

## Proposal Full View

### APPLICANT INFORMATION

<b>Organization Name *</b>	East Bay Municipal Utility District		
<b>Tax ID</b>	999999923		
<b>Point Of Contact *</b>	<b>Division/Address List:</b>	Water Supply Improvements Div	
	<b>Address1:</b>	375 11th Street	<b>Address2:</b> MS 407
	<b>City:</b>	Oakland	<b>State:</b> CA
	<b>Zip:</b>	94607	
	<b>First Name:</b>	Ken	<b>Last Name:</b> Minn
	<b>Email:</b>	ken.minn@ebmud.com	<b>Phone (Office):</b> (510) 2870668
<b>Point Of Contact Position Title *</b>	Associate Civil Engineer		
<b>Proposal Name *</b>	East Bay Plain Subbasin Groundwater Sustainability Plan Development		
<b>Proposal Objective*</b>	The objective of this proposal is to develop a single Groundwater Sustainability Plan (GSP) consistent with the GSP regulations for the entire East Bay Plain Subbasin using best available science and through collaboration among EBMUD (an exclusive GSA), City of Hayward (an exclusive GSA), stakeholders and interested parties.		

### BUDGET

<b>Other Contribution</b>	\$0.00
<b>Local Contribution</b>	\$1,018,000.00
<b>Federal Contribution</b>	\$0.00
<b>Inkind Contribution</b>	\$0.00
<b>Amount Requested *</b>	\$1,000,000.00
<b>Total Proposal Cost *</b>	\$2,018,000.00

### GEOGRAPHIC INFORMATION

<b>Latitude *</b>	<b>DD(+/-):</b> 37	<b>MM:</b> 48	<b>SS:</b> 4
<b>Longitude *</b>	<b>DD(+/-):</b> 122	<b>MM:</b> 16	<b>SS:</b> 15
<b>Longitude/Latitude Clarification</b>	Oakland	<b>Location</b>	375 11th Street, Oakland, CA
<b>County*</b>	Alameda		
<b>Ground Water Basin</b>	Santa Clara Valley-East Bay Plain		
<b>Hydrologic Region</b>	San Francisco Bay		
<b>Watershed</b>	17 2203 Bay Bridges		

### LEGISLATIVE INFORMATION

<b>Assembly District*</b>	18th Assembly District, 20th Assembly District
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<b>Senate District*</b>	10th Senate District, 9th Senate District
<b>US Congressional District*</b>	District 15 (CA)

## Project Information

### PROJECT NAME: EAST BAY PLAIN SUBBASIN GROUNDWATER SUSTAINABILITY PLAN DEVELOPMENT

#### EAST BAY PLAIN SUBBASIN GROUNDWATER SUSTAINABILITY PLAN DEVELOPMENT

<b>Implementing Organization</b>	East Bay Municipal Utility District
<b>Secondary Implementing Organization</b>	City of Hayward
<b>Proposed Start Date</b>	10/5/2015
<b>Proposed End Date</b>	7/16/2021
<b>Scope Of Work</b>	To prepare contents of the East Bay Plain Subbasin GSP. The key tasks include: ? adopting governance structure, ? conducting hydrogeologic study data gathering, synthesis, and analysis, ? developing a conceptual hydrologic and geologic model to build integrated hydrologic model including water budget and geologic framework, ? establishing sustainable management criteria, ? designing the monitoring network and subsidence monitoring system, and ? identifying data gaps and management actions
<b>Project Description</b>	The proposed project is to prepare a single GSP that defines the basin setting and establishes sustainable management criteria for the entire East Bay Plain Subbasin (Basin No. 2-009.04) using the best available science. The sustainable management criteria and management actions shall be based on the level of understanding of the basin setting, the level of uncertainty and data gaps, as reflected in the Plan. The GSP development will include conducting hydrogeologic investigation of the East Bay Plain Subbasin and developing an integrated hydrologic model for the Subbasin. The model will be then used as an analysis tool to define the six SGMA undesirable results and minimum thresholds. Based on investigation and analyses, a single GSP -- consisting of governance, basin setting, sustainable management criteria, monitoring network and protocols, sustainable management actions, and implementation plan -- will be developed and submitted to DWR for approval.
<b>Project Objective</b>	The objective of this proposal is to develop a single Groundwater Sustainability Plan (GSP) consistent with the GSP regulations for the entire East Bay Plain Subbasin using best available science and through collaboration among EBMUD(an exclusive GSA), City of Hayward (an exclusive GSA), stakeholders and interested parties.

#### PROJECT BENEFITS INFORMATION

No records found.

#### BUDGET

<b>Other Contribution</b>	\$0.00
<b>Local Contribution</b>	\$1,018,000.00
<b>Federal Contribution</b>	\$0.00
<b>Inkind Contribution</b>	\$0.00
<b>Amount Requested*</b>	\$1,000,000.00
<b>Total Project Cost*</b>	\$2,018,000.00

## GEOGRAPHIC INFORMATION

<b>Latitude *</b>	<b>DD(+/-):</b> 37	<b>MM:</b> 48	<b>SS:</b> 4
<b>Longitude*</b>	<b>DD(+/-):</b> 122	<b>MM:</b> 16	<b>SS:</b> 0
<b>Longitude/Latitude Clarification</b>		<b>Location</b>	
<b>County*</b>	Alameda, Contra Costa		
<b>Ground Water Basin</b>	Santa Clara Valley-East Bay Plain		
<b>Hydrologic Region</b>	San Francisco Bay		
<b>Watershed</b>	17 2203 Bay Bridges		

## LEGISLATIVE INFORMATION

<b>Assembly District*</b>	10th Assembly District, 18th Assembly District
<b>Senate District*</b>	10th Senate District, 9th Senate District
<b>US Congressional District*</b>	District 15 (CA)

## Section : Questions

### **Q1: Project Description:**

**Provide a brief abstract of the Proposal. This abstract must provide an overview of the proposal including the main issues and priorities addressed in the proposal. (25 words or less)**

This proposal (the proposed project) is to develop a DWR-approved single GSP for the entire East Bay Plain Subbasin (Basin No. 2-009.04) using the best available science. The GSP development will include conducting hydrogeologic investigations and developing an integrated hydrologic model for the entire Subbasin. The model will then be used as an analysis tool to establish sustainability goals, define undesirable results, and set minimum thresholds. Based on the investigation and analyses, a single GSP -- consisting of governance, basin setting, sustainable management criteria, monitoring network and protocols, sustainable management actions, and an implementation plan -- will be developed and submitted to DWR for approval. It is anticipated that available grant funding will be applied to technical studies and development of a robust groundwater model.

### **Q2: Project Representative:**

**Provide the name and details of the person responsible for signing and executing the grant agreement for the applicant. Persons that are subcontractors to be paid by the grant cannot be listed as the Project Representative.**

Alexander R. Coate General Manager

### **Q3: Project Manager:**

**Provide the name, title, and contact information of the Project Manager from the applicant agency or organization that will be the day-to-day contact on this application.**

Ken Minn Associate Engineer EBMUD 375 11th Street, MS 407 Oakland, CA 94607 (510) 287-0668 ken.minn@ebmud.com

### **Q4: Eligibility:**

**Has the applicant met the requirements of DWR's California Statewide Groundwater Elevation Monitoring (CASGEM) Program?**

- a)  Yes  
b)  No

**Q5: Eligibility:**

Is the applicant an agricultural water supplier? If yes, has the applicant submitted a complete Agricultural Water Management Plan (AWMP) to DWR? Has the AWMP been verified as complete by DWR? If the AWMP has not been submitted, explain and provide the anticipated submittal date?

Not an agricultural water supplier

**Q6: Eligibility:**

Is the applicant an urban water supplier? If yes, has the applicant submitted a complete Urban Water Management Plan (UWMP) to DWR? Has the UWMP been verified as complete by DWR? If the UWMP has not been submitted, explain and provide the anticipated date for submittal.

Yes. UWMP has been submitted and verified as complete by DWR.

**Q7: Eligibility:**

Is the applicant a surface water diverter? If yes, has the applicant submitted to the State Water Resources Control Board (SWRCB) their surface water diversion reports in compliance with requirements outlined in Part 5.1 (commencing with Section 5100) of Division 2 of the Water Code? If the reports have not been submitted, explain and provide the anticipated date for meeting the requirements.

Yes. EBMUD has submitted to the State Water Resources Control Board (SWRCB) the surface water diversion reports in compliance with requirements outlined in Part 5.1 (commencing with Section 5100) of Division 2 of the Water Code.

**Q8: Eligibility:**

Does the proposal include any of the following activities:

- 1) The potential to adversely impact a wild and scenic river or any river afforded protection under the California or Federal Wild and Scenic Rivers Act
- 2) Acquisition of land through eminent domain
- 3) Design, construction, operation, mitigation, or maintenance of Delta conveyance facilities
- 4) Acquisition of water except for projects that will provide fisheries or ecosystem benefits or improvements that are greater than required currently applicable environmental mitigation measures or compliance obligations
- 5) Pay any share of the costs of remediation recovered from parties responsible for the contamination of a groundwater storage aquifer
- 6) Projects or groundwater planning activities associated with adjudicated groundwater basins.

If yes, the project is not eligible to receive grant funding.

- a)  Yes  
b)  No

**Q9: DAC or EDA Cost Share Waiver or Reduction:**

Are you applying for cost share waiver or reduction as a DAC, SDAC, or EDA? Fill out Attachment 7, Attachment 8, or Attachment 9 as appropriate.

- a)  Yes  
b)  No

**Q10: Project Area Map:**

Provide a map illustrating the groundwater basin, relevant project features, service area (may represent the area covered by GSP for Category 2), and SDAC, DAC, EDA area, if applicable.

Last Uploaded Attachments: EBP Subbasin GSA Coverage Areas.jpg

**Section : Attachments**

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**Attachment 1: Authorization**

Upload Authorization documentation here. [This attachment is mandatory.](#)

Last Uploaded Attachments: Att1\_2017SGWPC2\_AuthDoc\_1of1.pdf

**Attachment 2: Eligibility Applicant Documentation**

Upload Eligibility Applicant documentation here. [This attachment is mandatory.](#)

Last Uploaded Attachments: Att2\_2017SGWPC2\_EligDoc\_1oftotal1.pdf

**Attachment 3: Project Justification**

Upload Project Justification documentation here. [This attachment is mandatory.](#)

Last Uploaded Attachments: Att3\_2017SGWPC2\_ProjJus\_1oftotal1.pdf

**Attachment 4: Work Plan**

Upload Work Plan documentation here. [This attachment is mandatory.](#)

Last Uploaded Attachments: Att4\_2017SGWPC2\_WrkPlan\_1oftotal1.pdf

**Attachment 5: Budget**

Upload Budget documentation here. [This attachment is mandatory.](#)

Last Uploaded Attachments: Att4\_2017SGWPC2\_Budget\_1oftotal2.pdf,Att4\_2017SGWPC2\_Budget\_2oftotal2.pdf

**Attachment 6: Schedule**

Upload Schedule documentation here. [This attachment is mandatory.](#)

Last Uploaded Attachments: Att6\_2017SGWPC2\_Schedule\_1oftotal2.pdf,Att6\_2017SGWPC2\_Schedule\_2oftotal2.pdf

**Attachment 7: Disadvantaged Community**

Upload Disadvantaged Community documentation here (if applicable).

Last Uploaded Attachments: Att6\_2017SGWPC2\_DAC\_1oftotal1.pdf

**Attachment 8: Economically Distressed Area**

Upload Economically Distressed Area documentation here (if applicable).

**Attachment 9: Severely Disadvantaged Community**

Upload Severely Disadvantaged Community documentation here (if applicable).

Last Uploaded Attachments: Att6\_2017SGWPC2\_SDAC\_1oftotal1.pdf

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ATTACHMENT 1

**AUTHORIZING DOCUMENTATION**

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RESOLUTION NO. 35060-17

AUTHORIZING AN APPLICATION TO THE CALIFORNIA DEPARTMENT OF WATER RESOURCES FOR A SUSTAINABLE GROUNDWATER PLANNING GRANT PURSUANT TO THE WATER QUALITY, SUPPLY, AND INFRASTRUCTURE IMPROVEMENT ACT OF 2014 (PROPOSITION 1) AND DESIGNATING AN AUTHORIZED REPRESENTATIVE TO EXECUTE A GRANT AGREEMENT

Introduced by Director Coleman ; Seconded by Director Linney

WHEREAS, the East Bay Municipal Utility District (District) is a public agency formed under the Municipal Utility District Act that provides water service to approximately 1.4 million customers in Alameda County and Contra Costa County; and

WHEREAS, pursuant to the Sustainable Groundwater Management Act (SGMA), the District is the exclusive Groundwater Sustainability Agency (GSA) for that portion of the East Bay Plain Subbasin of the Santa Clara Valley Basin (East Bay Plain Subbasin) located north of the City of Hayward; and

WHEREAS, the District is responsible as a GSA to coordinate and develop a Groundwater Sustainability Plan (GSP) for the East Bay Plain Subbasin by January 31, 2022; and

WHEREAS, the California Department of Water Resources (DWR) administers the Sustainable Groundwater Planning Grant Program, which provides funds under Proposition 1 (2014) for GSP development projects and other projects that develop and implement sustainable groundwater planning; and

WHEREAS, the District is eligible as a GSA within the East Bay Plain Subbasin to apply for up to \$1,000,000 in Proposition 1 funds to fund GSP development within the subbasin; and

WHEREAS, the City of Hayward (City) is the exclusive GSA for a separate portion of the East Bay Plain Subbasin within its jurisdictional boundaries; and

WHEREAS, on July 25, 2017, the Board of Directors authorized District staff to enter into a memorandum of understanding with the City in which the District agreed to apply for a GSP development grant on behalf of the East Bay Plain Subbasin and, if the application is successful, to enter into a grant agreement and administer the grant, and the City agreed to devote resources to support the District's grant application and its obligations under the grant agreement; and

WHEREAS, sustainable groundwater management activities within the East Bay Plain Subbasin remain in the planning phase and have not yet been sufficiently defined to allow for analysis under the California Environmental Quality Act (CEQA), the application for Proposition 1 grant funding is a type of governmental fiscal activity that does not constitute a project under CEQA as per CEQA Guideline section 15378(b)(4), the application for a Proposition 1 grant does not commit

the District to a definite course of action regarding sustainable groundwater management measures, and GSP preparation and adoption is exempt from CEQA requirements under Water Code section 10728.6;

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the East Bay Municipal Utility District hereby authorizes the General Manager to submit an application, in a form approved by the Office of General Counsel, to the California Department of Water Resources for up to \$1,000,000 in Proposition 1 grant funding under the 2017 Sustainable Groundwater Planning Grant Program, to assist in funding the development of a coordinated Groundwater Sustainability Plan for the East Bay Plain Subbasin.

BE IT FURTHER RESOLVED that if the East Bay Municipal Utility District is offered such grant funding, the General Manager shall review the terms and conditions of any grant agreement presented by the California Department of Water Resources and, subject to the Office of General Counsel's approval of the grant agreement as to form, the General Manager is hereby authorized to execute said grant agreement and accept the funds.

ADOPTED this 12th day of September, 2017 by the following vote:

AYES: Directors Coleman, Katz, Linney, Mellon, Patterson, Young and President McIntosh.

NOES: None.

ABSENT: None.

ABSTAIN: None.

  
\_\_\_\_\_  
President

ATTEST:

  
\_\_\_\_\_  
Secretary

APPROVED AS TO FORM AND PROCEDURE:

  
\_\_\_\_\_  
General Counsel

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ATTACHMENT 2

**ELIGIBILITY DOCUMENTATION**

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### ***ELIGIBILITY DOCUMENTATION***

East Bay Municipal Utility District (EBMUD) is a public agency formed under the Municipal Utility District (MUD) Act in 1921, which supplies water and wastewater treatment for 20 cities and 15 unincorporated communities located in the East Bay in parts of Alameda and Contra Costa counties in California. Service is provided within a 332-square mile area extending from Crockett in the north to San Lorenzo in the south, and eastward from San Francisco Bay through the Oakland-Berkeley hills to Walnut Creek and south through the San Ramon Valley. EBMUD's service area overlies approximately 85% of the East Bay Plain Subbasin (Bulletin 118 Basin No. 2-009.04). This Subbasin has been identified as a medium priority basin by the California Department of Water Resources (DWR) for the Sustainable Groundwater Management Act (SGMA).

### **CASGEM Compliance**

On May 6, 2013, EBMUD submitted a letter of commitment and a statement of capability to DWR to become a CASGEM entity for the southern portion of the Subbasin in accordance with California Water Code Section 2.11. On August 8, 2014, DWR designated EBMUD as a CASGEM monitoring entity for the southern portion of the Subbasin.

On July 14, 2015, EBMUD submitted similar letters to DWR to become a CASGEM entity for the remaining northern portion. On December 29, 2015, DWR designated EBMUD as a CASGEM monitoring entity for the remaining portion of the Subbasin. With this designation, EBMUD became the CASGEM monitoring entity for the entire East Bay Plain Subbasin (2-9.04).

The DWR's letters designating EBMUD as a CASGEM monitoring entity for East Bay Plain Subbasin (Southern portion and Northern portion combined) are attached here in.

### **Urban Water Management Compliance**

EBMUD, the grant applicant, is an urban water supplier for the East Bay area of the San Francisco Bay Area. The attached letter dated August 8, 2016 documents DWR's finding that EBMUD's 2015 Urban Water Management Plan (UWMP) addresses the requirements of the California Water Code. Also attached is the Appendix G describing EBMUD's compliance with the GPCD target (see G.3 Target 2020 Daily Per Capita Water Use).

The City of Hayward (Hayward), the supporting agency for the grant application, is also an urban water supplier. Hayward's UWMP was also found to meet the requirements as stated in the DWR's letter dated September 30, 2016.

### **Surface Water Diverter Compliance**

EBMUD is a surface water diverter and has submitted to the State Water Resources Control Board (SWRCB) the attached surface water diversion reports in compliance with the requirements outlined in Part 5.1 (commencing with Section 5100) of Division 2 of the Water Code. Screen shots of eWRIMS displaying EBMUD water right report submittal statuses are attached.

**DEPARTMENT OF WATER RESOURCES**

1416 NINTH STREET, P.O. BOX 942836  
SACRAMENTO, CA 94236-0001  
(916) 653-5791



August 8, 2014

Mr. Tom Francis  
East Bay Municipal Utility District  
375 Eleventh Street, MS 407  
Oakland, California 94623-1055

Monitoring Entity Designation for East Bay Municipal Utilities District  
under the California Statewide Groundwater Elevation Monitoring Program

Dear Mr. Francis:

Thank you for volunteering to be a Monitoring Entity for the California Statewide Groundwater Elevation Monitoring (CASGEM) program. On December 22, 2010, the Department of Water Resources (DWR) received your notification that EBMUD intends to assume responsibility for monitoring and reporting local groundwater elevations for the CASGEM program. Based on review and verification of the information that you submitted to DWR via the CASGEM Online Submittal System, EBMUD is designated as the Monitoring Entity for the following groundwater basin.

- East Bay Plain (2-9.04) EBPB – Southern Subbasin portion

The CASGEM Online System is ready to accept submittal of your groundwater elevation data. In accordance with the Water Code, you should submit groundwater elevation data for the wells you have included in the CASGEM program, beginning with data collected in fall 2011.

Additional information is available on the CASGEM program website at <http://www.water.ca.gov/groundwater/casgem>.

If you have any questions about the CASGEM program, please contact Chris Bonds in DWR's North Central Region Office at 3500 Industrial Boulevard, West Sacramento, California 95691, (916) 376-9657, or [chris.bonds@water.ca.gov](mailto:chris.bonds@water.ca.gov).

Thank you for your participation in the CASGEM program.

Sincerely,

A handwritten signature in blue ink, appearing to read "Paula J. Landis".

Paula J. Landis, Chief  
Division of Integrated Regional Water Management

cc: Chris Bonds, North Central Region Office  
Brett Wyckoff, Bonderson Bldg. Rm. 213 A

**DEPARTMENT OF WATER RESOURCES**

1416 NINTH STREET, P.O. BOX 942836  
SACRAMENTO, CA 94236-0001  
(916) 653-5791



December 29, 2015

Mr. Thomas Francis, P.E.  
East Bay Municipal Utility District  
375 Eleventh Street, MS 407  
Oakland, California 94607

Monitoring Entity Designation for East Bay Municipal Utility District under  
the California Statewide Groundwater Elevation Monitoring Program

Dear Mr. Francis:

Thank you for volunteering to be a Monitoring Entity for the California Statewide Groundwater Elevation Monitoring (CASGEM) program. On October 26, 2015, the Department of Water Resources (DWR) received your notification that East Bay Municipal Utility District intends to assume responsibility for monitoring and reporting local groundwater elevations for the CASGEM program. Based on review and verification of the information that you submitted to DWR via the CASGEM Online Submittal System, East Bay Municipal Utility District is designated as the Monitoring Entity for the following groundwater subbasin:

- East Bay Plain (2-9.04) Northern portion

The CASGEM Online System is ready to accept submittal of your groundwater elevation data. In accordance with the Water Code, you should submit groundwater elevation data for the wells you have included in the CASGEM program, beginning with data collected in fall 2011.

Additional information is available on the CASGEM program website at <http://www.water.ca.gov/groundwater/casgem>.

If you have any questions about the CASGEM program, please contact Bill Brewster in DWR's North Central Region Office at 3500 Industrial Boulevard, West Sacramento, California 95691, (916) 376-9657, or [bill.brewster@water.ca.gov](mailto:bill.brewster@water.ca.gov).

Thank you for your participation in the CASGEM program.

Sincerely,

A handwritten signature in blue ink, appearing to read "A. Hinojosa".

Arthur Hinojosa, Chief  
Division of Integrated Regional Water Management

cc: Bill Brewster, North Central Region Office  
Brett Wyckoff, Bonderson Bldg. Rm. 213 A

**DEPARTMENT OF WATER RESOURCES**

1416 NINTH STREET, P.O. BOX 942836  
SACRAMENTO, CA 94236-0001  
(916) 653-5791

**General Manager**



**AUG 12 2016**

August 8, 2016

Alexander Coate  
General Manager  
East Bay Municipal Utility District  
375 Eleventh Street, MS 804  
Oakland, CA 94607

RE: Urban Water Management Plan Requirements Addressed

Dear Mr. Coate,

The Department of Water Resources (DWR) has reviewed the East Bay Municipal Utility District's (District) 2015 Urban Water Management Plan (UWMP) received on June 30, 2016. The California Water Code (CWC) directs DWR to report to the legislature once every five years on the status of submitted UWMPs. In meeting this legislative reporting requirement, DWR reviews all submitted UWMPs.

DWR's review of the District's 2015 plan has found that the UWMP addresses the requirements of the CWC.

DWR's review of plans is limited to assessing whether suppliers have addressed the required legislative elements. In its review, DWR does not evaluate or analyze the supplier's UWMP data, projections, or water management strategies. This letter acknowledges that the District's 2015 UWMP addresses the CWC requirements. The results of the review will be provided to DWR's Financial Assistance Branch.

If you have any questions regarding the review of the UWMP or urban water management planning please contact Gwen Huff at (916) 651-9672.

Sincerely,

A handwritten signature in blue ink, appearing to read "Vicki Lake".

Vicki Lake  
Unit Chief  
Urban Water Use Efficiency  
(916) 651-0740

Electronic cc:

Priyanka Jain  
Senior Civil Engineer  
East Bay MUD

## APPENDIX G: SBX7-7 METHODOLOGY

In late 2009 the state legislature adopted Senate Bill x7-7 (SBx7-7), the Water Conservation Act of 2009, which calls for a 20 percent statewide reduction in per capita water use by the year 2020 and directs urban retail water suppliers to set 2015 interim and 2020 final urban water use targets. Under the bill and the 2020 Water Conservation Plan adopted by the California Department of Water Resources, all urban water agencies are required to report their per capita water use and reduction targets in their Urban Water Management Plan (UWMP). This appendix provides the background data, methodology, and calculations for the reported baseline and target for EBMUD to meet.

EBMUD will achieve its target water use by implementing water conservation and recycling programs identified in its long-term integrated resources planning. Phased implementation of water savings programs are incorporated into EBMUD's recycled water and water conservation programs as discussed in Chapters 6 and 7 of this UWMP 2015.

### G.1 DISCUSSION OF EBMUD METHODOLOGY

SBX7-7 allows each supplier to choose one of the following four methods for establishing its SBX7-7 targets, based on a baseline per capita daily water use for a ten to fifteen year period ending between December 31, 2004 and December 31, 2010:

- ◆ Eighty percent of the urban retail water supplier's baseline per capita daily water use (Method 1).
- ◆ The per capita daily water use that is estimated using: 55 gallons per capita per day (GPCD) for indoor residential water use; outdoor water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance for landscape irrigated through dedicated or residential meters; and a 10 percent reduction in baseline water use for commercial, industrial, and institutional uses (Method 2).
- ◆ Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's draft 20x2020 Water Conservation Plan (Method 3).
- ◆ A method identified by the Department of Water Resources that identifies per capita targets that cumulatively result in a statewide 20-percent reduction in urban daily per capita water use (Method 4).

It is also worth noting that, notwithstanding the target calculated by any of the methodologies described above, the Water Code requires that an urban retail water supplier's per capita daily water use reduction must be no less than five percent of a five-year baseline per capita daily water use ending no earlier than December 31, 2007 and no later than December 31, 2010, unless the water supplier has a base daily per capita water use of 100 GPCD or less.

Since the 1970s, demand management has been an important part of EBMUD's water practices and policies to promote reasonable and efficient use of supplies. EBMUD has developed an extensive water recycling program that further reduces the need for fresh water. Figure G-1 shows that EBMUD has made significant strides in decreasing historical daily per capital water demand as a result of its aggressive water conservation and recycling efforts and other factors. Gross overall water demand has remained relatively consistent as the number of accounts and service area population has grown steadily. This continuous effort has resulted in more than a 36% reduction in daily per capita water use since the 1970s and goes beyond the short-term focus on consumption reduction as required through SBx7-7.

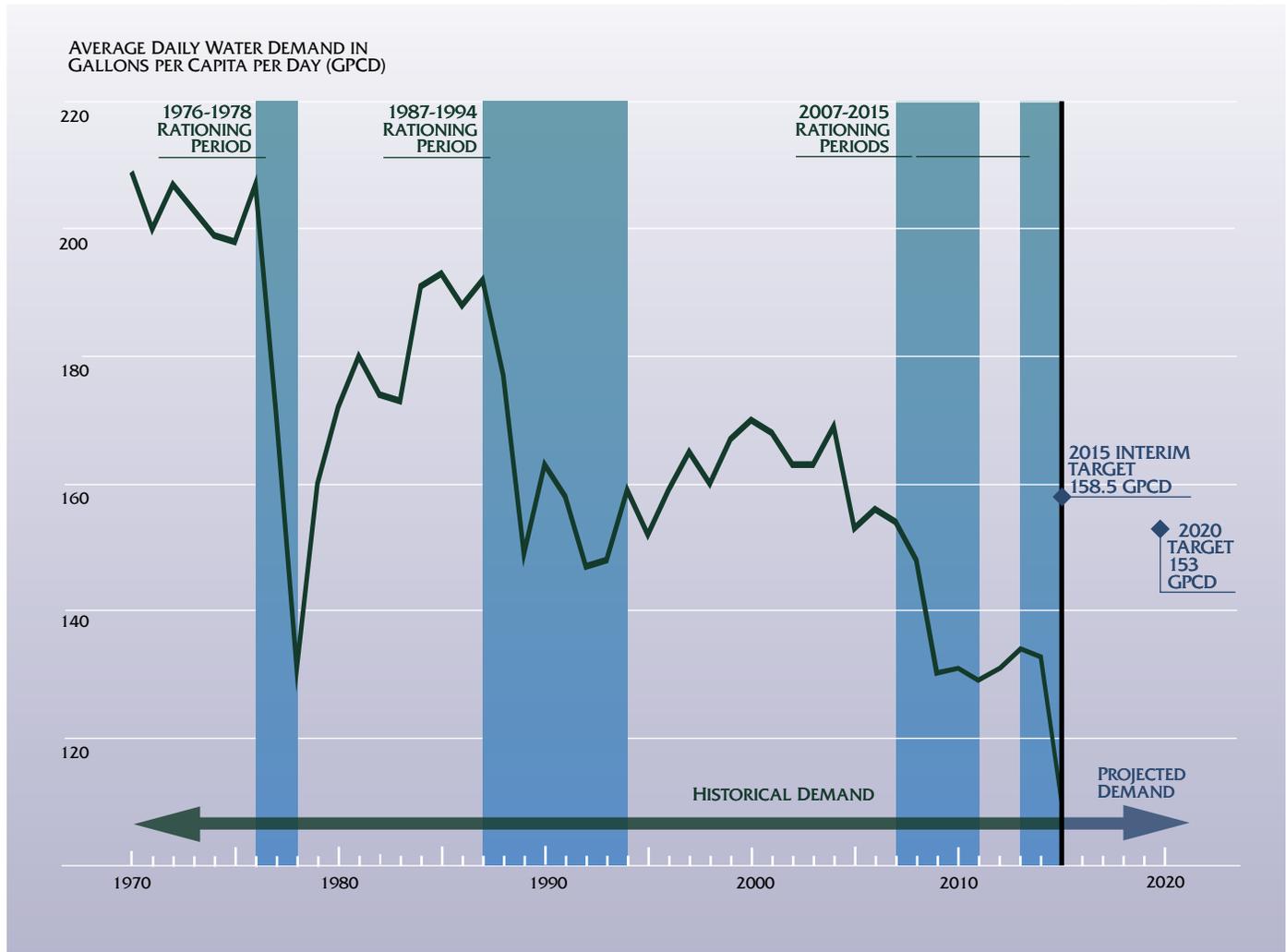
Largely as a result of its conservation and water recycling programs, EBMUD met its 2015 interim target of 158.5 GPCD. 2015 was also in the second of a multi-year drought, and EBMUD instituted a district-wide mandatory water use reduction goal that further reduced demand.

EBMUD researched each of the four target methodologies, with a particular interest in identifying a method that would allow it to be credited for its long standing existing conservation and recycled water savings. EBMUD selected a methodology that would allow it to implement demand management program water budgets that are appropriately tailored to customer usage. EBMUD also considered the need to anticipate the post-drought and economic rebound and to account for anticipated demand hardening in consumption behavior.

Ultimately, EBMUD selected Target Method 2 to calculate its water use target. The three methods that were not selected would not be suitable to EBMUD's service area, given that EBMUD's previous investments in conservation and water recycling have led to significant demand reduction and hardening in multiple customer sectors.

FIGURE G-1

## EBMUD HISTORIC GPCD



## G.2 EBMUD BASELINE WATER USE

### G.2.1 CALCULATION OF BASELINE WATER USE

Base daily per capita water use is defined by SBx7-7 as average gross water use, expressed in gallons per capita per day (GPCD) for a continuous period. GPCD is calculated by dividing the gross water use by the estimated population.

“Gross water use” is defined by the California Water Code Section 10608.12(g) as:

*The total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:*

*Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier;*

*The net volume of water that the urban retail water supplier places into long term storage;*

*The volume of water the urban retail water supplier conveys for use by another urban water supplier; and*

*The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.*

EBMUD gross water use is a measure of water supplied to the entire distribution system including raw water within the Service Area Boundary over a continuous 12-month calendar year, adjusted for changes in distribution system storage and recycled water deliveries. The methodology for calculating gross water use broadly follows American Water Works Association (AWWA) Manual M36 guidance for calculating Distribution System Input.

EBMUD gross water use includes both treated and untreated water for residential and non-residential uses and fire safety.

### G.2.2 EBMUD BASELINES

Under SBX7-7, agencies must calculate a baseline against which to demonstrate their reduction in water use. The

baseline water use is the average GPCD over a ten-year period ending between December 31, 2004 and December 31, 2010. If an agency met at least 10 percent of its 2008 measured retail water demand through recycled water, that agency may extend its baseline period to fifteen years. Since EBMUD did not meet 10 percent of its retail demand with recycled water in 2010, a ten-year period was selected. Table G-1 shows the GPCD calculation for EBMUD's selected ten-year period, from 1995 to 2004. It includes gross water production, estimated population, and calculated GPCD for each of the ten years. Population estimates have been updated since the 2010 UWMP using a more robust methodology, as described in detail in Chapter 1. EBMUD prepared estimates of its service area population based on data from the Association of Bay Area Governments, the U.S. Census, and previous UWMPs. Where data was not available for individual years, it was interpolated using published projections. The ten-year average baseline is 164 GPCD.

SBx7-7 also establishes that, regardless of which method is selected, the target water use must show at least a five percent reduction from a five-year baseline period. Agencies must therefore also calculate GPCD for a five-year baseline period ending no earlier than December 31, 2007 and no later than December 31, 2010. Table G-2 shows the calculated GPCD for the years 2003 through 2007. The average five-year baseline is 161 GPCD and minimum five percent reduction target is 153 GPCD.

### G.3 TARGET 2020 DAILY PER CAPITA WATER USE

An urban retail water supplier must set a 2020 water use target and a 2015 interim water use target based on one of the methodologies described above. If the 2020 target, as

calculated by the chosen methodology, is higher than the minimum reduction goal of 95% of the five-year baseline average, then the minimum reduction goal must be used as the 2020 target instead. The Water Code directs water suppliers to compare their actual use in 2020 against their 2020 target, and to compare their 2015 actual use to their interim target.

EBMUD selected Method 2 to calculate its target. Method 2 uses the following components to calculate the 2020 water use target:

- ◆ 55 gallons per capita daily water use for indoor residential use;
- ◆ 10% reduction from the baseline for commercial, institutional, and industrial (CII) use;
- ◆ For landscaped area water use for residential and irrigation accounts, water efficiency equivalent to the standards of the Model Water Efficient Landscape Ordinance set forth in Chapter 2.7 of Division 2 of Title 23 of the California Code of Regulations.

In 2015, the Governor's Executive Order B-29-15 called for revising the Model Water Efficiency Landscape Ordinance (MWELo) to increase water use efficiency standards for new and retrofitted landscapes. The new MWELo became effective on December 1, 2015, so it is not included in the 2015 analysis but will be included in the 2020 UWMP.

Following is additional information on how EBMUD calculated each of the three components above. EBMUD based its analysis on guidance found in the *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (Methodologies)* published by the DWR Division of Statewide Integrated Water Management Water Use and Efficiency Branch in February 2011.

**TABLE G-1 EBMUD 10-YEAR BASELINE DAILY PER CAPITA WATER USE CALCULATION**

CALENDAR YEAR	ANNUAL WATER PRODUCTION (MG)	POPULATION ESTIMATE	ANNUAL WATER CONSUMPTION (GPCD)
1995	69,663	1,232,000	155
1996	71,533	1,244,000	158
1997	77,189	1,255,000	169
1998	74,258	1,267,000	161
1999	77,058	1,278,000	165
2000	78,719	1,289,000	167
2001	78,871	1,294,000	167
2002	78,637	1,298,000	166
2003	78,360	1,302,000	165
2004	80,180	1,307,000	168
10-YEAR AVERAGE BASELINE			164

**TABLE G-2 EBMUD 5-YEAR BASELINE DAILY PER CAPITA WATER USE CALCULATION**

CALENDAR YEAR	ANNUAL WATER PRODUCTION (MG)	POPULATION ESTIMATE	ANNUAL WATER CONSUMPTION (GPCD)
2003	78,360	1,302,000	165
2004	80,180	1,307,000	168
2005	76,065	1,311,000	159
2006	76,218	1,315,000	159
2007	75,021	1,320,000	156
5-YEAR AVERAGE BASELINE			161
5% REDUCTION			8
MINIMUM 2020 REDUCTION GOAL			153

### G.3.1 INDOOR RESIDENTIAL USE

Target Method 2 allots 55 GPCD for residential indoor use. For 2020, EBMUD projects a population of 1,449,735 for its service area based on the ABAG 2013 population projections as applied to EBMUD's service area. Based on this population, EBMUD calculates a total of approximately 80 MGD for indoor residential use in 2020.

### G.3.2 COMMERCIAL, INSTITUTIONAL, & INDUSTRIAL USE

Under Target Method 2, agencies calculate CII water use as a ten percent reduction from the average CII water use over the ten year baseline period. Table G-3 shows the calculation for EBMUD based on the 1995-2004 baseline period. EBMUD's baseline CII water use is 58 GPCD and ten percent reduction target is 52 GPCD.

### G.3.3 LANDSCAPE WATER USE

As outlined by DWR, "landscaped areas" for the purpose of calculating the target under Target Method 2 mean the water supplier's estimate or measurement of 2020 landscaped areas that are served by residential or dedicated landscape meters or connections. Water suppliers shall develop a preliminary estimate (forecast) of 2020 landscaped areas for purposes of setting urban water use targets and interim urban water use targets under Subdivision 10608.20 (a) (1). For final compliance-year calculations, water suppliers shall update the estimate of 2020 landscaped areas using one of the techniques allowed.

Target Method 2 calculates water use for outdoor irrigation as water efficiency equivalent to the standards of the MWELo for all landscaped areas.

The following five steps are used to calculate Landscaped Area Water Use:

1. Identify applicable MWELo (1992 or 2010) by parcel;
2. Estimate irrigated (and irrigable) landscaped area for each parcel;
3. Determine reference evapotranspiration for each parcel;
4. Use the Maximum Applied Water Allowance (MAWA) from the applicable MWELo to calculate annual volume of landscaped area water use; and
5. Convert annual volume to GPCD.

The first step is to determine which MWELo ordinance applies to specific parcels. There are two versions of the MWELo ordinance that can be applied, depending on the date that the landscaping was installed. For landscaped areas installed on or after January 1, 2010, the 2009 version of the ordinance should be used. For landscaped areas installed before January 1, 2010, the 1992 version of the ordinance is applied.

### CALCULATION OF BASELINE AND TARGET COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL (CII) WATER USE COMPONENT

TABLE G-3

CALENDAR YEAR	ANNUAL WATER USE (MG)	POPULATION ESTIMATE	ANNUAL WATER CONSUMPTION (GPCD)
1995	24,885	1,232,000	55
1996	24,639	1,244,000	54
1997	27,511	1,255,000	60
1998	28,665	1,267,000	62
1999	27,798	1,278,000	60
2000	28,132	1,289,000	60
2001	27,042	1,294,000	57
2002	26,596	1,298,000	56
2003	27,438	1,302,000	58
2004	27,842	1,307,000	58
10-YEAR AVERAGE BASELINE			58
10% REDUCTION			6
2020 TARGET			52

For the current 2020 landscape water use estimate, > 99% of the landscapes were determined to have been installed prior to January 1, 2010, and all applicable criteria from the 1992 version of the MWELo were applied. These criteria are:

- ◆ *The landscaped area must be measured, estimated, or projected for all parcels served by a residential or dedicated landscape water meter or connection in the water supplier's service area;*
- ◆ *Only irrigated (or evidence of irrigated or irrigable) estimated landscaped area served by residential or dedicated landscape water meter or connection is included in the calculation of Landscaped Area Water Use; and*
- ◆ *Landscape served by CII connections and non-irrigated landscape is excluded.*

The purpose of this landscape measurement is to estimate the irrigation efficiency water budget of EBMUD customer parcels. It requires a measurement (or estimate) of projected landscaped area and water use per unit area based on a reference evapotranspiration (ET). All landscape served by dedicated or residential meters must be included, including multi-family residential parcels irrigated through dedicated or residential meters or connections.

It can be challenging to determine a parcel's irrigable area, as only a portion of each parcel is landscaped, and there are more than 360,000 parcels in EBMUD's service area. EBMUD used a statistical process to estimate the landscaped area for all customer parcels. All customer parcels were categorized by size, geographic location,

and use type. EBMUD then used a combination of remote sensing, software tools, and manual computer and field verification to develop estimates of irrigable areas for a statistically random subset of parcels within each grouping. These results could then be extrapolated to the rest of the parcel stratas in EBMUD's service area. Following is a more detailed description of how this statistical methodology was implemented.

### Measuring with Remote Sensing

The landscaped area was determined through a combination of measurements using remote sensing (aerial or satellite imaging), automated optimization using software tools, manual GIS imagery analysis, manual analyses, and field site visits to identify the landscaped (and irrigable) areas in conjunction with a GIS representation of the parcels in service area.

DWR established the following rules for the use of remote sensing data in calculating landscaped area water use, as described in the February 2011 *Methodologies*, which EBMUD followed:

- ◆ *The remote-sensing information must be overlaid onto a GIS representation of each parcel boundary to estimate the existing and potential irrigated landscaped area and the associated landscape water budget or Maximum Applied Water Allowance (MAWA) calculated for each parcel.*
- ◆ *The remote-sensing imagery must have a resolution of one meter or fewer per pixel.*
- ◆ *The remote-sensing technique must be verified for accuracy by comparing its results to the results of field-based measurement for a subset of parcels selected using random sampling.*

### Estimating Parcel Landscaped Areas

To calculate the landscaped area for smaller-sized parcels, EBMUD grouped the parcels according to size, geographic region, and use type. EBMUD then selected a subset of parcels for each group and measured the percentage of total parcel area that is landscaped and applied that percentage to the remaining parcels in the group. This technique was used for parcels with a total land area of 24,000 square feet or less. Parcels greater than 24,000 square feet were measured separately, with individual landscape water budget calculations for more than 23,000 parcels.

EBMUD maintains a sophisticated GIS database. Images for the analysis were taken at a resolution of between 4 and 6 inches per pixel. Alameda and Contra Costa County records, including parcel and building footprint statistics, were overlaid on the aerial photos. These county shape files were merged together and clipped against EBMUD's

service area boundary, creating a single shape file that includes all the parcels within EBMUD's service area.

The parcels were first categorized according to geographic region. The geographic region was assigned based on where the centroid of the parcel polygon was located. The six geographic regions are:

- ◆ West of Hills (WOH) North: Crockett, El Sobrante, Richmond, El Cerrito, Hercules, Pinole
- ◆ WOH Central: Albany, Berkeley, Alameda, Emeryville, Oakland, Piedmont
- ◆ WOH South: San Leandro, Hayward, San Lorenzo, Castro Valley
- ◆ East of Hills (EOH) North: Pleasant Hill, Walnut Creek, Alamo
- ◆ EOH Central: Lafayette, Moraga, Orinda
- ◆ EOH South: Danville, San Ramon

The area (in square feet) of each parcel was then calculated, and individual parcels within each geographic region were separated into groups, or strata, based on parcel size increments of 4,000 square feet or less. Six parcel strata were established:

- ◆ 0 - 4,000 square feet
- ◆ 4001 – 8000 square feet
- ◆ 8001 – 12000 square feet
- ◆ 12001 – 16000 square feet
- ◆ 16001 – 20000 square feet
- ◆ 20001 – 24000 square feet

A seventh strata with individual parcel budgets was also created for all the parcels that were greater than 24,000 square feet and therefore were not subject to this statistical sampling methodology.

The parcels were also divided into three use types - single family residential, multiple family residential, and irrigation - as listed in table G-4 under EBMUD's Business Classification Code (BCC) descriptions. Table G-5 shows the total number of parcels for each size strata and use type.

Field-based measurement and remote sensing were used to calculate the landscaped area for a subset of parcels, sampled at random, in each parcel size group, geographic region, and use type. The percentage of landscaped area to total land area for the sampled parcels was then extrapolated to all other parcels in the group. The number of parcels selected per strata was based on an a priori assumption of strata variability. Parcels were chosen using the random selection tool in ArcGIS. This methodology was tested for accuracy by comparing the results of satellite, manual, and field-based measurements for a

**TABLE G-4 EBMUD BCC CODES AND DESCRIPTIONS**

BCC CODE	BCC DESCRIPTION	USE TYPE
8800	PRIVATE RESIDENCE	SINGLE FAMILY RESIDENTIAL
6513	APARTMENT BUILDING	MULTIPLE FAMILY RESIDENTIAL
6514	MULTIPLE DWELLING (2 TO 4 UNITS)	MULTIPLE FAMILY RESIDENTIAL
7900	AMUSEMENT SERVICES	IRRIGATION
6500	CEMETERIES	IRRIGATION
7950	IRRIGATION USE ONLY	IRRIGATION
7990	PARKS & GARDENS	IRRIGATION

random subset of parcels. The percent error between the calculations of landscaped area produced by the selected satellite technique and those produced by manual and field-based measurements were used to create coefficient values for extrapolating parcel data across a total of 168 customer account categories, micro-climate regions, and parcel size tiers.

Following are more details on how EBMUD analyzed the parcel samples and extrapolated the data to the entire parcel set.

### Data Collection

For the parcels selected for analysis, a combination of census data, water account data, field visits, GIS mapping tools, aerial photography, and infrared imagery was used to collect the following information:

- ◆ Parcel size (county records and polygon of parcel).
- ◆ Square footage of property on County Records.
- ◆ Footprint of home and structures on property.
- ◆ Hardscape not including footprint. This may include items such as driveway, patio, sidewalks, or other paved areas.
- ◆ Irrigable area, which is defined as the ground area where plants could be grown, but which does not necessarily have plants or intentional irrigation currently. This is calculated as the difference between recorded or measured lot size and footprint plus hardscape.
- ◆ Total Turf Area.
- ◆ Other Irrigated area. This is calculated as the area defined by polygons where plants are known or believed to be irrigated currently or potentially at some time previously or in the future based on land use and landscaped area.
- ◆ Total Irrigated Area. This is the sum of turf and non-turf areas that appear to be irrigated or potentially irrigated (includes evidence of irrigable area).

**TABLE G-5 PARCEL STRATA DISTRIBUTION**

PARCEL SIZE (SQFT)	SINGLE FAMILY PARCELS	MULTI-FAMILY PARCELS	IRRIGATION PARCELS	TOTAL # PARCELS FOR STRATA
<4,000	73,213	6,413	2,672	82,298
4,001-8000	152,661	15,380	3,113	171,154
8,001-12,000	40,625	3,393	1,428	45,446
12,001-16,000	16,729	1,493	755	18,977
16,001-20,000	9,201	761	491	10,453
20,001-24,000	8,046	544	390	8,980
>24,000	15,173	3,651	4,396	23,220
<b>TOTAL</b>	<b>315,648</b>	<b>31,635</b>	<b>13,245</b>	<b>360,528</b>

- ◆ Non-irrigated area. This is the remainder of parcel area that falls outside of irrigated or irrigable area such as wild lands and open space.
- ◆ Outdoor water use based on monthly consumption.

### Calculating Footprint

Polygons were drawn around the footprint of obvious structures (see Figure G-2, images 1 thru 3). Obvious structures include any structure which a person can enter, including buildings, garages or carports, sheds, and covered gazebos.

### Measuring – Polygons-Hardscape

Hardscape is defined as any grade level area which cannot support landscape, such as driveways, sidewalks, or compacted dirt. It also includes grade level structures such as decks, patios, or stone pathways. It may also include artificial turf or sheet mulched areas (see Figure G-4).

### Measuring – Landscape Area-Irrigable

Irrigable area is defined as any property which is neither under the footprint of a building or hardscape. Therefore, it can be calculated as the difference between the parcel size and the sum of the hardscape and footprint. It includes any vegetated area or non-vegetated area that demonstrates a previously irrigated or manicured area is not otherwise covered. For example Figure G-3 illustrates true color images taken at two different times for the same parcel with evidence of an irrigated lawn.

### Measuring – Special Landscaped Areas

Special Landscaped Areas (SLAs) (in square feet) are defined as “an area of the landscape dedicated solely to edible plants, areas irrigated with recycled water, water features using recycled water and areas dedicated to active play such as parks, sports fields, golf courses, and where turf provides a playing surface.” An additional Water Allowance of 0.3 ETAF is applied for an SLA, resulting in an effective ETAF for SLA of 1.0. SLAs with artificial turf are

FIGURE G-2



TRUE COLOR



FALSE COLOR

PARCEL IMAGE CLASSIFICATION



LANDSCAPE CLASS

also classified as non-irrigable area and removed from the landscape water use calculations. An example of a SLA parcel is shown in Figure G-4.

### Measuring – Irrigated Areas-Turf & Non-Turf

Determining whether landscape is being actively irrigated from photographs is an inexact science. However, certain techniques help make the work more accurate. The first is looking at different imagery to see if the landscape is manicured/mowed or brown during different seasons, which would indicate that it may not be irrigated. Another technique is to look at the water use for a property to see if the usage is reasonably higher in summer vs. winter for the size of the estimated landscape.

For example, in Figure G-5, the parcels displayed appear to have both front and rear lawns as well as manicured shrubs in the front and larger trees in the back. The trees on some parcels appear to be shared or overlapping with neighbors. In this case, the trees are not likely to be separately watered but probably obtain some water from the surrounding irrigated turf, so the assumption is that the area of lawn hidden by the tree canopy is used for the water budget as the highest plant use and typically receives the applied irrigation water due to having more shallow roots than the trees. In the image, the green polygon represents the irrigated turf areas. The irrigated non-turf areas are separately classified in relation to the surrounding house and hardscape and parcel lines.

FIGURE G-3



AUGUST 2014

IRRIGABLE LANDSCAPE AREA CLASSIFICATION



SEPTEMBER 2015

FIGURE G-4



TRUE COLOR

IRRIGABLE LANDSCAPE AREA CLASSIFICATION



SLA CLASS

**LANDSCAPED AREA AERIAL IMAGE  
AND PLANT CLASSIFICATION**

**FIGURE G-5**



### Field Verification

EBMUD landscape water budgets and GIS calculations were performed on statistically sampled sites, which were visited to verify the accuracy of the GIS method, establish uniform correction factors, and determine if more field visits were necessary. Sites were selected at random. EBMUD contacted the customer of record and obtained their approval to visit the site and collected information on the type of landscape there. EBMUD staff then visited the site, bringing an aerial photograph marked up with polygons indicating the presumed irrigated area. During the site visit, staff marked up the photograph with any corrections and collected additional information.

### Evapotranspiration Calculation

Once the relevant data had been collected for each parcel, its average daily evaporation rate was estimated using the equations provided below. Outdoor water allocations used the MAWA equation as applied using the definitions under the MWEL0. This equation requires reference

evapotranspiration (ETO) data, landscape area, and special landscape area data. The ETO data was obtained from the Spatial California Irrigation Management Information System (CIMIS) across the project area for the years 2012, 2013 and 2014 (note the imagery was from year 2012). All areas that had an irrigated class were assumed to be irrigated. Water allocation for each parcel was estimated using the MAWA equation. Then the mean and variance for each stratum was calculated, followed by the 95% confidence intervals. Table G-6 shows the average as well as the lower and upper bound GPCD for each customer sector.

The summary landscape water use measurements for 2013 for the combined parcels, as well as for single-family residential, multi-family residential and irrigation parcels, are included at the back of this Appendix in Tables G-9 thru 12.

### Calculation of 2020 Target

Table G-7 shows the calculation of EBMUD's 2020 target, based on the methodologies discussed above for each different customer class.

The target of 166 GPCD calculated in Table G-7 exceeds the minimum reduction goal of 153 GPCD shown in Table G-2 above based on a 95% of the five-year baseline. Therefore, EBMUD must use the lower minimum reduction goal of 153 GPCD.

**TABLE G-6** **2012-2014 LANDSCAPED AREA WATER USE, AVERAGE GPCD**

BY LAND USE	95% CONFIDENCE INTERVAL		
	AVERAGE	LOWER	UPPER
SINGLE FAMILY	41.57	36.98	46.16
MULTI FAMILY	5.46	4.52	6.41
IRRIGATION	10.33	9.76	10.76
<b>TOTAL</b>	<b>57.36</b>	<b>51.25</b>	<b>63.33</b>

**TABLE G-7** **CALCULATION OF EBMUD TM2 2020 DAILY PER CAPITA WATER USE**

CUSTOMER SECTOR	MGD	GPCD <sup>1</sup>
RESIDENTIAL INDOOR	80	55
COMMERCIAL, INDUSTRIAL, & INSTITUTIONAL <sup>2</sup>	74	52
LANDSCAPE (IRRIGATION & RESIDENTIAL OUTDOOR) <sup>3</sup>	86	59
<b>TOTAL<sup>3</sup></b>	<b>240</b>	<b>166</b>

**Notes:**

1 Based on 2020 projected population of 1,449,735  
Population derived from ABAG Projections 2013.

2 Institutional uses include EBMUD uses and other non-revenue water uses.

3 Includes estimate of 2 MGD and 1.4 GPCD growth in outdoor water use for period 2015 to 2020.

## G.4 2015 INTERIM TARGET

EBMUD's 2015 target is calculated as the midpoint between the baseline and the 2020 target. The midpoint between the baseline of 164 GPCD and the 2020 goal of 153 GPCD is 158.5 GPCD. Table G-8 compares EBMUD's 2015 water consumption against this goal, showing that EBMUD has met its interim target.

EBMUD's success in meeting its 2015 interim target indicates that EBMUD is on track to meet its 2020 goal. This success is a result of EBMUD's long history of working to advance water use efficiency and conservation to reduce demand in its service area. EBMUD's water recycling and conservation programs (discussed in more detail in Chapters 6 and 7, respectively), have helped to hold average daily demand steady since the 1970s, even as the number of customer accounts has risen. Since the adoption of EBMUD's first Water Conservation Master Plan

in 1994 through 2015, EBMUD has achieved an estimated conservation program savings of 32 MGD. Water recycling has also helped to reduce the demand for fresh water supplies, and in 2014, EBMUD provided over 3.7 billion gallons of recycled water to customers for irrigation, commercial, and industrial uses.

EBMUD's demand, already kept low by its conservation and water recycling programs, was further reduced in 2015 as a result of EBMUD's conservation planning and drought response. In response to the 2014-2015 drought, EBMUD's Board of Directors called for water use reductions to conserve water supplies. At the start of CY2014, a 10% voluntary reduction goal was in effect. In April 2015, the Board increased the rationing goal to 20% mandatory District-wide. As a result, customer use dropped by an average of 45,000 acre-feet annually or approximately 40 MGD in 2015 as compared to 2013.

**TABLE G-8 EBMUD 2015 INTERIM TARGET**

	MGD	GPCD
2020 MINIMUM REDUCTION TARGET	240	153
1995-2004 TEN-YEAR BASELINE		164
2015 INTERIM TARGET	220	159
2015 ACTUAL WATER CONSUMPTION	148	106

**TABLE G-9 SUMMARY TARGET METHOD 2 LANDSCAPE WATER USE FINDINGS (ALL PARCELS)**

SERVICE AREA REGION	TOTAL # PARCELS FOR STRATA	PARCELS IN SAMPLE	AVERAGE PARCEL AREA (SQFT)	SUM PARCEL AREA (SQFT)	AVERAGE IRRIGABLE AREA PER PARCEL	SUM OF IRRIGABLE AREA	% OF IRRIGABLE AREA	MAXIMUM APPLIED WATER ALLOWANCE (GAL/DAY)	TOTAL VOLUME FOR STRATA (GAL/DAY)	CONFIDENCE INTERVAL @ 95%
< 4,000	82,298	3,003	7,487	222,324,208	2,064	65,080,729	29%	307	3,928,679	40.21
4,001-8,000	171,154	1,088	17,934	958,192,805	5,855	375,757,398	39%	1,154	22,738,699	162.59
8,001-12,000	45,446	237	28,657	442,111,445	8,867	201,682,524	46%	2,028	12,504,302	456.09
12,001-16,000	18,977	891	41,449	264,172,413	11,722	138,178,678	52%	3,184	8,648,563	315.84
16,001-20,000	10,453	766	54,027	186,872,192	10,229	57,644,576	31%	2,239	3,644,459	394.22
20,001-24,000	8,980	748	65,316	194,911,021	12,804	61,813,162	32%	2,698	3,920,773	455.89
> 24,000	23,220	23,175	1,267,331	6,024,622,453	77,238	429,317,948	7%	8,358	29,103,411	—
<b>TOTAL</b>	<b>360,528</b>	<b>29,908</b>	<b>—</b>	<b>8,293,206,536</b>	<b>—</b>	<b>1,329,475,016</b>	<b>16%</b>	<b>19,969</b>	<b>84,488,885</b>	<b>—</b>

TABLE G-10

**SUMMARY TARGET METHOD 2 LANDSCAPE WATER USE FINDINGS  
(SINGLE-FAMILY RESIDENTIAL PARCELS)**

SERVICE AREA REGION	TOTAL # PARCELS FOR STRATA	PARCELS IN SAMPLE	AVERAGE PARCEL AREA (SQFT)	SUM PARCEL AREA (SQFT)	AVERAGE IRRIGABLE AREA PER PARCEL	SUM OF IRRIGABLE AREA	% OF IRRIGABLE AREA	MAXIMUM APPLIED WATER ALLOWANCE (GAL/DAY)	TOTAL VOLUME FOR STRATA (GAL/DAY)	CONFIDENCE INTERVAL @ 95%
< 4,000	73,213	2,811	2,321	198,296,013	584	58,153,402	29%	214	3,490,089	17.50
4,001-8,000	152,661	992	5,935	847,887,919	2,545	345,198,892	41%	951	20,860,186	97.98
8,001-12,000	40,625	222	9,867	397,185,635	4,757	191,881,218	48%	1,778	11,901,608	272.93
12,001-16,000	16,729	804	13,883	233,250,343	7,901	133,708,750	57%	2,953	8,377,587	214.63
16,001-20,000	9,201	660	17,823	164,285,907	5,118	54,460,508	33%	1,924	3,448,632	264.87
20,001-24,000	8,046	612	21,747	174,601,161	6,074	58,700,391	34%	2,287	3,730,746	336.25
> 24,000	15,173	15,169	103,064	1,237,311,030	9,488	147,970,390	12%	3,632	9,415,951	—
<b>TOTAL</b>	<b>315,648</b>	<b>21,270</b>	<b>—</b>	<b>3,252,818,007</b>	<b>—</b>	<b>990,073,550</b>	<b>30%</b>	<b>13,740</b>	<b>61,224,798</b>	<b>—</b>

TABLE G-11

**SUMMARY TARGET METHOD 2 LANDSCAPE WATER USE FINDINGS  
(MULTI-FAMILY RESIDENTIAL PARCELS)**

SERVICE AREA REGION	TOTAL # PARCELS FOR STRATA	PARCELS IN SAMPLE	AVERAGE PARCEL AREA (SQFT)	SUM PARCEL AREA (SQFT)	AVERAGE IRRIGABLE AREA PER PARCEL	SUM OF IRRIGABLE AREA	% OF IRRIGABLE AREA	MAXIMUM APPLIED WATER ALLOWANCE (GAL/DAY)	TOTAL VOLUME FOR STRATA (GAL/DAY)	CONFIDENCE INTERVAL @ 95%
< 4,000	6,413	143	2,733	17,527,597	795	5,096,540	29%	51	325,491	9.65
4,001-8,000	15,380	74	5,947	91,463,153	1,651	25,393,176	28%	102	1,563,984	20.42
8,001-12,000	3,393	9	9,208	31,244,237	2,001	6,791,008	22%	125	424,708	85.17
12,001-16,000	1,493	56	13,699	20,451,956	2,148	3,207,216	16%	130	194,519	39.01
16,001-20,000	761	66	17,815	13,557,403	2,497	1,900,578	14%	153	116,068	39.07
20,001-24,000	544	78	21,544	11,719,735	3,171	1,725,044	15%	193	105,095	45.96
> 24,000	3,651	3,651	444,039	1,621,184,634	22,126	80,780,301	5%	1,455	5,313,814	—
<b>TOTAL</b>	<b>31,635</b>	<b>4,077</b>	<b>—</b>	<b>1,807,148,716</b>	<b>—</b>	<b>124,893,864</b>	<b>7%</b>	<b>2,209</b>	<b>8,043,679</b>	<b>—</b>

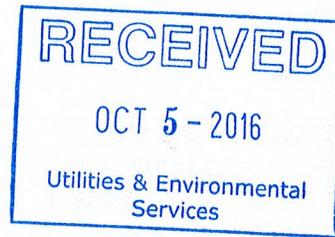
TABLE G-12

**SUMMARY TARGET METHOD 2 LANDSCAPE WATER USE FINDINGS (IRRIGATION PARCELS)**

SERVICE AREA REGION	TOTAL # PARCELS FOR STRATA	PARCELS IN SAMPLE	AVERAGE PARCEL AREA (SQFT)	SUM PARCEL AREA (SQFT)	AVERAGE IRRIGABLE AREA PER PARCEL	SUM OF IRRIGABLE AREA	% OF IRRIGABLE AREA	MAXIMUM APPLIED WATER ALLOWANCE (GAL/DAY)	TOTAL VOLUME FOR STRATA (GAL/DAY)	CONFIDENCE INTERVAL @ 95%
< 4,000	2,672	49	2,433	6,500,597	685	1,830,788	28%	42	113,099	13.07
4,001-8,000	3,113	22	6,053	18,841,733	1,659	5,165,330	27%	101	314,529	44.20
8,001-12,000	1,428	6	9,581	13,681,573	2,108	3,010,297	22%	125	177,986	97.99
12,001-16,000	755	31	13,868	10,470,114	1,672	1,262,713	12%	101	76,458	62.20
16,001-20,000	491	40	18,389	9,028,882	2,614	1,283,490	14%	162	79,759	90.29
20,001-24,000	390	58	22,026	8,590,125	3,558	1,387,727	16%	218	84,932	73.68
> 24,000	4,396	4,355	720,229	3,166,126,789	45,625	200,567,257	6%	3,270	14,373,646	—
<b>TOTAL</b>	<b>13,245</b>	<b>4,561</b>	<b>—</b>	<b>3,233,239,813</b>	<b>—</b>	<b>214,507,602</b>	<b>7%</b>	<b>4,019</b>	<b>15,220,408</b>	<b>—</b>

**DEPARTMENT OF WATER RESOURCES**

1416 NINTH STREET, P.O. BOX 942836  
SACRAMENTO, CA 94236-0001  
(916) 653-5791



September 30, 2016

Alex Ameri  
Director of Utilities and Environmental Services  
City of Hayward  
777 B Street  
Hayward, California 94541

RE: Urban Water Management Plan Requirements Addressed

Dear Alex:

The Department of Water Resources (DWR) has reviewed the City of Hayward's 2015 Urban Water Management Plan (UWMP) that was received on June 24, 2016. The California Water Code (CWC) directs DWR to report to the California State Legislature once every five years on the status of submitted UWMPs. In meeting this legislative reporting requirement, DWR reviews all submitted UWMPs.

DWR's review of the City of Hayward's 2015 UWMP has found that the UWMP addresses the requirements of the CWC. DWR's review of plans is limited to assessing whether suppliers have addressed the required legislative elements. In its review, DWR does not evaluate or analyze the supplier's UWMP data, projections or water management strategies. This letter acknowledges that the City of Hayward's 2015 UWMP addresses the CWC requirements. The results of the review will be provided to DWR's Financial Assistance Branch.

If you have any questions regarding the review of the UWMP or urban water management planning please call Gwen Huff at 916-651-9672.

Sincerely,

A handwritten signature in black ink, appearing to read "V. Lake".

Vicki Lake  
Unit Chief  
Urban Water Use Efficiency  
(916) 651-0740

Electronic cc: Lauren Wacker  
DWR

SB X7-7 BASELINES AND TARGETS

Senate Bill X7-7, also known as the Water Conservation Act of 2009, was signed into law in November 2009. The intent is to reduce urban per capita water use statewide by 10% by 2015 and 20% by 2020. To this end, retail agencies that are subject to the provisions of SB X7-7 were required in 2010 to establish target water use reductions for these years, based on a selected methodology. 2015 UWMPs must verify or update the calculations prepared in 2010, as well as demonstrate compliance with 2015 water use targets and document progress towards meeting 2020 targets. This chapter addresses SB X7-7 reporting requirements and verifies the City’s compliance with provisions of the Water Conservation Act of 2009, including water use targets. The full text of SB X-7-7 is included for reference in Appendix F.

5.1 GUIDANCE FOR WHOLESALE AGENCIES

The City of Hayward is not a wholesale agency, and this section is not applicable.

5.2. UPDATING CALCULATIONS FROM 2010 UWMP

5.2.1 Update of Target Method

SB X7-7 requires agencies to select one of four calculation methodologies to determine interim and final water use targets. The unit of measure used in SB X7-7 calculations and compliance is gallons per capita per day (gpcd). The four methodologies are briefly described below:

<b>Method 1</b>	Water use target is set at 80% of base daily per capita water usage
<b>Method 2</b>	Water use target is based on achieving certain performance standards, including indoor residential water use of 55 gpcd, 10% reduction in baseline non-residential water use, and landscape water use efficiency equivalent to certain standards
<b>Method 3</b>	Water use target is set at 95% of the applicable State hydrologic region target
<b>Method 4</b>	Water use target is set in accordance with savings from installation of water meters, specific indoor and commercial/industrial measures, water efficient landscape, and water loss management

In June 2011, the Hayward City Council adopted a resolution stating that the City’s target water use reductions would be based on Calculation Methodology 3, which is 95% of the applicable State hydrologic region target. Based on this method, and given that Hayward is situated fully

in the San Francisco Bay Hydrologic region, the City's interim target water use for 2015 was determined to be 128 gpcd, with a 2020 target of 124 gpcd.

SB X7-7 further requires that that calculated targets be compared to a minimum water use reduction, which is determined by calculating average per capital use during a continuous five-year period, ending no earlier than December 2007 and no later than December 2010. This average is then multiplied by 95%. If this result is lower than the calculated 2020 goal, then the final 2020 per capital use target must be set at the minimum reduction target. For the purpose of determining the minimum water use reduction for the 2010 UWMP, the appropriate five-year period for Hayward was 2003-04 through 2007-08. The average use, based on population estimates available at that time, was 128 gpcd, and 95% of this use was 122 gpcd. Thus, the minimum use reduction was applicable to Hayward, and targets were established as follows:

- 2015 Interim Water Use Target – 126 gpcd
- 2020 Water Use Target – 122 gpcd

Provisions of SB X7-7 allow agencies to update their target method in their 2015 UWMPs and calculate water use targets based on a different methodology.

**The City of Hayward has opted to retain Methodology 3.**

### *5.2.2 Required Use of 2010 United States Census Data*

One of the approved sources for SB X7-7 baseline population data is the California Department of Finance (DOF) population estimates, which are published annually. Since SB X7-7 water use targets were established in the 2010 UWMPs, DWR has determined that significant discrepancies exist between the DOF's population figures available in 2010 and subsequent revised populations based on United States Census data, published in 2012. Agencies that did not use 2010 Census data for their baseline population calculations in 2010 must update these calculations in 2015. This requirement applies Hayward.

Population estimates for Hayward were decreased by the Department of Finance for the years between 2000 and 2010. While these changes do not result in a different water use target, as calculated in accordance with Methodology 3, the City's selected methodology, the recalculations indicate that Hayward is no longer subject to the minimum water use reduction.

### *5.2.3 SB X7-7 Verification Form*

The Department of Water Resources requires agencies to submit standardized tables related to calculation of baseline water usage, water use targets and verification that 2015 interim water use targets were achieved, in order to demonstrate compliance with the Water Conservation Act of 2009. The tables in the SB X7-7 are distinguished from the other standardized UWMP tables by their name, which always begins with "SB X7-7, followed by the table number and name.

Hayward's SB X7-7-related tables, including the compliance form, are located at the conclusion of this chapter.

### **5.3 BASELINE PERIODS**

Water use gpcd must be calculated for two baseline periods: 1) the 10- to 15-year baseline for the purpose of establishing a water use target in accordance with Methodology 1; and 2) the 5-year baseline for the purpose of establishing a minimum water use reduction. As noted in Section 5.2.2, the City recalculated its baseline water use using updated California Department of Finance population estimates for the period between 2000 and 2010. This recalculation resulted in a change to the City's 10-year baseline period, in terms of both the time period and water usage. The 5-year baseline period did not change, but the average water usage during the period was revised.

#### ***5.3.1 Determination of the 10-15 Year Baseline Period (Baseline GPCD)***

The duration of the baseline period, either 10 years or 15 years, is dependent on recycled water use in 2008. If the percentage of recycled water use in that year was at least 10% of total water deliveries, an agency may use a baseline period of up to 15 years. A 10-year period must be used if recycled water use was less than 10% in 2008. Based on this criterion, Hayward's baseline period is 10 years. The baseline period must end no earlier than December 31, 2004 and no later than December 31, 2010.

The 10-year baseline period is 2000 through 2009. The average water usage for this period was 131 gpcd, as summarized in SB X7-7 Table 5: Gallons Per Capita Per Day. This recalculated usage is a slight increase from the baseline period in the 2010 UWMP. In 2010, the baseline usage was 130 gpcd, using water use data and population from 1996 through 2005.

#### ***5.3.2 Determination of the 5-Year Baseline Period (Target Confirmation)***

A 5-year baseline period is used to confirm that the selected 2020 target meets the minimum water use reduction requirements. The minimum water use reduction is 95% of the 5-year baseline period. This continuous 5-year period must end no earlier than December 31, 2007 and no later than December 31, 2010.

Hayward's 5-year baseline period is 2004 to 2008, during which water usage averaged 134 gpcd. 95% of this usage is 127 gpcd. The 2010 UWMP utilized the same 5-year time period, but the average usage was lower at 128 gpcd, and the minimum reduction was 122 gpcd. The revised 5-year baseline period and minimum water use reduction is summarized in SB X7-7 Table 5: Gallons Per Capita Per Day and SB X7-7 Table 7-F: Minimum Reduction for 2020 Target.

## **5.4 SERVICE AREA POPULATION**

In order to correctly calculate annual gpcd, agencies must determine the population served for each baseline year in both of the baseline periods and for the 2015 compliance year.

### ***5.4.1 Population Methodologies***

The UWMP Guidance Document provides several alternatives for determining service area population, including California Department of Finance Estimates for cities whose service area boundaries correspond by 95% or more with the city boundaries. The City's service area is substantially the same as the City of Hayward boundaries. Thus, the population estimates from the Department of Finance are appropriate for determining the service area population and have been used by the City for all SB X7-7 calculations.

Hayward did not use 2010 Census data in 2010 and therefore recalculated baseline populations, as required by DWR. SB X7-7 Table 2: Method for Population Estimates and SB X7-7 Table 3: Service Area Population documents Hayward's method for population estimates and service area populations in the baseline period and compliance year.

## **5.5 GROSS WATER USE**

Gross water is a measure of water that enters the distribution system of the supplier over a 12-month period. The gross water use utilized in the City's SB X7-7 calculations reflects the metered purchases from the wholesale supplier.

### ***5.5.1 Gross Water Tables***

SB X7-7 Table 4: Annual Gross Water Use is included in this chapter.

## **5.6 BASELINE DAILY PER CAPITA WATER USE**

The final step in determining baseline calculations is determining the daily per capita water use in each of the baseline years. Population and gross water use from each applicable year is used to calculate the gpcd for each year. Using the updated population data, Hayward's baseline daily per capita water use is 131 gpcd, as documented and summarized in SB X7-7 Tables 5 and 6: Gallons Per Capital Per Day, included at the end of this chapter.

## **5.7 2015 AND 2020 TARGETS**

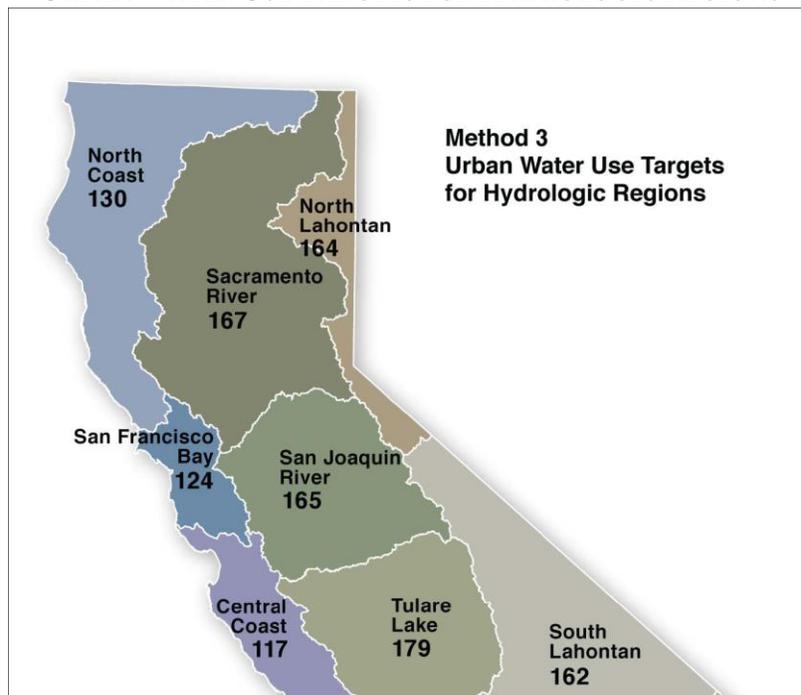
The City has opted not to select a different target method and acknowledges that, once the 2015 UWMP is submitted to the State, the target method may not be changed in any amendments to the 2015 UWMP or in the 2020 UWMP.

### 5.7.1 Select and Apply a Target Method

Upon reviewing its updated calculations and the target methods summarized in Section 5.2.1, Hayward has determined that Methodology 3, 95% of the applicable State hydrologic region target, is appropriate for determining the City's water use target. SB X7-7 Table 7: 2020 Target Method and Table SB X7-7 Table 7-E: Target Method 3 document this determination and are included at the end of this chapter.

Hayward is located entirely in the San Francisco Bay Region. This hydrologic region has an interim 2015 target of 144 gpcd and a 2020 target of 131 gpcd. Using a factor of 95%, Hayward's water use targets for 2015 and 2020 are 128 gpcd and 124 gpcd respectively. Figure 5-7 indicates the water use targets for each region, including the San Francisco Bay Region.

**FIGURE 5-1  
URBAN WATER USE TARGETS FOR HYDROLOGIC REGIONS**



### 5.7.2 5-Year Baseline – 2020 Target Confirmation

SB X7-7 requires that the calculated target be compared to a minimum water use reduction, determined by calculating average per capita use during the continuous five-year baseline period, ending no earlier than December 2007 and no later than December 2010. This average is then multiplied by 95%. If the result is lower than the calculated 2020 target, the final 2020 per capita use target must be reduced to the minimum reduction requirement.

As indicated in SB X7-7 Table 7-F: Confirm Target, Hayward’s water use target , as calculated by Method 3, is lower than the minimum water user reduction; thus, Hayward’s final target is not subject to the minimum reduction. Note: This conclusion is a change from the 2010 UWMP, which indicated that Hayward’s water user target was higher than the minimum water use reduction. The change resulted from updating the population estimates for the 5-year baseline period.

### 5.7.3 Calculate the 2015 Interim Urban Water Use Target

The 2015 Interim Target is the value halfway between the 10- to 15-year Baseline gpcd (from SB X7-7 Table 5) and the confirmed 2020 Target (from SB X7-7 Table 7). The Interim 2015 Target for Hayward, per Methodology 3 and documented in SB X7-7 Table 8: 2015 Interim Target GPCD, is 128 gpcd.

### 5.7.4 Baseline and Targets Summary

The SB X7-7 verification tables, which confirm Hayward’s compliance with the Water Conservation Act of 2009, are included at the end of this chapter.

Table 5-1 provides a Baseline and Targets Summary, based on the SB X7-7 verification tables.

<b>Table 5-1: Baselines and Targets Summary</b>					
Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target *	Confirmed 2020 Target*
10 year	2000	2009	131	128	124
5 Year	2004	2008	134		
*All values are in Gallons per Capita per Day (gpcd)					
NOTES: Fiscal years					

## 5.8 2015 COMPLIANCE WITH DAILY PER CAPITA WATER USE (GPCD)

### 5.8.1 Meeting the 2015 Target

Actual gross per capita water use in Hayward in 2015, as calculated in SB X7-7 Table 9: Compliance, was 89 gpcd. This usage is lower than the City’s target 2015 per capita use of 128 gpcd; thus, Hayward has met its 2015 interim target.

Table 5-2 further verifies Hayward’s compliance with its 2015 interim water use target.

**Table 5-2: 2015 Compliance**

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments to 2015 GPCD Enter "0" for adjustments not used					Adjusted 2015 GPCD	2015 GPCD (Adjusted if applicable)	Did Supplier Achieve Targeted Reduction for 2015? Y/N
		Extraordinary Events	Economic Adjustment	Weather Normalization	TOTAL Adjustments				
89	128	0	0	0	0	89	89	Yes	
<i>*All values are in Gallons per Capita per Day (gpcd)</i>									
NOTES: Fiscal year ending June 30, 2015									

Hayward’s 2015 actual gpcd usage was significantly lower than its interim target and in fact its final 2020 target. This low usage was achieved without optional adjustments or deductions for industrial process water. There were many factors that contributed to this result, including drought conditions, so this lower consumption is not expected to continue when water supplies return to normal. Nonetheless, the City has made good progress toward its final water use target and fully intends to strive to meet its 2020 targets.

It is important to note, however, that Hayward’s current per capita water use is among the lowest of all the wholesale customers of SFPUC even with the presence of two major educational facilities with significant daytime populations, a regional hospital, and a large and diverse industrial sector. Further, the City also has an interest in economic development and encouraging vibrant and engaged State university and community college campuses. To the extent that these activities impact water demand, Hayward may evaluate its industrial, commercial, and institutional water use in the compliance year 2020 to determine if deductions to the gross water use are appropriate. Since both industrial process and institutional water use is expected to be an important factor in Hayward’s future consumption, the water demand projections summarized in Chapter 4 are not consistent with the SB X7-7 water use targets.

**5.8.2 2015 Adjustments to 2015 Gross Water Use**

Hayward made no adjustments to its 2015 gross water use and therefore, Section 5.8.2 is not applicable.

**5.9 REGIONAL ALLIANCE**

SB X7-7 permits water agencies to comply with provisions of the legislation on a local or regional basis, or both. Regional alliances may be formed among agencies that purchase water from a common wholesale provider, are members of a regional agency authorized to implement water conservation, or are located in the same hydrologic region. BAWSCA, of which Hayward is

member, is specifically named in the legislation as an agency that may serve as a regional entity for compliance with SB X7-7. Alliances may be formed by some or all of the member agencies.

Agencies that choose to comply with SB X7-7 requirements through a regional alliance must report compliance information on a Regional Alliance Report. The City opted to comply with SB X7-7 on an individual basis and therefore, Section 5.9 is not applicable to Hayward.

### 5.10 SB X7-7 VERIFICATION FORMS

The following tables support and verify Hayward’s SB X7-7 calculations and compliance. The forms will also be submitted electronically to DWR in Excel format.

<b>SB X7-7 Table-1: Baseline Period Ranges</b>			
<b>Baseline</b>	<b>Parameter</b>	<b>Value</b>	<b>Units</b>
10- to 15-year baseline period	2008 total water deliveries	7,057	Million Gallons
	2008 total volume of delivered recycled water	0	Million Gallons
	2008 recycled water as a percent of total deliveries	0.00%	Percent
	Number of years in baseline period <sup>1</sup>	10	Years
	Year beginning baseline period range	2000	
	Year ending baseline period range <sup>2</sup>	2009	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2004	
	Year ending baseline period range <sup>3</sup>	2008	
<sup>1</sup> If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period.			
<sup>2</sup> The ending year must be between December 31, 2004 and December 31, 2010.			
<sup>3</sup> The ending year must be between December 31, 2007 and December 31, 2010.			
NOTES: Based on fiscal years beginning July 1 and ending June 30.			

**SB X7-7 Table 2: Method for Population Estimates**

Method Used to Determine Population	
<input checked="" type="checkbox"/>	<b>1. Department of Finance (DOF)</b> DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
<input type="checkbox"/>	<b>2. Persons-per-Connection Method</b>
<input type="checkbox"/>	<b>3. DWR Population Tool</b>
<input type="checkbox"/>	<b>4. Other</b>

**SB X7-7 Table 3: Service Area Population**

Year	Population	
<b>10 to 15 Year Baseline Population</b>		
Year 1	2000	140,030
Year 2	2001	141,444
Year 3	2002	141,850
Year 4	2003	141,263
Year 5	2004	140,681
Year 6	2005	140,530
Year 7	2006	140,305
Year 8	2007	140,720
Year 9	2008	141,495
Year 10	2009	142,642
<b>5 Year Baseline Population</b>		
Year 1	2004	140,681
Year 2	2005	140,530
Year 3	2006	140,305
Year 4	2007	140,720
Year 5	2008	141,495
<b>2015 Compliance Year Population</b>		
<b>2015</b>	152,889	
NOTES: Fiscal years		

**SB X7-7 Table 4: Annual Gross Water Use \***

	Baseline Year <i>Fm SB X7-7 Table 3</i>	Volume Into Distribution System (MG) <i>Fm SB X7-7 Table 4-A</i>	Deductions					Annual Gross Water Use (MG)
			Exported Water	Change in Dist. System Storage (+/-)	Indirect Recycled Water	Water Delivered for Agricultural Use	Process Water	
<b>10 to 15 Year Baseline - Gross Water Use</b>								
Year 1	2000	6832						6,832
Year 2	2001	6702						6,702
Year 3	2002	6427						6,427
Year 4	2003	6456						6,456
Year 5	2004	7171						7,171
Year 6	2005	6755						6,755
Year 7	2006	6675						6,675
Year 8	2007	6658						6,658
Year 9	2008	7057						7,057
Year 10	2009	6881						6,881
<b>10 - 15 year baseline average gross water use</b>								<b>4,508</b>
<b>5 Year Baseline - Gross Water Use</b>								
Year 1	2004	7,171						7,171
Year 2	2005	6,755						6,755
Year 3	2006	6,675						6,675
Year 4	2007	6,658						6,658
Year 5	2008	7,057						7,057
<b>5 year baseline average gross water use</b>								<b>6,863</b>
<b>2015 Compliance Year - Gross Water Use</b>								
	<b>2015</b>	4,963			0		0	4,963
NOTES: Fiscal years								

**SB X7-7 Table 4-A: Volume Entering the Distribution System**

<b>Name of Source</b>		SFPUC		
<b>This water source is:</b>				
<input type="checkbox"/>		The supplier's own water source		
<input checked="" type="checkbox"/>		A purchased or imported source		
<b>Baseline Year</b> <i>Fm SB X7-7 Table 3</i>		<b>Volume Entering Distribution System (MG)</b>	<b>Meter Error Adjustment* <i>Optional (+/-)</i></b>	<b>Corrected Volume Entering Distribution System (MG)</b>
<b>10 to 15 Year Baseline - Water into Distribution System</b>				
Year 1	2000	6832		6,832
Year 2	2001	6702		6,702
Year 3	2002	6427		6,427
Year 4	2003	6456		6,456
Year 5	2004	7171		7,171
Year 6	2005	6755		6,755
Year 7	2006	6675		6,675
Year 8	2007	6658		6,658
Year 9	2008	7057		7,057
Year 10	2009	6881		6,881
<b>5 Year Baseline - Water into Distribution System</b>				
Year 1	2004	7,171		7,171
Year 2	2005	6,755		6,755
Year 3	2006	6,675		6,675
Year 4	2007	6,658		6,658
Year 5	2008	7,057		7,057
<b>2015 Compliance Year - Water into Distribution System</b>				
<b>2015</b>		4,963		4,963
NOTES: Fiscal years				

**SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)**

<b>Baseline Year</b> <i>Fm SB X7-7 Table 3</i>		<b>Service Area Population</b> <i>Fm SB X7-7 Table 3</i>	<b>Annual Gross Water Use (MG)</b> <i>Fm SB X7-7 Table 4</i>	<b>Daily Per Capita Water Use (GPCD)</b>
<b>10 to 15 Year Baseline GPCD</b>				
Year 1	2000	140,030	6,832	134
Year 2	2001	141,444	6,702	130
Year 3	2002	141,850	6,427	124
Year 4	2003	141,263	6,456	125
Year 5	2004	140,681	7,171	140
Year 6	2005	140,530	6,755	132
Year 7	2006	140,305	6,675	130
Year 8	2007	140,720	6,658	130
Year 9	2008	141,495	7,057	137
Year 10	2009	142,642	6,881	132
<b>10-15 Year Average Baseline GPCD</b>				<b>131</b>
<b>5 Year Baseline GPCD</b>				
<b>Baseline Year</b> <i>Fm SB X7-7 Table 3</i>		<b>Service Area Population</b> <i>Fm SB X7-7 Table 3</i>	<b>Annual Gross Water Use (MG)</b> <i>Fm SB X7-7 Table 4</i>	<b>Daily Per Capita Water Use (GPCD)</b>
Year 1	2004	140,681	7,171	140
Year 2	2005	140,530	6,755	132
Year 3	2006	140,305	6,675	130
Year 4	2007	140,720	6,658	130
Year 5	2008	141,495	7,057	137
<b>5 Year Average Baseline GPCD</b>				<b>134</b>
<b>2015 Compliance Year GPCD</b>				
<b>2015</b>		152,889	4,963	89
NOTES: Fiscal years				

**SB X7-7 Table 6: Gallons per Capita per Day**  
*Summary From Table SB X7-7 Table 5*

10-15 Year Baseline GPCD	131
5 Year Baseline GPCD	134
2015 Compliance Year GPCD	89

SB X7-7 Table 7: 2020 Target Method		
Target Method		Supporting Documentation
<input type="checkbox"/>	Method 1	SB X7-7 Table 7A
<input type="checkbox"/>	Method 2	SB X7-7 Tables 7B, 7C, and 7D
<input checked="" type="checkbox"/>	Method 3	SB X7-7 Table 7-E
<input type="checkbox"/>	Method 4	Method 4 Calculator

SB X7-7 Table 7-E: Target Method 3				
Agency May Select More Than One as Applicable	Percentage of Service Area in This Hydrological Region	Hydrologic Region	"2020 Plan" Regional Targets	Method 3 Regional Targets (95%)
<input type="checkbox"/>		North Coast	137	130
<input type="checkbox"/>		North Lahontan	173	164
<input type="checkbox"/>		Sacramento River	176	167
<input checked="" type="checkbox"/>	100%	San Francisco Bay	131	124
<input type="checkbox"/>		San Joaquin River	174	165
<input type="checkbox"/>		Central Coast	123	117
<input type="checkbox"/>		Tulare Lake	188	179
<input type="checkbox"/>		South Lahontan	170	162
<input type="checkbox"/>		South Coast	149	142
<input type="checkbox"/>		Colorado River	211	200
<b>Target</b>				<b>124</b>

**SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target**

5 Year Baseline GPCD <i>From SB X7-7 Table 5</i>	Maximum 2020 Target*	Calculated 2020 Target <i>Fm Appropriate Target Table</i>	Confirmed 2020 Target
134	127	124	124
* Maximum 2020 Target is 95% of the 5 Year Baseline GPCD			

**SB X7-7 Table 8: 2015 Interim Target GPCD**

Confirmed 2020 Target <i>Fm SB X7-7 Table 7-F</i>	10-15 year Baseline GPCD <i>Fm SB X7-7 Table 5</i>	2015 Interim Target GPCD
124	131	128

**SB X7-7 Table 9: 2015 Compliance**

Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments ( <i>in GPCD</i> )				2015 GPCD <i>(Adjusted)</i>	Did Supplier Achieve Targeted Reduction for 2015?
		Extraordinary Events	Weather Normalization	Economic Adjustment	TOTAL Adjustments		
89	128	0	0	0	0	89	YES



**e-WRIMS Water Right Search Results**

Criteria: Displaying Water Rights where Holder Name like "East Bay Municipal Utility".

Search Results: previous | 1-15 of 15 | next

Appl ID	Permit ID	License ID	Water Right Type	Status	Holder Name	Date	Face Amt	County	Source	View Reports	Water Right	Open in GIS	Export to Excel
<a href="#">S020476</a>			Statement of Div and Use	Claimed	EAST BAY MUNICIPAL UTILITY DISTRICT	07/29/2010	0 acre-ft/yr	San Joaquin	Mokelumne River	<a href="#">View Reports</a>	<a href="#">View Statement</a>	<a href="#">Open in GIS</a>	<a href="#">Download to Excel</a>
<a href="#">S020477</a>			Statement of Div and Use	Claimed	EAST BAY MUNICIPAL UTILITY DISTRICT	07/29/2010	0 acre-ft/yr	Calaveras	Mokelumne River	<a href="#">View Reports</a>	<a href="#">View Statement</a>	<a href="#">Open in GIS</a>	<a href="#">Download to Excel</a>
<a href="#">S021241</a>			Statement of Div and Use	Claimed	EAST BAY MUNICIPAL UTILITY DISTRICT	02/13/2002	0 acre-ft/yr	San Joaquin	Camanche Dam	<a href="#">View Reports</a>	<a href="#">View Statement</a>	<a href="#">Open in GIS</a>	<a href="#">Download to Excel</a>
<a href="#">A025056</a>	017378		Appropriative	Permitted	EAST BAY MUNICIPAL UTILITY DISTRICT	04/29/1978	853000 acre-ft/yr	San Joaquin	MOKELUMNE RIVER	<a href="#">View Reports</a>	<a href="#">View Permit</a>	<a href="#">Open in GIS</a>	<a href="#">Download to Excel</a>
<a href="#">S000633</a>			Statement of Div and Use	Claimed	EAST BAY MUNICIPAL UTILITY DISTRICT	05/02/1967	0 acre-ft/yr	Alameda	SAN LEANDRO CREEK	<a href="#">View Reports</a>	<a href="#">View Statement</a>	<a href="#">Open in GIS</a>	<a href="#">Download to Excel</a>
<a href="#">S000634</a>			Statement of Div and Use	Claimed	EAST BAY MUNICIPAL UTILITY DISTRICT	05/02/1967	0 acre-ft/yr	Contra Costa	UNST	<a href="#">View Reports</a>	<a href="#">View Statement</a>	<a href="#">Open in GIS</a>	<a href="#">Download to Excel</a>
<a href="#">A018672</a>	012513	010797	Appropriative	Licensed	EAST BAY MUNICIPAL UTILITY DISTRICT	04/27/1959	30200 acre-ft/yr	Contra Costa	BEAR CREEK, SAN PABLO CREEK	<a href="#">View Reports</a>	<a href="#">View License</a>	<a href="#">Open in GIS</a>	<a href="#">Download to Excel</a>
<a href="#">A015201</a>	010479		Appropriative	Permitted	EAST BAY MUNICIPAL UTILITY DISTRICT	02/16/1953	303392.1 acre-ft/yr	Amador	MOKELUMNE RIVER	<a href="#">View Reports</a>	<a href="#">View Permit</a>	<a href="#">Open in GIS</a>	<a href="#">Download to Excel</a>
<a href="#">A013156</a>	010478		Appropriative	Permitted	EAST BAY MUNICIPAL UTILITY DISTRICT	06/16/1949	434962.2 acre-ft/yr	Amador, San Joaquin	MOKELUMNE RIVER	<a href="#">View Reports</a>	<a href="#">View Permit</a>	<a href="#">Open in GIS</a>	<a href="#">Download to Excel</a>
<a href="#">A008707</a>	003607	001750	Appropriative	Licensed	EAST BAY MUNICIPAL UTILITY DISTRICT	06/21/1930	30407.1 acre-ft/yr	Alameda	SAN LEANDRO CREEK	<a href="#">View Reports</a>	<a href="#">View License</a>	<a href="#">Open in GIS</a>	<a href="#">Download to Excel</a>
<a href="#">A005128</a>	003587	006062	Appropriative	Licensed	EAST BAY MUNICIPAL UTILITY DISTRICT	07/27/1926	300193.6 acre-ft/yr	Amador	MOKELUMNE RIVER	<a href="#">View Reports</a>	<a href="#">View License</a>	<a href="#">Open in GIS</a>	<a href="#">Download to Excel</a>
<a href="#">A004768</a>	002529	001388	Appropriative	Licensed	EAST BAY MUNICIPAL UTILITY DISTRICT	09/11/1925	470456.6 acre-ft/yr	Amador	MOKELUMNE RIVER	<a href="#">View Reports</a>	<a href="#">View License</a>	<a href="#">Open in GIS</a>	<a href="#">Download to Excel</a>
<a href="#">A004228</a>	002459	011109	Appropriative	Licensed	EAST BAY MUNICIPAL UTILITY DISTRICT	09/22/1924	316250 acre-ft/yr	Amador	MOKELUMNE RIVER	<a href="#">View Reports</a>	<a href="#">View License</a>	<a href="#">Open in GIS</a>	<a href="#">Download to Excel</a>
<a href="#">A002593</a>	001256	000358	Appropriative	Licensed	EAST BAY MUNICIPAL UTILITY DISTRICT	10/17/1921	4691.4 acre-ft/yr	Contra Costa	UNST	<a href="#">View Reports</a>	<a href="#">View License</a>	<a href="#">Open in GIS</a>	<a href="#">Download to Excel</a>
<a href="#">A000465</a>	001329	001749	Appropriative	Licensed	EAST BAY MUNICIPAL UTILITY DISTRICT	09/18/1916	16880 acre-ft/yr	Contra Costa	SAN PABLO CREEK	<a href="#">View Reports</a>	<a href="#">View License</a>	<a href="#">Open in GIS</a>	<a href="#">Download to Excel</a>

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1 2									
Water Right ID	Primary Owner	Face Value (acre-ft/yr)	County	Source	Type	Year / Revision	Status	Date Submitted	Action
A000465	EAST BAY MUNICIPAL UTILITY DISTRICT	16,880.0	Contra Costa	SAN PABLO CREEK	Report of Licensee	2016 / 2	Submitted	6/29/2017	<a href="#">View</a> <a href="#">Amend</a>
A000465	EAST BAY MUNICIPAL UTILITY DISTRICT	16,880.0	Contra Costa	SAN PABLO CREEK	Report of Licensee	2016 / 1	Submitted	3/29/2017	<a href="#">View</a>
A000465	EAST BAY MUNICIPAL UTILITY DISTRICT	16,880.0	Contra Costa	SAN PABLO CREEK	Report of Licensee	2015 / 1	Submitted	6/29/2016	<a href="#">View</a> <a href="#">Amend</a>
A000465	EAST BAY MUNICIPAL UTILITY DISTRICT	16,880.0	Contra Costa	SAN PABLO CREEK	Report of Licensee	2014 / 2	Submitted	6/26/2015	<a href="#">View</a> <a href="#">Amend</a>
A000465	EAST BAY MUNICIPAL UTILITY DISTRICT	16,880.0	Contra Costa	SAN PABLO CREEK	Report of Licensee	2014 / 1	Submitted	6/26/2015	<a href="#">View</a>
A000465	EAST BAY MUNICIPAL UTILITY DISTRICT	16,880.0	Contra Costa	SAN PABLO CREEK	Report of Licensee	2013 / 1	Submitted	6/27/2014	<a href="#">View</a> <a href="#">Amend</a>
A000465	EAST BAY MUNICIPAL UTILITY DISTRICT	16,880.0	Contra Costa	SAN PABLO CREEK	Report of Licensee	2012 / 1	Submitted	6/28/2013	<a href="#">View</a> <a href="#">Amend</a>
A000465	EAST BAY MUNICIPAL UTILITY DISTRICT	16,880.0	Contra Costa	SAN PABLO CREEK	Report of Licensee	2011 / 1	Submitted	6/28/2012	<a href="#">View</a> <a href="#">Amend</a>
A000465	EAST BAY MUNICIPAL UTILITY DISTRICT	16,880.0	Contra Costa	SAN PABLO CREEK	Report of Licensee	2010 / 1	Submitted	6/30/2011	<a href="#">View</a> <a href="#">Amend</a>
A000465	EAST BAY MUNICIPAL UTILITY DISTRICT	16,880.0	Contra Costa	SAN PABLO CREEK	Report of Licensee	2009 / 1	Submitted	6/30/2011	<a href="#">View</a> <a href="#">Amend</a>

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1 2									
Water Right ID	Primary Owner	Face Value (acre-ft/yr)	County	Source	Type	Year / Revision	Status	Date Submitted	Action
A002593	EAST BAY MUNICIPAL UTILITY DISTRICT	4,691.4	Contra Costa	UNST	Report of Licensee	2016 / 2	Submitted	3/29/2017	<a href="#">View</a> <a href="#">Amend</a>
A002593	EAST BAY MUNICIPAL UTILITY DISTRICT	4,691.4	Contra Costa	UNST	Report of Licensee	2016 / 1	Submitted	3/29/2017	<a href="#">View</a>
A002593	EAST BAY MUNICIPAL UTILITY DISTRICT	4,691.4	Contra Costa	UNST	Report of Licensee	2015 / 1	Submitted	6/29/2016	<a href="#">View</a> <a href="#">Amend</a>
A002593	EAST BAY MUNICIPAL UTILITY DISTRICT	4,691.4	Contra Costa	UNST	Report of Licensee	2014 / 1	Submitted	6/26/2015	<a href="#">View</a> <a href="#">Amend</a>
A002593	EAST BAY MUNICIPAL UTILITY DISTRICT	4,691.4	Contra Costa	UNST	Report of Licensee	2013 / 1	Submitted	6/27/2014	<a href="#">View</a> <a href="#">Amend</a>
A002593	EAST BAY MUNICIPAL UTILITY DISTRICT	4,691.4	Contra Costa	UNST	Report of Licensee	2012 / 1	Submitted	6/28/2013	<a href="#">View</a> <a href="#">Amend</a>
A002593	EAST BAY MUNICIPAL UTILITY DISTRICT	4,691.4	Contra Costa	UNST	Report of Licensee	2011 / 2	Submitted	6/27/2014	<a href="#">View</a> <a href="#">Amend</a>
A002593	EAST BAY MUNICIPAL UTILITY DISTRICT	4,691.4	Contra Costa	UNST	Report of Licensee	2011 / 1	Submitted	6/28/2012	<a href="#">View</a>
A002593	EAST BAY MUNICIPAL UTILITY DISTRICT	4,691.4	Contra Costa	UNST	Report of Licensee	2010 / 1	Submitted	6/30/2011	<a href="#">View</a> <a href="#">Amend</a>
A002593	EAST BAY MUNICIPAL UTILITY DISTRICT	4,691.4	Contra Costa	UNST	Report of Licensee	2009 / 1	Submitted	6/30/2011	<a href="#">View</a> <a href="#">Amend</a>

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Water Right ID	Primary Owner	Face Value (acre-ft/yr)	County	Source	Type	Year / Revision	Status	Date Submitted	Action
A004228	EAST BAY MUNICIPAL UTILITY DISTRICT	316,250.0	Amador	MOKELUMNE RIVER	Report of Licensee	2016 / 2	Submitted	6/29/2017	<a href="#">View</a> <a href="#">Amend</a>
A004228	EAST BAY MUNICIPAL UTILITY DISTRICT	316,250.0	Amador	MOKELUMNE RIVER	Report of Licensee	2016 / 1	Submitted	3/29/2017	<a href="#">View</a>
A004228	EAST BAY MUNICIPAL UTILITY DISTRICT	316,250.0	Amador	MOKELUMNE RIVER	Report of Licensee	2015 / 1	Submitted	6/29/2016	<a href="#">View</a> <a href="#">Amend</a>
A004228	EAST BAY MUNICIPAL UTILITY DISTRICT	316,250.0	Amador	MOKELUMNE RIVER	Report of Licensee	2014 / 1	Submitted	6/26/2015	<a href="#">View</a> <a href="#">Amend</a>
A004228	EAST BAY MUNICIPAL UTILITY DISTRICT	316,250.0	Amador	MOKELUMNE RIVER	Report of Licensee	2013 / 1	Submitted	6/27/2014	<a href="#">View</a> <a href="#">Amend</a>
A004228	EAST BAY MUNICIPAL UTILITY DISTRICT	316,250.0	Amador	MOKELUMNE RIVER	Report of Licensee	2012 / 1	Submitted	6/28/2013	<a href="#">View</a> <a href="#">Amend</a>
A004228	EAST BAY MUNICIPAL UTILITY DISTRICT	316,250.0	Amador	MOKELUMNE RIVER	Report of Licensee	2011 / 1	Submitted	6/28/2012	<a href="#">View</a> <a href="#">Amend</a>
A004228	EAST BAY MUNICIPAL UTILITY DISTRICT	316,250.0	Amador	MOKELUMNE RIVER	Report of Licensee	2010 / 1	Submitted	6/29/2011	<a href="#">View</a> <a href="#">Amend</a>
A004228	EAST BAY MUNICIPAL UTILITY DISTRICT	316,250.0	Amador	MOKELUMNE RIVER	Report of Licensee	2009 / 1	Submitted	6/29/2011	<a href="#">View</a> <a href="#">Amend</a>
A004228	EAST BAY MUNICIPAL UTILITY DISTRICT	316,250.0	Amador	MOKELUMNE RIVER	Report of Licensee	2008 / 1	Submitted	6/29/2011	<a href="#">View</a> <a href="#">Amend</a>

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1 2									
Water Right ID	Primary Owner	Face Value (acre-ft/yr)	County	Source	Type	Year / Revision	Status	Date Submitted	Action
A004768	EAST BAY MUNICIPAL UTILITY DISTRICT	470,456.6	Amador	MOKELUMNE RIVER	Report of Licensee	2016 / 2	Submitted	6/29/2017	<a href="#">View</a> <a href="#">Amend</a>
A004768	EAST BAY MUNICIPAL UTILITY DISTRICT	470,456.6	Amador	MOKELUMNE RIVER	Report of Licensee	2016 / 1	Submitted	3/29/2017	<a href="#">View</a>
A004768	EAST BAY MUNICIPAL UTILITY DISTRICT	470,456.6	Amador	MOKELUMNE RIVER	Report of Licensee	2015 / 1	Submitted	6/29/2016	<a href="#">View</a> <a href="#">Amend</a>
A004768	EAST BAY MUNICIPAL UTILITY DISTRICT	470,456.6	Amador	MOKELUMNE RIVER	Report of Licensee	2014 / 1	Submitted	6/26/2015	<a href="#">View</a> <a href="#">Amend</a>
A004768	EAST BAY MUNICIPAL UTILITY DISTRICT	470,456.6	Amador	MOKELUMNE RIVER	Report of Licensee	2013 / 1	Submitted	6/27/2014	<a href="#">View</a> <a href="#">Amend</a>
A004768	EAST BAY MUNICIPAL UTILITY DISTRICT	470,456.6	Amador	MOKELUMNE RIVER	Report of Licensee	2012 / 1	Submitted	6/28/2013	<a href="#">View</a> <a href="#">Amend</a>
A004768	EAST BAY MUNICIPAL UTILITY DISTRICT	470,456.6	Amador	MOKELUMNE RIVER	Report of Licensee	2011 / 2	Submitted	6/27/2014	<a href="#">View</a> <a href="#">Amend</a>
A004768	EAST BAY MUNICIPAL UTILITY DISTRICT	470,456.6	Amador	MOKELUMNE RIVER	Report of Licensee	2011 / 1	Submitted	6/28/2012	<a href="#">View</a>
A004768	EAST BAY MUNICIPAL UTILITY DISTRICT	470,456.6	Amador	MOKELUMNE RIVER	Report of Licensee	2010 / 1	Submitted	6/29/2011	<a href="#">View</a> <a href="#">Amend</a>
A004768	EAST BAY MUNICIPAL UTILITY DISTRICT	470,456.6	Amador	MOKELUMNE RIVER	Report of Licensee	2009 / 1	Submitted	6/29/2011	<a href="#">View</a> <a href="#">Amend</a>

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Water Right ID	Primary Owner	Face Value (acre-ft/yr)	County	Source	Type	Year / Revision	Status	Date Submitted	Action
A005128	EAST BAY MUNICIPAL UTILITY DISTRICT	300,193.6	Amador	MOKELUMNE RIVER	Report of Licensee	2016 / 2	Submitted	6/29/2017	<a href="#">View</a> <a href="#">Amend</a>
A005128	EAST BAY MUNICIPAL UTILITY DISTRICT	300,193.6	Amador	MOKELUMNE RIVER	Report of Licensee	2016 / 1	Submitted	3/29/2017	<a href="#">View</a>
A005128	EAST BAY MUNICIPAL UTILITY DISTRICT	300,193.6	Amador	MOKELUMNE RIVER	Report of Licensee	2015 / 1	Submitted	6/29/2016	<a href="#">View</a> <a href="#">Amend</a>
A005128	EAST BAY MUNICIPAL UTILITY DISTRICT	300,193.6	Amador	MOKELUMNE RIVER	Report of Licensee	2014 / 1	Submitted	6/26/2015	<a href="#">View</a> <a href="#">Amend</a>
A005128	EAST BAY MUNICIPAL UTILITY DISTRICT	300,193.6	Amador	MOKELUMNE RIVER	Report of Licensee	2013 / 1	Submitted	6/27/2014	<a href="#">View</a> <a href="#">Amend</a>
A005128	EAST BAY MUNICIPAL UTILITY DISTRICT	300,193.6	Amador	MOKELUMNE RIVER	Report of Licensee	2012 / 1	Submitted	6/28/2013	<a href="#">View</a> <a href="#">Amend</a>
A005128	EAST BAY MUNICIPAL UTILITY DISTRICT	300,193.6	Amador	MOKELUMNE RIVER	Report of Licensee	2011 / 1	Submitted	6/28/2012	<a href="#">View</a> <a href="#">Amend</a>
A005128	EAST BAY MUNICIPAL UTILITY DISTRICT	300,193.6	Amador	MOKELUMNE RIVER	Report of Licensee	2010 / 1	Submitted	6/29/2011	<a href="#">View</a> <a href="#">Amend</a>
A005128	EAST BAY MUNICIPAL UTILITY DISTRICT	300,193.6	Amador	MOKELUMNE RIVER	Report of Licensee	2009 / 1	Submitted	6/29/2011	<a href="#">View</a> <a href="#">Amend</a>
A005128	EAST BAY MUNICIPAL UTILITY DISTRICT	300,193.6	Amador	MOKELUMNE RIVER	Report of Licensee	2008 / 1	Submitted	6/29/2011	<a href="#">View</a> <a href="#">Amend</a>

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<a href="#">Water Right ID</a>	<a href="#">Primary Owner</a>	<a href="#">Face Value (acre-ft/yr)</a>	<a href="#">County</a>	<a href="#">Source</a>	<a href="#">Type</a>	<a href="#">Year / Revision</a>	<a href="#">Status</a>	<a href="#">Date Submitted</a>	<a href="#">Action</a>
A006707	EAST BAY MUNICIPAL UTILITY DISTRICT	30,407.1	Alameda	SAN LEANDRO CREEK	Report of Licensee	2016 / 2	Submitted	6/29/2017	<a href="#">View</a> <a href="#">Amend</a>
A006707	EAST BAY MUNICIPAL UTILITY DISTRICT	30,407.1	Alameda	SAN LEANDRO CREEK	Report of Licensee	2016 / 1	Submitted	3/29/2017	<a href="#">View</a>
A006707	EAST BAY MUNICIPAL UTILITY DISTRICT	30,407.1	Alameda	SAN LEANDRO CREEK	Report of Licensee	2015 / 1	Submitted	6/29/2016	<a href="#">View</a> <a href="#">Amend</a>
A006707	EAST BAY MUNICIPAL UTILITY DISTRICT	30,407.1	Alameda	SAN LEANDRO CREEK	Report of Licensee	2014 / 1	Submitted	6/26/2015	<a href="#">View</a> <a href="#">Amend</a>
A006707	EAST BAY MUNICIPAL UTILITY DISTRICT	30,407.1	Alameda	SAN LEANDRO CREEK	Report of Licensee	2013 / 1	Submitted	6/27/2014	<a href="#">View</a> <a href="#">Amend</a>
A006707	EAST BAY MUNICIPAL UTILITY DISTRICT	30,407.1	Alameda	SAN LEANDRO CREEK	Report of Licensee	2012 / 1	Submitted	6/28/2013	<a href="#">View</a> <a href="#">Amend</a>
A006707	EAST BAY MUNICIPAL UTILITY DISTRICT	30,407.1	Alameda	SAN LEANDRO CREEK	Report of Licensee	2011 / 1	Submitted	6/28/2012	<a href="#">View</a> <a href="#">Amend</a>
A006707	EAST BAY MUNICIPAL UTILITY DISTRICT	30,407.1	Alameda	SAN LEANDRO CREEK	Report of Licensee	2010 / 1	Submitted	6/30/2011	<a href="#">View</a> <a href="#">Amend</a>
A006707	EAST BAY MUNICIPAL UTILITY DISTRICT	30,407.1	Alameda	SAN LEANDRO CREEK	Report of Licensee	2009 / 1	Submitted	6/30/2011	<a href="#">View</a> <a href="#">Amend</a>
A006707	EAST BAY MUNICIPAL UTILITY DISTRICT	30,407.1	Alameda	SAN LEANDRO CREEK	Report of Licensee	2008 / 1	Submitted	6/30/2011	<a href="#">View</a> <a href="#">Amend</a>

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Water Right ID	Primary Owner	Face Value (acre-ft/yr)	County	Source	Type	Year / Revision	Status	Date Submitted	Action
A013156	EAST BAY MUNICIPAL UTILITY DISTRICT	434,962.2	Amador, San Joaquin	MOKELUMNE RIVER	Progress Report by Permittee	2016 / 2	Submitted	6/29/2017	<a href="#">View</a> <a href="#">Amend</a>
A013156	EAST BAY MUNICIPAL UTILITY DISTRICT	434,962.2	Amador, San Joaquin	MOKELUMNE RIVER	Progress Report by Permittee	2016 / 1	Submitted	3/30/2017	<a href="#">View</a>
A013156	EAST BAY MUNICIPAL UTILITY DISTRICT	434,962.2	Amador, San Joaquin	MOKELUMNE RIVER	Progress Report by Permittee	2015 / 1	Submitted	6/29/2016	<a href="#">View</a> <a href="#">Amend</a>
A013156	EAST BAY MUNICIPAL UTILITY DISTRICT	434,962.2	Amador, San Joaquin	MOKELUMNE RIVER	Progress Report by Permittee	2014 / 2	Submitted	6/26/2015	<a href="#">View</a> <a href="#">Amend</a>
A013156	EAST BAY MUNICIPAL UTILITY DISTRICT	434,962.2	Amador, San Joaquin	MOKELUMNE RIVER	Progress Report by Permittee	2014 / 1	Submitted	6/26/2015	<a href="#">View</a>
A013156	EAST BAY MUNICIPAL UTILITY DISTRICT	434,962.2	Amador, San Joaquin	MOKELUMNE RIVER	Progress Report by Permittee	2013 / 1	Submitted	6/27/2014	<a href="#">View</a> <a href="#">Amend</a>
A013156	EAST BAY MUNICIPAL UTILITY DISTRICT	434,962.2	Amador, San Joaquin	MOKELUMNE RIVER	Progress Report by Permittee	2012 / 1	Submitted	6/28/2013	<a href="#">View</a> <a href="#">Amend</a>
A013156	EAST BAY MUNICIPAL UTILITY DISTRICT	434,962.2	Amador, San Joaquin	MOKELUMNE RIVER	Progress Report by Permittee	2011 / 1	Submitted	6/28/2012	<a href="#">View</a> <a href="#">Amend</a>
A013156	EAST BAY MUNICIPAL UTILITY DISTRICT	434,962.2	Amador, San Joaquin	MOKELUMNE RIVER	Progress Report by Permittee	2010 / 1	Submitted	6/29/2011	<a href="#">View</a> <a href="#">Amend</a>

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Water Right ID	Primary Owner	Face Value (acre-ft/yr)	County	Source	Type	Year / Revision	Status	Date Submitted	Action
A015201	EAST BAY MUNICIPAL UTILITY DISTRICT	303,392.1	Amador	MOKELUMNE RIVER	Progress Report by Permittee	2016 / 2	Submitted	6/29/2017	<a href="#">View</a> <a href="#">Amend</a>
A015201	EAST BAY MUNICIPAL UTILITY DISTRICT	303,392.1	Amador	MOKELUMNE RIVER	Progress Report by Permittee	2016 / 1	Submitted	3/29/2017	<a href="#">View</a>
A015201	EAST BAY MUNICIPAL UTILITY DISTRICT	303,392.1	Amador	MOKELUMNE RIVER	Progress Report by Permittee	2015 / 1	Submitted	6/29/2016	<a href="#">View</a> <a href="#">Amend</a>
A015201	EAST BAY MUNICIPAL UTILITY DISTRICT	303,392.1	Amador	MOKELUMNE RIVER	Progress Report by Permittee	2014 / 1	Submitted	6/26/2015	<a href="#">View</a> <a href="#">Amend</a>
A015201	EAST BAY MUNICIPAL UTILITY DISTRICT	303,392.1	Amador	MOKELUMNE RIVER	Progress Report by Permittee	2013 / 1	Submitted	6/27/2014	<a href="#">View</a> <a href="#">Amend</a>
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A018672	EAST BAY MUNICIPAL UTILITY DISTRICT	30,200.0	Contra Costa	BEAR CREEK, SAN PABLO CREEK	Report of Licensee	2016 / 2	Submitted	6/29/2017	<a href="#">View</a> <a href="#">Amend</a>
A018672	EAST BAY MUNICIPAL UTILITY DISTRICT	30,200.0	Contra Costa	BEAR CREEK, SAN PABLO CREEK	Report of Licensee	2016 / 1	Submitted	3/29/2017	<a href="#">View</a>
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A025056	EAST BAY MUNICIPAL UTILITY DISTRICT	853,000.0	San Joaquin	MOKELUMNE RIVER	Progress Report by Permittee	2016 / 2	Submitted	6/29/2017	<a href="#">View</a> <a href="#">Amend</a>
A025056	EAST BAY MUNICIPAL UTILITY DISTRICT	853,000.0	San Joaquin	MOKELUMNE RIVER	Progress Report by Permittee	2016 / 1	Submitted	3/30/2017	<a href="#">View</a>
A025056	EAST BAY MUNICIPAL UTILITY DISTRICT	853,000.0	San Joaquin	MOKELUMNE RIVER	Progress Report by Permittee	2015 / 1	Submitted	6/29/2016	<a href="#">View</a> <a href="#">Amend</a>
A025056	EAST BAY MUNICIPAL UTILITY DISTRICT	853,000.0	San Joaquin	MOKELUMNE RIVER	Progress Report by Permittee	2014 / 1	Submitted	6/26/2015	<a href="#">View</a> <a href="#">Amend</a>
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S020476	EAST BAY MUNICIPAL UTILITY DISTRICT	0.0	San Joaquin	Mokelumne River	Supplemental Statement of Water Diversion and Use	2016 / 1	Submitted	6/29/2017	<a href="#">View</a> <a href="#">Amend</a>
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S000633	EAST BAY MUNICIPAL UTILITY DISTRICT	0.0	Alameda	SAN LEANDRO CREEK	Supplemental Statement of Water Diversion and Use	2016 / 1	Submitted	6/30/2017	<a href="#">View</a> <a href="#">Amend</a>
S000633	EAST BAY MUNICIPAL UTILITY DISTRICT	0.0	Alameda	SAN LEANDRO CREEK	Supplemental Statement of Water Diversion and Use	2015 / 1	Submitted	6/29/2016	<a href="#">View</a> <a href="#">Amend</a>
S000633	EAST BAY MUNICIPAL UTILITY DISTRICT	0.0	Alameda	SAN LEANDRO CREEK	Supplemental Statement of Water Diversion and Use	2014 / 1	Submitted	6/29/2016	<a href="#">View</a> <a href="#">Amend</a>
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S000633	EAST BAY MUNICIPAL UTILITY DISTRICT	0.0	Alameda	SAN LEANDRO CREEK	Supplemental Statement of Water Diversion and Use	2012 / 1	Submitted	6/27/2014	<a href="#">View</a> <a href="#">Amend</a>
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S000633	EAST BAY MUNICIPAL UTILITY DISTRICT	0.0	Alameda	SAN LEANDRO CREEK	Supplemental Statement of Water Diversion and Use	2008 / 1	Submitted	6/30/2011	<a href="#">View</a> <a href="#">Amend</a>

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Water Right ID	Primary Owner	Face Value (acre-ft/yr)	County	Source	Type	Year / Revision	Status	Date Submitted	Action
S000634	EAST BAY MUNICIPAL UTILITY DISTRICT	0.0	Contra Costa	UNST	Supplemental Statement of Water Diversion and Use	2016 / 1	Submitted	6/29/2017	<a href="#">View</a> <a href="#">Amend</a>
S000634	EAST BAY MUNICIPAL UTILITY DISTRICT	0.0	Contra Costa	UNST	Supplemental Statement of Water Diversion and Use	2015 / 1	Submitted	6/29/2016	<a href="#">View</a> <a href="#">Amend</a>
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ATTACHMENT 3

**PROJECT JUSTIFICATION**

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## PROPOSAL SUMMARY

As shown on the following Figure 1, the East Bay Municipal Utility District (EBMUD) and the City of Hayward (Hayward) are the exclusive GSAs, covering the entire East Bay Plain Subbasin (Subbasin) area. This proposal (the proposed project) is to develop a DWR-approved single GSP for the entire East Bay Plain Subbasin (Basin No. 2-009.04) using the best available science. The GSP development will include conducting hydrogeologic investigations and developing an integrated hydrologic model (groundwater model) for the entire Subbasin. The model will then be used as an analysis tool to establish sustainability goals, define undesirable results, and set minimum thresholds. Based on the investigation and analyses, a single GSP -- consisting of governance, basin setting, sustainable management criteria, monitoring network and protocols, sustainable management actions, and an implementation plan -- will be developed and submitted to DWR for approval. It is anticipated that available grant funding will be applied to technical studies and development of a robust model.

The GSAs, EBMUD and Hayward, recognize that the preparation of a technically sound GSP based on an accurate hydrogeologic conceptual and a groundwater model of the Subbasin is critically important for regional cooperation, long-term water supply planning, and emergency water supply reliability in the densely populated San Francisco Bay Area. The GSAs will share GSP development costs, jointly develop sustainability criteria and GSP governance, and implement the approved GSP to achieve sustainability goals. It will include data sharing, close coordination in stakeholder communication and engagement, and implementing the GSP in a coordinated fashion.

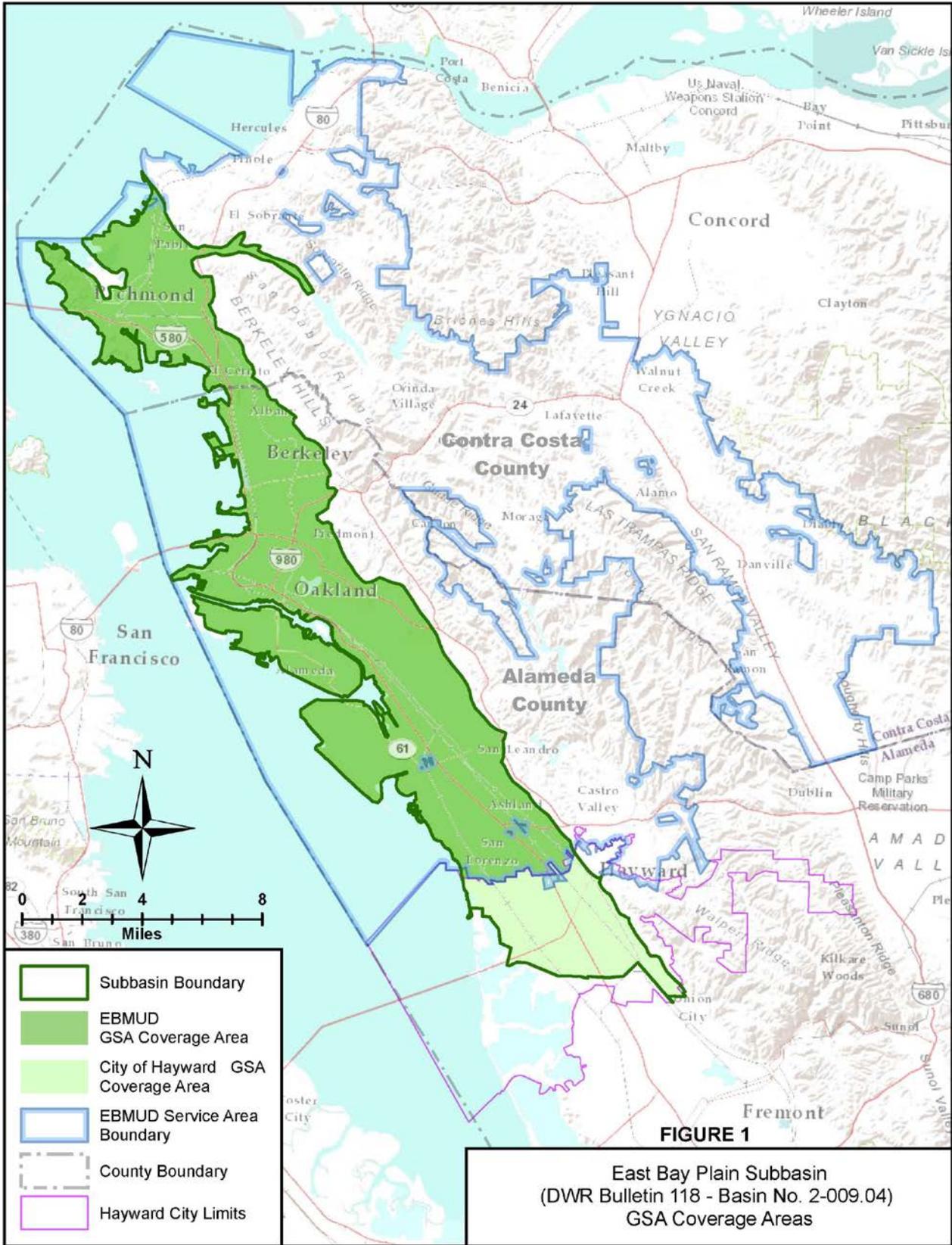
Currently, the exclusive GSAs for the Subbasin -- EBMUD and Hayward -- rely almost entirely on imported surface water to meet demand. During the most recent drought, EBMUD saw curtailments to its primary Mokelumne surface water supply and virtually unprecedented cutbacks to water allocations from the Central Valley Project, resulting in the need for EBMUD to secure additional supplemental imported water supplies. In Hayward, residential per capita water use dropped below levels being used by the State to calculate minimum health and safety needs, raising concerns that future severe rationing may not be achievable.

In addition to the drought, the imported water supplies to the region are also at risk from both climate change and natural disasters. Climate change is anticipated to reduce the size of the Sierra snowpack, leading to increased variability in the quantity of imported water available each year. An earthquake on the Hayward Fault, which defines the eastern boundary of the Subbasin, could damage the water supply infrastructure, leaving both EBMUD and Hayward without water for a period of time in which emergency water supply will be critical. Given the cutbacks experienced during the drought, and the threat to imported water supplies posed by natural disasters and climate change, both EBMUD and Hayward recognize the need to re-evaluate the reliability of current water supply sources and the potential to develop local and sustainable supplemental water supplies. In contrast to imported supplies, local groundwater can be a manageable and reliable resource during droughts and other water supply emergencies. In order to develop this resource while preserving the beneficial uses and avoiding undesirable results, the effects of groundwater production from the Subbasin need to be quantified.

The key part of this proposal is the development of a groundwater model for the Subbasin that will allow EBMUD and Hayward to coordinate and also collaborate with other local agencies and stakeholders, to ensure that the interconnected water resources of the region are managed sustainably. Model development will require additional technical studies, particularly for the northern portions of the Subbasin and implementation of the GSP based on the model results will require additional planning and coordination efforts throughout the Subbasin as a whole. The tasks required to successfully develop and implement the GSP include, but are not limited to:

- Gathering, synthesizing, and analyzing existing hydrogeologic data in order to compile essential data sets for conceptual model development, groundwater model inputs, and definition of data gaps;
- Building a groundwater model to quantify the water budget and sustainable yield, as well as the uncertainty associated with each;
- Establishing sustainable management criteria based on the understanding of minimum thresholds and undesirable results provided by the groundwater model;
- Designing the monitoring network to track minimum thresholds and undesirable results;
- Developing and conducting a stakeholder communication and engagement program, including a Technical Advisory Committee or an equivalent, and active stakeholder groups to provide stakeholders and the public opportunities to participate in the GSP development process; and
- Developing and adopting a basin-wide governance structure to jointly implement the GSP and sustainability measures.

The recent drought underscored the importance of sustainable groundwater management. As proposed, development of a GSP will help to better understand the role groundwater may play in meeting future water supply needs, while ensuring long-term sustainable management of valuable groundwater resources.



## **TECHNICAL NEED**

To develop a single GSP covering the entire East Bay Plain Subbasin, it will require significant technical effort. Specific studies and targeted investigations are needed to address outstanding questions and develop a sound groundwater model. Generally, technical needs can be categorized into two types: intrabasin technical investigations and interbasin (regional) hydrogeologic investigations.

### ***Intrabasin Technical Investigation:***

The majority of the technical work conducted to date has focused on the southern portion of the Subbasin. These previous investigations include long-term pumping tests, geophysical well logs, deep extensometer data, high-resolution seismic transects, and water quality analyses. The data collected during these investigations was used to create a groundwater model for the southern portion of the subbasin as a part of the AB3030/SB1938 Groundwater Management Plan development. Yet, it still requires further refinement to accurately represent subbasin boundary and interbasin flow for SGMA purposes.

Moreover, the northern portion of the Subbasin has yet to be thoroughly investigated. Hydrogeologic parameters such as transmissivity and storage capacity, as well as stratigraphic information including aquifer thickness and basin water quality, have not yet been defined. The studies required to define these parameters are required before a subbasin-wide groundwater model can be developed. Intrabasin technical investigations will include defining hydrogeologic characteristics of the Subbasin, conducting seawater intrusion studies, identifying data gaps, conducting water quality analyses, and developing a subsidence monitoring strategy. These investigations will apply and build upon data and findings from previous investigations and modeling of the Subbasin.

In addition to the current and future supplemental and emergency water supply interests of the two GSAs, there are other in-basin stakeholder interests that should also be considered. For example, the City of Berkeley is currently updating its Watershed Management Plan and stormwater permitting process including an assessment of water quality and groundwater recharge: This work should be compatible with SGMA goals. The City of Richmond would like to understand basin characteristics in its area and groundwater recharge for its land use planning and possible connections to water recycling. The City of San Pablo and other cities want to ensure its local groundwater users' pumping interests are protected through sustainable management. The City of Alameda is interested in managing subsidence for the island of Alameda. Throughout the Subbasin, there exists legacy contaminant sites and thus, a basin-wide water quality assessment needs to be completed as a part of technical investigations to safeguard the local groundwater resource.

### ***Interbasin Hydrogeologic Investigation:***

The East Bay Plain Subbasin is one of four subbasins that comprise the larger Santa Clara Groundwater Basin. GSP development requires understanding how management actions and sustainability goals developed for the Subbasin may affect neighboring subbasins. In the southern Subbasin, the boundary between the East Bay Plain and Niles Cone Subbasins is not a strict barrier to flow between the subbasins and the degree of connectivity between the subbasins is not yet thoroughly understood. Improved understanding of the interbasin connectivity will be essential to understand subbasin hydrogeologic boundaries and to develop a robust groundwater model that accurately accounts for interbasin flow.

Similarly, the possibility of hydrogeologic connection with the San Mateo Subbasin also needs to be investigated to understand regional groundwater hydrogeology so that sustainable groundwater management actions can account for regional interests.

As with stakeholders within the Subbasin, stakeholders representing adjacent subbasins have expressed interest in the GSP process. Local cities have interests related to emergency water supply and coordination with stormwater planning. Other subbasins in the region have begun to develop their own groundwater management plans, highlighting the need for coordination and a better technical understanding of subbasin boundary interactions.

### ***Why are technical studies and a groundwater model necessary?***

Technical studies and investigations will define the current state of the Subbasin's hydrogeological features including geological layers, fault zones, existing Subbasin water quality including current state of seawater intrusion, data gaps, monitoring needs, recharge areas, groundwater dependent ecosystem and hydrogeologic parameters such as geophysical properties, the Subbasin's storativity, transmissivity values and current storage. The information and the data obtained from these investigations will be applied to develop a groundwater model. The model then will be used as an analysis tool to define sustainability criteria, water budget, safe yield, and analyze beneficial uses, sustainable management scenarios and make planning decisions. The model will also be useful to understand the interbasin relationship and regional groundwater interaction.

## **PROJECT SUPPORT**

Prior to formation of GSAs in the Subbasin, EBMUD initiated stakeholder outreach efforts to identify eligible local agencies' interests in the formation of the GSAs in January 2015. DWR was invited to provide an overview of the SGMA compliance process and participate in the discussion. Local stakeholders requested EBMUD to take the lead in SGMA compliance efforts and form a GSA as EBMUD is most suited to undertake the SGMA compliance responsibilities. Once the tentative decision was made to form a GSA, EBMUD met with Alameda County Water District which manages the adjoining Niles Cone Subbasin and Hayward which overlies the remaining portion of the East Bay Plain Subbasin to discuss the needs for GSA formation and coordination among agencies in GSP development and implementation. Subsequently, EBMUD completed the GSA filing process and became an exclusive GSA for a portion of the Subbasin on November 28, 2016 after the 90-day public comment period closed. Similarly, Hayward became the exclusive GSA for the remaining portion of the Subbasin on June 6, 2017. EBMUD and Hayward have been coordinating and collaborating with in-basin stakeholders as well as stakeholders from neighboring Niles Cone and San Mateo Subbasins. Stakeholders represented cities, counties, environmental interests, the general public, Lawrence Berkeley National Laboratory, and elected offices. Stakeholders have expressed support in the GSAs' sustainable groundwater management efforts and grant funding request. Attached are letters of support for the grant application.

Throughout the GSA formation process and following SGMA compliance activities, EBMUD and Hayward have been closely coordinating to comply with SGMA requirements. In July 2017, the two GSAs entered into a Memorandum of Understanding (MOU) for coordination and cooperation related to the sustainable groundwater management of the East Bay Plain Subbasin (see attached MOU). To date, the GSAs have spent substantial resources on groundwater investigations in the southern portion of the East Bay Plain Subbasin. GSP development costs will be shared between the two GSAs under a cost-sharing arrangement that is currently being negotiated. As described above, there are a variety of technical issues to address and numerous stakeholder interests to consider in developing the GSP. Grant funding will allow the GSAs to develop a robust model and a comprehensive study that addresses stakeholder interests. Thus, grant funding is essential in developing an effective GSP for the entire Subbasin and for continuing the stakeholder communication and engagement process.

**MEMORANDUM OF UNDERSTANDING BETWEEN  
CITY OF HAYWARD AND EAST BAY MUNICIPAL UTILITY DISTRICT  
FOR COORDINATION AND COOPERATION RELATED TO THE  
SUSTAINABLE GROUNDWATER MANAGEMENT  
OF THE EAST BAY PLAIN SUBBASIN**

This Memorandum of Understanding (“MOU”) is made and entered into on this 31<sup>st</sup> day of July 2017 between the City of Hayward (“Hayward”), a municipal corporation, and the East Bay Municipal Utility District (“EBMUD”), a municipal utility district, for coordination and cooperation in planning and implementing Sustainable Groundwater Management Act compliance activities for the groundwater subbasin designated in California Department of Water Resources (“DWR”) Bulletin 118 as Basin No. 2-009.04 (the “East Bay Plain Subbasin” or “Subbasin”). Hayward and EBMUD are hereinafter sometimes referred to individually as a “Party” and collectively as the “Parties.”

**RECITALS**

**WHEREAS**, the California Legislature has adopted, and Governor Jerry Brown signed into law, the Sustainable Groundwater Management Act of 2014 (“SGMA”), which authorizes and requires local agencies to sustainably manage local groundwater resources; and

**WHEREAS**, SGMA requires that, by January 31, 2022, all groundwater basins designated by the DWR as high- or medium-priority basins that are not subject to critical conditions of overdraft shall be managed under a single Groundwater Sustainability Plan (“GSP”), or under coordinated GSPs prepared by the Groundwater Sustainability Agency or Agencies (“GSA”) managing the basin; and

**WHEREAS**, in the circumstances described in California Water Code section 10735.2(a)(1), SGMA authorizes the State Water Resources Control Board to designate a high- or medium-priority basin as a probationary basin and to exercise certain management authority thereof; and

**WHEREAS**, California Water Code section 10735.2(a)(1)(B) provides that a basin will not be designated as a probationary basin if a collection of local agencies has formed a GSA or prepared agreements to develop one or more GSPs that will collectively serve as a GSP for the entire basin; and

**WHEREAS**, the East Bay Plain Subbasin is categorized as a medium-priority groundwater basin and therefore SGMA requires sustainable management of the entire Subbasin pursuant to one or more GSPs; and

**WHEREAS**, Hayward and EBMUD are the exclusive GSAs for the entire portion of the East Bay Plain Subbasin within their respective boundaries; and

**WHEREAS**, the Parties wish to work cooperatively to prepare a single GSP that covers the entire East Bay Plain Subbasin; and

**WHEREAS**, the Parties intend to develop and enter into a future cooperating agreement defining the roles and responsibilities of each Party related to SGMA compliance and sustainable management of the East Bay Plain Subbasin (“Cooperating Agreement”); and

**WHEREAS**, the Parties intend for the Cooperating Agreement to address in greater detail the governance structure, decision-making procedures, and allocation of responsibilities relative to developing and implementing a GSP for the East Bay Plain Subbasin, to ensure the coordinated management and implementation of SGMA in the Subbasin; and

**WHEREAS**, DWR is tasked with evaluating the GSP developed for a basin, including assessing whether the agency submitting the GSP has the legal authority and financial resources necessary to implement the GSP (Cal. Code Regs., tit. 23, § 355.4); and

**WHEREAS**, DWR has established the Sustainable Groundwater Planning Grant Program to provide Proposition 1 funds for GSP development and implementation; and

**WHEREAS**, as depicted on Exhibit A, there exists an area within the East Bay Plain Subbasin of approximately 21 acres, located at and around 32992 Mission Boulevard in Union City, that is outside the boundaries of both Parties and is currently outside the management area of any GSA (the “Subject Area”); and

**WHEREAS**, to ensure that the entire East Bay Plain Subbasin is sustainably managed, the Parties desire to include the Subject Area within the forthcoming East Bay Plain Subbasin GSP and to manage that area in compliance with SGMA; and

**WHEREAS**, the Parties desire to enter into this MOU to memorialize their intent to prepare a single GSP to sustainably manage the entire East Bay Plain Subbasin in compliance with SGMA, including the Subject Area, and to avoid the need for State intervention in the basin; and

**WHEREAS**, the Parties additionally desire to enter into this MOU to express their commitment to sustainably manage the entire East Bay Plain Subbasin, including the Subject Area, and to memorialize certain principles of agreement that will guide the Parties’ development of a more comprehensive Cooperating Agreement and ongoing coordination and implementation of SGMA compliance measures in the Subbasin.

**AGREEMENT**

**NOW, THEREFORE**, the Parties agree as follows:

**ARTICLE I: PURPOSE AND TERM OF AGREEMENT**

1. The Recitals above are incorporated and adopted as if fully set out herein.
2. *Purpose.* The purpose of this MOU is to initially outline the roles and responsibilities of the Parties to coordinate and cooperate on SGMA-related efforts for the East

Bay Plain Subbasin, including the development of a Cooperating Agreement under which the Parties will jointly prepare and implement a single GSP to sustainably manage the entire East Bay Plain Subbasin in compliance with SGMA.

3. *Term.* This MOU shall remain in effect until such time as the Parties execute a Cooperating Agreement or either Party voluntarily terminates the MOU in writing, whichever occurs sooner.

## **ARTICLE II: SGMA COOPERATION AND COORDINATION**

1. *Single GSP for Entire Subbasin.* The Parties agree that cooperating on a single GSP for the entire East Bay Plain Subbasin will foster effective, coordinated, and efficient groundwater management and is in the best interest of the Parties and the Subbasin. Accordingly, the Parties will work cooperatively to develop a single GSP to sustainably manage the entire East Bay Plain Subbasin in compliance with SGMA.

2. *Comprehensive Basin Management.* The Parties will include the Subject Area within the forthcoming GSP and agree to continue to work in good faith with other local agencies and affected landowners to include it within the boundaries of a GSA. If any additional portion of the Subbasin is determined in the future to be outside any GSA's management area, the Parties will similarly include that additional territory within the GSP and work in good faith to include it within a GSA.

3. *Principles of Cooperating Agreement.* The Parties intend to negotiate in good faith a Cooperating Agreement for the sustainable management of the East Bay Plain Subbasin based on the following principles:

- a. *Collaboration.* The Parties recognize that collaboration and communication is key to the development and implementation of a successful GSP. The Parties will develop a decision-making process that encourages decisions driven by mutual understanding and respect, seeks to prevent impasse, and ensures that neither Party will inappropriately benefit at the expense of the other. The Parties agree that, consistent with SGMA, the Cooperating Agreement should recognize each GSA's independent decision-making authority within its jurisdictional area. The Parties will respect each GSA's interest and expertise in overseeing implementation within its jurisdictional area.
- b. *Governance Structure.* The Parties agree that a clear governance and decision-making structure is important to the long-term success of sustainable management efforts in the East Bay Plain Subbasin. The Cooperating Agreement will set forth a governance structure under which the Parties will develop and implement the GSP. The Parties anticipate that this governance structure may include the use of coordinated management areas to recognize the independent authority for each GSA to manage groundwater within their jurisdictional areas.

- c. *Stakeholder Outreach and Involvement.* The Parties are committed to an inclusive and transparent process that proactively seeks stakeholder involvement. The Parties will work jointly to develop an agreed-upon outreach plan, with each Party responsible for guiding efforts within its respective jurisdiction.
- d. *Financing.* The Parties recognize that the coordination of financial resources will be a key component of their respective SGMA collaboration efforts. The Cooperating Agreement will include mutually agreeable provisions for sharing costs to prepare and implement the GSP. The Parties agree to negotiate in good faith on an equitable cost-share that reflects the benefit of activities to the Parties. The cost-sharing arrangement will also take into account any grant funding that is secured from DWR to assist with preparation of the GSP.
- e. *Dispute Resolution.* The Parties recognize that in the course of collaboration, it is to the Parties' mutual benefit to identify in advance a procedure for productively addressing and resolving disputes. The Cooperating Agreement will set out a negotiated and mutually agreeable procedure for resolving disputes between the Parties.

4. *Grant Funding.* The Parties agree to cooperate on preparation of a Proposition 1 grant application to assist in funding preparation of the GSP. EBMUD agrees to serve as the grant applicant and, if the application is successful, to administer the grant. Hayward agrees to devote in-house staff or outside resources to support EBMUD's preparation of the grant application and further agrees to provide support as needed to enable EBMUD to meet its grant agreement obligations.

5. *Initial Administrative Costs.* Pending the development of the Cooperating Agreement, each Party agrees to bear its own costs incurred with respect to initial efforts under this MOU, including costs relative to developing the Cooperating Agreement. As provided for in Article II.3.(d), the Parties envision that the Cooperating Agreement will include mutually agreeable provisions for sharing costs to prepare and implement the GSP.

### **ARTICLE III: GENERAL PROVISIONS**

1. *Binding on Successors.* Except as otherwise provided in this MOU, the rights and duties of the Parties may not be assigned or delegated without the approval of the non-assigning party. This MOU shall inure to the benefit of, and be binding upon, the successors and assigns of the Parties hereto.

2. *Notice.* All notices required to be given, or which may be given by either Party to the other, shall be deemed to have been fully received when made in writing and deposited in the United States mail, registered and postage prepaid and addressed to the respective Parties as follows:

City of Hayward  
Director of Utilities and Environmental Services  
777 B Street  
Hayward, CA 94541

East Bay Municipal Utility District  
Director of Water and Natural Resources  
375 11<sup>th</sup> Street, MS 901  
Oakland, CA 94607

3. *Counterparts.* This MOU may be executed by the Parties in separate counterparts, each of which when so executed and delivered shall be an original. All such counterparts shall together constitute but one and the same instrument.

4. *Choice of Law.* This MOU shall be governed by the laws of the State of California.

5. *Severability.* If one or more clauses, sentences, paragraphs or provisions of this MOU are held to be unlawful, invalid or unenforceable, it is hereby agreed by the Parties that the remainder of the MOU shall not be affected thereby. Such clauses, sentences, paragraphs or provisions shall be deemed reformed so as to be lawful, valid and enforced to the maximum extent possible.

6. *Headings.* The paragraph headings used in this MOU are intended for convenience only and shall not be used in interpreting this MOU or in determining any of the rights or obligations of the Parties to this MOU.

7. *Construction and Interpretation.* This MOU has been arrived at through negotiation and each Party has had a full and fair opportunity to revise the terms of this MOU. As a result, the normal rule of construction that any ambiguities are to be resolved against the drafting Party shall not apply in the construction or interpretation of this MOU.

8. *Waivers.* Waiver of any breach or default hereunder shall not constitute a continuing waiver or a waiver of any subsequent breach either of the same or of another provision of this MOU and forbearance to enforce one or more of the remedies provided in this MOU shall not be deemed to be a waiver of that remedy.

9. *Third Party Beneficiaries.* This MOU shall not create any right or interest in any non-Party or in any member of the public as a third-party beneficiary.

10. *Entire Agreement.* This MOU constitutes the entire agreement between the Parties with respect to the subject matter thereof and supersedes all prior agreements and understandings, written or oral.

11. *Amendments.* This MOU may be amended from time to time by written agreement executed by the Parties.

IN WITNESS WHEREOF, the Parties hereto have executed this MOU the day and year first above written.

CITY OF HAYWARD

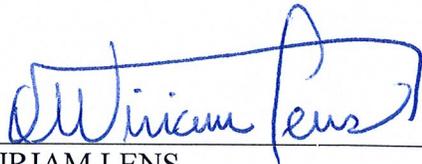
Recommended by:

  
\_\_\_\_\_  
ALEX AMERI  
Director of Utilities & Environmental Services

By:   
\_\_\_\_\_  
KELLY McADOO  
City Manager

Approved as to form:

  
\_\_\_\_\_  
MICHAEL LAWSON  
City Attorney

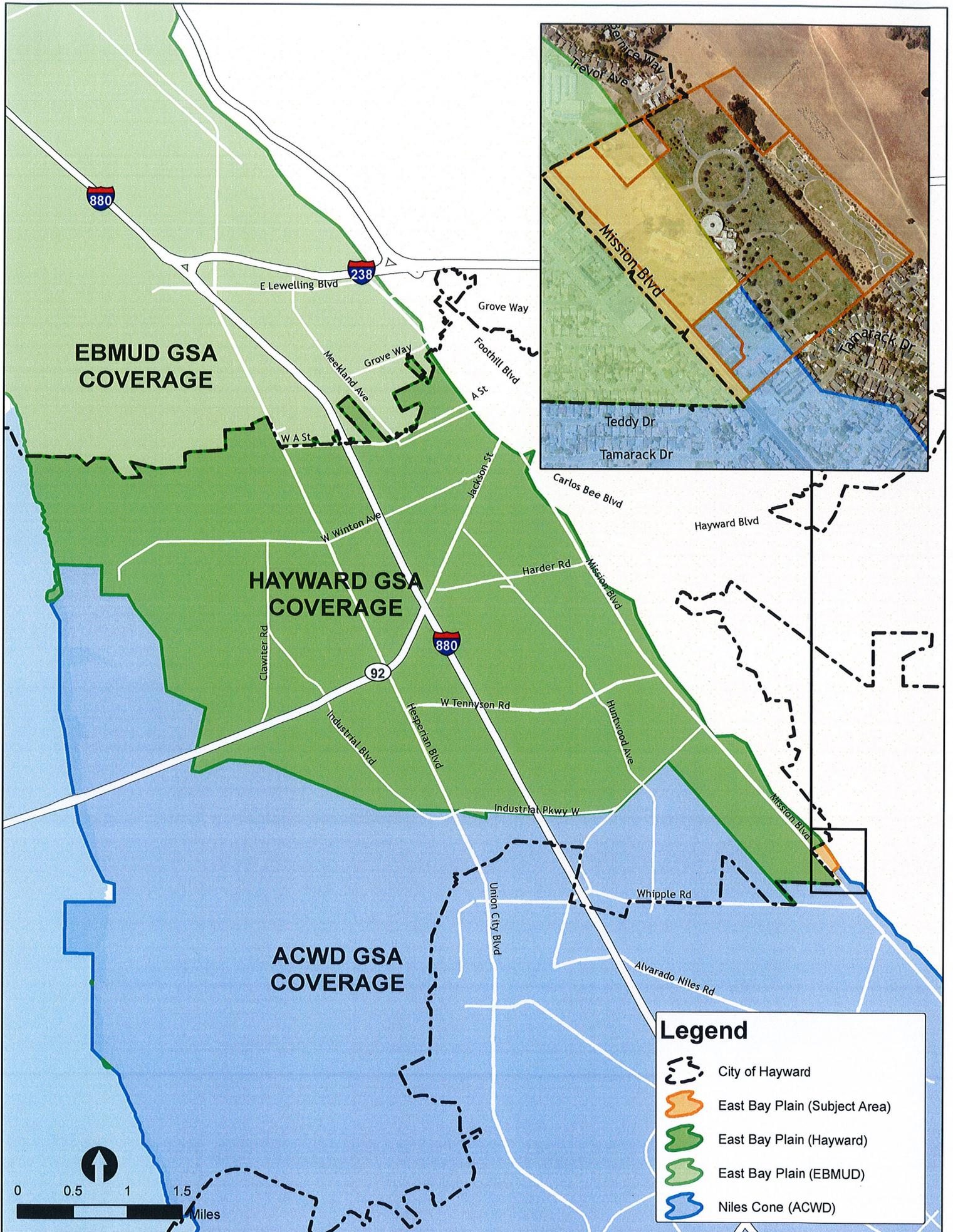
Attest:   
\_\_\_\_\_  
MIRIAM LENS  
City Clerk

EAST BAY MUNICIPAL UTILITY DISTRICT

  
\_\_\_\_\_  
RICHARD SYKES  
Director of Water & Natural Resources

Approved as to form:

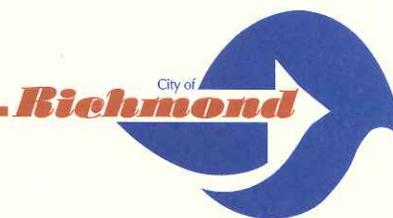
  
\_\_\_\_\_  
for the Office of General Counsel



**Legend**

-  City of Hayward
-  East Bay Plain (Subject Area)
-  East Bay Plain (Hayward)
-  East Bay Plain (EBMUD)
-  Niles Cone (ACWD)

WATER RESOURCE RECOVERY DEPARTMENT



September 5, 2017

Ms. Heather Shannon  
Division of Integrated Regional Water Management  
California Department of Water Resources  
PO Box 942836  
Sacramento, CA 94326-0001

SUBJECT: EBMUD's Sustainable Groundwater Planning (SGWP) Grant Proposal

Dear Ms. Shannon:

The City of Richmond (City) overlies the northern most portion of the East Bay Plain Subbasin. This subbasin is the source of local groundwater used for non-potable water needs across the City. As discussed in the Contra Costa County Grand Jury's 2016 report, the City recognizes the importance of preserving this precious local groundwater resource. In addition, we are considering future potential uses of this subbasin.

As such, the City has been cooperatively working with EBMUD to support sustainable groundwater management activities led by EBMUD. Development of a subbasin-wide Groundwater Sustainability Plan (GSP) requires significant financial resources, and the funding available under the SGWP grant program would enable EBMUD to develop a robust, technically sound GSP.

Therefore, we would like to express our support for EBMUD's Sustainable Groundwater Planning (SGWP) Grant Proposal, and we encourage the Department of Water Resources to award grant funding to EBMUD so it can develop a single GSP for the East Bay Plain Subbasin.

Sincerely,

A handwritten signature in blue ink, appearing to read "Ryan Smith".

Ryan Smith  
Director of Water Resource Recovery



## City of Alameda, California

September 5, 2017

Ms. Heather Shannon  
Division of Integrated Regional Water Management  
California Department of Water Resources  
PO Box 942836  
Sacramento, CA 94326-0001

SUBJECT: EBMUD's Sustainable Groundwater Planning (SGWP) Grant Proposal

Dear Ms. Shannon:

The City of Alameda (City) overlies the East Bay Plain Subbasin. This subbasin is the source of local groundwater used for non-potable water needs across the City. For the City, the importance of sustainably managing this local groundwater subbasin is much more than water supply. As the island of Alameda is situated closely to the San Francisco Bay, the City is interested in preventing potential land subsidence and seawater intrusion induced by unsustainable groundwater pumping.

As such, the City has been cooperatively working with EBMUD to support sustainable groundwater management activities led by EBMUD. Development of a basin-wide Groundwater Sustainability Plan (GSP) requires significant financial resources, and the funding available under the SGWP grant program would enable EBMUD to develop a robust, technically sound GSP.

Therefore, we would like to express our support for EBMUD's Sustainable Groundwater Planning (SGWP) Grant Proposal, and we encourage the Department of Water Resources to award grant funding to EBMUD so it can develop a single GSP for the East Bay Plain Subbasin.

Thank you for your consideration.

A handwritten signature in black ink, appearing to be "Liam Garland", written over a horizontal line.

Liam Garland  
Acting Public Works Director  
510-747-7962  
lgarland@alamedaca.gov

September 12, 2017



Ms. Heather Shannon  
Division of Integrated Regional Water Management  
California Department of Water Resources  
PO Box 942836  
Sacramento, CA 94326-0001

**SUBJECT: EBMUD's Sustainable Groundwater Planning Grant Proposal**

Dear Ms. Shannon:

The City of San Pablo (City) is nestled between the City of Richmond and Contra Costa County and neighboring cities of El Cerrito, Hercules, and Pinole. The City overlies the northern most portion of the East Bay Plain Subbasin. This subbasin is the source of local groundwater used for non-potable water needs across the City. As discussed in the Contra Costa County Grand Jury's 2016 report, the City recognizes the importance of this precious local groundwater resource and supports development of the Groundwater Sustainability Plan (GSP) for the East Bay Plain Subbasin.

The City has been cooperatively working with EBMUD to support sustainable groundwater management activities led by EBMUD. Development of a subbasin-wide GSP requires significant financial resources, and the funding available under the SGWP grant program would enable EBMUD to develop a robust, technically sound GSP.

Therefore, we would like to express our support for EBMUD's Sustainable Groundwater Planning (SGWP) Grant Proposal and we encourage the Department of Water Resources to award grant funding to EBMUD so it can develop a single GSP for the East Bay Plain Subbasin.

Sincerely,

Matt Rodriguez  
City Manager



September 12, 2017

Ms. Heather Shannon  
Division of Integrated Regional Water Management  
California Department of Water Resources  
PO Box 942836  
Sacramento, CA 94326-0001

**Subject: Proposition 1 Sustainable Groundwater Planning Grant for the East Bay Plain Groundwater Subbasin**

Dear Ms. Shannon:

This letter is to express support for the East Bay Municipal Utility District's (EBMUD) submittal of a funding assistance application under the Proposition 1 Sustainable Groundwater Planning Grant Program for development of a Groundwater Sustainability Plan (GSP) for the East Bay Plain Groundwater Subbasin (Basin No. 2-009.04). EBMUD will be working collaboratively with the City of Hayward to ensure sustainable management of this entire Subbasin.

The Bay Area Water Supply and Conservation Agency (BAWSCA) is a special district that provides regional water supply planning, water resource development, and water conservation program services to enhance the reliability of the 16 cities (including Hayward), 8 water districts, and 2 private water providers that serve water to over 1.78 million people and 40,000 commercial, industrial and institutional accounts in Alameda, San Mateo and Santa Clara Counties. BAWSCA's creation was enabled by the California Legislature to protect the health, safety and economic well-being of the people, businesses and community organizations within its service area.

Recent drought conditions have highlighted the importance of protecting local groundwater resources. BAWSCA is pleased to see the City of Hayward, a BAWSCA member agency, and EBMUD, step up and agree to become Groundwater Sustainability Agencies, with responsibilities for ensuring long-term sustainable management of the groundwater resources in the East Bay Plain Subbasin. It is BAWSCA's understanding that EBMUD and the City of Hayward have agreed to partner on preparing a single GSP for the entire East Bay Plain Subbasin. BAWSCA has a key interest in groundwater management throughout the region and intends to support its member agencies serving as Groundwater Sustainability Agencies.

A grant award would significantly augment local funding for development of the GSP and help further the understanding of the region's groundwater resources. BAWSCA urges the Department of Water Resources to award funding for this effort in consideration of its importance to the City of Hayward, EBMUD, the Bay Area and the State.

Sincerely,

A handwritten signature in blue ink that reads "Nicole Sandkulla". The signature is fluid and cursive.

Nicole Sandkulla  
CEO and General Manager

cc: Alex Ameri, City of Hayward  
Michael Tognolini, EBMUD



Office of Councilmember Linda Maio  
City of Berkeley, District 1

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September 15, 2017

Ms. Heather Shannon  
Division of Integrated Regional Water Management  
California Department of Water Resources  
PO Box 942836  
Sacramento, CA 94326-0001

East Bay Municipal Utility District's Sustainable Groundwater Planning (SGWP)  
Grant Proposal

Dear Ms. Shannon:

As a Councilmember representing West Berkeley, and as the person who initiated Berkeley's Watershed Management Plan some years ago, I am particularly interested in East Bay Municipal Utility District's (EBMUD) Groundwater Sustainability Plan (GSP) and the EBMUD grant proposal to CSWR.

The City of Berkeley is currently updating our Watershed Management Plan, and the GSP relates to the storm water permitting process. Currently, best management practices are being developed to address storm water management including water quality, flood control, environmental restoration, and groundwater recharge. Berkeley overlies a portion of the northern East Bay Plain Subbasin. This subbasin is the source of local groundwater used for non-potable water needs across the City.

Berkeley has participated in local discussions with EBMUD regarding sustainable groundwater management activities in the subbasin. Development of a basin-wide (GSP) requires significant financial resources, and the funding available under the SGWP grant program would enable EBMUD to develop a robust, technically sound GSP. Therefore, I encourage the Department of Water

Resources to award grant funding to EBMUD so it can lead the effort to develop a GSP for the East Bay Plain Subbasin.

Sincerely,

A handwritten signature in cursive script that reads "Linda Maio".

Councilmember Linda Maio  
City of Berkeley, District 1



September 19, 2017

State of California  
Department of Water Resources  
Financial Assistance Program  
1416 9th Avenue  
Sacramento, CA 95814

**Subject: Sustainable Groundwater Planning Grant for the East Bay Plain Groundwater Subbasin**

To Whom It May Concern:

This letter is to express support for East Bay Municipal Utility District's (EBMUD) submittal of an application for funding assistance under the Proposition 1 Sustainable Groundwater Planning Grant Program to prepare a Groundwater Sustainability Plan (GSP) for the East Bay Plain Groundwater Subbasin (Basin No. 2-009.04).

Among its many functions, the Alameda County Public Works Agency is responsible for administering groundwater regulations through its Well Standards Program. This Program provides for the coordination of well permitting and monitoring activities for the City of Hayward and other communities that overlie the East Bay Plain Subbasin. Alameda County is a key stakeholder in the Subbasin and its sustainable management is critical to the groundwater protection work that we do through the Well Standards Program.

It is our understanding that EBMUD and the City of Hayward will be working cooperatively to prepare a single GSP for the East Bay Plain Basin. Alameda County's well permitting and monitoring activities are located within the water service areas of EBMUD and Hayward and we have enjoyed collaborative relationships with both agencies. The County intends to support development of the GSP for the East Bay Plain Basin and we urge the Department of Water Resources to award funding to EBMUD for preparation of the GSP.

Sincerely,

Daniel Woldesenbet, Ph.D., P.E.  
Director and County Engineer

DW/JY/dc



# Hayward Area Recreation and Park District

## ***Board of Directors***

Louis M. Andrade  
Rick J. Hatcher  
Paul W. Hodges, Jr.  
Minane Jameson  
Carol A. Pereira

## ***General Manager***

Paul McCreary

September 1, 2017

State of California  
Department of Water Resources  
Financial Assistance Program  
1416 9<sup>th</sup> Avenue  
Sacramento, CA 95814

To Whom It May Concern:

Subject: Sustainable Groundwater Planning Grant for the East Bay Plain  
Groundwater Basin

This letter is to express support for East Bay Municipal Utility District's (EBMUD) submittal of an application for funding assistance under the Proposition 1 Sustainable Groundwater Planning Grant Program to prepare a Groundwater Sustainability Plan (GSP) for the East Bay Plain Groundwater Basin (Basin No. 2-009.04).

The Hayward Area Park and Recreation District (HARD) is an independent special use district that provides park and recreation services to 280,000 residents in the City of Hayward and surrounding unincorporated areas of Alameda County. HARD is governed by an elected five-member Board of Directors and serve to enrich the quality of life in our community by providing a variety of recreation activities, parks and facilities that promote health and wellness, learning and fun.

The East Bay Plain Basin underlies a portion of District's service area. HARD utilizes groundwater from this Basin to irrigate one of our largest and most heavily used family sites, Kennedy Park, as well as Mission Hills Golf Course. Sustainable management of the East Bay Plain Basin is critical to our ability to maintain the overall health and appeal of these two sites.

It is our understanding that EBMUD and the City of Hayward will be working cooperatively to prepare a single GSP for the East Bay Plain Basin. HARD's facilities are located within the water service areas of EBMUD and Hayward, and we have enjoyed collaborative relationships with both agencies. The District intends to support development of the GSP for the East Bay Plain Basin, and we urge the Department of Water Resources to award funding to EBMUD for preparation of the GSP.

Sincerely,

A handwritten signature in blue ink that reads "Paul McCreary". The signature is fluid and cursive, with the first name "Paul" being the most prominent part.

Paul McCreary  
General Manager

cc: Alex Ameri, City of Hayward  
Michael Tognolini, EBMUD

STATE CAPITOL  
P.O. BOX 942849  
Sacramento, CA 94249-0020  
(916) 319-2020  
FAX (916) 319-2120

DISTRICT OFFICE  
22320 Foothill Blvd, Suite 540  
Hayward, CA 94541  
(510) 583-8818  
FAX (510) 583-8800



STANDING COMMITTEES:  
CHAIR: Environmental Safety &  
Toxic Materials  
Agriculture  
Public Safety  
Revenue and Taxation  
Utilities and Energy

September 19, 2017

Ms. Heather Shannon  
Division of Integrated Regional Water Management  
California Department of Water Resources  
P.O. Box 942836  
Sacramento, CA 94326-0001

**RE: Proposition 1 Sustainable Groundwater Planning Grant for the East Bay Plain  
Groundwater Subbasin**

Dear Ms. Shannon:

I am writing in support of the East Bay Municipal Utility District's (EBMUD) application for funding assistance under the Proposition 1 Sustainable Groundwater Planning Grant Program for development of a Groundwater Sustainability Plan (GSP) for the East Bay Plain Groundwater Subbasin (Basin No. 2-009.04).

Recent drought conditions have highlighted the importance of protecting local groundwater resources. EBMUD will be working collaboratively with the City of Hayward to ensure sustainable management of this entire Subbasin and have agreed to jointly develop a GSP with interested stakeholders. As a long-time resident and former Council Member of the City of Hayward, I am pleased that Hayward has stepped up to become a Groundwater Sustainability Agency (GSA), assuming responsibility for ensuring long-term sustainable management of the groundwater resources beneath its service area. I am confident that the planning effort will be thorough, technically sound, and fully compliant with the Sustainable Groundwater Management Act.

Should you have any questions, please do not hesitate to contact me through my District Office at (510)-583-8818.

Sincerely,

*Bill Quirk*

Bill Quirk  
Assembly Member

cc: Alex Ameri, City of Hayward  
Michael Tognolini, EBMUD

BQ:lm



**San Francisco Bay Chapter**

Serving Alameda, Contra Costa, Marin and San Francisco counties

November 3, 2017

Ms. Heather Shannon  
Division of Integrated Regional Water Management  
California Department of Water Resources  
PO Box 942836  
Sacramento, CA 94326-0001

**SUBJECT: EBMUD's Sustainable Groundwater Planning (SGWP) Grant Proposal**

Dear Ms. Shannon:

The Sierra Club is a grassroots environmental group founded by legendary conservationist John Muir in 1892. The San Francisco Bay Chapter is comprised of 30,000 Sierra Club members who live in Alameda, Contra Costa, Marin, and San Francisco counties. One of our missions is to practice and promote the responsible use of the earth's ecosystems and resources. More specifically, we strive to be a steward our natural resources, including water, to safeguard them for present and future generations. The East Bay Plain Subbasin is a precious natural resource and we find that sustainable management of this local groundwater resource is essential for all beneficial users including environmental uses.

As an environmental stakeholder, we support EBMUD conducting comprehensive technical studies and developing the groundwater sustainability plan (GSP) for the Subbasin. Considering the required scope of SGMA, development of a basin-wide GSP would require significant financial resources, and the funding available under the SGWP grant program would enable EBMUD to develop a robust, technically sound GSP.

Therefore, we would like to express our support for EBMUD's Sustainable Groundwater Planning (SGWP) Grant Proposal, and we encourage the Department of Water Resources to award grant funding to EBMUD so it can develop a single GSP for the East Bay Plain Subbasin.

Heinrich Albert

Chris Gilbert

Co-chairs, Sierra Club San Francisco Bay Chapter Water Committee



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ATTACHMENT 4  
**WORK PLAN**

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## **WORK PLAN**

### **PROJECT SUMMARY:**

EBMUD and the City of Hayward (Hayward) are the exclusive GSAs covering the entire East Bay Plain Subbasin (Subbasin) for their respective service and jurisdictional areas. Consistent with GSP regulations, EBMUD and Hayward will jointly develop a single Groundwater Sustainability Plan (GSP), for the entire East Bay Plain Subbasin (Bulletin 118 Basin No. 2-9.004). The East Bay Plain Subbasin is one of four subbasins that comprise the larger Santa Clara Groundwater Basin. GSP development requires understanding how management actions and sustainability goals developed for the Subbasin may affect neighboring basins. In the southern portion of the Subbasin, the boundary between the East Bay Plain and Niles Cone Subbasins, is not a strict barrier to flow between the subbasins and the degrees of connectivity between the subbasins is not yet thoroughly understood. Improved understanding of the interbasin connectivity will be essential to understand subbasin hydrogeologic boundaries and to develop a robust groundwater model that accurately accounts for interbasin flow.

The project will include working with neighboring GSAs and conducting an active stakeholder communication and engagement (C&E) process to inform and provide opportunities for groundwater users, stakeholders, interested parties, and the general public to participate in the development of the East Bay Plain GSP. The C&E process will allow the GSAs to disseminate information and provide progress updates, share data, reports, and studies, and seek input for the GSP development process. The C&E process will include the use of a dedicated and live webpage [www.ebmud.com/SGMA](http://www.ebmud.com/SGMA) and public meetings. Project updates can also be received by subscribing to the SGMA mailing list.

The East Bay Plain Subbasin GSP will describe the geographic, geologic, and hydrogeologic setting for the Subbasin; and summarize and document the baseline conditions of the Subbasin with respect to water levels, water quality (for selected key constituents), seawater intrusion, point and non-point sources of water quality degradation, and land subsidence. It will establish specific objectives based on stakeholder input. A sustainable yield will be determined by taking into account the six undesirable results listed in SGMA (Part 2.74., Chapter 2, Section 10721 (w)).

Specific activities and management actions to meet GSP objectives and achieve sustainability within 20 years of plan implementation will be identified, described, and evaluated. Near-term GSP implementation actions will be included and aligned with the GSP developed interim milestones. Monitoring programs proposed as a part of the GSP implementation will be discussed and delineated. The GSP will summarize: the existing/current procedures and protocols under Alameda and Contra Costa Counties ordinances and other well permitting programs, current land use processes and plans, and efforts to coordinate with neighboring GSAs.

Through the process of preparing and implementing the GSP, a greater understanding of the groundwater system dynamics including current and planned groundwater use and development will be gained. With this understanding, sustainability measures will be developed and implemented to manage local groundwater resource to be sustainable by 2042 as SGMA requires.

### **ENVIRONMENTAL COMPLIANCE AND PERMITTING:**

While preparation of a GSP is itself exempt from CEQA as per §10728.6 of SGMA, the GSP development could include tasks and management actions that may trigger environmental regulatory requirements and/or permitting including but not limited to well drilling permits. EBMUD intends to fully comply with environmental regulations including CEQA and permitting requirements during GSP development and the implementation of the GSP. Should it become necessary, EBMUD will obtain any necessary permits such as well drilling permits for exploratory boreholes and monitoring wells, and also conduct necessary environmental documentation processes for completion of GSP preparation work.

In addition, as a task of the Work Plan, EBMUD will undertake environmental assessment activities including basin water quality assessment, identification of groundwater dependent ecosystems, identification of hazardous wastes and substances via databases like EnviroStar and GeoTracker. This

information will not only be used to develop sustainable management criteria and management actions for the Subbasin, but also be applied for environmental compliance needs.

### **SCOPE OF WORK:**

#### **Task 1.0 Stakeholders' Communication and Engagement (C&E)**

Under this task, a comprehensive East Bay Plain Subbasin Stakeholder Communication and Engagement Plan (C&E Plan) will be developed in accordance with the DWR's C&E guidance. Development of a C&E Plan has already commenced and is building on the success of the GSA formation processes. In October 2015, EBMUD initiated the SGMA stakeholders outreach effort by conducting a stakeholders assessment and a meeting with Hayward. In 2016, EBMUD convened stakeholders meetings to review SGMA compliance needs and identify local entities' interests in GSA formation. Based on these C&E activities, EBMUD agreed to submit a filing to become a GSA. Hayward initiated discussions with stakeholders in December 2016 and agreed to become a GSA in March 2017. The existing and on-going stakeholder outreach activities and a current list of active stakeholders will be integrated into the C&E Plan. The C&E Plan will include forming a Technical Advisory Committee or equivalent and active stakeholders groups to provide stakeholders and the public opportunities to participate in the GSP development process.

The GSAs will collaborate to implement the C&E plan to inform, consult and involve groundwater users, stakeholders, interested parties, and the general public in GSP development and the decision making process. The C&E process will allow the GSAs to update the progress made in GSP development and disseminate information updates, data, reports and studies, as well as to seek input during the GSP development process. Continuing C&E activities will include meetings, presentations, and postings on social media pages. EBMUD has also established a dedicated website ([www.ebmud.com/SGMA](http://www.ebmud.com/SGMA)) and mailing list where stakeholders can receive project updates. Hayward is coordinating with EBMUD on outreach efforts and have reached out to neighboring agencies and groundwater users within its service area to invite them to participate in the process for developing the GSP. Hayward and EBMUD will coordinate to insure consistent messaging via the web and other media platforms.

*Current Status:* 15% complete

#### **Task 2.0 Project Management and Grant Reporting**

Under this task, the project manager for the East Bay Plain Subbasin GSP will manage resources, task completion, budget and schedule. Quarterly progress reports, other necessary grant reports, and a final report will be generated and submitted to DWR to meet grant requirements. Progress reports will describe task completion, milestones, and budget review. Outstanding items, contingencies, and decisions made will be documented as necessary.

*Current Status:* 15% complete

#### **Task 3.0 Development of Governance Structure**

This task is to develop a governance structure for management of the Subbasin. The EBMUD and Hayward GSAs will outline a legally binding formal structure for GSP development and implementation, decision making processes, dispute resolution, and funding mechanisms to develop the GSP. On July 31, 2017, EBMUD and Hayward entered into a Memorandum of Understanding to develop a cooperating agreement. This cooperating agreement will define among other things roles, responsibilities, decision making processes and governance of the Subbasin management and GSP implementation. It is anticipated that more specific governance will become fully developed over time, as the specific management actions are determined; however, EBMUD and Hayward are currently drafting the cooperating agreement, which will include an overarching framework for governance of the Subbasin.

*Current Status:* 15% complete

#### **Task 4.0 Develop the East Bay Plain Groundwater Model (EBPGM)**

Under this task, the GSAs will develop the EBPGM. Model input files will be prepared from the collected data and the geologic framework model. The EBPGM will be a transient model that simulates historical conditions through the present. Initial model parameters will be selected based on review and analysis of existing data in the southern portion of the Subbasin, and new data collected as part of this GSP effort mainly in the northern portion of the Subbasin.

#### Subtask 4.1 Data Syntheses and Analysis

The objective of this task is to collect and review all available data that will be needed to develop an integrated hydrologic model (groundwater model) for the East Bay Plain Subbasin. As part of this task, previous geologic and hydrologic work that has been performed in the Subbasin will be compiled and integrated. The majority of the work done to date in the Subbasin has focused on the southern area. Existing datasets in the southern Subbasin include:

- Lithologic and geophysical well logs
- Aquifer properties derived from long-term pump tests
- Seismic refraction surveys, fault locations and faulting impacts on groundwater hydrology
- Precipitation, evapotranspiration, soil classification, and land use
- Groundwater pumping records, surface and recycled water deliveries
- Groundwater levels, land subsidence, and water quality

In contrast, key data set are not as readily available in the northern portion of the Subbasin. Therefore, this task will involve coordination with various stakeholders and research institutions such as USGS and Lawrence Berkeley National Laboratory to obtain additional data sets for the basin, that may not have been made publicly available. Through the process of gathering synthesizing and analyzing both new and existing data, the GSAs will identify data gaps.

The process of identifying data gaps is critical to the GSP development process for two reasons. First, by understanding the existing data gaps the GSAs can develop project concepts to fill them in to refine the groundwater modeling, and prepare sustainable yield estimates with the 5-year GSP updates. Second, the data gap assessment is a primary building block for analyzing uncertainty in the groundwater model results and sustainable yield estimate. A complete understanding of the existing uncertainty is needed for planning efforts for long-term sustainable management of the Subbasin.

*Current Status:* 0% complete

#### Subtask 4.2 Conceptual Hydrogeologic Model Development

As with the data gap assessment, development of a conceptual hydrogeologic model is a necessary and essential step in producing a representative groundwater model of the Subbasin, on which planning and management decisions can be based. In this task, a conceptual hydrologic model showing high-level representation of the groundwater flow system and detailing all the water budget components (or stresses) in the Subbasin will be developed.

As discussed above, although a number of studies have been completed for the southern part of the Subbasin, the hydrologic characteristics of the northern part of the Subbasin will be defined as a part of Subtask 4.1. This task will incorporate the new information obtained in Subtask 4.1 to define the characteristics of the Subbasin as a whole. This will be the first time that the hydrologic features, based on integrated findings from completed studies and investigations by EBMUD, Hayward, USGS, and others, will be incorporated into a single conceptual model of the entire Subbasin.

Also under this task, a 3D geologic framework will be developed to define the stratigraphy and connectivity of each geologic layer in the Subbasin. The geologic framework development will utilize collected data (such as well logs and faults) as well as previous geologic investigations in the Subbasin. The geologic model will be constructed based on the geologic framework so that it can easily be incorporated into and define the aquifer properties of an integrated hydrologic model.

*Current Status:* 0% complete

#### Subtask 4.3 Groundwater Model Objectives and Selection

Under this task the objectives and purpose of the groundwater model will be established. This will be used to select the appropriate model that will best quantify the water budget, determine the sustainable yield, and evaluate the sustainability indicators in the Subbasin.

*Current Status:* 0% complete

#### Subtask 4.4 Construct, Calibrate, and Perform Uncertainty Analysis of East Bay Plain Groundwater Model (EBPGM)

The objective of this task is to construct, calibrate, and validate the EBPGM. Once the data gap assessment, conceptual model development, and groundwater model code selection processes are complete, the results of these tasks will be used to construct the groundwater model for the Subbasin. After initial construction, the model will be calibrated, by adjusting the model parameters so the model outputs reflect historical observation data. If sufficient data are available, the results of the calibrated model can also be validated against existing data to determine the uncertainty in the model calibration. Additionally, a model calibrating software will be used to assist with the calibration process and quantify the uncertainty in the estimated parameter values.

*Current Status:* 0% complete

#### Subtask 4.5 Develop and Analyze Baseline Scenario and Alternative Management Scenarios

For this task, a baseline model will be developed that can be used to forecast future hydrologic conditions in the Subbasin. Then scenarios will be developed that simulate proposed water management actions, focusing on the potential impacts these actions may have on the six undesirable results defined under SGMA. Model outputs from the scenarios will be compared to the baseline to evaluate the hydrologic effects of the proposed water management actions.

*Current Status:* 0% complete

#### Subtask 4.6 Document and Archive EBPGM

Upon completion of the modeling work, the EBPGM development and results will be documented in a report under this task. The model files for the calibrated model and for each model scenario developed for the GSP will be archived.

*Current Status:* 0% complete

### Task 5.0 Preparation of the East Bay Plain Subbasin GSP

Under this task, the Groundwater Sustainability Plan for entire East Bay Plain Subbasin is to be developed consistent with the GSP regulations, using the best available science, and relying on the sustainable yield and future scenario output of the model developed in Task 4.

#### Subtask 5.1 General Information, Plan Area and Subbasin Setting, Stakeholder C&E, and Monitoring

In this task, the majority of the technical work done toward sustainable management of the Subbasin will be presented. Additionally, as part of this task, general background information on the Subbasin, the hydrogeologic setting of the Subbasin setting, and the stakeholder C&E efforts conducted during the GSP development process will be documented in the GSP.

Development of the background information required for this task is already underway. This information includes: description of the entire Subbasin and the GSP coverage area, as defined by the exclusive GSAs' jurisdictional areas, information about the GSAs, organization and management structure of the GSAs, and legal authority. Additionally, DWR guidance and documentation will be used to describe the GSP implementation process and periodic evaluation requirements. More detailed information on estimated implementation costs and funding mechanisms to meet the costs, will be developed under this task.

For the Subbasin setting, the conceptual hydrogeologic model from Subtask 4.2 will be described along with historical and current groundwater conditions, water budget, sustainable yield and uncertainty analysis developed by the EBPGM. In this section, the GSP will apply the modeling efforts to assess groundwater sustainability elements, including potential saline water intrusion, migration of existing contaminant plumes, reduction in groundwater storage, and impacts to groundwater dependent ecosystems that are reliant upon interconnected surface and groundwater. The results of the future scenarios will be documented and the designated management areas will be

identified and discussed detailing relevant sustainable management actions for each area as suggested by the model output.

In order to ensure ongoing sustainable management and to develop the measurable objectives against which sustainability will be assessed, existing groundwater level monitoring, CASGEM monitoring, subsidence monitoring, and water quality monitoring under permit compliance will be described. Ensuing discussion will detail how these existing monitoring programs will be integrated into proposed water resources monitoring and management programs.

In addition to the background information and the completed technical work, this task will document the stakeholder communication and outreach efforts for groundwater users, interested parties, environmental interests, and the public.

Finally, this task will also include preparing sustainability goals that will be based on the technical work and stakeholder input. The GSAs recognize that SGMA allows local entities to determine what constitutes “significant and unreasonable” undesirable effects in each basin. This determination can only be reached through the technical efforts to understand the impacts of management actions on both groundwater sustainability and local stakeholders

*Current Status:* 0% complete

#### Subtask 5.2 Sustainable Management Criteria and Management Actions

Once the sustainability goals for the Subbasin have been developed, the GSAs will work to define the sustainable management criteria, including measurable objectives and minimum thresholds for the Subbasin. The GSP will describe and quantify the sustainability goals/indicators and associated minimum thresholds factored by reasonable margins of safety for each goal.

Measurable objectives to evaluate meeting interim milestones will also be described. Management areas will be designated as needed based on beneficial uses, water quality objectives, and/or jurisdictional boundaries, and relevant measurable objectives for specific management areas will be developed.

Also under this task, projects and management actions designed to achieve measurable objectives will be described. Management actions may include:

- Assessing current Subbasin water quality and developing groundwater quality management actions
- Identifying existing hazardous waste and substances from sites such as EnviroStor, GeoTracker, EnviroMapper, Cleanups in My Community, and DWR’s Water Data Library and developing management strategies
- Updating well inventory and developing a database
- Preventing or minimizing groundwater quality degradation through actions such as identifying wellhead protection areas and measures
- Integrating the existing South East Bay Plain Subbasin Subsidence Monitoring Program into a Subbasin-wide program
- Expanding existing Bayside Project monitoring and CASGEM monitoring programs into a Subbasin-wide groundwater elevation and water quality monitoring program
- Filling data gaps in areas including groundwater elevation data, water quality sampling, seawater intrusion control, and subsidence monitoring reference elevation datum
- Assessing existing saltwater intrusion, monitoring, and control
- Well abandonment and well destruction program
- Replenishment of groundwater extractions
- Planning for existing and future conjunctive use and underground storage
- Well construction policies and permitting standards
- Groundwater contamination cleanup, recharge, diversions to storage, conservation, water recycling, conveyance, and extraction projects
- Efficient water management practices
- Relationships with state and federal regulatory agencies

- Land use plans and efforts to coordinate with land use planning agencies to assess activities that potentially create risks to groundwater quality or quantity
- Addressing potential impacts on groundwater dependent ecosystems

*Current Status:* 0% complete

#### Subtask 5.3 GSP Implementation Plan Development

Technical studies and investigations will define the current state of the basin's hydrogeological characteristics as well as data gaps, monitoring needs, and need for additional studies. This known and unknown information and data will be considered to develop a phased implementation plan. For example, additional monitoring wells may be necessary to define the seawater intrusion more accurately; basin-wide water quality and water level monitoring program may be developed; subsidence monitoring program may be developed; and more targeted investigations may be scoped under this task. Based on the findings from completed investigations, management areas may be designated as needed to implement relevant monitoring and management actions for each area. These management areas will be defined and delineated along with specific management actions for each area.

Once the sustainable groundwater management actions and specific projects are defined, a project development plan, completing with scope of work, planned budget, implementation schedule, periodic evaluation, and reporting for each project or study will be prepared.

*Current Status:* 0% complete

#### Subtask 5.4 Review of draft GSP and Finalizing the GSP

This task is to review the draft GSP, perform final quality assurance/quality control assessment of data accuracy and interpretation, organization of the GSP, consistency, correctness, and need to incorporate editorial changes. Then, the GSP will be finalized and submitted for public comment and DWR's review and approval. Once DWR's review is completed, the final GSP will be revised and modified as necessary to incorporate input and comments from both DWR and the public. All references, citations, and studies as well as documents for appendices will be compiled and documented.

*Current Status:* 0% complete

**PROJECT DELIVERABLES:**

The Project deliverables are outlined in the following table:

Task	General Description	Deliverables
1.0	Conduct stakeholder communication and engagement plan and implementation	Stakeholders communication and engagement records
2.0	Project management and grant reporting	Quarterly progress reports, necessary grant reports, and a final report
3.0	Develop governance structure outlining structure of GSP development and implementation, decision making, dispute resolution, and funding	A cooperating agreement between EBMUD and Hayward
4.0	Develop the East Bay Plain Groundwater Model (EBPGM)	An integrated transient groundwater flow base model that simulates historical conditions through the present and is capable of analyzing surface water groundwater interaction
4.1	Conduct Data Syntheses and Analysis	Summary of data syntheses and analysis including identification of data gaps
4.2	Conceptual Hydrologic Model Development	A conceptual hydrologic model showing high-level representation of the groundwater flow system. The conceptual model will include all of the water budget components (or stresses) and a 3D geologic framework model that will define the stratigraphy and connectivity of each geologic layer in the Subbasin.
4.3	Model Objectives and Selection	Establishing the model’s purpose and objectives and selecting the appropriate model
4.4	Construct, calibrate, and perform uncertainty analysis of the EBPGM	A calibrated transient model that simulates historical conditions through the present
4.5	Develop and analyze baseline scenario and alternative management scenarios for the Subbasin	Tabulated comparisons of model output from the scenarios and the baseline to evaluate the hydrologic effects of the proposed water management actions
4.6	Document model development and results	Model files and technical memorandum documenting model development and runs
5.0	Preparation of the EBP Subbasin GSP	
5.1	General Information, Plan Area, and Subbasin Setting	<ul style="list-style-type: none"> <li>• Draft Introduction</li> <li>• Identify Sustainability Goals</li> <li>• Draft Agency Information</li> <li>• Draft GSP Organization</li> <li>• Stakeholders C&amp;E Process</li> <li>• Description and maps of GSA areas, jurisdictional areas, and existing land use</li> <li>• Description and maps of existing and planned monitoring facilities such as monitoring wells, subsidence monitoring facility, and reference datum</li> <li>• Discussion of land use planning elements</li> <li>• Discussion of well standards and permitting entities</li> <li>• Detailed discussion of Subbasin setting including water budget, sustainable yield, natural and artificial recharge, current and future groundwater pumping, and designated management areas</li> </ul>

5.2	Sustainable Management Criteria and Management Actions	<ul style="list-style-type: none"> <li>• Description of sustainability goals, measureable objectives</li> <li>• Description of minimum thresholds and undesirable results</li> <li>• Monitoring programs for groundwater elevations, water quality, and subsidence</li> <li>• Description of data gaps and future plan</li> <li>• Descriptions of projects and management actions</li> </ul>
5.3	GSP Implementation Plan Development	<ul style="list-style-type: none"> <li>• A work plan to implement the management actions including descriptions of projects, schedules, costs, and reporting</li> </ul>
5.4	Review of draft GSP and Finalizing the GSP	<ul style="list-style-type: none"> <li>• A final GSP to submit for DWR's review and approval</li> <li>• Compiled references, citations, and studies</li> <li>• Compiled documents for appendices</li> <li>• Revised final GSP incorporating DWR's input and comments</li> </ul>

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ATTACHMENT 5

**BUDGET**

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**ATTACHMENT 5. BUDGET**

The table below specifies the requested grant amount, the non-state fund cost share, and the total cost of the project. There is no other cost share information to report. The table demonstrates that the GSA is able to meet the 50% required match and is fully prepared to do so. The GSA has a significant number of DAC and SDAC communities within its jurisdiction (see attachments 7 and 9), which comprise 58% of the Subbasin. Therefore, the GSA is respectfully requesting a 50% cost waiver. The budget line items where a match waiver is requested are footnoted at the end of the table. GSA is requesting a cost share waiver that would only apply if the project is completed under budget. The total budget is currently estimated at \$2.01 million.

<b>Table 4 - Project Budget</b>					
<b>Proposal Title:</b>		East Bay Plain Subbasin Groundwater Sustainability Plan Development			
<b>Project Title:</b>		East Bay Plain Subbasin Groundwater Sustainability Plan Development			
Project serves a need of a DAC?: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
Cost Share Waiver request?: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No					
	Tasks	(a)	(b)	(c)	(d)
		Requested Grant Amount <sup>4</sup>	Cost Share: Non-State Fund Source <sup>1</sup>	Other Cost Share	Total Cost
1.0	Conduct Stakeholders communication and engagement plan and implementation	\$ -	\$ 162,000	\$ -	\$ 162,000
2.0	Project management and Grant reporting	\$ -	\$ 216,000	\$ -	\$ 216,000
3.0	Develop governance structure outlining legally binding formal structure of GSP development and implementation, decision making, dispute resolution, and funding	\$ -	\$ 150,000	\$ -	\$ 150,000
4.0	Develop the East Bay Plain Integrated Hydrological Model (EBPIHM)				
4.1	Conduct Data Syntheses and Analysis <sup>2</sup>	\$ 250,000	\$ -	\$ -	\$ 250,000
4.2	Conceptual Hydrogeologic Model Development <sup>2</sup>	\$ 175,000	\$ -	\$ -	\$ 175,000
4.3	Model Objectives and Selection <sup>2</sup>	\$ 150,000	\$ -	\$ -	\$ 150,000
4.4	Construct, calibrate, and perform uncertainty analysis of the EBPIHM <sup>2</sup>	\$ 275,000	\$ -	\$ -	\$ 275,000
4.5	Develop and analyze baseline scenario and alternative management scenarios for the Subbasin <sup>3</sup>	\$ 150,000	\$ 25,000	\$ -	\$ 175,000
4.6	Document model development and results		\$ 100,000	\$ -	\$ 100,000
5.0	Preparation of the EBP Subbasin GSP				
5.1	General Information, Plan Area and Subbasin Setting		\$ 75,000	\$ -	\$ 75,000
5.2	Sustainable Management Criteria and Management Actions		\$ 90,000	\$ -	\$ 90,000
5.3	GSP Implementation Plan Development		\$ 110,000	\$ -	\$ 110,000
5.4	Review of draft GSP and Finalizing the GSP		\$ 90,000	\$ -	\$ 90,000
		\$ 1,000,000	\$ 1,043,000	\$ -	\$ 2,018,000
(a) Direct Project Administration			\$ 366,000		
(b) Plan Development			\$ 1,490,000		
(c) Stakeholder Engagement			\$ 162,000		
(d) Grand Total (Sum rows (a) through (d) for each column)			\$ 2,018,000		

1. List sources of funding : A combination of in-kind and cash contribution from Hayward and EBMUD, with each GSA's share divided according to the criteria to be included in the forthcoming cooperating agreement.

2. Requesting to waive 50% cost sharing requirement because of DAC/SDAC coverage area

3. Requesting to reduce 50% cost sharing requirement to 28.5% because of DAC/SDAC coverage area

4. It is anticipated that available grant funding will be applied to technical studies and development of a robust groundwater model

**ATTACHMENT 5. BUDGET**

The table below specifies the requested grant amount, the non-state fund cost share, and the total cost of the project. There is no other cost share information to report. The table demonstrates that the GSA is able to meet the 50% required match and is fully prepared to do so. The GSA has a significant number of DAC and SDAC communities within its jurisdiction (see attachments 7 and 9), which comprise 58% of the Subbasin. Therefore, the GSA is respectfully requesting a 50% cost waiver. The budget line items where a match waiver is requested are footnoted at the end of the table. GSA is requesting a cost share waiver that would only apply if the project is completed under budget. The total budget is currently estimated at \$2.01 million.

<b>Table 5 - Proposal Budget</b>						
<b>Proposal Title: East Bay Plain Subbasin Groundwater Sustainability Plan Development</b>						
<b>East Bay Plain Subbasin Groundwater Sustainability Plan Development</b>		<b>(a)</b>	<b>(b)</b>	<b>(c)</b>	<b>(d)</b>	<b>(e)</b>
		Requested Grant Amount <sup>4</sup>	Cost Share: Non-State Fund Source <sup>1</sup>	Other Cost Share	Total Cost	% Cost Share (Col b/Col d)
1.0	Conduct Stakeholders communication and engagement plan and implementation	\$ -	\$ 162,000	\$ -	\$ 162,000	100%
2.0	Project management and Grant reporting	\$ -	\$ 216,000	\$ -	\$ 216,000	100%
3.0	Develop governance structure outlining legally binding formal structure of GSP development and implementation, decision making, dispute resolution, and funding	\$ -	\$ 150,000	\$ -	\$ 150,000	100%
4.0	Develop the East Bay Plain Integrated Hydrological Model (EBPIHM)					
4.1	Conduct Data Syntheses and Analysis <sup>2</sup>	\$ 250,000	\$ -	\$ -	\$ 250,000	0%
4.2	Conceptual Hydrogeologic Model Development <sup>2</sup>	\$ 175,000	\$ -	\$ -	\$ 175,000	0%
4.3	Model Objectives and Selection <sup>2</sup>	\$ 150,000	\$ -	\$ -	\$ 150,000	0%
4.4	Construct, calibrate, and perform uncertainty analysis of the EBPIHM <sup>2</sup>	\$ 275,000	\$ -	\$ -	\$ 275,000	0%
4.5	Develop and analyze baseline scenario and alternative management scenarios for the Subbasin <sup>3</sup>	\$ 150,000	\$ 25,000	\$ -	\$ 175,000	14%
4.6	Document model development and results		\$ 100,000	\$ -	\$ 100,000	100%
5.0	Preparation of the EBP Subbasin GSP					
5.1	General Information, Plan Area and Subbasin Setting		\$ 75,000	\$ -	\$ 75,000	100%
5.2	Sustainable Management Criteria and Management Actions		\$ 90,000	\$ -	\$ 90,000	100%
5.3	GSP Implementation Plan Development		\$ 110,000	\$ -	\$ 110,000	100%
5.4	Review of draft GSP and Finalizing the GSP		\$ 90,000	\$ -	\$ 90,000	100%
		<b>\$ 1,000,000</b>	<b>\$ 1,043,000</b>	<b>\$ -</b>	<b>\$ 2,018,000</b>	<b>52%</b>
(a) Direct Project Administration			\$ 366,000			
(b) Plan Development			\$ 1,490,000			
(c) Stakeholder Engagement			\$ 162,000			
(d) Grand Total (Sum rows (a) through (d) for each column)			\$ 2,018,000			

1. List sources of funding : A combination of in-kind and cash contribution from Hayward and EBMUD, with each GSA's share divided according to the criteria to be included in the forthcoming cooperating agreement.

2. Requesting to waive 50% cost sharing requirement because of DAC/SDAC coverage area

3. Requesting to reduce 50% cost sharing requirement to 28.5% because of DAC/SDAC coverage area

4. It is anticipated that available grant funding will be applied to technical studies and development of a robust groundwater model

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ATTACHMENT 6

**SCHEDULE**

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# East Bay Plain Subbasin Groundwater Sustainability Plan Development Project Schedule

ID	Task Name	Duration	Start	Finish	2016				2017				2018				2019				2020				2021				
					Q4	Q1	Q2	Q3	Q4																				
1	1.0 Stakeholder Communication and Engagement	1510 days	Mon 10/5/15	Fri 7/16/21																									
2	2.0 Project Management and Grant reporting	1055 days	Mon 7/3/17	Fri 7/16/21																									
3	<b>3.0 Development of Governance Structure</b>	<b>390 days</b>	<b>Mon 10/2/17</b>	<b>Fri 3/29/19</b>																									
4	3.1 GSP Development Agreement	120 days	Mon 10/2/17	Fri 3/16/18																									
5	3.2 SGM Cooperating Agreement	270 days	Mon 3/19/18	Fri 3/29/19																									
6	<b>4.0 East Bay Plain Groundwater Model (EBPGM) Development</b>	<b>480 days</b>	<b>Mon 7/23/18</b>	<b>Fri 5/22/20</b>																									
7	4.1 Data Syntheses and Analysis	80 days	Mon 7/23/18	Fri 11/9/18																									
8	4.2 Conceptual Hydrologic Model	75 days	Mon 10/22/18	Fri 2/1/19																									
9	4.3 Model Objectives and Selection	60 days	Mon 2/4/19	Fri 4/26/19																									
10	4.4 Construct, Calibrate, and Perform Uncertainty Analysis of EBPIHM	180 days	Mon 4/29/19	Fri 1/3/20																									
11	4.5 Develop and Analyze Baseline Scenario and Alternative Management Scenarios	75 days	Mon 1/6/20	Fri 4/17/20																									
12	4.6 Document Model Development and Results	100 days	Mon 1/6/20	Fri 5/22/20																									
13	<b>5.0 Preparation of the EBP Subbasin GSP</b>	<b>580 days</b>	<b>Mon 4/29/19</b>	<b>Fri 7/16/21</b>																									
14	5.1 General Information, Plan Area, and Subbasin Setting	85 days	Mon 4/29/19	Fri 8/23/19																									
15	5.2 Sustainable Management Criteria and Management Actions	85 days	Mon 4/20/20	Fri 8/14/20																									
16	5.3 GSP Implementation Plan Development	120 days	Mon 8/17/20	Fri 1/29/21																									
17	5.4 Review of Draft GSP and Finalizing the GSP	120 days	Mon 2/1/21	Fri 7/16/21																									

# East Bay Plain Subbasin Groundwater Sustainability Plan Development Proposal Schedule

ID	Task Name	Duration	Start	Finish	2016					2017				2018				2019				2020				2021				
					Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
1	1.0 Stakeholder Communication and Engagement	1510 days	Mon 10/5/15	Fri 7/16/21																										
2	2.0 Project Management and Grant reporting	1055 days	Mon 7/3/17	Fri 7/16/21																										
3	<b>3.0 Development of Governance Structure</b>	<b>390 days</b>	<b>Mon 10/2/17</b>	<b>Fri 3/29/19</b>																										
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17	5.4 Review of Draft GSP and Finalizing the GSP	120 days	Mon 2/1/21	Fri 7/16/21																										

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ATTACHMENT 7

**DISADVANTAGED COMMUNITY**

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## **DISADVANTAGED COMMUNITY**

A Disadvantaged Community (DAC) is defined as a community with an annual median income (MHI) of less than 80% of the statewide annual MHI. A Severely Disadvantaged Community (SDAC) is defined as a community with an MHI of less than 60% of the statewide annual MHI.

The East Bay Plain Subbasin is a mostly urbanized area consisting of many diverse communities and socio-economic groups, including Disadvantaged Communities (DAC) and Severely Disadvantaged Communities (SDAC) as determined by the United States Census data, 2010-2014. The attached map shows DAC areas by block groups situated within the East Bay Plain Subbasin area in accordance with the DAC Mapping Tool ([http://water.ca.gov/irwm/grants/resources\\_dac.cfm](http://water.ca.gov/irwm/grants/resources_dac.cfm)) and the United States Census data, 2010-2014. Per these sources, it has been determined that DAC overlies approximately 22% of the Subbasin areas. We are requesting a cost share waiver that would only apply if the project is completed under budget. The total budget is currently estimated at \$2.01 million.

Although these communities are located within EBMUD and the City of Hayward (Hayward) service areas and have access to drinking water supply, DACs and SDACs disproportionately suffer during times of water supply uncertainty. During periods of drought, for example, surface water supplies may be severely limited and customers may be subject to water use reduction, steep drought rate surcharges, and excessive use penalties. As a percentage of their overall water consumption, DACs and SDACs typically use a greater amount of water for indoor purposes, compared to more discretionary outdoor use in more affluent communities. That makes it more difficult for DACs and SDACs to reduce water use during droughts. Sustainable groundwater management and future potential development of groundwater supplies may serve to ease water supply limitations and potential financial burden on DACs and SDACs during droughts by increasing the reliability of water supplies to the region.

Furthermore, the cost of preparing the GSP for the East Bay Plain Subbasin is most likely to be borne by ratepayers, including those in disadvantaged communities. Rate adjustments affect all customers, but ratepayers of disadvantaged communities are particularly impacted because utility expenses, as a percentage of their total household incomes, are usually higher than for more affluent communities. To the extent that funding assistance offsets these costs, the amounts that must be recovered from ratepayers will be decreased and DACs and SDACs will directly benefit from the grant funding.

Finally, the GSAs recognize that apart from economic disadvantage, DACs and SDACs may be technically compromised and/or not integrated for other reasons such as language differences, system isolation, and other factors. Moreover, the GSA recognizes that sustainable management of the East Bay Plain Subbasin will benefit all EBMUD and Hayward water customers, including disadvantaged communities and severely disadvantaged communities. The GSA will ensure that the East Bay Plain Subbasin can reliably provide a source of supply during droughts and emergencies.

As part of the GSP, the GSAs will ensure that targeted, effective, culturally sensitive and language appropriate outreach is woven into the fabric of communication and engagement strategies during GSP development and throughout GSP and project implementation. Communities and stakeholders will be successfully integrated into the process so that all the capacities of the DACs and SDACs are supported in the sustainability goals of the Subbasin.



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ATTACHMENT 9

**SEVERELY DISADVANTAGED**

**COMMUNITY**

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## **SEVERELY DISADVANTAGED COMMUNITY**

A Disadvantaged Community (DAC) is defined as a community with an annual median income (MHI) of less than 80% of the statewide annual MHI. A Severely Disadvantaged Community (SDAC) is defined as a community with an MHI of less than 60% of the statewide annual MHI.

The East Bay Plain Subbasin is a mostly urbanized area consisting of many diverse communities and socio-economic groups, including Severely Disadvantaged Communities (SDAC) as determined by the United States Census data, 2010-2014. The attached map shows SDAC areas by tracts situated within the East Bay Plain Subbasin area in accordance with the DAC Mapping Tool ([http://water.ca.gov/irwm/grants/resources\\_dac.cfm](http://water.ca.gov/irwm/grants/resources_dac.cfm)) and the United States Census data, 2010-2014. Per these sources, it has been determined that SDACs overlies 36% of the Subbasin areas, respectively. We are requesting a cost share waiver that would only apply if the project is completed under budget. The total budget is currently estimated at \$2.01 million.

Although these communities are located within EBMUD and the City of Hayward (Hayward) service areas and have access to drinking water supply, DACs and SDACs disproportionately suffer during times of water supply uncertainty. During periods of drought, for example, surface water supplies may be severely limited and customers may be subject to water use reduction, steep drought rate surcharges, and excessive use penalties. As a percentage of their overall water consumption, DACs and SDACs typically use a greater amount of water for indoor purposes, compared to more discretionary outdoor use in more affluent communities. That makes it more difficult for DACs and SDACs to reduce water use during droughts. Sustainable groundwater management and future potential development of groundwater supplies may serve to ease water supply limitations and potential financial burden on DACs and SDACs during droughts by increasing the reliability of water supplies to the region.

Furthermore, the cost of preparing the GSP for the East Bay Plain Subbasin is most likely to be borne by ratepayers, including those in disadvantaged communities. Rate adjustments affect all customers, but ratepayers of disadvantaged communities are particularly impacted because utility expenses, as a percentage of their total household incomes, are usually higher than for more affluent communities. To the extent that funding assistance offsets these costs, the amounts that must be recovered from ratepayers will be decreased and DACs and SDACs will directly benefit from the grant funding.

Finally, the GSAs recognize that apart from economic disadvantage, DACs and SDACs may be technically compromised and/or not integrated for other reasons such as language differences, system isolation, and other factors. Moreover, the GSA recognizes that sustainable management of the East Bay Plain Subbasin will benefit all EBMUD and Hayward water customers, including disadvantaged communities and severely disadvantaged communities. The GSA will ensure that the East Bay Plain Subbasin can reliably provide a source of supply during droughts and emergencies.

As part of the GSP, the GSAs will ensure that targeted, effective, culturally sensitive, and language appropriate outreach is woven into the fabric of communication and engagement strategies during GSP development and throughout GSP and project implementation. Communities and stakeholders will be successfully integrated into the process so that all the capacities of the DACs and SDACs are supported in the sustainability goals of the Subbasin.

