood of catastrophic wildland fire on EBMUD's watershed lands. This is a significant impact. Yet the traffic and public safety impacts of removal of the Middle Bar Bridge are not evaluated in the traffic impact or hazard impact sections of the DPEIR. (DPEIR, secs. 5.2.E & 5.2.J.) "A prejudicial abuse of discretion occurs if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process." (Kings County Farm Bureau et al. v. City of Hanford (5th Dist. 1990) 221 Cal.App.3d 692, 712 [270 Cal.Rptr. 650].) Please rectify this prejudicial omission in the final PEIR.

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F) Cultural Resource Impacts

The greatest omission from this section is that it fails to consider the impacts of expanding Pardee Reservoir on current and ongoing cultural practices of the native Me-wuk people of the foothills The Me-wuk still live in Amador and Calaveras counties. They still have a black willow gathering site in the Middle Bar area. The Me-wuk still consider this site sacred. The Me-wuk manage the willow stand and gather material there for baskets and cradleboards. The tribal elders use the experience to teach the Me-wuk language and culture to their grandchildren. It's also a site for gathering traditional tribal medicine materials. Inundating this sacred site will end these cultural practices. While it is a great loss to destroy the relics of past cultures, it is an even a greater loss to snuff out the *last living remnants* of noble cultural practices that date back millenniums. Please show enough respect to the Me-wuk to at least acknowledge the significance of this impact in the final PEIR.

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While we agree that archaeological and historical documentation is certainly important in preserving history, we disagree that it reduces cultural resource impact of expanding Pardee to a level of insignificance.

Draft PEIR Appendix E lists an inventory of 42 separately identified and/or potential cultural resources, 18 of which are either recommended or are potentially eligible for listing with the California Register of Historic Resources. Most of those sites and artifacts pertain to prehistoric American Indian occupations.

Additionally, because the earliest historic Gold Rush activities also occurred in this area, the historical and cultural resources of the Middle Bar-Electra area have statewide importance. The ruins around Middle Bar are the remains of the historic Gold Rush community of Middle Bar. The foundation of the state's second hydroelectric powerhouse, the 1897 Blue Lakes Powerhouse, is still visible on Electra Road. It would be within the inundation zone of the enlarged reservoir. Again, documentation, while important, is insufficient mitigation.

The 1912 Middle Bar Bridge was listed with National Register of Historic Places in 1985. It is the third such bridge on the site of this historic river crossing. The bridge was restored and seismically retrofitted in 2000 by local governments, using state grant funds. The destruction of this historic structure presents a cultural loss, and it would also eliminate a critical emergency access and escape route for local residents. Documentation or replacement with a fishing pier will not mitigate the loss of this significant local landmark.

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Finally, we note that the historic and cultural resources of the area are among the reasons the Mokelumne is eligible for National Wild and Scenic River designation. (BLM, SRMP EIS, pp. E-5, E-9.) The BLM's current management plan indicates that, "Management and development in the river corridor cannot affect the river's eligibility or suitability classification." (BLM, SRMP, p. 38.) We support that policy and encourage EBMUD to follow it as well.

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We agree with the Amador County Historical Society that mere documentation cannot mitigate the importance of having these resources available for study and experience in place. Please recognize the significance of these impacts in the final PEIR.

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G) Visual Resource Impacts

On page 5.2.I-6, the DPEIR admits that, even after mitigation, the visual impacts of the project remain potentially significant on the views from Highways 49 and 88, and on the scenic resources in the areas inundated by the enlarged reservoirs, and later drained leaving a denuded soil ring. After completing the final PEIR, please adopt an alternative that does not include an enlarged Pardee Reservoir.

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H) Environmental Justice Impacts

We find the environmental justice analysis and conclusions in the draft PEIR regarding the Pardee expansion to be incorrect. A review of the environmental justice setting section is all that is required to see the potentially significant impacts. That section notes that environmental justice issues can be triggered by income disparities, racial disparities, by disparities in democratic representation, and by disparities in suffering the burdens of environmental impacts.

For example, the EBMUD counties (Alameda and Contra Costa), that want to lay waste to an Upcountry river canyon and take Upcountry water, have median incomes ($64,424 & $74,241) above the state median ($53,770). Meanwhile, the median incomes of Calaveras and Amador counties ($41,022 and $42,280) are less than 80 percent of the state median ($43,061) or "low – income."

For another example, the counties that will get the bulk of the water and economic benefits from the preferred portfolio get to elect directors to the EBMUD board that makes the decision. Meanwhile the counties that get the flooded canyons, the dam construction traffic, the loss of cultural and historic resources, the degraded recreation area, the increased fire hazard, and the air pollution do not get to vote for the EBMUD board that makes the decision. 59

The Electra Run and Middle Bar Reach recreation areas are places of environmental equity to the Upcountry counties. The river is open to everyone regardless of age, physical ability, or income. Some local people rely on it for food, as fishing is allowed year-round in Middle Bar reach below Highway 49. The Upcountry counties don't have an extensive regional park system dedicated to recreation like the wealthier counties in the East Bay. Instead, we have and use USFS and BLM multiple-use public lands for recreation. In recognition of this fact, the BLM has recommended to Congress that the Mokelumne River above Highway 49 be designated a National Wild and Scenic River and managed for recreation. Inundating this area would be a huge loss to our community, and the draft PEIR poorly analyzes that loss.

Finally, the impacts of the Pardee expansion disproportionately fall on the Me-Wuk people, a minority population in the Upcountry counties who are losing sacred sites, cultural artifacts, and a willow gathering area. .

The environmental justice impacts of the Pardee expansion on the Upcountry counties are significant. The final PEIR must address this.

VIII. Comparison of Alternatives

An EIR must evaluate a range of reasonable alternatives to the program capable of eliminating any significant adverse environmental effects of the program, or reducing them to a level of insignificance, even though the alternatives may somewhat impede 60

attainment of project objectives, or may be more costly. (Pub. Resources Code, sec. 21002; CEQA Guidelines, sec. 15126, subd. (d); Citizens for Quality Growth v. City of Mount Shasta (3d Dist. 1988) 198 Cal.App.3d 433, 443-445 [243 Cal.Rptr. 727].)

By contrast, the program alternatives developed for this EIR were designed not to eliminate significant impacts of the preferred portfolio program, but to conform to "themes" such as partnership, local reliance, and conjunctive use. (DPEIR, pp. 1-7; 2-4 to 2-7.) The preferred portfolio program has significant and unavoidable impacts to the Delta, to agricultural land, to air quality, noise, scenic vistas, and to minority and low income populations. (DPEIR, p. 9-2.) Yet no effort was made to design an alternative specifically to reduce or eliminate these impacts of the preferred portfolio program. Please include such an alternative in the final PEIR. We encourage you to work cooperatively with all stakeholders in crafting this alternative. 60

The Executive Summary describes the preferred portfolio and its action alternatives. (DPEIR, pp. 1-7 & 1-8.) Only the "no project" alternative includes the current 25 percent rationing policy. None of the action alternatives include the 25 percent rationing policy. Why has this low impact, low cost, policy been abandoned? Why is EBMUD too afraid to evaluate its preferred portfolio on economic and environmental grounds against any action alternative that includes the current 25 percent rationing policy? This policy could reduce the impacts from water loss on the Delta; and the impacts from construction of dams including air pollution, loss of agricultural land, and degradation of scenic areas. By eliminating this option from consideration in the range of action alternatives, EBMUD has failed to evaluate a reasonable range of action alternatives, in a severely prejudicial fashion. Please include in the final PEIR, an action alternative that includes the 25 percent rationing policy. 61

IX. Growth-Inducing Impacts

Because the proposed project would make additional 13,800 acre feet of raw water per year available to Amador, Calaveras, and San Joaquin counties, in our scoping comment, we asked that the draft PEIR evaluate the cumulative growth-inducing impacts of providing water to Amador and Calaveras counties. (DPEIR, p. 3-24.) We noted that such growth could result in agricultural land conversion, air pollution, traffic congestion, groundwater contamination, cultural resource destruction, and impacts to threatened and endangered species including Ione rare plants, vernal pool fairy shrimp, and tiger salamanders. 62

An EIR must, "Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment." (CEQA Guidelines, sec. 15126.2, subd. (d).)

"It also is settled that the EIR must discuss growth-inducing impacts even though those impacts are not themselves a part of the project under consideration, and even though the extent of the growth is difficult to calculate. The case law supports this distinction. The court in *City of Antioch v. City Council* (1986) 187 Cal.App.3d 1325 [232 Cal.Rptr. 507] found that a project required an EIR notwithstanding that the project itself involved only the construction of a road and sewer project which did not in and of themselves have a significant effect on the environment. The court recognized that the sole reason for the construction was to provide a catalyst for further development in the immediate area. It held that because construction of the project could not easily be undone, and because achievement of its purpose would almost certainly have significant environmental impacts, the project should not go forward until such impacts were evaluated in the manner prescribed by CEQA. (Id. at pp. 1337-1338.)" (Napa Citizens for Honest Government v. Napa County Board of Supervisors (2001) 91 Cal.App.4th 342, 368.)

"In *Stanislaus Audubon Society, Inc. v. County of Stanislaus* (1995) 33 Cal.App.4th 144 [39 Cal.Rptr.2d 54], the court considered a proposed construction of a country club and golf course and attendant facilities. It was contended there that an EIR was not required because the growth-inducing impacts of the proposed project were too remote or speculative, and EIR's would be prepared in connection with any application for a housing development. The court responded, "The fact that the exact extent and location of such growth cannot now be determined does not excuse the County from preparation of an EIR.... [R]eview of the likely environmental effects of the proposed country club cannot be postponed until such effects have already manifested themselves through requests for amendment of the general plan and applications for approval of housing developments." (*Id.* at pp. 158-159, fn. omitted.)" (Napa Citizens for Honest Government v. Napa County Board of Supervisors (2001) 91 Cal.App.4th 342, 368-369.)

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In sharp contrast to the CEQA standards articulated above, the Growth-Inducing Impact analysis in Chapter 7 of the DPEIR does not analyze any of the growth-inducing impacts of water supplied to Amador, Calaveras, and San Joaquin Counties. The Draft PEIR improperly defers this analysis to later project level EIRs. (DPEIR, p. 7-6.) "A prejudicial abuse of discretion occurs if the failure to include relevant information precludes informed decisionmaking and informed public participation, thereby thwarting the statutory goals of the EIR process." (Kings County Farm Bureau et al. v. City of Hanford (5th Dist. 1990) 221 Cal.App.3d 692, 712 [270 Cal.Rptr. 650].)

EBMUD would like to have it both ways. EBMUD would like to describe the project components as providing future water supplies to Upcountry counties while refusing to evaluate the severe growth-inducing impacts of providing those supplies. CEQA does not allow such duplicitous analysis. Please rectify this prejudicial error in the final PEIR.

Apparently EBMUD is under the misapprehension that the PEIR is a promotional tool for their preferred portfolio. Actually, the PEIR is supposed to take an objective look at the impacts of the preferred portfolio, and make a good faith effort at disclosing them, as they say, "warts and all." Please keep this in mind when you make corrections in the final PEIR.

X. Cumulative Impacts

Because this EBMUD project is only one of many regional water projects planned in the IRCUP and the IRWMPs, our scoping comments asked that the PEIR evaluate the cumulative impacts of these plans on the Mokelumne River and the Delta.

" 'Cumulative impacts' refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." (CEQA Guidelines, sec. 15355.)

In some cases, a cumulative impact "results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects." (CEQA Guidelines, sec. 15355.) A cumulative impacts analysis must take into account the environmental impacts of not only projects that are already approved, but also proposed projects undergoing environmental review. (San Franciscans for Reasonable Growth v. City and County of San Francisco (1st Dist. 1984) 151 Cal.App.3d 61 [198 Cal.Rptr. 634].)

The discussion of cumulative impacts must either "list past, present, and reasonably anticipated future projects producing related or cumulative impacts" or provide "A summary of projections contained in an adopted general plan or related planning document which described or evaluated regional or areawide conditions." Then it must summarize their "expected environmental effects" and "examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects." (CEQA Guidelines, sec. 15130.)

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"Consideration of the effects of a project or projects as if no others existed would encourage the piecemeal approval of several projects that, taken together, could overwhelm the natural environment and disastrously overburden the man-made infrastructure and vital community services. This would effectively defeat CEQA's mandate to review the actual effect of the projects upon the environment." (Las Virgines Homeowners Federation, Inc. v. County of Los Angeles (2d Dist. 1986) 177 Cal.App.3d 300, 306 [223 Cal.Rptr. 18].)

A) Cumulative Impacts on Upcountry Land Use and Public Services

Section 8.5.2 indicates that the cumulative impact analysis for the project will ignore impacts associated with land use and public services. The alleged justification is that cumulative impacts cannot result from projects that conform to local land use plans, and that public service impacts are addressed by local governments. With regard to development in both Amador and Calaveras counties, those assertions are ridiculous.

First, most major projects with EIRs in Amador and Calaveras counties have significant and unmitigated impacts. They can be and are approved anyway pursuant to a Statement of Overriding Considerations. (In Calaveras County, See EIRs for Tuscany Hills and Cooper Mill; In Amador County see EIRs for Jackson Hills [City of Jackson], Gold Rush

[City of Sutter Creek], and Wicklow Way [County of Amador]). As a result, growth facilitated by the water provided to these counties through the proposed EBMUD project will have cumulatively significant impacts.

Second, public service impacts associated with development in Amador and Calaveras counties are not addressed by local governments. For example, many of the local governments in Amador County have refused to adopt the park mitigation fees identified by the Amador County Recreation Agency (a JPA) as necessary to mitigate parks impacts of new development. In Calaveras County, the provisions of the General Plan that provided for maintaining levels of public services (e.g. police and fire) through impact mitigation fees were removed from the General Plan in 1996, and have not yet been reinstated. As a result, the recent manpower review indicated that current Sheriff's Department staffing levels are substandard and getting worse. In Calaveras County, the 25-year regional transportation plan has an over $100 million funding shortfall, and in Amador County the RTP has an over $200 million funding shortfall. In Amador County, the current LAFCO Municipal Service Review found a host of legal violations by a chaotic assortment of CSDs performing unauthorized services and serving outside their district boundaries. It also noted the severely limited wastewater treatment capacity in the county, and identified areas with minimal and inadequate fire protection services. (Amador County LAFCO, Municipal Service Review Findings, August 2008.) There is no factual basis upon which to assert that Upcountry local governments are addressing the cumulative public service impacts of growth in a manner that reduces those impacts to a level of insignificance. 63

The EIR for the EBMUD 2040 WSMP cannot on the one hand indicate that it will provide raw water supplies to accommodate development in counties like Calaveras and Amador, and then on the other hand ignore the cumulative impacts of the growth. This omission is compounded by the draft PEIR's aforementioned failure to consider the growth-inducing impacts of the project in Amador and Calaveras counties. As a result, no part of the DPEIR evaluates or mitigates these major and obvious potentially significant environmental impacts of the project. An EIR must be a good-faith effort at full disclosure of environmental impacts. (CEQA Guidelines, sec. 15151.) Withholding this critical information on cumulative impacts of development does not reflect a good-faith effort at full disclosure. Please rectify this prejudicial omission in the final PEIR.

B) Lack of Quantitative Analysis

What is most striking about the cumulative impact analysis in the DPEIR is that most sections fail to include any quantitative analysis. For example, we really need to compare the total amount of water the various water projects and water rights holders want to take out of the river system and Delta, to the total amount of water in the river system and the Delta. Such an analysis is even more critical now that the state is again considering diverting more fresh water from the Sacramento River around the Delta through a conveyance facility. The draft PEIR's cumulative hydrology impact section does not provide this quantitative comparison. We really need to compare the cumulative loss of the habitat of the various rare and endangered species affected by the many proposed 64

water projects with the total habitat area for each species. The biological resources cumulative impact section does not provide that quantitative comparison. We really need to know the number of increased vehicle trips and amount of vehicle emissions, but neither the cumulative impact analysis in Chapter 8 nor the project impacts analyses in Chapter 5 provide these numbers.

As noted by the courts, the quantitative analysis of cumulative impacts is a necessary part of CEQA Review. "Absent some data indicating the volume of ground water used by all such projects, it is impossible to evaluate whether the impacts associated with their use of ground water are significant and whether such impacts will indeed be mitigated by the water conservation efforts upon which the EIR relies." (Kings County Farm Bureau et al. v. City of Hanford (5th Dist. 1990) 221 Cal.App.3d 692, 728-729 [270 Cal.Rptr. 650].) 64

We live in a country on the brink economic chaos as a result of the failure on the part of people to be accountable in their financial dealings. CEQA's cumulative impact analysis requirement mandates that a lead agency be accountable in its disclosure of cumulative environmental impacts. Please be so accountable in the final PEIR.

C) Cumulative Impacts on Agriculture Lands

Similarly, it is curious to note the relative ease with which EBMUD simply throws up its hands and concludes impacts to agricultural land will be significant and unmitigated, before exploring feasible mitigation measures. (DPEIR, p. 8-29.) For example, local jurisdictions have a number of available means to avoid the loss of agricultural land associated with future development. (See, American Farmland Trust, "Case Studies in Agricultural Land Protection in California," [available on the AFT web site].) EBMUD could provide water to other counties on the condition that they adopt such agricultural land protection programs. Better yet, EBMUD can also provide funding to existing nonprofit organizations to secure agricultural land conservation easements in areas where the project provides water. This would help mitigate the impact. CEQA requires that an agency adopt all feasible mitigation before it can conclude that an impact is significant and unavoidable. (CEQA Guidelines, secs. 15091 & 15092.) Please do so. 65

D) Greenhouse Gas Emissions

In our July 20, 2008, scoping comment, we noted that the, "EIR for the project must analyze the GHG emissions from the full life cycle of building or raising dams at Pardee and Lower Bear," including reconstruction of the Highway 49 Bridge, "the release of carbon from soil disturbance," from "decaying vegetation in the reservoir," and from hydropower generation of carbon-laden water.

In January 2008 the California Air Pollution Control Officers Association (CAPCOA) issued a white paper to assist planning professionals in evaluating both the direct and indirect green house gas emissions from proposed projects. This work identifies available models to quantitatively evaluate the greenhouse gas emissions from construction projects, from urban growth, from the energy these use, from stationary air pollution 66

sources, and from and mobile air pollution sources. The work identifies suitable thresholds of significance, and includes a 45-page table listing feasible mitigation measures. (See Attachment, CAPCOA, CEQA and Climate Change, January 2008, distributed free over the Internet.)

The draft PEIR's cumulative impact analysis includes a section on GHG emissions. (PEIR, Sec. 8.6.2.)

" 'It is vitally important that an EIR avoid minimizing the cumulative impacts. Rather it must reflect a conscientious effort to provide public agencies and the general public with adequate and relevant detailed information about them.' [Citation.] A cumulative impact analysis which understates information concerning the severity and significance of cumulative impacts impedes meaningful public discussion and skews the decisionmaker's perspective concerning the environmental consequences of a project, the necessity for mitigation measures, and the appropriateness of project approval. [Citation.] An inadequate cumulative impact analysis does not demonstrate to an apprehensive citizenry that the governmental decisionmaker has in fact fully analyzed and considered the environmental consequences of its action." Citizens to Preserve Ojai v. County of Ventura (2d Dist. 1985) 176 Cal.App.3d 421, 431 [222 Cal.Rptr. 247], quoting San Franciscans for Reasonable Growth v. City and County of San Francisco (1st Dist. 1984) 151 Cal.App.3d 61, 79 [198 Cal.Rptr. 634].)

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"Assessment of a project's cumulative impact on the environment is a critical aspect of the EIR. [3] 'One of the most important environmental lessons evident from past experience is that environmental damage often occurs incrementally from a variety of small sources. These sources appear insignificant, assuming threatening dimensions only when considered in light of the other sources with which they interact.'" (Kings County Farm Bureau v. City of Hanford (1990) 221 Cal.App.3d 692, 720 [270 Cal.Rptr. 650], quoting Selmi, The Judicial Development of the California Environmental Quality Act (1984) 18 U.C. Davis L.Rev. 197, 244, fn. omitted.)" (Los Angeles Unified School Dist. v. City of Los Angeles (1997) 58 Cal.App.4th 1019, 1025 – 1026.)

By way of contrast to previously referenced CEQA standards and CAPCOA guidance, the analysis of GHG emissions in Section 8.6.2 of draft PEIR makes no attempt to quantify the GHG from the construction of project components. The DEIR seeks to excuse this failure on the grounds that the model inputs such as types of equipment, construction materials, soil hauling volumes, and numbers of workers are unknown. (DPEIR, p. 8-37.) This is not a valid excuse. The purpose of the EIR is to disclose these project specifications, and to use them in impact analysis. Nowhere in the EIR is there any evidence that estimating these facts and their resulting impacts is somehow unreasonable. To the contrary, since in this case the EIR is being done for a project to be designed and carried out by the lead agency EBMUD, EBMUD has control over the relevant design aspects of program components.

The qualitative analysis goes on to rely on nonexistent regulations that someday may be passed to implement the provisions of the ARB's scoping plan, as justification for finding

67

the project's GHG emissions mitigated to a level of insignificance. (DPEIR, pp. 8-38 to 8-39.) It is arbitrary, capricious and an abuse of discretion to rely solely for successful implementation of GHG emission reduction strategies, over the *next* three decades, on the very same state agency that has failed to achieve ambient air quality standards for human health, over the *past* three decades. Nor is it appropriate for EBMUD to avoid committing to bearing its mitigation burden. To avoid or delay the devastating impacts of Global Climate Change, it will take a concerted effort on the part of every nation, every state, every local government, and every citizen of the world; EBMUD included... 67

Similarly, there is no attempt to quantify the GHG emissions from operational activities such as worker maintenance trips and recreation user trips. (DPEIR, pp. 8-39 to 8.42.) This is especially disturbing since the transportation sector is the largest source of GHG emissions statewide. (DPEIR, p. 8- 17.) These quantitative analyses are postponed until future project-specific EIRs are prepared, long after the programmatic decisions are made. No evidence was provided to suggest that these impacts could not be estimated at this time.

The postponement of these impact analyses until later project specific EIRs flies in the face of the purpose of programmatic environmental review. A program EIR is not supposed to be a document devoid of cumulative impact analysis and filled with promises for future studies. A program EIR is supposed to, "Provide an occasion for a *more exhaustive consideration of effects* and alternatives than would be practical in an EIR on an individual action." A program EIR is supposed to, "*Ensure consideration of cumulative impacts* that might be slighted in a case-by-case analysis." A program EIR is supposed to, "Allow a Lead Agency to consider broad policy alternatives and program-wide mitigation measures at an early time when the agency has greater flexibility to deal with basic problems or cumulative impacts." (CEQA Guidelines, sec. 15168.) 68

CEQA also requires a "quantitative, comparative analysis" of the relative environmental impacts and feasibility of project alternatives. (Kings County Farm Bureau et al. v. City of Hanford (5th Dist. 1990) 221 Cal.App.3d 692, 730-737 [270 Cal.Rptr. 650].) The only quantitative comparative analysis of the GHG emission of the alternatives is in Table 8.5. That table reflects only the GHG emissions from the electricity used by some project components. The numbers in the table demonstrate the problem with a GHG emissions analysis that refuses to identify a quantitative threshold of significance: there is no logical connection between the data and the conclusion. When only part of one aspect the project's GHG emissions is evaluated, the proposed project and its alternatives generate 200 – 300 million metric tons of CO2 equivalent emissions. A long held CEQA axiom is that the more severe the existing environmental problems are, the lower the threshold for treating the project's cumulative impacts as significant. (Kings County Farm Bureau et al. v. City of Hanford (5th Dist. 1990) 221 Cal.App.3d 692, 718-721 [270 Cal.Rptr. 650].) In a world desperately racing against future calamity to reduce GHG emissions to pre-1990 levels, how can an objective PEIR and a rational lead agency conclude that the impacts of such a large amount of GHG emission are insignificant? An agency must produce rigorous analysis and concrete substantial evidence to support a determination that the project's impacts are insignificant. (Kings County Farm Bureau et al. v. City of 69

Hanford (5th Dist. 1990) 221 Cal.App.3d 692 [270 Cal.Rptr. 650].) EBMUD has not done so in this draft PEIR. 69

Finally, the DPEIR praises the hydroelectric component of the new dam as a "green" source of energy and claims it will help EBMUD meet its GHG emission targets in AB 32. The generation from the hydroelectric plant will not count toward EBMUD's AB 32 compliance, because it will not meet the state's standards for renewable energy (i.e. new hydroelectric plants that change the duration and timing of river flow do not qualify). 70

Please rectify these analytical errors in the final PEIR. Please reconsider the conclusion that impacts of the project's GHG emissions are insignificant. Please review the lists of mitigation measures provided in the CAPCOA white paper and by the California Attorney General, and then adopt more of the measures. While you are considering mitigation measures, please consider some win-win solutions that will both improve the storage capacity of the Mokelumne watershed and offset carbon emissions. For example, EBMUD can make a positive contribution to offset carbon emissions and increase carbon sequestration by reforesting the clearcut areas the Mokelumne watershed, restoring high-country meadow systems, providing financial incentives to landowners to retain forest canopy and range land, and working with local efforts to reduce the risk of catastrophic wildfires. 71

Since the GHG analysis indicates that alternatives with less construction and less water conveyance will generate fewer GHG emissions, please consider adopting an alternative that does not include expansion of Pardee and Lower Bear reservoirs. (DPEIR, p. 8-44.)

XI. Cost Effectiveness & Fiscal Responsibility

Given today's economic and fiscal challenges, decisionmakers are being even more careful to consider the costs as well as the benefits of a decision. Here in Amador County, the Board of Supervisors and the City of Sutter Creek are asking project applicants for fiscal analyses of their proposed development projects. More often now through bond initiatives we are being asked as a taxpaying and rate-paying public, "Do you want to pay this much for enhanced public goods and services?" Nowhere is the issue of cost-effectiveness more critical than in planning for long-term programs. These programs involve the largest commitments of public funds over the longest periods of time.

Long-term water supply programs provide a great example of the critical need for evaluating the cost effectiveness of project components. In 2008, the Legislative Analyst published on its web site, "California Water – An LOA Primer." When addressing water supply reliability, Chapter 6 notes, 72

> "For example, according to DWR estimates, urban water use efficiency (a shorter–term solution) costs about $1,000 to achieve one acre–foot of water savings per year. The DWR also determined that annually about 2 million acre–feet of additional water could result from this water management strategy.

> According to DWR's estimates, this makes urban water use efficiency both the most cost–beneficial and the highest potential water producer of all of the solutions evaluated. On the other hand, according to DWR estimates, CALFED surface storage (a longer–term solution) costs about $10,000 to achieve one acre–foot of water savings per year."

This report reinforces the notion that the cost effectiveness of EBMUD water development will vary greatly among optional program components.

In addition, the beneficial uses of the water will also vary depending on the chosen program components. For example, since water developed by a dam project will be so costly, it will not be available for irrigation of most crops that depend on very low cost water. By contrast, water developed through inexpensive conservation and reclamation will be cost effective for a broader range of crops. 72

This is especially true with respect to water provided to some of the potential "participants" in EBMUD's project components. The Bear River Reservoir project component involves participants including Calaveras County Water District, Amador County Water Agency, and San Joaquin County. (DPEIR, p. 3-24.) Farmers buying water from Stockton East were paying only *$20 per acre foot* in September of 2008. Farmers in the North San Joaquin Water Conservation District *rejected a $4.80 per acre foot groundwater recharge fee in November 2008.* As of February 2009**,** irrigation rates had not been finalized, but farmers in Turlock were likely to pay somewhere around *$6 an acre-foot.* Modesto Irrigation District staff is recommending around *$10 an acre-foot* for a base allocation of 30 inches. Oakdale farmers pay by time, but it works out to around *$5 an acre-foot.* Water developed by a billion-plus dollar dam at a capital cost of $10,000 per acre foot is not going to be available at rates that support agriculture. Thus that water will have to support a different beneficial use, like domestic use.

Thirsty cities are willing to pay more for water than farmers. For example, EBMUD bought water from Woodbridge this year for $200 an acre foot. Lodi is doing the same. Woodbridge is selling water at $200 per acre-foot because it is more profitable than trying to grow crops with the water.

In addition to having different benefits, program components have different costs. The program's harm to the Delta will vary depending on which components are included and how much water they divert from the Mokelumne River upstream. Harm to the Delta fishery impacts significant economic interests. For example, the salmon fishery is being destroyed by existing dams, and fishing groups say they need *more* water through the Delta, not less. The economic consequences of last year's closure of the salmon fishing season amounted to $255 million, along with the loss of 2,263 jobs. California's freshwater recreational fishery generates $1.5 billion in retail sales, $2.5 billion in trip-related expenses and almost 27,000 jobs, according to economic data from the American Sportfishing Association. The marine recreational fishery generates $3.7 billion in retail sales, $1.9 billion in value-added impacts and almost 23,000 jobs. Since the EBMUD program components will contribute to the cumulative impacts on these fisheries, 73

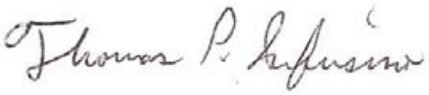
EBMUD must account for its portion of these economic losses when comparing program benefits to environmental costs.

Since EBMUD's preferred portfolio does have significant and unavoidable impacts, CEQA does require that EBMUD balance the environmental costs against the benefits of the project, to determine if a Statement of Overriding Considerations, and program approval, is warranted by the facts. Thus, it will be incumbent upon EBMUD to quantify and estimate the benefits and costs of the portfolio it chooses. We encourage EBMUD to prepare such a cost-benefit analysis of the components of the preferred portfolio and of a full range of alternatives. We encourage you to make this analysis available for director and public review at least 30-days in advance of your decision on the program. With such an analysis, your directors will have information necessary to make a rational decision regarding the choice of alternatives. With such information, the Statement of Overriding Considerations will have the requisite support of substantial evidence and rational argument in the record. (Sierra Club v. Contra Costa County (1992) 10 Cal.App.4th 1212.) 73

While CEQA does not require that an EIR comparatively evaluate the fiscal merits of a project, we encourage EBMUD to do such a fiscal analysis of the preferred portfolio and its alternatives, and to give ratepayers a way to respond to the results. Your rate-payers deserve to know how much they will pay over a 30 year period for the potential "convenience" of 10% rationing instead of 25% rationing in the rare severe drought years. They deserve to have a vehicle to express this concern early in the development of this program. Ultimately, state law provides the ratepayers with the opportunity to challenge future rate increases. Thus, without this timely ratepayer input, EBMUD could find itself adopting and investing in a costly program now, only to find that the ratepayers are unwilling to pay for the program in the future. The appropriate time for determining ratepayer preference is now, before EBMUD begins to waste precious funds on costly and unpopular program components. 74

We hope that your final PEIR for this project will properly address the concerns detailed in this letter, and those of expressed by other commenters. Please notify us a when the final PEIR is available, and when EBMUD intends to make its decision.

Sincerely,



Thomas P. Infusino,

for the Foothill Conservancy

cc: Mr. John Beuttler, California Sportfishing Alliance
Mr. Chuck Bonham, Trout Unlimited
Mr. Jim Eicher, BLM

Mr. Terry Davis, Sierra Club Mother Lode Chapter
Mr. Stuart M. Flashman
Mr. Mike Jackson, California Sportfishing Protection Alliance
Mr. Bill Jennings, California Sportfishing Protection Alliance
Mr. Curtis Knight, CalTrout
Mr. David Moller, PG&E
Mr. Matt Morrison, Sierra Club Bay Chapter
Mr. David Nesmith, Environmental Water Caucus
Ms. Beth Paulson, USFS
Mr. Chris Shutes, California Sportfishing Protection Alliance
Mr. Dave Steindorf, American Whitewater
Mr. Ron Stork, Friends of the River
Supervisor Steve Wilensky, Calaveras County

Foothill Conservancy 3 (FC3)

FC3-1: EBMUD reviewed the photos of the Electra/Middle Bar area on the commenter's website (see Attachment A below). As requested, the Draft PEIR is revised to include new Appendix F, which includes scenic photographs of the Mokelumne River and the surrounding area.

The comment discusses the Foothill Conservancy principles and activities and focuses on the Enlarge Pardee Reservoir and Enlarge Lower Bear Reservoir components on the Mokelumne River. EBMUD acknowledges the Foothill Conservancy's work on a variety of Mokelumne River Watershed projects, and staff will continue to work with the Conservancy. EBMUD notes the commenter's concern for the Mokelumne River watershed, and specific comments on the Draft PEIR are addressed below. The Draft PEIR identifies the Mokelumne River Watershed as being a source of water, recreation, and fisheries and related ecology (see Draft PEIR, pages 2-13 through 2-16). For further detail on the overall objectives and scope of the WSMP 2040, please see the Master Response on the WSMP 2040. Please also see the Master Response on the Enlarge Pardee Reservoir component.

FC3-2: The comment discusses a number of potential impacts from the Enlarge Pardee Reservoir component, as well as issues that the commenter has faced with local cities and counties. EBMUD acknowledges the commenter's opinion that the Enlarge Pardee Reservoir component will impair Foothill Conservancy members' uses of the Mokelumne River watershed. The Draft PEIR identifies the Mokelumne River Watershed as being a source of water, recreation, and fisheries and related ecology (see Draft PEIR, pages 2-13 through 2-16, 4.2.A-2 through 4.2.A-4, 4.2.D-5 through 4.2.D-6, and page 4.2.I-6). Please see Response FC3-60 for a more specific response regarding local jurisdictions and the intent of EBMUD in developing the WSMP 2040.

The commenter states that enlarging Pardee Reservoir would inundate the Electra Run and recreation areas, which are valued for whitewater rafting and kayaking, gold panning, wildflower viewing, family picnics, bird watching, and for their historic and cultural resources. Please see Response FC3-12 for discussion of impacts on recreation and the Electra Whitewater Run. Mitigation Measure 5.2.D-2a requires that EBMUD repair and reopen affected recreational facilities, and Mitigation Measure 5.2.D-2b requires that EBMUD develop a reservoir operations plan to preserve whitewater recreation on the Electra Run. When or if it is determined that the Enlarge Pardee Reservoir component should go forward and thus warrants design-level planning or feasibility study, EBMUD would prepare a project-level EIR that thoroughly examines potential impacts to the Electra Run. Until those design-level details are developed and the specific configuration is determined, it is speculative to assess the extent that this component would affect the Electra Run and whether the impact would be significant. Please see Response FC3-54 for a discussion of cultural resources practices along the Mokelumne River.

The commenter states that enlarging Pardee Reservoir would remove the Middle Bar Bridge, eliminating first responder access and resident evacuation route in the event of a wildland fire. Please see Response FC3-32 for discussion of potential impacts on emergency access and Middle Bar Bridge.

EBMUD does not plan to eliminate access in the Upcountry region or create issues for law enforcement and fire crews.

The commenter states that its members suffer as local cities and counties approve projects with significant and unmitigated impacts, including impacts associated with traffic, air pollution, public services, agricultural lands, and fish and wildlife. The commenter does not name the cities and counties that are approving unmitigated development, or which development is causing the stated impacts, although it can be assumed that these are communities within Amador and Calaveras Counties where the Conservancy is focusing its efforts. As noted in Responses FC3-62 and FC3-63, the project is not intended to cause growth in Amador and Calaveras Counties or remove an impediment to growth because the project focuses only on serving EBMUD's dry-year demand and does not have as an objective, goal, or even indirect consequence, the service of additional water to the Upcountry areas.

At this stage, EBMUD is not seeking project-level entitlements or authorization or authority for the Enlarge Pardee Reservoir or Enlarge Lower Bear Reservoir components by approving the WSMP 2040, and the demand study examines only EBMUD's needs based on local general plans within the EBMUD service area. The fact that some communities in Amador and Calaveras Counties may be approving development with unavoidable impacts is not relevant to the goal of the WSMP 2040 to ensure that the needs within the EBMUD service area can be met in dry years. EBMUD intends to seek regional support for the Enlarge Pardee Reservoir and Enlarge Lower Bear Reservoir components if those projects go forward, but at present, EBMUD is not focused on serving water to Amador or Calaveras Counties. Please see Responses FC3-62 and FC3-63 and the Master Response on the Enlarge Pardee Reservoir component.

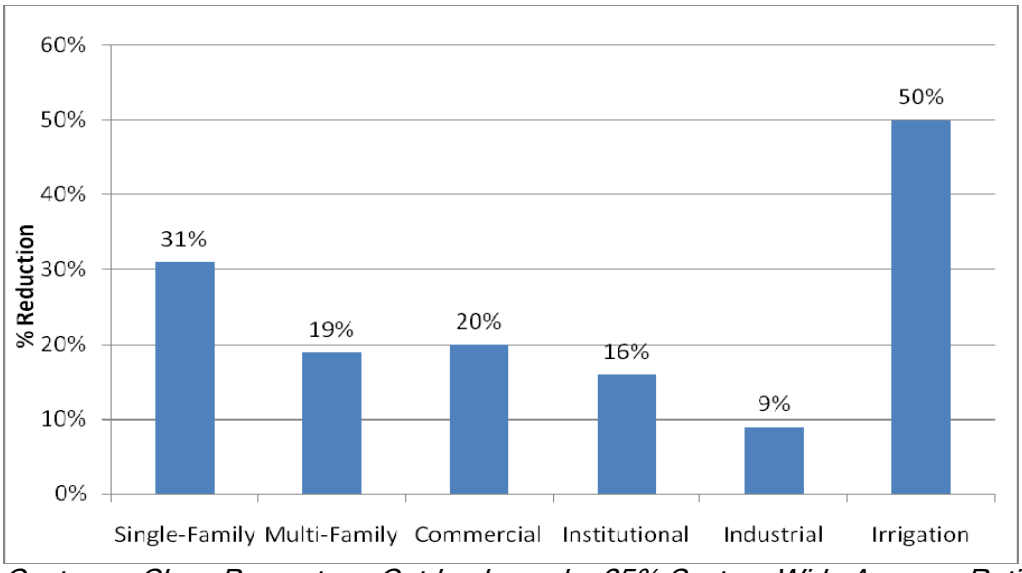
FC3-3: The comment refers to the July 20, 2008 scoping letter and flaws in the draft PEIR and urges that the Enlarge Pardee Reservoir component be withdrawn. The Foothill Conservancy's July 20, 2008 scoping letter, which is presented on pages 40-42 of Appendix A to the Draft PEIR, was reviewed by EBMUD staff prior to preparing the Draft PEIR. The scoping letter addresses greenhouse gas production from dam and bridge construction; cumulative growth-inducing impacts and related impacts in Amador and Calaveras Counties; loss of recreation resources and related economic activity; impacts to historic and cultural resources; elimination of key route for commerce and emergency response and evacuation; habitat loss around Lower Bear Reservoir and downstream of Pardee Reservoir; aquatic resource impacts; and related regional projects.

Please refer to the Master Response on the WSMP 2040 for a discussion of the Preferred Portfolio and alternatives. Additionally, please see the Master Response on the Enlarge Pardee Reservoir component, which explains this component and its inclusion in the Preferred Portfolio. The commenter's scoping comments were considered during preparation of the Draft PEIR. While it may not adopt all of the suggestions from the scoping letter, the PEIR properly analyzes and mitigates the WMSP 2040's potentially adverse environmental impacts to the extent necessary to serve as an informational document. Certain components within the Preferred Portfolio are not

proposed to be implemented now or in the near future. Instead, those components would be evaluated further at a program or project level when and if they are needed to meet EBMUD's dry-year demands. Impacts associated with the Enlarge Pardee Reservoir component, in particular, will be fully examined in a project-level EIR when and if the District decides to move forward with this specific project.

FC3-4: The comment recites a number of general principles contained in CEQA, the CEQA Guidelines, and in cases interpreting CEQA, and does not provide any comments specific to the WSMP 2040 PEIR. The responses to specific comments regarding the WSMP 2040 PEIR are provided below. Please also see the Master Responses on the WSMP 2040 and Program-level EIR analysis.

FC3-5: The comment asks questions regarding the 25 percent rationing level. Rationing at levels ranging from 0 to 25 percent was considered in the initial portfolio development. The 25 percent rationing level was tested in two of the 14 portfolios that were initially evaluated (Portfolios 11 and 14). Following the modeling and an evaluation of the preliminary portfolios against the WSMP criteria, the 0 percent and 25 percent rationing levels were eliminated from further consideration. The 25 percent rationing level was removed from consideration because it is likely to be difficult to achieve. It was noted that the demand has already "hardened", meaning that as conservation measures are adopted and implemented, water customers have less flexibility to adapt to short-term rationing in dry years without experiencing extensive hardship, increasing disparities among water user groups, and the potential for associated environmental impacts, as was discussed during the preparation of the WSMP 2040. Single-family residential customers would have to cut back their water use by 31 percent in order to achieve the 25 percent overall rationing level. Given the water conservation already occurring due to EBMUD's existing programs and extensive investment in conservation, which has resulted in previous upgrades, including installing low-flow shower heads, toilets, and appliances, as well as the use of drought resistant or less water-intensive landscapes, even under the No Project Alternative, it is unlikely that in the future EBMUD could successfully achieve the 25 percent rationing limit that currently exists but has never, to this point, been fully implemented.



Customer Class Percentage Cut-backs under 25% System-Wide Average Rationing

The Draft PEIR concluded that by selecting the 10 percent rationing level in combination with a high level of conservation – Conservation Level D (39 MGD above existing levels of conservation) – EBMUD could reasonably and feasibly achieve a high level of reduction in water demand during drought years. If EBMUD were to rely too heavily on rationing, EBMUD would actually be limiting its flexibility in times of severe droughts as there would be fewer tools remaining to ensure that demand could be met. EBMUD would thus risk public health and associated environmental problems, as well as significant costs associated with not planning to properly ensure that demand could be met. On the other hand, by including an average, system-wide rationing level of 10 percent, EBMUD could increase that rationing level if necessary to address the most severe droughts and the risk of a public emergency.

FC3-6: The comment discusses the opposition to the Enlarge Pardee Reservoir and Enlarge Lower Bear Reservoir components and the groups opposing these actions. As stated in the Master Responses on the Demand Study and the Enlarge Pardee Reservoir component, EBMUD recognizes the numerous local concerns. Section 1.5, Areas of Controversy, on page 1-11 of the Draft PEIR is therefore revised as follows to include these issues:

> Section 15123 of the CEQA Guidelines requires that an EIR identify areas of controversy. The following issues and concerns were raised by agencies or the public:
>
> - Reliability of water transfers
> - Preferred Portfolio components should reduce Mokelumne demand
> - Potential loss of whitewater recreation and other potential impacts associated with the Pardee Reservoir expansion and inundating more of the Mokelumne River
> - Accuracy of demand projections
> - Potential impacts on Delta water quality

- Potential impacts on Sacramento Water Forum Agreements from ASR components
- Potential degradation of groundwater from ASR components
- Potential impacts on endangered species from water transfers
- Opposition to cross-Delta water transfers
- Opposition to Buckhorn Reservoir
- Opposition to the Enlarge Pardee Reservoir component
- Opposition to Enlarge Lower Bear Reservoir component

The commenter also reiterates the earlier request that EBMUD consider an alternative to the Enlarge Pardee Reservoir and Enlarge Lower Bear Reservoir components which would be less contentious and less damaging. The Draft PEIR did so. The Draft PEIR evaluated a reasonable range of alternative portfolios, including several that did not include either the Enlarge Pardee Reservoir or the Enlarge Lower Bear Reservoir components. (Draft PEIR, Table 6-1, page 6-5.) Portfolios B and D, for example, omitted one Upcountry component or the other. Portfolios A, C, and E, on the other hand, omitted both Upcountry components. Portfolio D includes the Enlarge Pardee Reservoir component, but does not include the Enlarge Lower Bear Reservoir component. So while some alternative portfolios might have less environmental impacts within the Mokelumne River watershed, those alternatives are not necessarily "less damaging" when considering the balance of local, regional, and global environmental impacts.

As noted in the public meetings, an EIR need not consider every conceivable alternative to a program or project. CEQA requires only a consideration of a reasonable range of feasible alternatives, with the goal of fostering informed decisionmaking and public participation, and the PEIR meets this requirement.

FC3-7: Please see the Master Response on the WSMP 2040 and the Master Response on the Demand Study. The WSMP 2040 alternative development process and the Demand Study acknowledged the potential for global climate change and sea level rise to affect water supply and demand, and concluded that there is a great deal of uncertainty concerning these factors. EBMUD acknowledges the Bay Conservation and Development Commission's (BCDC) sea level rise estimates for 2050 (16 inches) and 2100 (55 inches). It should be noted, however, that the BCDC estimates and its recent study did not evaluate or question the most current regional growth-rate projections. The study focused on land uses within and along the shoreline of San Francisco Bay, and how those uses should adapt to rising sea levels in the future. (BCDC, *Living with a Rising Bay: Vulnerability and Adaptation in San Francisco Bay and on its Shoreline* (April 7, 2009).) While global climate change may affect customer demands due to temperature or seasonal changes, precisely how those changes will affect gross customer demand within EBMUD's service area is speculative. The projected levels of sea level rise are not expected to significantly affect overall growth projections within the service area, as much of the service area is well above the projected mean high tide line. In any event, the WSMP 2040 identifies solutions to meet dry-year needs through 2040, and the Preferred Portfolio includes a diverse range of components to meet those projected needs and provide the

District with flexibility to address uncertainties such as climate change and timing of droughts.

FC3-8: The comment states that the Enlarge Pardee Reservoir component is inconsistent with many of the WSMP planning objectives, and that either the component should be removed from the plan or the PEIR should acknowledge these inconsistencies. The WSMP 2040 portfolio development process and the objectives to be met were discussed at a number of Board workshops and CLC meetings. The WSMP 2040 alternative portfolios were detailed at Board Workshop #8, Portfolio Screening and Evaluation, as well as at Board Workshop #9, Identify Preferred Portfolio. Included as part of those discussions was significant detail regarding how each portfolio, including all of the components that comprise a particular portfolio, met the objectives of the WSMP 2040. The screening process used to build those portfolios was discussed at prior workshops. Information documenting the workshop discussions, including presentation materials, are available on the EBMUD website:

http://ebmud.com/water_&_environment/water_supply/water_supply_management_program/wsmp_materials/default.htm

The WSMP planning objectives and the evaluation criteria were developed to ensure that the WSMP 2040 would minimize certain impacts, recognizing that complete avoidance of impacts may not be possible. The objectives, including those cited in the comment, were used to facilitate the evaluation of the components, and provide relative comparisons of components and portfolios against one another.

The Enlarge Pardee Reservoir component was determined to provide high water supply reliability, while still relying upon existing entitlements. Thus, the reservoir's increased capacity would allow EBMUD to store additional water during above normal or wet years when the impacts to instream biological resources could be minimized. EBMUD would also continue to provide releases for fish under the Joint Settlement Agreement. This would meet the environmental objectives. With regard to the Public Health, Safety & Community objective category, this component would also ensure the high quality of the District's water supply. During the development of the portfolios, it was recognized that there could be adverse socioeconomic impacts (e.g., community impacts, economic impacts, social impacts, and potential conflicts with existing and planned facilities, utilities and transportation facilities) from this component, although efforts would be made to minimize these impacts.

With regard to the environmental objective, the Enlarge Pardee Reservoir component would also supply additional hydropower, decreasing long-term greenhouse gas emissions associated with operations and maintenance. This environmental benefit, as well as the potential to provide additional cold water storage for fishery releases, was taken into account.

Concerning biological resources, it was recognized that potential impacts could occur, including impacts to wetland resources. If and when this component moves to a project-specific planning stage, the potential biological

resource impacts would be assessed and, if needed, detailed mitigation measures developed.

Concerning recreational opportunities, although the component could inundate existing recreational facilities surrounding Pardee Reservoir, it is possible that new recreation facilities and opportunities would be created in their place (e.g., access points for kayak and raft put-in and take-out; picnic areas, etc.). Mitigation Measures 5.2D-2a and 5.2.D-2b would help ensure that these impacts would be less than significant.

Finally, the purpose of the objectives is to evaluate the various portfolios and individual components according to the priorities of WSMP 2040. Absolute consistency with all objectives is not necessary for any portfolio or any component within a portfolio. Overall, however, the Preferred Portfolio satisfies the program's objectives.

FC3-9: The comment questions the demand projections. Please see the Master Response on the Demand Study for a discussion of demand assumptions and projections. This Master Response explains the difference between the Urban Water Management Plan projection for 2030, which relies on the 2000 Demand Study, and the current projected demands.

It should be noted that the 2000 Demand Study projection of 232 MGD accounts for projected savings from conservation and recycled water use. CEQA provides lead agencies with discretion to adopt differing methodologies. The methodology chosen to gauge long-term service area demand is considered by EBMUD to be the most reliable. Over the next thirty years, EBMUD will periodically review its projected demands, and, to the extent that service-area demand does not match previous projections, those projections would be updated and the program would be adjusted accordingly. Finally, to the degree that these long-term projections never become realized, or if preferred alternative supplies become available during this next planning period, EBMUD may be able to forgo or alter some of the longer-term components of the Preferred Portfolio.

FC3-10: The comment states that project-specific technical and engineering data regarding portfolio components, particularly the reservoir enlargement components, should be included in the PEIR. Please see the Master Response on the Program-level EIR analysis. Subsequent environmental review will occur for specific portfolio components when and if the District decides to move forward with specific projects. An EIR need not evaluate, and may defer environmental analysis of individual program components that the lead agency has no current plans to actually implement. (*Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners of the City of Oakland* (2001) 91 Cal.App.4th 1344, 1358 ("A project involving only feasibility or planning studies for possible future actions which the agency, board, or commission has not approved, adopted, or funded does not require the preparation of an EIR . . .").) The PEIR adequately describes and evaluates the WSMP 2040 supplemental water supply components at a program stage. The intent in preparing a program-level document was to allow a comprehensive discussion of the proposed components, grouped as a program, at an early stage and before undertaking preliminary design-level

plans or feasibility studies for future components like the Enlarge Pardee Reservoir component.

FC3-11: The comment states that the Draft PEIR should consider alternative formulas for proportioning the burdens of rationing to see if higher rationing levels can be more easily achieved.

As noted by the commenter, EBMUD does not apply water rationing targets evenly to all customers during drought emergencies. For example, EBMUD imposes a higher level of rationing (i.e., a higher water use reduction goal) to irrigation customers than to residential customers. The water use reduction goal for each customer type (e.g., irrigation, residential, industrial) is determined by considering three drought management principles and by analyzing historical consumption and the likelihood of various customer groups attaining their respective water use reduction goals through an array of indoor and outdoor demand management measures. These factors are:

1. Consider three principles to balance water use reductions across customer categories
   a. Emphasize reductions in non-essential uses of water.
   b. Avoid/limit impacts to the economy and the environment.
   c. Safeguard water supplies for uses that meet public health needs.

2. Evaluate each category's actual historical consumption
   a. Determine the percent of total water demand by customer category.
   b. Determine the percent of indoor and outdoor demand by customer category.

3. Evaluate customer response to water savings measures
   a. Ability to achieve the potential savings from each measure.
   b. Research on customer ability and stated willingness to comply with drought measures.
   c. Staff and utility experience in managing and monitoring each measure.

The proposed water rationing targets developed determined that the current distribution of water conservation goals is the best approach available to achieve the overall water reduction target under drought emergencies.

FC3-12: The comment states that the PEIR discussion of recreation is misleading and asserts that boating occurs year round. The typical whitewater boating season occurs in the spring and summer. EBMUD acknowledges the assertion that whitewater boating also occurs in the fall and winter months. To emphasize EBMUD's commitment to preserving whitewater recreation on the Electra Run, Mitigation Measure 5.2.D-2b on page 5.2.D-8 of the Draft PEIR is revised as follows:

> Mitigation Measure 5.2.D-2b: Replace inundated recreational features. EBMUD or its contractors shall implement the following measures for the Enlarge Pardee and Lower Bear Reservoirs components:

- Replace recreational features displaced by enlargement of reservoirs; and
- Implement an operations plan for the enlarged Pardee Reservoir that preserves the Electra whitewater run ~~during the summer months~~.

If it is determined that the Enlarge Pardee Reservoir component will be implemented and warrants design-level planning or feasibility study, EBMUD would prepare a project-level EIR that thoroughly examines potential impacts to whitewater recreation on the Electra Run. Until those design-level details are developed, it is speculative to assess the extent that this component would affect the Electra Whitewater Run and whether the impact would be significant. Please see the Master Responses on the Enlarge Pardee Reservoir component and the Program-level EIR analysis.

FC3-13: The comment summarizes and compares the yield calculations for several proposed portfolio components, including Regional Desalination, Enlarge Lower Bear Reservoir, IRCUP, and Enlarge Pardee Reservoir. In the Preferred Portfolio example scenario provided on pages 3-30 and 3-31 of the Draft PEIR, it is assumed that the following supplemental supply components would be implemented before 2040: Northern California Water Transfers, Bayside Groundwater Project Phase 2, Sacramento Basin Groundwater Banking/ Exchange, and Regional Desalination. This example scenario was developed for inclusion in the Draft PEIR to allow for a meaningful comparison of the environmental impacts associated with the Preferred Portfolio against those of the Alternative Portfolios. It should be noted, however, that the goal and intention of the Preferred Portfolio is to allow EBMUD the flexibility to implement supplemental water projects as needed to meet the Need for Water and to be able to respond to the circumstances that arise during the 2010-2040 planning period.

Regarding the Preferred Portfolio example implementation scenario provided in Figure 3-13, the graphic indicates that components would be sized to meet the Need for Water. It also illustrates an "and/or" in between the Regional Desalination component and the Upcountry Components, indicating that one or the other, or a combination, may be required to meet the Need for Water. In the case of the Preferred Portfolio example scenario, it was assumed that in the event that Regional Desalination is brought online in 2030, no Upcountry components would be required to meet the Need for Water. This is the reason for the absence of an MGD flow rate for the Upcountry components along the timescale between 2010 and 2040. As the commenter states, the IRCUP is independent of the Enlarge Pardee Reservoir component.

FC3-14: The comment raises questions about EBMUD statements regarding the Inter-Regional Conjunctive Use Project (IRCUP) component and EBMUD's recent participation in a regional IRCUP+ effort.

In the context of the Draft PEIR and EBMUD's WSMP effort, IRCUP refers to a groundwater storage and recovery (conjunctive use) project that would be located in San Joaquin County. It is considered a regional effort that could yield dry year supplies for EBMUD while also providing benefits to San Joaquin County and others. The concept involves the use of Foothill

counties' water rights, EBMUD's existing facilities, and the San Joaquin County groundwater basin for storage.

The IRCUP reference, however, has recently been used with regard to a process outside of EBMUD's WSMP effort to encompass not only groundwater storage and recovery but also expansion of existing surface storage for the benefit of multiple agencies.

Specifically, several Mokelumne Forum participants (including EBMUD) are now also participating in discussion of what's referred to as an Inter-Regional Conjunctive Use Project (presently deemed "IRCUP+"). The participating entities are seeking through this program to develop solutions to water supply and water rights issues that affect each of the participating entities. This IRCUP+ effort is different and broader than the IRCUP component included in the WSMP 2040 Preferred Portfolio. For example, among the issues being addressed by the IRCUP+ are the need for additional supplies in San Joaquin County to alleviate their groundwater overdraft problems, as well as the need for supplies and storage in Amador and Calaveras Counties to address their needs. The regional nature of the IRCUP+, as well as the numerous interests and issues involved in the process, by necessity will require a number of studies and multiple agreements. The IRCUP+, at this point, is embodied only in conceptual terms which envision ongoing talks and the need for future agreements regarding water rights, the projects to be undertaken, and governance and management of the undertaking. The comment discusses this IRCUP+ effort and statements regarding the effort.

As noted in the Draft PEIR, the WSMP 2040 is not intended as a regional program, but is instead intended as a separate program that seeks only to examine EBMUD's dry-year water needs and the means of addressing those needs. Some of the components that could be developed as part of WSMP 2040 are also being examined as part of the Mokelumne Forum and the possible regional IRCUP+ effort. In developing the WSMP 2040, however, EBMUD has examined only the potential dry-year benefits to EBMUD, recognizing that the development of the same components that have been identified as having regional benefits could provide water to EBMUD in dry years. The objective of the WSMP 2040 is only to satisfy EBMUD's need. At the project-level stage of analysis and development, it is possible that these projects will be expanded to serve multiple objectives, beyond the objective of meeting EBMUD's dry-year water supply need. At this point, however, the WSMP 2040 and the IRCUP discussed in the WSMP 2040 is limited to ensuring that EBMUD can meet its dry year need.

The WSMP 2040 acknowledges that EBMUD may not necessarily take the lead in all three components that will occur upcountry (e.g., IRCUP, Enlarge Pardee and Enlarge Lower Bear). The WSMP 2040 also acknowledges that the three components included as regional upcountry projects may not proceed in the future. It is possible that only one or two of the three projects may proceed while still providing regional benefits.

FC3-15: EBMUD did not redefine the Preferred Portfolio and alternatives during the public review period. Even so, the WSMP 2040 is an iterative program; it must respond to information that is developed through the preparation and life

of the program. The WSMP will, in turn, serve as a planning tool for EBMUD to manage and develop individual projects as necessary to meet its long-term water needs. Even after adoption of the WSMP 2040, EBMUD will continue to respond and adapt its program to take into consideration changing water demand, water supplies, and public input. In advance of preparing the Draft PEIR, EBMUD conducted an extensive, 18-month-long alternative development process. The public was invited to a series of workshops, including one workshop held after the deadline for submitting comments, to provide input on the Preferred Portfolio and alternatives, and the public will continue to be engaged in this process.

FC3-16: Comment acknowledged. Figure 3-14 remains in the Draft PEIR.

FC3-17: The comment requests that FERC be added to the list of agencies providing approvals for project components. Federal Energy Regulatory Commission (FERC) has jurisdiction over the hydroelectric components of the Mokelumne River facilities and efforts to expand generation.

The text under Section 3.5, Required Approvals, on page 3-53 of the Draft PEIR is revised as follows:

- US Fish and Wildlife Service and National Oceanic and Atmospheric Administration (NOAA) for Section 7 consultation pursuant to the federal Endangered Species Act regarding "take" of federally listed threatened or endangered species, and for Essential Fish Habitat consultation under the Magnuson-Stevens Fishery Conservation and Management Act;

- <u>Federal Energy Regulatory Commission (FERC) for approval of changes in operation of hydropower facilities;</u>

- California Department of Fish and Game (CDFG) for a Streambed Alteration Agreement pursuant to Section 1600 of the state Fish and Game Code;

FC3-18: The comment raises questions regarding the inundation of lands. Please see Response BLM-1. BLM's 2008 Sierra Resource Management Plan (RMP) concluded that segments of the North and Main Forks of the Mokelumne River are suitable and eligible for possible inclusion in the national Wild and Scenic Rivers system, including the segment between Electra Afterbay and just below the Highway 49 Bridge. The section of the Mokelumne River below the Highway 49 Bridge and downstream to the Middle Bar Bridge was not included in the BLM determination. Currently, no portion of the Mokelumne River is designated as a recreational river as part of the national Wild and Scenic Rivers system. If the Enlarge Pardee Reservoir component is undertaken, EBMUD will consider the necessary collaboration with BLM regarding any legal instruments necessary to implement the project within BLM-owned territories and to comply with federal laws, including the Wild and Scenic Rivers Act. Please see the Master Response on Program-level EIR analysis. Impacts and alternatives will be fully examined in a project-level EIR when and if the District decides to move forward with project-level planning.

FC3-19: The commenter asks a number of specific questions about the environmental setting and information concerning water quality, air quality, and biological resources, and asserts that a complete environmental setting description would include episodes where it has been alleged that regulatory agencies have failed to adhere to plans and requirements. As outlined in the CEQA Guidelines, an EIR must include "a description of the physical environmental conditions in the vicinity of the project . . . from both a local and regional perspective." (CEQA Guidelines, § 15125(a).) Environmental setting information is important to identifying and evaluating the physical changes in the environment that would be caused by the proposed project. The Draft PEIR does include general environmental setting information in areas including water quality, air quality, and biological resources. (See, e.g., Draft PEIR, pages 4.2A-3, 4.2.C-22, and 4.2.C-24.) For example, on pages 4.2.A-9 and A-10, the Draft PEIR contains a discussion of both the local and regional issues surrounding water quality in the Sacramento Valley Region of the Central Valley and Upcountry, including both the current problems with water quality (high levels of dissolved oxygen, mercury, and pesticides) as well as possible contributing factors (urban development and runoff, water diversions, and agricultural return flows). This environmental setting information is sufficient to address the WSMP 2040's environmental effects at a programmatic level. Specific setting information will be presented in project-level CEQA documentation for the various components when and if EBMUD decides to move forward with specific projects. In this program-level analysis, EBMUD has sought to provide a broad overview of regulatory responsibilities and actions, and has assumed compliance with applicable laws and regulations. When EBMUD seeks to undertake specific projects, a thorough review of cumulative impacts, as well as a comprehensive discussion of the setting of the particular project, will be presented. Please also see the Master Response on Program-level EIR analysis.

FC3-20: While Inter-Regional Conjunctive Use Project (IRCUP) groundwater recharge and extraction facilities would not be located within Alpine County, they are a potential "partner" that perhaps could derive some water supply benefit from participation in the project. Potential partners included in the discussion were agency members of the Upper Mokelumne River Watershed Authority, as well as agencies signing the 2005 Memorandum of Understanding used to formalize the Mokelumne River Forum.

FC3-21: The gain-sharing provision included in the 1998 Joint Settlement Agreement between EBMUD, the California Department of Fish and Game, and the U.S. Fish and Wildlife Service applies to the Freeport Project.

FC3-22: Channel losses can be affected by overpumping of the water table aquifer in the area of the Mokelumne River. The extent and magnitude of channel losses depend on a number of factors, including the size and depth of the cone of depression produced by the pumping, the location of the pumping relative to the river, and the aquifer characteristics.

FC3-23: A description of Federal Regulatory Energy Commission (FERC) jurisdiction and hydroelectric licensing process is provided in Section 8.3.7 of the Draft PEIR.

The hydroelectric generation capacity of FERC Project 137, Mokelumne River Project, is described in Section 4.2.K of the Draft PEIR, and improvements to recreation resources required by the new FERC license are described in Section 4.2.D. EBMUD recognizes that the Joint Settlement Agreement (July 2000) and new license (issued in October 11, 2001) established a flow regime including, but not limited to, minimum streamflows, annual pulse flow events, and recreation streamflow releases. The Upper and Lower Bear Reservoirs are located within the FERC project boundary for the Mokelumne River Project and are therefore subject to the terms of that license. Any changes to these reservoirs such as inundation of FERC-related recreation facilities would require prior coordination with FERC and may result in the reopening of the license, a license amendment, and/or an amendment to the agreement. Until design-level information is available, however, it is impractical if not impossible to evaluate the precise nature of those regulatory approvals. In any event, the project would be required to satisfy the requirements established by federal and state agencies, including FERC.

FC3-24: The comment requests that the wildflower viewing and bird-watching activities be recognized. The text in the fifth paragraph on page 4.2.D-5 of the Draft PEIR is revised as follows:

> The Mokelumne River is one of several rivers in the region that offers whitewater recreation opportunities. The Electra Recreation Area and Electra Run is a 3.5-mile-long stretch of the Mokelumne River between PG&E's Electra Afterbay Dam and State Route (SR) 49. The Electra Recreation Area supports whitewater boating, fishing, gold mining, and swimming. In addition, this area is used for wildflower viewing and bird watching, especially in the spring. The area's proximity to the Amador County seat of Jackson, its relatively flat terrain, and its road access make it an especially valuable recreation area for local families, seniors and the physically challenged. Various entities own the land along this stretch of the river, including private landowners, PG&E, and BLM. Public access to this area is via SR 49 and Electra Road, which runs along the north side of the river (FRWA, 2003).

FC3-25: The comment asserts that whitewater rafting on the Electra Run occurs year-round. The typical whitewater boating season occurs in the spring and summer. EBMUD acknowledges the assertion that whitewater boating occurs in the fall and winter months as well. The extent and duration that inundation would occur in these areas, if it occurs at all, depends on the scope of the Enlarge Pardee Reservoir project. Preliminary planning and feasibility studies will be conducted before pursuing this component further. If and when this component becomes necessary to meet EBMUD's long-term dry-year water needs, EBMUD will conduct a thorough survey of recreation along the Mokelumne River to determine current uses throughout the year, and will prepare a project-level EIR that will examine potential impacts to the Electra Run and further measures to help preserve recreational opportunities in the watershed. Please see the Master Responses on the Enlarge Pardee Reservoir component and Program-level EIR analysis.

FC3-26: In its 2008 Sierra Resource Management Plan, the BLM recommended approximately 20 miles of the Mokelumne River for designation as a Wild and Scenic River. More specifically, the BLM recommended the recreation classification for 2.94 miles of river approximately between the State Route 49 Bridge and the Electra Afterbay, also known as the Electra Run. The recreation classification applies to "those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past". In the above referenced report, the BLM did not recommend the section of the Mokelumne River between State Route 49 and Middle Bar Bridge for designation as a Wild and Scenic River.

FC3-27: The comment requests that more detail be provided on the Delta, mismanagement of the Delta, and the possibility that the WSMP 2040 will contribute to cumulative impacts. As noted in Sections 8.3.4 through 8.3.6 of the Draft PEIR, a number of Delta planning efforts are currently underway, including the CALFED Bay-Delta Program, Bay Delta Conservation Plan, Delta Vision, and Delta Risk Management Strategy, as well as legislative efforts that may affect future Delta management. The outcomes of these ongoing efforts cannot be determined at this stage and are speculative. Furthermore, it is difficult to predict what Delta conditions may be in the future when project-level planning for the Upcountry Preferred Portfolio components is likely to occur.

EBMUD is involved in present efforts to study and address conditions in the Delta. Mokelumne River flows constitute 2.9 percent of the overall flow to the Delta, and EBMUD's water diversions account for less than one percent of all diversions from Delta inflow. EBMUD's diversions from the Mokelumne and Sacramento Rivers must already adhere to the terms of EBMUD's contract with the U.S. Bureau of Reclamation, FERC licenses for the Mokelumne River reservoirs, the Joint Settlement Agreement and the terms of EBMUD's water rights. The WSMP 2040 and the Upcountry components do not presently propose to increase EBMUD's existing water rights on the Mokelumne River or change its JSA Agreement water releases. Delta issues will be examined in more detail at the project level, if and when EBMUD seeks to implement specific Upcountry portfolio components. Measures identified in the Draft PEIR will help ensure that WSMP 2040 has no adverse affect on planning efforts in the Delta or certain Delta restoration efforts (e.g., Mitigation Measures 5.2.C-8a and 5.2.C-11).

FC3-28: The comment discusses the uses of the roads in Calaveras, Amador, and Alpine counties and the potential impacts to roads. EBMUD agrees with the commenter that State Routes 49 and 88 are considered major highways. These highways are identified in the setting sections for Enlarge Pardee and Lower Bear Reservoirs on page 4.2.E-4 of the Draft PEIR, but they were inadvertently omitted from the Upcountry setting section on page 4.2.E-3 of the Draft PEIR. That text is revised as follows:

> State Routes 49 and 88 ~~No major highways~~ extend through the Upcountry region of the WSMP 2040 Preferred Portfolio Study Area (in the counties of Plumas, Calaveras, Amador, and Alpine). SR 49 passes through Calaveras and Amador counties, and is a transportation route that links

the gold country counties from north to south. SR 88 in Alpine and Amador counties is a key east-west interstate corridor linking Nevada and the Central Valley of California. The road network within the upcountry area consists of a variety of public and private roadways. Limited bus service is provided in the Upcountry area. Small airports and airstrips are scattered throughout the Upcountry area.

At the project level, if any Upcountry components are implemented, EBMUD will include a detailed discussion of transportation and air quality impacts.

FC3-29: EBMUD did not circulate the Draft PEIR to the FAA. It is expected that there would be no significant impacts to air traffic at Westover Field. Impacts to transportation and public safety, including any potential impacts to the regional airport, will be thoroughly examined in a project-level EIR when and if the District decides to move forward with project-level planning for the Enlarge Pardee Reservoir component. Any necessary mitigation would be developed at that stage. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component.

FC3-30: Section 4.2.F, the Air Quality setting, provides ambient air quality data for all air basins where project components could potentially be developed. In addition to ambient air quality data, a criteria air pollutant inventory for each potentially affected air basin is included in Appendix D (Air Quality) to the Draft PEIR, which provides a quantitative description of the physical environmental conditions consistent with CEQA Guidelines §15125. The program-level Air Quality setting discusses the general areas (i.e., air basins) that can be affected by the proposed project. The greatest source of criteria pollutants in the San Joaquin Valley and surrounding foothills are mobile sources -- passenger vehicles and commercial trucks -- as well as stationary sources such as power plants. (California Air Resources Board 2009. *Air Resources Board Emissions Inventory by Air Basin*. Available: <http://www.arb.ca.gov/ei/maps/statemap/cntymap.htm>. Last updated April 14, 2009. Accessed August 19, 2009.) Generally, this project is not anticipated to add significant new vehicle trips. Hydropower is an alternative energy source that can, overall, help to reduce air quality emissions. Subsequent EIRs and/or environmental documentation will be prepared, as appropriate, for specific portfolio components when and if the District decides to move forward with project-level planning. For any components to be developed in Calaveras County, project-level documents will discuss the local conditions and plans.

FC3-31: Wildflowers are a distinct feature in the visual setting of Pardee Reservoir and the Mokelumne River, particularly in the spring. The Draft PEIR is revised to include new Appendix F, which includes scenic photographs of the Mokelumne River and the surrounding area. In addition, the second paragraph under the heading “Enlarge Pardee Reservoir” on pages 4.2.I-5 and 4.2.I-6 of the Draft PEIR is revised as follows:

The upper Mokelumne River flows into the east arm of the Pardee Reservoir (FRWA 2003). The uplands surrounding the Mokelumne River Canyon are characterized by rolling hills and small valleys, with

> occasional rock outcrops. The dominant natural vegetation in these upland areas is annual grassland and native oak woodlands. Pleasing displays of wildflowers catch the eye of those travelling along Electra Road and visitors to the Mokelumne River corridor in the spring. Please see Appendix F for scenic photographs of this area. The area is a rural, pastoral landscape of rangeland and open space, with residences scattered throughout the hills. The built environment along this stretch of the river is limited and includes two 60 kV transmission lines and the one-lane steel girder Middle Bar Bridge. SR 49, an eligible State scenic highway and designated scenic highway in the Calaveras County General Plan, crosses the Mokelumne River at Big Bar via a two-lane bridge (FRWA 2003), adjacent to the Mokelumne River Lodge. In general, views of the upper Mokelumne River are limited to recreationists (including anglers and boaters), SR 49 motorists, and lodge visitors (FRWA 2003).

The Enlarge Pardee Reservoir component is not likely to have a significant impact on visual resources in and around the reservoir or along the Mokelumne River for the reasons outlined in the Draft PEIR on pages 5.2.I-4 and I-5. EBMUD has analyzed the potential for significant impacts to visual resources. Because specific design and planning-level details have not yet been developed for Enlarge Pardee Reservoir component, the significance of the project's impact on visual resources cannot be determined at this time, as is acknowledged in the Draft PEIR on pages 5.2.I-5 and 5.2.I-6. Consequently, visual impacts resulting from the Enlarge Pardee Reservoir component could be significant and unavoidable. Impacts on visual resources will be examined at the project-level when and if the District decides to move forward with the Enlarge Pardee Reservoir component. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component.

FC3-32: The comment discusses the importance of the Middle Bar Bridge in the event of a wildfire. EBMUD does not plan to eliminate access in the Upcountry region or create issues for law enforcement and fire crews. Impacts on Middle Bar Bridge and access will be thoroughly examined in the project-level EIR for the Enlarge Pardee Reservoir component, when and if the District decides to move forward with project-level planning. Please see the Master Responses on Program-level EIR analysis and Enlarge Pardee Reservoir component.

The following text is added to page 4.2.J-5 of the Draft PEIR, in a new second paragraph under the heading "Enlarge Pardee Reservoir":

> Local residents and people recreating along the Mokelumne River would use Middle Bar Bridge as an evacuation route in the event of an up-canyon wildfire. It also provides first responder access for law enforcement, fire and medical emergencies.

FC3-33: The expansion of EBMUD's facilities would not result in a long-term increase in demand for public services in Calaveras and Amador counties; however, short-term increases in the need for fire protection and police services during construction were identified in Impact 5.2.K-2. EBMUD currently provides funding to Calaveras and Amador counties for police services in the area

surrounding Pardee Reservoir. For example, on June 9, 2009, EBMUD's Board of Directors authorized an agreement with Amador County for law enforcement services at Pardee and Camanche Reservoirs and on adjacent District watershed lands. That agreement included a financial arrangement whereby EBMUD would pay the County an annual amount up to a cap of $175,000 for said services.

Please see Responses FC3-62 and FC3-63 below for a discussion of growth-inducing impacts on land use and public services. EBMUD does not agree that past findings of improper conduct by Upcountry counties is relevant or necessary in this document and has reasonably assumed that services will be provided in the future consistent with legal requirements.

FC3-34: The solid waste management setting is presented in Section 4.2.K, Public Services and Utilities, which discusses a number of topics including water and wastewater services, flood control services, law enforcement and fire protection services, solid waste management, natural gas and electricity. The Draft PEIR acknowledges that the project may adversely affect landfill capacity (see page 5.2.K-7 through 5.2.K-8 of the Draft PEIR) and may also temporarily increase vehicle trips during construction (see pages 5.2.E-4 through 5.2.E-6 of the Draft PEIR). As noted on pages 7-5 through 7-7 of the Draft PEIR, the WSMP 2040 is a plan to meet EBMUD's customers' dry year needs. It is not meant to support or facilitate growth in Amador County, and therefore would have no growth-inducing effects there.

FC3-35: The comment asserts that the impact analysis does not meet the requirements for a program-level document and requests that more detail about specific project components be provided. Please see Responses BJo-1 through BJo-11 and the Master Response on Program-level EIR analysis. The PEIR meets the requirements for a program-level analysis for a program of this nature. Detailed, project-specific analysis of the type requested is not necessary in a program-level document of this nature and can be deferred for those components of the program that EBMUD is not currently proposing to fund or develop. (*See, e.g., Rio Vista Farm Bureau Center v. County of Solano* (1992) 5 Cal.App.4th 351, 373; *see also Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners of the City of Oakland* (2001) 91 Cal.App.4th 1344, 1358 ("A project involving only feasibility or planning studies for possible future actions which the agency, board, or commission has not approved, adopted, or funded does not require the preparation of an EIR . . .").) Here, the WSMP is a planning study that evaluates alternative water supply portfolios that may satisfy EBMUD's long-term, dry-year water demands. EBMUD has not determined, at this stage, to undertake the Enlarge Pardee Reservoir or Enlarge Lower Bear Reservoir components, and the EIR thus need not evaluate those components in the level of detail that is being requested. EBMUD has reviewed *Stanislaus Natural Heritage*, as well as other case law, and determined that the analysis is adequate. Contrary to the situation that was at issue in *Stanislaus Natural Heritage,* EBMUD is not proposing in this program to approve or entitle the Enlarge Pardee project or Enlarge Lower Bear project, or to fund or otherwise carry-out the Enlarge Pardee Reservoir component. As the Draft PEIR acknowledges, further design and planning details must be developed before the project can be evaluated in sufficient detail. The Draft PEIR has identified

and evaluated potential environmental impacts associated with the WSMP 2040. To do more without specific engineering proposals or planning information would be speculative. Subsequent project-level CEQA documentation will be prepared for specific portfolio components when and if the District decides to move forward with project-level planning.

FC3-36: The comment states that the PEIR has assumed that potentially significant impacts will be mitigated in the future without providing any factual basis for making that conclusion. The Draft PEIR has sought to identify impacts and address them at a program level, recognizing that the details of specific portfolio components, particularly those that are not being proposed to begin implementation immediately, must be developed at a later date. Details concerning particular components such as the Enlarge Pardee Reservoir component cannot be developed until further planning and feasibility studies are undertaken. Until then, it is impractical if not impossible to delineate that project's environmental effects in very specific detail. In some cases, a conservative position resulted in the characterization of impacts as potentially significant, while still recognizing that there will be an effort to mitigate impacts to the extent possible. Where mitigation can be broadly identified, there has been an effort to do that.

FC3-37: The comment addresses waste treatment and requests that specific information on discharges to sanitary systems be included in the PEIR. EBMUD does not agree that this type of project-level detail is necessary or feasible at this time. Where mitigation is feasible, but practical considerations such as the programmatic nature of an action under review preclude the development of specific measures, it is acceptable for an agency to commit itself to performance criteria that will be carried out once a project is implemented. That is the approach that EBMUD has used in committing to comply with the discharge limits that would be developed for the project.

FC3-38: The comment asks about data to support the conclusion that an expanded Pardee Reservoir would provide cooler water downstream. Enlargement of Pardee Reservoir would result in a larger, deeper reservoir. Typically water temperatures are cooler in deep water than in shallow water. If and when EBMUD decides to move forward with project-level planning for this component, impacts on water temperatures and fisheries habitat will be thoroughly evaluated in a project-level EIR. At this stage, EBMUD believes that the prediction is accurate. Please see the Master Response on Program-level EIR analysis.

FC3-39: Mitigation Measure 5.2.A-4 states that the groundwater monitoring programs would specify monitoring and water quality sampling frequency, parameters, and protocols *and response actions*. This mitigation measure is designed to commit EBMUD to take responsive action in the event that monitoring programs identify groundwater level or water quality impacts from groundwater banking/exchange project operations. Because the WSMP 2040 outlines these programs at a general, preliminary level, specific responsive actions and sampling protocols cannot be developed until more detailed information on the individual components is developed and becomes available. Generally, groundwater monitoring and response programs have proven effective at avoiding or reducing impacts on local groundwater

aquifers. For example, if groundwater levels or groundwater quality impacts are discovered, responsive measures could include, but would not be limited to the following: provide buffer areas between recovery wells and adjacent groundwater users; limit monthly or annual recovery rates; provide redundancy in recovery wells and rotate pumping from recovery wells; provide adequate well spacing; adjust or stop pumping if necessary to reduce impacts.

Completion of a project-level EIR and further project description development will assist in identifying existing groundwater levels and will specify maximum pumping rates, pumping schedules, and setback distances to insure that a positive project balance is maintained such that no net water would be removed from the basin. The water quality of the surface water sources for groundwater banking as well as existing groundwater quality would be characterized at that time and would specify water quality protection strategies including pre-treatment, if necessary. The project would operate by recharging water in a wet year and recovering water as needed in future dry years. The project would always put more water into the ground then it would remove and the project assumes that approximately 10 percent of stored water would be lost due to migration.

FC3-40: Contrary to the commenter's statements, the potential impacts of the Sacramento Basin Groundwater Banking/Exchange component on downstream Sacramento River and Delta water users are identified and described as "potentially significant" in the Draft PEIR (page 5.2.A-20). The Draft PEIR notes that increased diversions at Freeport or elsewhere along the Sacramento River may create impacts to the Delta and to downstream water users, and it recognizes the potential for reduced downstream flows to lead to limitations on downstream diversions and/or changes in water quality, although this is not expected. (Draft PEIR, page 5.2.A-20). As noted in the document, these impacts will be analyzed in more detail at the project level when and if EBMUD decides to move forward with those components. It is expected, however, that at the project level, designs would be developed to avoid harm to other water users.

Similarly, regarding the Mokelumne River, the potential impacts of the Inter-Regional Conjunctive Use/San Joaquin Groundwater Banking/Exchange component on downstream Delta water users resulting from the diversion of up to an additional 17.4 MGD in normal and/or wet years is described as "potentially significant" in the Draft PEIR (Draft PEIR 5.2.A-21). The Draft PEIR addressed impacts to the Delta, although not in detail at this stage. Specific project-level impact analysis cannot be performed because operational details of the components are not yet defined. Appropriate mitigation will be identified if significant impacts are found when project-specific proposals and operations are considered in the future, if they are considered at all. Currently, these components are uncertain and speculative for a number of reasons: the scope of each component has not yet been developed; no engineering or other design studies have been presented; and EBMUD is not planning to implement those components at any time in the near future.

As noted in the comment, Mokelumne River contribution to the Delta is relatively small. The Mokelumne River constitutes just 1.5 percent of the Delta watershed area. Based on the Department of Water Resources average annual unimpaired flow data from 1921-1994, the Mokelumne River provides just 2.9 percent of overall Delta unimpaired flow, and the other Eastside streams provide only 3.1 percent. EBMUD's diversions constitute less than one percent of total diversions. EBMUD has not stated that this relatively small contribution of to the Delta would mean that any impacts would not be significant. Instead, EBMUD has acknowledged the potential for impacts and will study these in detail at the project level to determine the significance. The Draft PEIR also includes mitigation measures to help protect these resources (Draft PEIR, Mitigation Measures 5.2.C-8a and C-8b, page 5.2.C-15).

FC3-41: The comment states that the PEIR should include more information on seismic risks. Please see pages 5.2.B-2 through 5.2.B-4 of the Draft PEIR and the Master Response on the Enlarge Pardee Reservoir component. Mitigation Measure 5.2.B-1a would require an analysis of geotechnical and seismic risks associated with the Enlarge Pardee Reservoir component, and the inclusions of structural and other features necessary to avoid, minimize, or mitigate that risk. Specific analysis of impacts related to geology and seismicity, along with an assessment of risks and specific mitigation, will be thoroughly undertaken as part of a project-level EIR when and if the District decides to move forward with project-level planning for this component. The analysis at the project-level will include the science, studies and mitigation.

FC3-42: EBMUD reviewed the scoping comment and the PEIR evaluated impacts to fish and wildlife species and acknowledges that the Enlarge Pardee and Lower Bear Reservoir components may adversely affect a number of fish and wildlife species, as noted in Section 5.2.C of the Draft PEIR.

Table C-10 in Appendix C of the Draft PEIR is revised to include the California spotted owl, as shown on the following page. The mitigation set forth in Mitigation Measures 5.2.C-5a, 5.2.C-5b, 5.2.C-5c, and 5.2.C-5d is considered adequate to reduce impacts to this species at this program-level stage to a level that is less than significant. Subsequent project-level EIRs will analyze impacts on special-status species and specific mitigation measures to reduce those impacts, when and if the District decides to move forward with project-level planning for these components. Additionally, as required by mitigation measures presented in Section 5.2.C of the Draft PEIR (including Mitigation Measures 5.2.C–1a, 5.2.C-1b, 5.2.C-2e, 5.2.C-4c, 5.2.C-5a, 5.2.C-5c, 5.2.C-5d, 5.2.C-6b, 5.2.C-6d, 5.2.C-7c, and 5.2.C-9), EBMUD will consult with the US Army Corps of Engineers, the Regional Water Quality Control Board, California Department of Fish and Game, US Fish and Wildlife Service, and National Marine Fisheries Service to develop effective mitigation measures to reduce impacts to special-status species and their habitats, and to obtain required permits and approvals. Please see the Master Response on Program-level EIR Analysis and the Enlarge Pardee Reservoir component for more detail regarding the future plans for project-level analysis of the Lower Bear expansion and the Enlarge Pardee reservoir component.

Table C-10: Wildlife Species Potentially Occurring within the Enlarge Lower Bear Reservoir Project Area

COMMON NAME	SCIENTIFIC NAME	FEDERAL LISTING STATUS	STATE LISTING STATUS
Amphibians			
Foothill yellow-legged frog	*Rana boylii*		SC
Sierra Nevada yellow-legged frog	*Rana sierrae*	Candidate	SC
Birds			
Northern goshawk	*Accipiter gentilis*		SC
American peregrine falcon	*Falco peregrinus anatum*	Delisted	Endangered, FP
California spotted owl	*Strix occidentalis occidentalis*		SC
Mammals			
Pacific fisher	*Martes pennanti (pacifica) DPS*	Candidate	SC

Notes:
SC = CDFG Species of Concern
WL = CDFG Watch List
MBTA = Migratory Bird Treaty Act
CNDDB = tracked by the CNDDB
FP = CDFG Fully Protected
Source: CNDDB 2008, USFWS 2008

FC3-43: Please see the Master Response on Program-level EIR analysis. EBMUD prepared this program-level EIR to conduct a general, qualitative assessment of impacts associated with the WSMP 2040 and to discuss, at a necessarily general level, mitigation that would reduce impacts. As stated in the Master Response on the Enlarge Pardee Reservoir component, not all of the supplemental supply components will necessarily be constructed. Moreover, for the components that do move forward, EBMUD will not rely solely on the Draft PEIR. The District commits to preparing project-level CEQA documentation for the various components. EBMUD also commits to having special-status species surveys conducted by a qualified biologist and proposing specific mitigation measures in the project-level CEQA documentation for each component. The project-level documentation will include a thorough analysis of impacts and will include specific measures, including species surveys, to ensure that impacts are mitigated. EBMUD fully intends to conduct species surveys and habitat assessments for the Enlarge Pardee Reservoir and Enlarge Lower Bear Reservoir components, along with a number of other feasibility, engineering, siting and planning studies. The species surveys and habitat assessments will provide input for facility design as well as for environmental impact assessment. Furthermore, the regulatory agencies that will issue permits and approvals for the project (including US Army Corps of Engineers, US Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Game) will most likely require that EBMUD conduct special-status species surveys and habitat assessments.

FC3-44: Please see the Master Response on Project-level EIR analysis and the Enlarge Pardee Reservoir component. EBMUD's operations along the Mokelumne and Sacramento Rivers must already adhere to the terms included in the authorizations for EBMUD's Freeport Project and CVP contract with the U.S. Bureau of Reclamation, FERC licenses for the Mokelumne River reservoirs, and the terms of EBMUD's water rights and the Joint Settlement Agreement. The WSMP 2040 and the Upcountry components do not presently propose to increase EBMUD's existing water rights on the Mokelumne River or change its JSA Agreement water release obligations as part of this program. At the project level for the Enlarge Pardee Reservoir and Enlarge Lower Bear Reservoir components, the District would examine options for siting of a new dam, evaluate the type of dam, identify suitable embankment elevations, and develop operation scenarios and associated reservoir storage volumes and yields, taking into consideration the need to protect fish and wildlife that depend on the Mokelumne River. Impacts to fish and wildlife will be thoroughly examined in project-level EIRs for the reservoir components when this information, including specific information on flows and other water quality issues, is available, when and if the District decides to move forward with project-level planning.

FC3-45: EBMUD acknowledges that the construction season may overlap with the bird breeding season. This issue will be addressed in the project-level EIR that will be prepared for the Enlarge Lower Bear Reservoir component, when and if the District decides to move forward with project-level planning. Please see the Master Response on Program-level EIR analysis.

FC3-46: As stated in Mitigation Measure 5.2.D-2b of the Draft PEIR, EBMUD is committed to preserving the Electra Run for whitewater boating. This mitigation measure was revised to emphasize EBMUD's commitment to preserving whitewater recreation on the Electra Run. Please see Response FC3-12.

Project impacts on whitewater and other recreation activities will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with the component. Please see Response FC3-47 below.

FC3-47: The typical whitewater boating season occurs in the spring and summer. EBMUD acknowledges the assertion that whitewater boating occurs in the fall and winter months as well, though to a lesser degree. The PEIR has examined potential whitewater boating impacts at a program level. At the project level, the District will conduct a thorough survey of recreation along the Mokelumne River to determine current uses throughout the year, and will prepare a project-level EIR that will thoroughly examine potential impacts to the Electra Run and ways to avoid, minimize, or mitigate those impacts when and if project-level planning moves forward. Please also see Responses FC3-12 and FC3-46, as well as the Master Responses on the Enlarge Pardee Reservoir component and Program-level EIR analysis.

FC3-48: Refer to Response BLM-4 for additional discussion of EBMUD and State rules and regulations regarding body contact. While there are limits on recreation resulting from the need to protect drinking water quality, recreation could still occur.

FC3-49: As stated in Mitigation Measure 5.2.D-2b of the Draft PEIR, EBMUD is committed to preserving the Electra Run for whitewater boating. Project impacts on the Electra Run and recreation activities will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with the component. Socioeconomic impacts, including impacts to commercial rafting operations, will also be examined as part of the project-level analysis, and resulting physical environmental impacts will be mitigated to the extent feasible.

FC3-50: EBMUD commits that project-specific environmental documentation would be prepared for an Enlarge Pardee Reservoir component. At the project-specific planning stage EBMUD would consider impacts to this facility based on the ultimate project design and construction (BLM anticipates that construction of the River Access will be completed by late 2009). At this point, it is speculative as to whether the Enlarge Pardee Reservoir component would render this facility inaccessible for day-use boating.

FC3-51: Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component. The generalized nature of mitigation measures is appropriate at this stage. Impacts to recreation features cannot be known with any particular level of certainty at this stage. Impacts to recreation will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with project-level planning. The project-level EIR will also identify specific mitigation measures to reduce significant impacts.

FC3-52: Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component. Impacts to recreation and recreation facilities, including effects on the Mokelumne River itself, will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with this component. This would include an extensive analysis of impacts resulting from increased inundation, including recreational impacts resulting from a change in the free-flowing nature of a reach of the river.

FC3-53: EBMUD does not intend to eliminate access in the area surrounding Pardee Reservoir. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component. Public safety, traffic and access impacts will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with this component. This analysis would include the limited number of residences using the route cited.

FC3-54: EBMUD recognizes the importance of the Me-wuk people and their cultural practices. The Me-wuk are discussed on page E-9 of Appendix E, Cultural Resources, to the Draft PEIR. EBMUD will consult with the Me-wuk and will conduct a thorough evaluation of cultural resources impacts, including impacts on current cultural practices and any sacred sites, in a project-level EIR when and if the District decides to move forward with the Enlarge Pardee Reservoir component. To respond to the comment, in Section 4.2.H.2 of the Draft PEIR, Cultural Resources Setting for Preferred Portfolio Components, a new paragraph is added after the first paragraph to the text under the heading

Enlarge Pardee Reservoir, as follows:

> The native Me-wuk people inhabit Amador and Calaveras counties, and have a black willow gathering site in the Middle Bar area. The Me-wuk manage the willow stand and gather material there for baskets and cradleboards as well as for traditional tribal medicines.

FC3-55: Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component. The mitigation measures presented in the Draft PEIR to reduce significant impacts to cultural resources are standard measures that are typically implemented. Impacts to cultural resources will be fully examined in a project-level EIR when and if the District decides to move forward with this component, and impacts and appropriate mitigation for each of the identified resources will be identified at that time. Furthermore, it is likely that NEPA documentation will be required for this component, in which case Section 106 consultation with the State Historic Preservation Office would be required.

FC3-56: Please see Response FC3-18 above.

FC3-57: Please see Response FC3-55 above. EBMUD recognizes the importance of these resources.

FC3-58: EBMUD acknowledges that the Enlarge Pardee Reservoir component would result in adverse visual impacts. These impacts will be fully evaluated in a project-level EIR when and if the District decides to move forward with this component. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component. The request that EBMUD adopt an alternative that does not include the Enlarge Pardee Reservoir component is noted.

FC3-59: On September 10, 2008, EBMUD adopted Policy 7.05, which commits the District to strive to balance environmental, social, and economic objectives into its decision-making and programs. Among other commitments, in Policy 7.05 (as an objective) the District states that it will “assure that the District adheres to the principles of sustainability and environmental justice”. EBMUD commits to reviewing Environmental Justice impacts at the project level if the Enlarge Pardee Reservoir component of the WSMP 2040 is implemented and the project-specific planning for this component is undertaken. The level of review regarding Environmental Justice is appropriate for this programmatic stage.

FC3-60: Please see the Master Response on the WSMP 2040. While the alternative portfolios were grouped into themes, the overall portfolio development effort was designed in part to identify components and grouping of components that could minimize or avoid identified impacts while still satisfying program objectives. In fact, preserving and protecting the environment and biological resources was one of the objectives. Environmental impacts were considered during the 18-month-long alternatives development process, which included a series of public workshops and meetings to obtain input from the public. Many of these public meetings and workshops were held in the EBMUD service area, however the District also held Upcountry regional

forums to consult with local residents from Amador and Calaveras counties. The Draft PEIR evaluated a reasonable range of alternatives, all of which would lessen certain environmental impacts of the program to one degree or another. Still, at this stage, there remain several significant and unavoidable impacts, which would be the case under any number of program alternatives. For example, as discussed under Impact 5.2.D-1 on pages 5.2.D-2 through 5.2.D-6 of the Draft PEIR, several components of the Preferred Portfolio, including Northern California Water Transfers, could have significant and unavoidable impacts to agriculture. This is because the sources and amounts of transfers cannot be known at this stage. At the program level, the District was not able to identify measures that would reduce these potentially significant effects to less-than-significant levels. Future project-level modeling and analysis would consider the source and amount of a water transfer, whether the transfer has the potential to impact agriculture, and mitigation would then be designed as needed. Specific mitigation measures would be identified in subsequent project-level environmental documentation that would be prepared for the projects.

FC3-61: Please see the Master Response on the WSMP 2040 and Response FC3-11 above detailing the process for reviewing and eventually eliminating the 25 percent rationing level. The District conducted an in-depth evaluation of a range of rationing levels before selecting the Preferred Portfolio. Evaluations of impacts, cost, and feasibility were part of this evaluation.

FC3-62: The comment discusses growth-inducing impacts in Amador, Calaveras, and San Joaquin Counties. While the Enlarge Pardee component is recognized as having the potential to provide some water supply benefits to Upcountry interests, those benefits are speculative at this early point in the planning process. The WSMP 2040 is intended to address EBMUD's dry-year water needs; it is not intended to address water supply or infrastructure needs in Amador and Calaveras Counties or any other area outside EBMUD's service area. Any discussion of regional benefits at this stage is intended to recognize that regional support would be sought before a component moves forward. As envisioned, the WSMP 2040 would not, in and of itself, facilitate growth or remove an obstacle to growth to the areas of concern to the commenter. If EBMUD decides to pursue the Enlarge Pardee component further, and if the component becomes part of a larger program to provide water to Upcountry interests, then the growth-inducing effects of the project would need to be evaluated.

FC3-63: As noted in the Master Response on the WSMP 2040, the objective of the WSMP 2040 and the focus of the program is to ensure that EBMUD's projected water needs can be met in dry years. The WSMP was not undertaken to examine water needs in Amador and Calaveras Counties, and the program does not provide water for development in those areas. In other words, the WSMP 2040 does not provide new water to support, encourage, or accommodate development in areas outside EBMUD's service area. As noted above, discussions of regional benefits at this stage are intended to recognize that regional support would be sought before a component moves forward. EBMUD does not agree that the cumulative impacts analysis requested by the comment is appropriate at this stage. In response to other issues raised by the comment, EBMUD believes that it is proper to assume

compliance with state law requirements and requirements by local and state planning agencies. It should be noted that EBMUD currently provides funding to Calaveras and Amador counties for police services in the area surrounding Pardee Reservoir. For example, as mentioned in Response FC3-33, on June 9, 2009, EBMUD's Board of Directors authorized an agreement with Amador County for law enforcement services at Pardee and Camanche Reservoirs and on adjacent District watershed lands.

FC3-64: The cumulative impacts analysis in the document is guided by the standards of practicality and reasonableness. CEQA does not mandate that a quantitative analysis be conducted in all instances, and a quantitative analysis of cumulative impacts is not included in the Draft PEIR because quantified data has not been developed for all of the WSMP 2040 components. Please see the Master Response on Program-level EIR analysis. In many instances, the locations of proposed facilities have not yet been identified, and designs have not been developed. The District would have to make many assumptions regarding location, design and operation of the proposed facilities that would most likely not be applicable when the planning for specific components moves forward. This would be in addition to the speculation regarding ultimate Delta restoration actions that will be undertaken. EBMUD has prepared this first-tier program-level EIR to conduct a general, qualitative assessment of impacts associated with the WSMP 2040. As stated in the Master Response on the Enlarge Pardee Reservoir component, not all of the supplemental supply components will necessarily be constructed. For the components that do move forward, EBMUD will conduct additional analysis. The District commits to preparing project-level CEQA documentation for certain components, including Enlarge Pardee. The project-level documentation will include a thorough analysis of cumulative impacts, including impacts on hydrology and biological resources.

FC3-65: As stated on page 8-29 of the Draft PEIR, agricultural lands would be potentially affected by development projects, water transfers, or groundwater/exchange projects. At the program level, the District cannot determine the agricultural lands that would be affected, if any, since partners and locations for water transfers and groundwater/exchange projects have not been identified. This approach was upheld by the California Supreme Court. (*In re Bay-Delta Programmatic EIR Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1176.) EBMUD will conduct a thorough evaluation of impacts on agricultural lands as part of future project-level CEQA analysis, and will also identify and implement any feasible mitigation measures consistent with the Municipal Utility District Act and other legal authorities. EBMUD cannot evaluate impacts and particular mitigation measures associated with agricultural lands unless and until it can review specific project proposals for identified components.

FC3-66: Please see the Master Response on Program-level EIR analysis. Additional documentation will be prepared, as appropriate, for specific portfolio components when and if the District decides to move forward with project-level planning. At that stage, any documentation would examine greenhouse gas (GHG) emissions and cumulative impacts fully, consistent with state law requirements and guidance developed by the Resources Agency, Air Quality Management Districts, and other state agencies, and would consider all

relevant guidance, including the CAPCOA guidance cited in the comment. At the program level, as stated in the Draft PEIR, it is not possible to quantify GHG emissions from construction or operations with any reasonable certainty. Nonetheless, the Draft PEIR concludes that the Preferred Portfolio's construction-related GHG emissions would be less than significant because construction-generated emissions would be temporary in nature, and because both existing State-wide emission reduction plans and new regulations being developed under the mandate of AB 32 will increase the GHG efficiency of construction activity.

For example, the California Air Resources Board's (ARB) *Proposed Climate Change Scoping Plan* identifies the need to expand efficiency strategies and low carbon fuels for heavy-duty and off-road vehicles, including construction equipment. In addition, existing programs for air quality improvement in California, including the *Diesel Risk Reduction Plan* and the *2007 State Implementation Plan,* will result in the accelerated phase-in of cleaner technology for virtually all of California's diesel engine fleets, including construction equipment (ARB 2008). Measures implemented under these plans are likely to result in future fleets of construction equipment that are more GHG-efficient than existing fleets. For these reasons, levels of GHG emissions associated with construction activity are expected to decrease over time as new regulations are developed under the mandate of AB 32. On September 22, 2009, the U.S. Environmental Protection Agency (USEPA) issued the Final Mandatory Reporting of Greenhouse Gases Rule, which requires reporting of GHG emissions from large sources and suppliers in the United States (those that generate more than 25,000 metric tons of CO2 per year), and is intended to collect accurate and timely emissions data to inform future policy decisions. This new program will cover approximately 85 percent of the nation's GHG emissions and will apply to roughly 10,000 facilities. USEPA's new reporting system will provide a better understanding of the sources of GHG emissions and will guide development of the best possible policies and programs to reduce emissions. According to the USEPA, this comprehensive, nationwide emissions data will help in the fight against climate change. (Final Mandatory Reporting of Greenhouse Gases Rule, available at the USEPA website: http://www.epa.gov/climatechange/emissions/ghgrulemaking.html, accessed on September 24, 2009) Implementation of Mitigation Measures 5.2.F-2b and 5.2.F-2c would result in further efficiencies that would reduce this impact to a less-than-significant level.

FC3-67: This is a programmatic analysis, and as noted in Section 5.2.F, Air Quality, project-specific analysis would quantify mass emissions and mitigate accordingly. The project's construction activities would be subject to the same mitigation measures described in Section 5.2.F, which would help reduce GHG emissions associated with construction equipment and construction-related vehicles. In addition, as noted in Mitigation Measure 5.2.F-2b, construction activities for each specific component would comply with all requirements of the applicable local air district. In the nature of full disclosure, the Draft PEIR discusses state-wide programs that are anticipated to reduce GHG emission from construction activities. As stated in Response FC3-66, new regulations being developed under the mandate of AB 32 will increase the GHG efficiency of construction activity, and USEPA's

recent issuance of the Final Mandatory Reporting of Greenhouse Gases Rule will guide development of future federal GHG regulations. Subsequent EIRs and/or environmental documentation will be prepared, as appropriate, for specific portfolio components and will include significance thresholds consistent with existing guidance and appropriate to the circumstances of the project, as well as, more detailed construction mitigation applicable to the project site and type, when and if the District decides to move forward with project-level planning. As noted in the Draft PEIR, these project-specific mitigation measures likely would include measures to meet AB 32 mandates for GHG reductions and require control measures for construction activities.

FC3-68: Please see the Master Response on Program-level EIR analysis. The cumulative impacts analysis in the document is guided by standards of practicality and reasonableness. Subsequent EIRs and/or environmental documentation will be prepared, as appropriate, for specific portfolio components when and if the District decides to move forward with project-level planning.

FC3-69: Please see the Master Response on Program-level EIR analysis and Response FC3-68 above. Subsequent EIRs and/or environmental documentation will be prepared, as appropriate, for specific portfolio components when and if the District decides to move forward with project-level planning.

Although the Draft PEIR discusses the potential operational GHG emission sources for each alternative, providing exact activity levels and emissions is not possible at this time. The electricity-related GHG emissions shown in Table 8-5 provide decision makers with information to compare the indirect operational GHG emissions of each alternative. As stated in Section 8.6.1 (Threshold of Significance), “no local or State air quality regulatory agency in California, including ARB and local air districts, has identified a significance threshold for GHG emissions generated by a proposed project, or a methodology for analyzing impacts related to GHG emissions or global climate change” (please see page 8-34). Therefore, comparing these emissions to a numeric threshold, in absence of an established significance threshold and without detailed information regarding other GHG operational emissions (e.g., vehicle trips, generators), would be premature and speculative.

FC3-70: Hydroelectric power is viewed as a source of energy resulting in relatively few GHG emissions. Were the Enlarge Pardee Reservoir component to be constructed, it would include hydroelectric elements such as a new powerhouse, and it is expected that more power would be produced as compared with current conditions. Reservoir operations would be analyzed to identify power generation capabilities. While EBMUD recognizes that the power from this component does not presently qualify as eligible under the state’s Renewable Portfolio Standards, in the future, efforts would be undertaken to determine if such generation would qualify for crediting under whatever GHG emissions offset program is in place at the time of project development at the state and/or local level.

FC3-71: As discussed in Impact 8-2 (GHG operational emissions) of the Draft PEIR, the proposed project would include infrastructural improvements that increase the energy efficiency of EBMUD's water conveyance system (please see page 8-41). These features are anticipated to reduce electricity demand for water conveyance, which would reduce GHG emissions associated with electricity production. This is the basis for the determination that the impact with respect to GHG emissions would be less than significant.

Mitigation measures for construction- and operation-related GHG emissions will be developed, as appropriate, for specific portfolio components when and if the District decides to move forward with project-level planning. As a PEIR examining a broad program, the level of detail available at this time does not allow for specific mitigation measures tailored to each project component. Rather, the Draft PEIR includes general mitigation measures that would apply to all construction activities.

Please see the Master Response on Program-level EIR analysis. Subsequent EIRs and/or environmental documentation will be prepared, as appropriate, for specific portfolio components when and if the District decides to move forward with project-level planning.

FC3-72: An extensive economic analysis was conducted as part of the WSMP 2040. During this process, an estimation of both the individual component costs as well as the portfolio costs was developed.

A complete explanation of the methodology for the economic analysis as well as the results are available in the Water Supply and Economic Modeling Report which is included as an appendix to the WSMP 2040. The estimated costs of each of the components can be found in the March 25, 2008 Board of Supervisors Workshop #7 presentation:

http://www.ebmud.com/water_&_environment/water_supply/water_supply_management_program/board/080325-BOD-workshop-Agenda-&-Presentation.pdf

EBMUD will refine the economic analysis at the project level, when more information about each of the individual components, partners, and expected customers (e.g., domestic, irrigation, industrial, etc.) are known. Please see the Master Response on Program-level EIR analysis.

FC3-73: EBMUD considered costs as well as benefits of the Preferred Portfolio and alternatives during the alternative development process. Please see Response FC3-74 below for links to various reports on EBMUD's website that document this information. Economic and social impacts are generally not considered under CEQA unless they result in physical changes in the environment that, in turn, cause adverse environmental consequences. It is speculative at this point as to whether the program and its various components would have any appreciable effect on salmon or the salmon fishing industry.

FC3-74: An economic analysis was conducted as part of the WSMP 2040 and was presented at the public Board of Directors Workshop #7 on March 25, 2008.

At this meeting, economic comparisons of the various rationing levels (10 percent, 15 percent, and 25 percent) were presented. This presentation can be found on the EBMUD website at:

http://www.ebmud.com/water_&_environment/water_supply/water_supply_management_program/board/080325-BOD-workshop-Agenda-&-Presentation.pdf

In addition, several supporting reports can also be found on the EBMUD website including:

- October 18, 2007 Proposed Method for Calculating Customer Shortage Costs
- March 14, 2008 Cost of Water Shortage
- February 6, 2008 Cost of Water Shortage Addendum
- April 11, 2008 Potential Impact of Water Shortages on Landscaping Services Sector within EBMUD Service Area

http://www.ebmud.com/water_&_environment/water_supply/water_supply_management_program/economic_analyses/default.htm

In addition, the cost of each of the Alternative Portfolios was evaluated in the economic analysis and presented at the June 24, 2008 Board Workshop #9. Alternative Portfolios A, B, and E include the 10 percent rationing level, while Alternative Portfolios C and D include a 15 percent rationing level. In the evaluation of the economic impact of rationing on the District and on District customers, several of the Alternative Portfolios (A, C, and E) were modeled at all three levels of rationing to compare their cost (10 percent, 15 percent, and 20 percent). As the rationing level was increased from 10 percent to 15 percent to 20 percent for these modeled scenarios, supplemental supply was decreased so that the Alternative Portfolio did not exceed the Need for Water. The results of this modeling exercise indicated that as rationing levels were increased, the total cost increased. The modeling also indicated that with increased rationing levels, the range of costs (or overall risk) that could be incurred increased.

http://www.ebmud.com/water_&_environment/water_supply/water_supply_management_program/board/080624-BOD-workshop-Agenda-&-Presentation.pdf

The cost of the Preferred Portfolio is not included because it had not yet been developed at that time; however, the example scenario for the Preferred Portfolio has subsequently been modeled and an economic analysis has been completed for it. The costs of the Alternative Portfolios as well as for the Preferred Portfolio example scenario are more fully described in the Water Supply and Economic Modeling Report which will be included as an appendix to the WSMP 2040.

Foothill Conservancy 3 (FC3)

Attachment A

As requested, the five (5) photographs presented on the following pages depict a portion of the physical setting of the area in which the Enlarge Pardee Reservoir component would occur. These photos were obtained from those stored and available for public review and download on a public website maintained by the Foothill Conservancy (www.foothillconservancy.org). As stated in Responses FC3-1 and FC3-31 above, the Draft PEIR is revised to include new Appendix F, which includes these photographs of the Mokelumne River and the surrounding area.

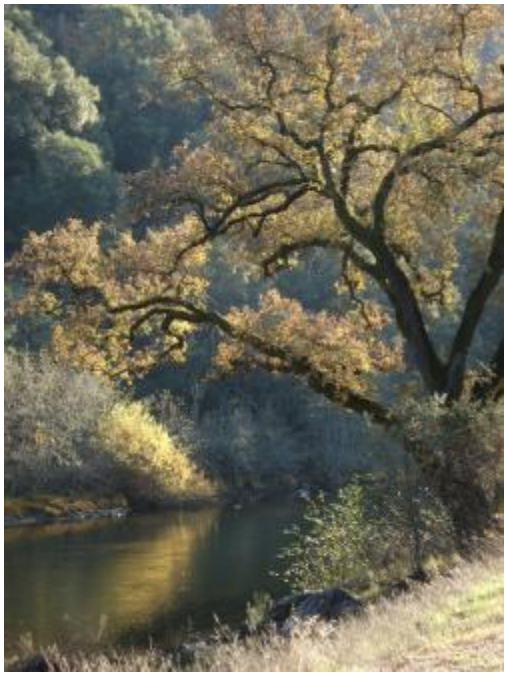


Photo 1 - Riverbank / Riparian along Electra Run

Photo 2 - Spring wildflowers / Electra Run (upland / overbank area)

Photo 3 - Middle Bar Bridge (Mokelumne River crossing)

Photo 4 - Mokelumne River near Middle Bar Bridge

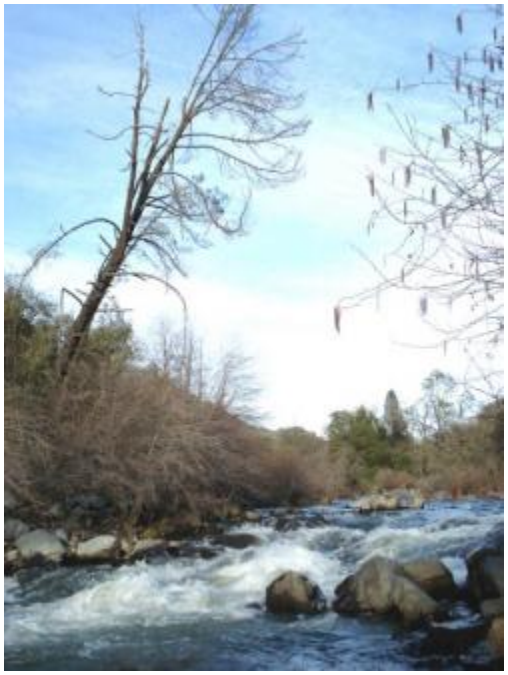


Photo 5 - Mokelumne River rapid (immediately below Hwy 49 Bridge)

FOR 090504

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March 4, 2009

ELECTRONIC FILING

Thomas B. Francis, PE
East Bay Municipal Utility District
375 11th Street, MS 407
Oakland, CA 94607

Re: Comments on EBMUD Draft Program Environmental Impact Report, Water Supply Management Program 2040

Dear Mr. Francis:

Friends of the River has reviewed the draft PEIR for the EBMUD Water Supply Management Program.

The Program rests on the remarkable assumption that EBMUD, a mature District of finite size that just accomplished a major expansion to its supply portfolio, now estimates that its demand will grow dramatically over the thirty-year planning horizon beyond its newly augmented supply. The preferred portfolio therefore contemplates construction of a major new dam (or dams) in an already heavily dammed and diverted watershed, and expects that the new capacity will be filled with water and thus available to meet the District's hypothetical modeled shortfall during the District's hypothetical design drought. Neither assumption is reasonable. 1

Projected water demand

The dPEIR notes that its demand projections are based on projected Land Use Demands (LUDs) based on discussions with planners and review of general plans within its service area. It concludes that service-area demands will increase to 312 MGD (280 MGD with water conservation and reclamation) by 2040, the planning horizon for the dPEIR. 2

As noted in the Amador County Water Board of Supervisor's recent letter to EBMUD, District demands from 1970 to 2005 actually decreased from 220 to 205 MGD during that thirty-five-year period. In the last twenty-five years, per-capita consumption has remained essentially flat (167 gpd to 160 gpd). This is typical for municipal water suppliers that are already substantially urbanized — and have been for many years.

Even this happy trend does not necessarily predict the future. The next thirty years are likely to see a renewed effort in urban water-conservation efforts, the Governor's 20 by 2020 program being only one example. Districts such as EBMUD, with both a finite land area and a finite (but now more generous)[1] water supply, should be motivated and capable of continuing to achieve relatively flat District demands, and an actual decrease in per-capita water consumption. 2

Thus it is highly likely that the LUDs overestimate actual required demands that the District will face during this planning period.

Enlarging Pardee Reservoir

Construction of a new, larger Pardee Dam is one potential centerpiece of the District's preferred portfolio supply expansion to meet hypothetical Program demand. Of critical importance to District Program planning should be that the supply augmentation projected to be achieved by the new Pardee Dam may also be hypothetical. This is not disclosed in the dPEIR. Instead when discussing the element of the preferred alternative at page 3-24, the dPEIR states,

> During dry years, this component would create an additional 172,000 AF of storage (at flood pool level), or about 51 MGD of water supply in each dry year for up to three dry years in a row. 3

The 51 MGD additional "yield" of the new Pardee Dam is apparently arrived at by using the simple conversion of 1 MGD = 1,120 AF per year. The arithmetic, of course, is correct. The hydrology may not be.

Clearly, the dPEIR assumes that 51 MGD is available to the District over the three years of the design drought. But given that in many years Mokelumne River hydrology is unable to fully utilize even the existing Pardee Dam at projected 2020 demands, it seems unlikely that just because 172,000 AF of additional space was available at Pardee Dam that it could be counted on to be occupied by water at the beginning of the design drought![2] Indeed, given the District's

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[1] "Through the FRWP [Freeport Water Project] up to 100 MGD of water can be delivered to EBMUD customers in dry years. Under its CVP contract, EBMUD is limited to a total delivery of 165,000 AF over any consecutive three-year period." (P. 2-12) During the 3-year design drought, FRWP supplies are expected to supply 49 MGD, the existing Mokelumne River facilities expected to supply 116 MGD. That represents a 42% increase in the District's surface-water supply sources.(Fig. 2-5)

[2] San Joaquin County consultants attempting to demonstrate the availability of unappropriated water in the Mokelumne River conducted a retrospective analysis of EBMUD Pardee-Comanche Reservoir operation studies. Based on 75 years of historic hydrology, they concluded that no water would be available in 37 years at a 228 MGD EBMUD demand. At 325 MGD EBMUD demand, no water would be available in 51 of the 75 years of record (1921–1995). (Tables 1 and 2 summaries, letter from James C. Hanson, Consulting Civil Engineer to Thomas M. Gau, Deputy Director, San Joaquin County Department of Public Works, January 30, 2002)

conservative design-drought planning assumptions, the initial start point of the design drought should be that no additional supply would be available from the expansion component of Pardee Dam at any time meaningfully before, and in, the design-drought sequence. Instead, the dPEIR shows bar graphs of a nice, solid expanded Pardee Dam supply playing a major and reliable role in meeting the hypothetical new demands in the District's design drought. (Figure 3-23, P. 3-48)

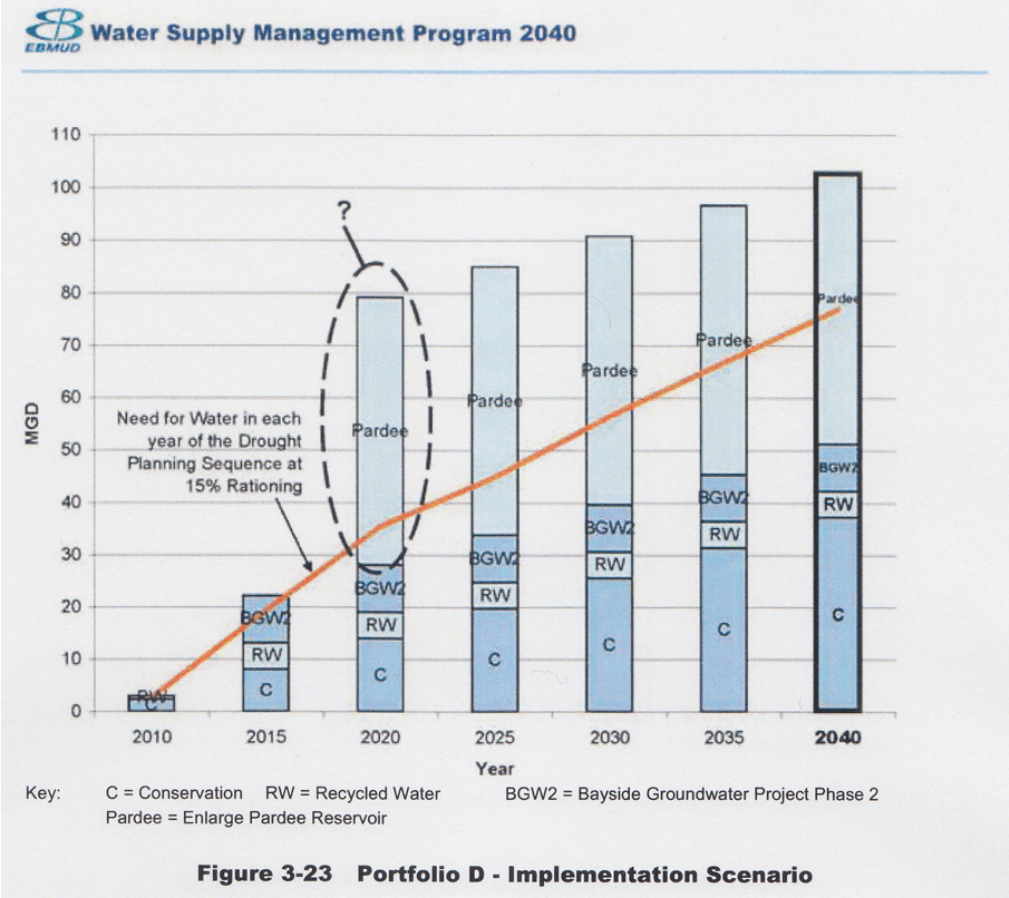


Figure 3-23 Portfolio D - Implementation Scenario

Most of the other measures of the Preferred Portfolio, including demand management, emergency rationing, water recycling, surface water transfers, regional desalination, and even groundwater programs have or could have high drought-year reliability. New Mokelumne River reservoir storage does not.

Expanded Mokelumne River storage alternatives should be deleted from the Preferred Portfolio because of failure to meet Program water-supply drought-planning reliability objectives.

3

dPEIR Discussion of New Storage Direct Environmental Impacts

The discussion of the setting and expected impacts of a 33-foot higher Pardee Dam is superficial, omits key information, and thus erroneously concludes that impacts can be mitigated to less than significant levels.

4

At it's most basic level, the dPEIR fails to disclose that the area that would be periodically inundated is an all-year-round river-recreation resource all the way down to the District-constructed takeout at Middle Bar Bridge, and that the destruction of shoreline vegetation from the reservoir normal maximum pool (where water can be ponded for many weeks) significantly affects not only shoreline riparian communities but the experience of river recreationists. 4

EBMUD, Friends of the River, and California Attorney General's staff and Foothill Conservancy Board members, Dedication of Middle Bar Take-out, May 16, 2003

Detailed comments:

Reservoir boundaries

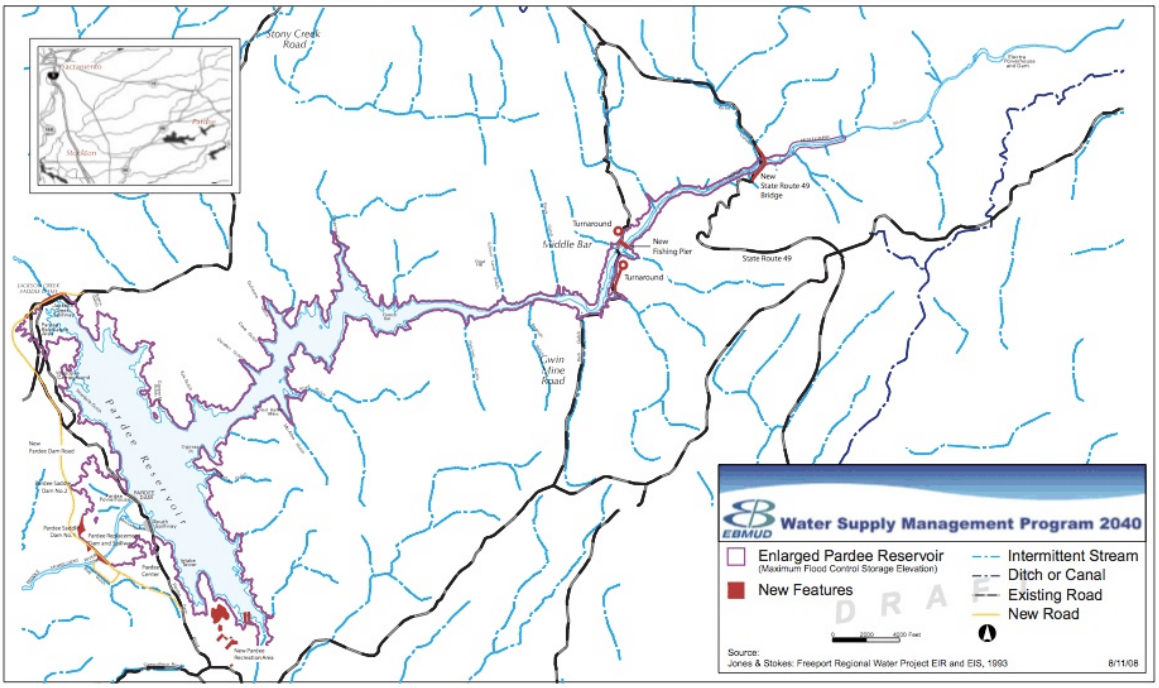
Figures 3-9 and 3-10 show the "Increase in Inundation Area" of the "Proposed Maximum Water Level"of the Enlarge Pardee Option. Page 3-19 states that the new Pardee Dam would "raise the existing maximum level by 33 feet, and the maximum flood control elevation would be raised about 46 feet." Presumably the first number refers to the maximum normal pool and the second number refers to the elevation of reservoir surcharge experienced during the reservoir design-flood for dam-safety purposes. Generally, the maximum normal pool determines the elevation of a reservoir "bathtub ring." Below that line, most terrestrial vegetation is killed by sustained 5

inundation. It is generally quite unmistakable.[3] The maximum surcharge elevation may or may not be associated with major loss of vegetation depending on the physical details of a dam's flood-control works, operational criteria, and flood characteristics — which is not discussed.

5

The provided maps fail to reveal whether they are depicting the expanded normal pool or the maximum surcharge elevation. It is our presumption that these maps represent the maximum normal pool level of the expanded reservoir. However, this information should have been depicted.

Figure 3-10
Enlarge Pardee Reservoir Component: Location of Proposed Facilities



Recreational Use

The dPEIR expanded Pardee Reservoir maps show that the entire Middle Bar run and a portion of the Electra Run would be inundated. According to the dPEIR (3-24), "Operationally, [the Electra Run] space would only flood during winter storms, and water levels would be lowered to expose the Electra Run for rafting." If the maps depict the maximum normal-pool elevation

6

[3] The "bathtub" ring effect is described in page 4.2.I-6: "[R]eservoir drawdown typically exposes a bare ring of soil along the shoreline, negatively affecting visual quality" in the context of the existing Pardee Reservoir. The dPEIR does not discuss this in the context of the reaches of the Mokelumne River that would be inundated by an expanded Pardee Reservoir. Apparently since no adverse impact has been identified, no mitigations are proposed for these areas.

within the Electra Run (upstream of Highway 49), this would not be true: maximum reservoir storage normally occurs in the spring, a busy time for rafting the Electra Run.[4] And the broader assumption of the dPEIR is incorrect: the Run is used year-round; and the Middle Bar Run, with its popular District-provided takeout, will be completely inundated by normal operations every few years (frequency assessments are not provided in the dPEIR), not just during winter storms.[5]


Boy fishing for Kokanee in Electra Recreation Area

This odd failure to describe the setting of the lands and river that would be inundated by an expanded Pardee Reservoir continues throughout the document. At pages 4.2D-5 and 6, the Electra Recreation Area is described, noting it "supports whitewater boating, fishing, gold mining, and swimming." Takeout areas upstream of the Middle Bar Run are described, but not that these takeout areas currently lack institutional arrangements for takeout status. But the Middle Bar Run immediately downstream is not specifically[6] mentioned, nor that its takeout has both the physical and institutional arrangements for a whitewater takeout serving both the Electra and Middle Bar Runs. 6

The mitigation proposed to address "[p]otential impairment of recreation facilities and activities," is to "replace recreational features displaced by enlargement of reservoirs" and "implement an expanded operations plan for the enlarged Pardee Reservoir that preserves the Electra whitewater run during the summer months." (mitigation Measure 5.2.D-2a) It is not, however, responsive to the actual impacts of reservoir expansion: elimination, disruption, or diminishment of the extent and quality of public use of the lands and river impacted by the reservoir expansion.


Electra Run paddler, March 2009

[4] Thus mitigation measure 5.2.D-2a to "preserve…the Electra whitewater run during summer months" is non-responsive to the impacts— both from conversion of a river to flat water and the bathtub-ring visual impact.

[5] In fact, mere "winter storms" is incorrect. Reservoir filling and consequent inundation of the upper reaches of a reservoir are accomplished by sufficient inflows from winter or spring rain floods or snow-melt runnoff.

[6] The dPEIR notes that flows between the Electra Afterbay (the start of the Electra Run) and Pardee Reservoir (the Middle Bar Run takeout is at the upper end of the Pardee Reservoir normal maximum pool) have been evaluated for supporting whitewater boating. However, the dPEIR fails to note that boating is occurring on the Middle Bar Run and there are District-provided arrangements for takeout there.

Institutional Constraints on Public Use of the Mokelumne River in the Expanded Reservoir


Family in Electra Recreation Area

It is District policy to enforce body contact prohibitions on Pardee Reservoir, which it considers to be a domestic-use terminal reservoir consistent with its interpretation of the California Health and Safety Code §4050(b). The dPEIR does not discuss the implications to public use of the existing Mokelumne River and the Electra and Middle Bar Runs of an expansion of Pardee Reservoir. There is no discussion of how the District will define the reservoir (normal maximum pool or maximum surcharge storage). However, given the District's strong views and regulations prohibiting use of its reservoirs,[7] the effect is likely to be quite significant. Fishing from the existing shoreline, wading, swimming, inner tubing, hiking, are common activities in the Electra Recreation Area, and even above District lands downstream of the Highway 49 Bridge. Since the dPEIR does not discuss this significant impact to these uses, no effective mitigation is identified and proposed.

7

Wild and Scenic Rivers

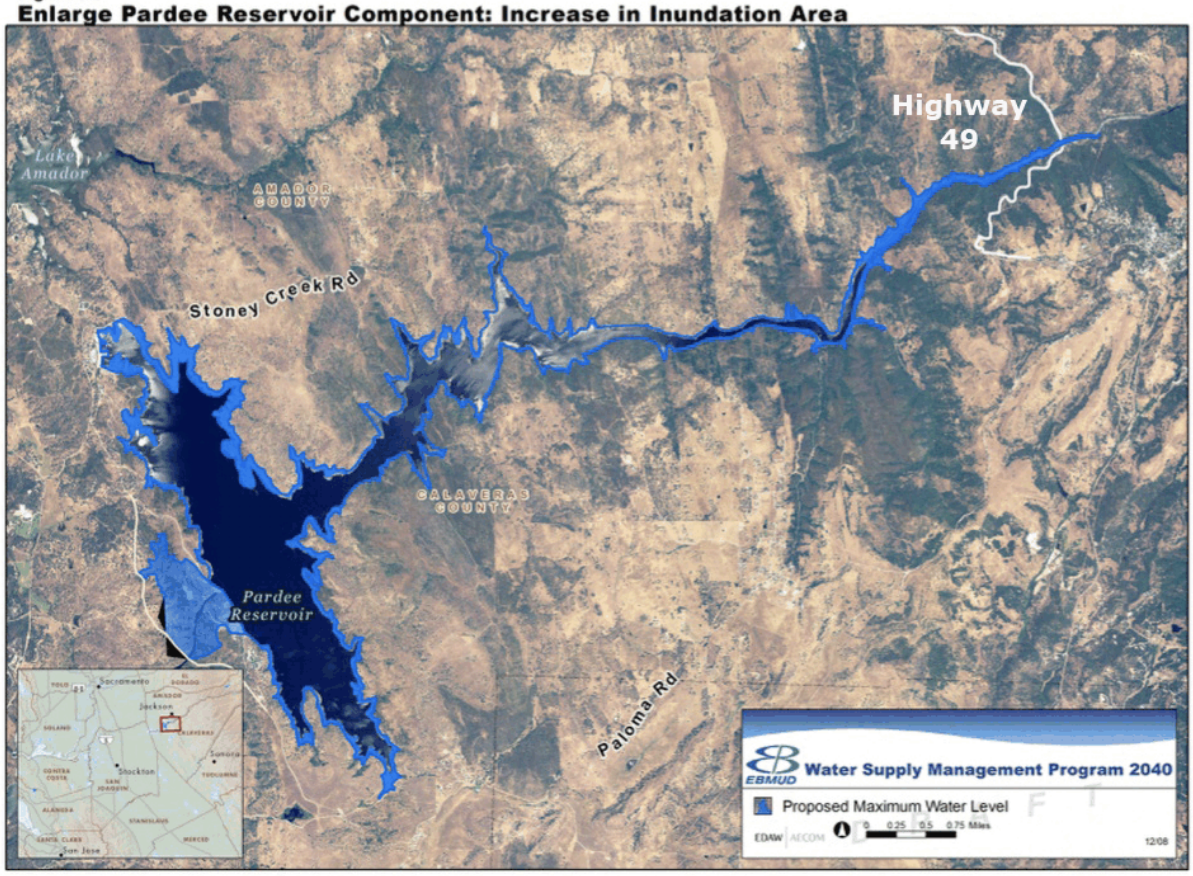
The Bureau of Land Management (BLM) Sierra Resources Management Plan finds that Mokelumne River from 300 feet below the Electra Afterbay to 100 feet below the Highway 49 Bridge is eligible and suitable for Federal wild and scenic river status. Eligible means that the segment is free flowing and contains outstandingly remarkable values. Suitable means that the Bureau of Land Management has reached the conclusion that it is in the public interest to protect this river segment from water resources projects such as the proposed expansion of Pardee Reservoir. It recommends to Congress that this river segment be added to the National wild and

8

[7] For many years EBMUD closed the Middle Bar reach of the Mokelumne River with postings and a series of regulations. As they existed in 1988, they include: Regulation §4.01 states: "It shall be unlawful for any person: To enter, use, or travel through areas of any watershed that are posted "NO TRESPASSING" in accordance with provisions of the penal code or "restricted" by the District and closed to the public, or to enter upon any watershed except at points designated by the District for entry." §5.01K; "It shall be unlawful for any person: To operate a vessel on any District waterway, or portion thereof which has been designated closed." Regulation §5.01W states: "It shall be unlawful to operate any vessel within any portion of District waterway not open to the public and closed off to boating and trespassing by protective lines of buoys, or to operate or to permit any vessel to pass through any line of buoys designating such closed areas." Regulation §11.09 states: "It shall be unlawful for any person: To make bodily contact with the waters of any District waterway except at swimming pools and in Camanche Reservoir." Regulation §5.01A states: "It shall be unlawful for any person: To operate or place any boat on a District watershed without first paying the established fee and obtaining a boating permit, and based upon the following conditions: To place, land, or launch a vessel in or on District waterways except in designated launching areas."

scenic river system.[8] The dPEIR project maps (figures 3-9 and 3-10) show the reservoir expanding into about one mile of the BLM-recommended wild and scenic river. It is Federal policy not to assist in the permitting and approvals of water resources projects that conflict with wild and scenic river values (including free flowing condition). 8

Figure 3-9
Enlarge Pardee Reservoir Component: Increase in Inundation Area



Impact to Lower Mokelumne River Fisheries

The dPEIR discusses both EBMUD and Intra-Regional Conjunctive Use Program (IRCUP) projects to increase Mokelumne and American River deliveries to direct use in the EBMUD service area, and Amador, Calaveras, and San Joaquin Counties, as well as substantial deliveries to the groundwater basins in San Joaquin County. In a nutshell, the dPEIR proposes to remove more water from the Mokelumne River and a comparatively smaller portion of Sacramento River flows. Yet the dPEIR contains no discussion of the recent dramatic decline in Mokelumne and Sacramento River/Delta fisheries. There is no discussion or analysis of how the project will contribute to the recovery of endangered fish stocks on either river. There is no discussion or 9

[8] Sierra Resources Framework Plan, Bureau of Land Management, U.S. Department of the Interior, 2008, p. 38, Appendix E, Map 8b.

analysis on the effect of diminished Mokelumne River flows (particularly winter and spring outflows) on endangered fisheries.

Instead, EBMUD apparently assumes that minimum flow-release requirements are all that are required to maintain a healthy fishery in good condition. Thus any diversions to direct use or storage have no significant adverse impact.[9] As noted in the California Sportfishing Protection Alliance's comments to the dPEIR, the 9

> "[t]heory that high flows will waste away to the sea under climate change, in spite of increasing evidence of the importance of high flows for salmon outmigration[] and for restoring the Delta ecosystem and Delta water quality by increasing Delta outflows, is faithfully reproduced in the draft PEIR."

Greenhouse Gas Analysis

The dPEIR notes at p. 6-15 that,

> [t]he enlargement of Pardee Reservoir would increase hydroelectric generation capability and thus provide a positive impact on reducing greenhouse gas emissions.

and 10

> Maximize contribution to AB 32 goals scored very high.

The dPEIR does not disclose that generation from this proposed hydroelectric plant would not count toward AB 32 goals because it would not meet California standards for renewable energy.

Conclusion

Friends of the River opposes the expansion of the Pardee Reservoir. We are gravely concerned about the contemplated increased diversions from the Mokelumne River in projects discussed in the dPEIR.

The District is in the process of completing the Freeport Regional Water Project, a major expansion to its dry-year supplies. It is not likely to be able to easily find new surface-water supply sources in this Mediterranean-climate over-appropriated state. Nor does it need to. The District, working with the cities and customers it serves, should be able to live within its newly 11

[9] "Mitigation Measure 5.2.A-11: Modify reservoir operations. EBMUD (and in the case of the Enlarge Lower Bear Reservoir component, EBMUD and its project partners) shall modify and manage the future operations of the reservoirs both during and following construction to meet flow requirements as established by the Joint Settlement Agreement (JSA) and as needed to meet all environmental and downstream appropriator and riparian rights obligation. Impact Significance After Mitigation: Less than Significant."

expanded physical and institutional means — after all, the District is not expanding and it is largely built out.

Squeezing the last drop out of an already greatly diminished Mokelumne River is unlikely to be an easier path than investing in water-wise land-use planning and sensible conservation and water reuse efforts. And more importantly, this second path brings far more reliable water supplies than investing in new storage on a river that has little left to give — particularly during intense or extended drought periods, which has been and is one of the District's major water-supply planning concerns. 11

Finally, we echo the California Sportfishing Protection Alliance's admonition that the District should embrace a more aggressive stewardship role in restoring the anadromous fisheries of the Mokelumne River.

We hope that the next iteration of EBMUD's 2040 Water Supply Management Plan embraces these "Yes we can" programs and rejects elements of its Preferred Portfolio that fail to meet these criteria.

Sincerely yours,

Ronald Stork
Friends of the River

with attachments

A good day on the Mokelumne River above Pardee Reservoir

Attachments to Friends of the River's Comments

on

EBMUD Draft Program Environmental Impact Report Water Supply Management Program 2040

May 4, 2009

The Sacramento Bee

Making peace on Mokelumne

Disputed river now user-friendly

By Stuart Leavenworth -- Bee Staff Writer
Published 2:15 a.m. PDT Saturday, May 17, 2003

JACKSON -- It once was California's only river with a no-trespassing sign across its banks.

Adamant about keeping people off "their" water, officials with the East Bay Municipal Utility District prosecuted kayakers who tried to float down a 2.5-mile stretch of the Mokelumne River south of Jackson. The result was decades of haggling, arrests and bitterness over a forbidden section of river.

On Friday, the two sides put those ugly years behind them. Helped by a $133,000 state grant, EBMUD unveiled a new boat landing on the Mokelumne, ending one of California's oldest disputes over public-trust waters.

"This is a pretty amazing day," said Violet Jakab, an engineer who kayaked down part of the Mokelumne with four friends. "There are plenty of lakes in California, but a free-flowing stretch of river is a rare thing."

Also rare are public acts of contrition by the East Bay utility, which has 1.2 million customers and receives much of its water from the Mokelumne. Although long accused of acting imperiously in guarding its Sierra-fed water, East Bay leaders pledged at the ceremony to work with their Amador and Calaveras counterparts.

"Communication is essential," said EBMUD General Manager Dennis Diemer, whose agency recently declared a truce with Sacramento over water from the American River. "If you are going to get anything done in California water these days, it has to be done collaboratively and with partners."

Traversing a placid valley of oak-studded foothills, the Mokelumne west of Highway 49 seems an unlikely spot for clashes pitting armed guards against paddlers.

Yet that's what happened, starting in the 1950s, when river runners began testing the resolve of EBMUD, which owns 28,000 acres on both sides of the river west of Highway 49.

Gerald Meral, former director of the Planning and Conservation League, was one kayaker who ignored a no-trespassing sign and paddled into the forbidden zone in the early 1970s.

EBMUD guards "approached us at gunpoint," recalls Meral. "It was pretty scary."

In shooing away boaters, utility officials claimed they were simply trying to protect water quality. The river runners didn't buy it.

They noted that boating had long been allowed upstream of the Highway 49 bridge, and also downstream of the closed section, in Pardee Reservoir, which is controlled by the utility.

Many suspected that EMBUD instead was trying to protect its prospects of building a future dam on the Middle Bar stretch of the Mokelumne.

"All that time, they had plans for either building another dam, or raising Pardee Dam downstream," said Katherine Evatt, a river advocate who heads the Foothills Conservancy. "So they were never interested in building a recreational constituency for that part of the river."

A key turning point came in 1999, when the state attorney general's office and the State Lands Commission sided with the displaced boaters and started pressuring the utility.

Arguing that the public had a right to access publicly owned waters, state officials told EBMUD they might challenge its federal hydroelectric license if it didn't seek a compromise.

That year and the next, Amador and Calaveras sheriff's deputies, acting at the utility's urging, arrested kayakers for trespassing. But district attorneys in both counties refused to prosecute the boaters.

"When that happened -- bam!" said Ron Stork, a senior policy advocate for Friends of the River. "EBMUD was forced to realize they couldn't restrict access to the river."

Diemer, the EBMUD manager, agrees.

"At that point, we realized there was nothing we could do," said Diemer. "We wanted to get beyond this adversarial relationship."

At Friday's ceremony, utility officials unveiled a new 20-car parking lot and bathrooms that will allow kayakers to easily exit the river as it flows into the slack water of Pardee Reservoir.

EBMUD employees worked for months to build a rustic iron fence around the site that matches the nearby Middle Bar Bridge, a historic structure that was recently restored. The total cost of the takeout area was less than $160,000, financed largely by a grant from the California Department of Boating and Waterways.

As kayakers pulled their boats out of the water Friday, many marveled that, after years of bickering, EMBUD officials and recreationists were breaking bread together.

"It's pretty hard to imagine," said Lisa Trankley, a state deputy attorney general who, just two years ago, was locked in tense discussions with the utility. "There are many people who thought this would never happen."

The Bee's Stuart Leavenworth can be reached at (916) 321-1185, sleavenworth@sacbee.com.

"Never doubt that a small group of dedicated people can change the world; indeed, it's the only thing that ever has." - Margaret Mead

Mokelumne River: Middle Bar Fishing Access

There has been some confusion about fishing in the Middle Bar section of the Mokelumne River (between Highway 49 and Middle Bar Bridge). This page is intended to help clarify what anglers can and can't do at Middle Bar.

Here are the basic facts (please read them all):

- You can legally fish in the Mokelumne River up to the ordinary high water mark.
- Body contact with the waters of Pardee Reservoir is against state law. However, you can fish in the Middle Bar Mokelumne River section of Pardee provided you are wearing waders, are in a boat, or are using a float tube while wearing chest waders.
- The body contact restriction for Pardee Reservoir does not apply to the river upstream of the east end of the reservoir (the point Pardee reaches when full).
- You cannot legally hike on East Bay Municipal Utility District (EBMUD) lands at Middle Bar or fish on those lands above the ordinary high water mark.
- There is a short gravel path between Middle Bar Road and the river, near the new EBMUD parking lot and sanitary facilities. You may use that path to reach the river below the ordinary high water mark. Please stay on the path until you are below the high water mark.
- EBMUD has agreed to discuss fishing access trails in the future. The utility will be evaluating the use of the Middle Bar area from now through next spring.

Please use common sense and courtesy to avoid conflict with other river users, including rafters, kayakers, and people fishing from the Middle Bar Bridge. And keep our rivers clean!

For more information

To request information on EBMUD rules and programs, please call EBMUD's Mokelumne Watershed and Recreation office at 209-772-8340.

If you have a Middle Bar Mokelumne River access problem or question and cannot resolve it by calling EBMUD, send us an e-mail. Please describe the issue and include your phone number.

For general information on river access law and the public trust doctrine, see the websites of American Whitewater and National Rivers.

Note: East Bay MUD constructed the path as part of the Middle Bar Boating Takeout Facility, for boaters to use when leaving the river. However, EBMUD staff assures us they will not stop or cite anglers who use the path to reach or exit the river. You must follow all other EBMUD rules.

TABLE 1

ESTIMATES OF OBTAINABLE DIVERSIONS FROM MOKELUMNE RIVER BASED ON EBMUD 2020 LEVEL OF DEVELOPMENT (228 MGD)

TABLE 1 - SUMMARY

(all amounts in ac.-ft. unless otherwise indicated)

Year	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL	
1921	0	0	0	0	0	0	59504	59504	
1922	0	0	0	0	0	50358	59504	109862	
1923	0	0	0	0	0	20229	17078	37307	
1924	0	0	0	0	0	0	0	0	
1925	0	0	0	0	0	3935	4225	8160	
1926	0	0	0	0	0	0	0	0	
1927	0	0	0	0	0	32158	38618	70776	
1928	0	0	0	0	0	0	0	0	
1929	0	0	0	0	0	0	0	0	
1930	0	0	0	0	0	0	0	0	
1931	0	0	0	0	0	0	0	0	
1932	0	0	0	0	0	0	0	0	
1933	0	0	0	0	0	0	0	0	
1934	0	0	0	0	0	0	0	0	
1935	0	0	0	0	0	0	0	0	
1936	0	0	37377	0	0	56937	39332	133646	
1937	0	0	0	0	0	22750	21659	44409	
1938	0	0	0	60319	28324	61488	59504	209635	
1939	0	0	0	0	0	0	0	0	
1940	0	0	0	0	0	42180	0	42180	
1941	0	0	0	0	0	35909	46949	82858	
1942	0	0	0	0	0	61488	59504	120992	
1943	0	0	0	61057	15769	57983	20529	155338	
1944	0	0	0	0	0	0	0	0	
1945	0	0	0	0	0	18692	26479	45171	
1946	0	0	0	0	0	8424	0	8424	
1947	0	0	0	0	0	0	0	0.	
1948	0	0	0	0	0	0	0	0	
1949	0	0	0	0	0	0		0	
1950	0	0	0	0	0	26317	27491	53808	
1951	61488	8854	0	0	34929	56876	0	162147	
1952	0	0	9275	15187	42248	61488	59504	187702	
1953	0	0	0	0	0	0	14638	14638	
1954	0	0	0	0	0	0	0	0	
1955	0	0	0	0	0	0	0	0	
1956	48883	61488	11447	5411	0	61488	59504	248221	
1957	0	0	0	0	0	0	6010	6010	
1958	0	0	0	11867	59504	61488	59504	192363	
1959	0	0	0	0	0	0	0	0	
1960	0	0	0	0	0	0	0	0	
1961	0	0	0	0	0	0	0	0	
1962	0	0	0	0	0	0	0	0	
1963	0	0	0	0	0	57368	39749	97117	
1964	0	0	0	0	0	0	0	0	
1965	0	61488	0	0	0	42549	40820	144857	
1966	0	0	0	0	0	0	0	0	
1967	0	0	0	0	29992	61488	51233	142713	
1968	0	0	0	0	0	0	0	0	
1969	0	49006	27991	3608	59504	61488	55934	262531	
1970	0	50604	0	11560	0	9531	10255	81930	
1971	0	0	0	0	0	0	18803	18803	
1972	0	0	0	0	0	0	0	0	
1973	0	0	0	0	0	20844	11365	32209	
1974	0	5751	0	25394	13626	38676	33583	117030	
1975	0	0	0	0	0	0	43736	43736	
1976	0	0	0	0	0	0	0	0	
1977	0	0	0	0	0	0	0	0	
1978	0	0	0	0	0	0	0	0	
1979	0	0	0	0	0	16663	0	16663	
1980	0	56630	57521	15987	0	39352	37011	206502	
1981	0	0	0	0	0	0	0	0	
1982	0	24042	35537	61488	59504	61488	49626	311685	
1983	34495	36524	35537	61488	57362	61488	59504	366398	
1984	61488	22873	6155	6825	0	21459	18744	137544	
1985	0	0	0	0	0	0	0	0	
1986	0	0	55537	61488	0	53679	29038	199742	
1987	0	0	0	0	0	0	0	0	
1988	0	0	0	0	0	0	0	0	
1989	0	0	0	0	0	0	0	0	
1990	0	0	0	0	0	0	0	0	
1991	0	0	0	0	0	0	0	0	
1992	0	0	0	0	0	0	0	0	
1993	0	0	0	0	0	23734	13445	47179	
1994	0	0	0	0	0	0	0	0	
1995	0	0	0	61488	59504	61488	59504	241984	75 year ave.
TOTAL	206354	375260	316377	468167	460266	1571483	1263867	4461774	59490

TABLE 2

ESTIMATES OF OBTAINABLE DIVERSIONS FROM MOKELUMNE RIVER BASED ON EBMUD 2040 LEVEL OF DEVELOPMENT (325 MGD)

TABLE 2 - SUMMARY

(all amounts in ac.-ft. unless otherwise indicated)

Year	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL	
1921	0	0	0	0	0	0	59504	59504	
1922	0	0	0	0	0	31974	59504	91478	
1923	0	0	0	0	0	0	0	0	
1924	0	0	0	0	0	0	0	0	
1925	0	0	0	0	0	0	0	0	
1926	0	0	0	0	0	0	0	0	
1927	0	0	0	0	0	0	0	0	
1928	0	0	0	0	0	0	0	0	
1929	0	0	0	0	0	0	0	0	
1930	0	0	0	0	0	0	0	0	
1931	0	0	0	0	0	0	0	0	
1932	0	0	0	0	0	0	0	0	
1933	0	0	0	0	0	0	0	0	
1934	0	0	0	0	0	0	0	0	
1935	0	0	0	0	0	0	0	0	
1936	0	0	0	0	0	0	0	0	
1937	0	0	0	0	0	0	4582	4582	
1938	0	0	0	48883	15769	61488	59504	185644	
1939	0	0	0	0	0	0	0	0	
1940	0	0	0	0	0	0	0	0	
1941	0	0	0	0	0	0	43319	43319	
1942	0	0	0	0	0	54048	59504	113552	
1943	0	0	0	47161	3273	51775	9164	111371	
1944	0	0	0	0	0	0	0	0	
1945	0	0	0	0	0	0	0	0	
1946	0	0	0	0	0	0	0	0	
1947	0	0	0	0	0	0	0	0	
1948	0	0	0	0	0	0	0	0	
1949	0	0	0	0	0	0		0	
1950	0	0	0	0	0	0	0	0	
1951	61488	0	0	0	0	0	0	61488	
1952	0	0	3055	3751	29693	61488	55398	153385	
1953	0	0	0	0	0	0	0	0	
1954	0	0	0	0	0	0	0	0	
1955	0	0	0	0	0	0	0	0	
1956	61488	5004	0	0	0	61488	55993	183973	
1957	0	0	0	0	0	0	0	0	
1958	0	0	0	0	53494	61488	59504	174486	
1959	0	0	0	0	0	0	0	0	
1960	0	0	0	0	0	0	0	0	
1961	0	0	0	0	0	0	0	0	
1962	0	0	0	0	0	0	0	0	
1963	0	0	0	0	0	0	0	0	
1964	0	0	0	0	0	0	0	0	
1965	24349	61488	0	0	0	28530	26539	140906	
1966	0	0	0	0	0	0	0	0	
1967	0	0	0	0	0	59090	41891	100981	
1968	0	0	0	0	0	0	0	0	
1969	0	0	21493	0	55279	61488	52542	190802	
1970	0	40520	0	0	0	0	0	40520	
1971	0	0	0	0	0	0	3630	3630	
1972	0	0	0	0	0	0	0	0	
1973	0	0	0	0	0	0	0	0	
1974	0	0	0	11437	0	27546	22751	61734	
1975	0	0	0	0	0	0	17792	17792	
1976	0	0	0	0	0	0	0	0	
1977	0	0	0	0	0	0	0	0	
1978	0	0	0	0	0	0	0	0	
1979	0	0	0	0	0	0	0	0	
1980	0	17032	37521	11006	0	16971	31243	113773	
1981	0	0	0	0	0	0	0	0	
1982	0	0	55537	61488	59504	61488	33917	271934	
1983	24595	26440	55537	61488	44866	61488	59504	333918	
1984	61488	13789	0	0	0	3751	4046	82074	
1985	0	0	0	0	0	0	0	0	
1986	0	0	55537	61488	0	40582	21005	178612	
1987	0	0	0	0	0	0	0	0	
1988	0	0	0	0	0	0	0	0	
1989	0	0	0	0	0	0	0	0	
1990	0	0	0	0	0	0	0	0	
1991	0	0	0	0	0	0	0	0	
1992	0	0	0	0	0	0	0	0	
1993	0	0	0	0	0	0	0	0	
1994	0	0	0	0	0	0	0	0	
1995	0	0	0	0	59504	61488	59504	180496	75 year ave.
TOTAL	233408	165273	248680	306702	321582	806169	830520	2909934	38799

Friends of the River (FOR)

FOR-1. Please see the Master Response on the Demand Study for a discussion of demand assumptions and projections. Once the proposed recycled water and conservation components selected as part of the Preferred Portfolio are subtracted from the projected demand, the demand is anticipated to increase at an overall average of approximately 0.21 percent annually between 2005 and 2040.

FOR-2. Please see the Master Response on the Demand Study and the Demand Study itself for a discussion of demand assumptions and projections. The system input demand projection for 2040 is 312 MGD before cumulative conservation and cumulative non-potable (recycled) water is subtracted. 2040 District-wide demand, after accounting for planned conservation and recycling, is 230 MGD. The Demand Study sets forth several projected trends, including increased density, more intense uses of parcels, and a rise in mixed-use development.

FOR-3. As noted in the comment, the Enlarge Pardee Reservoir component is one potential project among several that could be implemented to meet the Need for Water in dry years. As stated on page 3-30 of the Draft PEIR, this component and the other Upcountry components (Enlarge Lower Bear Reservoir and IRCUP/San Joaquin Groundwater Banking/Exchange) may not be needed if other components are implemented and yield sufficient water.

Figure 3-23 of the Draft PEIR depicts Alternative Portfolio D, which would rely heavily on the Enlarge Pardee Reservoir component. The implementation schedule shown in this figure was developed for PEIR purposes only; the actual schedule may be different. Projects will be brought online as the Need for Water is determined. EBMUD believes that an expanded reservoir would provide a reliable drought supply.

EBMUD's existing reservoir operation plan for Pardee Reservoir was developed taking into consideration extensive data and knowledge regarding the Mokelumne River's flow regime. For the program-level effort, EBMUD used that hydrologic information, coupled with hands-on knowledge regarding how EBMUD operates its existing Mokelumne River facilities, to estimate the potential yield from an Enlarged Pardee Reservoir. This work allowed EBMUD to make the estimate that if Pardee Reservoir was enlarged to the degree as noted in the Draft PEIR, the project would have a corresponding yield of 51 MGD.

During a project-specific effort for the development of an Enlarge Pardee Reservoir component, when and if such effort is embarked upon, EBMUD would undertake additional studies of optimum reservoir sizing as based on river flow, taking into consideration water rights limitations.

EBMUD is aware of the effort undertaken by Mr. James Hansen in 2002 in support of a San Joaquin County (SJC) water right matter on the Mokelumne River and further is aware of the results generated by Mr. Hansen. The study results referenced in the footnote support the view that when the Mokelumne River water rights that are either existing and/or held in reserve for the future use by others are taken into account, the remaining Mokelumne River flow

during times of flood alone may not support the development of a new project. The Enlarge Pardee Reservoir project, as envisioned in this programmatic document, could be undertaken using EBMUD's existing water rights and these water rights would be utilized to store water in the enlarged reservoir during years when that water is available.

FOR-4. Please see the Master Responses for the Enlarge Pardee Reservoir component and Program-level EIR analysis. At this stage, there is no certainty regarding the impacts of the potential Enlarge Pardee Reservoir component, and EBMUD is not attempting to downplay, dismiss and/or discount the impacts of this component as part of this program-level review. At the project level, EBMUD will examine a broad range of configurations and the potential impacts and possible means of mitigating impacts to fish and wildlife, recreational uses, and other resource areas. These impacts will be presented in a project-level EIR that will be subject to public review. Please see Response FC4-1 for alternative configurations for an Enlarge Pardee Reservoir component.

FOR-5. Figures 3-9 and 3-10 in the Draft PEIR depict the extent of the existing pool and the approximate proposed inundation area that would result from implementation of the Enlarge Pardee Reservoir component. Visual impacts were addressed to the degree possible in the Draft PEIR. The specific Enlarge Pardee configuration, as selected as part of project-specific design process in the future, will in turn determine the effects on visual quality resulting from destruction of vegetation (deemed the "bathtub ring" effect). As noted by the commenter, these effects would be more pronounced based on the size of the area inundated. At the project-specific stage, EBMUD commits to seeking to minimize impacts, including impacts resulting from the loss of vegetation along and adjacent to the reservoir pool area.

FOR-6. The typical whitewater boating season occurs in the spring and summer; however, EBMUD acknowledges the assertion that whitewater boating occurs in the fall and winter months as well. The District will conduct a thorough survey of recreation along the Mokelumne River to determine current uses throughout the year, and will prepare a project-level EIR that will thoroughly examine potential impacts to the Electra Run when and if project-level planning moves forward for the Enlarge Pardee Reservoir component. This would include an analysis of take-out areas and other features that are part of the recreational use of the River. Also refer to Response FC3-12 for additional discussion regarding preservation of whitewater recreation on the river. At the project-level stage, EBMUD will examine whether additional mitigation is necessary to address the elimination, disruption or diminishment of public use of the lands and river area impacted by the project.

At this stage, there is no certainty regarding the impacts of the potential Enlarge Pardee Reservoir component, and EBMUD is not attempting to downplay, dismiss and/or discount the impacts of this component as part of this program-level review.

FOR-7. Current state law prohibits body contact recreation in drinking water supply reservoirs. Typically, the California Department of Public Health defines the

reservoir boundary as the aerial extent of the reservoir at full elevation. Full elevation is typically defined as the elevation of the spillway and not the elevation of some flood surcharge elevation. Under the concept put forth at this program-level stage, this would place the body contact restriction at or near the area of the Highway 49 Bridge. It is not anticipated that there would be prohibitions on body contact above the Highway 49 Bridge. Since most of the property below the Highway 49 Bridge is under EBMUD ownership and body contact is already restricted in this area pursuant to the EBMUD Rules and Regulations, the proposed enlargement would restrict, but not dramatically diminish, the areas where body contact recreation currently occurs. As noted in the Draft PEIR, any recreational impacts would be evaluated in detail at the project level and specific mitigation measures would also be set forth if and when EBMUD goes forward with the Enlarge Pardee component.

FOR-8. Please see Response BLM-1. As part of a project-level analysis, EBMUD would conduct further evaluation of impacts of an Enlarge Pardee Reservoir component including impacts to the Mokelumne River and its associated values and would comply with legal requirements, including the Wild and Scenic River Act.

FOR-9. There are multiple factors affecting the population numbers of naturally spawning salmon and steelhead. For a discussion of the decline of salmon over the last three years see Attachment A, which presents pages 144-146 from *Moyle, P.B., J.A. Israel, and S.E. Purdy. 2008. Salmon, Steelhead and Trout in California. Center for Watershed Sciences. University of California, Davis. Davis, CA.*

EBMUD has and continues to work on efforts to recover populations of endangered fish stocks in the Mokelumne River. Although EBMUD has committed to minimum instream flows in the lower Mokelumne River, during below normal and normal and above water year types, minimum flows are increased substantially below Camanche Dam. These flows provide significant benefits to downstream fisheries while substantially reducing flood damage. The table below compares the minimum and actual releases from Camanche Dam since the implementation of the JSA.

WATER YEAR	JSA AGREED RELEASE FROM CAMANCHE DAM (acre feet)	ACTUAL RELEASE FROM CAMANCHE DAM (acre feet)
1998	180,651	669,891
1999	181,296	474,869
2000	168,098	233,764
2002	142,756	226,562
2003	141,031	326,412
2004	202,415	301,098
2005	197,260	737,714
2006	230,276	1,215,298
2007	168,098	256,812
2008	131,285	198,131

From 1940 through 1997, fall-run Chinook salmon escapement in the lower Mokelumne River ranged from 137 to 15,861. Since implementation of the JSA in 1998, fall-run Chinook salmon escapement has ranged from 412 to 16,144. Based on data gathered to date, EBMUD considers flow releases from Camanche Dam adequate to protect lower Mokelumne River fishery resources.

EBMUD will prepare project-level CEQA documentation for the Preferred Portfolio components that will describe and thoroughly analyze current fishery conditions including Delta conditions, and will thoroughly examine project effects on flows, water quality and other habitat conditions. Please see the Master Response on Program-level EIR analysis.

FOR-10. Hydroelectric power is viewed as a source of energy resulting in relatively few GHG emissions. Were an Enlarge Pardee Reservoir component constructed, it would include hydroelectric elements such as a new powerhouse, and it is expected that more power would be produced as compared with current conditions. Producing and using more power that does not involve GHG emissions is consistent with the AB 32 goals. Reservoir operations would be analyzed to identify power generation capabilities.

FOR-11. EBMUD acknowledges the commenter's opposition to the Enlarge Pardee Reservoir component. Please see the Master Response on the WSMP 2040 for a description of the District's demand management measures. Please also see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component.

Attachment A

Pages 144-146 in Moyle, P.B., J.A. Israel, and S.E. Purdy. 2008. Salmon, Steelhead and Trout in California. Center for Watershed Sciences. University of California, Davis. Davis, CA.

So, what caused this apparently precipitous decline in salmon? Unfortunately, the causes are historic, multiple and interacting. The first thing to recognize is that Chinook salmon are adapted to living in a region where conditions in both fresh water and salt water can alternate between being highly favorable for growth and survival and being comparatively unfavorable. Usually, conditions in both environments are not overwhelmingly bad together, so when survival of juveniles in fresh water is low, those that make it to salt water do exceptionally well, and vice versa. This ability of the two environments to compensate for one another's failings, combined with the ability of adult salmon to swim long distances to find suitable ocean habitat, historically meant salmon populations fluctuated around some high number. Unfortunately, when conditions are bad in both environments, populations crash, especially when the heavy hand of humans is involved.

The recent precipitous decline has been blamed largely on "ocean conditions." Generally what this means is that the upwelling of cold, nutrient-rich water has slowed or ceased, so less food is available, causing the salmon to starve or move away. Upwelling is the result of strong steady alongshore winds which cause surface waters to move off shore,

allowing cold, nutrient-rich, deep waters to rise to the surface. The winds rise and fall in response to movements of the Jet Stream and other factors, with both seasonal and longer-term variation. El Nino events can affect local productivity as well, as can other 'anomalies' in weather patterns. And Chinook salmon populations fluctuate accordingly. The 2006 and 2007 year classes of returning salmon mostly entered the ocean in the spring of 2004 and 2005, respectively (most spawn at age 3). Although upwelling should have been steady in this period, conditions unexpectedly changed and ocean upwelling declined in the spring months, so there were fewer shrimp and small fish for salmon to feed on. According to an analysis by Barth et al. (2007), conditions were particularly bad for a few weeks in spring of 2005 in the ocean off Central California, resulting in abnormally warm water and low concentrations of zooplankton, which form the basis for the food webs which include salmon. All this *could* have caused wide scale starvation of the salmon. While the negative impact of ocean anomalies on salmon is likely, monitoring programs in ocean are too limited to make direct links between salmon and local ocean conditions.

"Ocean conditions" can also refer to other factors which can be directly affected by human actions, especially fisheries. For example, fisheries for rockfish and anchovies can directly or indirectly affect salmon food supplies (salmon eat small fish). Likewise, fisheries for sharks and large predators may have allowed Humboldt squid (which grow to 1-2m long) to become extremely abundant and move north into cool water, where they *could* conceivably prey on salmon. These kinds of effects, however, are largely unstudied.

Meanwhile, what has been going on in the Sacramento and San Joaquin Rivers? On the plus side, dozens of stream and flow improvement projects have increased habitat for spawning and rearing salmon. Removal of small dams on Butte Creek and Clear Creek, for example, increased upstream run sizes dramatically. Salmon hatcheries also continue to produce millions of fry and smolts to go to the ocean. On the contrary side:

- The giant pumps in the South Delta have diverted increasingly large amounts of water in the past decades, altering hydraulic and temperature patterns in the Delta as well as capturing fish directly.
- The Delta continues to be an unfavorable habitat for salmon, especially on the San Joaquin side where the inflowing river water is warm and polluted with salt and toxic materials.
- Hatchery fry and smolts are released in large numbers but their survivorship is poor, compared to wild fish, although they contribute significantly to the fishery. Nevertheless, they may be competitors with wild produced fish under conditions of low supply in the ocean. Most of the hatchery fish are planted below the Delta, to avoid the heavy mortality there. Unfortunately, the fitness of naturally produced salmon versus hatchery produced salmon is not understood; it is possible that the influence of hatchery-reared fish is so strong today that the progeny of natural and hatchery spawners have similar survival rates in the wild.
- Numbers of salmon produced by tributaries to the San Joaquin River (Merced, Tuolumne, Stanislaus) continue to be exceptionally low, in the hundreds, and the promised restoration of the San Joaquin River will take a long time to be effective.

Thus reduced survival of naturally spawned fish in fresh water, especially in the Delta, combined with the naturally low survival rates of hatchery fish, could make for plummeting numbers of adult spawners. This is especially likely to happen if young

salmon also hit adverse conditions in the ocean, as they enter the Gulf of the Farrallons. The growing salmon can also hit other periods when food is scarce in the ocean, along with abundant predators and stressful temperatures, at any time in the ocean phase of their life cycle. Once again, our ignorance of how the salmon survive in the ocean is profound. For example, much could be learned about how ocean food supplies are affecting salmon growth and survival by tracking the growth and condition of juveniles once they have moved out to sea.

The overall message here is that indeed “ocean conditions” have had a lot to do with the recent steep decline of salmon populations in the Central Valley in recent years. However, they are superimposed on a population that has been declining in the long run (with some apparent stabilization in recent decades, presumably due to hatchery production). The salmon still face severe problems before they reach the ocean, especially in the Delta. Overall, blaming “ocean conditions” for salmon declines is a lot like blaming Hurricane Katrina for flooding New Orleans, while ignoring the many human errors that made the disaster inevitable, such as poor construction of levees or destruction of protective salt marshes. Managers have optimistically thought that salmon populations were well managed, needing only occasional policy modifications such as hatcheries or removal of small dams, to continue to go upward. The listings of the winter and spring runs of Central Valley Chinook as endangered species were warnings of likely declines on an even larger scale.

On a final somewhat more optimistic note, there is a reasonably good chance that Chinook salmon populations will once again return to higher levels as they have in the past. However, the lower the population goes and the more the environment changes in unfavorable ways, the more difficult recovery becomes.

GWWF
090317

From: Friends of the River on behalf of Cindy Charles
Sent: Tue 3/17/2009 5:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years. 1

The Pardee reservoir enlargement will drown a segment of the Mokelumne River recommended by the BLM for wild and scenic river protection. This section is also popular for kayaking and fishing. The Pardee enlargment would destroy the recently renovated Middle Bar Bridge and other existing and proposed public access facilities, as well as require the costly relocation of the Hwy 49 bridge. 2

The Lower Bear reservoir enlargement could alter Mokelumne River flows that have been improved to benefit fish, wildlife, and recreation. These improved flows took years to negotiate as part of PG&E's federal hydroelectric license. EBMUD's proposed reservoir enlargements will thwart the decades of work that have gone into making the Mokelumne a more viable recreation resource that will economically benefit foothill communities. 3

As Conservation Chair for the Golden West Women Flyfishers and a Board member of the Northern California Council, Federation of Fly Fishers, I oppose these plans.

Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Cindy Charles
2255 N Point St Apt 103
San Francisco, CA 94123-1438

Golden West Women Flyfishers (GWWF)

GWWF-1. Please see the Master Response on the Demand Study for a discussion of demand assumptions and projections, and see the Master Response on the WSMP 2040 for a discussion of analyses conducted on Preferred Portfolio components. As noted in the Draft PEIR and Response ACHS-3, EBMUD has decided to move forward with aggressive demand management.

GWWF-2. The 2008 Sierra Resource Management Plan included the BLM recommendation to designate approximately 20 miles of the Mokelumne River as Wild and Scenic River. BLM recommended the recreation classification for 2.94 miles of river approximately between the State Route 49 Bridge and the Electra Afterbay, also known as the Electra Run.

At this stage, there is no certainty regarding the potential impacts of the Raise Pardee portfolio component. At the project level, EBMUD will examine a broad range of configurations and the potential impacts and possible means of mitigating impacts to recreational uses, cultural resources, transportation and other resource areas. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component.

GWWF-3. The Draft PEIR acknowledges the potential for disruption to downstream flow releases from the proposed Enlarge Lower Bear Reservoir component, although potential changes to flow are not known at this time (please see page 5.2.C-17 of the Draft PEIR). Potential impacts to fish, wildlife and recreation will be thoroughly examined in a project-level EIR for the Enlarge Lower Bear Reservoir component when this information is available, when and if the District decides to move forward with project-level planning. Please see the Master Response on Program-level EIR analysis. Mitigation and measures to avoid impacts would be developed at the project stage.

EBMUD recognizes the value of water conservation, recycling and rationaing, and has included them as components in the Preferred Portfolio. Please see the Master Response on the WSMP 2040.

LHC1
090331

LAFAYETTE HOMEOWNERS COUNCIL

649 Los Palos Drive
Lafayette, CA 94549

March 31, 2009

Mr. Thomas B. Francis, PE
East Bay Municipal Utility District
Water Supply Improvements Division
375 Eleventh Street, MS # 407
Oakland, CA 94607

Dear Mr. Francis:

Please find attached a comment letter regarding the proposed *Water Supply Management Program 2040* to the EBMUD Board from the Board of the Lafayette Homeowners Council, a Board that attempts to represent the interests of approximately fifty homeowners associations, both formal and informal, within the city of Lafayette.

We thank the Board and staff for undertaking the *Water Supply Management Program 2040*. We also thank you for having achieved a 16% reduction in water consumption by single family residential users. If many of us had not witnessed water running unattended down urban drains in other cities in California we would have more confidence in our area's actions having an impact on California consumption, in general.

We have confidence that you and the Board, together, will develop a program that will present an equitable and sensible resolution to the East Bay's long-developing water availability crisis.

Thank you for the role that you play in securing water for the East Bay area for decades into the future.

1

Very truly yours,

Maeve Pessis

Maeve Pessis, President

LAFAYETTE HOMEOWNERS COUNCIL
649 Los Palos Drive
Lafayette, CA 94549

March 31, 2009

Mr. Doug Linney, President
Board of Directors, East Bay Municipal Utility District
% Lynelle Lewis, Secretary (via email)
375 Eleventh Street, MS #800
P.O. Box 24055
Oakland, CA 94607

Honorable President Linney and Members of the EBMUD Board:

Issue: The Board of the Lafayette Homeowners Council (LHC) is very concerned that approaching decades will continue to see Sierra water runoff lost due to un-addressed need for additional water supply and new reservoir construction, resulting in a once-fertile California that will more closely resemble a shriveling dustbin than the thriving state seen today.

The Board of Directors of the Lafayette Homeowners Council (LHC), a Board that works to represent the interests of the residents of Lafayette and approximately fifty homeowners' associations, is deeply concerned –as students of history--that approaching decades will continue to see Sierra water runoff lost due to un-addressed need for additional water supply and new reservoir construction. In considering its studied options contained within the District's *Water Supply Management Program 2040*, we would encourage the EBMUD Board to arrive at a means of addressing both additional water supply and drought rate charges between now and 2040 by means that are both effective and fair to all subscribers.

The LHC Board understands that the water issues faced by the EBMUD Board are complex. However, we believe that the District must not be put at risk of increased drought exposure that could increase public paranoia and further the area's already significant economic uncertainty.

2

We applaud the EBMUD Board's forward-looking initiative in devising its *WSMP 2040* and we support the following:

- Additional storage, including consideration of raising the Pardee and Lower Bear Reservoirs and building anew; reasonable conservation measures; water transfers that make economic *and* environmental sense; and recycling and desalination.
- If we remain in a state of drought this year, we would support the current program. We do not support the addition of tiers and we do not want to see the east-vs-west battles of the early 1990s recur.

Regarding the current program, the data indicate that what you have done thus far has worked very well. You asked the SFR users to reduce consumption by 19% and achieved a 16% reduction. Lafayette was one of these. Overall, through all customer classes, 15% reduction was requested and 13% reduction achieved.

In short, the Board of the LHC believes that the Preferred Portfolio will best suit the needs of *all* EBMUD customers. This is the option that appears to most appreciate the broad spectrum of very serious issues that affect water availability and fair distribution, stretching as it does the use of our existing supplies to the extent possible, including emerging technologies, and relying on geographically diverse new water supply components. It is by retaining all elements of the Preferred Portfolio that we can maintain reliability and the necessary flexibility to adapt to future uncertainties such as climate change. 2

Local governments and residents are eager to assist you in any way that we can in coming to an equitable and sensible resolution of California's long-developing water availability crisis.

If we can be of assistance in your efforts, please do contact us at 925-284-1722 or 925-284-2345.

Very truly yours,

Maeve Pessis

Maeve Pessis, President
Lafayette Homeowners Council

Cc: Thomas B. Francis, PE, EBMUD
Lafayette City Council
Steve Falk, City Manager
Lafayette Homeowners Council
Gayle B. Uilkema, Supervisor, District 2, Contra Costa County

Lafayette Homeowners Council 1 (LHC1)

LHC1-1. EBMUD acknowledges the Lafayette Homeowners Council's (LHC) support of the District's WSMP 2040 effort. As referenced by LHC, in the latter portion of 2008, due to drought conditions present and water supplies in storage, the District declared a drought emergency, asking customers to ration at a 15 percent level (15 percent as averaged across customer class). EBMUD was able to achieve a 13 percent demand reduction.

LHC1-2. EBMUD acknowledges the LHC's expression of concern regarding the impact that reduction in Sierra runoff would have on the need for additional dry year supplementary water supplies.

EBMUD prepared a Demand Study as a component of the need for water analysis. Please refer to the Master Response as prepared for the Demand Study for further discussion on this topic. EBMUD concluded that additional supplemental water supplies will be necessary to meet the District's Need for Water through the year 2040, and shares similar concerns to those expressed by LHC regarding the need to be forward planning.

EBMUD acknowledges the sentiment as expressed by LHC regarding the need for a fair and effective rate structure as well as a robust / capable means to address the District's future water supply needs. EBMUD's Board of Directors regularly reviews water rates and the rate structure, including but not limited to the development of drought surcharges when and if such measures are needed. Water rates, including drought surcharges, were not (and are not) discussed in the context of water supply management planning at EBMUD.

EBMUD acknowledges the LHC's support of the District's WSMP 2040, including but not limited to the supplemental supply elements of the Preferred Portfolio which include the development of new surface storage. As noted above, although EBMUD did not include a water rate analysis as part of the WSMP 2040 effort, the District acknowledges the position taken by LHC regarding opposing additional water rate tiers.

As referenced by LHC, in the latter portion of 2008, due to drought conditions present and water supplies in storage, the District declared a drought emergency, asking customers to ration at a 15 percent level (15 percent as averaged across customer class). EBMUD was able to achieve a 13 percent demand reduction.

LHC2
090402

LAFAYETTE HOMEOWNERS COUNCIL

649 Los Palos Drive
Lafayette, CA 94549

April 2, 2009

Mr. Thomas B. Francis, PE
East Bay Municipal Utility District
Water Supply Improvements Division
375 Eleventh Street, MS #407
Oakland, CA 94607

Dear Mr. Francis:

One of our Lafayette Homeowners Council Board members has posed an interesting two-part question for the Draft WSMP DEIR to answer: "If 60% of California's water goes to big agriculture and 70% of that is lost to evaporation due to flooding of fields as the delivery system of choice—what are the chances of requiring conversion to drip irrigation which is more expensive to install and maintain? As it stands now, how can reduction of water use by individuals have a significant impact when household consumption amounts to approximately 20% of water consumed? 1

Thank you for your kind attention and response.

Very truly yours,

Maeve Pessis

Maeve Pessis, President

Lafayette Homeowners Council 2 (LHC2)

LHC2-1. EBMUD acknowledges the comment by a Lafayette Homeowners Council (LHC) Board Member indicating his concern that much of California's water goes to agriculture, and further, that a large percentage of that water is lost to evaporation which takes place when agricultural fields are flooded.

EBMUD and other agencies that have a customer base that is predominantly urban work to encourage other water agencies (including, but not limited to, those that serve a rural and/or agricultural customer base) to adopt water conserving practices. Water conserving practices can include the conversion from field flooding to drip irrigation systems.

EBMUD shares the view expressed by the State of California that water conservation is needed to meet the State's projected future Need for Water moving forward. While EBMUD acknowledges the skepticism expressed by LHC regarding the impact that household conservation would have on the State's water supply picture as compared with the conservation savings potential available within other customer classes, in the case of the EBMUD service area, conservation measures employed at a household level is of important. Together with the conservation measures identified in WSMP 2040 targeting other customer classes, household-level conservation savings will be implemented as part of the WSMP 2040 Preferred Portfolio conservation component.

LHC3
090403

LAFAYETTE HOMEOWNERS COUNCIL

649 Los Palos Drive
Lafayette, CA 94549

April 3, 2009

Mr. Doug Linney, President
Board of Directors, East Bay Municipal Utility District
% Lynelle Lewis, Secretary (via email)
375 Eleventh Street, MS #800 P.O. Box 24055
Oakland, CA 94607

Re: 2010-12 EBMUD Budget Consideration

Honorable President Linney and Members of the Board of the East Bay Municipal Utility District :

We understand that the East Bay Municipal Utility District (EBMUD) is conducting a Budget Meeting on April 14, 2009, for consideration of the adoption of a budget for the years 2010-11.

The Board of Directors of the Lafayette Homeowners Council (LHC), a Board that works to represent the interests of the residents of Lafayette and approximately fifty homeowners' associations, is concerned that additional tiers may be added beyond the current rate model that is used for the 2008-09 budget years.

The EBMUD Board's current system, which we support, encourages conservation, yet is both effective and fair to all subscribers.

While we understand EBMUD's desire to curb excessive and unnecessary water use, the data indicate that what you have done thus far has worked very well. You asked the SFR users to reduce consumption by 19% and achieved a 16% reduction. Lafayette was one of these. Overall, through all customer classes, 15% reduction was requested and 13% reduction achieved. 1

We support the current program. We do not support the addition of tiers and we do not want to see the east-vs.-west battles of the early 1990s recur.

Should you find it necessary and productive, perhaps some type of penalty ceiling would be more appropriate for those who are gross water users, without penalizing the majority that are conserving and reducing their consumption.

If we can be of assistance or answer any question that you may have, please do contact us at 925-284-1722 or 925-284-2345.

Very truly yours,

Maeve Pessis

Maeve Pessis, President

Cc: Thomas B. Francis, PE, EBMUD
Lafayette City Council
Steve Falk, City Manager
Gayle B. Uilkema, Supervisor, District 2, Contra Costa County

LHC3-1. EBMUD appreciates the support of the Lafayette Homeowner's Council (LHC) of EBMUD's WSMP 2040 Preferred Portfolio, and further that you applaud EBMUD's forward looking approach regarding water supply planning through the year 2040.

As the LHC noted, in the latter half of 2008, due to drought conditions experienced within our primary watershed (the Mokelumne River watershed), the District was forced to declare a drought emergency, asking our customers to ration at 15 percent level (15 percent as averaged across all customer classes). As noted by the commenter, EBMUD achieved an overall 13 percent demand reduction due primarily to the willingness of customers, such as the residents of the City of Lafayette, who were willing to cut-back their water use. We are grateful for the support of the citizens of our entire service area and appreciate that groups such as the LHC are active participants when the call goes out to help respond to drought emergencies. Such participation and support is critical for effective management of water supplies during those times.

In response to the statement regarding not supporting additional water rate tiers, note that the modification of EBMUD's current tiered rate structure is not proposed as part of WSMP 2040. However, EBMUD reviewed the option of altering the current tiered rate system in order to respond to comments generated by the San Francisco Chapter of the Sierra Club. Please see Response SCSFB2-7 for further information regarding that review and the conclusions regarding this measure.

SCSFB1
090318

SIERRA CLUB
FOUNDED 1892

March 18, 2009

EBMUD Administrative Offices
375-11th Street
Oakland, CA 94607

Re: EBMUD Water Supply Management Plan 2040 Draft PEIR Comments

Dear East Bay Municipal Utility District Board Members;

The Sierra Club position as stated in our June 2008 letter (attached) to your board has not changed.

I want to emphasize again the Sierra Club's four main points:

1. The Sierra Club supports the highest level of water conservation, level E.
2. The Sierra Club supports the highest level of water recycling, level 3.
3. The Sierra Club does not support any new or expanded dams or reservoirs.
4. The Sierra Club does not support cross Delta water transfers.

1

The Sierra Club encourages the board to be aggressive, to take bold steps, and seize the opportunity of leading a green future in water management.

Sincerely,

Matt Morrison
Chair, Sierra Club S.F. Bay Chapter Water Committee
Sierra Club San Francisco Bay Chapter
2530 San Pablo Av. Suite I
Berkeley, CA 94702-2000

SCSFB1
090318
Attachment

SIERRA CLUB
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San Francisco Bay Chapter
Serving the counties of Alameda, Contra Costa, Marin and San Francisco

EBMUD Administrative Offices
375-11th Street
Oakland, CA 94607

June 23rd, 2008

Sierra Club "Green Portfolio" for the EBMUD Water Supply Management Program 2040

Dear East Bay Municipal Utility District Board Member,

In this year of drought and a 15% water rationing program at EBMUD, set against the backdrop of global warming, the Sierra Club recommends that a "Green Portfolio" or package of options be studied as a 6th alternative for the Water Supply Management Program 2040 (WSMP 2040).

Summary of our "Green Portfolio" :

EBMUD staff have done a good job of laying out the alternatives to reach the needed 67 MGD projected shortfall for 2040, assuming a 20% rationing program. This shortfall can be met without building any new surface water supply by choosing a "Green Portfolio" consisting of conservation, rationing, recycling and groundwater storage.

1. **Rationing level of 20%,** which should be structured by EBMUD to be spread out as equitably as possible across the residential, commercial and agricultural sectors.

2. Maximizing water conservation at Level D or better, saving **39 MGD**.

3. Maximizing water recycling at level 3, saving **11 MGD**

4. Optimizing groundwater storage to save **17 MGD** Scale 4.2 MGD

This total savings of **67 MGD** from the "Green Portfolio" meets the mandate to maintain and improve the District's water supply reliability to its customers, while not needing to develop a new surface water supply or engage in potentially environmentally harmful cross-Delta transfers. Specifically, Buckhorn Dam and Reservoir is not needed, and should be rejected.

EBMUD has an unparalleled opportunity to lead us into a green future in water management as we plan for the probability of climate change and global warming. The Sierra Club urges that EBMUD study this alternative as part of your Environmental Impact Report (EIR), and adopt this portfolio as your preferred alternative for the WSMP 2040. Thank you for your support.

1

Sincerely,

Kent Lewandowski
Chair, Sierra Club Northern Alameda County Group

2530 San Pablo Ave., Suite I, Berkeley, CA 94702 Tel. (510) 848-0800 E-mail: *san-francisco-bay.chapter@sierraclub.org*

SCSFB1-1. EBMUD acknowledges the commenter's support for a green portfolio as presented in the June 23, 2008 letter as well as the points stated in the March 18, 2009 letter.

The commenter's green portfolio, as described in the attached June 23, 2008 letter, is similar to the WSMP 2040 Preferred Portfolio: both include Conservation Level D, the maximum water recycling level (11 MGD), and optimizing groundwater storage (17 MGD). However, the Preferred Portfolio includes a 10 percent rationing level, while the commenter's green portfolio calls for a 20 percent rationing level.

Please see the Master Response on the WSMP 2040. EBMUD conducted an extensive alternatives development process for the WSMP 2040, as described in Section 2.3 of the Draft PEIR (see pages 2-4 through 2-7). EBMUD held a series of public meetings throughout this process to get input from the public. The EBMUD Board of Directors selected Conservation Level D, a high level of conservation, and a 10 percent rationing level. As stated on page 3-8 of the Draft PEIR, of the five conservation levels considered (A through E), Conservation Level D was identified as being at and/or closest to the pivot point of cost-effectiveness.

EBMUD selected a rationing level of 10 percent in part because of the potential difficulties in achieving higher levels as demand hardens and conservation measures are implemented. As stated on page 2-7 of the Draft PEIR, the benefit of targeting a 10 percent rationing level in the WSMP 2040 is that it preserves the flexibility to increase rationing above 10 percent as one of several possible responses to dry-year conditions. EBMUD will be unable to reduce the target rationing level to 10 percent until it develops additional dry-year supplemental water supplies. As new supplemental supplies are secured, EBMUD will be able to gradually reduce the level of rationing it imposes on its customers. Until supplemental supplies are secured, higher rationing restrictions may be imposed in a specific drought event.

EBMUD acknowledges the commenter's opposition to new or expanded dams or reservoirs and cross-Delta water transfers. Impacts will be thoroughly evaluated in subsequent project-level CEQA documentation when and if the District decides to move forward with these components. Please see the Master Response on Program-level EIR analysis.

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SCSFB2
090504

SIERRA CLUB
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San Francisco Bay Chapter
Serving Alameda, Contra Costa, Marin and San Francisco counties

To: EBMUD Board of Directors
Thomas B. Francis, PE, EBMUD Water Supply Improvements Division

From: Sierra Club San Francisco Bay Chapter, Water Committee
(contact: Juliet Lamont, 2249 Glen Ave., Berkeley CA 94709;
E-mail: jlamont@creekcats.com, Ph: 510-909-5403)

Date: May 4, 2009

Subject: Sierra Club Comments on EBMUD WSMP 2040,
Draft Program Environmental Impact Report

East Bay Municipal Utility District (EBMUD) Board of Directors, EBMUD staff, and EBMUD consultants:

The Water Committee of the Sierra Club (San Francisco Bay Chapter) is submitting a set of comments (attached in this memo), regarding the draft Program Environmental Impact Report (PEIR) for EBMUD's Water Supply Management Program 2040 (WSMP 2040).

The comments include:

A. Summary of Sierra Club position regarding the WSMP 2040
B. Comments on growth assumptions in the WSMP 2040 PEIR
C. Comments regarding the environmental impacts of water transfers proposed in the WSMP 2040, and impacts of water withdrawals on biological resources overall
D. Comments regarding the need to include a conservation water rate structure as part of the WSMP's conservation element (with attached background documents for these comments)

A. Summary of Sierra Club position regarding the WSMP 2040

The Sierra Club applauds the EBMUD Board of Directors, staff, and EDAW consultants for the work that has been put into the WSMP 2040. We are at a time when we need to take bold, aggressive steps towards a sustainable water future that is centered on water conservation and recycling. The EBMUD WSMP 2040 preferred portfolio includes some

1

strong steps towards that sustainable future for the Bay Area, but there are some key elements that remain to be addressed. These elements are summarized as follows:

1) Adopt Highest Levels of Water Conservation (Level E)

   We continue to urge that you adopt the highest level of conservation (Level E) in your preferred portfolio, to ensure that we are maximizing conservation as the keystone of any water strategy for the future. Conservation is the most flexible and secure strategy that EBMUD can adopt for an uncertain and increasingly resource-limited future. Future EBMUD budget allocations should also reflect this highest conservation level, and allow for implementation of this commitment on the ground (including conservation education and outreach programs).

2) Adopt Highest Levels of Water Recycling (Level 3)

   We urge you to maintain your commitment to the highest levels of water recycling (Level 3), and thank you for your support of that. However, your budget must reflect that commitment (not just statements in the WSMP 2040).; we urge that future EBMUD budget allocations allow for this level of recycling to be implemented on the ground.

3) Remove all Proposals for New or Expanded Dams or Reservoirs

   We continue to urge that you drop any new or expanded dams or reservoirs from the WSMP 2040 preferred portfolio, and from the plan overall. With respect to this point, we fully support the continued elimination of the proposal for a new reservoir at Buckhorn Canyon in the preferred portfolio. However, the preferred portfolio still includes expansion of Pardee Reservoir, which is equally damaging from an environmental perspective, and as politically explosive as Buckhorn has been.

4) Remove all Proposals for Cross-Delta Water Transfers

   We urge that you remove any cross-Delta water transfers from the final WSMP 2040 alternatives (and from the preferred portfolio), due to their extensive environmental impacts.

5) Adopt Mandatory Rationing Levels of at least 15%

   We continue to urge you to adopt mandatory water rationing levels (for drought emergencies) of at least 15%, and preferably a full 20%. This level of rationing would eliminate the need for much of the expensive (and controversial) new water supply infrastructure proposed in the WSMP 2040 preferred portfolio.

6) Support Groundwater Storage and Recovery

We urge your continued support for groundwater storage and recovery, rather than surface storage. 6

7) Adopt Aggressive, Tiered Rate Pricing Structures

We urge you to include aggressive and progressive new rate pricing structures for water, based on such examples as Irvine Ranch Water District's (IRWD) tiered system, in southern California, or on similar pricing structures that exist in Tuscon, Arizona. These tiered structures establish a more realistic and environmentally-beneficial pricing system, which aggressively targets high water users, thereby encouraging greater conservation among water users overall, and heightening the attractiveness of investments in water conservation and recycling. In addition, aggressive, tiered water pricing that establishes exponentially higher rates for high water users (as IRWD and Tuscon both do) will allow EBMUD to make up revenues lost through increased conservation at the lower tiers. Ultimately, such pricing structures benefit those users who should benefit (i.e. those who conserve), by focusing on revenues from the high water users to subsidize these lower water conservation tiers. This system also allows for implementation of rebates and/or subsidies for low-income groups – again by focusing EBMUD's revenue capture on the higher water tiers. This produces a "win-win-win" scenario for consumers, EBMUD, and the environment. 7

In sum, the Sierra Club believes that future water needs can be met in an environmentally sustainable manner if EBMUD focuses on conservation, recycling, and a reformed, progressive water pricing structure, rather than on costly engineered systems which negatively impact the environment, are political lighting rods, and which do not address our fundamental over-use and overdrafting of one of the earth's most precious resources.

We cannot build or engineer our way out of water waste and over-use. And over-use is already impacting our ecosystem as a whole – the Sierra foothills, the Delta, all the way to the San Francisco Bay – as noted in the comments about the WSMP 2040, submitted by countless individuals, as well as a number of environmental organizations. This is neither sustainable from an environmental perspective, nor does it provide a secure water supply for EBMUD's consumers. Water conservation and recycling do. We urge EBMUD to be bold and visionary in focusing on these elements as the core for setting and adopting the preferred portfolio for the WSMP 2040. 8

B. Comments on Growth Assumptions in the WSMP 2040 PEIR

EBMUD has developed a stated "need for water" (NFW) to justify the water supply investments and elements presented in the preferred portfolio, including expansion of Pardee and Bear Reservoirs, cross-Delta transfers, and desalination. The NFW calculation is purportedly based on land use patterns projected in each EBMUD district city's General Plan. These development assumptions were the input for a land use-based water demand model. The EBMUD consultants reported to the EBMUD Board of 9

Directors that they met with each city's planning department to review their General Plans in developing future growth assumptions.

Given the smart growth visioning in progress for the Bay Area, it is reasonable to use land use-based projections as one of several sets of projections (e.g. DOF projections) that would be compiled and compared to suggest a range of future population growth conditions. However, given the variation among the projections currently available from agency to agency, we question the outright use of only one such set of projections for a model basis.

In addition, we are concerned about (and skeptical of) the actual assumptions that EBMUD consultants placed into the model, and have recommended this as a technical issue to discuss with the consultants. For example, some of the slides from the EBMUD PEIR website show growth assumptions in some specific cities, particularly Oakland. Referencing the statistics from EBMUD's 2005 UWMP (http://www.ebmud.com/water_&_environment/water_supply/urban_water_management_plan/2005_uwmp/UWMP%202005%20Final%20Chapter%201.pdf), which relied on ABAG Projections 2005, population growth is .77% annually from 2005 to 2030. The growth rate for the Alameda County portion is .96% annually. ABAG switched to a land-use mapping, policy-based projections system in 2003, and has been moving further in that direction since. A draft Projections 2009 was just released, so comparing to the final Projections 2007 and draft Projections 2009 would be important. 9

Ultimately, if the NFW projections are over-stated – even marginally – the purported need for a range of elements in the preferred portfolio also diminishes. The Amador County Board of Supervisors has also submitted comments questioning EBMUD's growth projections (Letter of April 21, 2009, from Amador County Board of Supervisors to Thomas B. Francis, EBMUD Water Supply Improvements Division), and specifically noting the potential over-statement of future population growth and need for water. The Sierra Club would like to see a more complete analysis of growth projections, and comparisons of ranges of projections and their impact on future water needs.

C. Comments regarding the Environmental Impacts of Water Transfers Proposed in the WSMP 2040 PEIR, and Impacts on Biological Resources Overall

Water transfers can be an efficient means of re-allocating water in times of shortage, or from low value uses to higher value uses. However, water transfers can also damage agricultural communities, cause loss of farmworker jobs, and cause significant impacts to a groundwater basin that underlies a surface water transfer.

Since the largest and most productive aquifer in the Sacramento Valley is the Tuscan Aquifer, and the water districts receiving the largest portion of surface water from the Sacramento River overlie the Tuscan, our comments will focus on issues that arise from possible transfers in this area. Most of the issues need to be addressed even if transfers occurred from some other area north of the Delta. 10

In the case of the north-of -Delta water transfer program proposed by EBMUD, a number of issues arise which must be addressed at the programmatic level, including: .

- Is the groundwater basin which underlies a proposed transfer area adjudicated, managed, and/or well characterized? The PEIR should present this analysis, and the degree to which the presence or absence of these elements could potentially impact water resources in the Delta. 10

- Would a proposed transfer fallow land, or increase groundwater extraction? Are mechanisms in place in the transfer areas to monitor and fully mitigate impacts from either fallowing or extraction? If EBMUD proposes a program that might, in the future, transfer water from north of Delta, it should now, as a condition of including this option in the WSMP, establish a program of measuring, monitoring and managing groundwater in areas proposed for transfer with appropriate local agencies. Or EBMUD should begin to prepare programs to mitigate impacts of fallowing agricultural land on local economies and on farmworkers who lose jobs as a result of a land fallowing program. 11

- Has EBMUD made inquiries with possible water transferring agencies? Has the District discussed how the reduction of surface water deliveries would be managed? Has the District offered to help characterize groundwater resources underlying proposed transfer areas? These preparations, which by their nature require long lead time, must be considered in the programmatic EIR. 12

- If water is transferred from areas overlying the Tuscan aquifer, and overlying water agencies increase their extraction of groundwater to replace what is being transferred, there could be significant impacts to up-gradient farms and communities which are completely dependent on the Tuscan aquifer, and whose wells may be much shallower than those of the big water districts involved in transfer activity with EBMUD. Has EBMUD fully analyzed the possibility for such up-gradient impacts, particularly for cumulative impacts across a wide geographical area as well as a long time frame? This analysis, along with proposed mitigations, must be conducted and presented in the PEIR. 13

- The most productive salmon streams tributary to the Sacramento River (Deer, Mill, Battle, and Butte Creeks), all of which have received significant restoration funding from the public, overlie the Tuscan. Is EBMUD sure that a significant increase in groundwater extraction here will not dewater these essential salmon streams? Potential impacts to this salmon habitat and associated populations must be fully analyzed in the PEIR, with associated presentation of avoidance measures and mitigations. 14

- The Delta is suffering a severe ecological crisis caused, in part, by reduced fresh water inflows and increased diversion of its water. How will EBMUD carry out this proposed program of water transfers, while completely avoiding removing 15

any more water from the Delta? The PEIR currently fails to discuss these issues, and instead lists the potential biological impacts of the Pardee expansion and other preferred portfolio elements as being "less-than-significant" or mitigated. 15

- In addition to salmonid populations, the Delta is habitat for a number of threatened and endangered species, both under federal Endangered Species Act parameters/listing, as well as California state listing. The PEIR simply does not address the full range of potential impacts (direct, indirect, and cumulative) to these species, and fails to include any analysis at all of at least one species that was recently listed as threatened under California endangered species legislation (the longfin smelt). Likewise, the Delta smelt was just changed from "threatened" status to "endangered" status under California state law. Mitigation measures presented in the PEIR to address potential impacts are vague at best, and again, in some cases, completely absent. The PEIR needs to undertake a much more extensive analysis of the potential impacts to biological resources resulting from projects proposed under the WSMP 2040, and develop a more detailed and specific list of proposed mitigations. 16

D. Comments regarding the need for a Conservation Rate/Pricing Structure

Despite scoping comments suggesting inclusion of a conservation rate structure as part of the conservation element of the WSMP (See Appendix A to DEIR at pp. 8, 46-48), the proposed WSMP does not include conservation pricing as a component, nor does the Draft EIR include any discussion of why it was not included. Further, the District's "Conservation Memo" that claims to provide the evidence supporting the DEIR's conclusions about the feasibility and cost-effectiveness of various conservation also does not include any discussion of conservation pricing.

To make it clear what is included under the rubric of a conservation rate structure or conservation pricing, the concept, which has been well documented and discussed in the literature, is to increase the marginal cost of water to the consumer as the consumer uses more water. Normally, this is done by dividing water usage into "blocks" and assigning a higher rate to each successive block. Attached as an example is the rate structure used by the Irvine Ranch Water District (Attachments 1 and 2), which uses five successive "tiers" of rates, with the highest rate more than eight times the lowest. Such a rate structure is also sometimes described as an "inclined-block" rate structure. 17

EBMUD has long had a mildly inclined rate structure. During the 1989-1992 drought, as part of its rationing program, EBMUD instituted a more strongly inclined rate structure, including a "penalty" tier for those using highly excessive amount of water. Indeed, the current DEIR includes the use of rate "signals" as part of its overall rationing strategy for coping with a drought. (DEIR at p.2-17.) However, the DEIR doesn't consider or discuss what role pricing might have in inducing conservation during non-drought periods.

There is abundant evidence that conservation pricing is both feasible and effective in reducing consumers' water use. A study by the Irvine Ranch Water District indicated that its strongly-inclined rate structure, in addition to a variety of other conservation inducements (most of which East Bay MUD already implements), resulted in a drop in per acre irrigation water use of almost 50%. (See Attachment 3, "*Irvine Ranch Water District Water Conservation and Efficiency Program, June 2007"* report, p. 3) Likewise, overall per capita water use also dropped. (Id.) A much broader study of rates and water use by Western Resource Advocates also found a strong correlation between adoption of a strongly-inclined rate structure and lower per capita water use. The correlation was predictably strongest at the highest levels of water use. (See Attachment 4, "Smart Water: A Comparative Study of Urban Water Use Efficiency Across the Southwest," Chapter 3). Significantly, the Western Resources Advocates study looked at water use across a variety of cities with different climatic conditions and concluded that conservation pricing was not climate-dependent. 17

Based on all of this evidence, and particularly EBMUD's own past reliance on conservation pricing as part of its strategy in addressing a water shortage emergency, there appears to be no good reason for not including conservation pricing as part of the conservation component of the WSMP. The EIR should therefore be rewritten to include conservation pricing as a component of the WSMP. Along with that, and based on the best available data from IRWD, Western Resource Advocates, other sources, and EBMUD's own past drought rate data, the EIR should be revised to reduce the "need for water" to reflect the additional water saving resulting from implementing a conservation rate structure.

E. Attachments

Attachments 1 and 2: Irvine Ranch Water District Rate Structure

Attachment 3: IRWD Water Conservation and Efficiency Program, June 2007

Attachment 4: "Smart Water: A Comparative Study of Urban Water Use Efficiency Across the Southwest," Chapter 3.

Attachment 5: IRWD Rate Structure Presentation to CA Water Agencies

Attachment 6: "Smart Water: A Comparative Study of Urban Water Use Efficiency Across the Southwest," Chapter 2.

IRVINE RANCH WATER DISTRICT

SCHEDULE OF RATES AND CHARGES

IRVINE RANCH
WATER DISTRICT

EFFECTIVE

JULY 1, 2008

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Section 2: Wastewater System Charges ..... Page

Section 3: Developer Services ..... Page

Section
1 Water System Charges

Monthly Water Service Charge

Monthly Service Charge for residential, master metered apartments/condos, commercial/industrial, public authority, non-agricultural and reclaimed:

User Description	
Irvine Ranch Service Area	
Residential detached, attached and apartments	See chart (a)
Residential apartments and condominiums (master metered)	See chart (b)
Commercial, Industrial, Public Authority and Landscape	See chart (b)
Landscape reclaimed user	See chart (b)
Temporary water service connections	See chart (c)
Former Los Alisos Service Area	
Residential and Non-Residential customers	See chart (d)
Santiago County Service Area	
Residential and Non-Residential customers	See chart (e)
Orange Park Acres	
Residential and Non-Residential customers	See chart (f)

Meter Size	Flow in Gallons	Chart (a)	Chart (b)	Chart (c)	Chart (d)	Chart (e)	Chart (f)
5/8" or 3/4" Disc	0-22	$ 7.50	$ 7.50	$ 59.35	$ 9.60	$	$ 16.00
5/8" Disc	0-22					15.95	
3/4" Disc	0-22					23.55	
1" Disc	23-37	7.50	14.80	66.45	18.20	39.50	16.00
1 1/2" Disc	38-75	17.65	41.05	92.80	28.35	80.10	16.00
2" Disc	76-120	24.20	67.50	119.25	43.65	128.35	16.00
3" Compound	161-250		160.95	212.75	84.75		16.00
4" Compound	381-450		260.55	353.45	130.95		16.00
6" Compound	451-750		418.30	469.95	258.75		
8" Compound	1001-1450		933.95	851.60	412.15		
10" Compound	1451-1600		1,036.55	1,088.20	581.25		
14" Compound	2001-3500		1,598.75	1,592.60	1,179.75		
2" Turbo	120-160		90.50	142.25	54.05		
3" Turbo	281-360		207.80	259.40	118.05		
4" Turbo	751-1000		617.60	869.10	322.80		
6" Turbo	1601-2000		1,093.15	1,144.80	642.50		
8" Turbo	2001-3500		1,598.75	1,650.25	899.25		
10" Turbine	3500-5500		2,489.60	2,565.60			
2" Magnetic Meter	161-280		160.95	212.75	84.75		
4" Magnetic Meter	751-1000		617.60	669.10	322.80		
6" Magnetic Meter	1601-2000		1,093.15	1,144.80	642.50		
8" Magnetic Meter	2001-3500		1,598.75	1,650.25	899.25		
6" Propeller	1001-1450		933.95				
8" Propeller	1451-1600		1,036.55				
10" Propeller	1601-2000		1,093.15				
12" or 14" Propeller	2001-3500		1,598.75				
16", 18", or 20" Propeller	3501-5500		2,514.10				
Construction Meters					383.80	128.35	259.40
3 Main Line					53.70		
4 Main Line					107.50		
6 Main Line					201.55		
8 Main Line					241.90		
10 Main Line					322.35		

Service Charges – Private Fire Protection Service

1. Service-Line Charge

The monthly service charge for private fire line service will be $13.60 for each inch of diameter of service connection. This charge includes water used for fire extinguishing purposes. The fee for the former Los Alisos Water District service area will be $9.50 per inch of diameter of pipe with a commodity charge of $1.46 per ccf.

2. Fire Hydrant Charge

The monthly charge for private fire hydrant service shall be $23.70 per hydrant. This charge includes water used for fire extinguishing purposes.

3. Fire Flow Testing

The District will charge a one-time fee of $250.00 to administer fire flow tests.

4. Former Santiago County Water District Service Area

Monthly private fire line service will be:

1 – 1 1/2" only	$ 7.35
Larger meter(s) charge	$ 13.60 per diameter inch

Private Fire Sprinkler Service – Residential

Effective January 1, 2005, combined fire sprinkler and domestic water lines are allowed under the following conditions:

The minimum WSCF meter size purchased and installed shall be one inch (1").

The only exception is for new homes, including all out-building structures, which total less than 2000 square feet in combined size per parcel. Customers in this category may purchase a 5/8" WSCF under the following policy, also applicable to incremental up-sizing above one inch (1").

A customer may pay the appropriate Water System Capacity Fee (WSCF) for a smaller diameter domestic meter capacity **(minimum 1")**, and increase the service line size and meter to meet fire flow requirements with the understanding they will be subject to:

1. All applicable tiered rate water charges based on the domestic WSCF meter size purchased.
2. Monthly meter service charges at the corresponding rate for the WSCF meter size purchased.
3. Monthly Fire Service Connection charges based on the increased line size.

Existing and future customers with combined domestic and residential fire sprinkler lines that have paid the applicable WSCF for both the meter and line size **will not** incur additional monthly fire sprinkler line size charges.

Commodity Charges: Potable Water

1. Commodity Charge for Residential Detached Dwelling Units

Tier	Rate/ccf	Indoor Usage in ccf	Landscape Percent of usage
Low Volume	$0.91	0-5	0-40
Base Rate	$1.07	6-12	41-100
Inefficient	$2.14	13-18	101-150
Excessive	$4.28	19-24	151-200
Wasteful	$8.56	25+	201+

2. Commodity Charge for Residential Attached Dwelling Units

(Base allocation x number of dwelling units)

Tier	Rate/ccf	Indoor Usage in ccf	Landscape Percent of usage
Low Volume	$0.91	0-4	0-40
Base Rate	$1.07	5-9	41-100
Inefficient	$2.14	10-13	101-150
Excessive	$4.28	14-18	151-200
Wasteful	$8.56	19+	201+

3. Commodity Charge for Apartments

(Base allocation x number of dwelling units)

Tier	Rate/ccf	Indoor Usage in ccf
Low Volume	$0.91	0-2
Base Rate	$1.07	3-6
Inefficient	$2.14	7-8
Excessive	$4.28	9-11
Wasteful	$8.56	12+

4. Commodity Charge for Lake Forest (former Los Alisos Water District service area)

Rate/ccf	Percent of Usage
$1.55	100

5. Commodity Charge for Commercial, Industrial and Public Authority and Mixed Usage

Tier	Rate/ccf	Base Index Percent of Usage
Base Rate	$1.07	0-100
Inefficient	$2.14	101-110
Excessive	$4.28	111-120
Wasteful	$8.56	121+

6. Commodity Charge for Potable Landscape Irrigation (Acre Feet per Acre Basis)

Tier	Rate/ccf	ET Index Percent of Usage
Low Volume	$0.91	0-40
Base Rate	$1.07	41-100
Inefficient	$2.14	101-110
Excessive	$4.28	111-120
Wasteful	$8.56	121+

Block 86	Rate/ccf	ET Index Percent of Usage
Low Volume	$1.07	0-40
Base Rate	$1.07	41-100
Inefficient	$1.07	101-110
Excessive	$1.07	111-120
Wasteful	$1.07	121+

7. Charge for Non-Conforming Uses

*Non-Conforming Use	Rate/ccf
Base Rate	$4.28

* The non-conforming use charge shall be applied, as defined in IRWD's "Rules and Regulations", in addition to the applicable commodity charge.

8. Commodity Charge for Former Santiago County Water District Service Area

5/8" Meter Size	Rate/ccf	Allocation
Standard Tier I	2.16	0 – 43 ccf
Excess Tier II	4.32	44 – 65 ccf
Excess Tier III	6.48	65 + ccf

3/4" Meter Size	Rate/ccf	Allocation
Standard Tier I	2.16	0 – 64 ccf
Excess Tier II	4.32	65 – 96 ccf
Excess Tier III	6.48	97+ ccf

1" Meter Size	Rate/ccf	Allocation
Standard Tier I	2.16	0 – 107 ccf
Excess Tier II	4.32	108 – 161 ccf
Excess Tier III	6.48	162+ ccf

1 1/2" Meter Size	Rate/ccf	Allocation
Standard Tier I	2.16	0 – 213 ccf
Excess Tier II	4.32	214 – 320 ccf
Excess Tier III	6.48	321+ ccf

2" Meter Size	Rate/ccf	Allocation
Standard Tier I	2.16	0 – 340 ccf
Excess Tier II	4.32	341 – 510 ccf
Excess Tier III	6.48	511+ ccf

4" Meter Size	Rate/ccf	Allocation
Standard Tier I	2.16	0 – 1,275 ccf
Excess Tier II	4.32	1,276 – 1,913 ccf
Excess Tier III	6.48	1,914+ ccf

9. Commodity Charge for Orange Park Acres Service Area

3/4" Meter Size	Rate/ccf	Allocation
Standard Tier I	1.59	0 – 10 ccf
Excess Tier II	1.85	11 – 40 ccf
Excess Tier III	2.32	41+ ccf

Commodity Charges: Potable Water System - Agricultural

Water supplied under this section shall be used only for the growing or raising, in conformity with recognized practices of husbandry, for the purposes of commerce, trade, or industry, of agricultural, or floricultural products, and produced (1) for human consumption or for the market, or (2) for the feeding of fowl or livestock produced for human consumption or for the market, such products to be grown or raised on parcels of land having an area of not less than five acres utilized exclusively there for.

1. Commodity Charge: Non-Interruptible

Tier	Rate/ccf	Base Index Percent of Usage
Base Rate	$1.30	0-100
Inefficient	$2.60	101-110
Excessive	$5.20	111-120
Wasteful	$10.40	121+

Commodity Charges: Nonpotable Water System Including Agricultural

1. Commodity Charge

The commodity charge for nonpotable ILP water used for agricultural purposes (including agricultural irrigation, landscape irrigation, commercial usage, lake users and grading users of nonpotable water) shall be:

Area	Rate/ccf	Per Acre Foot	Overuse *
IRWD service area	$1.01	$441.00	$898.00
Former Los Alisos service area	$0.96	$419.50	$898.00

The commodity charge for reclaimed water used for agricultural purposes (including agricultural and landscape irrigation) shall be:

Area	Rate/ccf	Per Acre Foot	Overuse *
IRWD service area	$0.96	$419.50	$898.00
Former Los Alisos service area	$0.96	$419.50	$898.00

2. Santiago Aqueduct Commission (SAC) Water

The commodity charge for nonpotable SAC water used for agricultural and non-agricultural (landscape irrigation, commercial and grading) purposes shall be:

Area	Rate/ccf	Per Acre Foot	Overuse *
Agricultural	$1.03	$450.00	$898.00
Non-Agricultural	$1.29	$561.00	Not Subject

* Interim Agricultural Water Program Delivery Limitation

The District participates in the Interim Agricultural Water Program (IAWP) that is managed by the Metropolitan Water District of Southern California (MWD). MWD will limit deliveries if water supply conditions warrant that action and the District is required to pass those limitations on to the agricultural user. The Overuse cost is equivalent to the penalty rate assessed by MWD for water exceeding the deliveries limitation.

3. Surcharge

The District reserves the right to impose, based upon relevant factors, a surcharge to the basic commodity rate for nonpotable agricultural irrigation water.

4. Seasonal Pricing Policy

The District may from time to time, at the discretion of the General Manager, implement a seasonal pricing structure that offers available supplies of untreated water at a discounted rate. The seasonal rate will be established by the Board of Directors.

Commodity Charges: Nonpotable (Untreated) Water System- Non-Agricultural Landscape Irrigation

1. Commodity Charge

The commodity charge for nonpotable ILP water used for landscape irrigation (acre foot per acre basis) based on evapotranspiration (ET) for each microclimate:

Tier	Rate/ccf	ET Index Percent of Usage
Low Volume	$0.82	0-40
Base Rate	$0.96	41-100
Inefficient	$1.92	101-110
Excessive	$3.84	111-120
Wasteful	$7.68	121+

Commodity Charges: Reclaimed Water System
Non-Agricultural Landscape Irrigation

1. Commodity Charge

Commodity charge for nonpotable reclaimed water used for landscape irrigation (acre foot per acre basis) based on evapotranspiration (ET) for each microclimate:

Tier	Rate/ccf	ET Index Percent of Usage
Low Volume	$0.82	0-40
Base Rate	$0.96	41-100
Inefficient	$1.92	101-110
Excessive	$3.84	111-120
Wasteful	$7.68	121+

2. Reclaimed Loan Customers

The commodity charge for reclaimed loan customers (acre foot basis):

Tier	Rate/ccf	ET Index Percent of Usage
Low Volume	$0.91	0-40
Base Rate	$1.07	41-100
Inefficient	$2.14	101-110
Excessive	$4.28	111-120
Wasteful	$8.56	121+

Block 86	Rate/ccf	ET Index Percent of Usage
Low Volume	$0.96	0-40
Base Rate	$0.96	41-100
Inefficient	$0.96	101-110
Excessive	$0.96	111-120
Wasteful	$0.96	121+

3. Former Los Alisos Water District Service Area

Tier	Rate/ccf
Base Rate	$0.96

Commodity Charges: Reclaimed Water System - Commercial/Industrial

1. Commodity Charge for Commercial and Industrial

Tier	Rate/ccf	Base Index Percent of Usage
Base Rate	$0.64	0-100
Inefficient	$1.28	101-110
Excessive	$2.56	111-120
Wasteful	$5.12	121+

2. Commodity Charge for Commercial and Industrial Loan Customers

Tier	Rate/ccf	Base Index Percent of Usage
Base Rate	$1.07	0-100
Inefficient	$2.14	101-110
Excessive	$4.28	111-120
Wasteful	$8.56	121+

Allocations and Variances

1. Base Allocations for Commodity Charges

Monthly allocation includes fixed component for indoor usage and variable component based on evapotranspiration (ET) rate for landscape irrigation.

Account Type	Base Allocation Number of Residents	Landscape Area (LA)	Base Allocation Indoor	Base Allocation Outdoor	Total Allocation
Residential Detached	4	1300 sq. ft (0.03 acres)	# Residents x 75 gpd	ET x Kc x 1.25 x LA	(Indoor + Outdoor) x # days in bill service period
Residential Attached*	3	435 sq. ft	# Residents x 75 gpd	ET x Kc x 1.25 x LA	(Indoor + Outdoor) x # days in bill service period
Apartments*	2	N/A	# Residents x 75 gpd		Indoor x # days in bill service period
Irrigation		Site specific based on irrigated acreage	N/A	ET x Kc x 1.25 x LA	Outdoor x # days in bill service period
Commercial, Industrial, Institutional			Site specific, based on productivity, employees, water use efficiency practices etc.	Site specific, based on irrigation needs	Site specific, adjusted for # days in bill service period

*For master-metered apartments and condominiums, the base allocation is multiplied by the number of dwelling units.

gpd = gallons per day
CCF = 100 cubic feet. 1 CCF = 1 billing unit = 748 gallons
ET (evapotranspiration) – from IRWD weather stations located in coastal, central or foothill zones
Kc (crop co-efficient) – relative amount of water cool-season turf needs at various times of the year
1.25 for 80% irrigation system efficiency – extra water to make up for inefficiencies in the irrigation system
LA = landscape acreage. Assumes that 100% of the landscape is cool-season turf-grass

2. Variances from Ascending Tiered Rate Allocations

Water allocations are based on the number of residents, landscape square footage and actual daily weather and evapotranspiration (ET) data for each of three microclimates within the IRWD service area. Variances are available for larger than normal landscaped areas, more people living in the home or special medical needs. *Note: Former Los Alisos Water District customers are billed on a flat rate and do not qualify for variances at this time.*

Procedure

See IRWD Rules and Regulations, Section 12.6

3. Grounds for Variance

Proof acceptable to the District will be required for each ground(s) of variance.

a. Number of people residing in a residential dwelling unit.
Each additional person increases the base by 2.5 ccf/month (indoor usage factor x 0.8)

b. Landscape
Increased allocations shall be given for residential lot size beyond the standard base allocation lot size. It is the obligation of the customer to provide to the District acceptable documentation of the actual landscape area served.

c. Medical Needs

- Approval is contingent upon medical documentation.
- Increased allocation will be determined on a case by case basis and based on the type of medical need.

d. Licensed Care Facilities (in a residential dwelling unit)

- A current license from appropriate regulatory agency will be required.
- A licensed 24-hour care facility will be allocated increases based on the additional people per dwelling unit formula at 2.5 ccf per month per additional person.
- A licensed day care facility (not 24-hour) will be granted one ccf per additional person, or one third of the allotment (rounded to the next highest ccf) of the licensed 24-hour care facility.
- Additional allocation for medical reasons will be determined on a case by case basis.

e. Fire Control Zones

- Increased allocations will be determined by the District based upon relevant factors such as area, slope, planting material, etc.

f. Commercial/Industrial/Public Authority

- Increases to the base allocation will be determined on a case by case basis. Relevant factors will include expansion of productive capacity, existing conservation practices that can be shown to have reduced water usage, severe economic hardship, etc.

g. New Account Establishment Variance
Landscape Accounts - will be placed on conservation base rate for the first six months.

Commercial and Industrial Accounts - will be placed on conservation base rate for the first six months.

4. Limitations

a. An approved variance will become effective on the date the request for variance is submitted to the District, but must be submitted within thirty (30) days of receipt of the bill.

b. Approvals are valid for a period specified by the District (one year or less), and must be resubmitted on or before the expiration date to remain in effect.

5. Effect of Increased Allocations

a. Residential:

Approved variances will extend each tier of the residential structure, excluding the low volume tier, by the number of increased ccf's.

b. Non-Residential:

Approved variances will extend each tier of the non-residential structure by a given percentage (or other method) determined on a case by case basis.

Pumping Surcharges

1. Potable Water Pumping Surcharges

A surcharge will be added to the commodity rate of those users who reside at higher elevations and cause the District to incur additional pumping costs to supply their water. The surcharge is based upon prevailing energy costs.

Zone Name	Surcharge/ccf
Zone 4	$0.17
Coast Zone 4	$0.16
Zone 6	$0.18
Zone 6A	$0.25
Coast Zone 6	$0.29
Zone 7	$0.42
Zone 8	$0.28
Zone 9	$0.32

2. Reclaimed Water Pumping Surcharges

A surcharge will be added to the commodity rate of those users who reside at higher elevations and cause the District to incur additional pumping costs to supply their water. The surcharge is based upon prevailing energy costs.

Zone Name	Surcharge/ccf
Zone D	$0.16
Zone D (Quail Hill Zone B)	$0.16
Zone G	$0.29
Zone H	$0.42

Temporary Water Service Connection

1. Monthly Service Charge

See Chart C on page 4.

2. Commodity Charge

Wherever feasible, reclaimed water shall be used for temporary construction uses. The Commodity Charge shall be as follows:

Potable $1.47/ccf

Reclaimed $1.32/ccf

Former Santiago County Water District Service Area – Potable $4.15/ccf

Former Orange Park Acres Service Area – Potable $1.59/ccf

3. Meter Deposit

A deposit equal to the replacement cost of the construction meter shall be collected at the time of service application. For FY 2008-09, this is estimated to be $1,000.00. The deposit will be applied to the closing bill and any remaining amount refunded to the customer. Lost meters will result in forfeiture of deposit.

4. Materials for Repairing Damaged Construction Meters

Item	Cost
Eddy Valve (2")	$ 200.00
Eddy Valve (3")	$ 380.00
Meter, complete	$ 877.00
Swivel Adapter	$ 135.00
Register	$ 97.00
Male Fitting	$ 81.00
Female Attachment	$ 135.00
Lock & Chain	$ 30.00
Chain (per five-foot length)	$ 11.00
Lock	$ 15.00
Handle (main case)	$ 277.00
Hydrant Collar	$ 87.00
Rotor	$ 81.00
Rotor Cap	$ 23.00
Collar	$ 81.00
Collar (with barrel lock)	$ 87.50
Barrel Lock	$ 5.00
Stores Clearing	40% of total parts billed
Labor & Overhead	$ 110.00
Meter Body only	$ 277.00

5. Replacement Costs for Residential Customers Who Destroy District Property

Item	Cost
5/8" meter	$ 35.00
3/4" meter	$ 53.00
1" meter	$ 77.00
1 1/2" meter	$ 160.00
2" meter	$ 230.00
3/4" Anglestop plug lock	$ 18.00 – Cost estimate by IRWD customer service

New Account Fees for Water Service

This section is applicable to all requests for new or transferred service.

1. Charges

A fee of $15.00 shall be collected to establish a new account for water and sewer service, or to transfer an existing account to a new location.

2. Residential Deposit

For residential customers, a deposit of $50.00 may be required for instances of delinquent payments.

3. Non-Residential Deposit

A deposit of $50.00 for 5/8" non-residential meters and $100.00 for non-residential meters larger than 5/8" may be required at the time of service application.

Delinquency and Service Restoration Charges

All bills and charges for water, sewer and reclaimed water service shall be due and payable upon presentation and shall become delinquent twenty-five (25) days thereafter.

1. Delinquency Charges

If payment is not made within twenty-five (25) days after presentation, a late charge will be levied upon the unpaid balance as follows:

For residential and non-residential accounts with an unpaid balance of $10 or more, a one-time charge of 10% of the unpaid balance plus 1.5% interest will be assessed, and each month thereafter the unpaid balance will be subject to an interest charge of 1.5%.

2. Restoration Charges

When service is discontinued because of delinquency in payment of a water, sewer, or reclaimed water bill, the service shall not be restored until all charges, including a restoration charge, have been paid.

(a) **Restoration Charge During Normal Working Hours:** The restoration charge applicable for work requested to be performed during normal working hours of the District will be $40.00.

(b) **Restoration Charge After Normal Working Hours:** The restoration charge applicable for work requested to be performed after normal working hours of the District will be $55.00.

3. Non-Sufficient Funds Checks

A $20.00 service fee will be charged for each check returned from the bank for non-sufficient funds.

Special Contract Billing

1. Residential Domestic Water Sold to Trabuco Canyon Water District

(a) Commodity Charge: The base residential commodity rate shall be $1.48 per hundred cubic feet.

(b) Pumping Surcharge: A pumping surcharge of $0.32 per hundred cubic feet shall be added to the base residential commodity rate.

(c) Monthly Service Charge: The monthly service charge shall be $4.70 per residential customer.

2. Excess Nonpotable Water Sold to Agencies Outside the District

(a) Commodity Charge:

Rate/ccf	Per Acre Foot
$0.96	$419.50

Section 2 Wastewater System Charges

Monthly Wastewater Service Charges

Residential

(a) Single Family Dwelling Units

AVERAGE MONTHLY WATER USE	SERVICE CHARGE PER MONTH
Over 1000 cubic feet (10 ccf)	• 100% rate = $13.80 per unit
501-1000 cubic feet (5.01-10.0 ccf)	• 90% rate = $12.40 per unit
0-500 cubic feet (0-5.0 ccf)	• 75% rate = $10.35 per unit

(1) Monthly service charge based upon actual water meter readings during the twelve month period ending December 31.

(2) To qualify for the reduced rates a customer must have usage history for a full calendar year.

(b) Multiple Family Dwelling Units — SERVICE CHARGE PER MONTH
- $10.35 per unit

(1) No credit will be granted for vacancies resulting from the normal turnover of occupants in an existing multiple dwelling unit. The price structure contained herein includes considerations of average vacancy rates.

(2) A newly constructed multiple dwelling unit may be billed at the non-residential metered rate, with appropriate allowance for landscape irrigation, until the structure is substantially occupied.

(c) Single or Multiple Family Dwelling Units

	SERVICE CHARGE PER MONTH
(1) Portola Hills	• $13.80 per unit
(2) A portion of Newport Coast	• $4.75 per unit

NON-RESIDENTIAL – CLASS II

Quantity charges are based on the supposition that 90 percent (90%) of non-residential water consumption returns to the sewer. Because of landscape irrigation or consumptive usage, some non-residential users may discharge substantially less of their metered water into the wastewater system. Those users may, upon request to the District, be permitted to have the amount of water being discharged into the sewer determined by means acceptable to the District.

(a) Shall apply to all commercial, industrial and institutional users whose consumption is in excess of 10 ccf per month. — SERVICE AND QUANTITY CHARGE PER MONTH
- Service charge - $13.80 *
- Quantity charge - $1.58/ccf

(1) To qualify for this rate, a customer usage history based upon actual water meter readings is not greater than 120 ccf in a full calendar year.

(b) Shall apply to all commercial, industrial and institutional users whose consumption is in excess of 10 ccf per month. — SERVICE /QUANTITY/COMMODITY CHARGE PER MONTH
- Service charge - $13.80 + 1.40 = $15.20*
- Quantity charge - $1.66/ccf ┐ = $1.737/ccf
- Commodity charge - $0.077/ccf ┘

(c) Portola Hills customers — SERVICE AND QUANTITY CHARGE PER MONTH
- Service charge - $13.80*
- Quantity charge - $1.58/ccf

* Basic service charge includes 10 ccf water consumption allowance

Non-Residential Class I Wastewater

This section shall be applicable to non-residential and Class I customers who discharge extra-strength wastewater into the wastewater system, or discharge or have the potential to discharge constituents subject to federal or state standards and local discharge limitations.

1. Discharge Limits

The limits in this table are local limits. Customers subject to federal categorical pretreatment standards may be required to meet more stringent limits.

Constituent	Concentration Limit in mg/L
Arsenic	2.00
Cadmium	1.00
Chromium	2.00
Copper	3.00
Lead	2.00
Mercury	0.03
Nickel	10.00
Silver	5.00
Zinc	10.00
Cyanide (Total)	5.00
Cyanide (Amenable)	1.00
Polychlorinated Biphenyls	0.01
Pesticides	0.01
Total Toxic Organics	0.58
Sulfide (Total)	5.00
Sulfide (Dissolved)	0.50
Oil and grease of mineral or petroleum origin	100.00

2. Appeals to the Board of Directors

Appeal fee - $500

3. Charges and Fees

Basic Service and Quality Charge

The Class I charge for use shall be computed by the following formula:

Charge for use = VRv + BRb + SRs

Where V = Total volume of flow in hundred cubic feet.

B = Total discharge of biochemical oxygen demand (BOD) in pounds.

S = Total discharge of suspended solids (SS) in pounds

Rv = $0.920 per hundred cubic feet

Rb = $0.250 per pound of BOD

Rs = $0.217 per pound of SS

4. Fees for Noncompliance with Permit Conditions

a. Minor Violation

Condition where the limitation is less than the violation and the violation is less than the technical review criterion.

Fee per violation - $350

b. Significant Noncompliance or Significant Violation

Condition where the violation is greater than the technical review criterion or qualifies under the definition of significant noncompliance.

Fee per violation - $550

c. Batch Dump or Slug Load

Fee per violation - $550

d. Probation Orders

Enforcement Compliance Schedule Agreements and subsequent two year probation, and Regulatory Compliance Schedule Agreements.

Fee per violation - $550

e. Fees for Restaurant Grease Trap Service Calls

Fee for service call within 12 month period - $1,000

Fee for all other service calls within 12 month period - $2,000

Section
3 Developer Services

Water Connection Fees

Residential

	IMPROVEMENT DISTRICT	0-5.8 DUs/acre	5.9-10.8 DUs/acre	10.9-25.8 DUs/acre	25.9-40.0 DUs/acre
Connection Fees Per Dwelling Unit	101*	$2,368.00	$2,089.00	$1,770.00	$1,494.00
	113	1,713.00	1,713.00	1,713.00	1,713.00
	102 (120), 121	818.00	818.00	818.00	818.00
	103 (130)	1,235.00	1,235.00	1,235.00	1,235.00
Total acreage for any given	140	1,469.00	1,469.00	1,469.00	1,469.00
development shall be gross	105 (150)	1,235.00	1,235.00	1,235.00	1,235.00
acres excluding private parks.	106 (160), 161	1,235.00	1,235.00	1,235.00	1,235.00
	186	6,779.00	6,779.00	6,779.00	6,779.00
	180	1,235.00	1,235.00	1,235.00	1,235.00
	Lambert Ranch	2,320.00	2,320.00	2,320.00	2,320.00
	Los Alisos 135	1,883.00	1,883.00	1,883.00	1,883.00
	All others*				

Commercial, Industrial and Public Authority – Office Building

	IMPROVEMENT DISTRICT	Commercial	Industrial	Public Authority
Connection Fees Per Gross Acre	101*	$14,387.00	$21,913.00	$14,387.00
	113	13,707.00	*	6,853.00
	102 (120), 121	4,486.00	4,557.00	4,486.00
	103 (130)	3,048.00	3,048.00	3,048.00
	140	8,269.00	.00	8,269.00
	105 (150)	7,107.00	10,041.00	7,107.00
	106 (160), 161	7,107.00	10,088.00	7,107.00
	186	15,130.00	15,130.00	15,130.00
	188	23,608.00	23,608.00	23,608.00
	190	7,107.00	.00	7,107.00
	Los Alisos 135	8,533.00	8,533.00	8,533.00
	All others*			

Parks, Churches and Commercial Recreational Facilities

	IMPROVEMENT DISTRICT	Indoor Water Use	Outdoor[1] Water Use
Connection Fees Per Fixture Unit	101*	$41.15	$144.80
	102 (120), 121	6.79	23.99
(1) As calculated per UPC as revised.	103 (130)	4.94	14.83
	140	28.50	100.24
	105 (150)	20.78	72.87
	106 (160), 161	21.59	75.66
	186	44.82	157.45
	188	107.76	379.11
	190	22.16	75.66
	All others*		

*Connection fees will be set by the Board of Directors upon request for initial service for each such improvement district.

Schools (Public and Private)

		Indoor Use		Landscape Use [2]
	IMPROVEMENT DISTRICT	Primary & Intermediate	Secondary	Primary Intermediate & Secondary
Connection Fees Per	101*	$3,243.00	$4,349.00	$139.00
100 Students Average Daily Attendance	102 (120), 121	536.00	715.00	24.00
	103 (130)	330.00	444.00	15.00
[2] Minimum required	140	2,243.00	3,016.00	97.00
	105 (150)	1,633.00	2,196.00	70.00
	106 (160), 161	1,698.00	2,279.00	76.00
	186	3,382.00	4,739.00	152.00
	188	8,531.00	11,414.00	365.00
	All others*			

*Connection fees will be set by the Board of Directors upon request for initial service for each such improvement district.

High Volume User – Commercial and Industrial

This section shall apply to all non-residential applicants in addition to standard connection fees in all improvement districts.

Connection Fee Formula: Additional High Volume Water User Connection Fee =

$$\frac{[\text{Est. GPD use} - (\text{no. acres} \times \text{use factor}^*)] \times \$740,000/\text{cfs}}{646,320 \text{ gal/day/cfs}}$$

*Non-Residential Water Use Factor	Land Use Category	Water Use Factors (Gal/Acre/Day)
	Commercial	2,000.00
	Industrial	4,000.00
	UCI	Special Contact

Definitions

Commercial: Commercial development including retail and offices

Industrial: Industrial development including manufacturing, research and development, and distributorships

Former Santiago County Water District Service Area - Planning Area 155

Water System Capacity Fees for Single Dwelling Unit

Capacity fees shall be based upon the potential demand that the new service will place on the system. Water System Capacity Fees must be paid in full before water is delivered through a new service connection.

Service Size	Max CF per Billing Period	Capacity (gals/day)	Factor	Cost per Equivalent Meter	Total
5/8"	4,250	1,065	1.0	$4,900.00	$4,900.00
3/4"	6,375	1,600	1.5	$4,900.00	$7,350.00
1"	10,625	2,700	2.5	$4,900.00	$12,250.00
1 1/2"	21,250	5,325	5.0	$4,900.00	$24,500.00
2"	34,000	8,250	8.0	$4,900.00	$39,200.00
4"	127,500	31,800	30.0	$4,900.00	$147,000.00

If, after service is established, the customer's actual water use is greater than the amount allowed within the scope of this policy, the customer may either pay the additional incremental Water System Capacity Fee surcharge at the established tiered rate for water used, or pay the cost of additional Water System Capacity Fees and meter change-out fees to obtain additional capacity at the Tier I rate for Santiago customers.

Water System Capacity Fees for Commercial and Multi-Family Dwelling Units

Based upon the maximum demand per 24-hour period, Water System Capacity Fees will be set using the following calculation:

Gallons per Day (GPD) / 1,440 = Gallons per Minute (GPM)
GPM / 0.74 = Equivalent 5/8" x 3/4" Meter (EM)
EM x $4,900.00 = Water System Capacity Fee

Service Installations by District

1. The District may install individual domestic or fire services upon request. The cost for each service will be based on an estimate prepared by District personnel. The requestor will provide a written request accompanied by a drawing to show the location of the proposed service. The district will provide their estimate to the requestor and when the check is received from the requestor the work order will be forwarded to the District crews for installation and coordination.

   Meter installation charges are as follows: (customer provides the service and the meter box)

Meter size	Cost
5/8" x ¾"	$55.00*
5/8" x ¾"	$80.00 for individual meters and bypass meters on DDCA
¾"	$105.00
1"	$175.00
1-1/2"	$290.00
2" Disc	$405.00
2" Turbo	$710.00
3" Turbo	$1,025.00
4" Turbo	$1,890.00

   *(Developer installed-Residential only)

   Costs for larger meters will have to be determined at the time of request from Purchasing Dept. Cost of meter includes the strainer if not already built-in to the meter.

2. If a meter is downsized on a 2" or smaller service lateral there will be no additional charge or refund. If the meter is downsized from a 3" or larger meter, the charge will be based on the service installation charge less the salvage value of the materials recovered from the larger service.

3. If a meter is to be upsized from 5/8" X ¾" to 1", the angle stop will need to be replaced. The cost for District forces to do this work is $2,000.00 and will be collected along with the standard 1" meter cost.

Plan Check and Inspection Fees

Plan check and inspection fees for water systems shall be calculated as 8% of the bondable cost for the off-site, public, potable or recycled water system or a fixed fee as described below:

1. Addition of a 1" service	$75.00
2. Addition of a 2" service	$100.00
3. Addition of a 4" or larger service	$500.00
4. Addition or replacement of Fire DDCA	$900.00

A non-refundable deposit of 5% of the estimated cost of the public potable or recycled water system is required with the submittal of the first plan check to cover the costs of plan checking. The total fee is due and payable prior to final plan approval.

Non-Digital Submittal Surcharge

A surcharge fee, calculated as 2% of the bondable cost for the potable or recycled water system will be charged for any plans not submitted with a digital format. The fee is due and payable prior to final approval of the plans.

Interim Water Service Charge – New Developments

A one-time charge of $35.10 per connection to each pad in a new tract and/or development will be made to builders and developers for unmetered water service available for that period of time after in-tract lines have been connected to the District's water system until the new customer begins metered water service.

Custom lots will be charged $164.50 per lot due to the extended construction period.

Sewer Connection Fees

Residential

	IMPROVEMENT DISTRICT	0-5.8 DUs/acre	5.9-10.8 DUs/acre	10.9-25.8 DUs/acre	25.9-40.0 DUs/acre
Connection Fees Per Dwelling Unit	1 (201)*	$4,204.00	$3,742.00	$3,079.00	$2,430.00
	213	2,998.00	2,998.00	2,998.00	2,998.00
	2 (220), 221	579.00	579.00	579.00	579.00
	2 (230)	1,394.00	1,394.00	1,394.00	1,394.00
Total acreage for any given	240	2,320.00	2,320.00	2,320.00	2,320.00
development shall be gross	205 (250)	1,394.00	1,394.00	1,394.00	1,394.00
acres excluding private parks.	206 (260), 261	1,394.00	1,394.00	1,394.00	1,394.00
	286	1,874.00	1,874.00	1,874.00	1,874.00
	290	1,394.00	1,394.00	1,394.00	1,394.00
	Lambert Ranch	2,748.00	2,748.00	2,748.00	2,748.00
	Los Alisos 235	1,633.00	1,633.00	1,633.00	1,633.00
	All others*				

Commercial, Industrial and Public Authority – Office Building

	IMPROVEMENT DISTRICT	Commercial	Industrial	Public Authority
Connection Fees Per Gross Acre	1 (201)*	$25,802.00	$45,015.00	$25,802.00
	213	19,561.00	*	9,709.00
	2 (220), 221	5,222.00	7,886.00	5,222.00
	2 (230)	579.00	579.00	579.00
	240	11,599.00	.00	11,599.00
	205 (250)	6,962.00	11,543.00	6,962.00
	206 (260), 261	6,962.00	11,553.00	6,962.00
	286	4,268.00	4,268.00	4,268.00
	288	4,268.00	4,268.00	4,268.00
	290	6,962.00	.00	6,962.00
	Los Alisos 235	6,534.00	6,534.00	6,534.00
	All others*			

Parks, Churches and Commercial Recreational Facilities

	IMPROVEMENT DISTRICT	Fee
Connection Fees Per Fixture Unit	1 (201)*	$260.69
	2 (220), 221	75.20
	2 (230)	18.09
	240	157.60
	205 (250)	99.65
	206 (260), 261	96.21
	286	42.47
	288	42.47
	290	96.21
	All others*	

*Connection fees will be set by the Board of Directors upon request for initial service for each such improvement district.

Schools (Public and Private)

	IMPROVEMENT DISTRICT	Primary & Intermediate	Secondary
Connection Fees Per	1 (201)*	$12,353.00	$16,473.00
100 Students Average Daily Attendance	2 (220), 221	3,533.00	4,706.00
	2 (230)	1,398.00	1,910.00
	240	7,449.00	9,932.00
	205 (250)	4,682.00	6,243.00
	206 (250), 251	4,598.00	6,131.00
	286	2,044.00	2,725.00
	288	2,044.00	2,725.00
	290	4,598.00	6,131.00
	All Others*		

*Connection fees will be set by the Board of Directors upon request for initial service for each such improvement district.

Former OCSD Irvine Business Complex – Non-Residential

	Commercial/Industrial		
	(1) Low Demand	(2) Average Demand	(3) High Demand
Connection Fees Per 1,000 Square Feet	$163.00	$1,002.00	$2,375.00

(1) Low Demand connections are the following categories of users: Nurseries, Warehouses, Parking Structures, RV Storage, Churches, Truck Terminals, RV Parks, Lumber/Construction Yards, and other discharge whose flow is similar in volume to these listed categories.

(2) Average Demand connections other than listed in Low or High Demand categories.

(3) High Demand connections are the following categories of users: Restaurants, Supermarkets, Car Washes, Coin Laundries, Amusement Parks, Shopping Centers with Restaurants, Food Processing Facilities, Textile Manufacturers, and other discharges whose flow is similar in volume to these listed categories.

High Volume User – Commercial and Industrial

This section shall apply to all non-residential applicants for 2" and larger meters in addition to standard connection fees in all improvement districts.

Connection Fee Formula: Additional High Volume Sewer User Connection Fee =

* Sewer GPD = 90% of water GPD

[Est. GPD use * – (no. acres x use factor**)] x $10.75/Gal. of Sewer Flow

**Non-Residential Sewage Flow Generators (Use Factors)

Land Use Category	Average Flows
Commercial	1,300.00
Industrial	2,600.00
UCI	Special Contract

Definitions

Commercial: Commercial development including retail and offices
Industrial: Industrial development including manufacturing, research and development and distributorships

Sewer Installation Charges

1. A $100 inspection fee will be charged for sewer laterals installed by the applicant, at no cost to the District, in accordance with District approved plans. The fee is to be paid prior to the approval of the plan for the sewer lateral.
2. The plan check and inspection fee for public sewer systems will be calculated as 10% of the bondable cost for the public sewer system or a fixed fee as described above. A non-refundable deposit of 5% of the estimated cost of the sewer system is required with the submittal of the first plan check. The total fee will be due and payable prior to final approval of the plans.

Non-Digital Submittal Surcharge

A surcharge fee, calculated as 2% of the bondable cost for the public sewer system will be charged for any plans not submitted with a digital format. The fee is due and payable prior to final approval of the plans.

District Closed Circuit Television Inspection Charges

Initial TV Inspection Fee

A fee of $.60 per lineal foot as measured from the center line of manholes will be charged for all 6-inch and larger sewer lines to be inspected by a closed-circuit television camera. The District will furnish the special camera equipment and manpower to fulfill this inspection requirement. This fee is to be paid along with the other connection, meter, and inspection fees prior to the District signing developer's tract utility plans.

Reinspection

Fees for Reinspection by District TV Crew After Corrective Work is Completed. Those portions of the pipeline system that have been corrected must be retelevised.

1. District fees for retelevising corrective work will be a flat set-up fee of two hundred fifty dollars ($250.00) plus $.60 per foot of sewer line reinspected measured centerline to centerline of manholes.

2. Payment for retelevising estimated inspection fees must be received by the District Engineering Inspection Division prior to scheduling the reinspection. Retelevising will not be done until the fees are paid.

Cancellation of District's TV Inspection

If it is determined by either the Contractor or Developer that the job site will not be ready or accessible for the television inspection on the scheduled date, as notified, the Contractor shall notify the District Inspection Division of the necessary cancellation at least 24 hours in advance of the scheduled inspection to avoid being charged a cancellation fee.

1. If the District's television crew arrives at the job site and the work is not ready or accessible, the Contractor and owner will be billed for the cancellation fee of two hundred fifty dollars ($250.00), payable to the District prior to the date of the rescheduled television inspection.

2. A rescheduled inspection is to be made through the District's project inspection division.

Optional Developer TV Inspection

If the Contractor or Owner desires to have a portion of, or the entire job, TV inspected for his convenience, he will be charged a fee of one hundred fifty dollars ($150.00) plus $.60 per foot of sewer line inspected measured centerline to centerline of manholes.

Exhibit B: History of Revisions to Schedule of Rates and Charges

DATE ADOPTED	RESOLUTION	REVISION		EFFECTIVE DATE
05-23-77	1977-49	Rescind 1973-48 & 1977-42		
08-29-77	1977-71	Change in Connection Charges		09-01-77
02-27-78	1978-31	Rescind 1977-71	Discontinue Water & Sewer Service	03-01-78
07-10-78	1978-135	Rescind 1978-31	Increase	07-10-78
08-28-78	1978-154	Rescind 1978-135	Increase Connection Fees	08-28-78
01-08-79	1979-02	Rescind 1978-154	Increase Water Commodity Charges	01-08-79
06-25-79	1979-25	Rescind 1979-02	Increase Water & Sewer Charges	07-01-79
07-30-79	1979-41	Rescind 1979-25	Increase Connection Fees	07-30-79
06-23-80	1980-28	Rescind 1979-41	Increase	07-01-80
08-25-80	1980-49	Rescind 1980-28	Increase Connection Fees	08-25-80
12-22-80	1980-77	Rescind 1980-49	Increase Wastewater System Charges	01-01-81
06-15-81	1981-103	Rescind 1980-77	Increase	07-13-81
07-13-81	1981-132	Rescind 1981-103	Increase Connection Fees	07-13-81
06-28-82	1982-48	Rescind 1981-132	Increase Connection Fees & Water & Sewer Rates	07-01-82
09-27-82	1982-61	Rescind 1982-48	Delinquency Charges	10-01-82
11-22-82	1982-67	Rescind 1981-61	High-rise Connection Fees	12-01-82
06-27-83	1983-116	Rescind 1982-67	Increase	07-01-83
11-21-83	1983-137	Rescind 1983-116	Increase Dom. Water Rates & Imply. Mod. Sewer Rates	01-01-84
12-12-83	1983-132	Rescind 1983-131	High-rise Connection Fees (Sewer)	01-01-84
04-23-84	1984-13	Rescind 1983-132	Untreated & Reclaimed Water For Ag Use Commodity Charges Increase	06-01-84
06-25-84	1984-22	Rescind 1984-13	Decrease Water & Sewer Charges, Increase Connection Fees	07-01-84
09-10-84	1984-43	Rescind 1984-22	Change Delinquency Charge	10-01-84
01-28-85	1985-2	Rescind 1984-43	Lower Sewer Rates	02-01-85
02-25-85	1985-7	Rescind 1985-2	High Volume Connection Fee	02-25-85
03-25-85	1985-31	Rescind 1985-7	Reduce Connection Fees I.D. 103 & 3(203)	03-25-85
06-24-85	1985-37	Rescind 1985-31	Decrease Water & Sewer Chgs. Change Reclaimed Landscape Charge	07-01-85
12-16-85	1985-115	Rescind 1985-37	Decrease Sewer Charges	01-01-86
06-23-86	1986-28	Rescind 1985-115	Decrease Sewer Charges	07-01-86
03-23-87	1987-11	Rescind 1986-28	High Volume Connection Fees	04-01-87

Continued

DATE ADOPTED	RESOLUTION	REVISION		EFFECTIVE DATE
06-22-87	1987-27	Rescind 1987-11	Increase R-W; Nonpotable Ag	07-01-87
08-10-87	1987-44	Rescind 1987-27	Reduce Connection Fees I.D.'s 103,3(203), 102(120)121 & 106(160)161	07-10-87
09-28-87	1987-49	Rescind 1987-44	Industrial Waste Program	10-01-87
01-25-88	1988-18	Rescind 1987-49	Add Portola Hills Sewer Serf. Add Water Pumping Surcharge	02-01-88
06-27-88	1988-61	Rescind 1988-18	Reduce Monthly Sewer Charge	07-01-88
08-22-88	1988-66	Rescind 1988-61	Adjust Connection Fees	08-23-88
06-26-89	1989-38	Rescind 1988-66	Reduce Monthly Sewer Charge Reduce Reclaimed Landscape Increase Untreated and Reclaimed Ag Rates	07-01-89
08-28-89	1989-58	Rescind 1989-38	Adjust Connection Fees	08-28-89
06-26-90	1990-20	Rescind 1989-58	Reduce Monthly Sewer Charge Reduce Untreated and Reclaimed Ag Rates	07-01-90
07-23-90	1990-24	Rescind 1990-20	Adjust Connection Fees	07-23-90
01-28-91	1991-05	Rescind 1990-24	Eliminate High Rise and Adjust Connection Fees Add Excessive Use Surcharge	02-01-91
04-22-91	1991-09	Rescind 1991-05	Ascending Block Rate Structure and Request for Variance	06-01-91
05-28-91	1991-13	Rescind 1991-9	Commodity Rates for Landscape Customers	06-01-91
06-10-91	1991-19	Rescind 1991-13	Commodity Rates for Ag., Untreated Landscape, Portola Hills Sewer Rates and Coastal Reclaimed Rates	07-01-91
07-12-91	1991-37	Rescind 1991-19	Adjust Connection Fees	07-12-91
10-28-81	1991-46	Rescind 1991-37	Increase Ag Water Rate	10-28-91
04-30-92	1992-12	Rescind 1991-46	Modify Ascending Block Rate Structure	04-30-92
06-22-92	1992-22	Rescind 1991-13	Modify Ascending Block Rate Structure	07-02-92
09-28-92	1992-40	Rescind 1992-22	Adjust Connection Fees	09-28-92
01-25-93	1993-3	Rescind 1992-40	Landscape Irrigation Rates	02-01-93
03-04-93	1993-8	Rescind 1993-3	Modify Ascending Block Rate Structure	04-01-93
06-28-93	1993-22	Rescind 1993-8	Increase Water Rate and Reduce Monthly Sewer Charge	07-01-93
07-28-93	1993-26	Rescind 1993-22	Decrease Water Rates	08-01-93
09-13-93	1993-29	Rescind 1993-26	Adjust Connection Fees	09-14-93

Continued

DATE ADOPTED	RESOLUTION		REVISION	EFFECTIVE DATE
06-13-94	1994-10	Rescind 1993-29	Increase Water Rate	07-01-94
08-08-94	1994-18	Rescind 1993-10	Adjust Connection Fees	08-08-94
08-14-95	1995-20	Rescind 1994-18	Adjust Connection Fees	08-14-95
08-28-95	1995-24	Rescind 1995-20	Adjust Pumping Surcharges	10-01-95
09-25-95	1995-27	Rescind 1995-20	Adjust Connection Fees and	09-25-95
09-25-95	1995-27	Rescind 1995-24	Adjust Pumping Surcharges	11-01-95
10-23-95	1995-31	Rescind 1995-27	Adjust Pumping Surcharges	11-01-95
11-27-95	1995-35	Rescind 1995-31	Add Monthly Sewer Service Charge - Newport Coast	12-01-95
01-08-96	1996-3	Rescind 1995-35	Adjust Connection Fees to I.D. 240	01-08-96
06-10-96	1996-19	Rescind 1996-3	Adjust Pumping Surcharges Increase Nonpotable Water Charges and Modify Ascending Block Rate Allocations	07-01-96
08-12-96	1996-27	Rescind 1996-19	Adjust Connection Fees	08-12-96
08-27-96	1996-28	Rescind 1996-27	Adjust Connection Fees to I.D.'s 140 & 240	08-27-96
09-23-96	1996-32	Rescind 1996-28	Adjust Water and Sewer Fixed Charges	09-23-96
10-14-96	1996-33	Rescind 1996-32	Adjust Sewer Service Charges for Non-Residential & Portola Hills	10-14-96
06-30-97	1997-17	Rescind 1996-33	Modify Rates and Charges and Connection Fees	06-30-97
10-01-97	1997-29	Rescind 1997-17	Modify Ascending Block Rate Structure Terminology	10-01-97
06-08-98	1998-21	Rescind 1997-29	Miscellaneous Adjustments to Schedule of Rates and Charges	07-01-98
08-24-98	1998-33	Rescind 1998-21	Adjust Connection Fees	08-24-98
06-28-99	1999-25	Rescind 1998-33	Adjustments to Schedule of Rates and Charges	07-01-99
06-26-00	2000-18	Rescind 1999-25	Adjustments to Schedule of Rates and Charges	07-01-00
07-24-00	2000-24	Rescind 2000-18	Adjustments to Schedule of Rates and Charges	07-25-00
06-25-01	2001-24	Rescind 2000-24	Adjustments to Schedule of Rates and Charges	07-01-01
06-24-02	2002-22	Rescind 2001-24	Adjustments to Schedule of Rates and Charges	07-01-02
12-09-02	2002-47	Rescind 2002-22	Adjustments to Schedule of Rates and Charges	12-09-02
03-10-03	2003-7	Rescind 2002-47	Adjustments to Schedule of Rates and Charges	03-10-03
06-23-03	2003-20	Rescind 2003-7	Adjustments to Schedule of Rates and Charges	07-01-03
09-08-03	2003-35	Rescind 2003-20	Adjustments to Schedule of Rates and Charges	09-08-03
06-28-04	2004-25	Rescind 2003-35	Adjustments to Schedule of Rates and Charges	07-01-04
07-12-04	2004-32	Rescind 2004-25	Adjustments to Schedule of Rates and Charges	07-12-04
10-11-04	2004-51	Rescind 2004-32	Adjustments to Schedule of Rates and Charges	10-11-04
06-27-05	2005-20	Rescind 2004-51	Adjustments to Schedule of Rates and Charges	07-01-05

DATE ADOPTED	RESOLUTION		REVISION	EFFECTIVE DATE
09-26-05	2005-31	Rescind 2005-20	Adjustments to Schedule of Rates and Charges	10-10-05
10-10-05	2005-35	Rescind 2005-31	Adjustments to Schedule of Rates and Charges	10-10-05
06-26-06	2006-20	Rescind 2005-35	Adjustments to Schedule of Rates and Charges	06-27-06
07-24-06	2006-27	Rescind 2006-20	Changes to Water & Sewer Connection Fees	07-24-06
06-25-07	2007-16	Partially Modifies 2006-27	Adjustments to Schedule of Rates and Charges	06-26-07
07-16-07	2007-21	Partially Modifies 2006-27	Changes to Water & Sewer Connection Fees	07-17-07
06-23-08	2008-36	Rescind 2007-21	Adjustments to Schedule of Rates and Charges	07-01-08

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About IRWD
Residential Rates

Monthly Service Charge (up to a 1 " meter): $7.50

Commodity charge:
IRWD uses a five-tiered rate structure which rewards conservation. Water allocations are based on number of residents, landscape square footage and actual daily weather and evapotranspiration (ET) data for your area. Evapotranspiration is the amount of water that travels through turfgrass, and therefore the amount of water required for turf grass to be healthy and attractive. Turfgrass is the highest water-using plant in a landscape. Trees and shrubs use far less water than turfgrass, but IRWD's allocation system assumes that your entire landscape is covered in turfgrass. Therefore, your allocation contains more than enough water to meet the demands of your landscaping. Variances are available for larger than normal landscaped areas, more people living in the home or special medical needs. For additional information, please contact the District at (949) 453-5300.

Commodity charges for Detached Residential Dwelling Units, effective July 1, 2008

Tier	Rate (per ccf*)	Use (percent of allocation)
Low Volume	$0.91	0-40%
Base Rate	$1.07	41-100%
Inefficient	$2.14	101-150%
Excessive	$4.28	151-200%
Wasteful	$8.56	201%+

*One ccf =748 gallons

A complete table of commodity charges itemized by indoor and landscape allocations for detached homes, attached homes and apartments can be found in the IRWD Rates and Charges document. This document is in PDF format for easy viewing or printing.

Lake Forest Area (formerly LAWD)
Monthly Service Charge (up to a 3/4 inch meter): $9.60

*Commodity charge: $1.55 per ccf**

Santiago Canyon Area (formerly Santiago County Water District)

Monthly service charges vary depending upon the size of the meter installed at the customer's connection. The lowest monthly service charge is $15.95 for a 5/8" meter. The base commodity rate is $2.16 per ccf and excess tier rates are charged for water usage in excess of allocated amounts.

Pumping Surcharge
A surcharge will be added to the commodity rate of those users who reside at higher elevations and cause the District to incur additional pumping costs to supply their water. The surcharge is based upon prevailing energy costs and currently varies from $.16 to $.42 per ccf depending upon the elevation of the area served. If you live in an area affected by a pumping surcharge it will be itemized on your monthly bill.

Wastewater System Charges (Sewer Rates)--Single Family
Newly established residential accounts are charged a sewer rate of $13.80 per month. Water usage is reviewed each year on December 31 and when an account has established a 12-month history, sewer rates are adjusted accordingly. As a results, customers who use low volumes of water are charged lower sewer rates. For example, after the annual review, customers using an average of 0-5 ccf of water per month pay a $10.35 sewer rate, customers using an average of

5.01-10 ccf of water pay a $12.40 sewer rate; and customers who use an average of more than 10 ccf remain at the $13.80 monthly sewer rate.

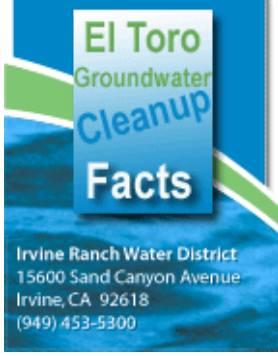
A portion of Newport Coast pays $4.75 per month for sewer collection fees.

Customers in the former Santiago County Water District area use septic tanks and therefore do not pay a sewer charge.

Certain parts of the IRWD service area receive sewer service from other agencies and therefore do not see a sewer charge on their IRWD bill.

The entire text of the IRWD Rates and Charges document is available through this site. The document is in PDF format, which can be read with the free Adobe Acrobat Reader.

** A ccf, or one hundred cubic feet, is the basic measurement of water use. One ccf equals approximately 748 gallons.*



Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, CA 92618
(949) 453-5300

Irvine Ranch Water District
Water Conservation and Efficiency Program
June 2007

Irvine Ranch Water District is a recognized leader in water use efficiency. As evidenced by the District's extensive, world-recognized water reclamation program, water resources stewardship has been a hallmark of the District since its inception. The District set an aggressive tone to promote the efficient use of all water resources during the late 1980's to early 1990's drought. This effort, which included intensive communication with the various customer groups and some of the first home water audit and ultra low flush toilet programs in the state, culminated in the adoption of a tiered rate structure by the IRWD Board in 1991. This rate structure was instituted to promote the efficient use of water and provide customers with economic signals as their use increased. The rate structure has provided the foundation for IRWD's water conservation programs since the early 1990's. Revenue from higher tier water use is "reinvested" to promote long-term improvements in water use efficiency and support District environmental programs.

IRWD Rate Structure

The tiered rate billing system, based on a water budget allocation, was established to encourage conservation and discourage substandard irrigation systems. The rate structure is based upon providing customers with the water they need at the lowest rates in Orange County ($0.98 per CCF). Inefficient use is penalized with higher rates, ranging from $1.96 to $7.84 per CCF. Since the introduction of this rate structure, water consumption has dropped significantly, while the health of the landscapes within our service area has improved.

IRWD'S SINGLE-FAMILY RESIDENTIAL RATE STRUCTURE

Tier	Rate Per CCF	Use (As a Percent of Allocation)
Low Volume Discount	$0.82	0-40%
Conservation Base Rate	$0.98	41-100%
Inefficient	$1.96	101-150%
Excessive	$3.92	151-200%
Wasteful	$7.84	201% +

Effective July 1, 2007
1 CCF = 748 gallons

IRWD'S LANDSCAPE IRRIGATION RATE STRUCTURE

Tier	Rate Per CCF	Use (As a Percent of Allocation)
Low Volume Discount	$0.82 potable $0.74 reclaimed	0-40%
Conservation Base Rate	$0.98 potable $0.88 reclaimed	41-100%
Inefficient	$1.96 potable $1.76 reclaimed	101-110%
Excessive	$3.92 potable $3.52 reclaimed	111-120%
Wasteful	$7.84 potable $7.04 reclaimed	121% +

The rate structure is designed to encourage conservation and efficient irrigation by sending an economic signal to customers when they exceed their water allocation. Developing and setting valid, scientifically-based allocations is essential to effectiveness of this system. Allocations are calculated using the formula below:

Allocation Equation

$$\textbf{Allocation} = \frac{Kc \times ET \times LA(acres)}{Eff.} + \text{Indoor Use (if applicable)}$$

Note: because the Kc for cool season turf averages 0.8, and the irrigation efficiency used is 80%, these cancel out in the equation, reducing it to (ET x LA) + Indoor Use.

CCF = 100 cubic feet = 748 gallons

Kc
Crop Co-efficient. The relative amount of water needed to irrigate the landscape. IRWD assumes 100% cool season turf.

Et (reference ET)
The amount of water that evaporates into the air and the amount of water that is transpired through the vegetation. Evapotranspiration numbers are computed daily from IRWD's three weather stations.

Indoor Use
Based on number of people per household for residential accounts. Based on number of employees and business process water for commercial/industrial accounts.

LA
Landscape area in acres.

Eff. = Efficiency.
This is the efficiency of the irrigation system. Irvine Ranch Water District assumes 80%.

Water Savings and Additional Information

Landscape Irrigation Use

- Immediate reduction of ½ AF per acre use in the first 6 months following implementation of the rate structure.
- Use continued to decline from 1992-98:

Year	Acre Ft/Acre/Yr
1992	3.5
1993	3.3
1994	3.2
1995	2.5
1996	2.4
1997	2.4
1998	1.9 (El Niño)
1999	2.0
2000	2.1
2001	2.0
2002	2.2
2003	1.93
2004	1.95
2005	1.85
2006	1.94

- Total estimated savings 1991-2006: **253,000 AF**
  Cost to purchase 253,000 AF: **$96.3 million**
- In the year 2000, the number of acres that were developed in IRWD's service area doubled, yet water use only increased by 3% over water use in 1992.
- Landscape usage has dropped from an average of 4.4 acre-feet per acre per year on 3,361 acres in 1991 to 1.94 acre-feet per acre per year on 12,750 acres in 2006.

Residential Use

- Residential usage dropped by an average of 12% per meter, or a total of 1074 AF in the first year, despite a 5% growth rate and after usage had *already dropped* in response to the drought. Although the average usage has increased since the drought

ended, it remains below the pre-budget structure average.
Total estimated savings 1991-2006: **36,886 AF**
Cost to purchase 36,886 AF: **$16 million**

- IRWD's residential use has dropped from 0.32 AF/yr/customer in 1989-90 to 0.28 AF/yr/customer in 2002-03. This is a 12.5% decrease in residential use per customer. The residential water use per customer for Los Alisos (an area annexed to IRWD, but not yet on IRWD's water-budget rate structure) was 0.35 AF/yr/customer in 2002-3. This is 25% higher than the IRWD use per customer.
- Fewer than 3% of residential customers receive the highest penalty charges in any given month.
- Both residential and non-residential customers give IRWD high marks in customer satisfaction. Overall score: 87.1%

Water Rates

Data from the MWDOC 2002 survey of Orange County Water Agencies Water Rates, Water System Operations and Financial Information. 31 retail cities/water agencies surveyed.

- 15 agencies have increasing block rates = 48 %, 10 have bi-monthly billing
- 16 agencies have uniform rates (range from $0.883 - $2.50) = 52%, 8 have bi-monthly billing
- 18.58% have bi-monthly billing (rate message has diluted impact)
- Only 2 have any water budget (allocation-based) rate structures (IRWD and the City of San Juan Capistrano)

District Water Conservation Programs

IRWD's water conservation programs can be broken into several broad categories:

Rate Structure Support – water conservation staff is responsible for setting and reviewing customer water allocations that are the foundation of the tiered rate structure.

Customer Support and Communication – staff spends considerable time and effort working with all customer groups to assist their understanding and promote the efficient use of water. The District has entered into "Environmental Partnerships" with two of our largest customers (City of Irvine and The Irvine Company) to provide a focused review of their water use practices and implement measures to improve efficiency. District efforts to improve communication with customers resulted in 11 consecutive months of reduced water use in the highest billing tier during 2003.

Research – since the late 1980's pilot home water audit program and early 1990's ULF toilet distributions, IRWD has adopted a proactive approach to evaluating cutting-edge water conservation programs.

- Weather-Based Irrigation Controllers – IRWD has provided significant leadership in evaluating and promoting the use of this emerging technology. The late 1990's "Westpark" Study was the first study in the nation documenting water savings associated with remote, weather-based irrigation control on residential homes. The larger "Residential Runoff Reduction Study" confirmed water savings from the Westpark Study of about 41 gallons per day (10% of total household use), documented significant water savings from the technology on small "commercial" landscapes, and demonstrated significant reductions in urban runoff from the area receiving the technology. Further proof of concept was demonstrated in a recent study performed in the Buck Gully watershed. Initial results suggest equivalent quantities of water saving through the installation of this technology. Final results included a discussion of the effects of this technology on runoff reduction. As a result of these studies, the Metropolitan Water District of Southern California has adopted a rebate incentive program to encourage the installation of this technology throughout their service area serving a population of nearly18 million.
- Cooling Tower Alkalinity Control Study – this study reviewed the effectiveness of an alkalinity control system on cooling towers. This system resulted in an increase in the number of cycles of concentration (from 3 to 6 or more) and a corresponding 35% decrease in water use.
- X-Ray Recirculation Study – this study tested a new x-ray recirculation system several years ago at two sites in IRWD (as well as several sites in other regions of the state), and resulted in water savings of 98%. As a result of this study, the Metropolitan Water District of Southern California has adopted a rebate incentive program to encourage the installation of these systems throughout their service area.
- Rotary Nozzle Study – this study was designed by IRWD to determine the increase in distribution uniformity by changing from conventional spray heads to rotating stream nozzles. Initial results suggest that there is an increase in distribution uniformity of 20% or more. The Metropolitan Water District of Southern California found similar results and has adopted a rebate incentive program for commercial and residential applications.

Regional and Statewide Water Use Efficiency Efforts – Water conservation staff actively participate in regional and statewide water conservation forums. The District is a signatory to the California Urban Water Conservation Council's Memorandum of Understanding. IRWD staff is actively involved in the development and implementation of the statewide Best Management Practices for Urban Water Use Efficiency. Staff works closely with regional wholesalers, the Municipal Water District of Orange County (MWDOC) and Metropolitan Water District of Southern California on regional water use efficiency programs. Staff also participated in the Landscape Task Force and provided recommendations to state government concerning water uses.

Chapter 3

Comparative Analysis of Water Providers in the Southwest: Water Use and Demand-Side Efficiency

Overview

As urban expansion and population growth continue at a break-neck pace in the southwestern United States, municipal water efficiency has become increasingly critical. Over the past several years, some cities have made improvements in this area. However, great disparities remain between the per capita water use in cities across the region, suggesting that many municipal water providers have room for significant gains. Cities could maximize savings by considering and implementing many of the state-of-the-art efficiency measures and programs noted in Chapter 2.

To provide a snapshot of where we stand, Chapter 3 reports on the status of municipal water consumption and efforts toward efficiency in 2001 (prior to the unusually dry year of 2002). Thanks to the cooperation of many urban water providers who completed our Smart Water survey, we can provide the first-ever regional comparative analysis of:

- Per capita water use across many categories;
- System leaks and losses;
- Conservation programs and policies;
- Rate structures;
- Conservation budgets; and
- Recent trends in these categories.

This chapter will aid members of the public in making personal water use decisions, assist water managers with efficiency program implementation, and help officials formulate future water policy.

Although supply-side efficiency is also important, the comparative analysis component of Smart Water was designed to focus on water demand and on conservation efforts in various water service areas throughout the region. As a result, chapter 3 focuses on ways to measure conservation, including what we label "ends" and "means."

For the water providers in our survey sampling, we look at "ends" such as Single-Family Residential water consumption rates, outdoor water consumption, system-wide consumption rates, and levels of Unaccounted for Water. These indicators shed light on the comparative efficiency of urban water use in a representative subset of the major systems in our region. Later in the chapter, we assess the "means"—actual water conservation measures, incentives, and programs—implemented by these same water providers and municipalities to influence efficiency.

Two attached appendices supplement Chapter 3. Appendix A explains methodology and analysis assumptions. Appendix B contains many additional specifics on each participating urban water provider (including water supply system information, consumption rates/trends, conservation programs and policies, and supply-side efficiency projects).

"A river is the report card for its watershed."
-Alan Levere

Chapter 3

Based on this analysis, it is clear that across the Southwest:

- Urban water use is steadily increasing as urban populations continue to grow.
- Water use efficiency, as measured through per capita use, varies substantially in southwestern cities and is not correlated with climate conditions—cities in the hottest, driest areas do not necessarily use more water.
- Cities throughout the region have a lot of room for improving municipal water use efficiency.
- Outdoor water consumption accounts for a large proportion of total water sold to residential customers and offers the biggest target for future water savings.
- Unaccounted for Water (UFW) is high in many systems, leaving room for improvement in repairing leaks, metering, and accounting for water use.
- Increasing block rate pricing structures can provide strong incentives for cost-based conservation, and are an integral part of any plan to enhance urban efficiency.
- The content and budget of conservation programs varies considerably throughout the region, but is uniformly quite low, an average of 1 percent of total water service budget.

Background: Smart Water Survey Participants

In the spring of 2002, Western Resource Advocates distributed a comprehensive Smart Water survey to 32 urban water providers throughout the Southwest. The survey contained several dozen questions related to retail water demand in calendar years 1994 and 2001 and asked for water management plans and related materials. We chose these two data years to reveal trends over time without going too far back in time (where utility record-keeping may be less complete). Most of the analysis in this chapter focuses on the 2001 data. As a result, the effects of the drought in 2002 did not influence the outcome of the comparative analysis (*e.g.*, 2002 consumption figures and program implementation were not analyzed). The 2001 data analyzed resulted from relatively "normal" operating conditions for most water providers.

During an overall data collection period of nearly a year, a total of 13 water providers participated by submitting survey data during the summer and fall of 2002. Providers participating include those for major urban areas in Arizona, Colorado, New Mexico, Nevada, Texas, and Utah[1] and constitute a cross-section of urban area providers throughout the Southwest, from small to large.[2]

1 The service areas for most municipal water providers are not necessarily consistent with the city's political boundaries. Some water providers serve areas outside of the city's jurisdictional boundary. Some do not serve the full area within the city's jurisdictional boundary. However, for ease of reference throughout this chapter, each water provider is referenced by the primary municipality that it serves, instead of the name of the particular utility.

2 Appendix A contains details on the Smart Water survey participation, analysis methodology, and data assumptions.

3 The following water providers did not respond to the Smart Water survey: City of Aurora Utilities Dept. (CO), Parker Water & Sanitation District (CO), Colorado Springs Utilities (CO), City of Thornton Water Resources Dept. (CO), Town of Castle Rock Utilities Dept.(CO), City of Chandler Water Conservation Office (AZ), City of Glendale Utilities Dept. (AZ), City of Peoria Utilities Administration (AZ), City of West Jordan Utilities (UT), City of Sandy Public Utilities Dept. (UT), Salt Lake City Public Utilities (UT), City of St. George Water Dept. (UT), City of Las Cruces Water Resources Dept. (NM), Washoe County Water Resources Dept. (Reno, NV), Cheyenne Board of Public Utilities (WY), Mountain Water Company (Missoula, MT), and United Water Idaho (Boise, ID). The Town of Gilbert Water Conservation Department (AZ) did respond to the survey, but provided insufficient data to be included in the analysis and declined to submit additional data. The City of Santa Fe Public Utilities Dept. (NM) participated in part but stated they were unable to retrieve a significant amount of requested water accounting data due to a database/system problem that occurred in 2001.

Table 3.1 provides a 2001 system snapshot for each of the municipal water providers in the study.[3] This table provides a basic look at the size of each water provider system.

Table 3.1

Basic System Information for Participating Water Providers

City/Water Provider 2001	Service Area (sq.mi.)	Total Water Utility Employees	2001 Total Water Utility Budget	2001 Retail Population Served	2001 Total Retail Water Sold (Million Gallons)
Albuquerque, NM [City of Albuquerque Public Works Dept.]	187	n/a	n/a	482,577	31,693
Boulder, CO [City of Boulder Water Utilities Dept.]	26	75	$63,973,955	113,600	6,511
Denver, CO [Denver Water]	328	1,026	$220,000,000	1,081,000	58,385
El Paso, TX [El Paso Water Utilities]	250	621	$165,890,000	645,641	33,639
Grand Junction, CO [City of Grand Junction Water Utilities Dept.]	10	25	$3,993,007	25,545	1,897
Highlands Ranch, CO [Centennial Water & Sanitation District]	20	60	$48,566,183	80,000	5,336
Las Vegas, NV [Las Vegas Valley Water District]	307	839	$264,628,291	1,021,475	106,463
Mesa, AZ [City of Mesa Utilities Department]	122	114	$45,000,000	440,000	30,804
Phoenix, AZ [City of Phoenix Water Services Dept.]	514	1,206	$558,699,363	1,284,000	100,194
Scottsdale, AZ [City of Scottsdale Water Resources Dept.]	188	140	$42,070,129	212,000	24,999
Taylorsville, UT [Taylorsville-Bennion Improvement District]	12	23	$11,180,657	62,000	4,825
Tempe, AZ [Tempe Water Utilities Dept.]	42	130	$35,072,000	171,000	18,389
Tucson, AZ [City of Tucson Water Dept.]	300	590	$103,000,000	630,000	34,392

Source Smart Water survey responses.
Note: Appendix B provides a comprehensive description of the above water providers, including supply system summaries, water demands, conservation programs and policies, and supply-side efficiency projects. "Retail Water" refers to treated potable water sold to private customers (including residential, commercial, industrial, and institutional sectors).

Chapter 3

Climatic Differences

Because outdoor water use accounts for a substantial portion of total water use, it is important to consider the climatic differences between each water provider service area.

Table 3.2 provides a basic summary list of key climate variables in surveyed cities. Average temperatures, precipitation, and humidity vary widely across the study region. The average annual precipitation in the study ranges from 4.1 inches per year in Las Vegas to 18.3 inches per year in Boulder. The average annual temperature ranges from 51 ºF in Boulder, Denver, and Santa Fe, to 73 ºF in Phoenix. Average high temperatures range from 64 ºF in Boulder, Denver, and Salt Lake City, to 86 ºF in Phoenix.

While a detailed climate analysis is beyond the scope of this report, Table 3.2 and the following sections of this report suggest high urban water consumption is not a foregone conclusion for areas with high temperatures and/or low precipitation.

Table 3.2

Basic Climate Data for Urban Areas included in Smart Water Report

City or Metropolitan Area	Average Temperature (°F)	Average High Temperature (°F)	Average Low Temperature (°F)	Average Probability for Sunshine	Average Annual Precipitation (in.)
Albuquerque, NM	57	70	43	76%	8.5
Boulder, CO	51	64	38	n/a	18.3
Denver, CO	51	64	37	69%	15.4
El Paso, TX	64	78	50	83%	8.6
Grand Junction, CO	53	65	40	71%	8.6
Las Vegas, NV	67	80	54	85%	4.1
Phoenix, AZ	73	86	59	86%	7.7
Salt Lake City, UT	52	64	40	66%	15.6
Tucson, AZ	69	82	55	85%	11.7

Source www.weatherbase.com.
Notes: Climate data for Phoenix also applies to Mesa, Tempe, and Scottsdale. Climate data for Denver also applies to Highlands Ranch. Climate data for Salt Lake City also applies to Taylorsville.

Chapter 3

Smart Water Survey Results and Analysis: Inter-City Comparison

"Ends"—2001 Water Use Comparisons

Urban water use is growing. In the past several decades, millions of people have flocked to cities in the Southwest. (Although regional urban population growth has recently slowed somewhat in response to an economic downturn, most believe rapid growth will return when the economy improves.) A dramatic increase in water demand to serve the needs of homes, businesses, parks, and other urban uses has accompanied this population growth. Increased water demand, in turn, has tapped further into the surface and groundwater systems of an arid desert environment. As discussed in Chapter 1, this growth threatens to overwhelm the region's river systems.

Figures 3.1 and 3.2 provide a graphical representation of participating water providers' system populations and total retail sales. Region-wide, the Smart Water survey covers a served population of over 6.2 million people. In the year 2001, this population purchased nearly 458 billion gallons of water, equivalent to over 1.4 million acre-feet.

By comparing Figures 3.1 and 3.2, we see that total retail water sold is not necessarily proportional to the service population. Instead, variations among cities' per capita water use, a topic covered in greater detail in the following sections, means that in some cases, larger service populations consume less water than smaller ones do. Figure 3.2 also highlights some of the water service areas with the highest water use in the Southwest, places where policy changes can have the most impact.

Figure 3.1

2001 Retail Service Area Population

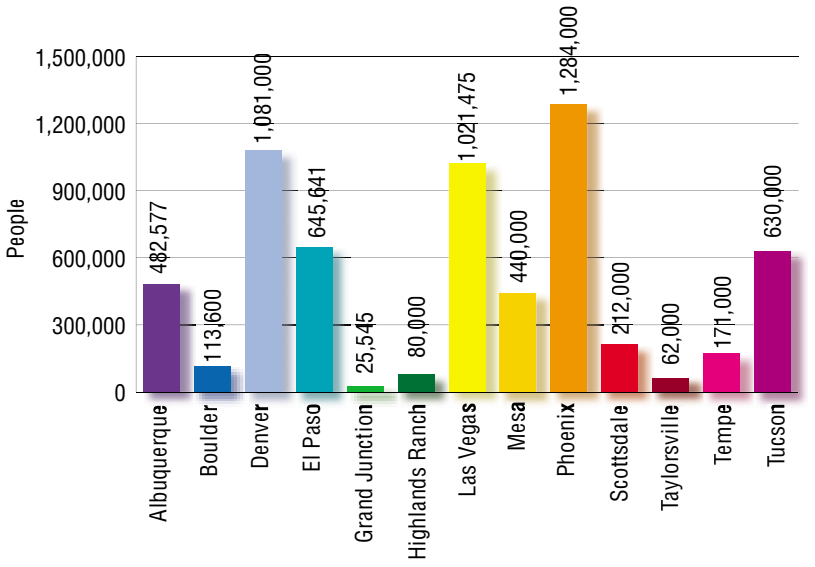
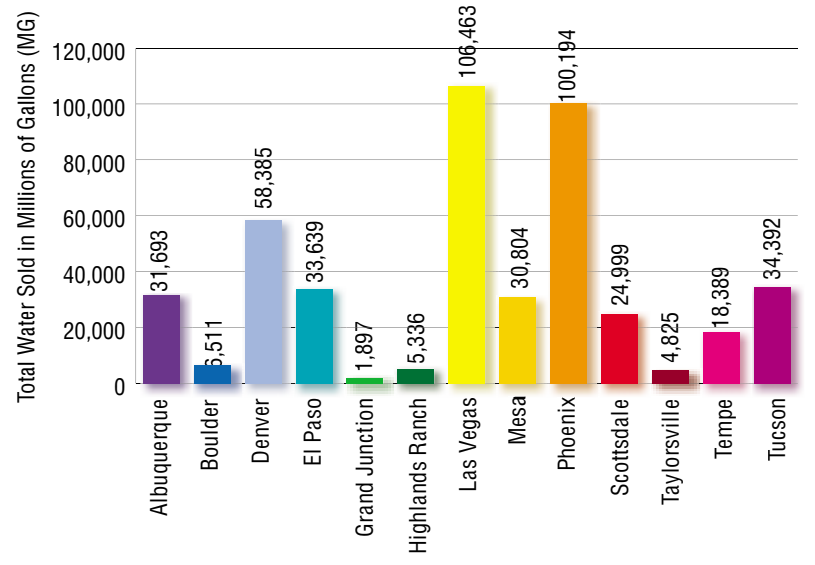


Figure 3.2

2001 Total Retail Water Sold



Chapter 3

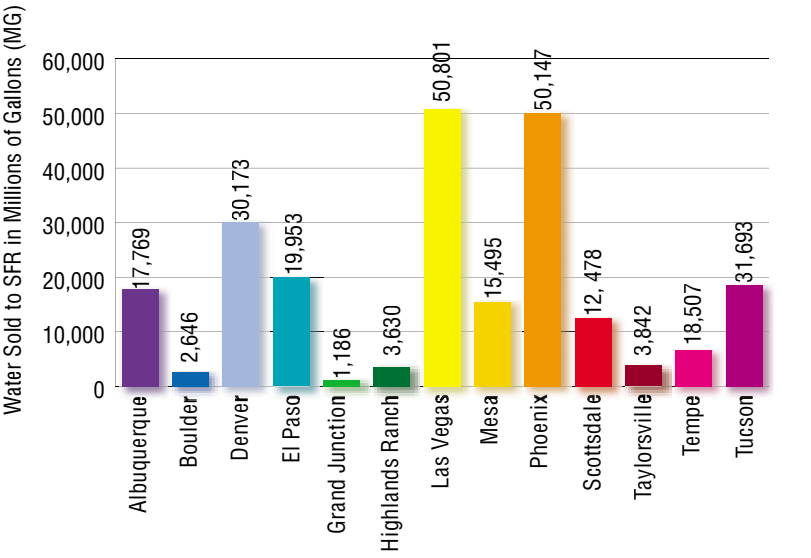
Single-Family Residential Consumption[4]

For the purposes of this study, we focus on per capita water consumption rates in a single sector—Single-Family Residential (SFR). Though we acknowledge the widespread use of a "system-wide" water use variable by the water industry, we conclude that the SFR consumption variable is a superior comparative tool for a host of reasons,[5] including:

- The SFR variable minimizes the sources of analytical error inherent to the system-wide per consumption variable (described in later sections and in Appendix A);[6]
- SFR is derived easily from raw-sales accounting data and census data;
- SFR is the largest consumption sector in all participating water service areas;
- SFR holds a very high potential for demand reduction given the large proportion of outdoor water consumption (*e.g.*, lawn irrigation);
- SFR customers are the primary focus of most water conservation programs offered by water providers throughout the study area.

Figure 3.3

2001 Retail Water Sold to Single-Family Residential



Notes: Denver Water groups multi-plex residences with the Single-Family Residential billing category. This may have some minor effects on Denver's SFR consumption rates due to typically smaller multi-plex yards.

The Taylorsville-Bennion Improvement District groups all single-family and multi-family water consumption into one billing category. The above Taylorsville SFR usage totals include all housing types. Therefore, the displayed total SFR water sales for this water provider is higher than the actual SFR volume since multi-family housing sales are included.

The Salt River Project (SRP) in Arizona provides untreated urban irrigation water to residential customers in Phoenix, Mesa, Tempe, and portions of Scottsdale. The SRP delivers and bills independently from the municipal water providers. SRP water is typically available every two weeks from April through September, and once a month from October through March. The use of SRP water for outdoor irrigation in these Phoenix-area service areas most likely lessens the amount of treated municipal water applied to residential landscapes. Thus, the applicable consumption volumes in the above graph may be somewhat lower than what they would be without the SRP deliveries.

Our focus on the SFR variable does not imply that efficiency in other sectors is unimportant. Water providers excelling in SFR demand reduction may not necessarily be excelling in demand reduction in other sectors, and vice versa. With non-SFR water use accounting for roughly 50 to 60 percent of urban water use in most cities of our region, addressing efficiency in all sectors is vitally important for achieving significant savings and yielding equity in public policy. However, SFR use is a good place to start in measuring a city's efficiency performance. A comparative analysis of urban water use efficiency outside the SFR sector is beyond the scope of this report.

Total Retail Water Sales to Single-Family Residential Accounts

Prior to assessing per capita consumption rates within the Single-Family Residential sector, we take a quick look at SFR retail sales volumes for each partici-

4 This report uses the terms "consumption" and "use" interchangably, as do most writings on the subject. Technically speaking, the terms have distinct meanings. "Water consumption" implies water used and not returned to the system. "Water use" is a broader term, including water consumed plus water returned via pipes to wastewater treatment facilities.

5 Greater detail on the SFR variable and other data variables appears under Data Variables and Assumptions section in Appendix A.

6 Although the SFR per capita consumption variable offers many advantages, the variable does not completely eliminate the possibility of yielding biased comparison results. See Appendix A.

pating water provider. The variation in service area size is demonstrated by the large disparity in total SFR retail sales volumes in each service area. Figure 3.3 provides a graphical display of this disparity in 2001 SFR sales data. The relative size of the bars in Figure 3.3 bears a striking resemblance to Figure 3.2, revealing that water sold to SFR accounts is roughly the same percentage of total retail water sold by each provider.

Single-Family Residential Daily per capita Water Consumption

Per capita SFR use varies greatly across the study area.

Figure 3.4 displays the 2001 SFR daily per capita consumption rates for the participating water service areas. To derive per capita consumption rates within the SFR sector requires knowledge of SFR occupancy rates, which vary between urban areas analyzed. Using data from the 2000 U.S. Census, we derived these rates for each area analyzed.[7] Although the mean 2001 SFR daily per capita consumption rate is 161 gallons per capita per day (gpcd), city-by-city rates range from 107 gpcd in Tucson to 230 gpcd in Las Vegas.

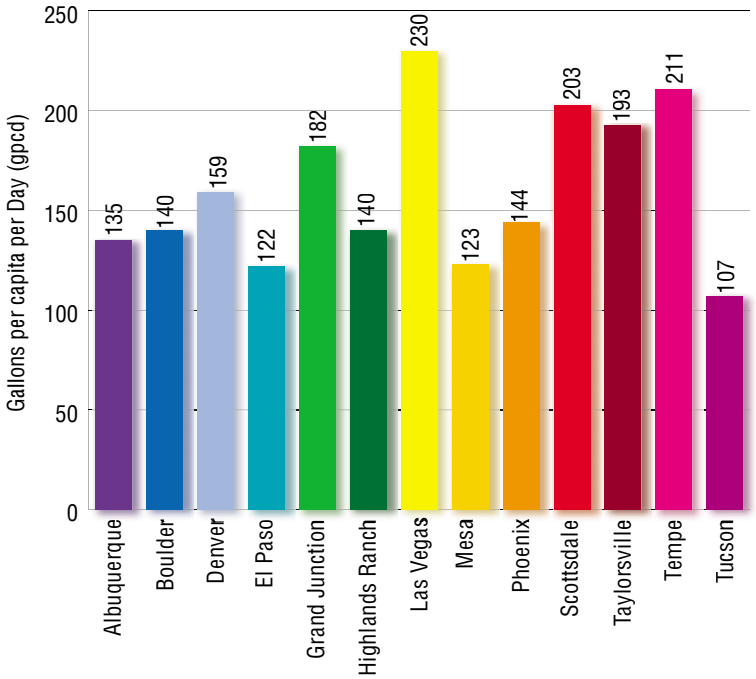
The very low SFR per capita consumption in Tucson is noteworthy, particularly given the very arid climate of southeastern Arizona. This consumption rate is roughly half of some of the consumption rates of other water service areas in the region, particularly other areas with similar climates.

The significant disparity in SFR per capita consumption throughout the region indicates the enormous potential for improved water use efficiency inside almost every urban area.

The substantial SFR consumption disparity from water provider to water provider raises two very important questions: (1) Why are the SFR consumption figures in some municipal water service areas so low, and others so high?; and (2) What are the water providers and their customers with low SFR consumption doing to attain these figures? Though some water managers and public officials have indicated that the potential water savings from conservation efforts is insignificant or already fully "tapped," this cannot be so if

Figure 3.4

2001 Single-Family Residential Daily per capita Water Consumption



Note: See notes to Figure 3.3.

7 Appendix A contains the methodology and results of the household occupancy rate derivation. For the purposes of this study, the SFR per capita consumption variable can be defined as follows:

$$\text{SFR per capita Consumption} = \frac{\text{Retail Water Sold to SFR Accounts}}{\text{Number of SFR Accounts}} \times \frac{1}{\text{Avg. Occup. / SFR Household}}$$

Chapter 3

a neighboring city, or a city with a drier climate, is saving more water.

While assessing the SFR consumption figures in Figure 3.4 and considering the above questions, we look at the two primary attributes to SFR water use: indoor water use and outdoor water use. In contrast to outdoor use, per capita indoor residential water use remains relatively constant from season to season and year to year, and does not vary much from region to region.[8] According to the American Water Works Association Research Foundation (AWWARF) Residential End Uses of Water Study ("REUWS"), the mean indoor residential per capita consumption for the North American cities in the study was 69.3 gpcd (with a range from 57.1 to 83.5 gpcd).[9] The range of per capita indoor use likely is based on variations in social norms, the age and efficiency of household water fixtures, the presence of evaporative coolers, and other factors.

Although the Smart Water survey included a data request for an indoor/outdoor breakdown of residential water consumption, almost no respondents had this information available. Therefore, we were unable to perform a direct data analysis of indoor water use trends. However, many of the means to improve indoor efficiency discussed in Chapter 2 are available for cities in the study area to lower annual indoor use.

With variations in indoor use being relatively minimal across the region, we can deduce that most of the SFR consumption variation reported in Figure 3.4 results from variations in per capita outdoor water use (*i.e.*, urban landscape irrigation). Yet, there appears to be very little correlation, if any, between water consumption and local climate. With landscape irrigation accounting for a majority of SFR water consumption in most cities, we might expect a direct, distinct correlation between urban water use and climate. However, the water providers with the lowest SFR per capita consumption rate in this study are exposed to very similar climate conditions as the water providers with some of the highest SFR per capita consumption rates in the study.

The absence of a correlation between climate and per capita water consumption rates underscores that an "appropriately developed landscape" is defined differently throughout the region. It appears that while some communities have adjusted their urban landscape expectations to coincide with the climate in which they reside, others have maintained their preference for non-native, high-water-use urban landscapes. Several other factors that contribute to these disparities in SFR use (*e.g.*, water rates, conservation efforts, etc.) are assessed later in this chapter. Other variables beyond the scope of this study are highlighted in Appendix A (*e.g.*, community socioeconomics).

8 The variation in indoor residential per capita consumption is relatively minimal due to relatively constant daily consumption patterns in an average household, regardless of location in North America. However, as discussed in Chapter 2, per capita indoor consumption could drop significantly over time due to the installation of high-efficiency water appliances and fixtures in new development and the retrofit of such appliances in existing development.

9 Peter Mayer, Residential End Uses of Water Study (REUWS), American Water Works Association Research Foundation (AWWARF), 1999, at 90.

Estimated SFR Outdoor Daily per capita Water Consumption

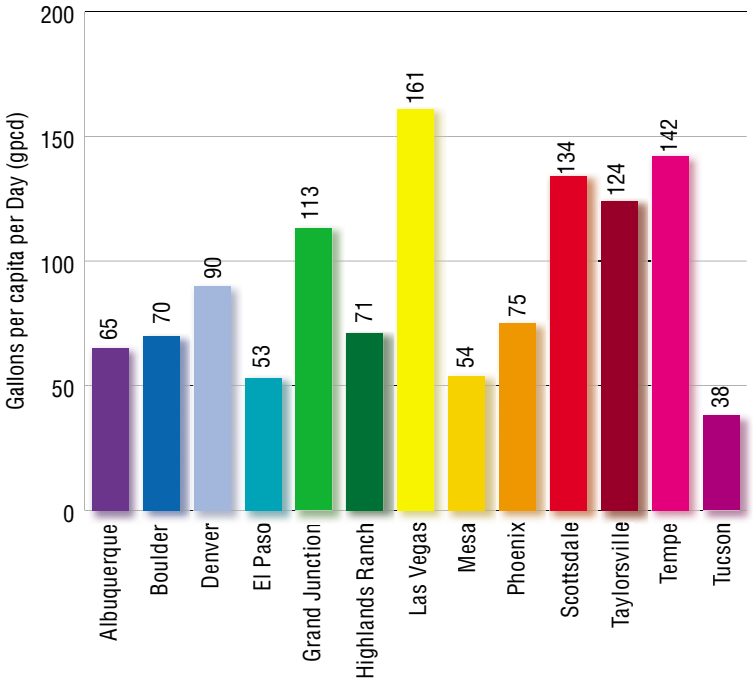
Outdoor use is the primary component of Single-Family Residential water consumption in most cities of the semi-arid and arid Southwest. Most of these outdoor uses are "elective," or discretionary uses. While some of this outdoor water is used for filling swimming pools and washing cars, the vast majority is for landscape irrigation. Thus, the quantity of water allocated to outdoor use varies considerably from season to season and year to year, depending on the frequency and amount of precipitation during the respective time period.

There is a dramatic variation in outdoor water consumption between sampled providers. This variation can be seen in Figure 3.5.[10] The estimated outdoor per capita consumption rates in some water service areas are three to four times greater than Tucson's rate of 38 gpcd. Among sampled providers, the mean 2001 SFR daily per capita consumption rate for outdoor water use is 92 gpcd, with individual consumption rates ranging from 38 gpcd in Tucson to 161 gpcd in Las Vegas. The implication from these data is that outdoor use efficiency offers the greatest opportunity for water demand reduction in most southwestern cities.

The differences among outdoor water use in cities with similar climates may be the result of variations in conservation programs, water rate structures, municipal ordinances, and urban landscape expectations among residents. Therefore, the incentives and measures used to attain outdoor use reduction will be unique to each water provider. Chapter 2 provides a framework of state-of-the-art outdoor water use efficiency measures, programs, and policies to be considered by all water providers. In addition, Chapter 4 takes a look at the benefits of smart development strategies, as they relate to the effect of urban sprawl on outdoor water use.

Figure 3.5

2001 Estimated Single-Family Residential Outdoor Use, Represented as a Daily per capita Use



Notes: The methodology used to derive the estimated SFR outdoor use figures is provided in footnote 10 of this chapter.

The Salt River Project (SRP) in Arizona provides untreated urban irrigation water to residential customers in Phoenix, Mesa, Tempe, and portions of Scottsdale. The SRP delivers and bills independently from the municipal water providers. SRP water is typically available every two weeks from April through September, and once a month from October through March

The use of SRP water for outdoor irrigation in these Phoenix-area water service areas most likely lessens the amount of treated municipal water applied to residential landscapes. Thus, the applicable outdoor consumption rates in the above graph may be somewhat lower than what they would be without the SRP deliveries.

10 By applying the previously listed SFR per capita consumption rates and the indoor average of 69.3 gpcd, the estimated SFR daily per capita outdoor consumption rates can be derived. In general, this variable can be defined as follows:

Estimated SFR Daily per capita Outdoor Consumption = SFR Daily per capita Consumption - 69.3 gpcd

Because most participating water providers did not provide indoor water use data in their survey responses, we chose to assign the average per capita indoor use of 69.3 gpcd to all Smart Water survey participants (as derived from the AWWARF REUWS). By assuming this average indoor use applies to all water providers in the study, we are able to derive an estimated outdoor per capita SFR consumption rate for each.

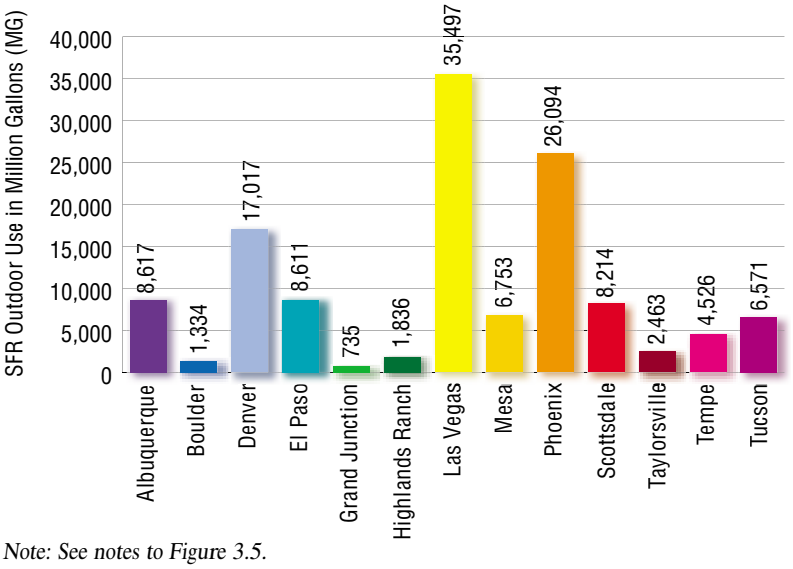
Chapter 3

Estimated Annual Total of SFR Outdoor Water Consumption

The significance of SFR outdoor water use becomes more apparent when the above-mentioned per capita SFR outdoor rates (from Figure 3.5) are converted to total annual volumes. Figure 3.6 displays the estimated 2001 annual totals for each participating water provider.[11] The sum of all estimated outdoor SFR water consumption in the 13 participating water service areas equals 128,268 million gallons annually (approximately 393,639 acre-feet). This notable amount of outdoor water only applies to the Single-Family Residential sector. Other sectors also apply a significant amount of water to outdoor uses.

Figure 3.6

2001 Estimated Total Single-Family Residential Outdoor Water Use



Note: See notes to Figure 3.5.

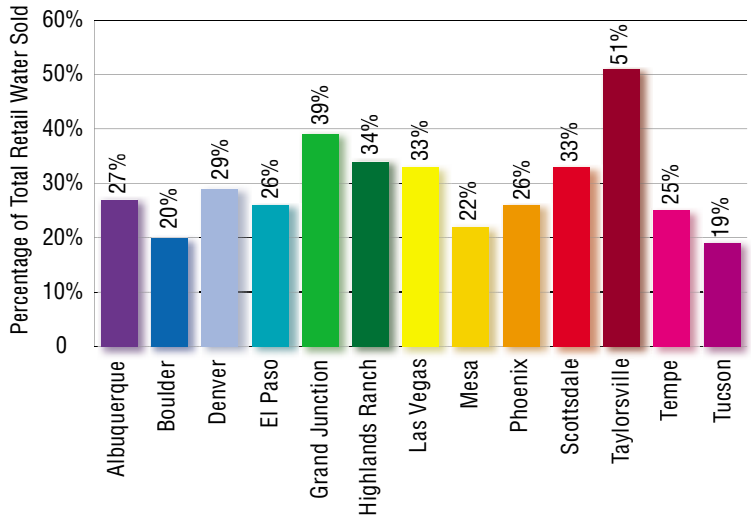
Estimated Annual SFR Outdoor Water Consumption, as a Percentage of Total Retail Water Sold

An equally revealing observation can be made when the estimated SFR outdoor volumes are compared to the actual 2001 total annual retail water sold in each water service area (as listed in Table 3.1). Figure 3.7 displays the percentage of 2001 total retail water sold allocated to SFR outdoor consumption in each water service area. Across the region, nearly one-third of all retail water sold by the participating water providers is applied to outdoor SFR consumption.

These percentages only include SFR outdoor water consumption. If outdoor consumption in the Commercial, Multi-Family Residential, Industrial, and Institutional sectors is included, the percentages become much larger.

Figure 3.7

2001 Estimated Single-Family Residential Outdoor use, Represented as a Percentage of Total Retail Water Sold



Note: See notes to Figure 3.5.

11 These volumes are calculated by multiplying the per capita outdoor figures by the number of SFR accounts, the average SFR household occupancy in each urban area, and 365 days (See Appendix A for details on household occupancy rates).

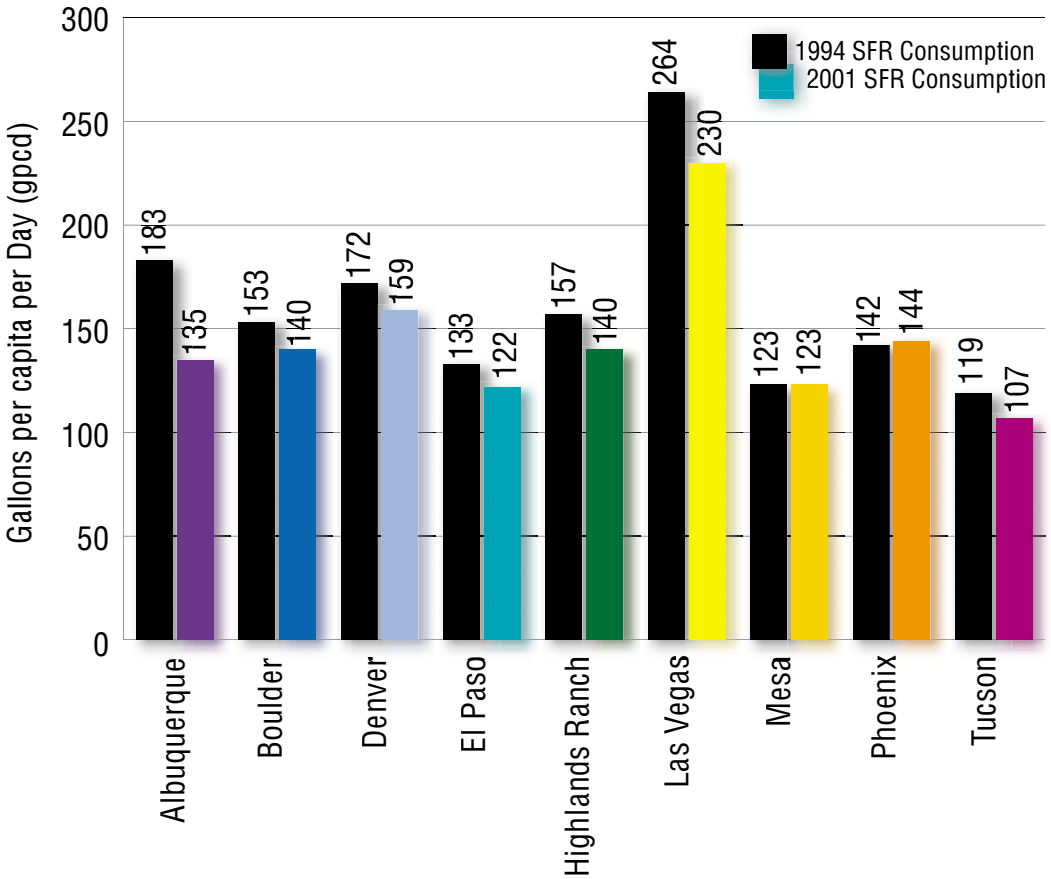
Changes in Single-Family Residential Use Between 1994-2001

Trends during the past decade indicate many water providers have improved demand-side efficiency but considerable additional progress is possible.

Figure 3.8 displays the changes in SFR daily per capita consumption, from 1994 to 2001.[12] The sampled trends reveal an average SFR per capita consumption reduction of 9.2 percent from 1994 to 2001, with a range from –1 percent in Phoenix to 26 percent in Albuquerque. Per capita consumption rates in most water service areas are declining despite increases in population and developed land area. In some cities, the majority of the reduced per capita consumption rates can be attributed to changes in landscape development standards over the years. However, the degree of reduction is small compared to the reduction potential.

Figure 3.8

Changes in Single-Family Residential Daily per capita Water Consumption, from 1994 to 2001



12 The 2000 U.S. Census information on average SFR household occupancy was applied to both 1994 and 2001 figures. Not all Smart Water participants are included in this figure since complete 1994 data were not provided by all water providers.

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System-wide per capita Water Consumption

System-wide daily per capita consumption is a commonly used standard in the water supply industry.[13] This indicator is intended to represent the overall per capita demand across all consumer sectors. Figure 3.9 displays the 2001 system-wide daily per capita consumption rates for the participating water providers. Per capita distribution losses (UFW) are included in these system-wide figures. The mean system-wide daily per capita consumption rate for this sampling of water providers is 229 gpcd. The rates range from 170 gpcd in Tucson to 366 gpcd in Scottsdale[14].

Although the water supply industry commonly uses this demand variable as a system demand indicator, the probability for comparison error in the system-wide per capita variable is relatively high, resulting in an "apples-to-oranges" comparison. Therefore, the displayed values in Figure 3.9 should be considered individually, instead of comparatively, to avoid erroneous conclusions on water consumption.

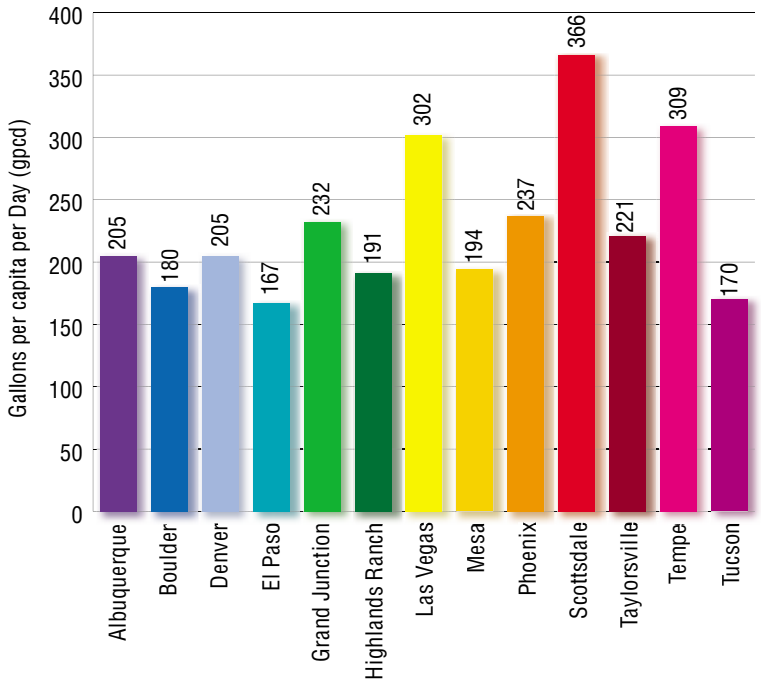
As discussed in Appendix A, data analysis bias in the system-wide consumption indicator can originate in municipal water service areas that:

1. function as employment centers and receive significant amounts of inflow commuting;
2. possess a relatively large industrial, commercial, or institutional (ICI) consumption sector;[15]
3. serve large airports; or
4. distribute large quantities of wholesale water.

Varying definitions of Unaccounted For Water (UFW) across water providers also contribute to the bias in the system-wide consumption variable. As a result, Chapter 3 de-emphasizes the system-wide indicator, focusing instead on Single-Family Residential per capita consumption.

Figure 3.9

2001 System-Wide Daily per capita Water Consumption



13 The industry-standard definition of system-wide per capita consumption is the total raw water extracted from supply sources divided by the water provider's service area population:

$$\text{System-wide per capita consumption} = \frac{\text{Total Raw Water Extracted from Supply Sources}}{\text{Service Area Population}}$$

14 The City of Mesa Utilities Department alluded to a possible raw water master meter discrepancy between the City and the Central Arizona Project (CAP). Apparently, the actual CAP raw water deliveries may be higher than the recorded/billed volume. CAP raw water deliveries constitute roughly 30 percent of Mesa's supply. Since the system-wide per capita figures are directly based on the volume of total raw water drawn from supply sources, Mesa's system-wide consumption rate in Figure 3.9 may be slightly lower than the actual value.

15 As an example, Tempe's system-wide consumption rate is notably higher than nearby Mesa or Phoenix. However, Tempe's non-residential consumption accounts for 45 percent of its retail water sold, compared to 30 percent and 33 percent in Mesa and Phoenix, respectively. The higher proportion of commercial, industrial, and institutional water use will yield a higher system-wide per capita figure in Tempe.

Unaccounted For Water (UFW)

Many water providers have room to improve the efficiency of their water delivery systems.

Many water providers in the sampled group lose track of large volumes of water each year through the water delivery systems they build, operate, and maintain. This loss—generally referred to as Unaccounted For Water (UFW)—is defined as the percentage difference between total raw water extracted from supply sources and the total water sold.[16] If a hypothetical water provider extracts 100 units of raw water from a reservoir storage system and, following water treatment, sells 90 units of water to consumers, the remaining 10 units are lost in the system (10 percent UFW). UFW is comprised of three general categories:

- Real losses: Actual losses of water due to delivery system leaks, private service line leaks (between main and meter), inefficient treatment systems, and theft
- Apparent losses: "Paper/computational losses" due to faulty metering and system accounting errors/flaws
- Beneficial uses: Unmetered water used for fire fighting, watermain flushing, cleaning, and construction use

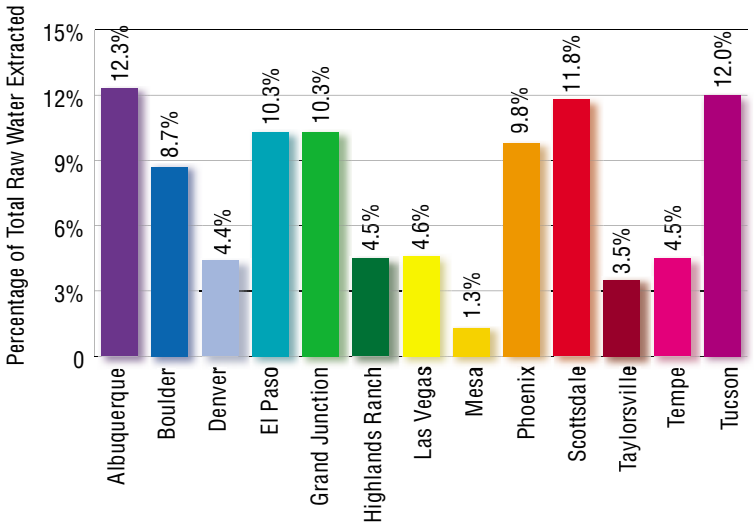
The percentage breakdown of UFW in each water system varies considerably. In some water systems, the vast majority of UFW results from real losses (*e.g.*, leaks). Since real losses translate to a direct loss of "wet water," they are the most critical type of loss. In other systems, faulty meters or accounting errors may comprise most of the UFW. Although these apparent losses do not translate to "wet water" lost, they distort consumer water usage data critical for developing future demand models and conservation plans, evaluating conservation program effectiveness, building water supply infrastructure, and designing equitable pricing mechanisms. The amount of UFW attributed to beneficial uses is relatively small compared to the aforementioned losses in most water systems. UFW can be decreased through ongoing leak detection and repair, system upgrades, accounting quality control, and meter repair and replacement.

Unaccounted For Water (UFW) as a Percentage of Total Water Extracted from Supply Sources

Figure 3.10 shows the UFW percentages reported by the participating water providers or derived from extraction and sales data. The mean 2001 UFW percentage for the sampled water providers is 7.5 percent. The 2001 UFW percentages range from 1.3 percent in Mesa to 12.3 percent

Figure 3.10

2001 Unaccounted For Water (UFW) as Percentage of Total Raw Water Extracted



16 Some water providers maintain slightly different definitions of UFW. See Appendix A for further explanation. In addition, a discrepancy exists between water wholesalers and water retailers. Typically, water providers that sell large amounts of wholesale water have lower UFW percentages than water providers that only sell retail water.

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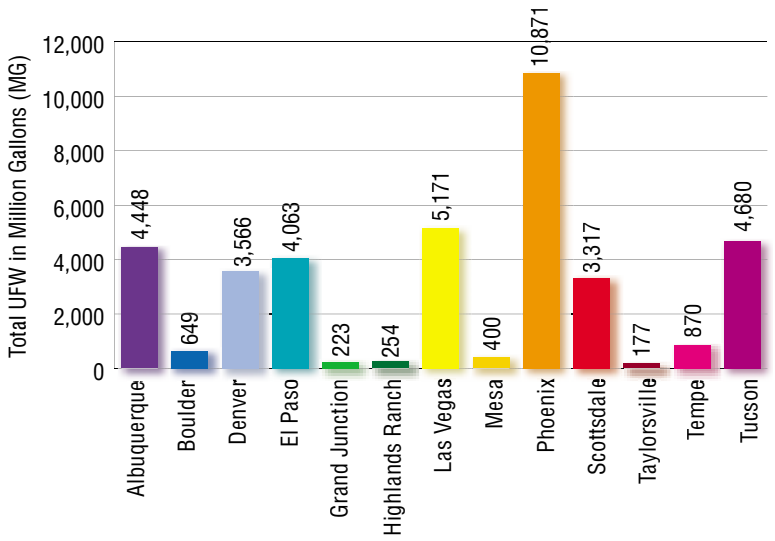
in Albuquerque.[17] Figure 3.10 demonstrates that approximately half of the surveyed water providers possess UFW percentages that hover around 10-11 percent, while the other half hover around 4-5 percent. These data show no correlation between system size and UFW percentage. The water providers with lower UFW percentages demonstrate the significant potential and capacity for water loss reduction in municipal water systems.

Figure 3.11

2001 Estimated Volume of Unaccounted For Water



Unaccounted For Water (UFW), as a Total Volume "Lost" per Year

Tens of millions of gallons of water are lost through UFW in systems of the sampled providers each year. Added together, the 13 Smart Water survey participants lost track of 38,689 million gallons of water in 2001 (the equivalent of 118,732 acre-feet). Figure 3.11 presents the estimated total annual volumes "lost" in 2001. These values are derived by multiplying the UFW percentages by the total raw water extraction volumes of each provider. Thus, the 2001 UFW values displayed in Figure 3.11 are a factor of both UFW percentage and system size/capacity. A small water provider with a high UFW percentage will not generate nearly as much volume loss or resource impact as a large water provider with an equal UFW percentage. For example, Boulder, El Paso, Grand Junction, and Phoenix had relatively similar UFW percentages in 2001. However, since Phoenix's water use volume is much higher than the other three service areas, the Phoenix UFW volume is substantially higher.

This graphic can also be interpreted from another perspective. For example, Phoenix and Las Vegas sell similar volumes of retail water (each sell just over 50 billion gallons each year); however, Las Vegas had a 2001 UFW that was less than half of Phoenix's UFW. The resulting 2001 UFW volume in Las Vegas is half that of Phoenix. Not surprisingly, the large municipal water systems account for the lion's share of this overall loss.

17 The City of Mesa Utilities Department indicated that the 1.3 percent UFW figure may be lower than Mesa's actual UFW value, due to a possible master meter discrepancy between the City and the Central Arizona Project (CAP). CAP water deliveries constitute roughly 30 percent of Mesa's supply. According to Utilities Department representatives, the actual UFW value could deviate from this reported value by a couple percent, but still be below 5 percent.

Unaccounted For Water (UFW), as a Daily Volume "Lost" per capita

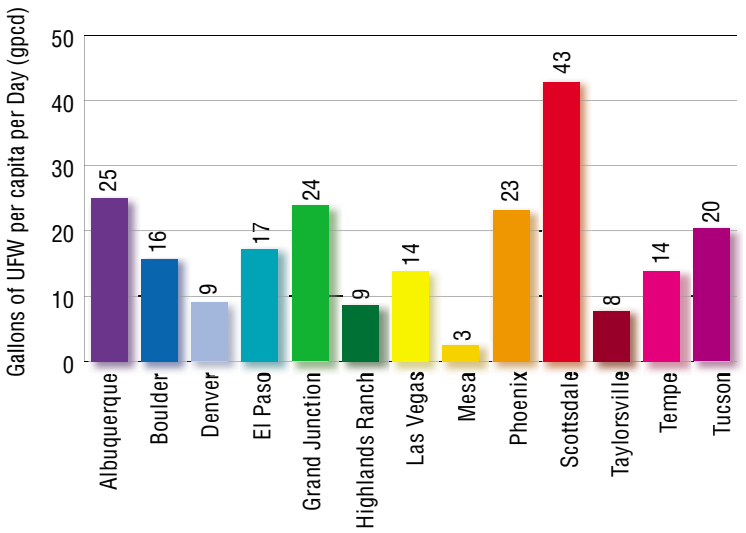
Analyzing UFW losses on a per capita basis is also revealing.[18] Since Figure 3.11 only reports total UFW loss volume estimates, it does not provide a fair per capita UFW comparison across the various water providers (due to system size variations). Figure 3.12 presents the per capita results for the 2001 data. Although all UFW water is not physically lost due to leaks, these per capita UFW results hint at the scale of potential savings in per capita consumption (as measured by the "system-wide" consumption variable). The mean 2001 per capita UFW for the water providers in this survey is roughly 17 gpcd. The 2001 per capita UFW rates range from 3 gpcd in Mesa to 43 in Scottsdale. Interestingly, the lowest and the highest per capita UFW in this regional sampling are located within the same metropolitan area.

The significance of these per capita UFW values is evident when we compare the UFW value in Figure 3.12 to a hypothetical demand reduction goal. For example, assume a particular water service area has a current SFR per capita consumption rate of 150 gpcd and a per capita UFW of 15 gpcd (which are both near or at the averages from the Smart Water survey). If this water provider sets its long-term SFR per capita demand reduction goal at 20 percent, it is aiming to have its SFR customers reduce their water use by 30 gpcd. The per capita UFW rate of 15 gpcd represents one-half of the target demand reduction. Thus, cutting the UFW rate in half would meet 25% of the total target demand reduction.

In addition to underscoring the significance of UFW with respect to water savings potential, this hypothetical example also illustrates the effect of UFW on a water provider's public relations efforts. A water provider may have a difficult time trying to encourage its customers to conserve water and repair leaks if the water provider's delivery system is losing track of more water per capita than an individual customer loses to inefficient use.

Figure 3.12

2001 Unaccounted For Water, Represented As Daily Consumption Loss per capita



18 This is done by dividing the total UFW losses by the respective service area population of each water provider (with the appropriate time unit conversions).

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1994 to 2001 Changes in Unaccounted For Water (UFW), as a Percentage of Total Water Extracted from Supply Sources

Although Figure 3.12 exposed a substantial potential for water loss reduction (i.e, decreased UFW) in municipal water supply systems in the West, some water providers have made some progress in recent years. Figure 3.13 identifies the changes in UFW percentages between 1994 and 2001 for the participating water providers.[19]

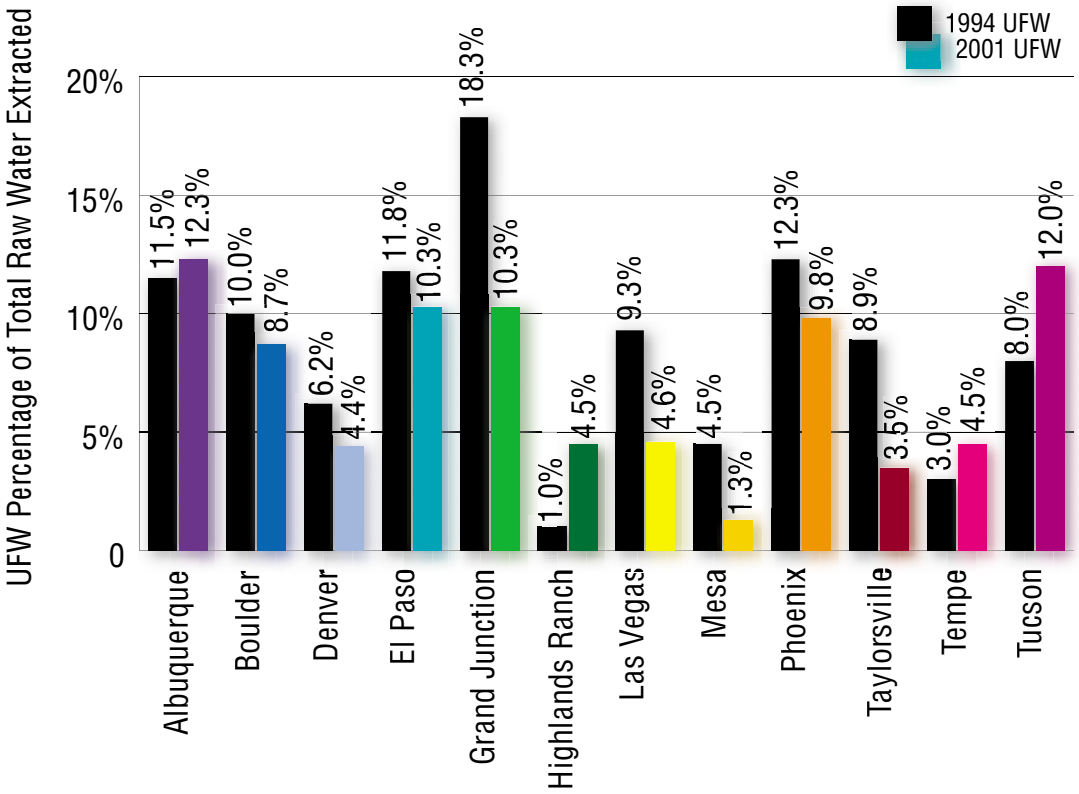
Between 1994 and 2001, Grand Junction, Las Vegas, Mesa, and Taylorsville all realized a significant reduction in UFW. The majority of the other providers achieved modest reductions, partly because some of them may have had UFW reduction programs in place for decades. Albuquerque, Highlands Ranch, and Tucson experienced an increase in UFW over this same time period (although the resulting 2001 Highlands Ranch UFW is still relatively low). These UFW increases are most likely attributed to aging water supply systems and service lines.

At least two potential water efficiency improvements are evident from this UFW analysis:

1. Water providers with UFWs that hover around 10-11 percent would save a substantial amount of water if they streamline their systems down to the lower tier of UFW values (*i.e.*, around 4-5 percent).
2. Even water providers with relatively low UFW percentages may be able to "squeeze out" additional savings by aggressively seeking more loss reductions via leak detection and repair, system upgrades, as well as metering and accounting upgrades.

Figure 3.13

Changes in Unaccounted For Water (UFW) Percentages, from 1994 to 2001



19 Not all Smart Water participants are included in this figure, since complete 1994 data were not provided by all water providers.

"Means": 2001 Water Conservation Measures, Incentives, and Programs

Overview

The previous sections of Chapter 3 focused on the consumption demand, or "ends," of the participating water supply systems. The following section provides a summary comparison of many of the "means" used to attain efficiency in these systems. The available means to achieve demand-side water use efficiency fall into the following four categories:

Incentives

- water rate structure (*i.e.*, price incentives)
- rebate programs for indoor water appliances, turf replacement, etc.

Regulatory Controls

- municipal ordinances
- utility mandates

Public Education and Awareness

- education offerings, media drives, information leaflets, etc.
- indoor and outdoor water use audits

Utility Maintenance Programs

- metering streamlining and repair
- leak detection and repair (system-wide and private service lines)

Survey responses and other research suggest the above means act synergistically to improve demand-side water use efficiency. The overall effectiveness of these means likely depends upon whether a provider sends a consistent and clear conservation message to its customers.

Many water providers we spoke with noted customers have unique response "triggers" or "motivators." Thus, providers should consider a wide array of conservation opportunities and incentives. For example, some customers may make water use decisions based strictly on the price of water. Others may respond best to regulatory controls and enforcement. For others, simple education on conservation and supply issues may be most of what is needed to induce positive results. Therefore, considering a "diversified portfolio" is important to a water conservation program.

However, diversification is not the complete answer. Program effectiveness is also dependent on many other attributes, such as program promotion, conservation message consistency, diligent program accounting and monitoring, proactive policy-making, rate and rebate pricing, and local government acting as a role model.

A few key observations can be made.

First, without up-to-date and thorough monitoring and accounting for conservation program components, program strengths and weaknesses cannot be accurately discerned. As a result, effective implementation or improvement of a particular program becomes difficult. Studies conducted by the American Water Works Association Research Foundation (AWWARF) indicate that a significant lack of conservation program accounting exists throughout the water supply industry. According to AWWARF's report titled Effectiveness of Residential Water Conservation Price and Nonprice Programs, "Although specific water pricing data is documented by water utilities, information about nonprice conservation programs is often not recorded in any detail or degree of consistency."[20]

Second, a conservation program with potential for yielding significant water savings can be rendered ineffective if public

"A river is more than an amenity, it is a treasure."

–Justice Oliver Wendell Holmes

(quoted by the Supreme Court in its decision in U.S. v. Republic Steel, 1960)

20 Ari Michelsen, J. Thomas McGuckin, and Donna M. Stumpf, *Effectiveness of Residential Water Conservation Price and Nonprice Programs*, American Water Works Association Research Foundation (AWWARF), 1998, at 25.

education and program promotion efforts do not adequately convince customers that valuable resources are at stake if conservation is not pursued.

Third, the influence of a program's "conservation message" can be compromised if other aspects of the program do not send the same message (in degree or scope). For example, a conservation message is compromised when a municipal water supply utility promotes aggressive conservation practices to its private customers while allowing wasteful water use by its public institution and public facilities customers. Similarly, the effect of a utility's state-of-the-art conservation programs and measures can be diminished if the utility implements a weak water rate structure that undervalues water.

Lastly, water providers and municipalities need to be more proactive by enacting effective, comprehensive conservation programs, incentives, and measures *prior* to the next drought crisis. Long-term policy shifts toward more efficient water use in both wet and dry years will help protect us from the drought cycles that are inherent to our region.

Rebates, Education, and Regulations

The following sections: (1) set forth the basic measures, incentives, and programs that were reported as being implemented by the participating water providers in 2001 (see also more detailed descriptions of each provider's programs in Appendix B); and (2) provide a detailed analysis of one of the most effective means to water conservation—water rate structures.

Table 3.4 (facing page) provides a summary of water conservation programs, incentives, and regulations implemented by participating water providers in 2001.[21] A more complete explanation of water conservation programs in each participating service area is provided in Appendix B, the "City-by-City Analysis."

Many of the participating water providers have discussed, enacted, or implemented new water conservation measures, incentives, and programs since 2001. The majority of these recent program enhancements were in response to the 2002 and 2003 drought conditions throughout the Southwest. These program changes involved measures such as water appliance rebate programs, Xeriscape rebate programs, more aggressive increasing block rate structures, and landscape ordinances for new development. Some water providers have introduced and maintained these new measures as permanent changes. However, in areas where drought conditions have since subsided, many other water providers and municipalities have already discontinued the recently-instituted conservation programs and policies. This trend highlights the distinction between short-term reactionary fixes and proactive, long-term policy shifts.

We retain the focus on 2001 data to maintain consistency between 2001 conservation programs and 2001 consumption patterns and provide a cross-section of existing programs and policies in a relatively normal water supply year (*i.e.*, a year without severe drought conditions).

Table 3.4 reveals that, as of 2001, all water providers participating in the Smart Water survey were doing something aimed toward conservation. Of this group, all had some sort of conservation education program. These programs ranged in scope, from minimal publications and website information to comprehensive educational programs, classes, mailings, and citizen outreach targeting adults and various school-aged populations (tomorrow's water consumers).

The vast majority of surveyed providers had Xeriscape demonstration gardens, some sort of water use ordinance, leak detection, and audit program, as well as building codes requiring water-efficient

21 Data were derived from Smart Water survey responses, water provider conservation plans and documents, water provider websites, as well as telephone and email correspondence with water provider representatives.

Table 3.4

2001 Water Conservation Efforts via Rebate Programs, Regulations, and Education

	Albuquerque	Boulder	Denver *(a)	El Paso	Grand Junction	Highlands Ranch	Las Vegas	Mesa	Phoenix *(b)	Scottsdale *(c)	Taylorsville	Tempe *(d)	Tucson *(e)
Building Codes Requiring Water-Efficient Fixtures	●		●	●	●	●	●		●			●	●
Indoor Fixture Retrofit Program (Faucet, showerhead, etc.)				●			●		●	●		●	●
Toilet Rebate Program	●			●						●		●	
Clothes Washer Rebate Program	●	●		●			●						
Xeriscape Rebate Program	●	●		●			●	●		●		●	
Xeriscape Demonstration Garden		●	●		●	●	●	●			●	●	●
Water Conservation Education Programs	●	●	●	●	●	●	●	●	●	●	●	●	●
Irrigation Timer and/or Rain Sensor Retrofits or Rebates		●	●				●						
Landscaping Ordinances	●		●	●			●		●	●		●	●
Water Use/Waste Ordinances/Mandates	●		●	●	●		●	●	●	●		●	●
Indoor Water Use Audit Programs *(f)	●	●	●	●	●	●	●	●	●	●		●	●
Irrigation Audit Programs	●	●	●	●		●	●		●	●	●	●	●
Leak Detection and Repair Programs *(g)			●	●	●	●	●		●	●		●	●

Notes:
(a) Denver: The indoor water use audit program is available to commercial and industrial customers, but does not apply to residential customers. The irrigation audit program is available to multi-family residential, commercial, and industrial customers.
(b) Phoenix: The indoor water use audit program applies to commercial, industrial, institutional, and multi-family uses, but not to SFR uses. The irrigation audit program applies to commercial uses.
(c) Scottsdale: The fixture replacement program is actually both a retrofit and rebate program. Rebates are offered for showerheads, faucet aerator retrofits are free. Also, the landscape ordinance does not apply to single-family residential customers.
(d) Tempe: The landscaping ordinance only applies to non-residential developments.
(e) Tucson: The landscaping ordinance applies to commercial and multi-family residential developments, but not to single-family residential projects. The indoor fixture retrofit program is actually a part of the indoor water use audit program.
(f) Indoor Water Use Audit Programs: This section includes both onsite inspections by water provider staff and self-audit kits provided by the water provider.
(g) Leak Detection and Repair: This category includes any water provider program that offers detection and repair of leaks in the delivery system along public rights-of-way, or in the private service line on a customer's property.

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"Children of a culture born in a water-rich environment, we have never really learned how important water is to us. We understand it, but we do not respect it."

-William Ashworth

from "Nor Any Drop to Drink"

fixtures for new construction. However, the scope, implementation, and enforcement of these programs and regulations vary considerably from city to city.

Programs targeting reductions in specific types of use were more rare. Only half of the providers had some kind of landscaping ordinance or Xeriscape rebate program. Notably, fewer than half of the providers had indoor fixture retrofit programs. Only four providers had toilet rebates and clothes washer rebates. Only three had Irrigation Time/Rain Sensor rebates.

While gathering conservation program data for this report, we discovered a distinct lack of analyses by water providers related to water savings effectiveness and cost-effectiveness of specific conservation programs. Although benefit/cost analysis is a common tool for justifying structural water supply improvements and planning in other areas, this tool is rarely applied to assess the cost-effectiveness of water conservation measures.

The previously cited AWWARF study reaches a similar conclusion—a lack of detailed and consistent program monitoring makes it extremely difficult to perform an objective analysis of program effectiveness.[22] It is possible that a conservation program with a carefully selected, actively promoted, yet limited scope of incentives and measures may yield more effective water conservation results than one with poorly implemented, yet comprehensive conservation incentives. We feel there will be a great benefit for providers around the region—those tasked with program implementation on a daily basis—to monitor closely the results of programs they implement. We look forward to working with individual providers in the future to investigate many of these water savings effectiveness and cost-effectiveness issues.

Water Rate Structures and Billing

Background of Rate Structure Analysis

Among all the tools available to encourage water use efficiency, water rate structure is a crucial component of an effective demand-side efficiency program.

Water rate structures are premised on the notion that consumers will buy less water as its price rises and more as its price declines. As long as the water prices that consumers face are based on the costs that a water provider and society would incur if the consumers increase their consumption, a water rate structure automatically will increase efficiency, saving money as well as mitigating environmental or other social costs. The cost that a provider would incur if a consumer increased his/her consumption is known as the "avoidable" or "marginal" cost. We use both interchangeably in this section.

Prices based on avoidable or marginal costs enhance efficiency. For example, suppose that a water customer is paying $2.00 per each 1,000 gallons consumed, whether the overall amount is large or small. Suppose also that if customers consume large quantities of water, the cost the water provider would soon begin to incur is actually $4.00 per 1,000 gallons. This higher cost to the provider results from the need to build another expensive impoundment and related infrastructure to store water to meet increasing demand (including the costs of environmental mitigation). If the consumer sees only a $2.00 price, the customer will consume as if the costs he/she is imposing on the provider is only $2.00, forcing the provider to spend $4.00 to meet demand that the consumer values

22 Michelsen, McGuckin, and Stumpf, AWWARF, at 25.

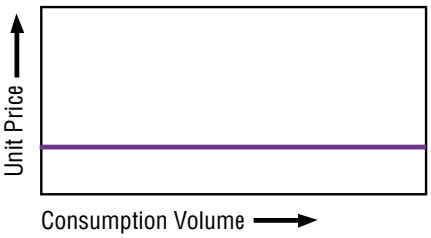
only at $2.00. This mismatch between price and cost causes society to divert scarce resources to the provision of a commodity that the consumer values less than its cost.

When customers see water rate structures that communicate the true costs of water provision, customers and water providers alike can save money and protect the environment simultaneously. Under most circumstances, consumers will reduce their use of water through turf replacement, lower-water-using appliances, behavioral changes, and other measures in light of the economic and environmental costs that are saved when they do that.

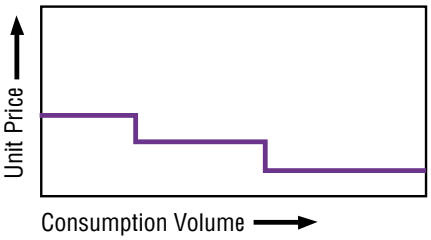
On most urban water systems in our region, avoidable or marginal costs vary with the level of consumption on the system, reflecting strong population growth, recurrent droughts, and the value of avoiding new expensive and environmentally damaging dams and reservoirs. As a result, water rate structures that charge more as consumption levels increase typically track avoidable costs and, thus, promote efficiency and cost-based conservation. Avoidable costs are almost always higher in the growing season, since daily urban water demand doubles or triples then, largely attributable to lawn watering. As a result, rate structures that show higher charges for water in this season usually track providers' avoidable costs and promote efficiency.

Four general types of water rate structure can be found among urban water providers:

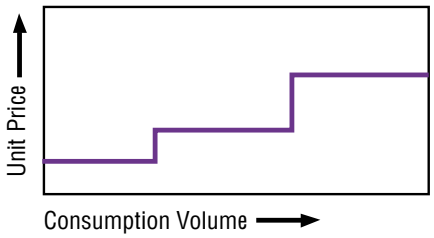
Uniform Rates: The unit rate for water is constant, or flat, regardless of the amount of water consumed.



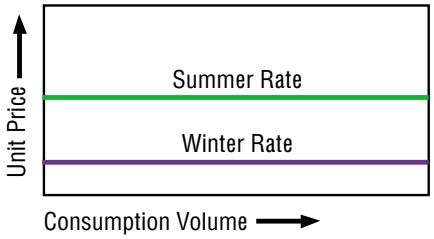
Decreasing Block Rates: The unit rate for water decreases as the consumption volume increases. The structure consists of a series of "price blocks", which are set quantities of water that are sold at a given unit price. The unit prices for each block decrease as the price block quantity increases.



Increasing Block Rates: The unit rate for water increases as the consumption volume increases. As with the previous, this structure consists of a series of "price blocks", which are set quantities of water that are sold at a given unit price. In this case, the unit prices for each block increase as the price block quantity increases. The last block is often called the "tail block."



Seasonal Rates: The unit rate for water varies from season to season. In most cases, two rates are set: summer rates and winter rates. Summer water rates are typically higher than winter rates.



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In our region, seasonal and increasing block rate structures offer a price incentive for water conservation that is based on avoidable costs and, predictably, will enhance efficiency. The increasing block rate structure charges a higher unit rate for higher consumption (*i.e.*, a higher marginal price as consumption increases). The seasonal rate structure charges a higher unit rate when outdoor uses are the highest (*i.e.*, summer months). However, the effectiveness of a particular seasonal or increasing block rate structure is also dependent on other factors, as examined later in this section. Typically, uniform rate and decreasing block rate structures provide no cost-based incentive for water conservation. Thus, they rarely promote efficiency and they waste resources, economic as well as environmental.

Turning the straightforward principle—that, for efficiency purposes, water rates should communicate the costs that a customer's water provider avoids when they decrease their consumption—into actual water rate structures is not without challenges. These challenges result mainly from the fact that water rates are designed to meet a multiplicity of purposes, not simply efficiency. Generally, we believe that water providers in our region need to stress efficiency as an objective more than they have to date. However, knowing that purposes other than efficiency will not and should not drop from consideration, we describe some of the problems that the establishment of efficient water rate design confronts in a world in which efficiency is not the only objective.

Perhaps the biggest problem occurs because water providers need to make sure they raise sufficient revenues to cover their unavoidable, fixed costs. These are costs of past investment and current operations that cannot be avoided no matter the degree to which customers limit demand. The understandable temptation among water providers is to recover their fixed costs through service charges that do not vary with consumption, thereby maximizing the chance that they will recover these costs in sales revenues. However, recovering fixed costs in this manner can negate the price signal of an increasing block rate structure. In some cases, fixed service charges can even make it appear as if the unit price for water decreases as consumption increases, even when the rate structure involves increasing block rates. This effect is dependent on the amount of the fixed charge and the amount of the tail block rate. If these amounts are inappropriately set, a customer focusing on his/her total bill may notice the average cost of service declining with usage. According to AWWARF research:

"A rate structure with increasing marginal prices while the average price is declining sends mixed signals to consumers about their economic incentives to conserve water. This mixed incentive system creates problems in both understanding and analyzing consumer responses. Rate structures with any service charges, and in particular relatively large service charges in relation to the per unit cost and total water bill, are apt to create these mixed price signal conditions. Most water utilities, including those with inclining block rate structures, continue to use a service charge as part of their rate structure. . . . Some researchers have suggested that rather than using and responding to the marginal price of water, consumers instead may use the total bill amount (average price) as the basis for deciding how much water to consume."[23]

Rate managers on many water systems have worked on the problem of how to assuredly recover fixed costs while encouraging efficiency, some for many years. One solution is to make sure that the increasing block rate design is steep and the tail-

23 Michelsen, McGuckin, and Stumpf, (AWWARF), at 13-14.

block (last) rate very high, thereby making sure that average costs incline with consumption.

Before customers respond to a rate structure of this nature, however, a water provider ironically could end up raising more money than actual costs of service in the short-run. Under the municipal ordinances we have examined, water providers may lawfully use this money to establish a reserve or to subsidize investments by their customers in water use efficiency, such as turf replacement or water-efficient appliances.

Another problem, known as "income insensitivity," occurs when some customers at the highest end of the income spectrum may not fully respond to rates that reflect avoidable costs because they have significant disposable income to spend on water consumption. In other words, they're wealthy enough that price signals have little or no effect on their consumption. To our knowledge, the importance of this issue in our region has not been analyzed. For example, there is a price for water that will get nearly everyone's attention. However, we may not know what that price is on most systems. In any event, many would say that there is equity in charging at least avoidable cost rates to these customers even if they do not change their consumption, as it is largely their *discretionary* consumption that tends to drive system expansion.

On some systems, water is sold to low-income customers below actual average costs, not to mention avoidable costs. While much of this water is for essential purposes and thus, not a target for conservation encouraged by rate design, some of this water may be used inefficiently on lawns or in inefficient appliances. Equity considerations suggest that rebate programs are an appropriate means to reach this quantity of water.

Although much discretion is left to the local rate-setting body of the municipality or water district, the primary legal constraint applicable to a publicly owned water provider is that rates and rate structure design must be just and reasonable, and rationally related to the cost of providing the service (*e.g.*, operations, maintenance, conservation programs, etc.). This rule applies to all water providers, whether privately or publicly owned, and whether mandated by statute or imposed by the courts. Generally speaking, this can be referred to as the "cost-of-service" approach.

The cost-of-service principal applies to the overall rate structure rather than to each individual block in an increasing block rate structure. This means that (1) there is no legal prohibition against setting that last tailblock rate at a higher-than-cost rate; and (2) if the last tailblock rate is set at a high rate (in an attempt to discourage consumption), then the rates on the lower tiers will need to decrease in order to stay within the predicted revenue requirements. With that said, case law indicates that there is no legal prohibition against a publicly owned water provider using marginal or avoidable costs in setting its rates and rate structure, once again, as long as a nexus exists between the expected revenues and the costs—whether the costs involve current system operation costs or long-term avoidable costs.

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Rate Structure Analysis

Table 3.5 lists the rate structures that were implemented by various water providers in 2001.[24] The majority of the water providers in the analysis sample applied an increasing block rate structure. However, we found significant variations in these increasing block rate structures. Two of the providers utilized a seasonal rate structure. The remaining two providers used a uniform rate structure. Although the analysis in this section concentrates on 2001 rate structures, we acknowledge that there have been more recent rate structure changes in most participating service areas. We retain the focus on 2001, however, to maintain consistency between 2001 rate structures and 2001 consumption patterns.

Photo by Jeff Widen.

The variations in increasing block rate structures include the strategy that is applied by Boulder and El Paso. The price structure used in these water service areas is based on an increasing block rate system. However, instead of using fixed consumption volumes as thresholds for each block rate, the blocks are determined by the Average Winter Consumption (AWC) of each individual account. This type of price structure serves two objectives. First, as with standard block rate structures, efficient and/or low-use customers pay a low unit rate, while inefficient and/or high-use customers pay a high unit rate. Second, the use of AWC baselines builds an additional incentive into the water pricing. The AWC provides an estimate of a household's "essential" or indoor use (measured and averaged during winter months). In turn, an individual consumer's water rates are based on the amount of water consumed by "elective" or discretionary landscape irrigation uses. This mechanism encourages customers to conserve water during the time of year when system demands are highest (*i.e.*, summer months).

These pricing strategies are also relatively effective at discouraging customers from increasing their block allotments by deliberately increasing water consumption in winter months. According to Hydrosphere Consultants (contracted by the City of Boulder), if customers intentionally try to increase their AWC in an attempt to raise the amount of water they are allocated in the low price block during summer months, the savings will be almost totally offset by the increased wastewater costs. In other words, these wastewater charges discourage the abuse of the AWC pricing mechanism. However, under the AWC pricing mechanism, it is conceivable, if unlikely, that some customers may abuse the system by "dumping" water outdoors during winter months to increase their AWC without contributing to wastewater flows.

24 Unlike previous sections of this chapter, you will notice that all participating water providers are not included in all parts of this water rate analysis section. Given the complexity of the analysis and graphic displays, a subset sample of providers was chosen. Salt Lake City Public Utilities was included in this analysis, even though they have not responded to the Smart Water survey, because: (1) they round off the list of the largest water providers in the Southwest; and (2) some rate and billing data from this water provider were already compiled in other reports.

Table 3.5

2001 Water Rates and Surcharges for Residential Accounts (<1" Service Lines)

Water Provider	2001 Rate Structure Type	Fixed Service Charge: Monthly Base Rate/Surcharge	Consumption Rate: Unit Rate per 1,000 Gallons of Water Consumed	Additional Monthly Rates or Fees
Albuquerque	Uniform	$6.28/month	$1.06 for up to 200% AWC *(b) $1.34 for over 200% AWC ($0.28 surcharge per 1,000 gal. above 200% residential AWC, which is set at 11,220 gal.)	Sustainable Water Supply Fee: $0.50 per 1,000 gal.; State Water Conservation Fee: $0.03 per 1,000 gal.
Aurora	Uniform	$2.87/month	$2.04	None
Boulder	Increasing Block Rate, AWC *(b)	$8.12/month	$1.60 for up to AWC *(b) $2.85 for AWC - 350% AWC $4.25 for over 350% AWC	None
Denver	Increasing Block Rate	$2.22/month*(a)	$1.53 for first 11,000 gal. $1.84 for 11,000 - 30,000 gal. $2.30 for over 30,000 gal.	None
El Paso	Increasing Block Rate, AWC *(b)	$3.73/month (includes first 2,992 gal.)	For over 2,992 gal.: *(b) $1.14 for up to 150% of AWC $2.15 for 150% - 250% AWC $2.77 for over 250% AWC	Water Supply Replacement Charge per service: $3.96
Grand Junction	Increasing Block Rate	$8.00/month (includes first 3,000 gal.)	$1.85 for 3,000 – 10,000 gal. $1.90 for 10,000 - 20,000 gal. $1.95 for over 20,000 gal.	None
Las Vegas	Increasing Block Rate	$4.23/month	$0.98 for first 7,500 gal. $1.42 for 7,500 - 22,500 gal. $1.92 for 22,500 - 66,000 gal. $2.27 for over 66,000 gal.	None
Phoenix	Seasonal	$5.16/month (includes first 4,448 gal. Oct.-May and 7,480 gal. June-Sept)	Dec.-Mar.: $1.56 for over 4,448 gal. Apr., May, Oct., Nov.: $1.85 for over 4,448 gal. June-Sept: $2.35 for over 7,480 gal.	Environmental Charge: $0.11 per 1,000 gal.
Salt Lake City	Seasonal	$8.08/month (includes first 3,740 gal.)	Oct.-May: $0.79 for over 3,740 gal. June-Sept: $1.19 for over 3,740 gal.	None
Tucson	Increasing Block Rate	$5.35 (includes first 748 gal.)	$1.48 for 748 – 11,220 gal. $4.46 for 11,220 - 22,400 gal. $6.12 for 22,400 - 33,660 gal. $8.82 for over 33,660 gal.	None

Sources: Smart Water survey responses and utility websites.
Notes:
(a) Denver Water implements a bi-monthly billing cycle with a bi-monthly surcharge of $4.43 in 2001. The volume thresholds shown for each consumption rate are based on monthly consumption. Volume thresholds on the bi-monthly system are 22,000 gal., and 60,000 gal., accordingly.
(b) "AWC" = Average Winter Consumption (on a monthly basis). Individual blocks are calculated for each customer, based on the AWC for that account. Boulder AWC covers Dec.-March. El Paso AWC covers Dec.-Feb. Albuquerque AWC is set at average of all residential customers with similar taps (11,220 gal.).

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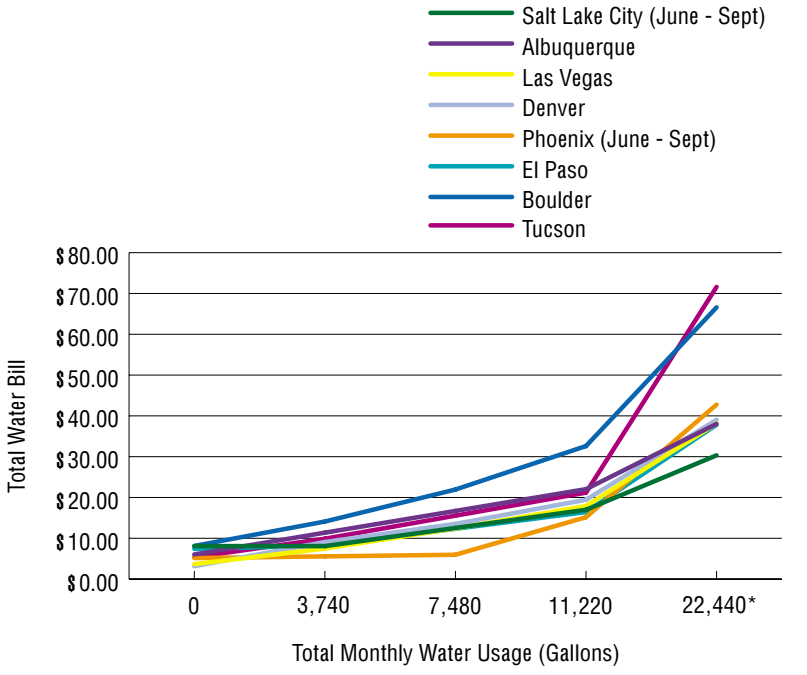
Figure 3.14 provides a snapshot of average water bills for varying consumption levels throughout the region. The monthly water bill amounts graphed in Figure 3.14 are drawn directly from the 2002 Water and Wastewater Rate Survey, conducted and reported by Raftelis Financial Consulting, PA.

A customer's response to water rates can also be dependent on the billing cycle and the availability of account information (*i.e.*, consumption volumes for a particular household). For example, Denver Water and the Centennial Water and Sanitation District (Highlands Ranch) are the only providers in the Smart Water survey that use a bi-monthly billing cycle. All other providers in the study use monthly cycles.[25]

There are other areas for improved customer interaction. Customers are more likely to practice water conservation if they have easy access to their account information. Although billing statements typically summarize each household's water use during the previous month period, other opportunities could be made available on a day-to-day basis. For example, as computerized utility accounting systems become more streamlined and modernized, it will be possible to provide real-time account access via the utility website. With this type of customer-interaction tool, a particular customer would have the opportunity to monitor daily or weekly water use trends. As a customer becomes more aware of his/her use trends, this customer becomes more adept at practicing water conservation in the home and in the yard. Being informed leads to being efficient.

Figure 3.14

2001 Average Monthly Water Bill



Source: Raftelis Financial Consulting, PA, Raftelis Financial Consulting 2002 Water and Wastewater Rate Survey, *Charlotte, N.C.: Raftelis Financial Consulting, PA, 2002.*
**Please note that the horizontal axis is not to scale for consumption values higher than 11,220 gallons*

Marginal Price of Water

Analysis of the marginal price curves of the various water rate structures reveals differences in price incentives. As mentioned earlier, the water providers in this analysis implemented uniform rate structures, seasonal rate structures, and increasing block rate structures in 2001. Each of these rate structures has a unique marginal price curve.[26] Plotting all of these marginal price curves on one graph exposes the significant distinction in economic effect of each price structure.

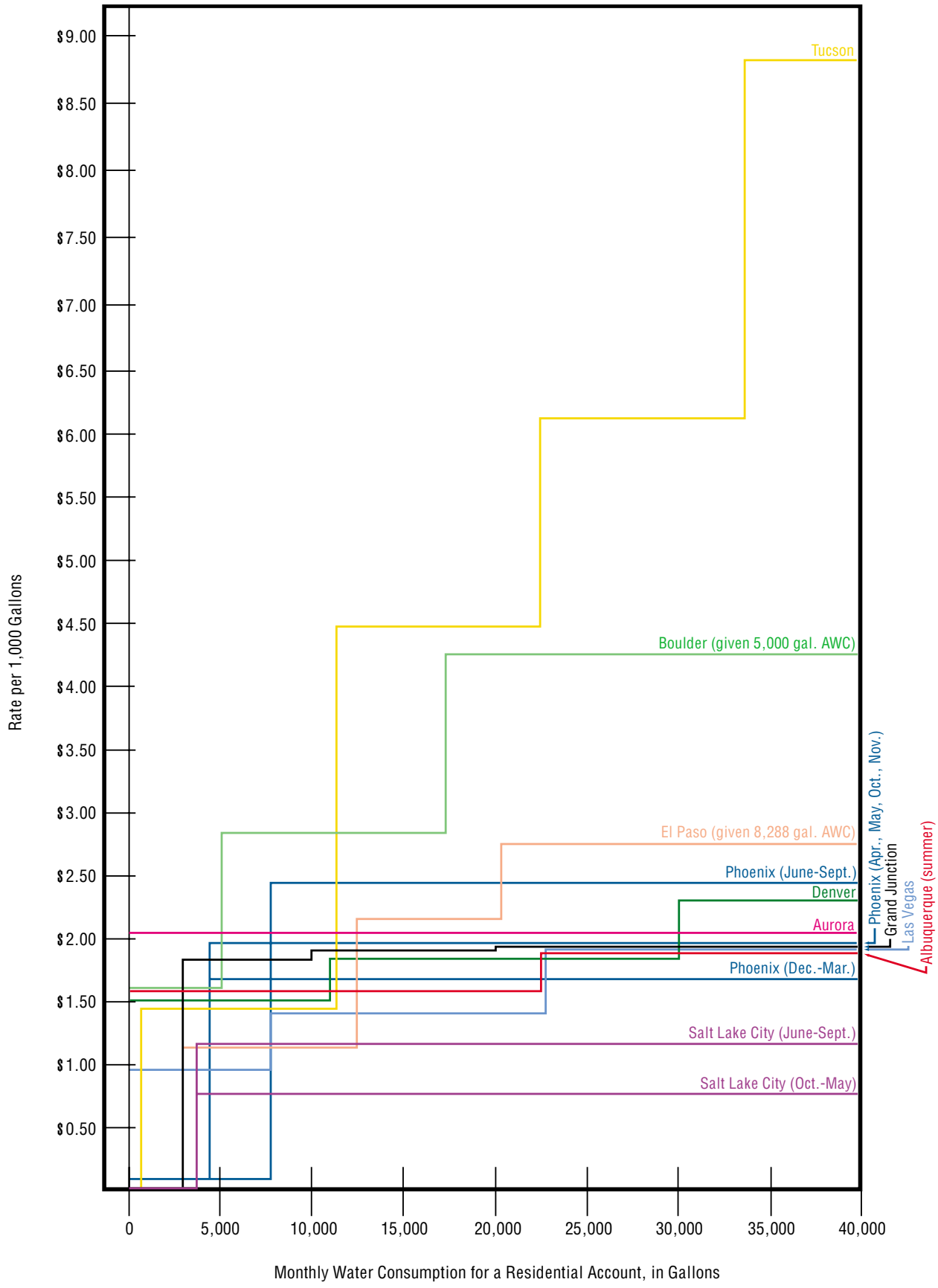
Figure 3.15 (facing page) illustrates this effect. All of the price structures listed in Table 3.5 have been graphed in a color-coded format for comparative analysis.

25 Through anecdotal evidence from various Denver Water customers, we see that this bi-monthly billing cycle is an information hurdle to water conservation efforts in the home. Many "conservation-minded" or "money-savings minded" customers adjust their home water use on an incremental basis, in response to the consumption reported in each billing statement. This practice is particularly common during the summer irrigation months. With a bi-monthly billing cycle, the irrigation season is roughly half over by the time customers are notified of their recent consumption quantities. This is counterproductive to efficient conservation. Although water providers switching from bi-monthly billing to monthly billing cycles incur costs (e.g., computer system upgrades, mailing costs, metering, etc.), the long-term potential savings from conservation warrants consideration (in terms of avoided costs for expensive dams, pipelines, and treatment facilities).

26 The marginal price curves represent the change in the unit prices of water as consumption levels increase. The marginal prices represent the prices that the customers pay for the next unit of water consumed (*e.g.*, price for the next 1,000 gallons). In an increasing block rate structure, the marginal price curves move upward in a "staircase" manner, with each "stair" representing each block rate.

Figure 3.15

Marginal Price Curves of Various 2001 Water Rate Structures



Two features of Figure 3.15 are particularly revealing:

- Differences in curves between the uniform, seasonal, and increasing block rate marginal price curves (as defined earlier in this subsection); and
- Significant variations in block prices and block volume thresholds among the providers that use increasing block rate structures.

Tucson's 2001 rate structure possesses the steepest marginal price curve in the Smart Water survey. This steepness is attributed to the sizeable incremental increases in each block price, the number of blocks, and the relatively low "volume triggers" for each block. This is an example of an aggressive increasing block rate structure. As discussed earlier, Tucson also possesses the lowest SFR per capita consumption rate in the Smart Water survey (107 gpcd).

Figure 3.15 also illustrates the significant differences between increasing block rates and uniform or seasonal rates. Uniform and seasonal rate structures do not offer a conservation price incentive by charging higher rates for higher consumption levels. However, the increasing block rate is not a panacea: setting block volumes and prices is integral to this strategy's effectiveness. Although the majority of water providers in the survey implemented an increasing block rate structure, many of the block prices in these structures appear to be set too low to be effective. This ineffectiveness is compounded if the incremental price increases from block to block are negligible.

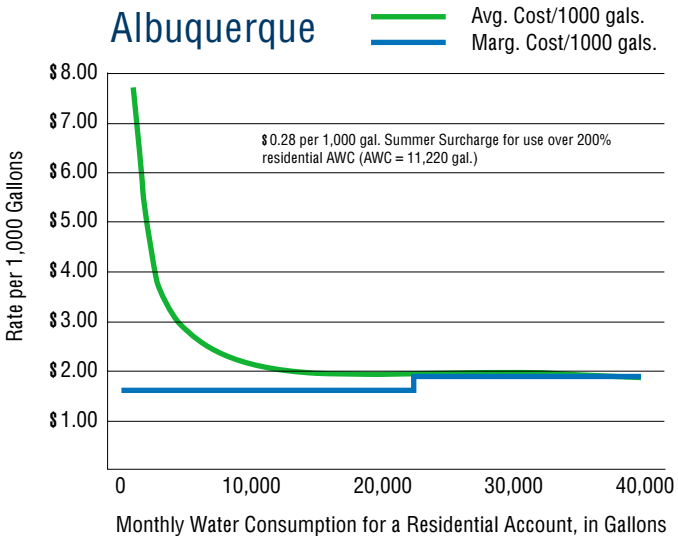
Average Price of Water

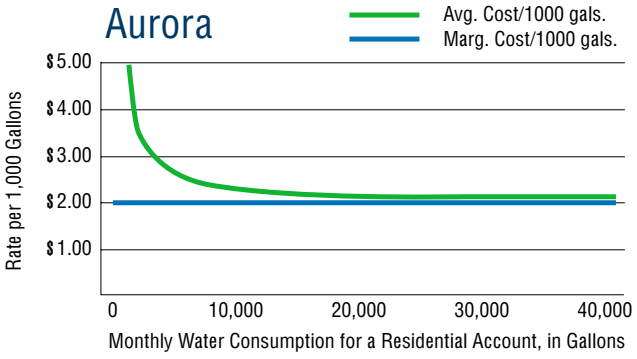
The average price curves in Figures 3.16a through Figure 3.16j show that the majority of water providers in the sampling use price structures that result in relatively flat average price curves as consumption increases, regardless of the chosen marginal price structure. From the perspective of a customer reacting to his/her total bill, a rate structure with declining or flat average costs per unit of consumption does not strongly encourage conservation even on water service systems with increasing block rate pricing (*i.e.*, increasing marginal prices). Although the increasing marginal prices appear to provide a conservation incentive to customers in these service areas, the resulting average price effect isn't much different than that of a uniform price structure (as consumption increases). As discussed earlier, minimal block price increases and high fixed costs (*e.g.*, service charges) typically yield this effect.

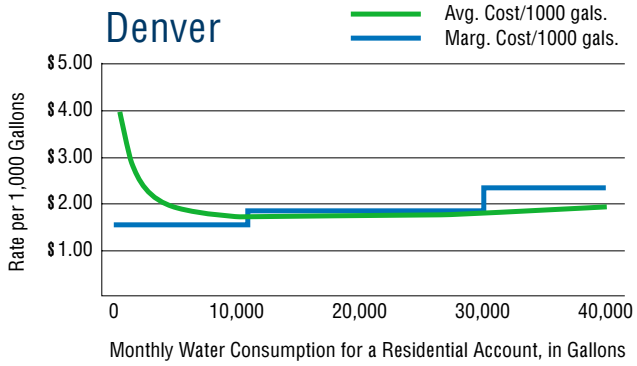
The sampled water providers with average price curves that increase at notable rates as consumption increases are Tucson, El Paso, and Boulder. Significantly, Tucson and El Paso have the two lowest Single-Family Residential per capita consumption rates in the Smart Water Survey, at 107 gpcd and 122 gpcd, respectively. Boulder's SFR daily per capita rate is also below the average of sampled water providers at 140 gpcd. As a wide variety of attributes affect water consumption rates, we cannot provide a statistically significant conclusion on this correlation between rate structures and consumption. Attributes such as other conservation program efforts, societal and cultural values, income strata, and regional climate also have significant effects on consumption rates. However, it is very likely that the distinct aggressiveness of the rate structures in Tucson, El Paso, and Boulder contribute to the relatively low SFR consumption rates in these water service areas.

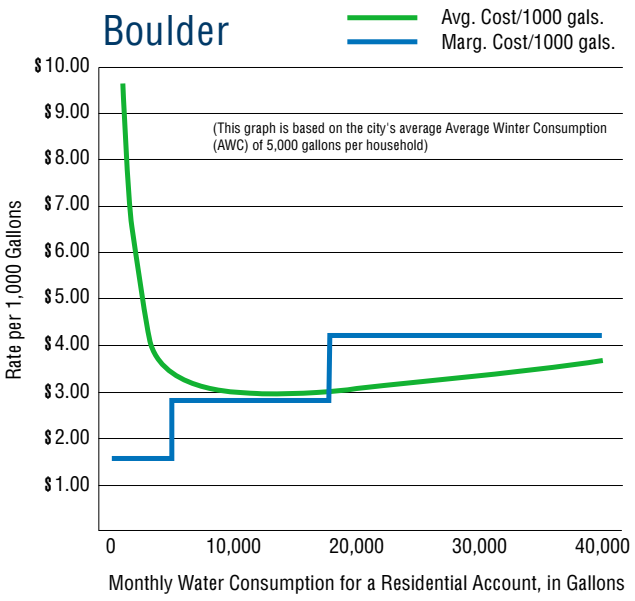
Figure 3.16 a-j

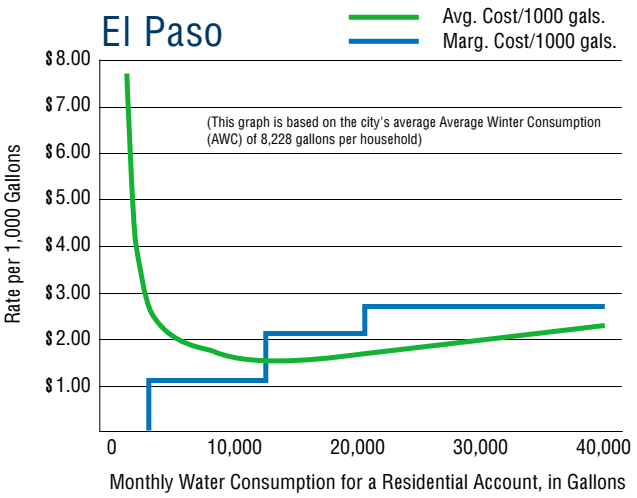
Average Cost and Marginal Cost Curves of Various Water Rate Structures











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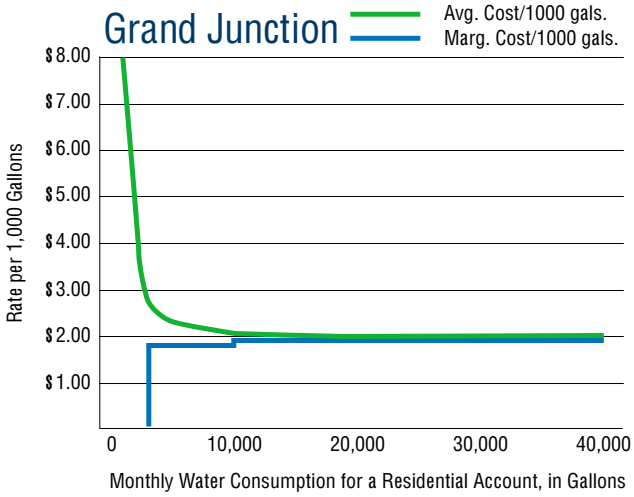
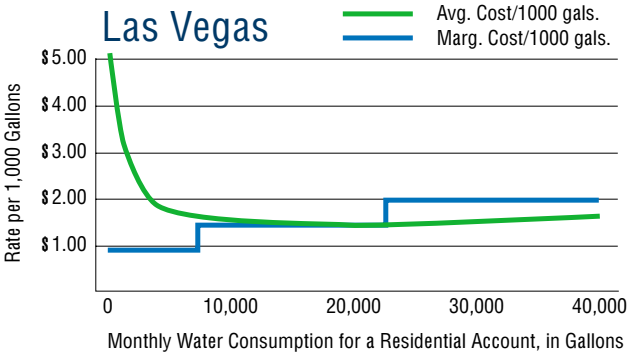
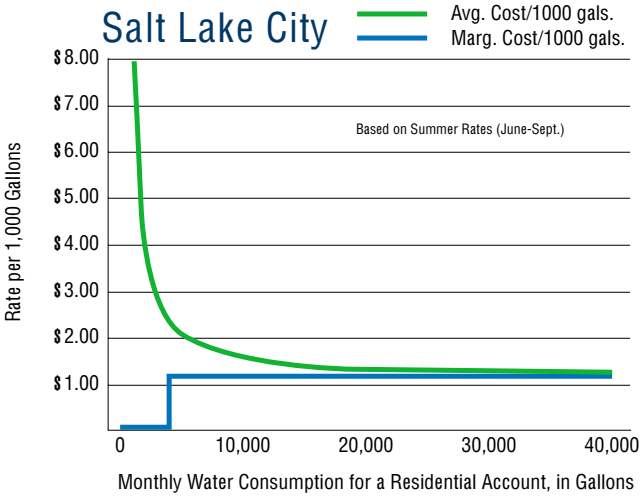
Grand Junction



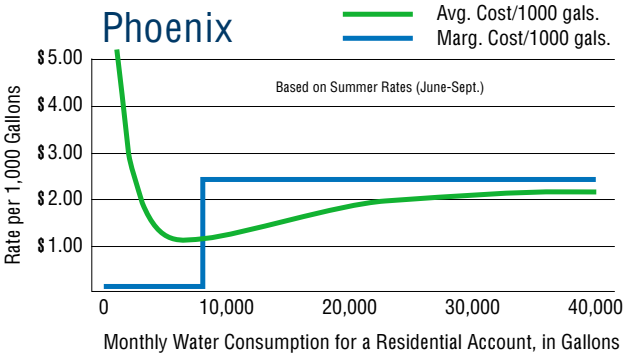
Las Vegas



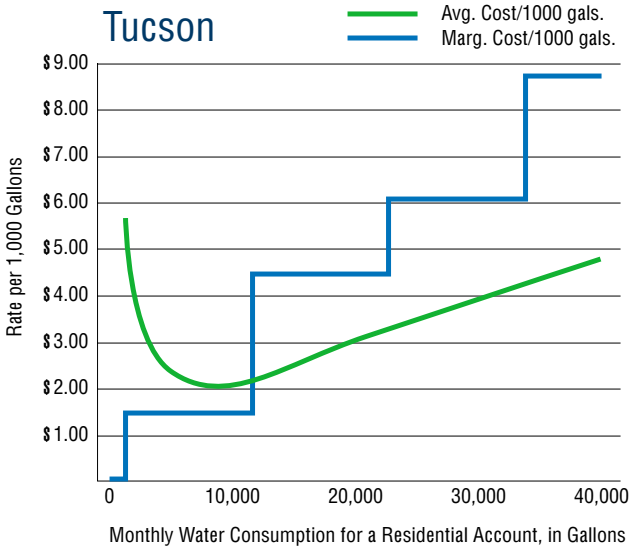
Salt Lake City



Phoenix



Tucson



Total Water Bill vs. Single-Family Residential per capita Consumption

Figures 3.17a through 3.17e display the average total water bills for various consumption levels with respect to the actual Single-Family Residential daily per capita consumption rates. Price data points for the average water bill totals in these charts were extracted from the 2002 Water and Wastewater Rate Survey[27] (conducted and reported by Raftelis Financial Consulting, PA), as well as computed via the 2001 rate structures.

Figure 3.17a

Comparison of 2001 Single-Family Consumption and Monthly Water Bills (for 3,740 gal./month consumption)

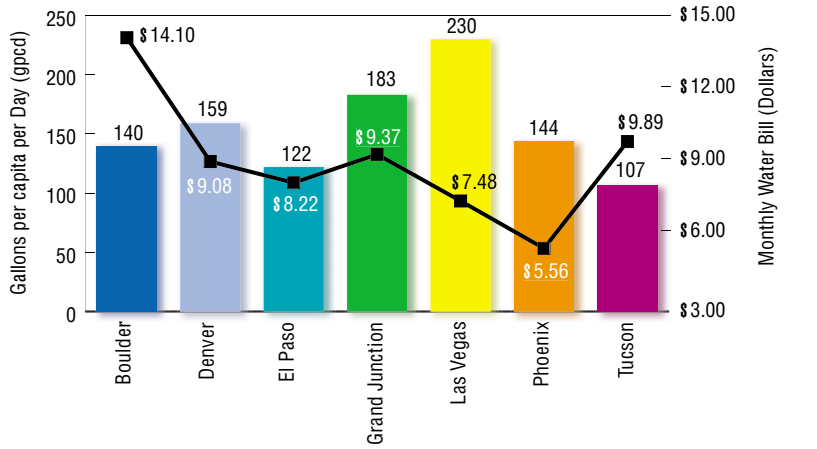
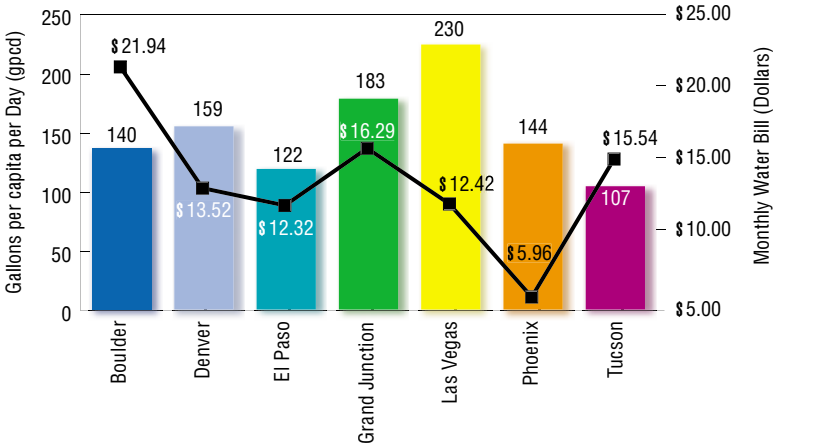


Figure 3.17b

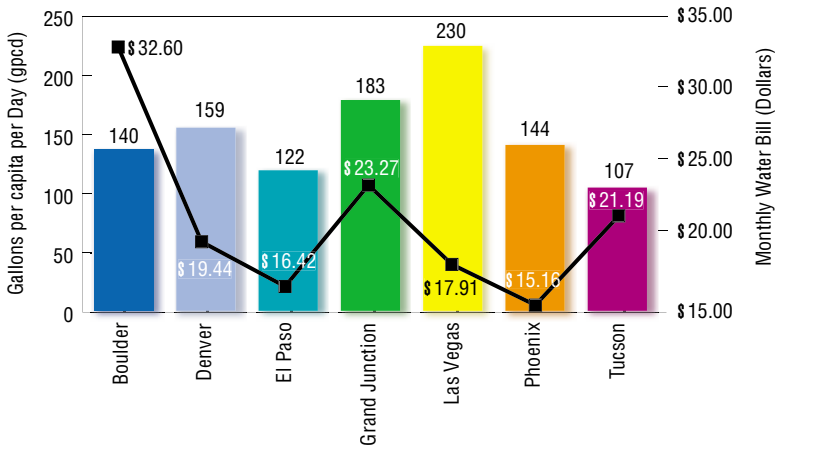
Comparison of 2001 Single-Family Consumption and Monthly Water Bills (for 7,480 gal./month consumption)



At lower consumption levels such as 3,740, 7,480, and 11,220 gallons (Figures 3.17a, 3.17b, and 3.17c, respectively), the correlation between low SFR per capita consumption and water bill amount is negligible. No trend can be concluded.

Figure 3.17c

Comparison of 2001 Single-Family Consumption and Monthly Water Bills (for 11,220 gal./month consumption)



27 Raftelis Financial Consulting, PA, *Raftelis Financial Consulting 2002 Water and Wastewater Rate Survey*, Charlotte, N.C.: Raftelis Financial Consulting, PA, 2002.

As consumption levels increase to 22,440 and 44,880 gallons (Figures 3.17d and 3.17e, respectively), some possible correlation trends become apparent. For these higher consumption level categories, the SFR per capita consumption rates appear to decrease as the water bill amounts increase, and vice versa. Since the sample size is too small to draw any statistically significant correlations between water pricing and per capita consumption, these results must be viewed in a qualitative manner.

These graphical displays effectively demonstrate the intrinsic objective of aggressively increasing block rate structures. When average costs increase with consumption, consumers that do not use high volumes of water will pay relatively low unit prices for their water (and subsequently have lower total bills), whereas high-end consumers will receive bills that increase significantly with use.

Figure 3.17d

Comparison of 2001 Single-Family Consumption and Monthly Water Bills (for 22,440 gal./month consumption)

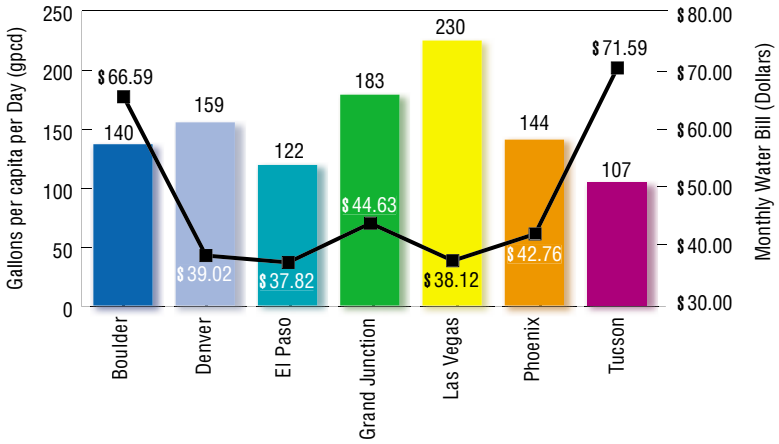
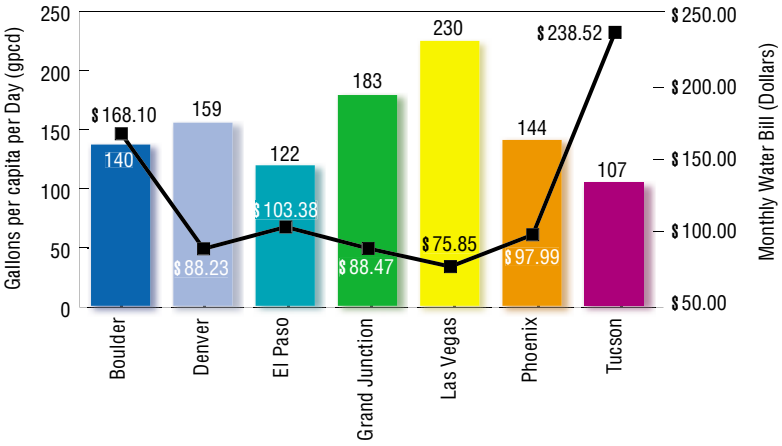


Figure 3.17e

Comparison of 2001 Single-Family Consumption and Monthly Water Bills (for 44,880 gal./month consumption)



Chapter 3

2001 Conservation Budgets

The Smart Water survey requested information from providers regarding their expenditures on conservation in 2001. Figure 3.18 displays each water provider's conservation budget with respect to its total budget, as a percentage.[28] Since accounting practices and conservation budget definitions vary for each water provider, the information is not strictly comparable. Regardless, the most notable result of Figure 3.18 is the surprisingly low budget allocation to conservation efforts. This sampling indicates that, on average, only 1 percent of total water service budget funds conservation efforts in our region. Although water service budgets must address a wide range of other operation and maintenance costs, one would expect a stronger budget emphasis on system-wide conservation, particularly given the very limited water supplies and the substantial costs associated with new water supply development projects.

Figure 3.18

2001 Conservation Budget, as a Percentage of Total Water Budget

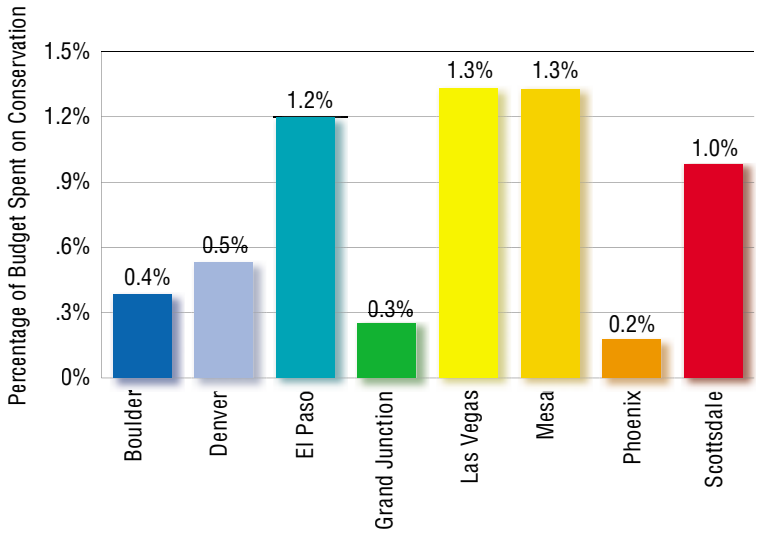


Photo by Jeff Widen.

28 Some of the smaller water utilities do not include "conservation" as a separate budget line item. Instead, conservation program funding is often drawn from the utility's general fund or operations budget in such cases. Therefore, it is not appropriate to include these water providers in the conservation budget comparisons since we do not have the specific dollar amounts allocated to conservation efforts.

Chapter 3

2002 Drought Response Measures

Response to the drought in 2002 revealed considerable "slack" in the water system.

The severe drought of 2002 hit nearly every area of the southwestern United States. The drought conditions prompted many urban water providers to pursue immediate, short-term reductions in water use throughout the region through temporary "drought response" measures. In 2002, a large portion of the water savings resulted from outdoor watering restrictions. These watering restrictions, if mandatory, proved to be very effective in lowering system demand. A comprehensive look at water providers on the Front Range of Colorado found savings measured in expected per capita use ranged from 18 to 56 percent.[29] Water providers in the region also implemented a variety of other temporary and permanent conservation measures in response to the drought conditions in 2002, including higher water rates, drought surcharges, public education drives, and appliance and landscape rebate programs to name a few.

Dillon Reservoir during the drought-stricken summer of 2002. *Photo by Denver Water.*

Table 3.6 lists drought response measures and successes for various municipal water providers in Colorado. Of special note is the column reflecting "Savings Achieved" by instituting the various drought response measures. In a very short period, many Colorado water providers were quite successful in achieving large decreases in demand. However, it is unclear whether such demand reductions can be maintained over the long term, or even if they should be. These measures often resulted in brown lawns, among other results. Brown lawns are not an example of efficiency but permanent low water-using landscapes are. In any event, while we point to these results to illustrate the degree of slack in the system, we favor an incentive-based approach to conservation.

During and since the summer of 2002, many water providers discussed or enacted new, potentially more permanent water conservation measures. These program and policy changes involved measures such as water appliance rebate programs, Xeriscape rebate programs, more aggressive increasing block rate structures, lawn watering standards, and landscape ordinances for new development. Some water providers have introduced and maintained these new measures as permanent changes.

When the drought conditions subsided in some areas in 2003, however, many water providers terminated the conservation programs and measures that were instituted in late 2002 and early 2003 and took other considerations off the table. Some water providers in the region have already gone back to their old ways. This difference in post-drought behavior underscores the very important distinction between short-term reaction and deep-rooted, long-term policy shifts. To maintain sustainable urban water supplies as our populations grow and future droughts occur, we need to pursue long-term policy change.

29 *See* Doug Kenney and Roberta Klein, "Use and Effectiveness of Municipal Water Restrictions During Drought in Colorado" (2003).

Table 3.6 2002 Colorado Front Range Drought Restrictions

Water Provider	Savings Goal	Savings Achieved	Effective Dates	Watering Days	No Watering Hours	Watering Time Limit	New Landscaping	Variances	Car Washing	Other
City of Aurora	20% of outdoor use from 2001	20% of outdoor, 7% overall	May 15-Aug. 31	every 3rd day	9 am-6 pm	no limit			on watering days	water rate surcharge
			Sept. 1-Oct. 14	every 3rd day, not on Sun.	7 am-7 pm	1 hr. per day	none allowed	n/a	on watering days	
			After Oct 15	lawn watering banned	n/a	n/a	n/a		no home car washing	
City of Boulder	25% of avg. use based on 2000 & 2001	28-30%	June 5, 2002	2 days per wk. (includes all outdoor watering)	9 am-6 pm	15 min. per zone	none allowed		w/bucket or hose nozzle	no washing hardscape, fill kids pools 1X/day
Colorado Springs Utilities	20% of outdoor use in 2001	18% of outdoor use, 9.5% overall	Jun. 11-Aug. 27	every 3rd day	9 am-7 pm	no limit	by permit: sod-6 wks., seed-8 wks.	alternative management plans, large properties	on watering days	
			Aug. 28-Sep. 30	2 days per wk. (includes all outdoor watering)	9 am-7 pm	3 hrs. per day	by permit: sod-24 days, no seed	alternative management plans, large properties	on watering days	water rate surcharge
			Oct. 1-Apr. 1	once per month	3 pm-9 am	no limit	by permit: sod-14 days (install by 10/15)	hardship, additional savings	on watering days	
Denver Water	30% of expected use	27%	July 1-Aug. 31	every 3rd day	9 am-6 pm	3 hrs. per day	by permit: sod-3 wks., seed-4 wks.	hardship, large properties	on watering days, w/bucket or hose nozzle	serve water on request, shut off fountains, no washing hardscape
			Sep. 1-Sep. 30	every 3rd day, not on Sun.	9 am-6 pm	2 hrs. per day	none allowed	sports playing fields	on watering days, fleet washing 1X/wk.	water rate surcharge, hotel sheet washing every 4 days
			after Oct. 1	lawn watering banned	n/a	n/a	n/a	sports playing fields	home car washing w/ bucket (not hose), fleet washing 1X/wk.	water tap surcharge
City of Fort Collins	10% of average use based on 2000 & 2001	9.5%	July 22-Sept. 26	2 days per week	10 am-6 pm	no limit	3 wks. sod, 4 wks. seed	medical hardship, multiple address, >4 acres	no limits	none
			after Sep. 27	1 day per wk.	10 am-6 pm	no limit	4 wks. sod, 6 wks. seed	medical hardship, multiple address, >4 acres, religious objections	no limits	none
City of Greeley	15% of Sept. 2000	13%	May 1-July 2	every other day	1-5 pm	no limit	sod & seed exempt	none	no limits	
			July 3-Oct. 1	every 3rd day	10 am-6 pm	no limit	by permit: sod-4 wks., seed-6 wks.	medical hardship, multiple address, >4 acres	on watering days, w/bucket or hose	no washing hardscape, public plumbing fixtures
			Oct. 15-Apr. 15	lawn watering banned	n/a	n/a	by permit: sod-4 wks., seed-6 wks.	none	no waste allowed	considering inclining block rate or budget
City of Lafayette	75% outdoor, 35% overall			1 day per wk.	7 am-8 pm, 10 pm-5 am	2 hrs. per day	none allowed	none		
City of Loveland	20%		June 6-Nov. 1	2 days per wk. (includes all outdoor watering)	10 am-6 pm	no limit	sod & seed exempt	none	no limits	none
City of Thornton	15% of Sept. 2001	23.7%	Sept. 1	every 3rd day	none	3 hrs. per day	by permit: only front yards in new construction	medical hardship	on watering days, w/bucket or hose nozzle	none
City of Westminster	20% of average use based on 2000 & 2001	25%	Aug. 1-Sep. 9	every 3rd day	9 am-6 pm	2 hrs. per day	no turf, trees & shrubs w/drip	hardship, large properties	no limits	
			Sep. 10-Sep. 30	2 days per wk. (includes all outdoor watering)	9 am-6 pm, 10 pm-5 am	2 hrs. per day, 10 min. per zone	no turf, trees & shrubs w/drip	hardship, large properties	no limits	water rate increase
			Oct. 1	lawn watering banned	n/a	n/a	no turf, trees & shrubs w/drip	none	no home car washing	

Source: Compiled by City of Fort Collins Utilities.

Chapter 3

Observations and Conclusions of Comparative Analysis[30]

"Any river is really the summation of the whole valley. To think of it as nothing but water is to ignore the greater part."
-Hal Borland

From "This Hill, This Valley"

The Smart Water survey and data analysis yielded the following conclusions:

- Water use efficiency, as measured by per capita use, varies substantially between cities.

- There is a large potential for improving urban water efficiency throughout the Southwest. A comparison between Single-Family Residential consumption rates, outdoor and discretionary use rates, and Unaccounted For Water (UFW) percentages reveals much room to improve water use efficiency. An "efficiency target" water provider exists in almost every variable category, setting the benchmark toward which others can strive. These benchmarks hint at a vast potential for water savings.

- Little or no correlation exists between municipal water consumption and climate conditions. Intuitively, we'd expect that water providers in hot, dry areas would need more municipal water to sustain urban landscapes. However, water service areas in hotter, drier areas of the region do not necessarily use more water per capita. The water providers with the lowest SFR per capita consumption rate in this study experience very similar climate conditions as the water providers with some of the highest SFR per capita consumption rates in the study.

- Outdoor, or elective, water consumption accounts for a large proportion of total water sold to municipal customers, offering the biggest target for future water savings.

- Rates of Unaccounted For Water (UFW) vary substantially between water providers. Collectively, the 13 Smart Water survey participants lost track of nearly 39 million gallons (119,000 Acre-feet) of water in the region in 2001 (real and apparent losses). Although some UFW will always exist (due to fire fighting, system flushing, etc.), a substantial potential exists for minimizing or eliminating both real losses (*e.g.*, leaks) and apparent losses (*e.g.*, faulty metering, accounting errors, etc.). The effectiveness of a water provider's conservation message to customers may be compromised if the water provider itself is "losing" significant amounts of water.

- Increasing block rate structures that communicate to their users that avoidable costs increase as consumption rises are effective in promoting cost-based water use efficiency among consumers, as long as the price increases are steep enough to get the attention of water users. Rate structures that yield inclining marginal price curves *and* average price curves tend to be most effective in promoting water use efficiency among consumers. Increasing block rate structures also tend to be fair, if they are established to charge high-volume users for the provider's avoidable costs of serving discretionary, outdoor use.

30 The observations and conclusions that follow represent the position of Western Resource Advocates and not necessarily those of the individual water providers who participated in this study.

- Many water providers throughout the Southwest are beginning to take a multi-dimensional approach to planning and implementing a conservation program. This appears to be the most effective means used by providers to affect demand-side water use efficiency. Since every water customer may have his/her unique response "trigger" or "motivator", providers must consider a wide array of conservation opportunities and incentives (*i.e.*, via rate structures, rebates, education, and regulation).

- The majority of water providers have not assessed the cost-effectiveness of their particular conservation programs. Although detailed benefit/cost analyses are often conducted to justify structural water supply improvements, this level of analysis for water use efficiency measures is virtually non-existent.

- Regionally, customer self-monitoring could be improved. Water customers are more likely to become more efficient if they have a better, up-to-date understanding of their current consumption patterns. Some examples of such opportunities include distribution programs for direct-use meters (*e.g.*, for self-monitoring of landscape irrigation) and interactive billing websites that provide real-time consumption rates for customers. For some water providers, the transition from bi-monthly billing to monthly billing will also improve customer awareness and reaction.

- The preferences and expectations of a developed urban landscape appear to vary considerably throughout the Southwest. Some urban areas are embracing the concept of Xeriscape designs in most new developments (and actively retrofitting existing developments with Xeriscape), while other urban areas are still encouraging widespread use of non-native bluegrass lawns. These differences become very apparent when the makeup of a city's urban landscape is compared against its surrounding natural landscape. Some cities are adjusting their urban landscapes to fit the arid or semi-arid climate and landscape, some are not.

- On average, only 1 percent of total water service budget is allocated to conservation efforts in our sampling of water providers in the region.

Space for Notes

Irvine Ranch Water District's

Allocation-Based Rate Structure

Presentation to
Association of California Water Agencies

What is an Allocation-Based Rate Structure?

- Allocates water to customers based upon land use-specific indoor uses and landscaping needs
- Encourages use within allocation through a significantly tiered commodity pricing system
- Provides revenue neutrality for agency
- Generates “penalty” revenue for water conservation, urban runoff prevention and treatment

Rate Structure Development History

- Motivated by drought in late 1980's
- Revenue stability impacted by drought

Water Conservation Effect

Water Shortages

→ Implement Conservation Measures

→ Water Sales Decline

→ Water Revenues Decline

→ Demand Equals Supply

Outcome

- Conservation goals met
- Fabulous community response
- Additional measures avoided
- Pumped and imported water needs reduced
- It's all good

Or is it?……

Rate Structure Development History

- Two Initial Objectives:
  1. Separate fixed and commodity charges
  2. Encourage conservation through a commodity pricing mechanism
- Six-Month Process to:
  - Develop rate "philosophy" (allocation/tiers)
  - Conduct demographic research
  - Determine allocations
  - Test the allocations
  - Perform software programming
- Customer Transition/Education Process

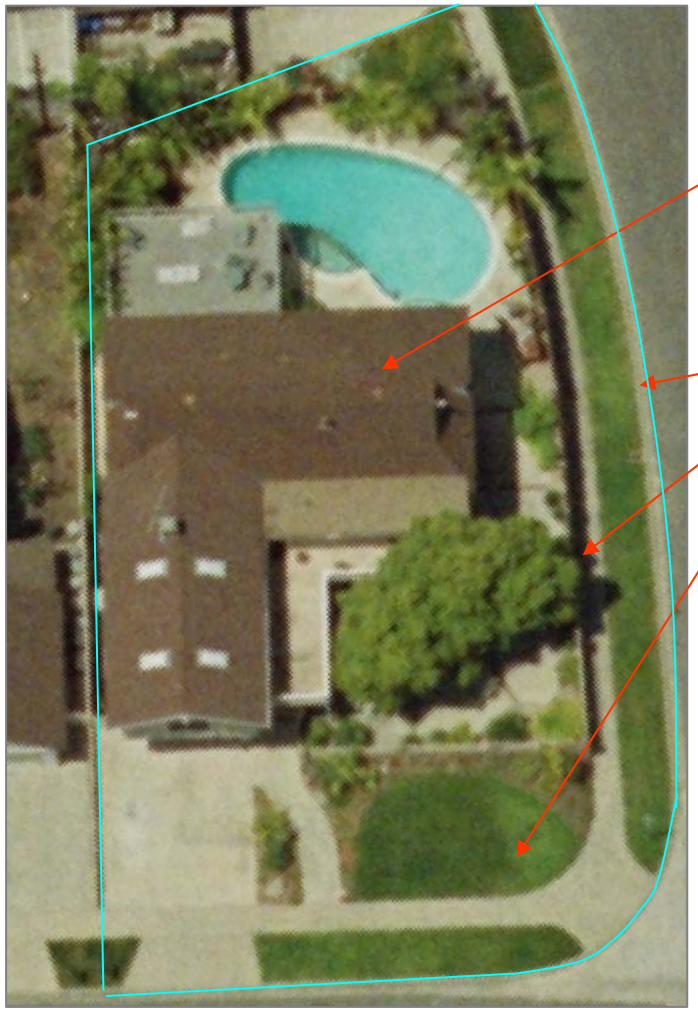
Residential Base Allocations

- Single-Family Residence
  - 4 Occupants
  - 75 Gallons Per Person Per Day
  - 1,300 Square Feet of Landscaping

- Townhouse/Condominium
  - 3 Occupants
  - 75 Gallons Per Person Per Day
  - 435 Square Feet of Landscaping

- Apartment
  - 2 Occupants
  - 75 Gallons Per Person Per Day
  - No Landscaping

Refinements to Residential Base Allocation



Single Family Detached House (4 occupants)

+

Outdoor Allocation:

- Irrigated area seasonal needs (Eto)

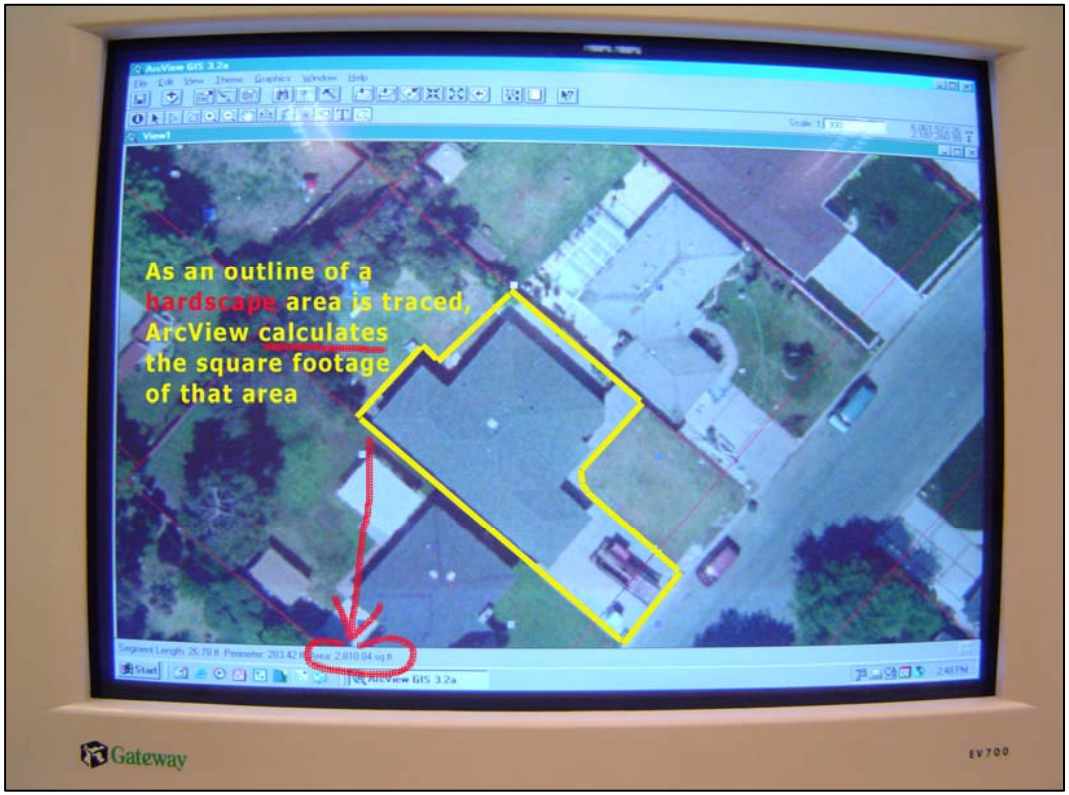
+

Variances:

- Pool
- Additional occupants
- Medical needs
- Others

Allocations for Non-Uniform Sites

- Total lot area information from GIS
- Landscaped area determined as % of the lot area - ratios established
- Variances applied



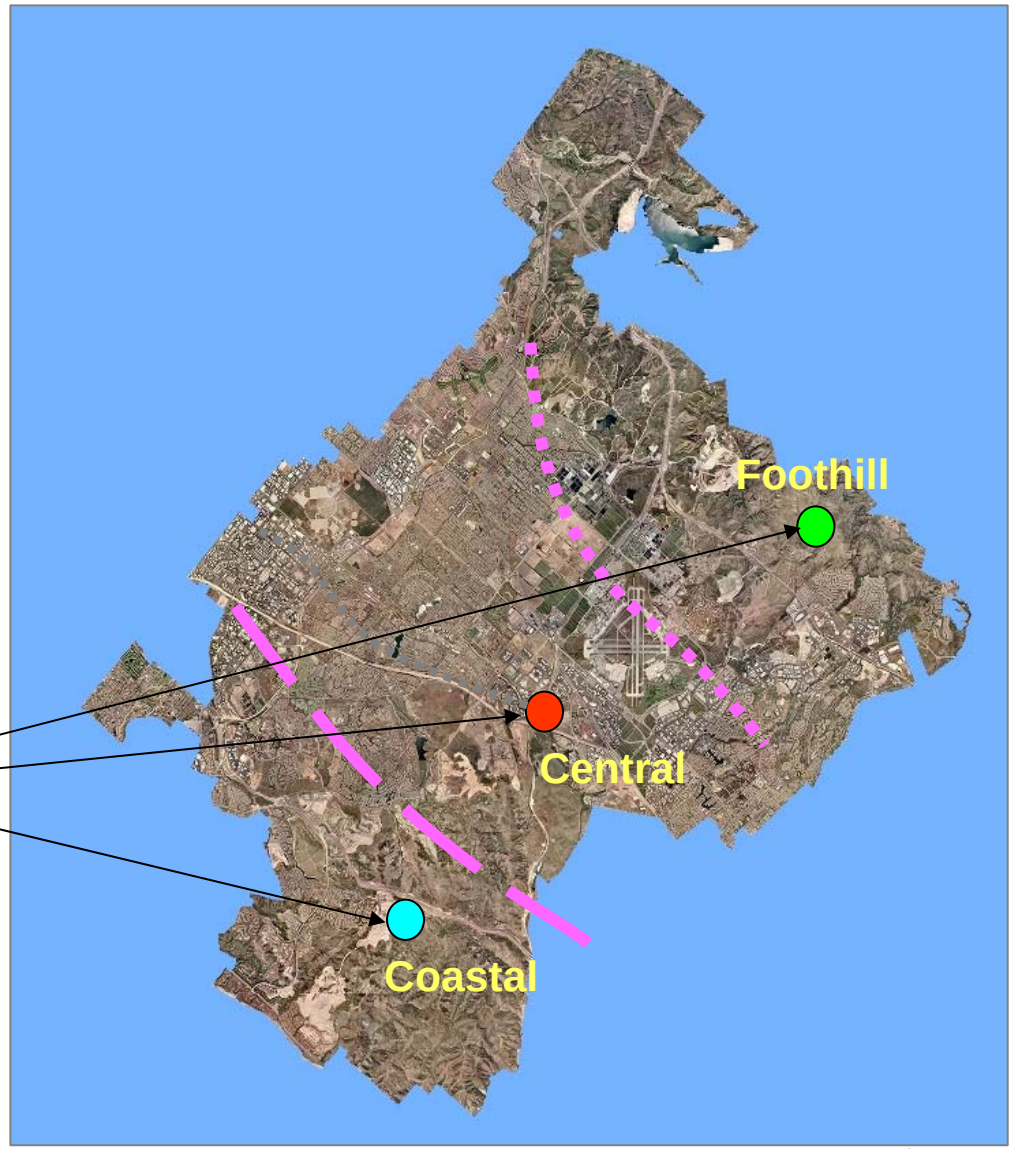
Allocation system works in both new and old neighborhoods

Commercial Allocations

- Based upon:
  - Historic Use
  - Equipment (e.g. cooling towers, processes)
  - Number of Employees

Landscape Allocations

- Based upon landscaped area and real time evapotranspiration
  - Cool season turf
  - Irrigation system efficiency - 80%
- IRWD has three weather stations (IRWD originally used historic Eto data)



Rate Structure - Residential

TIER	BREAK POINT (% of Allocation)		RATE	
Low Volume	0 - 40%		$0.91	100% of water needed for indoor/ outdoor uses
Base	41-100%	Base rate	$1.07	
Inefficient	101-150%	2x base	$2.14	
Excessive	151-200%	4x base	$4.28	
Wasteful	201+%	8x base	$8.56	

- Typical Residential Fixed Charge = **$ 7.50/month (3/4" meter)**
- Typical Residential Commodity Bill = **$15.00/month (15 ccf)**

  $22.50/month – typical

- Rates among *lowest* in County

Sample Residential Water Billing - Overuse

8/10/08	9/09/08		1255	1337	82 CCF
USAGE - LOW VOLUME DISCOUNT			16	0.91	$14.56
USAGE - CONSERVATION BASE RATE			23	1.07	$24.61
USAGE - INEFFICIENT			20	2.14	$42.80
USAGE - EXCESSIVE			19	4.28	$81.32
USAGE - WASTEFUL			4	8.56	$34.24
WATER SERVICE CHARGE				$7.50	

YOUR ALLOCATION FOR THIS BILL 39 CCF

BILL CALCULATION BASED ON 0.12 ac. / SFD

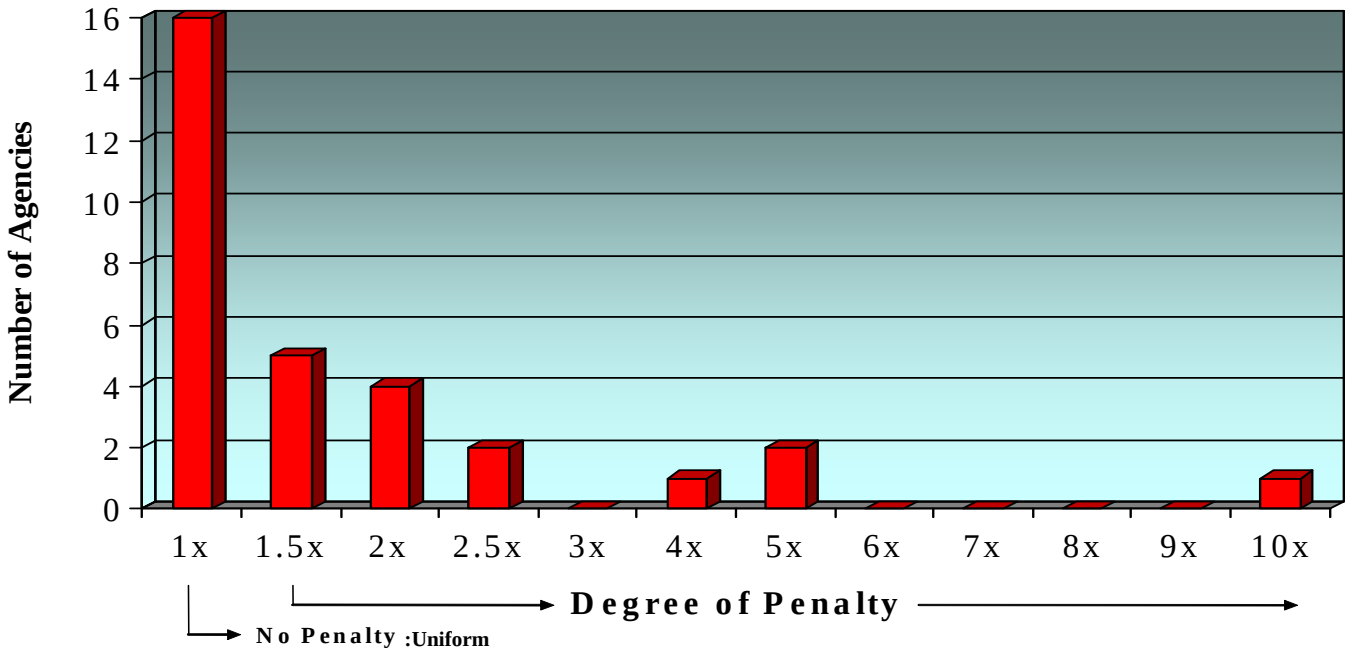
Over allocation use pays penalty rates, discourages overuse

TO AVOID LATE CHARGE PAY BEFORE 10/07/08 $197.53

Commodity Within Allocation	$ 39.17	20%
Commodity Above Allocation	$158.36	80%

Not all "Conservation" Rates Send a Signal

"Low" to "High" Pricing Tiers



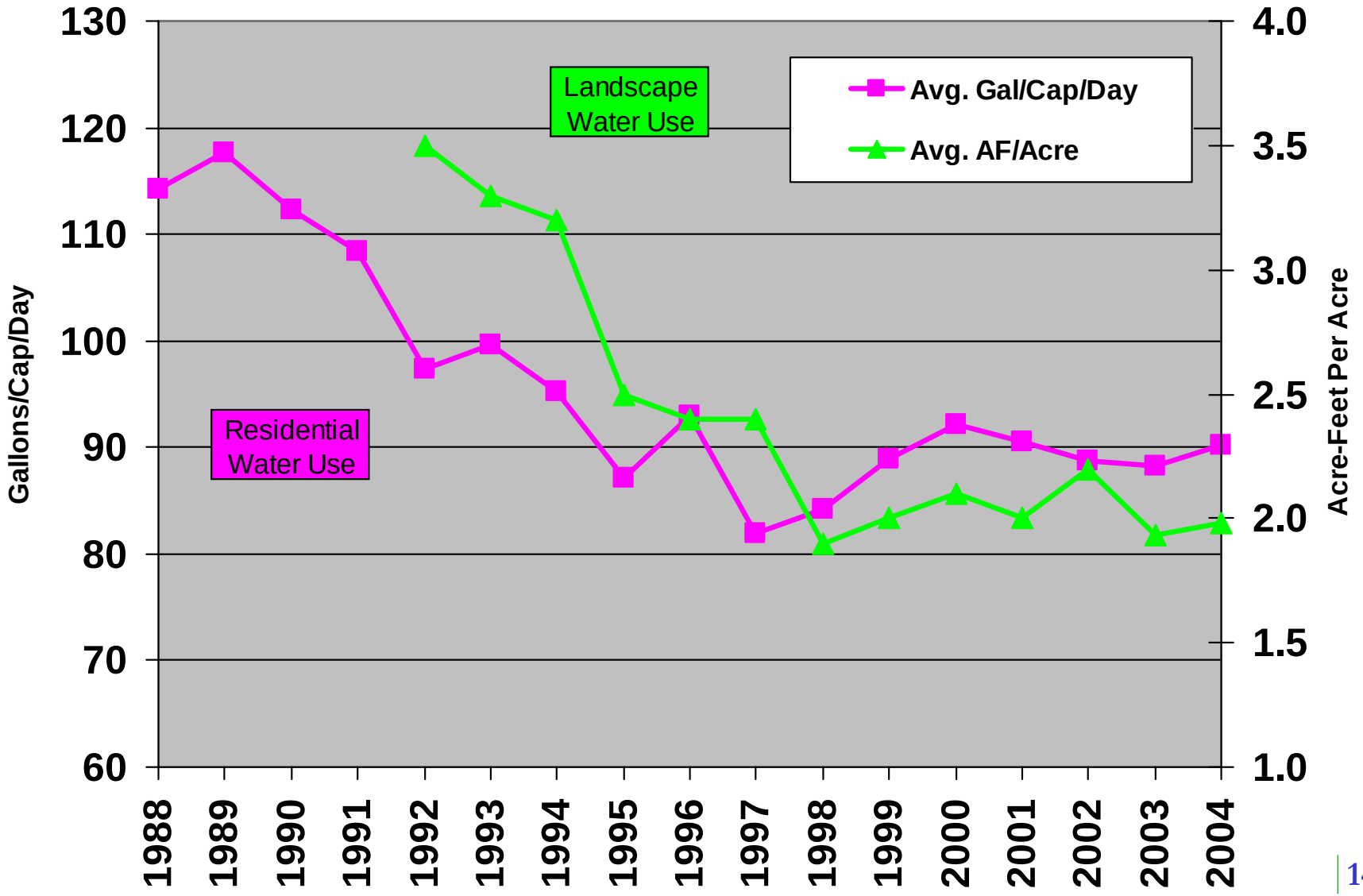
- At 2x Penalty at 40 ccf (50% overuse):

	(fixed)		(water)		
-Bill Without Penalty:	$13	+	$27 =	$40	Little financial impact
-Bill With Penalty:	$13	+	$34 =	$47	

- Cable TV/Internet = $106.50

Allocation-Based Rate Structure Results

IRWD Residential and Landscape Water Usage



Results: Rate Structure Reduces Water Use

- Since Rates Adopted in 1991:
  - Average Water Use Dropped from 3.5 AF/acre/yr to 1.9 AF/acre/yr.
  - Stabilization of Dry Weather Runoff
  - Changes in Plant Material Selection - more “California Friendly” landscaping

- From 1992 to 2000:
  - Irrigated Area Doubled
  - Water Use Increased by 3%

Allocation Based Rate Structure - Financial

- Number of Customer Accounts: 96,000
- Residential Customers in "Penalty" Tiers:

"Inefficient"	=	14%
"Excessive"	=	3%
"Wasteful"	=	3%
		20%

- Penalty Revenue Available = $2.5 million
- Reinvestment of Penalty Revenue:
  - Water Conservation Programs /Incentives = $700,000
  - "Low Volume" Discount Incentive = $1,000,000
  - Recycled Water Programs = $800,000

Rate Structure Funds Water Efficiency

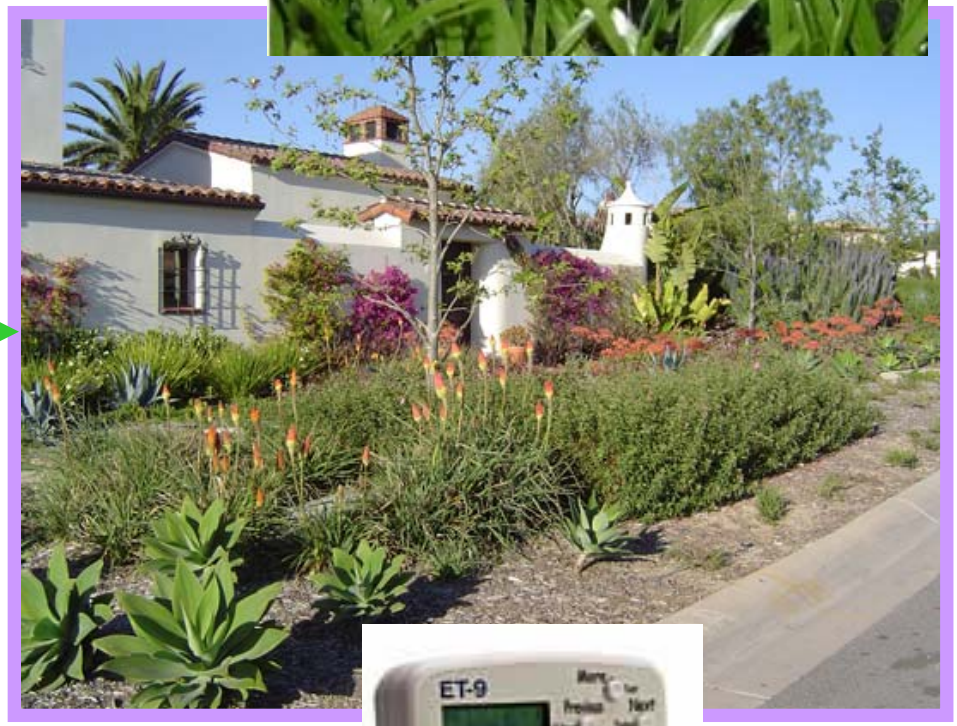
Residential Programs:

- High Penalty Outreach
- Free Residential Surveys
- Residential Education/Workshops
- Financial Incentives:
  - High Efficiency Toilets
  - High Efficiency Clothes Washers

Rate Structure Funds Water Efficiency

Landscape Programs:

- Water Management Report Card
- Irrigation upgrades
- California Friendly landscaping
- Rotary nozzle rebates
- Weather-based irrigation controllers



Rate Structure Funds Water Efficiency

Commercial, Industrial, Institutional:

- Free site surveys – targeted at high penalty use
- Financial Incentives:
  - High efficiency toilets and urinals
  - Cooling tower conductivity controllers
  - Industrial process improvements

Recycled Water Programs

- First dual-plumbed building (1991)
  - Toilets and urinals
  - 42 buildings as of Feb 2008
- Cooling towers
- Industrial process (carpet dyeing)

Five dual-plumbed high-rise buildings - The one on far left uses recycled water in cooling tower on roof

Funds Urban Runoff Treatment

San Joaquin Marsh

- 320 ac. owned and managed by IRWD
- 68 acres of treatment ponds
- 3.5 mgd
- Removes 70% of nitrogen from San Diego Creek (75,000 pounds per year)
- Removal of 50,000 tons of sediment and 10,000 pounds of phosphorus per year from desilting basins

What's Needed to Implement?

- Customer Data Base and Method to Develop Allocations
- Evapotranspiration Data
- Customer Service Follow-through
  - Billing Adjustments (leaks)
  - Service Establishment
- Changes to Billing Engine
  - No substantive changes were made to accommodate the new rate structure
  - Off-the-shelf billing programs are available
- Customer Transition/Education Plan
- Political Support

Summary

Allocation-Based Conservation Rates

- Strong price signal
- Provide revenue stability to agency
- Provide customer equity
- Over-use and water waste penalty tiers fund demand-management programs
  - Conservation
  - Recycled Water
  - Urban Runoff Treatment

Chapter 2

Water Use Efficiency: State-of-the-Art

Overview

Municipal water utilities in the United States and around the globe are increasingly aware of the narrowing gap between growing demands and finite supplies. This includes water utilities in the Southwest, which is both the fastest-growing and the driest region in the U.S.

With water so precious and scarce, one might expect all municipal water providers in this region to be world leaders in water conservation and efficiency. However, this is not yet the case.

To date, most western water providers have not come close to tapping the full potential of water conservation or to optimizing the efficiency of their existing facilities and delivery systems. Cities in other parts of the country, notably New York, Boston, and Seattle, made system-wide demand reductions of 20 percent or more in the 1990s. These coastal cities' efforts, focusing mainly on indoor use, obviated the need for new dams and wastewater treatment facilities. Factoring in potential reductions in outdoor use, western cities might achieve even greater savings. Creative supply-side alternatives can boost efficiency even further.

The engineers of the past century constructed a vast series of reservoirs and made way for tremendous population growth in the Southwest. As growth continues into the 21st Century, the engineers of today have a wide range of new and often cost-effective options to more effectively use our limited water resources. It is our collective challenge to take advantage of these new water efficiency technologies and practices to maximize our water use efficiency for both water supply systems and customers' demands.

This chapter describes the state-of-the-art technology, policies, and programs that are available to render our water use more efficient in this arid region. We present information on both the supply-side and demand-side of water use efficiency. By supply-side efficiency, we refer to ways that stretch existing, developed water supplies without constructing massive new dams, diversions, or pipelines. Demand-side efficiency refers to water conservation, but without loss of quality of life.

Both sides of the efficiency equation must be pursued not only to maximize the beneficial use of our scarce water resources but also to show that urban water suppliers and their customers have roles to play in water efficiency. In our view, the information in this chapter is every bit as important to westerners in the 21st Century as construction of Hoover and other dams was to westerners in the 20th Century.

"There once were men capable of inhabiting a river without disrupting the harmony of its life."

-Aldo Leopold

from "Song of the Gavilan" (1940)

Photo by Brian Holmes.

Photo by the Bureau of Reclamation.

Chapter 2

Supply-Side Water Efficiency Measures

Implemented on a broad scale, state-of-the-art supply-side measures can augment existing water system supplies and allow the downsizing or even avoidance of new, traditional supply development to meet future growth. This section describes many of these supply-side efficiency measures. In so doing, we do not endorse their use in every situation. Costs or environmental impacts may preclude their use under local conditions. However, these measures often provide significant benefits to urban water providers, suggesting they be reviewed by providers in their long-term planning and implemented where appropriate.

Water main maintenance. *Photo by the American Water Works Association.*

A. Water Loss Management

Urban water suppliers lose copious quantities of water from their systems due to leaks and other causes. Water loss management in collection and delivery systems is integral to maximizing supply-side water use efficiency. Being attentive to delivery system leak detection and repair, accurate metering, and dam/reservoir maintenance and repair is necessary to achieve this goal.

1. Leak Detection and Repair

System leak detection and repair is a fundamental component of water loss management. This efficiency measure is a vital responsibility of the water supplier, and involves vigilant monitoring of collection and distribution systems (i.e., water storage and conveyance systems, water treatment facilities, municipal water main networks, etc.). We can save vast quantities of water by reducing or eliminating system leaks. Methods for water auditing, performance measurement, and leakage management are usually very cost-effective and self-sustaining, often a winning solution for all parties involved. Night flow assessment,[1] sonic leak detection, and strategic replacement of old deteriorating water mains are all excellent tools.

The value that a community places on water is likely to be inversely proportional to the amount of water loss that it tolerates. The 1995 United States Geological Survey data show a difference of nearly 6 billion gallons per day between source water withdrawals and water consumed in the United States.[2] This is nearly enough water to satisfy the total water demand of all use sectors for the entire State of Arizona (i.e., municipal use, agricultural use, industrial use, etc.).[3] As a direct result of system leaks, riparian and aquatic

1 "Night Flow" assessment refers to the monitoring of water flows during low-use periods (i.e., middle of the night) to search for possible pipe leakage (since actual consumer demands are typically low or negligible during these periods).
2 U.S. Geological Survey, "*Water Uses in the United States*" *1995 data*, water.usgs.gov/watuse/. Note: this figure includes firefighting and meter error as well as actual leakage.
3 *Id*. at 4. In 1995, the State of Arizona used a total of 6.8 billion gallons of surface water and groundwater per day for use in all sectors, including municipal, agricultural, and industrial.

ecosystems suffer unnecessarily, water suppliers lose millions of dollars annually, unnecessary water system infrastructure is built, and anywhere from 10 to 15 billion kilowatt hours of energy are wasted annually on water that never reaches the tap.[4] Other nations faced with similar challenges, particularly in the United Kingdom, have led the way in developing cost-effective methods to manage water loss.

Water loss consists of both real and apparent losses. In the water supply industry, these losses collectively are referred to as Unaccounted For Water (UFW).[5]

Real losses refer to the actual volume of water that physically leaks from the system. Although the real losses may eventually recharge an underlying aquifer, in most cases in our region, a "real loss" represents a direct and unnecessary water loss to nearby or distant surface water tributaries (sometimes in an entirely separate river basin). Leaks also correspond to financial losses to the utilities and taxpayers, both of whom pay to treat and transport water that never arrives.

Apparent losses (also called "paper/computational" losses) are miscalculations or metering errors. Apparent losses also represent services rendered without payment received. These losses may not be as destructive to water sources as real losses but may damage the efficiency of the overall water supply system in that they distort consumer water use data that is critical for developing future demand models and conservation plans, building water supply infrastructure, and designing equitable pricing mechanisms. The scope of apparent losses occasioned one water provider to say: "accountants peering in from outside of the water supply field might regard our industry as careless, complacent and not accountable for the water that it manages."[6]

The responsibilities of both suppliers and consumers of water are inextricably intertwined. When water districts experience real water losses at volumes comparable to what consumers are being asked to conserve, the ground is less fertile for promoting an ethic of conservation. To maintain a clear, consistent conservation message, water loss management efforts by water suppliers must meet or exceed the expectations of consumers to conserve water. As discussed in detail in Chapter 3, several surveyed water providers have reduced their Unaccounted for Water to less than 5 percent of total supply withdrawals.[7]

2. Metering

Accurate accounting of water withdrawals, deliveries, and sales is critical to designing equitable rate structures, tracking UFW, and allowing consumers to monitor their conservation progress. The importance of an expanded metering system that is frequently calibrated has been clearly demonstrated by the City of Denver.

Water Metering Example

Denver, Colorado

The City of Denver's water utility, Denver Water, estimates that by 1999 it had saved 28,500 acre-feet from its conservation programs and natural replacement (of outdated, less efficient appliances and fixtures) since 1980, or about 10 percent of current demand.[8] About 44 percent of these savings were attributed to the universal metering program, and about 33 percent of the savings were attributed to the natural replacement of plumbing fixtures with more efficient fixtures.[9]

"All of this points to one clear problem: we don't value water properly."

—George Kunkel

Philadelphia Water Department, Former Chair, AWWA Water Loss and Accountability Committee

4 George Kunkel, *"Water Loss Recovery - Our Greatest Untapped Water Resource"*, Philadelphia Water Department from AWWA "Water Sources" Conference Proceedings, 2001, at 2.
5 In addition to real and apparent water losses, Unaccounted For Water (UFW) also includes unmetered beneficial uses such as water for fire-fighting and main flushing, usually using small volumes of water compared to other uses.
6 Kunkel, *supra*.
7 *See, e.g.*, Denver Water, *Comprehensive Annual Financial Report: 2001, 2002*, at C-53.
8 Maddaus Water Management, Inc. (prepared for Denver Water), *Qualitative Review of Water Conservation Program*, May 2001, at 1-8.
9 Of the remaining savings, about 10 percent was attributed to household/customer leak detection and audits, and 13 percent of savings was attributed to public education and related efforts.

Chapter 2

Continuing as a leader in meter technology, Denver Water is currently in the midst of the largest Automatic Meter Reading (AMR) implementation in the western United States.[10] In addition to yielding a significant advancement in water use accounting, this system also provides more opportunity to inform customers about changes in their rates of use, and conservation progress or regress. With the AMR system complete, Denver Water expects that it will be able to reduce its fleet of 33 meter readers and 33 vehicles to a single meter reader with one vehicle. This transition will lead to savings on vehicles, maintenance, communication devices, worker's compensation insurance, and liability insurance, because meter readers will never have to set foot on the homeowner's property. Denver Water has decided to implement the system on a staggered schedule so that the project will begin to pay for itself as it goes. The AMR system is expected to cut at least $1.25 off of the fixed monthly charge per account and allow Denver Water to move from a bi-monthly to a monthly billing system.[11]

Photo by the Bureau of Reclamation.

3. Dam Repair and Reservoir Maintenance

Water storage capacity often can be gained by dam repairs and reservoir maintenance *(e.g.*, dredging). Silt deposits in reservoirs reduce storage capacity directly, and deteriorating dams result in storage reductions because the reservoirs cannot be filled safely to capacity. Although maintenance operations to address these conditions can be expensive initially, depending on the amount of water supply capacity gained, they can be cost-effective. Maintenance costs are often substantially lower than the monetary and environmental costs for most new water supply infrastructure projects.

Reclaimed Storage Example

State of Colorado [12]

The Colorado Division of Water Resources (CDWR)—the agency that administers Colorado's Dam Safety Program—noted "the determination of safe water storage levels [via the Dam Safety Program] resulted in storage restrictions at 198 reservoirs that resulted in an estimated 132,115 acre-feet of reduced storage."[13] As of August, 2002, the CDWR increased this figure to 142,850 acre-feet of storage.[14] Although this lost storage is dispersed throughout the state on dams/reservoirs managed by many different water districts, the quantity suggests a large opportunity. For the sake of comparison and scale, 142,850 acre-feet (46,569 million gallons) of

10 Charlie Jordan, "*New AMR System Will Lower Costs, Improve Customer Service, and Increase Efficiency*", www.denverwater.org/waterwire, January 2002.
11 Note: The heart of an AMR system is the Encoder Receiver Transmitter (ERT), which is a device installed on the electronic register of existing meters that relays readings electronically to a handheld device carried by the meter reader. This information is then downloaded to the provider's database, and is always available for analysis of historical use, conservation savings, peak use, and any other pertinent details. AMR readings are only as accurate as the meters themselves. However, increasing the frequency of readings is also likely to increase the frequency of detecting errors.
12 Colorado Division of Water Resources, *2001 Annual Report*, Colorado Department of Natural Resources, 2002, at 2. Note: The mission of this Program is to "prevent loss of life and property damage, determine safe storage levels, and protect the state's water supplies from the failure of dams within the resources available."
13 *Id.* Note: A large portion of Colorado's lost storage capacity is in reservoirs that serve agricultural water uses, not urban uses.
14 *See* water.state.co.us/presentations/cwc_0902.pdf. Colorado Division of Water Resources website, Presentation: "Responsibilities and Roles in Water Matters," September, 2002.

water is 80 percent of Denver Water's 2001 annual retail sales volume (58,385 million gallons).[15]

A 2002 presentation by the CDWR indicates that 25,060 acre-feet of this lost storage in 45 reservoirs is recoverable at an approximate cost of $10 million, with the balance being recoverable at higher costs.[16] The savings potential for the first subset of capacity equals $399 per acre-foot of recovered storage, substantially lower than the costs of new storage projects, which are often several thousand dollars per acre-foot.

B. Cooperative Water Management and Transfers

In many cases, municipal water supply problems are not a matter of insufficient quantities as much as a matter of insufficient cooperation among water users, providers, and states.

1. Regional and Local System Integration and Coordination

Regional Water Banking

Water banking has enormous potential to improve supply-side water use efficiency via market-based transfers. Several water districts and utilities across the region already are using water banking. At the inter-state level, the Arizona Water Banking Authority (AWBA) provides a good example. Numerous urban water providers in Arizona, Nevada, and California have integrated the AWBA options into their existing water supply planning as a response to urban growth. For example, to accommodate its future needs, the Southern Nevada Water Authority (SNWA) entered into a water banking agreement with the State of Arizona.[17] The agreement is administered by the AWBA. The AWBA banks Arizona's unused Colorado River water rights by pumping the excess water into groundwater aquifers to be sold to account holders in Arizona and other neighboring states at a later date (including the SNWA). Under the SNWA's agreement, the AWBA will store up to 1.2 million acre-feet of water credits for the SNWA, which will pay for all costs associated with acquiring, storing, and recovering the water.[18] The SNWA can redeem up to 100,000 acre-feet in a given year. This type of interstate water banking is crucial to long-term efficient allocation throughout the Southwest.

Local and Regional Integration of Collection and Distribution Systems

Water providers within individual metropolitan areas often have tremendous opportunities for increased efficiency through system integration.

For example, in the Phoenix metro area the City of Mesa treats and "wheels" roughly 6,500 acre-feet per year of Central Arizona Project water to the City of Chandler, the City of Apache Junction, and the Arizona Water Company. In this case, "wheeling" refers to the delivery of treated water to other water districts via Mesa's delivery system. The City of Mesa is also in the process of building a new wastewater reclamation plant in partnership with the Town of Gilbert and the Town of Queen Creek.[19]

Over 40 individual water providers, with various water sources and demands, serve the Denver metropolitan area. As water rights and return flows are traded, and interconnecting pipelines are installed,

15 The use of Denver Water in the example is not intended to imply that Denver Water is responsible for lost storage volume in Colorado.
16 *See* "Responsibilities and Roles in Water Matters," *supra.*
17 *See* Southern Nevada Water Authority website: www.snwa.com/html/wr_az_banking_agreement.html.
18 *Id.*
19 Western Resource Advocates correspondence with City of Mesa staff (6/03).

providers have recognized that some supply shortages are caused less by insufficient quantity than by insufficient organization, cooperation, and flexibility. In many cases, sharing water rights and return flows and utilizing one another's storage capacity are feasible with minor adjustment to Colorado's Front Range water infrastructure.

Local Organizational Cooperatives and Water Authorities

In addition to physical, or structural, system integration, water management efficiencies can be gained by organizational integration at the local level. Cooperatives are most effective and most common in large metropolitan areas where numerous individual water districts collectively serve the metro basin (*e.g.*, metro water authorities).

One example is the above-mentioned SNWA in southern Nevada. The SNWA was formed in 1991 as the wholesale provider of water resources in the region. Since its inception, the SNWA has served to develop new water sources and better manage existing sources for several southern Nevada water providers and cities.[20] The SNWA also provides the majority of conservation programs that are available to customers in these member water districts. The SNWA is governed by a board of representatives made up of representatives from each of the member cities and utility providers. The Jordan Valley Water Conservancy District (Utah) and the Douglas County Water Authority (Colorado) are other examples of such cooperatives.

Agricultural irrigation. *Photo by the American Water Works Association.*

2. Water Salvage Transfers

A water salvage transfer is an arrangement where one water user pays for another's conservation, and in turn, receives all or a portion of the conserved water. The most common use of water salvage transfers involves municipal-agricultural agreements.

For example, a municipality that is seeking additional water sources can pay for lining irrigation canals, leveling fields, and installing state-of-the-art irrigation technologies on an agricultural property. In turn, the farmer or rancher can continue normal agricultural operations while using less irrigation water due to these efficiency improvements. The unused, or conserved, irrigation water is then available for municipal use via a water salvage transfer. The legal complexity of such transfers varies from state to state.

Water Salvage Example

Imperial Irrigation District, Southern California[21]

Over the past 50 years, the Imperial Irrigation District (IID), its conservation partners, and member farms have invested $613 million (1996 dollars) to improve water use efficiency. Water conservation measures have included concrete lining of canals and laterals, construction of reservoirs and interceptor canals, implementing canal seepage recovery programs and additional irrigation management measures.

In December 1988, the IID and the Metropolitan Water District of Southern California (MWD) entered into a water conservation agreement that allowed MWD to invest in water

20 These SNWA members include: Las Vegas Valley Water District, Big Bend Water District, the Cities of Boulder City, Henderson, Las Vegas (which provides wastewater services for the cities of Las Vegas and North Las Vegas), North Las Vegas (which provides water to its residents), and the Clark County Sanitation District.

21 *See* www.iid.com/water/irr-conservation.html. Note: The implementation of agreements and plans (i.e., conservation efforts) are ongoing. Therefore, the overall effectiveness and efficiency of these particular projects must be assessed in the years to come.

conservation measures in the Imperial Valley in exchange for use of the conserved water. MWD financed the construction, operation, and maintenance of the selected projects at a total project cost of $233 million (1988 dollars). These conservation projects in Imperial Valley were projected to save approximately 106,000 acre-feet of water annually. This water is now available to MWD.

In 1998, the IID signed a historic water conservation and transfer agreement with the San Diego County Water Authority (SDCWA). This agreement is the largest water conservation and transfer program in United States history, and allows the SDCWA to receive up to 200,000 acre-feet annually of water conserved by the IID. IID expects to invest $295 million from the SDCWA in water conservation programs through the year 2011. Water conservation projects will enable farmers to maintain current agricultural production, while transferring conserved supplies to SDCWA.[22]

In October 1999, IID, Coachella Valley Water District (CVWD), MWD, SDCWA, the State of California, and the U. S. Bureau of Reclamation issued key terms for a quantification of Colorado River water use issues. Through conservation and improved water management and water transfers, the key terms will ultimately shift the use of over 500,000 acre-feet per year of California's Colorado River water supply from agriculture to municipal use.

3. Dry-Year Leases and other Municipal-Agricultural Transfers

Severe drought conditions impede a farmer's ability to turn a profit or even break even. In a drought season, when farming is, at minimum, frustrating and, at worst, impractical or impossible, farmers should have the option to temporarily lease their water rights to municipal users instead of applying the water to their land. A dry-year lease temporarily shifts water from agricultural to municipal use. This can be very economically attractive to some farmers, as water leases during a drought year can often present higher profits than crop sales even in a good year. In turn, municipalities also benefit since such leases provide an alternate or emergency water source during drought periods, without necessitating large, costly system expansion projects or new trans-basin source development. In addition, the temporary nature of dry-year leases ensures that the agricultural land will not dry up permanently, which is a major concern for some people.

Dry-Year Transfer Example

■ **Metropolitan Water District of Southern California (MWD) and the State of California Dry-Year Water Purchase Program**

In an attempt to minimize its reliance on Colorado River water and to safeguard against the recent series of drought years, the MWD has entered into various temporary water transfer agreements with other districts throughout California. These dry year transfer arrangements provide the MWD with a cost-effective contingency plan that helps offset potential water supply shortages. According to a 2003 MWD report, the MWD has access to transfer options of 80,000 acre-feet per year from districts in the San Bernardino Valley and access to transfer options of 167,000 acre-feet from the Sacramento Valley.[23] These potential transfers are administered on a single-year basis, depending on the severity of drought conditions.

The MWD also can seek additional water supply from the California Department of Water Resources' Dry-Year Water Purchase Program.[24] This Program has been in effect since 2001.[25] The Program is intended to assist public water agencies throughout California in supplementing their water supplies during dry periods. According to the DWR documents,

"Water links us to our neighbor in a way more profound and complex than any other."

– John Thorson

22 Note: Imperial Valley farmers produce more than $1 billion annually in agricultural products from 460,000 cultivated acres.
23 Metropolitan Water District of Southern California, "Report on Metropolitan's Water Supplies: A Blueprint for Water Reliability, March 25, 2003 (accessed via www.mwd.dst.ca.us on August 28, 2003).
24 *Id.*
25 California Department of Water Resources, News Release: *"DWR Announces 2003 Dry Year Water Purchase Program,"* November 15, 2002.

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"In 2001, the Department of Water Resources (DWR) secured 138,800 acre-feet of water from willing sellers in Northern California and provided it to eight water agencies throughout the State to help offset their water shortage conditions. In 2002, DWR secured 22,000 acre-feet of water from willing sellers in Northern California and provided it to four water agencies throughout the State."[26]

C. Aquifer Storage and Recovery (ASR) and Conjunctive Use

Aquifer Storage and Recovery (ASR) is based on the principle that surface water supplies can be stored in existing aquifers and then retrieved at a later date. Conceptually, the aquifer becomes a storage reservoir. A water provider can either inject the water into wells and then withdraw it from the same (or nearby) boreholes or it can allow water to slowly seep into the aquifer by constructing recharge ponds over porous land, thus allowing water to percolate into the aquifer. "Conjunctive use" describes ASR systems that use excess surface flows during spring run-off to recharge the aquifer (particularly during wet years), in contrast to ASR systems that use treated effluent (reused water) to recharge the aquifer.

For some municipalities, ASR is a promising alternative to building new dams; for others it is an absolute necessity. Since the Arizona Groundwater Management Act was passed in 1980, recharging aquifers has become the law in that state. Arizona has witnessed serious impacts from generations of pumping groundwater in excess of the rate of natural recharge (also known as groundwater "mining"). Reduced groundwater levels can result in drying aquatic, riparian, and wetland systems. Another significant impact from groundwater mining is land subsidence.[27] Arizona ranks third nationally (behind Texas and California) in land area affected by subsidence, with most of Arizona's subsidence issues concentrated in the Phoenix and Tucson areas.[28] Other impacts of groundwater mining include increased costs of pumping and generally decreasing water quality of the groundwater pumped from greater depths.

Aquifer Storage and Recovery Facility (ASR). *Photo by Michael Bennett.*

Currently, the best way to minimize the impacts of groundwater pumping is through some form of ASR. For ASR to be effective, the appropriate hydro-geologic conditions must exist. In addition, caution must be taken to avoid aquifer contamination and the migration of injected water. However, several ASR/conjunctive use programs have been operating successfully for a number of years in areas throughout the Southwest. Many examples can be drawn from municipalities in the State of Arizona due to their active responses to the 1980 Arizona Groundwater Management Act.

26 *Id.*
27 Land subsidence refers to the downward movement or sinking of the earth's surface caused by removal of underlying support. As the water table drops, soil particles lose the buoyancy and water pressure originally provided by groundwater. The particles soon become more compacted and compressed, sometimes resulting in earth fissures.
28 Water Resources Research Center, *Water in the Tucson Area: Seeking Sustainability,* University of Arizona, at 19-22.

ASR/Conjunctive Use Example

City of Tucson, Arizona

The City of Tucson Water Department has been operating a variety of conjunctive use projects over recent years and continues to plan for operation expansion. For example, in the spring of 2001, Tucson began using about 18 million gallons of water per day from the Clearwater Facility, which was constructed to help utilize all of Tucson's Central Arizona Project (CAP) water rights. The facility uses Colorado River water rights (via the CAP) to artificially recharge groundwater basins. The three basins currently used by the Clearwater Facility are recharged with about five billion gallons of Colorado River water annually. This artificial recharge water mixes with natural groundwater after being naturally filtered through the soil strata. Eventually, the City hopes that the Clearwater Project will provide more than half of the City's water supplies, therefore lessening the use of natural groundwater supplies as required by Arizona state law. By 2003, an estimated 60,000 acre-feet of water will have been recharged into eleven basins.

ASR/Conjunctive Use Example

Centennial Water & Sanitation District, Highlands Ranch, Colorado

The Centennial Water and Sanitation District's progressive ASR/conjunctive use program is proof that even relatively small water districts can successfully install and maintain an ASR operation. The District operates the oldest groundwater recharge program in Colorado, which began operation in 1992 when the District served less than 35,000 people. As of 2001, the District's groundwater recharge project included 13 deep bedrock aquifer wells that have been retrofitted for ASR operations, with four additional wells scheduled to be added. The District recharged nearly 6,000 acre-feet of water between 1992 and 2001. The projected annual capacity for the injection wells is targeted at 3,000 acre-feet per year.

Compared to other alternatives, ASR and conjunctive use may provide a long-term source of underground supply, minimize evaporative loss, prevent permanent disruptions to the hydrologic table, and maximize the use of surface water supplies. Although in some cases this supply-side option may be technically or economically infeasible, it should become a regular consideration for water planners throughout the region.

D. Water Reuse and Recycling

Reuse and recycling involve the use of legally reusable municipal return flows in potable reuse and nonpotable reuse programs.[29] In a typical southwestern city, less than 50 percent of the water delivered is actually fully consumed.[30] The remainder yields a return flow to wastewater treatment facilities. Throughout the U.S., the average consumptive use for municipal water supply systems is only about 20 percent.[31] The higher consumptive use value in the Southwest results from the large proportion of water used for landscape irrigation in the semi-arid and arid climate. Thus, conservatively speaking, consumptive use percentages range from 20-50 percent, depending on local variations in water use patterns.

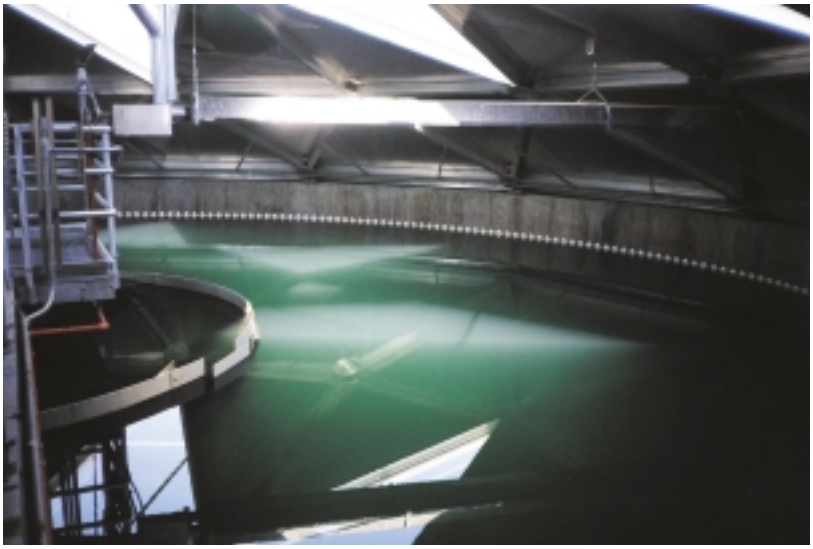
This leaves 50-80 percent of delivered water still circulating through the sewer system and treatment plants, and eventually released back to the river as return flows. If this remainder is retreated and reused, a multiplier effect operates on water supplies so that 100 gallons of original source water could yield 200-275 gallons of actual supply (based on 35-50 percent consumption estimates for Western

29 Hydrosphere Resource Consultants, Inc., HRS Water Consultants, Inc., Mulhern MRE, Inc., Spronk Water Engineers, Inc. (prepared for Colorado Water Conservation Board), *Metropolitan Water Supply Investigation Final Report (MWSI)*, January 1999, at 67-70.
30 *Id.*
31 *See* www.usgs.gov/watuse/. Note: This 20 percent consumptive use figure refers to municipal public water supply systems that serve domestic (residential), commercial, industrial, and thermoelectric uses.

cities).[32] Of course, the ultimate efficiency of water reuse is dependent on several system variables (*e.g.*, system losses, treatment and redelivery efficiency, etc.). As a result, the actual water savings that might be realized by a reuse system vary considerably from municipality to municipality. However, the above-mentioned conceptual example illustrates the potential of an effective water reuse operation.

In some cases, reusing water may be legally impermissible. In many western states, the law entitles most water users to one use only, with unconsumed portions returning to be available for the next user downstream. Rules, however, are state-specific and fact-specific. In Colorado, for example, cities are entitled to reuse to extinction water that has been imported from other basins or developed from specific groundwater supplies. However,

Water treatment facility.
Photo by American Water Works Association.



despite the legal right to reuse this water, there is political resistance to reuse from some downstream users who have grown to rely upon certain quantities of return flow. In addition, these flows, in some cases, provide benefits to the river ecosystem. Nonetheless, compromises in this area should be encouraged—perhaps the target for the short-term should be partial reuse (rather than use to extinction), so some downstream flows remain.

1. Nonpotable Water Reuse

Nonpotable reuse refers to a process in which water is treated to a secondary level, so that it is safe for irrigating parks, golf courses and crops, and for use in industrial processes and cooling. Hundreds of nonpotable reuse systems are in operation today around the globe. In the 1930s, the fledgling City of Las Vegas sent effluent from its Imhoff tanks down to wet the pastures of Stewart Ranch in one of the West's early examples of nonpotable water reuse. California's "Title 22 Standards" which require reused water to be suitable for full body contact is the general standard that cities have adopted.

Nonpotable Water Reuse Example

City of Phoenix, Arizona[33]

The City of Phoenix has an active and comprehensive effluent management program. The City has contracts to sell water from the 91st Ave. Wastewater Treatment Plant (WWTP) (163 mgd capacity) to the Palo Verde Nuclear Generating Station for cooling and to the Buckeye irrigation district for irrigating cotton. The 23rd Ave. WWTP (63 mgd capacity) provides tertiary treatment through a mono-media filter, yielding high quality reuse water that is used to irrigate food crops such as melons and vegetables. Cave Creek WWTP is the newest facility in Phoenix, designed to provide 32 mgd of reclaimed water to irrigate golf courses, parks, and green belts. Another interesting City of Phoenix project involves transferring 30,000 acre-feet of treated reuse water from a City reclamation plant to the Roosevelt Irrigation District (RID) in

32 In concept, for a community that consumes 50 percent of delivered water, if 100 gallons of source water enters a customer's home, business, or facility, 50 gallons are consumed and 50 gallons are returned to a treatment plant. In turn, this water is treated and redelivered to home, business, or facility. This time 25 gallons are consumed and 25 gallons returned to the system. The process continues until the source water is used to extinction (*i.e.*, entirely exhausted), yielding a total water supply quantity that is roughly twice the amount of the original source water.
33 Data provided in response to Smart Water Survey and in related correspondence.

exchange for higher quality groundwater rights owned by the RID. The groundwater is transferred to the Salt River Project, which supplies 20,000 acre-feet of water to treatment plants in the City.

Nonpotable Reuse Industrial Sector Example

- **Paulinia Refinery in Brazil**[34]

  This is the largest refinery of the Petrobas system, refining each day 22 percent (321,000 barrels) of all the petroleum processed in Brazil. The area in which the refinery is located, the Piracicaba and Capicari River basins, is prone to drought and has recently faced serious water shortages. In response, the refinery set out to curtail its raw water use by reusing effluent in 1999. By 2002, the refinery had reduced its water use by 2.2 million gallons per day. The goal of the refinery is 100 percent recycled water; zero discharge and zero demand. This is sustainable development at its best.

On one hand, nonpotable reuse may require additional treatment and/or storage facilities and increased treatment and energy costs. On the other, it may reduce wastewater discharges and create a supply source immune from seasonal variations in volume. On balance, it deserves a close look by water managers and planners.

2. Potable Water Reuse

With reverse osmosis, membrane filtration, ultraviolet irradiation, carbon absorption, and ozonation, water utilities now have the capacity to re-inject highly treated wastewater directly into the municipal water supply. This process is known as direct potable reuse. An indirect potable reuse system mixes highly treated effluent with raw water supplies before re-entering the municipal system flow (*e.g.*, via reservoirs). While safe and effective, direct potable reuse is more controversial than indirect potable reuse.

Indeed, the largest obstacle to potable reuse (direct or indirect) is public perception. Many people do not like the idea of drinking water processed from wastewater. However, what people generally do not understand is that they are more than likely doing just that right now. Unless one is living in a community where water supplies originate in headwaters or deep aquifers, at least some of the instream flow that enters a typical water treatment facility has already passed through one or more upstream user's wastewater treatment plant. With new treatment technologies becoming more widely available, dependable, and less expensive, potable reuse is becoming a more and more viable option.

Indirect Potable Reuse (Blended with Reservoir Water) Example

- **Upper Occoquan Sewage Authority**[35]

  In Virginia, the Upper Occoquan Sewage Authority (UOSA) Regional Water Reclamation Plant has been discharging highly treated effluent into the Occoquan Reservoir for over 20 years. This reservoir is a key water source for one million northern Virginia residents. The initial capacity of 10 million gallons per day (mgd) has been expanded to 34 mgd, with a $200 million system expansion to a 54-mgd capacity in the works. This recycled water has become an integral part of the Washington, D.C. metropolitan area's water supply. Some other major cities employing indirect, blended potable reuse systems are in Los Angeles County and Orange County in California and El Paso, Texas.

All of these supply-side efficiency alternatives can help stretch existing water supplies farther. In many cases, these alternatives can minimize the need for new large-scale dams that are, by comparison, more expensive, slow to construct, and environmentally damaging. While not every alternative will apply in every case, they are tools that water planners should consider.

34 Bentaci Correa and Luis Tadeau Furlan, *"Reducing Water Demand and Wastewater Through Source Management and Reuse - Paulinia Refinery Experience"*, "Water Sources" Conference in Las Vegas, 2002.
35 *See* www.watereuse.org/Pages/information.html.

Chapter 2

Demand-Side Water Efficiency Measures

"We talk scarcity, yet we have set our largest cities in deserts, and then have insisted on surrounding ourselves with Kentucky bluegrass. Our words are those of the Sahara Desert; our policies are those of the Amazon River."

—Richard Lamm

Former Governor of Colorado[38]

Demand-side measures refer to "end use" water conservation technologies and practices that can be applied to nearly every type of water use among residential, landscape irrigation, commercial, industrial, and public/institutional water users. Conservation programs and research have demonstrated that reliable and sometimes significant water demand reductions are achievable from these measures. However, much depends on the way these programs are implemented.

Conservation means much more than just using less water at the tap. It means using less water without sacrificing quality of life. It's not brown lawns, but planning for and nurturing attractive, low water-using landscapes. It's not foregoing washing your clothes or taking showers to save water, but using water-efficient washers and showerheads.

Implemented on a large and comprehensive scale, state-of-the-art demand-side measures can significantly reduce residential, commercial, institutional, and industrial customer water use—now and in the future. Such water savings represent additional water supply that could augment existing water system supplies and allow the downsizing or even avoidance of new supply development to meet future growth.

Long-term consistent efforts by other cities have paid huge dividends. The Massachusetts Water Resources Authority (MWRA) reduced system-wide water requirements in the Boston area by 25 percent during the 1990s. This led to the cancellation of a plan to dam the Connecticut River and saved MWRA's 2 million customers more than $500 million in capital expenditures alone.[36]

Similarly, since the early 1990s, New York City has saved more than 250 million gallons per day in water and sewer flows through a conservation program that included an aggressive low-flow toilet rebate program replacing more than 1 million fixtures. The savings resulted in the cancellation of a planned expansion to a $1 billion wastewater treatment plant and the indefinite postponement of development of new water supply sources.

Through tiered water pricing, rebates, incentives and water-related ordinances, Seattle has reduced system-wide consumption by 20 percent during the past decade and is committed to continue reducing demand by 1 percent per year until 2010.[37]

Based on these cities' examples, the necessary ingredients for success combine leadership; political will; commitment to a sustainable water supply; concern about long-term costs to consumers and taxpayers; and most important, an understanding of and strategic investment in large-scale, innovative, and dependable water use efficiency technologies and practices.

While people in the Southwest may regard the achievements of Seattle, New York and Boston as good demand reduction benchmarks, we actually have potentially even greater room for improvement. Boston, New York and Seattle realized their savings primarily from reductions in indoor use. While the same relative level of indoor savings reasonably can be expected in the Southwest, an even larger volume of water savings can be derived by curtailing wasteful outdoor uses in this arid climate.

As growth continues in the Southwest, we should challenge ourselves to stay on the "cutting edge" of demand-side water use efficiency.

36 Amy Vickers, *Handbook of Water Use and Conservation*, WaterPlow Press, 2001, at xvi.
37 *Id.*
38 *Id.*, at 141.

Chapter 2

Measures for Outdoor Efficiency

A new conservation ethic has surfaced for the residential, business, and institutional landscape. A conservation-oriented "state of mind" has become the "state of the art." The ethic relates to both what we choose for our urban landscape and how we choose to irrigate. Importantly, these choices are relevant not just in extremely dry years, but in all years.

A. Landscaping Design Decisions and the Xeriscape Option

Landscaping with Kentucky bluegrass and other water-loving turf and vegetation is the leading source of outdoor municipal water use in the Southwest. Sustaining bluegrass landscapes typically requires 30-40 inches of water each year. Our love affair with bluegrass and other water-loving vegetation is a well-documented result of the fact that many of us have moved here from wetter climes with sufficient precipitation to sustain these plants without regular irrigation. We are accustomed to bluegrass and want it here, too. The problem is that Denver and Salt Lake

Photo by American Water Works Association.

receive about 15 inches of precipitation per year and Albuquerque, Phoenix, El Paso, and Tucson receive 10 inches or less. This is not enough precipitation to sustain bluegrass without nearly constant irrigation during the summer months.

In short, irrigating bluegrass and its water-loving cousins is not sustainable in this part of the country. The practice increasingly requires us to rob Peter to pay Paul—to take water from already damaged aquatic ecosystems, sometimes from hundreds of miles away—to support our bluegrass habit in the urban Interior West. In our view this is no longer reasonable, if it ever was. Nor is it necessary when there are sustainable alternatives that are, in the eyes of many, more attractive than the non-native bluegrass lawn.

Using Xeriscape™ (pronounced "zeer-i-scape")—a trademarked term for yard and office park landscaping in place of traditional turf grass—is the most immediate and direct way to attain a more sustainable urban landscape. Xeriscape is a seven-step landscape design and maintenance practice that promotes water efficiency optimal for the arid and semi-arid Southwest.

Below, top:
Lawn watering in a city park. *Photo by American Water Works Association.*
Bottom:
Inefficient lawn watering. *Photo by K.C. Becker.*

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Xeriscape landscape design, along with similar natural and native landscaping design concepts, are the state-of-the-art measure for outdoor landscaping.

Xeriscape uses low-water-use, or drought-tolerant, vegetation as the primary element in residential and commercial landscapes. Drought-tolerant vegetation inherently implies native vegetation—vegetation that has evolved in these hot and arid conditions. Plant selection is dependant on local conditions, so consulting

Xeriscaped yard and common area. *Photo by Al Nichols.*

local garden supply stores or city-specific xeric plant lists is the best way to find out what will work in any given neighborhood. In addition, many water district offices and USDA Natural Resource Conservation Service (NRCS) Extension offices typically provide a variety of Xeriscape information.

A xeric landscape can consist of grasses, flowers, shrubs, trees, and cacti. The property owner can tailor the yard to his/her preference, ranging from a 100 percent buffalograss or blue grama lawn to a diverse mixture of vegetation types. It is a misconception that Xeriscape yards preclude lawns. In fact, Xeriscape lawns can provide a similar or superior level of aesthetic value to the property owner and to the neighborhood, with only a fraction of the water use, pesticide application, and mowing responsibilities.

Many groups and individuals, including some directors of water utilities, support re-assessing our "needs" and shifting the landscaping norm to satisfaction with smaller turf lawns, or even their elimination.[39] Some urban areas in our region have already embraced the shift to Xeriscape. Xeriscape landscaping is becoming the new "norm" in areas such as Tucson and El Paso, where societal acceptance of this landscaping strategy has taken hold. However, in most urban areas of the region, Denver and Salt Lake City among them, non-native turfgrass is still the

Xeriscaped yard. *Photo by Dave Show & Associates, Landscape Architects.*

norm, with the Xeriscape option only receiving serious consideration during drought years. Some homeowners' covenants in Colorado actually require bluegrass lawns, a practice that is at odds with common-sense stewardship of our scarce water resources.

Xeriscaping and other water-efficient landscape designs can yield big water savings. In a 1992 study, the East Bay Municipal Utility District in northern California compared the daily water con-

Xeriscaped yard. *Photo by David Winger, Denver Water.*

39 *See* www.SALT.org, Smaller American Lawns Today.

Table 2.1

Water Use on Water-Conserving vs. Traditional Landscapes (gallons per day)[41] [East Bay Municipal Utility District]

	Lot Size (sq. ft.)			
	<6,000	6,000-10,000	10,000-20,000	>20,000
Traditional Landscape	278	510	735	1,531
Water-conserving Landscape	170	298	419	656
WATER SAVINGS	39%	42%	43%	57%

Table 2.2

Landscape Water Use by Percentage Turf (gallons per day)[42] [East Bay Municipal Utility District]

	Lot Size (sq. ft.)			
Percent Turf	<6,000	6,000-10,000	10,000-20,000	>20,000
<70%	169	297	418	656
70%	—	—	—	—
75%	—	656	—	—
80%	284	488	620	—
85%	—	516	758	—
90%	274	491	735	—
95%	279	539	817	—

sumption of a group of single-family detached homes with "water-conserving" landscapes to consumption by homes that had "traditional" turf-oriented landscapes.[40] The water-conserving landscapes contained well-maintained vegetation, with turf area less than or equal to 15 percent of total yard area. By comparison, turf area in the traditional yards was equal to or greater than 70 percent of total yard area.

The water-conserving landscapes saved an average of 42 percent (equal to 209 gallons per day) over comparable traditional landscapes (see Table 2.1). Not surprisingly, water use increased with lot size and with increases in the area of turf used in the landscape (see Table 2.2). Similar studies conducted in Austin, Texas, and by the North Marin Water District in California, found a 43 percent savings.[43]

B. Responsible Landscape Watering

Regardless of the landscaping we choose, we must be sensible with how we irrigate it. With common-sense landscape watering practices, owners of commercial and residential landscapes can maintain a healthy urban landscape while minimizing the amount of water applied, whether they water manually or with automated irrigation. These practices should be applied in

40 Lisa Iwata, "Xeriscape: Winning the Turf War over Water," *Home Energy Magazine Online*, August 1994. This study looked at seven developments consisting of 548 dwelling units with mature landscapes. The sample was divided into two segments: traditionally-landscaped projects, and projects that met specific design criteria for water conservation. When costs for water, labor, fertilizer, fuel, and herbicide were considered, annual savings of $75 per dwelling unit were realized for the water-conserving projects. Compared to traditional yards, the water-conserving landscape averaged 55 percent less turf area, used 54 percent less water, saved 25 percent in labor costs, 61 percent for fertilizer, 44 percent for fuel, and 22 percent for herbicides, with a total of 10 percent less total landscaped area.

41 *Id.*

42 *Id.*

43 *Id.*

both wet and dry years, in part because wet-year conservation helps keep reservoirs full for future dry years. At a minimum, responsible watering implies one should:

- avoid watering during hot, sunny periods of the day;
- correct misdirected sprinklers (to avoid watering the sidewalk, driveway, street, etc.); and
- closely monitor the absolute water needs of their private landscape.

Inefficient lawn watering.
Photos by K.C. Becker.

These measures appear obvious. However, the evidence suggests many property owners over-water their yards simply because they assume "more is always better." Actually, plants do best when water applied matches their needs as measured by the evapotranspiration (ET) rate.

The ET rate provides a measurement of the amount of water (in inches) required to replace evaporation and transpiration[44] for maximum plant growth. Sound water stewardship requires a degree of education, both by water providers and through customer self-education, on landscape water needs and ET rates. Increasingly, television and newspaper weather reports in our region include ET rates in the daily forecast information.

C. Evapotranspiration/Irrigation Controllers and Rain Sensors

Recent technological advances in ET monitors, rain sensors, soil moisture content sensors, and similar devices can augment greatly the efficiency of irrigation control systems. These devices automatically monitor real-time precipitation, temperature, and/or ET variables, and adjust irrigation control systems accordingly. With landscape irrigation accounting for the majority of an average water bill in summer months, the efficiency gains and water savings yielded by such devices can provide a cost recovery for the upfront installation expenses in a relatively short amount of time. The following two examples provide summaries of state-of-the-art automated irrigation control systems.

Automated Irrigation Control Example

- **California Irrigation Management Information System (CIMIS)[45]**

  This system is applicable to agricultural operations and other large-scale irrigation systems (*e.g.*, institutions, parks, golf courses, schools, urban

44 Transpiration is water released by plants as part of the cycle of photosynthesis.
45 Peter H. Gleick, *"Chapter 16: The Power of Good Information: The California Irrigation Management Information System (CIMIS)", Sustainable Use of Water: California Success Stories*, Pacific Institute for Studies in Development, Environment, and Security, 1999, at 179-184.

greenways, etc.). The prototype for this system was developed in California in the mid-1980s by the California Department of Water Resources and the University of California. It was designed to provide farmers and irrigators of large landscapes with accurate weather information so that levels of rainfall, temperature, wind speed and solar radiation could be incorporated into watering schedules. There are currently 100 computerized weather stations throughout California, each including a pyranometer (to measure solar radiation), a soil temperature sensor, an air temperature sensor, a humidity sensor, an anemometer (to measure wind speed), a wind vane (to measure wind direction) and a precipitation gauge.[46] Each station is equipped with a small microprocessor, which logs data every minute, produces an hourly value and then calculates daily averages and totals, maximum and minimum values, and relative humidity. A main computer downloads this information every day and calculates a reference evapotranspiration (ET) rate. Landscape managers use this figure to determine the appropriate amounts of water for their turf or crops.

CIMIS users reported an average of 13 percent reduction in applied water; some were as high as 20 percent. Applying those results (13 percent) to CIMIS users statewide (includes 400,000 acres), applied water reductions are in the neighborhood of 100,000 acre-feet per year and monetary savings are nearly *$65 million.* Many golf course and municipal park managers reported savings of 10-25 percent with CIMIS information. A landscaper who pays $566 per acre-foot of water was able to reduce applied water by 60 percent using CIMIS. In 1990, Escondido Union School District began using CIMIS. An average of 32 million gallons has been saved annually, along with $40,000 in water and sewer bills, in that school district alone. Some other school districts have reported 44 percent reductions in applied water to athletic fields because of CIMIS information.[47]

Each CIMIS station costs roughly $5,000 to set up. Operation costs for maintaining stations and computer systems in CIMIS is $850,000 annually. In California, the cost is split between the California Department of Water Resources (DWR) and local agencies. CIMIS is used by a variety of water users, such as private agricultural operations, irrigation districts, urban park districts, golf courses, and urban landscape managers.[48]

Automated Irrigation Control Example

WeatherTRAK®

This system focuses on smaller-scale landscape irrigation systems such as residential yards, schools, and businesses, but may also have agricultural applications. Although WeatherTRAK is relatively new and somewhat unproven, this type of technology holds great potential in applying a CIMIS-like strategy to residential properties. The system consists of three components: (1) a network of weather stations that provide real-time weather data that can be remotely down-loaded; (2) a central data processing and communications hub; and (3) field controllers (ET signal controllers).[49] The controllers receive ET data and other important variable data via satellite in a similar way that pagers function. The WeatherTRAK controller closes the loop between the information generated by the weather stations and ground irrigation control. Each field controller contains extensive information on soil types, plant materials, landscape slopes, locations of sprinklers and water application rates for each zone. This allows it to apply the water required to make up the lost ET while minimizing losses due to runoff or percolation. The controller develops an irrigation schedule on a real-time basis, allowing of adjustment to watering systems to reduce peak demands.[50]

46 *Id.*
47 *Id.*
48 *Id.*
49 Aquacraft, Inc., "*WeatherTRAK 2001 Study Report: Performance Evaluation of WeatherTRAK® Irrigation Controllers in Colorado.*" Additional information can also be found at www.aquacraft.com/weathert.html.
50 *Id.* Note: Since this technology is relatively new, various tests on the effectiveness of this system have been conducted in recent years. Although these studies exposed the presence of a customer learning curve and the need for some minor system modifications, the overall results indicate that the WeatherTRAK® system operates effectively by accurately matching irrigation schedules to plant requirements.

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D. Smart Development via Municipal Zoning and Development Standards

As Chapter 4 shows, per capita water use is directly affected by patterns of development. Sprawling development along urban fringes often leads to high per capita water usage. Faced with the need to meet the demand for water, local governments can take steps to promote development that conserves water. In-fill development with higher densities and mixed-use development (*e.g.*, New Urbanism development) tend to be more water-efficient than low-density sprawl. In addition, significant gains in water use efficiency can be achieved via local government landscape design standards that emphasize Xeriscaping and other similar practices. Of course, the kind of development a locality permits or encourages, based on the principles of New Urbanism or otherwise, is a function of many variables, but there is increasing justification for taking into account the water use impacts that result from different development patterns.

Sprawling residential development. *Photo by K.C. Becker.*

Smart Development Example

- **Community of Civano in Tucson, Arizona**[51]

  Through wise development strategies and designs, the Community of Civano has proven that new development can yield very substantial reductions in per capita urban water demand. After several years of coordination and planning, this development began to take shape in the late 1990s via a public-private partnership between the Community of Civano, LLC, the City of Tucson, and various other private partners. At its eventual build-out, the Civano development is expected to house up to 2,600 families in a developed area of 1,145 acres.[52] Civano incorporates New Urbanism design principles that foster living community interaction through mixed uses and densities, increased open space area, maximized pedestrian access/use, minimized roads, and a sustainable use of natural resources (*e.g.*, water, energy, building materials, etc.). Roughly 35 percent of the entire development will be Sonoran Desert open space.

  The residential lot sizes in Civano are modest, averaging less than 5,000 square feet.[53] These lot sizes directly minimize the amount of landscaped area in the development, which in turn minimizes outdoor watering needs considerably. In addition to smaller landscaped areas, the Civano development requires Xeriscape landscape design on all private lots. Parkways, plazas, and other common areas also utilize Xeriscape design standards. An onsite community nursery provides native vegetation that is salvaged as the development expands—with an estimated 65 percent salvage rate from the Sonoran Desert landscape and a 97 percent replanting success rate.[54] All landscape irrigation in the Civano development is supplied with City of Tucson reclaimed water.[55] Every individual residence in Civano is served with two separate City of Tucson

51 The Civano development has been subsidized by the City of Tucson and thus does not represent a fully independent development example. However, its inclusion in this report is intended to effectively highlight the potential water use efficiency that can be gained from smart development strategies. Much of the City subsidy involved the extension of reclaimed water service to the community. Tucson already operates a sizeable water reuse operation, which is not yet the case in many southwestern cities.
52 *See* www.terrain.org (A Journal of the Built and Natural Enviroments), "Unsprawl Case Study: Community of Civano, Arizona."
53 Al Nichols Engineering, Inc., *Civano and Tucson Residential Water Use, Revised*, (prepared for the Community of Civano, LLC), August 2002.
54 www.terrain.org (A Journal of the Built and Natural Environments).
55 Al Nichols Engineering, Inc., *supra.*

water service lines and meters: one for potable drinking water and the other for reclaimed water for landscape irrigation (via a Tucson water reuse project). The development is also considering the use of rainwater harvesting (i.e., cistern collection) to supplement the outdoor watering needs.[56] Notably, the onsite plant nursery facility uses reclaimed water for 98 percent of its total water use.

Through all of the above-described layout and design strategies, Xeriscaping, and reclaimed water use, the Community of Civano has yielded very low urban water consumption rates, relative to virtually all other urban developments in the region. In 2001, residents in the Civano development used an average of 52 gallons per capita per day (gpcd) of City of Tucson potable water, according to a recent study.[57] This rate is a remarkable 48 percent of the average residential per capita consumption rate for the balance of Tucson (based on corroborating data from Smart Water research and the aforementioned Civano study). Since all Civano outdoor water use is served with reclaimed water, this consumption rate is entirely for indoor uses. To irrigate their Xeriscaped yards, Civano residents only used 25 gpcd of City of Tucson reclaimed water in 2001. Regardless of water type (potable or reclaimed), Civano residents used only 77 gpcd total for indoor and outdoor use combined, still well below consumption rates throughout the Southwest. Many other new developments in Tucson are implementing similar densities and Xeriscape designs, and yielding comparably low water use. As detailed in Chapter 3, Tucson's 2001 Single-Family Residential potable water consumption rate was 107 gpcd—with Denver at 159 gpcd, Phoenix at 144 gpcd, and Las Vegas at 230 gpcd to highlight a few. The potential savings from Civano-type development is simply astounding.

The Community of Civano development in Tucson, AZ. *Photo by Al Nichols.*

Measures for Indoor Efficiency

While few "tap-water westerners" may realize it, along with landscaping and irrigation choices, personal choices about plumbing fixtures and indoor water use habits ultimately will have substantial impacts on riparian and aquatic habitat in the Southwest.

According to an in-depth water use study by the American Water Works Association Research Foundation (AWWARF) in the late 1990s, the typical American citizen living in a single-family residence uses 69.3 gallons per capita per day (gpcd) indoors.[58] This figure could be significantly reduced via water-conserving or low-flow dishwashers, clothes washers, faucets, showerheads, and toilets. Combining these advanced appliances with more careful habits and in-home leak repairs could reduce water use to roughly 45 gpcd.[59] If taken to the highest level, including waterless or composting toilets and other state-of-the-art appliances, the future norm for indoor water use could even be as low as 30 gpcd. Furthermore, these indoor water savings include a large volume of hot water. Reduced hot water consumption has the related benefit of reducing energy costs, associated pollution and damage to pristine western lands through natural gas recovery.

56 *Id.* Note: Rainwater harvesting is not legal under some state water laws (*e.g.*, Colorado).
57 *Id.*
58 Peter Mayer, *Residential End Uses of Water Study (REUWS)*, American Water Works Association Research Foundation (AWWARF), 1999, at 90.
59 Vickers, at 23-133.

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Figure 2.1

Typical, Conserving, and State-of-the-Art Indoor Water Use (daily per capita)

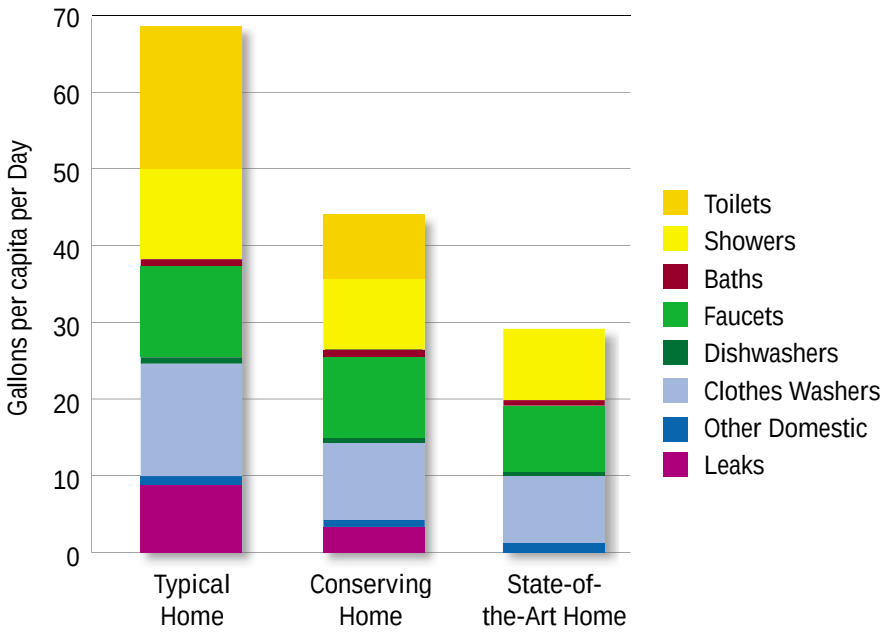

Figure 2.1 displays these estimated potentials of residential water efficiency.

The 1992 Energy Policy Act set maximum allowable flows for toilets, showerheads and faucets. Since then, all new construction and large scale remodels have been required to use fixtures that meet these standards. As a result, there is generally less room for improvement in water efficiency in buildings constructed after 1992 than in older structures. However, in older structures, cost recovery from appliance/fixture upgrades can be realized in a relatively short period of time since the older appliances use considerably more water than new efficient models (particularly toilets and clothes washers).

Table 2.3 (facing page) provides a quantitative breakdown of key indoor plumbing fixtures and appliances.[60] When compared to the current average water use in the U.S., the efficiency demonstrated by state-of-the-art fixtures and appliances is compelling. Because they use the highest percentages of water in the typical home, technological advances in toilets and clothes washers offer the most potential for significant water savings. For example, the U.S. average water use from toilets is 18.5 gallons per person each day. By upgrading to toilets that use only 1.6 gallons per flush, the daily average use drops to 8.2 gallons per day. Over the course of a year, each household could save close to 10,000 gallons.

Ultra-Low-Flow toilet.
Photo by the American Water Works Association.

60 *Id.*

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Water-efficient faucet and showerhead.
Photo by the American Water Works Association.

Water-efficient clothes washer.
Photo by the American Water Works Association.

Table 2.3

Comparison of State-of-the-Art Fixtures/Appliances to Average U.S. Residential Water Use

	Average U.S. Water Use vs. State-of-The-Art	Daily per capita Water Use (gpcd)	Estimated Daily per capita Water Savings When Compared to U.S. Avg. Use (gpcd)	Estimated Annual per capita Water Savings (gallons)	Estimated Annual Household Water Savings @ 2.6 people/household average (gallons)
TOILETS	U.S. Average Use in Non-conserving Household)	18.5	—	—	—
	Waterless Toilets	0.0	18.5	6,753	17,557
	1.0 gpf Toilet	5.1	13.4	4,891	12,717
	1.6 gpf ULF Toilet	8.2	10.3	3,760	9,775
SHOWER HEADS	U.S. Average Use in Non-conserving Household)	11.6	—	—	—
	2.5 gpm rated Showerhead (1.7 gpm actual)	8.8	2.8	1,022	2,657
FAUCETS	U.S. Average Use in Non-conserving Household)	10.9	—	—	—
	1.5 gpm rated Faucet (1.0 gpm actual)	8.1	2.8	1,022	2,657
CLOTHES WASHERS	U.S. Average Use in Non-conserving Household	15.0	—	—	—
	Front-loaded 27 gpl Clothes Washer	10.0	5.0	1,825	4,745
DISH WASHERS	U.S. Average Use in Non-conserving Household)	1.0	—	—	—
	4.5 gpl Dishwasher	0.5	0.5	183	475
	7.0 gpl Dishwasher	0.7	0.3	110	285

Source: "Handbook of Water Use and Conservation", *Amy Vickers, (WaterPlow Press, 2001), at 23-133.*
Notes: There is continual technological advancement in water appliances and fixtures, such that appliances/fixtures with even lower water use figures may currently be available.
gpm = gallons per minute; gpf = gallons per flush; gpl = gallons per load.

Chapter 2

Implementing Water Efficiency Measures Via Incentives, Regulations, and Education Programs

"When you drink the water, remember the spring."
-Chinese Proverb

Homeowners and businesses are not alone in working toward improved efficiency. Municipalities and urban water districts have an economic interest in encouraging their customers to conserve water where, as in many cases, water conservation costs less than a new water supply project. In our view, as officials charged with meeting the needs of their customers in a way that is consistent with the public interest, urban water providers have a responsibility to encourage the transition to new efficient plumbing fixtures, drought-tolerant landscapes, and other demand reduction measures. By way of incentives, regulations, and various educational efforts, municipal water providers have the available tools and strategies needed to achieve water use efficiency.

Incentives

A. Water Rate Structures

To gain the attention it deserves, water conservation must be embedded in the financial transactions of all water consumers in a truly understandable and overt manner, forming the foundation of other conservation programs. With some innovation and fine-tuning, aggressive rate structures can simultaneously reward conservation, discourage waste, provide revenue stability and equitably distribute costs so that all customer types feel that they are being treated fairly.

As an example, water rates that impose higher charges as water use increases can lawfully generate revenues to be used to subsidize a utility's retrofit program that distributes water-saving devices to customers or a utility's rebate program that refunds customers who purchase water-efficient appliances or replace water-loving turf with xeric vegetation. It strikes most people as equitable, and it is lawful where we have looked into it, that revenues collected from the sale of water for high volumes of discretionary or elective use should help pay for water efficiency on the system.

Uniform increases to water and sewer charges, increasing block rate structures, and seasonal rate structures (*e.g.* summer surcharges) are all potential rate-related efficiency strategies. Drought surcharges are another strategy. In Chapter 3 we describe in greater detail the issues surrounding the establishment of water-efficient rate design. To attain effective demand reduction via pricing in an equitable way, several pricing attributes must be carefully analyzed. The Irvine Ranch Water District's (IRWD) increasing block rate structure is an excellent model for illustrating an effective rate strategy.

Water Rate Example

- **The Irvine Ranch Water District**[61]
  In the early 1990's, the IRWD (California) made great strides in enacting a conservation price structure in response to drought conditions in the years prior. The IRWD developed criteria for determining a base allocation for each customer class based on the use and demand factors as well as the variances that would be considered to adjust the allocation. The base allocation for residential customers is based on number of household residents, landscape square footage, and actual daily weather and evapotranspiration (ET) data for the area. Non-residential landscape allocations are deter-

61 Arlene K. Wong, *"Chapter 2: Promoting Conservation with Irvine Water District's Ascending Block Rate Structure", Sustainable Use of Water: California Success Stories*, Pacific Institute for Studies in Development, Environment, and Security, 1999, at 27-35.

mined by square footage and ET. Agricultural allocations are determined by crop type (each crop has a different crop coefficient to adjust the reference ET), acreage of crop, number of crop rotations, local ET, and irrigation efficiency (set at 80 percent).[62] The rate structure adopted by IRWD was based on five blocks of water use, each with an increasing charge for the volume of water used. For residential customers, conservation was rewarded by offering a discounted rate ($0.64 per 1000 gallons) applied to the first 40 percent of the base allocation used and the base rate ($0.85 per 1000 gallons) for the remainder of the base allocation (40-100 percent).[63] Rates for water usage above 100 percent of the base allocation were set to send severe price signals for wasteful use, doubling in price for each ascending block, with a maximum charge of eight times the base rate ($6.84 per 1000 gallons) for water use exceeding 200 percent of the base allocation.

Through the introduction of this rate structure and its accompanying conservation programs (that were informed largely by the rate structure) the IRWD was able to reduce water use from its 1990 baseline for all customer classes by an average of 13 percent through 1998. Residential use was reduced by 19 percent during the first two years of the increasing block rate introduction. From 1991 to 1998, the residential use reduction averaged 13 percent (when compared to the original baseline consumption rates).[64] Non-residential landscape water use also declined substantially. While the acreage of irrigated landscape increased from 3,034 acres in 1990 to over 7,000 acres in 1998, the actual average water use dropped from 4.4 to 2.2 acre-feet/acre/year during the same period (50 percent reduction per acre).[65]

Another interesting pricing strategy has been applied by El Paso Water Utilities (EPWU) and the City of Boulder Water Utilities Department, in Texas and Colorado, respectively. In an attempt to curtail heavy-volume, discretionary and elective outdoor water use (*e.g.*, landscape irrigation), the EPWU and the City of Boulder have based their water block rates on the percentage of the Average Winter Consumption (AWC) of each individual account holder. The AWC strategy is applied to establish an estimated average indoor use rate for each account by assessing consumption patterns when outdoor use is negligible. By doing this, non-essential outdoor use can be identified for each customer through the remainder of the year. Both of these entities apply this AWC feature to a traditional increasing block rate structure. In other words, if a particular customer averages 100 units of water use per month during the winter (i.e., indoor only), and 200 units of water is used in July, this customer will be charged the block rate that corresponds to 200 percent of the AWC. This price structure is discussed and assessed further in Chapter 3.

Regardless of price structure, the experience of most municipalities has shown demand to be slightly inelastic—an increase in rates does not result in an equivalent decrease in usage.[66] It can be argued "that the effectiveness of pricing mechanisms as a water conservation tool is ultimately limited…by the fact that water in the West is generally quite inexpensive."[67] Because of the relatively low cost of water, creative and equitable price increases are needed to trigger significant changes in water-using behavior. In general, substantial price increases directed

62 *Id.* Baseline allocations for institutional, commercial, and industrial (ICI) were the most difficult to set because water use varies dramatically according to production cycles or business cycles. In most of the ICI cases, the IRWD decided to set allocations based on historical use.
63 *Id.* The IRWD base rate for 1997 was $0.64 per unit (100 cubic feet) or $0.85 per 1000 gallons.
64 *Id.*
65 Although the IRWD example provides a state-of-the-art rate structure model that aggressively instills a conservation ethic into water pricing, this type of structure may not be applicable to all water districts and municipalities. Implementation costs may be a limiting factor for some small districts. Also, the degree of monitoring/allocation complexity in the IRWD model may be a limiting factor for some larger districts.
66 Jan Gerston, "Conservation Rates Affect Demand Management," Texas Water Resources Institute, 1996.
67 Peter D. Nichols, Megan K. Murphy, and Douglas S. Kenney, "Water and Growth in Colorado: A Review of Legal and Policy Issues," Natural Resources Law Center, University of Colorado School of Law, 2001, at 119.

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"Water sustains all."
-Thales of Miletus
(600 B.C.)

at high use and non-essential use are necessary. Such increases must, of course, conform with any applicable state statutes that regulate utility revenues. We discuss these issues in Chapter 3.

B. Rebate and Retrofit Programs

Another incentive that water providers can offer customers is a rebate program. The utility can offer cash rebates (or water bill credits) to customers who purchase or implement water conserving appliances, fixtures, and even yard landscaping. Some very common water utility rebate programs involve Ultra-Low-Flow toilets, high-efficiency clothes washers, and turf/landscape replacement.

When water-efficient appliances, fixtures, and landscapes are installed, the water customer can recover most or all of the front-end costs in a relatively short period of time via lower water bills. The rebate program incentive is intended to expedite this cost recovery time for the customer. Once a customer's initial upgrade costs are recovered (via a combination of rebate and water savings), the customer's long-term savings will continue to accrue. Concurrently, the water provider will also experience a long-term demand reduction as a result of this effort. Rebate programs are designed to be a win-win situation for both the supplier and the consumer (i.e., the consumer can save money on water bills and the supplier can avoid the cost of acquiring new supplies), and of course for the natural environment where the water originates.

Since rebate programs require active customer participation, public relations and advertisement associated with the rebate program are essential. Many water providers throughout the Southwest offer a wide variety of rebate programs. Unfortunately, in many cases, the average customer never discovers their existence due to insufficient advertising and promotion.

Another related program strategy that provides a higher level of water use efficiency for indoor and outdoor use is the retrofit program. In these programs, the water providers typically make available basic water-conserving devices to their customers, usually for free. The water utility incurs a cost for the distributed items, but these costs are typically very low and, in any event, installation of the devices helps the utility save higher costs of water supply. Some common examples of retrofit items are showerheads, faucet aerators, toilet-efficiency kits, and rain sensors for irrigation systems.

The success of a retrofit program depends on the effectiveness of the utility's program implementation and the level of water efficiency offered by the retrofitted device or fixture. In many cases, water utilities will often "test the water" with a pilot retrofit program in a concentrated area of the their district. If sufficient water savings are achieved in a pre-established trial period, the utility can then decide to expand the retrofit program throughout the district.

Customer education is an important component of every retrofit program in the initial product distribution stage. In addition to simply installing a new fixture, customers should be educated on the reasons for the program and the potential savings that can be realized by the customer. Retrofit programs offer a great opportunity to educate customers on water conservation first hand. An educated and convinced customer is much more likely to participate in current or future rebate programs and is also more likely to practice voluntary indoor and outdoor water conservation.

Examples of existing rebate and retrofit programs from around the region include:

- $100-200 ULF toilet rebate;
- $100-230 high-efficiency clothes washing machine rebate;
- Cash for Grass: $1.00 per square foot of landscape converted from turfgrass to Xeriscape;

- $50 rain sensor rebate;
- $200 soil moisture sensor rebate;
- $50 multi-setting irrigation clock rebate;
- Business Rebates: rebates reflecting the actual system development charge ($9,500 per acre-foot saved). Offer to pay half upfront to cover capital costs of new technology and half after water savings achieved;
- 50 percent reimbursement of cost for drip irrigation materials and installation;
- $200 for individual irrigation audits;
- Free low-flow showerhead distribution;
- Free toilet leak detection kit distribution;
- Free faucet aerator distribution;
- Free rain sensor distribution.

El Paso Water Utilities (Texas) has been a leader in many aspects of water use efficiency for many years. The following two examples highlight this utility's long-standing rebate and retrofit programs, which tend to be "ahead of the curve" or "cutting-edge" upon implementation.

Landscape Rebate Program Example

Turf Replacement Program—El Paso Water Utilities, Texas[68]

Since 2001, the El Paso Water Utilities (EPWU) has offered a landscape/turf-replacement rebate program to all pre-existing residential, commercial, and industrial EPWU customers (*i.e.*, not applicable to new homes). The program provides an incentive to convert already-established turf areas to water-efficient landscape designs that incorporate drought-tolerant plants and water-efficient horticulture practices. During the 2001 pilot phase of the program, the Utility paid $0.50/square-foot of turf replaced with an approved landscape. In 2002, the EPWU raised the rebate amount to $1.00/ square-foot of replacement. By the end of 2002, EPWU asserts that this rebate program has involved 385 participants that removed about 29 acres of turfgrass, resulting in a water savings of approximately 23 million gallons. During the summer months of 2002, EPWU data indicates that residential customers were saving 150 to 180 gallons per day per account (!) due to this turf replacement program during the 2002 drought.

Appliance/Plumbing Fixture Rebate and Retrofit Program Example

El Paso Water Utilities, Texas[69]

In 2000, the EPWU distributed over 160,000 low-flow showerheads to its customers. The Utility asserts that preliminary evaluations showed a decrease of one billion gallons in wastewater sewer flows due to the showerhead replacement program in the year that followed its inception (thus reducing water demand by a similar amount). Since 1991, the EPWU has implemented an Ultra-Low-Flow toilet rebate program (max. 1.6 gal/flush). EPWU customers can receive a 75 percent rebate (up to $100 per toilet) for replacing an existing less efficient toilet with an ULF toilet. Since the inception of this program, over 34,000 toilets have been replaced. In recent years, the EPWU instituted a water-efficient clothes washer rebate program. EPWU residential customers can receive a $200 rebate by purchasing and installing a high-efficiency, horizontal-axis washing machine. This rebate is actually given through the El Paso Electric Company. EPWU records indicate that 544 machines have qualified for the rebate since the program's inception.

68 *See* the El Paso Water Utilities website at www.epwu.org.
69 *Id.*

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Regulations

In some cases monetary incentives (via rate structures or rebates) do not yield the intended response or reactions by all water customers. For example, some pricing incentives may have negligible effects on water consumption by customers in higher income brackets, since the charge for excessive consumption is not high enough to sway their decision-making. This phenomenon illustrates the importance of a multi-dimensional conservation program in any particular water district. If one means to achieve demand reduction fails for one sector of the customer population, it is essential to have another means available. This is where regulatory controls enter the picture.

A wide variety of regulatory controls has been implemented throughout the country and the Southwest. Some take the form of municipal ordinances. Some take the form of water utility rules. Regulations can address water waste, landscape design, indoor fixtures and appliances, irrigation systems, or even lawn watering times/days. Examples of some existing ordinances and regulations compiled from around the Southwest include:

- Fugitive water prohibited (no watering of sidewalks, driveways, and streets);
- Cool season turf grass limited to 50 percent of landscaped area;
- Six inches of new soil (or organic matter) required for all turf installation;
- Spray irrigation prohibited on slopes, narrow strips and within eight feet of a street curb;
- Spray irrigation prohibited between 9 a.m. and 6 p.m.;
- Prohibition of covenants that mandate bluegrass or prevent Xeriscape;
- Non-ULF toilets and showerheads to be upgraded when a property is sold;
- Large properties must have an irrigation audit;
- Very large properties (over 3 acres) must irrigate with reclaimed wastewater or make plans to transition to reclaimed wastewater within five years;
- Identified leaks must be fixed within five working days;
- Penalties for violations start at $100 and move up quickly, including misdemeanor charges and jail as potential penalties for repeat offenders.

Landscape Ordinance Example

City of Albuquerque, New Mexico[70]

In the mid-1990s, the City of Albuquerque enacted an ordinance that requires new developments to limit landscaped areas of high-water-use plants (including turfgrass) to 20 percent of total landscaped area, or to develop an appropriate water use budget that limits landscape irrigation. If the water budget for a particular development is exceeded, the City utility can penalize the customer $0.21 per every 100 cubic feet in excess of the allowed budget (administered on an annual basis).[71] The ordinance also established planting requirements and watering limitations on all city-owned properties. City departments are charged the same rate if their water budgets are exceeded. According to Albuquerque's water use monitoring before and after the ordinance enactment, single-family residential customers used 28 percent less water.[72] The City of Albuquerque also passed a comprehensive "Long-Range Water Conservation Strategy Resolution" in 1995 (Resolution 40-1995) that establishes comprehensive standards and goals regarding water conservation in the City. This resolution enacts rules and policies for water rate structures, long-range water supply planning, demand reduction goals, Unaccounted for Water reduction strategies, and specific conservation program attributes and objectives.[73]

70 Vickers, at 169-170.
71 *Id.*
72 *Id.*, at 176
73 City of Albuquerque, Resolution 40 – 1995, *"Long-Range Water Conservation Strategy Resolution."*

Education

A. Public Education and Program Promotion

Education programs are by far the most common demand-side water use efficiency measure in the Southwest, if not nationwide. Two primary reasons are that public education and awareness are the fundamental building blocks to all goals of water use efficiency and public education programs tend to be relatively affordable.

Although education and awareness provide a solid foundation for all other demand reduction programs, policies, and regulations, in most cases education alone will not effectively address demand-side water use efficiency. The importance of implementing a multi-dimensional conservation program cannot be overstated. However, education, awareness, and program promotion is typically the best place to begin an effective water conservation program.

An effective education program could involve a wide array of awareness/promotion attributes. Some examples of common program elements are as follows:

- Xeriscape demonstration gardens (with full public access);
- Grade-school classroom presentations on water use efficiency;
- Instruction courses on Xeriscape gardening;
- Instruction courses on indoor/outdoor water use efficiency;
- TV, radio, and newspaper awareness advertisements, public service announcements, and program promotions;
- Conservation "bill stuffers" (*e.g.*, leaflets on program promotion, efficiency tips, etc.);
- Comprehensive utility website, with up-to-date information on conservation opportunities, program details, water use statistics, district goals and consumption targets, real-time water account links, and contact information.

Education/Awareness Program Example

■ **"Water—Use It Wisely" Campaign, City of Mesa, Arizona**[74]

In recent years, the Mesa Water Utilities Department developed the "Water—Use it Wisely" campaign to increase awareness of water conservation and its importance. The campaign has grown to become a regional campaign, being supported by 14 other cities and organizations. To complement this campaign, the Department offers a variety of free landscape classes on topics such as landscape watering, drip irrigation, and Xeriscape landscaping. A variety of free brochures and literature is also available on topics such as Xeriscape landscaping, efficient landscape watering, plant guides, and other conservation tips. In addition, Mesa runs school programs for grades 2, 4, and 7 to help students develop a strong water conservation ethic.

Education/Awareness Program Example

■ **Xeriscape Demonstration Garden—Denver Water, Colorado**[75]

Denver Water, the Associated Landscape Contractors of Colorado, and other green industry organizations developed the world's first Xeriscape demonstration garden in 1981. The original portion of the garden was constructed on 1/3 acre on the southwest side of Denver Water's Administration Building at a cost $55,000 (60 percent of which came from private donations). Since the garden first opened to the public in 1982, it has nearly tripled in size to surround much of the Denver Water Administration Building. Today there are more than 200 species of drought-tolerant plants on display, including trees, shrubs, perennials, ornamental grasses, and test plots of alternative turf grasses.

74 Data provided in response to Smart Water survey and subsequent correspondence.
75 Data provided in response to Smart Water survey and subsequent correspondence.

B. Water Use Audits

Water use audits can be conducted for both indoor and outdoor water use in almost all municipal consumer sectors.

In general, the water provider's primary objective of a water use audit is to assess current water use trends of an individual consumer, and provide advice, direction, and/or physical fixes to the consumer. If a direct solution or recommendation cannot be provided in the field, the water auditor can lead the consumer to the appropriate information clearinghouse.

As with other key program implementation strategies, a water use audit program requires active and consistent participation from the water utility. Passive participation from the utility can breed passive, and often ineffective, participation from the utility customers. However, since water use audits are typically voluntary (for the customer), the prime form of action for the water utility is program promotion and advertising.

The fundamental cost to the utility is staff time (*i.e.*, auditor field time), and perhaps water efficiency kits. However, in some cases, audit programs are implemented at relatively low costs by involving summer interns, university students, and other forms of low-cost labor. Once the interns or students are educated on the basics of water auditing, they can carry out the actual tasks effectively and cheaply. Some water providers also direct customers to utilize private water audit consultants, while offering a substantial rebate for the private auditor services.

Indoor water use audits can consist of any combination of the following:

- Fixture and appliance leak detection (active or via distribution of leak detection kits);
- Leak repair;
- Faucet, showerhead, and/or toilet flow rate measuring, with suggestions for higher efficiency fixtures and appliances;
- Assessment of daily indoor water use behaviors, with recommendations to improve efficiency;
- Distribution of efficiency kits and retrofit fixtures or devices;
- Summary "report card" or rating on overall indoor use to inform customer where he/she stands with respect to indoor water use efficiency;
- Calculation on potential water savings (and monetary savings) for the customer if all efficiency measures are implemented.

Outdoor or irrigation water use audits can consist of any combination of the following:

- Sprinkler or irrigation system efficiency evaluation;
- Irrigation system leak detection;
- Assessment of existing vegetation types, with estimated computations of vegetation water needs;
- Development and recommendation of an efficient irrigation schedule for landscape;
- Evaluation of outdoor water use behaviors and water wasting practices, with recommendations to improve efficiency (*e.g.*, lawn watering, car washes, swimming pools maintenance, etc.);
- Distribution of information and literature on Xeriscape options;
- Distribution of irrigation retrofit or augmentation devices (*e.g.*, rain sensors, etc.);
- Summary "report card" or rating on overall outdoor use to inform customer where he/she stands with respect to outdoor water use efficiency;
- Calculation on potential water savings (and monetary savings) for the customer if various efficiency measures are implemented.

Indoor & Outdoor Water Use Audit Program Example

- **Zanjero Program, City of Tucson, Arizona**[76]

  In 1996, the Tucson Water Department's Zanjero Program began offering free indoor and outdoor water audits for residential customers. The program currently consists of a group of six Zanjeros who have been trained in indoor and outdoor water conservation and a wide variety of related water issues. The Zanjeros check for leaks, measure showerhead and faucet flow rates, search for special water uses (*e.g.*, pools, spas, misting systems, etc.), and analyze the efficiency of the irrigation system. New low-flow fixtures, faucet aerators, or other water-saving devices are installed, if necessary. The customer receives the results of the analysis, along with advice on how to decrease their water use, and their water bills.

  In order to ensure the Zanjero Program has the greatest opportunity to make a significant change in Tucson's overall water use, the Tucson Water Department initially targeted residential customers who use more than 25 Ccf (hundred cubic feet) in any month of the year (roughly 18,700 gallons/month). These water users typically have the greatest opportunities for reductions in overall water use. Approximately 36,000 residential customers qualified for the first year of this program. These customers received a letter inviting their participation in the Zanjero Program. Even though the initial invitations were targeted at high water users, the program is open to all Tucson Water customers.

Integrated Demand- and Supply-side Planning

A critical element of "state-of-the-art" efficiency is a cohesive plan that puts all the pieces together. Integrated resource planning—an approach that has been the norm for electric utilities for at least a decade—allows for informed decision-making through consideration of many alternatives and their relative costs and benefits.

The City of Denver has been using integrated resource planning (IRP) for roughly a decade.[77] As a result, planners at the City's water provider, Denver Water, have been able to closely compare the costs and benefits of a wide range of demand- and supply-side measures to meet future water needs. IRP documents also provide public review, transparency that is desirable, if not required, by public or quasi-public entities dealing with important public resources.

76 Data provided in response to Smart Water survey and subsequent correspondence (*see also* Tucson Water Department's website at www.ci.tucson.az.us/water/).
77 Denver Water, Water for Tomorrow: An Integrated Resource Plan, July 1997. A 2002 IRP update is also available.

Chapter 2

Conclusion

"Here is a land where life is written in water..."
-Thomas Hornsby Ferril

This chapter has described the state-of-the-art measures and techniques that urban water providers can use to improve water use efficiency on their systems. Their implementation is as important to the future of our region in the 21st Century as dam-building was in the 20th Century.

In our view, it is well past time for the region's urban water providers to consider and implement these measures and techniques according to the unique conditions which each of them faces. They should do so not only as a temporary measure to address the drought, but also as an instrument of long-term water supply planning. If they do so, we can lower the average cost of water supply and begin to live sustainably in this magnificent but arid region.

Photo by the Bureau of Land Management.

SCSFB2-1. Please see the Master Response on the WSMP 2040. To implement Conservation Level E and gain the additional 2 MGD in water savings, the cost (total present value) to EBMUD was modeled at approximately $120 million. The total difference in cost between Levels D and E, which includes both costs to the District and costs to the customer, would be approximately $260 million.

Conservation Level D was selected for inclusion in the Preferred Portfolio because it establishes an aggressive conservation goal that is greater than the District's current level of investment and it ensures that the District will continue to be a leader in the demand management aspects of future water supply planning. This effort by EBMUD will continue to include education and outreach to encourage conservation.

SCSFB2-2. The Board selected Recycled Water Level 3, the highest level of water recycling, and it is part of the Preferred Portfolio. If the Board approves the WSMP 2040 and certifies the PEIR, funding will be allocated for this recycled water level.

SCSFB2-3. EBMUD acknowledges the commenter's opposition to expanded dams or reservoirs. Please see the Master Responses on the WSMP 2040 and the Enlarge Pardee Reservoir component. The alternatives development process for the WSMP 2040 included an in-depth evaluation of over 50 components and a range of portfolios before the Preferred Portfolio was selected by the Board. If the WSMP 2040 is approved and implemented, EBMUD will pursue multiple supplemental supply components simultaneously, with the most cost effective and efficient projects being pursued first. The success of one component could allow the District to delay other additional components over the course of the planning period. EBMUD intends to evaluate the proposed surface water storage projects, particularly the Enlarge Pardee Reservoir component, as part of a future project-level review if and when this component moves to the project-specific planning stage. Impacts will be thoroughly evaluated in a project-level EIR.

SCSFB2-4. Please see the Master Response on Program-level EIR analysis. At this time, water transfers partners have not been identified, and locations where environmental impacts would occur are not known. Thus, a thorough examination of impacts associated with transfers cannot be prepared for this program-level impact analysis. The District, however, is not proposing transfers that would use Delta facilities or involve moving water though the Delta. If and when the District decides to move forward with any long-term transfers, project-level CEQA review will be undertaken to identify potential impacts and mitigation measures to reduce those impacts.

SCSFB2-5. EBMUD acknowledges the commenter's support for a 20 percent rationing level. Please see Response FC3-5. As discussed elsewhere, EBMUD selected a level of rationing that is considered to be the most feasible, allowing flexibility as necessary during dry years.

SCSFB2-6. The WSMP 2040 Preferred Portfolio includes three components that involve groundwater storage and recovery: Bayside Groundwater Project Phase 2, Sacramento Basin Groundwater Banking/Exchange and IRCUP/San Joaquin Groundwater Banking/Exchange.

SCSFB2-7. EBMUD has long maintained an aggressive water conservation pricing structure that includes tiered rates and 80 percent volumetric based rates to help encourage customers to use water more efficiently. EBMUD conservation programs are founded on a principle that it is possible to conserve and recycle water without compromising service or unnecessarily impacting lifestyles. Pricing structure has always been one of the tools available for EBMUD to use, especially during periods of water shortages, to set permissible and equitable rates that balance supply and demand while collecting revenues sufficient to ensure that EBMUD can deliver high quality water supply.

The water conservation modeling undertaking during the WSMP 2040 analysis was based on this principle to promote a voluntary approach and to reserve a steep tiered rate structure if needed in response to drought emergencies. However, an analysis was also conducted to consider the conservation impact of tiered pricing.

The tiered pricing analysis indicated that while a steep tiered structure may be able to accelerate and achieve water savings earlier in the 30-year planning period, the net long-term savings by the year 2040 are not substantially increased above the 39 million gallon per day (MGD) savings goal established by Level D in the Preferred Portfolio. In the event EBMUD adopted steep tiered rates (outside of Level D), the rate of projected water savings could be accelerated relatively quickly. However, it needs to be recognized that the mandatory savings achieved through a steep tiered rate structure overlap with the savings achieved more gradually through the primarily voluntary measures included in Level D of the Preferred Portfolio. Including a steep tiered pricing element in Level D would result in lower savings from other measures identified for the same target customers. Therefore, the net results of this are in the margin of error (2 to 4 MGD) of what is expected to be achieved through the primarily voluntary measures already included in Level D. At the end of 30 years, any savings resulting from steep tiered pricing would not significantly increase overall savings that are otherwise anticipated. In other words, this would not markedly alter the forecasted savings in Level D and would not change the complement of components included in the Preferred Portfolio to satisfy the District's Need for Water through the year 2040.

In addition to analyzing tiered pricing, EBMUD staff also studied the Irvine Ranch Water District (IRWD) rate system and repesented these results to the EBMUD Board of Directors at a meeting of the EBMUD finance committee that took place on June 23, 2009. This work showed that EBMUD's current pricing system is generally as effective in controlling water use, and can better target water conservation overall, rather than an IRWD approach which tends to penalize water wasters.

Aside from the finding of limited additional savings as identified above, note that EBMUD views that steep tiered pricing has significant effects on customers and could negatively impact EBMUD's ability to effectively use pricing as a way to achieve rationing during water shortages. Specifically, using steep tiered pricing as a water conservation measure in every year removes the opportunity to use financial penalties as a way to achieve rationing during droughts. This is because it can be reasonably assumed that customers who are most driven by cost (to use less water) would have already adjusted their use. Similarly, from a revenue perspective, a steep tiered rate structure in all years would also make it more difficult for EBMUD to further increase rates and recover lost revenue during dry years. Also, as the measures in Level D approach the demand hardened threshold, implementing a steep tiered rate structure could potentially cause financial hardship as water savings become harder to achieve for the customer.

To summarize, the District is not precluding the use of tiered rates and can use rates as a future tool if needed to help customers achieve the projected 39 MGD in savings. At this point, however, tiered rates do not appear to further reduce the Need for Water or mitigate impacts from other supplemental supply components. Therefore, EBMUD has chosen to defer inclusion of steep tiered conservation rates until a later time if they are needed to achieve the Level D conservation goal.

SCSFB2-8. EBMUD recognizes the value of water conservation and recycled water and has included them as components in the WSMP 2040 Preferred Portfolio. Please see the Master Response on the WSMP 2040.

SCSFB2-9. Please see the Master Response on the Demand Study for a discussion of demand assumptions and projections. As part of the WSMP 2040 effort, EBMUD compared projections that could be obtained from population estimates. The projections are also based on specific consultations with local jurisdictions to ensure that projections are accurate.

SCSFB2-10. EBMUD also agrees that water transfers can be an efficient means of satisfying water demand in dry years. At this stage, there is no certainty regarding the potential impacts of the Northern California Water Transfers component because the sources of these transfers are not known. EBMUD intends to pursue transfers that can be undertaken without significant environmental impacts. At the project level, when a specific water transfer is undertaken, EBMUD will examine a broad range of scenarios and the potential impacts and possible means of mitigating impacts to agriculture, hydrology, fish and wildlife, and other resource areas. Please see the Master Response on Program-level EIR analysis.

SCSFB2-11. Please see the response to Sierra Club Comment 10 above. Potential impacts due to fallowing or extracting would be analyzed for specific transfers. At this stage, without further information on the source of the transfer, the mitigation proposed in the comment cannot be formulated.

SCSFB2-12. EBMUD is currently examining water transfer opportunities on the Mokelumne River, and as noted in the PEIR, EBMUD will pursue opportunities in the Sacramento River watershed area. At the project level, EBMUD will examine a broad range of scenarios and the potential impacts and possible means of mitigating impacts to agriculture, hydrology, fish and wildlife, and other resource areas. Please see the Master Response on Program-level EIR analysis.

SCSFB2-13. Please see Response SCSFB2-10 above. EBMUD cannot develop a uniform policy for mitigating water transfers because each water transfer has unique circumstances that must be considered.

SCSFB2-14. Please see Response SCSFB2-10 above. Potential impacts to salmon habitat and associated populations will be thoroughly evaluated in project-level CEQA documentation when and if the District moves forward with the Northern California Water Transfers component. At this point, it is not clear that any particular transfer would involve increased use of groundwater, and further study would be needed at the project level.

SCSFB2-15. As noted in Sections 8.3.4 through 8.3.6 of the Draft PEIR, a number of Delta planning efforts are currently underway, including the CALFED Bay-Delta Program, Bay Delta Conservation Plan, Delta Vision, and Delta Risk Management Strategy. The outcomes of these ongoing complex efforts cannot be determined at this stage. Furthermore, it is difficult to predict Delta conditions in the future when project-level planning for the Preferred Portfolio components occurs, which may be 20 years from now for certain components. Impact 5.2.A-9 on page 5.2.A-19 through 5.2.A-21 of the Draft PEIR discusses potential impacts to Delta downstream users and concludes that these impacts are potentially significant.

EBMUD is involved in present efforts to study and address conditions in the Delta. Mokelumne River flows constitute a small percentage of the overall flow to the Delta, but it is important to EBMUD to ensure the long-term success of efforts to protect Mokelumne fisheries and to protect the Delta ecosystem. At this stage, the final outcome of pending management efforts in the Delta cannot be determined with certainty, but this will be examined in more detail at the project level, if and when EBMUD seeks to implement specific portfolio components.

SCSFB2-16. EBMUD acknowledges that the Northern California Water Transfers component could adversely affect a number of fish and wildlife species, as noted in Section 5.2.C of the Draft PEIR. At this stage, there is no certainty regarding the potential impacts of the Northern California Water Transfers component, although EBMUD will seek to avoid impacts to fish and wildlife and water users in undertaking any transfer. At the project level, when a specific water transfer is undertaken, EBMUD will examine a broad range of scenarios and the potential impacts and possible means of mitigating impacts to agriculture, hydrology, fish and wildlife, and other resource areas. This discussion will include all threatened and

endangered species that could be potentially affected. Please see the Master Response on Program-level EIR analysis.

SCSFB2-17. EBMUD supports the position that the rate structure is important to encouraging water conservation from our customers. EBMUD's current rate structure (as established for the Fiscal Year 2010) for single-family residential (SFR) accounts has a three-tiered structure, with the first tier set at a price level of $2.04 per Hundred Cubic Feet (Ccf) up to 7 units; the second tier set at a price of $2.48 per Ccf to 16 units, and the third tier set at $3.04 per Ccf above 16 units. Combined with our conservation efforts, the average annual consumption for our SFR accounts is 11.5 Ccf/month (from year 2006 data), which is below the average annual consumption as measured for Irvine Ranch Water District's (IRWD) SFR customers (16.1 Ccf/month), as was referenced in Comment SCSFB2-17. When use is adjusted for the average household size of 2.52 occupants per household in EBMUD's service area, EBMUD's SFR per capita use is 112 gallons per day, which is comparable to the 107 gallons per day for the city of Tucson, a community also cited in Attachment 4 of the Comment SCSFB2-17 as an example of how a particular community can adopt steep tier prices to encourage conservation.

There may be additional water savings that could be achieved through steeper tier prices, but given current EBMUD's low per capita SFR use, the potential savings likely are limited. In addition, the 2040 WSMP is targeting an additional 39 MGD that will be achieved through other conservation measures. As stated in Response SCSFB2-7 above, there is significant overlap with the potential savings from steeper tiers and the conservation measures in the 2040 WSMP.

As noted in Response SCSFB2-7, EBMUD views that adopting a steeper tiered approach is appropriate in response to a drought, and has in the past taken such an approach. As stated in Response SCSFB2-7, EBMUD wishes to continue to use steeper tiering as a drought management tool. There is a concern that were it to be incorporated into a non-drought rate structure, it would make it difficult and perhaps impractical to use rates to encourage water use reductions during droughts.

SCTG
090322

From: Jon M Sturtevant [mailto:js3060@yahoo.com]
Sent: Sunday, March 22, 2009 7:26 PM
To: Francis, Thomas
Subject: Pardee Reservoir enlargement

March 22, 2009

Thomas B Francis
EBMUD Water Supply Improvements Division
375 11th St MS 407
Oakland, CA 94607

Dear Mr. Francis,

I am writing on behalf of the Tuolumne Group of the Sierra Club. Our members live in both Calaveras and Tuolumne counties.

We stand in opposition to the Pardee Reservoir enlargement and the Lower Bear River Dam raise. These actions are too expensive and provide little new water storage.

The Pardee Reservoir enlargement will drown a segment of the Mokelumne River destroying kayaking, fishing and public access. Additionally nearly a mile of the river will be seasonally inundated. This will preclude designation as a Wild and Scenic protection as proposed by the Bureau of Land management.

The proposed raise at Lower Bear River Dam could affect flows in the Mokelumne River that have been established to protect fish, wildlife and recreation.

EBMUD has implemented excellent conservation plans for developments in its district. More water can be saved more economically than by building dams.

1

Thanks in advance for your consideration.

Sincerely,

Jon M Sturtevant
Chair, Tuolumne Group of the Sierra Club

Sierra Club Tuolumne Group (SCTG)

SCTG-1. Please see the Master Responses on the WSMP 2040 and the Enlarge Pardee component. Impacts to fish, wildlife, and recreation will be fully examined in a project-level EIR when and if the District decides to move forward with project-level planning.

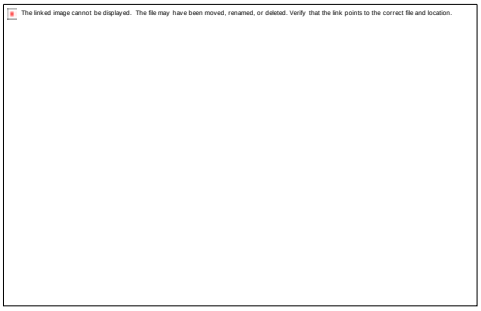
In its 2008 Sierra Resource Management Plan, the BLM recommended 20 miles of the Mokelumne River for designation as a Wild and Scenic River. The BLM recommended the recreation classification for 2.94 miles of river approximately between the State Route 49 Bridge and the Electra Afterbay, also known as the Electra Run.

At this stage, there is no certainty regarding the potential impacts of the Enlarge Lower Bear Reservoir component. At the project level, EBMUD will examine a broad range of configurations and the potential impacts, including impacts to designated river segments, and possible means of mitigating impacts to fish and wildlife, recreational uses, and other resource areas.

EBMUD recognizes the value of water conservation and has included it as a component in the WSMP 2040 Preferred Portfolio. EBMUD is also committed to maintaining the flows set forth in the Joint Settlement Agreement.

SNA
090420

From: Marion Gee [mailto:marion@sierranevadaalliance.org]
Sent: Monday, April 20, 2009 3:22 PM
To: Francis, Thomas
Cc: katherine@mokeriver.com; chris@foothillconservancy.org
Subject: Comments on Draft Environmental Impact Report for EBMUD 2040 Water Supply Management Plan



April 20, 2009

Thomas B. Francis
EBMUD Water Supply Improvements Division
375 11th Street MS 407
Oakland, CA 94607

RE: Pardee Reservoir Expansion EIR

Dear Mr. Thomas Francis:

The Sierra Nevada Alliance urges you to continue your commitment to water conservation and other soft-path solutions and to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

The Sierra Nevada Alliance has been protecting and restoring Sierra lands, water, wildlife and rural communities since 1993. We are a network of 106 grassroots conservation groups. Our activity spans 22 counties in the Sierra, and we also participate at the California state level. Our Water & Climate Change Program is currently working to ensure that state and local money is invested in soft path solutions, like water conservation and headwaters restoration, to address California's water crisis. 1

EBMUD has taken commendable and innovative measures to reduce the water use of its customers, create a model for water neutral development and to ensure a reliable water supply by investing in programs like water recycling. The Alliance encourages EBMUD to continue to be a pioneering leader by expanding your water conservation program and investing in more water recycling, water efficiency, graywater recycling and other soft path projects in order to ensure water for your customers. Taking such measures

will ensure regional self-sufficiency, will save money and will prevent irreparable damage to a river that provides economic, environmental and recreational benefits to Sierra foothill communities. 1

Some other reasons to drop your plans to expand Pardee reservoir and find and invest in alternative, more environmentally responsible means of ensuring a reliable water supply include:

- A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River. 2
- Enlarging Pardee will drown a part of the Mokelumne River popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate important cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management. 3
- Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development. 4
- Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads. 5
- There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently. 6

Please leave a lasting legacy by protecting these amazing stretches of the Mokelumne River for future generations.

Sincerely,

Joan Clayburgh
Executive Director

SNA
090420
Copy (Letter)

SIERRA NEVADA ALLIANCE

Keeping light in the range.

April 20, 2009

Thomas B. Francis
EBMUD Water Supply Improvements Division
375 11th Street MS 407
Oakland, CA 94607

RE: Pardee Reservoir Expansion EIR

Dear Mr. Thomas Francis:

The Sierra Nevada Alliance urges you to continue your commitment to water conservation and other soft-path solutions and to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

The Sierra Nevada Alliance has been protecting and restoring Sierra lands, water, wildlife and rural communities since 1993. We are a network of 106 grassroots conservation groups. Our activity spans 22 counties in the Sierra, and we also participate at the California state level. Our Water & Climate Change Program is currently working to ensure that state and local money is invested in soft path solutions, like water conservation and headwaters restoration, to address California's water crisis.

EBMUD has taken commendable and innovative measures to reduce the water use of its customers, create a model for water neutral development and to ensure a reliable water supply by investing in programs like water recycling. The Alliance encourages EBMUD to continue to be a pioneering leader by expanding your water conservation program and investing in more water recycling, water efficiency, graywater recycling and other soft path projects in order to ensure water for your customers. Taking such measures will ensure regional self-sufficiency, will save money and will prevent irreparable damage to a river that provides economic, environmental and recreational benefits to Sierra foothill communities.

Some other reasons to drop your plans to expand Pardee reservoir and find and invest in alternative, more environmentally responsible means of ensuring a reliable water supply include:

- A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.
- Enlarging Pardee will drown a part of the Mokelumne River popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate important cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.
- Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

Post Office Box 7989, South Lake Tahoe, California 96158
Phone: 530.542.4546 Fax: 530.542.4570 info@sierranevadaalliance.org
www.sierranevadaalliance.org

- Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.
- There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave a lasting legacy by protecting these amazing stretches of the Mokelumne River for future generations.

Sincerely,

Joan Clayburgh
Executive Director

Post Office Box 7989 South Lake Tahoe, California 96158
Phone: 530 542 4546 Fax: 530.542 4570 info@sierranevadaalliance.org
www.sierranevadaalliance.org

Sierra Nevada Alliance (SNA)

SNA-1. The District acknowledges the commenter's support for water conservation, water recycling and other soft path projects, as well as the commenter's opposition to the Enlarge Pardee Reservoir component. As stated in the Master Response on the WSMP 2040, the District is committed to implementing high levels of water conservation and recycling.

SNA-2. Please see the Master Responses on the Enlarge Pardee Reservoir component and the WSMP 2040. EBMUD believes the Enlarge Pardee Reservoir component would provide a reliable water supply to meet the Need for Water in dry years. The District would seek to involve partner agencies to share costs and to provide regional benefits in terms of yield. Project impacts, including impacts on the Mokelumne River, will be thoroughly examined in a project-level EIR when and if the District decides to move forward with project-level planning for this component.

SNA-3. Please see Master Responses on the Enlarge Pardee Reservoir component and Program-level EIR analysis. Project impacts on recreation, historic structures and cultural resources, and the Mokelumne River will be thoroughly examined in a project-level EIR when and if the District decides to move forward with project-level planning for this component. Please see Response BLM-1 for a discussion of the proposed Wild and Scenic River designation for the North Fork/Main Mokelumne River.

SNA-4. Please see the Master Responses on the Enlarge Pardee Reservoir component and Program-level EIR analysis. As noted in the comment, EBMUD and other local agencies have invested significant resources to promote recreation in the Mokelumne River watershed. EBMUD will consult with agencies, including the Bureau of Land Management and Caltrans, and will coordinate with local residents when and if project-level planning moves forward for this component. Impacts to recreation will be fully examined in a project-level EIR when and if the District decides to move forward with project-level planning.

SNA-5. Please see the Master Responses on the Enlarge Pardee Reservoir component and Program-level EIR analysis. Impacts to public safety and emergency access will be fully examined in a project-level EIR when and if the District decides to move forward with project-level planning for this component.

SNA-6. Please see the Master Responses on the WSMP 2040 and the Demand Study. The Preferred Portfolio includes a range of components that are intended to provide the District with flexibility to respond to uncertainties such as climate change and the timing of droughts. The Enlarge Pardee Reservoir component would provide a reliable water supply in dry years.

SNAC
090503

From: snacattack3@gmail.com on behalf of Jill Seale - SNAC
Sent: Sun 5/3/2009 11:54 AM
To: Francis, Thomas
Subject: Mokelumne River

Thomas Francis:

In response to the proposal for EBMUD to expand Pardee dam by raising the water level to inundate the Hwy. 49 and Middle Bar bridges of the Mokelumne, we are writing to oppose.

This 3 mile stretch of river is a popular recreational and historic waterway. So many people and organizations in our area of the country and in the state support effective stewardshipship of our watersheds. They will oppose flooding this section of river. As you know, we lost the Stanislaus River to New Melones dam and so many millions of dollars of tourism went with it. The only river around for miles is the Mokelumne and nobody we know wants to see it buried under a new dam. Amador and Calaveras counties rely on tourism and our business is built on it. Any threats to tourism will be opposed, as we don't want to have less to offer tourists. Plus, local residents enjoy the Mokelumne River. 1

Please consider you other options for EBMUD water needs.

Thank you,
Jill Seale

--
Sierra Nevada Adventure Co.
http://snacattack.com <http://snacattack.com/>
Gear For Wild Environments

Sierra Nevada Adventures Co. (SNAC)

SNAC-1. Please see the Master Responses on the Enlarge Pardee Reservoir component and Program-level EIR analysis. Project impacts will be thoroughly examined in a project-level EIR when and if the District decides to move forward with project-level planning for this component.

F

TFF
090323

Tracy Fly Fishers • P.O. Box 1916 • Tracy, CA 95378
A Non-Profit Corporation

March 23, 2009

Thomas B. Francis
EBMUD Water Supply Improvements Division
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis:

The Tracy Fly Fishers oppose the proposed Pardee Reservoir enlargement as described in EBMUD's Water Supply Management Plan and Programmatic Environmental Impact Report.

The proposed Pardee Reservoir surface area increase will extend into an area of the Mokelumne River canyon popular with anglers and white water boaters. Extension in that area will destroy today's public access facilities and a major bridge. Additional storage requires the relocation of the Hwy 49 bridge, and maximum storage will unacceptably inundate areas proposed for Wild & Scenic River protection and regarded as excellent trout fishing waters by our club. 1

We cannot stress enough that conservation measures have not been undertaken with clarity and backed with enforcement. Administrative measures have not been exhausted such that more storage is reasonable, required, or beneficial. We concur with the comments made by Chris Shutes of the California Sportfishing Protection Alliance regarding conservation. 2

More storage on the Mokelumne additionally increases the impact of any future dam failure on downstream residents and habitat, which this proposal fails to address adequately. 3

Mitigation of habitat loss for threatened and endangered fish is required and would therefore add much cost to this project unless ignored. We caution against ignoring the law. 4

Please inform me of any future decisions EBMUD may make concerning the plan and the proposed Pardee Reservoir enlargement. 5

Thank you.

Sincerely:

Corey Cate
Conservation Chairman
Tracy Fly Fishers
P. O. Box 1918
Tracy CA 95378
925 245 1359
cateintracy2@sbcglobal.net

Tracy Fly Fishers (TFF)

TFF-1. EBMUD acknowledges the commenter's opposition to the Enlarge Pardee Reservoir component. The Draft PEIR identifies potential impacts that would result from the Enlarge Pardee Reservoir component, including impacts on recreation and access (see Impact 5.2.D-2 on pages 5.2.D-6 through 5.2.D-8, and Impact 5.2.E-1 on pages 5.2.E-2 through 5.2.E-4). EBMUD will thoroughly evaluate potential impacts to recreation, traffic and emergency access in a project-level EIR when and if the District decides to move forward with project-level planning for this component. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component.

The 2008 Sierra Resource Management Plan included the BLM recommendation to designate approximately 20 miles of the Mokelumne River as Wild and Scenic River. BLM recommended the recreation classification for 2.94 miles of river approximately between the State Route 49 Bridge and the Electra Afterbay, also known as the Electra Run.

TFF-2. EBMUD conducted an extensive alternatives development process for the WSMP 2040, as described in Section 2.3 of the Draft PEIR (see pages 2-4 through 2-7). EBMUD held a series of public meetings throughout this process to get input from the public. The EBMUD Board of Directors selected an aggressive conservation target of 39 MGD between 2010 and 2040. This amount would be in addition to the water conserved under EBMUD's current conservation programs, which are projected to reach 22.5 MGD by 2010. As stated on page 3-8 of the Draft PEIR, of the five conservation levels considered (A through E), Conservation Level D was identified as being the highest, considering the limited cost-effectiveness and minimal gain of Level E. Please see the Master Response on the WSMP 2040.

TFF-3. Impacts on downstream residents and habitat resulting from potential dam failure will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with project-level planning for the Enlarge Pardee Reservoir component. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component.

TFF-4. The Draft PEIR acknowledges that the Enlarge Pardee Reservoir component would have impacts on special status fish species and their habitat and that these would have to be mitigated, consistent with applicable laws. See Impacts 5.2.C-8 and 5.2.C-11 on pages 5.2.C-14 through 5.2.C-15, and 5.2.C-17. Impacts on special-status fish species and their habitat will be thoroughly evaluated in a project-level EIR when and if the District decides to move forward with project-level planning for the Enlarge Pardee Reservoir component. Additionally, the project-level EIR will present all feasible mitigation measures that would reduce these impacts to less-than-significant levels. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component.

TFF-5. EBMUD will inform the commenter of any future decisions or actions concerning the WSMP 2040 and the Enlarge Pardee Reservoir component.

TVF
090323

March 23, 2009

Thomas B. Francis
EBMUD Water Supply Improvements Division
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis:

The Tri-Valley Fly Fishers oppose the proposed Pardee Reservoir enlargement as described in EBMUD's Water Supply Management Plan and Programmatic Environmental Impact Report.

The proposed Pardee Reservoir surface area increase will extend into an area of the Mokelumne River canyon popular with anglers and white water boaters. Extension in that area will will unacceptably inundate areas proposed for Wild & Scenic River protection and regarded as excellent trout fishing waters by our club. 1

We believe that adherence to the law regarding endangered species protection and mitigation of the effects of projects like this is paramount.
Mitigation of habitat loss for threatened and endangered fish is required and would therefore add much cost to this project unless ignored. We caution against ignoring the law.

We cannot stress enough that conservation measures have not been undertaken with clarity and backed with enforcement. Administrative measures have not been exhausted such that more storage is reasonable, required, or beneficial. We concur with the comments made by Chris Shutes of the California Sportfishing Protection Alliance regarding conservation. 2

Please inform me of any future decisions EBMUD may make concerning the plan and the proposed Pardee Reservoir enlargement.

Thank you.

Sincerely:

Corey Cate
Conservation Chairman

Tri-Valley Fly Fishers

Tri-Valley Fly Fishers (TVF)

TVF-1. In its 2008 Sierra Resource Management Plan, the BLM recommended 20 miles of the Mokelumne River for designation as a Wild and Scenic River. The BLM recommended the recreation classification for 2.94 miles of river approximately between the State Route 49 Bridge and the Electra Afterbay, also known as the Electra Run. The recreation classification applies to "those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past".

BLM's recommendation of Wild and Scenic River designation for the Mokelumne River is currently awaiting Congressional approval. The District will collaborate with BLM regarding management of lands adjacent to the Mokelumne River and NEPA compliance, if needed, when and if project-level planning moves forward.

TVF-2. At this stage, there is no certainty regarding the potential impacts of the Enlarge Pardee Reservoir component. At the project level, EBMUD will examine a broad range of configurations and the potential impacts and possible means of mitigating impacts to recreational uses, cultural resources, transportation and other resource areas. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component.

EBMUD recognizes the value of water conservation and has included it as a component in the Preferred Portfolio. Please see the Master Response on the WSMP 2040.

UCC
090422

-----Original Message-----
From: Bob and Cindy [mailto:countrymice@volcano.net]
Sent: Wednesday, April 22, 2009 4:09 PM
To: Francis, Thomas
Subject: Pardee Dam

Hay check this one out. Why not cap Camanche's dams? Flooding the Mokelumne will have no issue from recreation users, since it has already

been established by East Bay mud to be a dangerous area to be. All you have to deal with is the ranchers n that area. Its a win win. Please let

me know how you feel about this idea. Bobby Currall, co- chair Up Country Community Council

1

Upcountry Community Council (UCC)

UCC-1. Enlarging Camanche Reservoir was one of many potential supplemental supply projects that were considered early in the WSMP 2040 development process. EBMUD used a matrix review process, based on certain objective categories, that gave consideration to the following: 1) Engineering, Legal and Institutional Considerations; 2) Economic Considerations; 3) Public Health & Safety and Community Considerations; and 4) Environmental Considerations. The Enlarge Camanche Reservoir component did not survive the screening process because of a failure to satisfy these objective categories. The results of the component screening were made public as part of the Feb. 13, 2008 Board Workshop (Board Workshop Number 6). Among many factors that should be noted is that the difference in elevation between Camanche and Pardee results in the need for greater pumping costs and impacts, and the shallower reservoir area eliminates any benefits in terms of temperature management. Other reasons for eliminating the Enlarge Camanche Reservoir component were discussed at the workshop.

2.2.5 Individuals and Small Businesses

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Form Letters

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Form Letter 1
090318

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years. 1

The Pardee reservoir enlargement will drown a segment of the Mokelumne

River recommended by the BLM for wild and scenic river protection. This

section is also popular for kayaking and fishing. The Pardee enlargment would destroy the recently renovated Middle Bar Bridge and other existing and proposed public access facilities, as well as require the costly relocation of the Hwy 49 bridge. 2

The Lower Bear reservoir enlargement could alter Mokelumne River flows that have been improved to benefit fish, wildlife, and recreation. These improved flows took years to negotiate as part of PG&E's federal hydroelectric license. EBMUD's proposed reservoir enlargements will thwart the decades of work that have gone into making the Mokelumne a more viable recreation resource that will economically benefit foothill communities. 3

More dams and above ground water storage has always been a poor way to conserve water and in this critical environmental situation, this is especially true. Underground storage and any facility which allows little or no evaporation is the only answer to our water storage problems. 4

Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Form Letter 1

Form Letter 1-1: A thorough study was undertaken to estimate the water demand within the EBMUD service area through the year 2040. Please refer to the Master Response on the Demand Study for a detailed response that explains the appropriateness of the study methodology and results.

As detailed in the Draft PEIR, the Preferred Portfolio as selected by the EBMUD Board of Directors incorporates a high number of water recycling projects combined with extensive and aggressive water conservation. That approach will enable EBMUD to satisfy the projected increase in demand in the service area through the planning horizon. However, supplemental supply projects, including the Enlarge Lower Bear Reservoir and Enlarge Pardee Reservoir components, are needed to meet the District's Need for Water during a prolonged drought, as conservation and water recycling alone will not provide adequate supply during such periods. Consequently EBMUD identified a number of potential projects which in turn were evaluated for consideration as components of the Preferred Portfolio. Rationing levels were recommended based on a review and understanding of what is achievable given the aggressive conservation program that will be enacted as part of WSMP 2040. Please refer to the Master Response on the WSMP 2040 for further discussion of the analyses conducted in support of development of the Preferred Portfolio. Also, please refer to Response AHS-3 for details regarding EBMUD's approach to demand management.

Form Letter 1-2: The 2008 Sierra Resource Management Plan included the BLM recommendation to designate approximately 20 miles of the Mokelumne River as a Wild and Scenic River. BLM recommended the recreation classification for 2.94 miles of river approximately between the State Route 49 Bridge and the Electra Afterbay, also known as the Electra Run.

At this program-level stage, there is no certainty regarding the potential impacts of the Enlarge Pardee Reservoir component. At the project level, EBMUD will examine a broad range of configurations and the potential impacts and possible means of mitigating impacts to recreational uses, cultural resources, transportation and other resource areas. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component.

Form Letter 1-3: The PEIR acknowledges the potential for disruption to downstream flow releases from the proposed Enlarge Lower Bear Reservoir component, although potential changes to flow are not known at this time (please see page 5.2.C-17 of the Draft PEIR). Potential impacts to fish, wildlife and recreation will be thoroughly examined in a project-level EIR for the Enlarge Lower Bear Reservoir component when this information is available, when and if the District decides to move forward with project-level planning. Please see the Master Response on Program-level EIR analysis. Mitigation and measures to avoid impacts would be developed at the project stage.

Form Letter 1-4: EBMUD believes the Enlarge Pardee Reservoir and Enlarge Lower Bear Reservoir components provide a reliable water supply that, together with other elements of the Preferred Portfolio, allows the District to meet the Need for Water in dry years. EBMUD recognizes the value of water conservation, recycling and rationing, and has included them as components in the Preferred Portfolio. The Preferred Portfolio depends on conservation and recycling to satisfy all projected increases in demand in the service area through the planning period. Please see the Master Responses on the Enlarge Pardee Reservoir component and the WSMP 2040.

PCart
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Pat Carter
Sent: Wednesday, March 18, 2009 7:45 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

The Pardee reservoir enlargement will drown a segment of the Mokelumne

River recommended by the BLM for wild and scenic river protection. This

section is also popular for kayaking and fishing. The Pardee enlargment would destroy the recently renovated Middle Bar Bridge and other existing and proposed public access facilities, as well as require the costly relocation of the Hwy 49 bridge.

The Lower Bear reservoir enlargement could alter Mokelumne River flows that have been improved to benefit fish, wildlife, and recreation. These improved flows took years to negotiate as part of PG&E's federal hydroelectric license. EBMUD's proposed reservoir enlargements will thwart the decades of work that have gone into making the Mokelumne a more viable recreation resource that will economically benefit foothill communities.

More dams and above ground water storage has always been a poor way to conserve water and in this critical environmental situation, this is especially true. Underground storage and any facility which allows little or no evaporation is the only answer to our water storage problems.

Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Pat Carter
1260 Shaffer Rd Apt 6204
Santa Cruz, CA 95060-5789

PL1
090318

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Patricia Law
Sent: Wednesday, March 18, 2009 6:44 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

The Pardee reservoir enlargement will drown a segment of the Mokelumne

River recommended by the BLM for wild and scenic river protection. This

section is also popular for kayaking and fishing. The Pardee enlargment would destroy the recently renovated Middle Bar Bridge and other existing and proposed public access facilities, as well as require the costly relocation of the Hwy 49 bridge.

The Lower Bear reservoir enlargement could alter Mokelumne River flows that have been improved to benefit fish, wildlife, and recreation. These improved flows took years to negotiate as part of PG&E's federal hydroelectric license. EBMUD's proposed reservoir enlargements will thwart the decades of work that have gone into making the Mokelumne a more viable recreation resource that will economically benefit foothill communities.

Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Patricia Law
1948 Felton St
San Diego, CA 92102-1232

Form Letter 2
090303

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan. 1

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River. 2

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management. 3

* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development. 4

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads. 5

* There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently. 6

Please leave these miles of the Mokelumne a river for future generations.

Form Letter 2

Form Letter 2-1: The District acknowledges the commenter's opposition to the Enlarge Pardee Reservoir component of the WSMP 2040.

Form Letter 2-2: Please see the Master Responses on the Enlarge Pardee Reservoir component and the WSMP 2040. EBMUD believes that the Enlarge Pardee Reservoir component, together with other elements of the Preferred Portfolio, would provide a reliable water supply to meet the Need for Water in dry years. The costs of potential Preferred Portfolio components were developed and used as one of many evaluation considerations. Further, the rate impact of the Preferred Portfolio was also considered. Also, the District would seek to involve partner agencies to share costs and to provide regional benefits in terms of yield sharing. Project impacts, including impacts on the Mokelumne River, will be thoroughly examined in a project-level EIR when and if the District decides to move forward with project-level planning for this component.

Form Letter 2-3: Please see Master Responses on the Enlarge Pardee Reservoir component and Program-level EIR analysis. Project impacts on recreation, historic structures and cultural resources, and the Mokelumne River will be thoroughly examined in a project-level EIR when and if the District decides to move forward with project-level planning for this component. Please see response BLM-1 for a discussion of the proposed Wild and Scenic River designation for the North Fork/Main Mokelumne River.

Form Letter 2-4: Please see the Master Responses on the Enlarge Pardee Reservoir component and Program-level EIR analysis. EBMUD will consult with agencies, including the Bureau of Land Management and Caltrans, and will coordinate with local residents when and if project-level planning moves forward for this component. Impacts to recreation will be fully examined in a project-level EIR when and if the District decides to move forward with project-level planning.

Form Letter 2-5: Please see the Master Responses on the Enlarge Pardee Reservoir component and Program-level EIR analysis. Impacts to public safety and emergency access will be fully examined in a project-level EIR when and if the District decides to move forward with project-level planning for this component.

Form Letter 2-6: As stated in the Draft PEIR, the Preferred Portfolio incorporates a number of water recycling projects combined with aggressive water conservation. While that approach allows the District to satisfy all of the projected increase in demand within the service area through the planning horizon, it would not be sufficient to meet the District's Need for Water during a prolonged drought, even though the District's Freeport Regional Water Project will be in place to meet a portion of the Need for Water in dry years.

Supplemental supply projects included in the Preferred Portfolio include groundwater storage, desalination, and water transfers along with surface storage to create a robust and diverse means of addressing water supply needs during those dry periods. Project specific impacts and potential mitigation measures will be identified in project-specific documentation, when and if the Enlarge Pardee Reservoir project moves forward. Please refer to the Master Responses on the WSMP 2040, the Demand Study, the Enlarge Pardee Reservoir component, and Program-level EIR analysis for further information.

AMcG1
090307

From: aeamodio@hotmail.com [mailto:aeamodio@hotmail.com]
Sent: Saturday, March 07, 2009 11:34 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Anna McGuire
PO BOX 5205
Bear Valley, CA 95223

ARa
090403

From: arianerasori@mail.com [mailto:arianerasori@mail.com]
Sent: Fri 4/3/2009 8:28 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

ï¿½ Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate important cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

ï¿½ Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

ï¿½ Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

ï¿½ There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Ariane Rasori
P.O Box 2244
Murphys, CA 95247

AWi
090504

From: fringe54@volcano.net [mailto:fringe54@volcano.net]
Sent: Monday, May 04, 2009 8:17 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

ï¿½ Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate important cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

ï¿½ Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

ï¿½ Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

ï¿½ There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Alan Willard
P.O. Box 210 / 2402 Campo Flores Lane
West Point, California 95255

BFa
090411

From: bjfarkas@sbcglobal.net [mailto:bjfarkas@sbcglobal.net]
Sent: Sat 4/11/2009 10:42 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

ï¿½ Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate important cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

ï¿½ Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

ï¿½ Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

ï¿½ There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Barbara Farkas
18422 Avenida Bonita
Sonora, California 95370-8112

CBey
090330

From:
Sent: Mon 3/30/2009 12:22 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

christine Bey
PO Box 436
Vallecito, Ca 95251

CBr
090410

From: Browncs@colorado.edu [mailto:Browncs@colorado.edu]
Sent: Friday, April 10, 2009 6:06 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate important cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Cameron Brown
438 W. Harvey St
Philadelphia, PA 19144

CHe
090308

From: lorettaandchuck@sbcglobal.net
[mailto:lorettaandchuck@sbcglobal.net]
Sent: Sunday, March 08, 2009 12:16 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Charles Heimstadt
16340 Stephanie Way
Pioneer, , CA 95666

CMo
090428

From: carita.del.sol@gmail.com [mailto:carita.del.sol@gmail.com]
Sent: Tue 4/28/2009 6:06 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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ï¿½ Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

ï¿½ Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

ï¿½ There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Cara Moore
3253 Marlette Cir
South Lake Tahoe, CA 96150

CSt
090316

From: cstorm@vinofarms.net [mailto:cstorm@vinofarms.net]
Sent: Monday, March 16, 2009 8:28 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Chris Storm
1064 Mason Street
Lodi, CA 95242

CT
090306

From: tablemountain@goldrush.com [mailto:tablemountain@goldrush.com]
Sent: Friday, March 06, 2009 10:26 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Christine & Eric Taylor
PO Box 2052
Murphys, CA 95247

CWr
090316

From: leapwin@yahoo.com [mailto:leapwin@yahoo.com]
Sent: Monday, March 16, 2009 3:42 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Chris Wright
PO Box 361
Glencoe, CA 95232

DAm
090310

-----Original Message-----
From: dlamo@goldrush.com [mailto:dlamo@goldrush.com]
Sent: Tuesday, March 10, 2009 6:38 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Don Amo
P.O. Box 949
San Andreas, CA 95249

DE
090504

From: redwood_paddler@comcast.net [mailto:redwood_paddler@comcast.net]
Sent: Monday, May 04, 2009 6:50 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

To: East Bay MUD and water policy officials:

I urge you to drop your plans for raising a new Pardee Dam and expanding Pardee Reservoir as part of the EBMUD 2040 water plan, for the following reasons:

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

ï¿½ Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate important cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

ï¿½ Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

ï¿½ Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

ï¿½ There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please preserve the natural beauty of this section of the Mokelumne River for the enjoyment of present and future generations.

David Emery
10585 River Drive
Forestville, CA 95436

DF
090504

From: dlfabiano@yahoo.com [mailto:dlfabiano@yahoo.com]
Sent: Monday, May 04, 2009 7:25 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

1 A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

2 Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate important cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

3 Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

4 Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

5 There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Donna Fabiano
9651 Argonne Way
Forestville, Ca 95436

DHa
090303

From: dh1952@infostations.com [mailto:dh1952@infostations.com]
Sent: Tuesday, March 03, 2009 1:46 PM
To: Lewis, Lynelle
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

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* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Deborah Hallford
4764 Bear Mountain Road
Greenwood, CA 95635

DLan
090310

From: v.landreth1@hotmail.com [mailto:v.landreth1@hotmail.com]
Sent: Tuesday, March 10, 2009 12:29 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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Please leave these miles of the Mokelumne a river for future generations.

Dan Landreth
2020 Independence Cemetery Road
Rail Road Flat, CA 95248

DMc
090316

From: deenster3@yahoo.com [mailto:deenster3@yahoo.com]
Sent: Monday, March 16, 2009 1:59 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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Please leave these miles of the Mokelumne a river for future generations.

Dena McAfee
623 Feather Drive
Copperopolis, CA 95228

DOB
090311

From: donobrien@att.net [mailto:donobrien@att.net]
Sent: Wednesday, March 11, 2009 1:04 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Don O'Brien O'Brien
112 Central Ave
Los Gatos, CA 95030

DRee
090403

From: zenden@goldrush.com [mailto:zenden@goldrush.com]
Sent: Fri 4/3/2009 6:45 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

ï¿½ Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate important cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

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ï¿½ Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

ï¿½ There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Dennis Reeves
443 Oak st.
San Andreas, California 95249

DRi
090323

From: dnrickert@aol.com [mailto:dnrickert@aol.com]
Sent: Monday, March 23, 2009 9:44 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

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Please leave these miles of the Mokelumne a river for future generations.

Deborah Rickert
345 Raven Lane
Lodi, CA 95240

DSte
090311

From: dane.stevens@gmail.com [mailto:dane.stevens@gmail.com]
Sent: Wednesday, March 11, 2009 9:47 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

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Please leave these miles of the Mokelumne a river for future generations.

Dane Stevens
PO Box 4963
Jackson, wy 83001

EH
090313

From: hobbs@volcano.net [mailto:hobbs@volcano.net]
Sent: Fri 3/13/2009 6:50 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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Please leave these miles of the Mokelumne a river for future generations.

Ed Hobbs
18314 Climax Rd
Jackson, Calif 95642

EK
090308

From: edbrk4@aol.com [mailto:edbrk4@aol.com]
Sent: Sunday, March 08, 2009 11:03 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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Please leave these miles of the Mokelumne a river for future generations.

Eric Kurtz
2629 Huckleberry Lane
Valley Springs, CA 95252-9210

EO
090309

From: pat_spratt@comcast.net [mailto:pat_spratt@comcast.net]
Sent: Monday, March 09, 2009 6:31 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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Please leave these miles of the Mokelumne a river for future generations.

Eric OBrien
201 Lupine
Murphys, CA 95247

GHa
090410

From: galen1artist@yahoo.com [mailto:galen1artist@yahoo.com]
Sent: Friday, April 10, 2009 2:06 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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ï¿½ Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

ï¿½ There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Ms. Galen Hazelhofer
2044 Vista del Lago
Valley Springs, CA 95252-9378

GK
090308

From: grandmagretchen@sbcglobal.net
[mailto:grandmagretchen@sbcglobal.net]
Sent: Sunday, March 08, 2009 3:02 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Gretchen Kingsbury
12730 Sutter Creek Road
Sutter Creek, CA 95685

GL
090319

From: grandmaglenna@sbcglobal.net [mailto:grandmaglenna@sbcglobal.net]
Sent: Thu 3/19/2009 9:23 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Glenna Larson
PO Box 923
San Andreas, CA 95249

GMart
090501

From:
Sent: Fri 5/1/2009 4:29 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Geoff Martin
p.o.box 15020
south lake tahoe, ca 96151

GRo
090504

From: g.rollinson@sbcglobal.net [mailto:g.rollinson@sbcglobal.net]
Sent: Monday, May 04, 2009 6:47 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Gary Rollinson
3352 Goodway Court
Soquel, CA 95073

HD
090504

From: harrydundore@hotmail.com [mailto:harrydundore@hotmail.com]
Sent: Monday, May 04, 2009 8:16 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Harry Dundore
1835 Broadway
Chico, CA 95928

HW
090327

From: lorihale@aol.com [mailto:lorihale@aol.com]
Sent: Friday, March 27, 2009 12:46 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Heather Willats
Center St.
Moke Hill, Ca 95245

JBa
090411

From: sodanciful@yahoo.com [mailto:sodanciful@yahoo.com]
Sent: Sat 4/11/2009 9:35 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Janice Bassett
2997 Cedar Ct
Valley Springs, Ca 95252

JBeu
090313

From: beutlerjamie@yahoo.com [mailto:beutlerjamie@yahoo.com]
Sent: Friday, March 13, 2009 1:49 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Jamie Beutler
2620 Piedra verde
Placerville, California 95667

JDa
090316

From: joedaviddesign@yahoo.com [mailto:joedaviddesign@yahoo.com]
Sent: Monday, March 16, 2009 9:37 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Joseph Dacid
18150 Shell Rd
Jamestown, CA 95327

JDo
090504

From: jmdonovan05@sbcglobal.net [mailto:jmdonovan05@sbcglobal.net]
Sent: Monday, May 04, 2009 7:02 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

John Donovan
741 Commons Dr.
Sacramento, CA 95825

JGin
090504

From: jody@idiom.com [mailto:jody@idiom.com]
Sent: Monday, May 04, 2009 7:26 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Jody Ginsberg
933 Helen Ave
San Leandro, ca 94577

JHarv1
090306

From: maximumjo@hotmail.com [mailto:maximumjo@hotmail.com]
Sent: Friday, March 06, 2009 3:24 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Joe Harvey
19724 Cedar Way
Pioneer, CA 95666

JKn
090407

From: jjknight33@gmail.com [mailto:jjknight33@gmail.com]
Sent: Tuesday, April 07, 2009 9:39 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

John Knight
434 Bristol Ave.
Stockton, CA 95204

JLe
090430

From: levy@goldrush.com [mailto:levy@goldrush.com]
Sent: Thu 4/30/2009 7:02 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

JoAnn Levy
PO Box 1809
Sutter Creek, CA 95685

JMa
090318

-----Original Message-----
From: lajerka@hotmail.com [mailto:lajerka@hotmail.com]
Sent: Wednesday, March 18, 2009 2:06 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

jessica massoletti
1440 lawrence st
el cerrito , ca 94530

JPec
090330

From: pecklerfamily@yahoo.com [mailto:pecklerfamily@yahoo.com]
Sent: Mon 3/30/2009 1:44 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

John Peckler
7087 Hwy 26
Mokelumne Hill,, CA 95245

JPel
090314

From: samsneadre@juno.com [mailto:samsneadre@juno.com]
Sent: Sat 3/14/2009 10:43 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

JOHN PELLETTI
PO BOX 117
WEST POINT, CA 95255

JRoss
090313

From: jmross@ucdavis.edu [mailto:jmross@ucdavis.edu]
Sent: Friday, March 13, 2009 12:40 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

jesikah maria ross
704 M St
Davis, CA 95616

KBe
090504

From: bethelelectricco@yahoo.com [mailto:bethelelectricco@yahoo.com]
Sent: Monday, May 04, 2009 7:49 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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kevin bethel
po box 341
ione, ca 95640

KBr2
090303

From: kevinbran@yahoo.com [mailto:kevinbran@yahoo.com]
Sent: Tuesday, March 03, 2009 4:25 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Kevin Branstetter
21915 Oak Ranch Rd
Colfax, CA 95713

KHam
090410

From: hamil@goldrush.com [mailto:hamil@goldrush.com]
Sent: Friday, April 10, 2009 8:58 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

ï¿½ Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate important cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

ï¿½ Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

ï¿½ Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

ï¿½ There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Kathy Hamilton
PO Box 224
Vallecito, California 95251

KHu
090306

From: khurley_99@yahoo.com [mailto:khurley_99@yahoo.com]
Sent: Friday, March 06, 2009 9:19 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

To the East Bay MUD and local officials:
I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

In addition, enlarging Pardee will drown a part of the Mokelumne, known for it's kayaking and fishing, will submerge or require removal of the historic Middle Bar Bridge and river access facilities, would inundate cultural resources and require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

Creating the dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.
There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please protect and preserve these miles of the Mokelumne river for future generations.

Kristin Hurley
13243 Aubrey St.
Poway, CA 92064

KMe
090323

From: xliron73@hotmail.com [mailto:xliron73@hotmail.com]
Sent: Monday, March 23, 2009 5:06 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Kim Means
19446 e.Clinton Rd.
Jackson, Calif 95642

KS
090304

From: gummer8@earthlink.net [mailto:gummer8@earthlink.net]
Sent: Wednesday, March 04, 2009 11:26 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Karen Smart
19096 Pine Drive East
Pioneer, CA 95666

LCa
090317

From: bubblecrew2000@juno.com [mailto:bubblecrew2000@juno.com]
Sent: Tuesday, March 17, 2009 9:38 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Lori Caires
6418 Gwin St
Paloma, CA 95252

LGul1
090503

From: glindseed@yahoo.com [mailto:glindseed@yahoo.com]
Sent: Sunday, May 03, 2009 10:23 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

ï¿½ Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate important cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

ï¿½ Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

ï¿½ Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

ï¿½ There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

lindsey gulyas
1571 auburn ravine rd
auburn, ca 95603

LH
090306

From: lorihale@rocketmail.com [mailto:lorihale@rocketmail.com]
Sent: Friday, March 06, 2009 10:13 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Lori Hale
8325 Main Street
Mokelumne Hill, CA 95245

LR
090324

From: foothillsmom@yahoo.com [mailto:foothillsmom@yahoo.com]
Sent: Tuesday, March 24, 2009 4:28 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Liane Roberts
PO Box 1267
Valley Springs, CA 95252

MBi
090430

From: mikastemple@gmail.com [mailto:mikastemple@gmail.com]
Sent: Thursday, April 30, 2009 2:59 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

ï¿½ Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate important cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

ï¿½ Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

ï¿½ Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

ï¿½ There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

mikaela bianchi
po box 82
west point, ca 95255

MBon
090322

From: mc_bonar@comcast.net [mailto:mc_bonar@comcast.net]
Sent: Sunday, March 22, 2009 11:12 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials:

I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

Please leave these miles of the Mokelumne a river for future generations.

Mark Bonar
PO Box 2005
Arnold, CA 95223

MBr
090428

From: rickypaws@yahoo.com [mailto:rickypaws@yahoo.com]
Sent: Tuesday, April 28, 2009 12:05 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

ï¿½ Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate important cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

ï¿½ Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

ï¿½ Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

ï¿½ There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

MARTHA BREED
1285 CLOVER LANE
WALNUT CREEK, CA 94595

MBurt
090410

From: teacherpop@earthlink.net [mailto:teacherpop@earthlink.net]
Sent: Friday, April 10, 2009 12:26 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

ï¿½ Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate important cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

ï¿½ Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

ï¿½ Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

ï¿½ There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Mchael Burtch
461 Hedstrom Rd
Turlock, Ca 95382

MCI
090313

From: Baltzie@aol.com [mailto:Baltzie@aol.com]
Sent: Friday, March 13, 2009 2:45 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Maxine Clark
34 River Bluff Lane
Carmichael, CA 95608-5269

MCop2
090410

From: gr8cpa_com@yahoo.com [mailto:gr8cpa_com@yahoo.com]
Sent: Friday, April 10, 2009 3:02 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

ï¿½ Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate important cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

ï¿½ Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

ï¿½ Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

ï¿½ There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Margaret Copenhaver
18127 Highway 26; P.O. Box 40
Glencoe, CA 95232

ME1
090316

From: Marion Gee [mailto:marionjgee@yahoo.com]
Sent: Monday, March 16, 2009 9:49 AM
To: Francis, Thomas
Subject: No to Pardee Reservoir enlargement

From: mfishe@sbcglobal.net [mailto:mfishe@sbcglobal.net]
Sent: Monday, March 16, 2009 8:39 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Mary Elliott
PO Box 361
Verdi, nv 89439

MGer
090307

From: mgp@cal.net [mailto:mgp@cal.net]
Sent: Saturday, March 07, 2009 10:32 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

michael gerell
pob 101
Wilseyville, California 95257

MHae
090401

From: gcontrol@caltel.com [mailto:gcontrol@caltel.com]
Sent: Wednesday, April 01, 2009 9:45 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Michael Haerr
PO Box 453
Copperopolis, CA 95228

MHet
090328

From: mags@cruzio.com [mailto:mags@cruzio.com]
Sent: Saturday, March 28, 2009 10:02 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Margaret Hetherington
140 John Street
Santa Cruz, CA 95060

MNi
090504

From: mdnlbc@gmail.com [mailto:mdnlbc@gmail.com]
Sent: Monday, May 04, 2009 5:21 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

ï¿½ Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate important cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

ï¿½ Enlarging Pardee will destroy decades of work and investment by public agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

ï¿½ Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

ï¿½ There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

mike nichols
700 east ocean blvd. # 1703
long beach, ca 90802

MPa
090312

From: mpatwel@rei.com [mailto:mpatwel@rei.com]
Sent: Thursday, March 12, 2009 5:27 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Matt Patwell
1010 Park Stream Ct
Galt, California 95632

MSar
090303

From: msare@comcast.net [mailto:msare@comcast.net]
Sent: Tuesday, March 03, 2009 10:21 AM
To: Lewis, Lynelle
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

mavis sare
294 black oak drive
Mokelumne Hill, ca 95248

MSi
090323

From: msidvers@hotmail.com [mailto:msidvers@hotmail.com]
Sent: Monday, March 23, 2009 5:08 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Mary Sidvers
19446 e.Clinton Rd.
Jackson, Calif 95642

MWe
090307

From: david-mary@sbcglobal.net [mailto:david-mary@sbcglobal.net]
Sent: Saturday, March 07, 2009 7:13 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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Please leave these miles of the Mokelumne a river for future generations.

Mary Wehner
404 W. Jackson St
Ione, CA. 95640

NB
090403

From: nateberner@yahoo.com [mailto:nateberner@yahoo.com]
Sent: Fri 4/3/2009 8:24 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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Please leave these miles of the Mokelumne a river for future generations.

Nathan Berner
PO Box 2244
Murphys, CA 95247

NF
090416

From: snfort@volcano.net [mailto:snfort@volcano.net]
Sent: Thursday, April 16, 2009 1:57 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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Please leave these miles of the Mokelumne a river for future generations.

Nancy Fort
25340 Sherwood Drive
Pioneer, CA 95666

NL
090309

From: nicklwsn@yahoo.com [mailto:nicklwsn@yahoo.com]
Sent: Monday, March 09, 2009 12:40 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

nick lawson
20841 payton lane
pine grove, ca 95665

RBa
090314

From: randy@bayneweb.com [mailto:randy@bayneweb.com]
Sent: Sat 3/14/2009 9:16 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Randy Bayne
3346 Flint Trail
Ione, CA 95640

RBo
090410

From: drboylan@sbcglobal.net [mailto:drboylan@sbcglobal.net]
Sent: Friday, April 10, 2009 11:46 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Dr. Richard Boylan
P.O. Box 1009
Diamond Springs, CA 95619

RCur1
090313

From: countrymice@volcano.net [mailto:countrymice@volcano.net]
Sent: Fri 3/13/2009 7:29 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

robert currall
27100 Manzanita Ct
Pioneer, Ca 95666

RCur3
090324

From: countrymice@volcano.net [mailto:countrymice@volcano.net]
Sent: Tuesday, March 24, 2009 12:49 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Robert Currall
27100 Manzanita Ct
Pioneer, Ca 95666

RGu
090504

From: r_guletz@hotmail.com [mailto:r_guletz@hotmail.com]
Sent: Monday, May 04, 2009 5:38 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Robin Guletz
Po Box 729
Pine Grove, CA 95665

RKe
090410

From: ooksan@caltel.com [mailto:ooksan@caltel.com]
Sent: Friday, April 10, 2009 9:51 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Robert Kenney
5516 Chili Camp rd.
Campo Seco, Ca. 95226-0035

RMct
090319

From: rmcteer@sbcglobal.net [mailto:rmcteer@sbcglobal.net]
Sent: Thu 3/19/2009 11:29 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Robert Mcteer
499 Montgomery ave
Mokelumne Hill, California 95245

RMean
090323

From: rob@meansracing.com [mailto:rob@meansracing.com]
Sent: Monday, March 23, 2009 5:06 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Rob Means
19446 e.Clinton Rd.
Jackson, Calif 95642

RSI
090313

From: troutbum4ever@gmail.com [mailto:troutbum4ever@gmail.com]
Sent: Friday, March 13, 2009 2:58 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Ross Slayton
430 orange Ct.
manteca , CA 95336

SBr
090309

From: amadorolive@twinwolf.net [mailto:amadorolive@twinwolf.net]
Sent: Monday, March 09, 2009 12:35 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

susan bragstad
p.O.Box 79
amador City, cA 95601

SCo
090308

From: mokriv@yahoo.com [mailto:mokriv@yahoo.com]
Sent: Sunday, March 08, 2009 10:46 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Sean Collins
P.O. Box 313 Jackson
Jackson, CA 95642

SLon2
090309

From: laloba@twinwolf.net [mailto:laloba@twinwolf.net]
Sent: Monday, March 09, 2009 6:25 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

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Please leave these miles of the Mokelumne a river for future generations.

Sharon Long
PO Box 162
Fiddletown, CA 95629-0162

SMar
090315

From: stevemarkle@gmail.com [mailto:stevemarkle@gmail.com]
Sent: Sunday, March 15, 2009 9:16 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

* Enlarging Pardee will drown a part of the Mokelumne popular for rafting, kayaking and fishing, submerge or require removal of the historic Middle Bar Bridge and river access facilities, inundate cultural resources, require construction of a new Highway 49 bridge, and seasonally inundate nearly a mile of river proposed for National Wild and Scenic River designation by the Bureau of Land Management.

* Enlarging Pardee will destroy decades of work and investment by pubilc agencies and local residents to improve recreational use of the Mokelumne River, thwarting local efforts to use the river for economic development.

* Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Stephen Markle
PO Box 25
Hathaway Pines, CA 95233

SMc
090307

From: health2wealth@volcano.net [mailto:health2wealth@volcano.net]
Sent: Saturday, March 07, 2009 10:12 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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Please leave these miles of the Mokelumne a river for future generations.

Susan McMorris
20496 Hwy 26
West Point, Ca 95255

SMen
090402

From: stevemenicucci@hotmail.com [mailto:stevemenicucci@hotmail.com]
Sent: Thu 4/2/2009 8:16 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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Please leave these miles of the Mokelumne a river for future generations.

Steve Menicucci
740 Bounty Dr. #4009
Foster City, CA 94404

SRey
090304

From: suereysue@gmail.com [mailto:suereysue@gmail.com]
Sent: Wednesday, March 04, 2009 8:43 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Susan Reycroft
322 12th Street
Davis, CA 95616

SSi
090504

From: susimms@comcast.net [mailto:susimms@comcast.net]
Sent: Monday, May 04, 2009 6:31 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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ï¿½ There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Sue Simmons
PO Box 758
Sonoma, CA 95476

STri
090418

From: stritch@usa.net [mailto:stritch@usa.net]
Sent: Sat 4/18/2009 5:46 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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ï¿½ There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Susan Tritch
2378 Barbour Road
Valley Springs, CA 95252

TI1
090309

From: tedingalls@earthling.net [mailto:tedingalls@earthling.net]
Sent: Monday, March 09, 2009 8:51 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Ted Ingalls
732 Simon Street
Galt, California 95632

TI2
090320

From: tedingalls@earthling.net [mailto:tedingalls@earthling.net]
Sent: Fri 3/20/2009 12:49 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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Please leave these miles of the Mokelumne a river for future generations.

Ted Ingalls
732 Simon Street
Galt, California 95632

TLu
090504

From: tjlfae@gmail.com [mailto:tjlfae@gmail.com]
Sent: Monday, May 04, 2009 7:55 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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ï¿½ Creating dead-end roads approaching the river will cut off a critical fire evacuation route for residents of Middle Bar and Gwin Mine roads.

ï¿½ There is no reason to destroy more miles of a popular river used by locals and visitors alike and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Tamara Luckinbill
PO BOX 776
Grass Valley, CA 95945

TSa
090411

From: tcs2201@gmail.com [mailto:tcs2201@gmail.com]
Sent: Sat 4/11/2009 12:56 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

ï¿½ A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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Please leave these miles of the Mokelumne a river for future generations.

tom saffell
1141 whipple ave
redwood city, ca 94062

VS
090314

From: samsneadre@juno.com [mailto:samsneadre@juno.com]
Sent: Sat 3/14/2009 10:45 AM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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Please leave these miles of the Mokelumne a river for future generations.

VICKI SNEAD-HINKELL
PO BOX 117
WEST POINT, CA 95255

YH
090313

From: hobbs@volcano.net [mailto:hobbs@volcano.net]
Sent: Fri 3/13/2009 6:51 PM
To: Francis, Thomas
Subject: Please drop plans to expand Pardee Reservoir

Dear East Bay MUD and local officials: I urge you to drop your plans to build a new Pardee Dam and expand Pardee Reservoir as part of the EBMUD 2040 water plan.

* A new dam will be too expensive for EBMUD ratepayers, provide relatively little new water, and harm miles of the Mokelumne River.

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* There is no reason to destroy more miles of a popular river and its fish habitat. You can avoid the environmental, social and economic cost by using your water supplies, including the new American River water supply, more efficiently.

Please leave these miles of the Mokelumne a river for future generations.

Yvonne Hobbs
18314 Climax Rd
Jackson, Calif 95642

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Form Letter 3
090317

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years. 1

The Pardee reservoir enlargement will drown a segment of the Mokelumne

River recommended by the BLM for wild and scenic river protection. This

section is also popular for kayaking and fishing. The Pardee enlargment would destroy the recently renovated Middle Bar Bridge and other existing and proposed public access facilities, as well as require the costly relocation of the Hwy 49 bridge. 2

The Lower Bear reservoir enlargement could alter Mokelumne River flows that have been improved to benefit fish, wildlife, and recreation. These improved flows took years to negotiate as part of PG&E's federal hydroelectric license. EBMUD's proposed reservoir enlargements will thwart the decades of work that have gone into making the Mokelumne a more viable recreation resource that will economically benefit foothill communities. 3

Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Form Letter 3-1: A thorough study was undertaken to estimate the water demand within the EBMUD service area through the year 2040. Please refer to the Master Response on the Demand Study for a detailed response that explains the appropriateness of the study methodology and results.

As detailed in the Draft PEIR, the Preferred Portfolio selected by the EBMUD Board of Directors incorporates a high number of water recycling projects combined with extensive and aggressive water conservation. That approach will enable EBMUD to satisfy the projected increase in demand within the service area through the planning horizon. However, supplemental supply projects, including the Enlarge Lower Bear Reservoir and Enlarge Pardee Reservoir components, are needed to meet the District's Need for Water during a prolonged drought, as conservation and water recycling alone will not provide adequate supply during such periods. Consequently EBMUD identified a number of potential projects which in turn were evaluated for consideration as components of the Preferred Portfolio. Rationing levels were recommended based on a review and understanding of what is achievable given the aggressive conservation program that will be enacted as part of WSMP 2040. Please refer to the Master Response as prepared on the WSMP 2040 for a further discussion of the analyses conducted in support of development of the Preferred Portfolio. Also, please refer to Response AHS-3 for details regarding EBMUD's approach to demand management.

Form Letter 3-2: The 2008 Sierra Resource Management Plan included the BLM recommendation to designate approximately 20 miles of the Mokelumne River as a Wild and Scenic River. BLM recommended the recreation classification for 2.94 miles of river approximately between the State Route 49 Bridge and the Electra Afterbay, also known as the Electra Run.

At this program-level stage, there is no certainty regarding the potential impacts of the Raise Pardee portfolio component. At the project level, EBMUD will examine a broad range of configurations and the potential impacts and possible means of mitigating impacts to recreational uses, cultural resources, transportation and other resource areas. Please see the Master Responses on Program-level EIR analysis and the Enlarge Pardee Reservoir component.

Form Letter 3-3: The PEIR acknowledges the potential for disruption to downstream flow releases from the proposed Enlarge Lower Bear Reservoir component, although potential changes to flow are not known at this time (please see page 5.2.C-17 of the Draft PEIR). Potential impacts to fish, wildlife and recreation will be thoroughly examined in a project-level EIR for the Enlarge Lower Bear Reservoir component when this information is available, when and if the District decides to move forward with project-level planning. Please see the Master Response

on Program-level EIR analysis. Mitigation and measures to avoid impacts would be developed at the project stage.

EBMUD recognizes the value of water conservation, recycling and rationing, and has included them as components in the Preferred Portfolio. Please see the Master Response on the WSMP 2040.

ACa
090322

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Alexandra Campbell
Sent: Saturday, March 21, 2009 10:23 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 22, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

The Pardee reservoir enlargement will drown a segment of the Mokelumne

River recommended by the BLM for wild and scenic river protection. This

section is also popular for kayaking and fishing. The Pardee enlargment would destroy the recently renovated Middle Bar Bridge and other existing and proposed public access facilities, as well as require the costly relocation of the Hwy 49 bridge.

The Lower Bear reservoir enlargement could alter Mokelumne River flows that have been improved to benefit fish, wildlife, and recreation. These improved flows took years to negotiate as part of PG&E's federal hydroelectric license. EBMUD's proposed reservoir enlargements will thwart the decades of work that have gone into making the Mokelumne a more viable recreation resource that will economically benefit foothill communities.

Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Alexandra Campbell
1703 Ebers St
San Diego, CA 92107-3503

ACh
090430

From: Friends of the River on behalf of Annabel Channell-Johnson
Sent: Thu 4/30/2009 8:27 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 30, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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River recommended by the BLM for wild and scenic river protection. This

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Miss Annabel Channell-Johnson
2118 Canoas Garden Ave Apt 123
San Jose, CA 95125-2125

ACI
090424

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Alison Clement
Sent: Friday, April 24, 2009 3:12 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 24, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

The Pardee reservoir enlargement will drown a segment of the Mokelumne

River recommended by the BLM for wild and scenic river protection. This

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Alison Clement
2684 Coloma Ct Apt 87
Placerville, CA 95667-3446

AGog1
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Alan Goggins
Sent: Wednesday, March 18, 2009 8:45 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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River recommended by the BLM for wild and scenic river protection. This

section is also popular for kayaking and fishing. The Pardee enlargment would destroy the recently renovated Middle Bar Bridge and other existing and proposed public access facilities, as well as require the costly relocation of the Hwy 49 bridge.

The Lower Bear reservoir enlargement could alter Mokelumne River flows that have been improved to benefit fish, wildlife, and recreation. These improved flows took years to negotiate as part of PG&E's federal hydroelectric license. EBMUD's proposed reservoir enlargements will thwart the decades of work that have gone into making the Mokelumne a more viable recreation resource that will economically benefit foothill communities.

Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Alan Goggins

18456 Vernon Ct
Castro Valley, CA 94546-2230

AGog2
090411

From: Friends of the River on behalf of Alan Goggins
Sent: Sat 4/11/2009 8:43 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 11, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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River recommended by the BLM for wild and scenic river protection. This

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Alan Goggins
18456 Vernon Ct
Castro Valley, CA 94546-2230

AGon
090331

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Alicia Gonzales
Sent: Tuesday, March 31, 2009 4:22 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 31, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

The Pardee reservoir enlargement will drown a segment of the Mokelumne

River recommended by the BLM for wild and scenic river protection. This

section is also popular for kayaking and fishing. The Pardee enlargment would destroy the recently renovated Middle Bar Bridge and other existing and proposed public access facilities, as well as require the costly relocation of the Hwy 49 bridge.

The Lower Bear reservoir enlargement could alter Mokelumne River flows that have been improved to benefit fish, wildlife, and recreation. These improved flows took years to negotiate as part of PG&E's federal hydroelectric license. EBMUD's proposed reservoir enlargements will thwart the decades of work that have gone into making the Mokelumne a more viable recreation resource that will economically benefit foothill communities.

Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Alicia Gonzales
317 Ocean St Apt 9
Santa Cruz, CA 95060-4655

AHo
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Amos Hobby
Sent: Wednesday, March 18, 2009 8:45 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. Amos Hobby

743 Alpha Rd
Turlock, CA 95380-5505

AMcB
090419

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Alex McBroom
Sent: Sunday, April 19, 2009 7:25 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 19, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Alex McBroom
25555 East Ramone Street
Stevenson Ranch, CA 91355

ARe
090504

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Amy Rea
Sent: Sunday, May 03, 2009 11:05 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

May 4, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Amy Rea
5710 Church Rd
Amarillo, TX 79124-5830

ASm
090427

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Aaron Smith
Sent: Monday, April 27, 2009 5:49 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 27, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Aaron Smith
62 9th St
Sacramento, CA 95819

ASt
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Anthony Steuer
Sent: Wednesday, March 18, 2009 2:45 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Anthony Steuer

326 Ansel Ave
Alameda, CA 94501-5470

BBri
090317

From: Friends of the River on behalf of Bill Britton
Sent: Tue 3/17/2009 7:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Bill Britton
3963 California Way
Livermore, CA 94550-3617

BFin
090401

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Brad Findlay
Sent: Wednesday, April 01, 2009 8:54 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 1, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Brad Findlay
7920 Fair Oaks Blvd Apt 10
Carmichael, CA 95608-6736

BFr
090416

From: Friends of the River on behalf of Brian Frias
Sent: Thu 4/16/2009 5:48 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 16, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Brian Frias
1370 Leonard Rd
Gardnerville, NV 89460-8347

BFu
090324

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Brian Fugler
Sent: Monday, March 23, 2009 11:50 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 24, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Brian Fugler
6601 Whitsett Dr
N Highlands, CA 95660-3829

BGo
090324

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Bradley Gordon
Sent: Tuesday, March 24, 2009 8:52 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 24, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Bradley Gordon
PO Box 113
Sebastopol, CA 95473-0113

BKis
090401

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Ben Kishimoto
Sent: Wednesday, April 01, 2009 7:53 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 1, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Ben Kishimoto
3840 Kilroy Airport Way
Long Beach, CA 90806-2452

BMat
090324

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Brooke Matteson
Sent: Tuesday, March 24, 2009 3:21 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam!!!!!! THINK OF THE FUTURE!!!!

Mar 24, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Brooke Matteson
147 Belvedere Ter
Santa Cruz, CA 95062-1001

BMe
090317

From: Friends of the River on behalf of Bob Mellinger
Sent: Tue 3/17/2009 8:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Bob Mellinger
227 Commercial St
Cloverdale, CA 95425-3216

BN
090416

From: Friends of the River on behalf of Bobbie North
Sent: Thu 4/16/2009 6:48 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 16, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Bobbie North
12115 San Vicente Blvd
Los Angeles, CA 90049-4942

CAt1
090401

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Carolin Atchison
Sent: Wednesday, April 01, 2009 4:24 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 1, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Carolin Atchison
12122 Hoffman St Apt 11
Studio City, CA 91604-4703

CAt2
090420

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Carolin Atchison
Sent: Monday, April 20, 2009 3:57 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 20, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Carolin Atchison
12122 Hoffman St Apt 11
Studio City, CA 91604-4703

CCoo
090317

From: Friends of the River on behalf of Craig Cook
Sent: Tue 3/17/2009 9:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Craig Cook
129 Sequoia Cir
Santa Rosa, CA 95401-9174

From: Friends of the River on behalf of Craig Everhart
Sent: Tue 3/17/2009 7:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Craig Everhart
1960 Cleveland St
San Leandro, CA 94577-6225

CEv2
090401

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Craig Everhart
Sent: Tuesday, March 31, 2009 10:22 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 1, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mrs. Craig Everhart
1960 Cleveland St
San Leandro, CA 94577-6225

CHa
090317

From: Friends of the River on behalf of Charles Hammerstad
Sent: Tue 3/17/2009 5:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Charles Hammerstad
780 Portswood Dr
San Jose, CA 95120-3334

CL
090317

From: Friends of the River on behalf of Christa Lindsey
Sent: Tue 3/17/2009 5:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Christa Lindsey
10652 Charbono Way
Rancho Cordova, CA 95670-4835

CMa
090326

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Cynthia Martz
Sent: Thursday, March 26, 2009 5:36 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 26, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Cynthia Martz
2726 1/2 Q St # 3
Sacramento, CA 95816-6911

CMc
090324

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Carol W. Mc Cormick
Sent: Tuesday, March 24, 2009 7:21 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 24, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Carol W. Mc Cormick
5723 Shepard Ave
Sacramento, CA 95819-2405

CPh
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Corley Phillips
Sent: Wednesday, March 18, 2009 1:45 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Corley Phillips
6006 Via De La Rosa
Granite Bay, CA 95746-9040

CSe
090317

From: Friends of the River on behalf of Charles Seidler
Sent: Tue 3/17/2009 9:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Charles Seidler
5232 T St
Sacramento, CA 95819-4839

CSu
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Constance Sutton
Sent: Wednesday, March 18, 2009 9:15 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Constance Sutton
877 The Alameda
Berkeley, CA 94707-1913

DAd1
090317

From: Friends of the River on behalf of David Adams
Sent: Tue 3/17/2009 6:13 PM
To: Francis, Thomas
Subject: Oppose Raising the Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

The Pardee reservoir enlargement will drown a segment of the Mokelumne River recommended by the BLM for wild and scenic river protection. This section is also popular for kayaking and fishing. The Pardee enlargment would destroy the recently renovated Middle Bar Bridge and other existing and proposed public access facilities, as well as require the costly relocation of the Hwy 49 bridge.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. David Adams
14487 Burlington Pkwy
Penn Valley, CA 95946-9503

DBac
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Dan Bacher
Sent: Wednesday, March 18, 2009 9:45 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Dan Bacher
3201 Eastwood Rd
Sacramento, CA 95821-3713

DBr
090317

From: Friends of the River on behalf of deirdre brownell
Sent: Tue 3/17/2009 6:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Miss deirdre brownell
333 Andover Dr Apt 108
Burbank, CA 91504-3817

DD
090319

From: Friends of the River on behalf of Dennis P. Davie
Sent: Thu 3/19/2009 5:48 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 19, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Dennis P. Davie
PO Box 651
Capitola, CA 95010-0651

DHe
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Dana Heins-Gelder
Sent: Wednesday, March 18, 2009 11:15 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Dana Heins-Gelder
PO Box 944
Kernville, CA 93238-0944

DKi
090325

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Drew King
Sent: Wednesday, March 25, 2009 8:23 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 25, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Drew King
PO Box 11646
Berkeley, CA 94712-2646

DMi1
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of David Mierkey
Sent: Wednesday, March 18, 2009 10:45 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. David Mierkey
10214 Garbo Ct
Stockton, CA 95209-3911

DOC
090418

From: Friends of the River on behalf of Daniel O'Connor
Sent: Sat 4/18/2009 11:21 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Daniel O'Connor
2919 Polaris St
Pollock Pines, CA 95726-9612

DPe
090319

From: Friends of the River on behalf of Dominic Perello
Sent: Thu 3/19/2009 9:48 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 19, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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River recommended by the BLM for wild and scenic river protection. This

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Dominic Perello
1591 Slack St
San Luis Obispo, CA 93405-1963

DRei
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Dana Reimer
Sent: Wednesday, March 18, 2009 9:15 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Dana Reimer
8645 Verdosa Dr
Whittier, CA 90605-1336

DSh
090420

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of David Shorey
Sent: Monday, April 20, 2009 3:57 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 20, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. David Shorey
9421 Maria Way
Sacramento, CA 95827-1028

DSil
090318

From: Friends of the River on behalf of Dan Silver
Sent: Tue 3/17/2009 11:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. Dan Silver
1422 N Sweetzer Ave Apt 401
Los Angeles, CA 90069-1536

DSim1
090331

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of David Simpson
Sent: Tuesday, March 31, 2009 5:22 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 31, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. David Simpson
1815 Virginia St
Berkeley, CA 94703-1324

DSim2
090416

From: Friends of the River on behalf of David Simpson
Sent: Thu 4/16/2009 5:48 PM
To: Francis, Thomas
Subject: DO NOT RAISE PARDEE DAM

Apr 16, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. David Simpson
1815 Virginia St
Berkeley, CA 94703-1324

DStr
090324

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of david strewer
Sent: Tuesday, March 24, 2009 2:51 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 24, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. david strewer
1548 Oxford St
Berkeley, CA 94709-1521

EDr1
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Evan Drath
Sent: Wednesday, March 18, 2009 8:45 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Evan Drath
5800 11th Ave
Sacramento, CA 95820-2431

EDS
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Elisse De Sio
Sent: Wednesday, March 18, 2009 3:15 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Elisse De Sio
662 3rd Ave
Redwood City, CA 94063-3815

EN1
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Eric Newberg
Sent: Wednesday, March 18, 2009 11:15 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Eric Newberg
1465 65th St Apt 461
Emeryville, CA 94608-1176

GA
090401

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of George C. Allerton
Sent: Wednesday, April 01, 2009 11:23 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam!!

Apr 1, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. George C. Allerton
555
Albany, CA 94706

GB1
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Gypsy Bandita
Sent: Wednesday, March 18, 2009 12:15 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Gypsy Bandita
28212 W Fm 1097 Rd
Montgomery, TX 77356-6319

GB2
090326

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Gypsy Bandita
Sent: Thursday, March 26, 2009 2:05 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 26, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Gypsy Bandita
28212 W Fm 1097 Rd
Montgomery, TX 77356-6319

GHu
090319

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Geary Hund
Sent: Thursday, March 19, 2009 8:17 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 19, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Geary Hund
PO Box 3671
Idyllwild, CA 92549-3671

GRa
090317

From: Friends of the River on behalf of George Rawley
Sent: Tue 3/17/2009 5:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. George Rawley
1682 Filbert Ave
Chico, CA 95926-1706

GSch
090327

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Greg and Laurie Schwaller
Sent: Thursday, March 26, 2009 10:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 27, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
We believe that EBMUD can readily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan significantly overestimates future demand and

substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Greg and Laurie Schwaller
43857 S Fork Dr
Three Rivers, CA 93271-9615

GSt
090414

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Greg Stock
Sent: Tuesday, April 14, 2009 11:12 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 14, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Greg Stock
PO Box 617
Yosemite National Park, CA 95389-0617

GT
090317

From: Friends of the River on behalf of Gene R. Trappk & Jo Ellen Ryan
Sent: Tue 3/17/2009 7:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. Gene R. Trappk & Jo Ellen Ryan
2313 Isle Royale Ln
Davis, CA 95616-6619

HG
090317

From: Friends of the River on behalf of Henry Gutierrez
Sent: Tue 3/17/2009 9:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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The Lower Bear reservoir enlargement could alter Mokelumne River flows that have been improved to benefit fish, wildlife, and recreation. These improved flows took years to negotiate as part of PG&E's federal hydroelectric license. EBMUD's proposed reservoir enlargements will thwart the decades of work that have gone into making the Mokelumne a more viable recreation resource that will economically benefit foothill communities.

Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Henry Gutierrez
1311 Hollowood Ct
Perris, CA 92571-4940

IB
090421

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Ian Bailey
Sent: Tuesday, April 21, 2009 7:31 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 21, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Ian Bailey
1722 Cherrytree Ln
Mountain View, CA 94040-3602

IK
090317

From: Friends of the River on behalf of ilona karow
Sent: Tue 3/17/2009 9:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. ilona karow
62 Centennial Ave
Chico, CA 95928-9121

JAt
090503

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Jennifer Atkin
Sent: Sunday, May 03, 2009 10:05 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

May 4, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Jennifer Atkin
1007 41st St Apt 513
Emeryville, CA 94608-3778

JBec
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Jaime Becker
Sent: Wednesday, March 18, 2009 5:15 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. Jaime Becker
1535 35th Ave
San Francisco, CA 94122-3118

JCa
090318

From: Friends of the River on behalf of Jim Carpenter
Sent: Tue 3/17/2009 10:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. Jim Carpenter
1831 Blake St
Berkeley, CA 94703-1903

JCe
090429

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Joseph Celeste
Sent: Wednesday, April 29, 2009 2:24 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 29, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Joseph Celeste
6112 Temple Hill Dr
Los Angeles, CA 90068-2917

JCo
090324

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Janet Cook
Sent: Tuesday, March 24, 2009 4:51 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 24, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Janet Cook
676 Oak Park Way
Emerald Hills, CA 94062-4040

JCr
090317

From: Friends of the River on behalf of Jonathan Creighton
Sent: Tue 3/17/2009 5:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Jonathan Creighton
758 Trestle Glen Rd
Oakland, CA 94610-2316

JDw1
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of James R. Dwyer
Sent: Wednesday, March 18, 2009 9:45 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. James R. Dwyer
464 E 3rd Ave
Chico, CA 95926-3458

JDw2
090324

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of James R. Dwyer
Sent: Tuesday, March 24, 2009 3:21 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 24, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Sincerely,

Mr. James R. Dwyer
464 E 3rd Ave
Chico, CA 95926-3458

JeAn
090319

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Jennifer Anderson
Sent: Wednesday, March 18, 2009 10:16 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 19, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Sincerely,

Ms. Jennifer Anderson
8413 Kroeger Ct
Fair Oaks, CA 95628-5240

JFor
090317

From: Friends of the River on behalf of Julie Ford
Sent: Tue 3/17/2009 8:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

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Sincerely,

Ms. Julie Ford
16222 Monterey Ln Spc 223
Huntington Beach, CA 92649-2244

JFos
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Janice Foss
Sent: Wednesday, March 18, 2009 7:15 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

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Sincerely,

Ms. Janice Foss
622 Richmond St
El Cerrito, CA 94530-3213

JFried
090317

From: Friends of the River on behalf of Dr. Judith & William E. Friedel
Sent: Tue 3/17/2009 8:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

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Sincerely,

Dr. Dr. Judith & William E. Friedel
10434 Fuerte Dr
La Mesa, CA 91941-4349

JG1
090318

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From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Janice Gloe
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375 11th Street MS 407
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Sincerely,

Ms. Janice Gloe
3100 Guido St
Oakland, CA 94602-3521

JGe
090403

From: Friends of the River on behalf of Jim Genes
Sent: Fri 4/3/2009 12:57 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 3, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

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Sincerely,

Mr. Jim Genes
PO Box 270
Merced, CA 95341-0270

JHarr
090318

From: Friends of the River on behalf of James harris
Sent: Tue 3/17/2009 11:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

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375 11th Street MS 407
Oakland, CA 94607

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Sincerely,

Dr. James harris
Esplanada Way
Stanford, CA 94305

JHarv2
090317

From: Friends of the River on behalf of Joe Harvey
Sent: Tue 3/17/2009 5:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

The Pardee reservoir enlargement will drown a segment of the Mokelumne

River recommended by the BLM for wild and scenic river protection. This

section is also popular for kayaking and fishing. The Pardee enlargment would destroy the recently renovated Middle Bar Bridge and other existing and proposed public access facilities, as well as require the costly relocation of the Hwy 49 bridge.

The Lower Bear reservoir enlargement could alter Mokelumne River flows that have been improved to benefit fish, wildlife, and recreation. These improved flows took years to negotiate as part of PG&E's federal hydroelectric license. EBMUD's proposed reservoir enlargements will thwart the decades of work that have gone into making the Mokelumne a more viable recreation resource that will economically benefit foothill communities.

Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Joe Harvey
19724 Cedar Way
Pioneer, CA 95666-9313

JHo1
090317

From: Friends of the River on behalf of John Holtzclaw
Sent: Tue 3/17/2009 5:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. John Holtzclaw
1508 Taylor St
San Francisco, CA 94133-4290

JJerg
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of John Jerger
Sent: Wednesday, March 18, 2009 8:45 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. John Jerger
3510 Rubin Dr
Oakland, CA 94602-4146

JLa1
090317

From: Friends of the River on behalf of Jacqueline Lasahn
Sent: Tue 3/17/2009 9:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Jacqueline Lasahn
808 Balra Dr
El Cerrito, CA 94530-3002

JMcCL
090317

From: Friends of the River on behalf of Jonathan McClelland
Sent: Tue 3/17/2009 8:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Jonathan McClelland
4740 Hall Rd
Santa Rosa, CA 95401-5633

JMcK2
090321

From: Friends of the River on behalf of julie mckee
Sent: Sat 3/21/2009 2:52 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 21, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. julie mckee
705-925 Elysian Valley Rd
Janesville, CA 96114-9699

JMe
090319

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of jack meeks
Sent: Thursday, March 19, 2009 10:47 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 19, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. jack meeks
13545 Spenceville Rd
Penn Valley, CA 95946-8962

JMu1
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Jon Musacchia
Sent: Wednesday, March 18, 2009 4:15 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Jon Musacchia
40 Kenyon Ave
Kensington, CA 94708-1025

JMu2
090324

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Jon Musacchia
Sent: Tuesday, March 24, 2009 4:21 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 24, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Sincerely,

Mr. Jon Musacchia
40 Kenyon Ave
Kensington, CA 94708-1025

JO1
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of john okulick
Sent: Wednesday, March 18, 2009 3:45 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

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Sincerely,

Mr. john okulick
604 Hampton Dr
Venice, CA 90291-2626

JPo
090403

From: Friends of the River on behalf of Julie Poulton
Sent: Fri 4/3/2009 4:57 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 3, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. Julie Poulton
16200 Excelsior Ditch Camp Rd
Nevada City, CA 95959-8665

JRose
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Jamie Rosenthal
Sent: Wednesday, March 18, 2009 8:15 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Jamie Rosenthal
2027 Gillespie St
Santa Barbara, CA 93101-4647

JSa1
090317

From: Friends of the River on behalf of Jeff Salkas
Sent: Tue 3/17/2009 8:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Jeff Salkas
1910 Brockway St
Joliet, IL 60431-1598

JSa2
090324

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Jeff Salkas
Sent: Tuesday, March 24, 2009 6:21 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 24, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

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Sincerely,

Mr. Jeff Salkas
1910 Brockway St
Joliet, IL 60431-1598

JSe1
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Joseph Sebastian
Sent: Wednesday, March 18, 2009 9:16 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

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Sincerely,

Mr. Joseph Sebastian
4110 Edison Ave
Sacramento, CA 95821-2827

JShu
090317

From: Friends of the River on behalf of Jacqueline Shulters
Sent: Tue 3/17/2009 9:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

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Sincerely,

Ms. Jacqueline Shulters
265 Riverside Dr
Woodland, CA 95695-2548

JSims
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Jennifer Sims
Sent: Wednesday, March 18, 2009 10:15 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Jennifer Sims
212 Vanden Ct
Vacaville, CA 95687-7232

JSto
090324

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Jeffrey Stone
Sent: Tuesday, March 24, 2009 7:21 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 24, 2009

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375 11th Street MS 407
Oakland, CA 94607

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Jeffrey Stone
506 Discovery St
Yreka, CA 96097-2215

JTi
090324

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of James Jade Tippett
Sent: Tuesday, March 24, 2009 3:21 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 24, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

The Pardee reservoir enlargement will drown a segment of the Mokelumne

River recommended by the BLM for wild and scenic river protection. This

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. James Jade Tippett
814 Jackson Ave
Ukiah, CA 95482-3721

JTo
090317

From: Friends of the River on behalf of Janette Tom
Sent: Tue 3/17/2009 5:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Janette Tom
2414 Browning St
Berkeley, CA 94702-2027

KBa
090317

From: Friends of the River on behalf of Kenneth Bauer
Sent: Tue 3/17/2009 6:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Kenneth Bauer
703 Falls Ct
Pleasant Hill, CA 94523-1066

KFr
090321

From: Friends of the River on behalf of Kathleen Frank
Sent: Sat 3/21/2009 7:21 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 21, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Kathleen Frank
188 Oak Springs Dr
San Anselmo, CA 94960-1327

KHan
090327

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Kathy Hanson
Sent: Friday, March 27, 2009 2:45 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 27, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Kathy Hanson
5431 Meadow Cir
Huntington Beach, CA 92649-4027

KHe
090323

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Kathleen Head
Sent: Monday, March 23, 2009 1:56 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 23, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Kathleen Head
40123 Corte Lorca
Murrieta, CA 92562-3525

KHol
090323

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Kirsten R. Holmquist
Sent: Monday, March 23, 2009 9:20 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 23, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Kirsten R. Holmquist
505 Porpoise Bay Ter Apt C
Sunnyvale, CA 94089-4724

KLi2
090402

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of KJ Linarez
Sent: Thursday, April 02, 2009 2:25 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 2, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. KJ Linarez
5249 Manzanita Ave
Carmichael, CA 95608-0544

KLo
090317

From: Friends of the River on behalf of Kit Lofroos
Sent: Tue 3/17/2009 6:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Kit Lofroos
101A Post St
Petaluma, CA 94952-2624

KMa
090317

From: Friends of the River on behalf of Ken Maloney
Sent: Tue 3/17/2009 9:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Ken Maloney
16222 Monterey Ln Spc 223
Huntington Beach, CA 92649-2244

KN
090317

From: Friends of the River on behalf of Kenneth Nemire
Sent: Tue 3/17/2009 5:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. Kenneth Nemire
4251 Sea Pines Ct
Capitola, CA 95010-3553

KRed
090504

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Kate Redburn
Sent: Monday, May 04, 2009 11:11 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

May 4, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Kate Redburn
295 Stratford Dr
San Francisco, CA 94132-2655

KY
090429

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Kelle Young
Sent: Wednesday, April 29, 2009 7:55 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 29, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mrs. Kelle Young
580 Santa Ray Ave
Oakland, CA 94610-1743

LA
090317

From: Friends of the River on behalf of Laura Allen
Sent: Tue 3/17/2009 5:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Laura Allen
935 Arlington Ave
Oakland, CA 94608-2703

LDa
090427

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of LANG DAYTON
Sent: Monday, April 27, 2009 6:19 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 27, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. LANG DAYTON
1776 El Capitan Dr
Redding, CA 96001-2976

LF
090328

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Lis Fleming
Sent: Friday, March 27, 2009 10:29 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 28, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Lis Fleming
1107 Halifax Ave
Davis, CA 95616-2718

LK
090323

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Lauren Kramer
Sent: Monday, March 23, 2009 7:27 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 23, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Miss Lauren Kramer
1353 Walnut Ln
Macungie, PA 18062-9405

LL
090317

From: Friends of the River on behalf of Larry L. Lundberg
Sent: Tue 3/17/2009 6:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Larry L. Lundberg
665 S 16th St
San Jose, CA 95112-2372

LMu
090424

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Lynn Murray
Sent: Friday, April 24, 2009 3:12 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 24, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Lynn Murray
2684 Coloma Ct Apt 87
Placerville, CA 95667-3446

LY
090402

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Lois Yuen
Sent: Thursday, April 02, 2009 4:54 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 2, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Lois Yuen
1940 Yosemite Rd
Berkeley, CA 94707-1651

MCr
090317

From: Friends of the River on behalf of Mallory Cremin
Sent: Tue 3/17/2009 7:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Mallory Cremin
53850 Pine Crest Ave
IDYLLWILD, CA 92549-0665

MFI
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Madeleine Flandreau
Sent: Wednesday, March 18, 2009 9:15 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Miss Madeleine Flandreau
1263 E 10th St
Chico, CA 95928-5935

MFrant1
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Mary Frantz
Sent: Wednesday, March 18, 2009 1:45 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. Mary Frantz
1737 Peyton Ave
Burbank, CA 91504-3680

MGae
090317

From: Friends of the River on behalf of Marnie Gaede
Sent: Tue 3/17/2009 8:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mrs. Marnie Gaede
772 Caldera Curv
South Fork, CO 81154-9432

MGre
090331

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Max Greene
Sent: Tuesday, March 31, 2009 5:52 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 31, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Max Greene
PO Box 41
Friant, CA 93626-0041

MGu
090325

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Mike Gunderson
Sent: Wednesday, March 25, 2009 8:24 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 25, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Mike Gunderson
6820 Casa Contenta Dr
Somerset, CA 95684-9316

MHaw
090330

From: Friends of the River on behalf of Mandi Hawley
Sent: Mon 3/30/2009 2:26 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 30, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Mandi Hawley
630 14th St Apt 5
Sacramento, CA 95814-1522

MHew
090331

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Mark Hewell
Sent: Tuesday, March 31, 2009 4:22 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 31, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Mark Hewell
9208 Vista Del Monte Ct
Gilroy, CA 95020-9409

MK1
090428

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Megaen Kelly
Sent: Monday, April 27, 2009 10:49 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 28, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Megaen Kelly
PO Box 604
Newcastle, CA 95658-0604

ML
090318

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Michael Little
Sent: Wednesday, March 18, 2009 8:45 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. Michael Little
321 Burden Ter
Paradise, CA 95969-5710

MOC
090317

From: Friends of the River on behalf of meave o'Connor
Sent: Tue 3/17/2009 5:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. meave o'Connor
1717 Berkeley Way
Berkeley, CA 94703-1505

MPi
090325

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Michael Pinelli
Sent: Wednesday, March 25, 2009 8:53 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 25, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Michael Pinelli
1124 Banyan Way
Pacifica, CA 94044-4342

MRi1
090317

From: Friends of the River on behalf of Michael Rifkind
Sent: Tue 3/17/2009 7:43 PM
To: Francis, Thomas
Subject: Support S.22

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Michael Rifkind
5899 Empire Grade
Santa Cruz, CA 95060-9604

MRi2
090325

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Michael Rifkind
Sent: Wednesday, March 25, 2009 8:53 AM
To: Francis, Thomas
Subject: Support S.22

Mar 25, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Michael Rifkind
5899 Empire Grade
Santa Cruz, CA 95060-9604

MRo
090331

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of mike rogers
Sent: Tuesday, March 31, 2009 5:22 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 31, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. mike rogers
1660 Lupton Ave
San Jose, CA 95125-3853

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of melissa Sackett
Sent: Wednesday, March 18, 2009 9:16 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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River recommended by the BLM for wild and scenic river protection. This

section is also popular for kayaking and fishing. The Pardee enlargment would destroy the recently renovated Middle Bar Bridge and other existing and proposed public access facilities, as well as require the costly relocation of the Hwy 49 bridge.

The Lower Bear reservoir enlargement could alter Mokelumne River flows that have been improved to benefit fish, wildlife, and recreation. These improved flows took years to negotiate as part of PG&E's federal hydroelectric license. EBMUD's proposed reservoir enlargements will thwart the decades of work that have gone into making the Mokelumne a more viable recreation resource that will economically benefit foothill communities.

Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. melissa Sackett
2939 61st Ave
Oakland, CA 94605-1516

MSav
090326

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of m. savino
Sent: Thursday, March 26, 2009 9:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 26, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. m. savino
PO Box 2219
Sacramento, CA 95812-2219

MSw
090317

From: Friends of the River on behalf of Mark Swoiskin
Sent: Tue 3/17/2009 5:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. Mark Swoiskin
655 Redwood Hwy Ste 255
Mill Valley, CA 94941-3025

MTa
090324

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of MICHAEL TAAFFE
Sent: Tuesday, March 24, 2009 3:21 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 24, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. MICHAEL TAAFFE
24 Stanford Cir
Lompoc, CA 93436-1113

MTo
090324

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Michael Tomlinson
Sent: Tuesday, March 24, 2009 3:21 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 24, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Michael Tomlinson
2776 18th St
Sacramento, CA 95818-3006

MV1
090331

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Mike Vandeman
Sent: Tuesday, March 31, 2009 4:22 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 31, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. Mike Vandeman
2600 Camino Ramon # 2E950I
San Ramon, CA 94583-5000

MWa1
090325

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Marie Wadman
Sent: Wednesday, March 25, 2009 10:53 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 25, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Marie Wadman
2431 11th Ave
Oakland, CA 94606-2713

MZ
090331

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Mark Zimmerman
Sent: Tuesday, March 31, 2009 6:52 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 31, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. Mark Zimmerman
1201 S Church St
Lodi, CA 95240-5713

NAg
090501

From: Friends of the River on behalf of Nick Aghazarian
Sent: Fri 5/1/2009 11:59 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

May 1, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.

The EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Nick Aghazarian
3275 Coldwater Dr
San Jose, CA 95148-1210

NAI
090504

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Nalatie Alpers
Sent: Monday, May 04, 2009 11:11 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

May 4, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Miss Nalatie Alpers
21149 Lyons Bald Mountain Rd
Sonora, CA 95370-8760

PDa
090318

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Patricia Davis
Sent: Wednesday, March 18, 2009 9:15 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Patricia Davis
615 Santa Ray Ave
Oakland, CA 94610-1720

PDi
090322

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Philip Dinter
Sent: Sunday, March 22, 2009 8:24 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 22, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Philip Dinter
3375 Shepherd Dr
Lompoc, CA 93436-2389

PJon
090324

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Patricia Jones
Sent: Tuesday, March 24, 2009 7:21 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 24, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Patricia Jones
81 Calle De Los Ositos
Carmel Valley, CA 93924-9714

PL2
090325

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Patricia Law
Sent: Wednesday, March 25, 2009 7:53 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 25, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Patricia Law
1948 Felton St
San Diego, CA 92102-1232

PMa
090317

From: Friends of the River on behalf of Patricia Matejcek
Sent: Tue 3/17/2009 5:13 PM
To: Francis, Thomas
Subject: Do NOT raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan significantly overestimates future demand.while substantially underestimating the amount of water that could be produced at far less cost than raising the dam through reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

The Pardee reservoir enlargement will drown a segment of the Mokelumne River recommended by the BLM for wild and scenic river protection, a

section that is popular for kayaking and fishing. The Pardee enlargment would destroy the recently renovated Middle Bar Bridge and other existing and proposed public access facilities, as well as require the costly relocation of the Hwy 49 bridge.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Patricia Matejcek
PO Box 2067
Santa Cruz, CA 95063-2067

PS
090320

From: donkeyacres@centralhouse.net [mailto:donkeyacres@centralhouse.net]
Sent: Fri 3/20/2009 9:20 PM
To: Francis, Thomas
Subject: proposed mokelumne project

Dear Mr. Francis,
My name is Peter B. Hansell, I am a third generation Californian.
I was born in December 1951, in Oroville , Butte county, California.
Therefore I had a ''ring side seat'', at the biggest ''Urban Water
Theft'', from rural residents, in the history of the United States of America. Yes I am talking about Edmund G. Brown's , ''California Water Project'', (Big Oroville Dam, completed 1968) This project was supposedly built for the ''Greater Good'', of the population of California. (actually benefited Southern Pacific corporate farms , down the west side of the Sanjoaquin Valley; and the population of the Las Angeles basin, who had already burned through the water they had stolen from the Owens river) (Mulholands agents really did sneak around the Owens valley, pretending to be ranchers, buying land & water rights)(and water stolen from the Colorado
river).
I witnessed thousands of acres, inundated. Consequentially, I also
saw thousands of people forced off of their land.Two of these people were my
grand parents:John B. Hansell & Grace Hansell, who owned and operated Hansell's Motor Lodge, on Hwy 70 at Hansell's bridge (spanning the middle fork of the feather river, completed in 1932)(a twin of the Bixbey Creek bridge south of Big Sur) Their business wasn't inundated, it was buried under the down stream toe, of the actual dam.
I am also aware of the city of San Francisco's arrogant and selfish acquisition, of the Hetch Hetchy, and damming, of the same.
EBMUD,s vicious, and pointless, fight about the Middle Bar public
access, ten years ago, demonstrates to me that EBMUD has no regard, nor respect, for the people of Amador, and Calaveras county. Your only apparent
interest here , is to take (steal?) as much as you can for your customers.
Mr. Francis you have taken enough. If you have too many customers
,restrict growth. If you insist on unrestricted growth, look to the Bay(de-salianation)
These hills are dry enough. The river run down stream from Electra
is holy. It is a beautiful run of river, and should be left as is.
The Parde dam is eighty two years old. EBMUD cant prove with any certainty, that it is structurally sound. The aggregate is exposed on the face of the dam , from eighty two years of rain water erosion. The eighty

two year old rebar is likely corroding away. The geological survey's of the
north and south anchorages, are eighty two (plus?) years old. EBMUD can't possibly be considering increasing the pond size (and therefore the stress)
on that old dam. (Teton dam was new, in the 1970's when it collapsed [Idaho])

I would not want to live down stream (Clements, Lockford, Lodi) from this proposed, engineering amalgamation.

EBMUD would better spend the money, they are going to spend defending all the law suits, on mineing the Bay for water.

Thankyou

Peter B. Hansell

RBu
090326

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Reagan Bush
Sent: Thursday, March 26, 2009 3:32 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 26, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Reagan Bush
5000 Forbes Ave.
Pittsburgh, PA 15213

RCo
090324

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Richard Cooper
Sent: Tuesday, March 24, 2009 4:51 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 24, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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River recommended by the BLM for wild and scenic river protection. This

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. Richard Cooper
5631 Castle Dr
Oakland, CA 94611-2727

RD
090401

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Robert DeVisscher
Sent: Wednesday, April 01, 2009 1:23 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 1, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.

I believe that EBMUD can meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Sincerely,
Robert DeVisscher
3632 Waynart Court
Carmichael CA 95608

Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Robert DeVisscher
3632 Waynart Ct
Carmichael, CA 95608-2862

REI1
090317

From: Friends of the River on behalf of Richard Ely
Sent: Tue 3/17/2009 5:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Richard Ely
2138 Green Hill Rd
Sebastopol, CA 95472-9306

RFra
090318

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Randall Frank
Sent: Wednesday, March 18, 2009 5:15 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Randall Frank
188 Oak Springs Dr
San Anselmo, CA 94960-1327

RH
090401

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Robert Hammon
Sent: Wednesday, April 01, 2009 3:54 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 1, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Robert Hammon
2233 Otis Dr
Alameda, CA 94501-5756

RMcC
090317

From: Friends of the River on behalf of Robert McConachie
Sent: Tue 3/17/2009 5:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Robert McConachie
1048 Shoreline Dr
Placerville, CA 95667-9318

RMeag
090317

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Robert Meagher
Sent: Tuesday, March 17, 2009 4:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. Robert Meagher
1157 Markham Way
Sacramento, CA 95818-2913

RN
090318

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of roberta E. newman
Sent: Wednesday, March 18, 2009 4:45 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. roberta E. newman
300 Monte Vista Ave
Mill Valley, CA 94941-5080

RO
090331

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Richard Ober
Sent: Tuesday, March 31, 2009 5:52 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 31, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Richard Ober
966 Colusa Ave
Sunnyvale, CA 94085-3437

RobMil
090418

From: Friends of the River on behalf of Robin Miller
Sent: Sat 4/18/2009 6:21 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. Robin Miller
30 San Miguel Way
Novato, CA 94945-1719

RR
090317

From: Friends of the River on behalf of Richard Rawson
Sent: Tue 3/17/2009 5:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Dr. Richard Rawson
2781 Land Park Dr
Sacramento, CA 95818-2938

RSe
090324

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of rob Seltzer
Sent: Tuesday, March 24, 2009 3:51 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 24, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. rob Seltzer
6465 Kanan Dume Rd
Malibu, CA 90265-4040

RSh
090318

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Rick Shreve
Sent: Wednesday, March 18, 2009 9:15 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Rick Shreve
501 9th St
Arcata, CA 95521-6235

RWe1
090317

From: Friends of the River on behalf of Richard Rawson
Sent: Tue 3/17/2009 5:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Richard S. Weiss
Sent: Tuesday, March 17, 2009 4:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Richard S. Weiss
615 Santa Ray Ave
Oakland, CA 94610-1720

RWu
090329

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of rebecca wu
Sent: Sunday, March 29, 2009 9:55 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 29, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. rebecca wu
417 Mace Blvd J194
Davis, CA 95618-6053

SBar
090331

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Serge Barbir
Sent: Tuesday, March 31, 2009 4:52 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 31, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Serge Barbir
2939 Rubino Cir
San Jose, CA 95125-6310

SFe
090317

From: Friends of the River on behalf of Suzanne Ferroggiaro
Sent: Tue 3/17/2009 9:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I am writing on behalf of our 12 family voters and river lovers who believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Suzanne Ferroggiaro
13340 Lower Colfax Rd

Grass Valley, CA 95945-9601

SFo
090331

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Scott Foster
Sent: Tuesday, March 31, 2009 5:52 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 31, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Scott Foster
888 N West Knoll Dr
West Hollywood, CA 90069-4741

SFr
090320

From: Friends of the River on behalf of Steven Frie
Sent: Fri 3/20/2009 2:50 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 20, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

The Pardee reservoir enlargement will drown a segment of the Mokelumne

River recommended by the BLM for wild and scenic river protection. This

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Steven Frie
1628 Balboa Ave
Burlingame, CA 94010-4616

SGo
090317

From: Friends of the River on behalf of Sharon Gosselin
Sent: Tue 3/17/2009 6:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Sharon Gosselin
15 Glen Ave
San Rafael, CA 94901-5024

SGr
090411

From: Friends of the River on behalf of Shirley Gregory
Sent: Sat 4/11/2009 10:43 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 11, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mrs. Shirley Gregory
368 Deerfield Dr
Moraga, CA 94556-2505

SK
090502

From: Friends of the River on behalf of Sara Keene
Sent: Sat 5/2/2009 6:00 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

May 2, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Sara Keene
409 N Geneva St # 2
Ithaca, NY 14850-4111

SMi
090317

From: Friends of the River on behalf of Scott Milener
Sent: Tue 3/17/2009 6:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Scott Milener
2530 Chestnut St Apt 8
San Francisco, CA 94123-2422

SP
090319

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Sarah Parks
Sent: Thursday, March 19, 2009 7:17 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 19, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Sarah Parks

1304 Camille Dr
Carson City, NV 89706-2613

SRa
090317

From: Friends of the River on behalf of Sara Raskie
Sent: Tue 3/17/2009 5:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Sara Raskie
11477 Rocker Rd
Nevada City, CA 95959-9506

SSchu
090425

From: Friends of the River on behalf of Sharon Schumacher
Sent: Sat 4/25/2009 3:43 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 25, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Sharon Schumacher
471 Hagemann Dr
Livermore, CA 94551-6037

STra
090401

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Soleil Tranquilli
Sent: Wednesday, April 01, 2009 7:24 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 1, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Soleil Tranquilli
9012 Meadowsweet Way
Elk Grove, CA 95624-2705

STu
090318

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Sherry Turner
Sent: Wednesday, March 18, 2009 12:15 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Sherry Turner
516 Sacramento St
Nevada City, CA 95959-3010

TFag
090324

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Theresa Fagouri
Sent: Tuesday, March 24, 2009 6:51 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 24, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Miss Theresa Fagouri
1206 Salem St
Chico, CA 95928-6551

TFI
090326

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Tova Fleming
Sent: Thursday, March 26, 2009 8:34 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 26, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Tova Fleming
4914 Cowell Blvd
Davis, CA 95618-4405

THu1
090318

From: Friends of the River on behalf of Tara Hui
Sent: Tue 3/17/2009 10:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 18, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Tara Hui
238 Wilde Ave
San Francisco, CA 94134-2248

TMe
090317

From: Friends of the River on behalf of Tanya Meyer
Sent: Tue 3/17/2009 9:13 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 17, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs downing a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Ms. Tanya Meyer
2319 Shire Ln
Davis, CA 95616-3059

TMi2
090419

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Thomas Miro
Sent: Sunday, April 19, 2009 6:25 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 19, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Thomas Miro
1340 Versailles Ave
Alameda, CA 94501-4720

TSt1
090322

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of Tim Stutz
Sent: Sunday, March 22, 2009 4:55 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 22, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. Tim Stutz
130 N California St
Lodi, CA 95240-1904

WB
090331

-----Original Message-----
From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of walteR baity
Sent: Tuesday, March 31, 2009 5:22 PM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Mar 31, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

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Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. walteR baity
6145 Oak Lakes Ln
Citrus Heights, CA 95621-3568

WZ
090406

From: Friends of the River [mailto:info@friendsoftheriver.org] On Behalf Of William Zemanek
Sent: Monday, April 06, 2009 9:03 AM
To: Francis, Thomas
Subject: Don't raise Pardee Dam

Apr 6, 2009

Mr. Thomas Francis
375 11th Street MS 407
Oakland, CA 94607

Dear Mr. Francis,

Please do not enlarge the Pardee and Lower Bear reservoirs drowning a segment of the Mokelumne River.
I believe that EBMUD can easily meet its future water needs without enlarging the Pardee or Lower Bear Reservoirs. EBMUD's proposed Water Supply Management Plan is significantly overestimating future demand. In addition, the Plan substantially underestimates the amount of water that could be produced by reasonable and achievable increases in water conservation, recycling, groundwater storage, and increased rationing during drought years.

The Pardee reservoir enlargement will drown a segment of the Mokelumne

River recommended by the BLM for wild and scenic river protection. This

section is also popular for kayaking and fishing. The Pardee enlargment would destroy the recently renovated Middle Bar Bridge and other existing and proposed public access facilities, as well as require the costly relocation of the Hwy 49 bridge.

The Lower Bear reservoir enlargement could alter Mokelumne River flows that have been improved to benefit fish, wildlife, and recreation. These improved flows took years to negotiate as part of PG&E's federal hydroelectric license. EBMUD's proposed reservoir enlargements will thwart the decades of work that have gone into making the Mokelumne a more viable recreation resource that will economically benefit foothill communities.

Please revise the Plan to eliminate the Pardee and Lower Bear Reservoir enlargements. The Plan should focus on increased conservation, recycling, and drought year rationing instead.

Sincerely,

Mr. William Zemanek
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