



## Santa Clara Valley Water District Board of Directors Meeting

District Headquarters Board Room  
5700 Almaden Expressway  
San Jose, CA 95118

### **\*AMENDED/APPENDED AGENDA**

**Tuesday, March 28, 2017  
6:00 PM**

**\*ITEMS AMENDED AND/OR APPENDED SINCE THE ORIGINAL PUBLICATION OF THIS  
AGENDA ARE IDENTIFIED BY AN ASTERISK (\*) HEREIN**

**District Mission: Provide Silicon Valley safe, clean water for a healthy life, environment and economy.**

#### **DISTRICT BOARD OF DIRECTORS**

John L. Varela, Chair - District 1  
Richard Santos, Vice Chair - District 3  
Barbara Keegan - District 2  
Linda J. LeZotte - District 4  
Nai Hsueh - District 5  
Tony Estremera - District 6  
Gary Kremen - District 7

All public records relating to an open session item on this agenda, which are not exempt from disclosure pursuant to the California Public Records Act, that are distributed to a majority of the legislative body will be available for public inspection at the Office of the Clerk of the Board at the Santa Clara Valley Water District Headquarters Building, 5700 Almaden Expressway, San Jose, CA 95118, at the same time that the public records are distributed or made available to the legislative body. Santa Clara Valley Water District will make reasonable efforts to accommodate persons with disabilities wishing to attend Board of Directors' meeting. Please advise the Clerk of the Board Office of any special needs by calling (408) 265-2600.

NORMA CAMACHO  
Interim Chief Executive Officer

MICHELE L. KING, CMC  
Clerk of the Board  
(408) 265-2600  
Fax (408) 266-0271  
[www.valleywater.org](http://www.valleywater.org)

**Note: The finalized Board Agenda, exception items and supplemental items will be posted prior to the meeting in accordance with the Brown Act.**



**Santa Clara Valley Water District  
Board of Directors**

**\*AMENDED/APPENDED  
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**Tuesday, March 28, 2017**

**6:00 PM**

**District Headquarters Board Room**

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**1. CALL TO ORDER:**

- 1.1. Roll Call.
- 1.2. Pledge of Allegiance/National Anthem.
- 1.3. Orders of the Day.
  - A. *Approximate Discussion Time (Board); and*
  - B. *Adjustments to the Order of Agenda Items.*
- 1.4. Time Open for Public Comment on any Item not on the Agenda.

*Notice to the public: This item is reserved for persons desiring to address the Board on any matter not on this agenda. Members of the public who wish to address the Board on any item not listed on the agenda should complete a Speaker Card and present it to the Clerk of the Board. The Board Chair will call individuals to the podium in turn. Speakers comments should be limited to three minutes or as set by the Chair. The law does not permit Board action on, or extended discussion of, any item not on the agenda except under special circumstances. If Board action is requested, the matter may be placed on a future agenda. All comments that require a response will be referred to staff for a reply in writing. The Board may take action on any item of business appearing on the posted agenda.*

**2. TIME CERTAIN:**

**6:00 PM**

- 2.1. Presentation of 2016 Board Committee Accomplishment Reports by 2016 Board Advisory Committee Chairs/Vice Chairs. [17-0091](#)

Recommendation: Receive and approve the 2016 Accomplishment Reports as presented by the 2016 Board Advisory Committee Chairs/Vice Chairs.

Manager: Michele King, 408-630-2711

Attachments: [Attachment 1: AWAC Accomplishments Report](#)  
[Attachment 2: EWRC Accomplishments Report](#)  
[Attachment 3: SCVWD Accomplishments Report](#)

Est. Staff Time: 20 Minutes

- \*2.2. Fiscal Year 2017-18 Second Pass Budget Development Process Overview. [17-0173](#)

Recommendation: Receive and discuss the overview information on the District's FY 2017-18 Second Pass Budget Development Process.

Manager: Darin Taylor, 408-630-3068

Attachments: [\\*Supplemental Board Agenda Memo](#)  
[\\*Supplemental Attachment 1: PowerPoint](#)

**3. CONSENT CALENDAR: (3.1 - 3.4) (Est. Time: 5 Minutes)**

*Notice to the public: There is no separate discussion of individual consent calendar items. Recommended actions are voted on in one motion. If an item is approved on the consent vote, the specific action recommended by staff is adopted. Items listed in this section of the agenda are considered to be routine by the Board, or delegated to the Board Appointed Officers (BAOs) yet required by law or contract to be Board approved (EL-7.10). Any item may be removed for separate consideration at the request of a Board member. Whenever a resolution is on the consent calendar, a roll call vote will be taken on the entire calendar. Members of the public wishing to address the Board on any consent items should complete a Speaker Card and present it to the Clerk of the Board.*



- 3.1. Memorandum of Understanding with the San Francisco Public Utilities Commission and the Bay Area Water Supply and Conservation Agency for Feasibility Studies Related to Purified Water Alternatives. [17-0141](#)

Recommendation: Authorize the Interim CEO to execute the Memorandum of Understanding (MOU) between the Santa Clara Valley Water District (District), the San Francisco Public Utilities Commission (SFPUC), and the Bay Area Water Supply and Conservation Agency (BAWSCA) to Participate in a Feasibility Study to Evaluate Alternatives for SFPUC Participation in the Expedited Purified Water Program.

Manager: Garth Hall, 408-630-2750

Attachments: [Attachment 1: PowerPoint](#)  
[Attachment 2: District/SFPUC/BAWSCA MOU](#)

- 3.2. Memorandum of Understanding with City of Sunnyvale for Collaboration on Assessing the Feasibility of Water Reuse Alternatives. [17-0142](#)

Recommendation: Authorize the Interim CEO to execute the Memorandum of Understanding (MOU) between the Santa Clara Valley Water District (District) and the City of Sunnyvale (Sunnyvale) for Collaboration on Assessing the Feasibility of Water Reuse Alternatives.

Manager: Garth Hall, 408-630-2750

Attachments: [Attachment 1: PowerPoint](#)  
[Attachment 2: District/Sunnyvale MOU](#)

- 3.3. Recommended Position on Proposed Renewal and Replacement of the City of Palo Alto's Storm Drainage Fee with a Storm Water Management Fee That Would Apply to One District-Owned Parcel in the City of Palo Alto. [17-0161](#)

Recommendation:

- A. Support the renewal and replacement of the existing City of Palo Alto Storm Drainage Fee of \$66.45 per month with a Storm Water Management Fee of \$69.62 per month, and associated annual inflation adjustment, for one District-owned parcel in the City of Palo Alto.
- B. Authorize the Chief Executive Officer to sign the Official Mail Ballot in favor of the proposed fee and associated inflation adjustment.

Manager: Rick Callender, 408-630-2017

Attachments: [Attachment 1: Copy of Official Mail Ballot](#)  
[Attachment 2: Proposed Storm Water Mgmt Fee Brochure](#)

- \*3.4. CEO Bulletins for the Weeks of March 10-16, and 17-23, 2017.

[17-0171](#)

Recommendation: Accept the CEO Bulletins.

Manager: Norma Camacho, 408-630-2084

Attachments: [Attachment 1: 031617 CEO Bulletin](#)

[\\*Attachment 2: 032317 CEO Bulletin](#)

## **REGULAR AGENDA:**

### **4. BOARD OF DIRECTORS:**

- 4.1. Fiscal Year 2017 Board Policy Planning and Performance Monitoring Calendar.

[16-0432](#)

Recommendation: Review and revise the Fiscal Year 2017 Board Policy Planning and Performance Monitoring Calendar.

Manager: Michele King, 408-630-2711

Attachments: [Attachment 1: 2017 Calendar](#)

Est. Staff Time: 5 Minutes

- 4.2. Board Committee Reports.

- \*4.3. Capital Improvement Program Ad Hoc Committee Recommendations from February 27, 2017 Meeting, Revising Committee Status and Purpose.

[17-0154](#)

Recommendation: Consider and approve the following recommendations made by the Capital Improvement Program Ad Hoc Committee (Committee) during its February 27, 2017 meeting:

- A. Revise the Committee's status from ad hoc to standing; and
- B. Revise the Committee's purpose statement to read: *The CIP Committee is established to provide a venue for more detailed discussions regarding capital project validation, including recommendations on prioritizing, deleting, and/or adding projects to the CIP, as well as monitoring implementation progress of key projects in the CIP.*

Manager: Michele King, 408-630-2711

Attachments: [Attachment 1: 2017 CIP Committee Work Plan](#)

Est. Staff Time: 5 Minutes

**5. WATER UTILITY ENTERPRISE:**

**\*5.1. Water Utility Asset Management and Maintenance Program Update. [17-0178](#)**

Recommendation: Receive update on the District's Water Utility Asset Management and Maintenance Program.

Manager: Jim Fiedler, 408-630-2736

Attachments: [Attachment 1: Asset Risk Assessment](#)  
[Attachment 2: FY17-21 Water Utility Maint Work Plan](#)  
[Attachment 3: EPA 10-Step Asset Management Model](#)  
[Attachment 4: PowerPoint](#)

Est. Staff Time: \*20 Minutes

**5.2. Cost-Sharing Agreement for Consulting Services to Evaluate Increasing Water Storage in Lake Del Valle Reservoir. [16-0800](#)**

Recommendation: A. Approve the Cost-Sharing Agreement between the Alameda County Water District (ACWD), Zone 7 Water Agency (Zone 7), Santa Clara Valley Water District (District), and East Bay Regional Parks District (EBRPD) for a District contribution of \$75,000 towards an evaluation of increasing water storage in Lake Del Valle Reservoir, and  
B. Authorize the Interim Chief Executive Officer (ICEO) to execute the Cost-Sharing Agreement.

Manager: Garth Hall, 408-630-2750

Attachments: [Attachment 1: Cost Sharing Agreement](#)  
[Attachment 2: PowerPoint](#)

Est. Staff Time: 5 Minutes

**6. WATERSHEDS: None.**

**7. CHIEF EXECUTIVE OFFICER:**

- \*7.1. Recommended Position on State Legislation: AB 18 (Garcia) California Clean Water, Climate, and Coastal Protection and Outdoor Access for All Act of 2018, SB 3 (Beall) Affordable Housing Bond Act of 2018, SB 5 (De Leon) California Drought, Water, Parks, Climate, Coastal Protection and Outdoor Access for All Act of 2018, SB 231 (Hertzberg) Local Government: Storm Water Management and other legislation which may require urgent consideration for a position by the Board. [17-0188](#)

Recommendation:

- A. Adopt a position of "Support if Amend" on: AB 18 (Garcia) California Clean Water, Climate, and Coastal Protection and Outdoor Access for All Act of 2018.
- B. Adopt a position of "Support" on: SB 3 (Beall) Affordable Housing Bond Act of 2018.
- C. Adopt a position of "Support if Amend" on: SB 5 (De Leon) California Drought, Water, Parks, Climate, Coastal Protection and Outdoor Access for All Act of 2018.
- D. Adopt a position of "Support" on: SB 231 (Hertzberg) Local Government: Storm Water Management.

Manager: Rick Callender, 408-630-2017

Attachments: [\\*Original Board Agenda Memo](#)  
[\\*Supplemental Board Agenda Memo](#)

- 7.2. Recommended Position on Federal Legislation: HR 547 (DeLauro) - National Infrastructure Development Bank Act of 2017; and HR 434 (Denham) - New WATER Act. [17-0117](#)

Recommendation:

- A. Adopt a position of "Support if Amended" on: HR 547 (DeLauro) - National Infrastructure Development Bank Act of 2017; and
- B. Adopt a position of "Support" on: HR 434 (Denham) - New WATER Act;

Manager: Rick Callender, 408-630-2017

Est. Staff Time: 10 Minutes

- \*7.3. Federal Authorization and Appropriation Requests for Federal Fiscal Years 2017 and 2018. [17-0172](#)

Recommendation: Adopt the recommended Federal Fiscal Year 2017 and Fiscal Year 2018 authorization and appropriation requests for District-sponsored and District-supported projects.

Manager: Rick Callender, 408-630-2017

Attachments: [Attachment 1: Authorization/Appropriation Requests](#)  
[\\*Supplemental Board Agenda Memo](#)  
[\\*Supplemental Attachment 1: Revised Auth/Approp Requests](#)

- 7.4. Chief Executive Officer Report.

- 7.4- Storm Report Update, March 15 - 27, 2017. [17-0166](#)  
A

Recommendation: Receive and discuss current Storm Report information.

Manager: Melanie Richardson, 408-630-2035

Est. Staff Time: 5 Minutes

**8. ADMINISTRATION: None.**

**9. DISTRICT COUNSEL: None.**

**10. ADJOURN:**

10.1. Board Member Reports/Announcements.

10.2. Clerk Review and Clarification of Board Requests.

\*10.3. \*Adjourn to 2:00 p.m. Special Meeting on March 29, 2017, in the Santa Clara Valley Water District Headquarters Building Boardroom, 5700 Almaden Expressway, San Jose, California.



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**File No.:** 17-0091

**Agenda Date:** 3/28/2017  
**Item No.:** 2.1.

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## BOARD AGENDA MEMORANDUM

### **SUBJECT:**

Presentation of 2016 Board Committee Accomplishment Reports by 2016 Board Advisory Committee Chairs/Vice Chairs.

### **RECOMMENDATION:**

Receive and approve the 2016 Accomplishment Reports as presented by the 2016 Board Advisory Committee Chairs/Vice Chairs.

### **SUMMARY:**

The Board's Advisory Committees (Committees) were established to prepare policy alternatives and provide comment on activities in the implementation of the District's mission for Board consideration. When requested by the Board, the Board Committees may help the Board produce the link between the District and the public through information sharing to the communities they represent. The Board's Advisory Committees annually report to the Board on their accomplishments of the preceding year.

The following current and former Board Advisory Committee Chairs are presenting their respective 2016 Accomplishments Reports to the Board (Attachments 1-3).

- ❖ **Mr. Robert Long**  
Agricultural Water Advisory Committee (AWAC)
- ❖ **Hon. Dean Chu**  
Environmental and Water Resources Committee (EWRC)
- ❖ **Hon. Yoriko Kishimoto**  
Santa Clara Valley Water Commission (SCVWC)

### **FINANCIAL IMPACT:**

There is no financial impact associated with this item.

### **CEQA:**

The recommended action is a ministerial action and thus is not subject to the requirements of CEQA.

**ATTACHMENTS:**

Attachment 1: AWAC Accomplishments Report  
Attachment 2: EWRC Accomplishments Report  
Attachment 3: SCVWC Accomplishments Report

**UNCLASSIFIED MANAGER:**

Michele King, 408-630-2711



## 2016 Annual Accomplishments Report: Agricultural Water Advisory Committee

Update: February 2017

GP8. Accordingly, the Board has established Advisory Committees, which bring respective expertise and community interest, to advise the Board, when requested, in a capacity as defined: prepare Board policy alternatives and provide comment on activities in the implementation of the District's mission for Board consideration. In keeping with the Board's broader focus, Advisory Committees will not direct the implementation of District programs and projects, other than to receive information and provide comment.

The annual work plan establishes a framework for committee discussion and action during the annual meeting schedule. The committee work plan is a dynamic document, subject to change as external and internal issues impacting the District occur and are recommended for committee discussion. Subsequently, an annual committee accomplishments report is developed based on the work plan and presented to the District Board of Directors.

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S) (Action or Information Only)	ACCOMPLISHMENT DATE AND OUTCOME
1	Annual Accomplishments Report	<ul style="list-style-type: none"> <li>Review and approve 2015 Accomplishments Report for presentation to the Board. <b>(Action)</b></li> <li>Submit requests to the Board, as appropriate.</li> </ul>	<p><b><u>Accomplished January 11, 2016:</u></b> The Committee reviewed the 2015 Accomplishments Report for presentation to the Board.</p> <p><b><u>Accomplished April 4, 2016:</u></b> The Committee reviewed the 2015 Accomplishments Report for presentation to the Board and took the following action:</p> <p>The Committee unanimously approved the Accomplishments Report for presentation to the Board</p> <p><i>The Board received the Accomplishments Report at their May 10, 2016, board meeting.</i></p>
2	Election of Chair and Vice Chair for 2016	<ul style="list-style-type: none"> <li>Committee Elects Chair and Vice Chair for 2016. <b>(Action)</b></li> </ul>	<p><b><u>Accomplished January 11, 2016:</u></b> The Committee elected the 2016 Committee Chair and Vice-Chair, Mr. Robert Long and Mr. Ralph Santos respectively.</p>

Yellow = Update Since Last Meeting

Blue = Action taken by the Board of Directors

# 2016 Annual Accomplishments Report: Agricultural Water Advisory Committee

Update: February 2017

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S) (Action or Information Only)	ACCOMPLISHMENT DATE AND OUTCOME
3	Update on 2016 Water Supply and Drought Response	<ul style="list-style-type: none"> <li>Receive update on water supply and drought response. <b>(Information)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<b><u>Accomplished January 11, 2016:</u></b> The Committee received information on the water supply and drought response and took no action.
4	Review of Agricultural Water Advisory Committee Work Plan, the Outcomes of Board Action of Committee Requests and the Committee's Next Meeting Agenda	<ul style="list-style-type: none"> <li>Receive and review the 2016 Board-approved Committee work plan.</li> <li>Submit requests to the Board, as appropriate. <b>(Action)</b></li> </ul>	<b><u>Accomplished January 11, 2016:</u></b> The Committee reviewed the 2016 Committee Work Plan and took the following action:  <u>Committee requested that the Board add the agenda items to the Committee's work plan:</u> <ol style="list-style-type: none"> <li>1. Progress of recharge costs upcoming for Fiscal Year 2017-2018;</li> <li>2. Capital expansion update; and</li> <li>3. Discussion of the water quality conditions of waterways (rivers/streams/systems) within the county if/and how does/does not agricultural water influence the water quality conditions.</li> </ol> <ol style="list-style-type: none"> <li>2. Review the report, The Economic Contribution of Agriculture to the County of Santa Clara 2014 Report, and staff's review and analysis of the economic data (study) and implications from page 17 of the report, and include this analysis as part of the Open Space Credit/Groundwater Production Charges discussion for the Committee's April Agenda.</li> </ol> <i>The Board approved the Committee's requests (see April Agenda 4.4 Attachment 3) at its</i>

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Attachment 1

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# 2016 Annual Accomplishments Report: Agricultural Water Advisory Committee

Update: February 2017

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S) (Action or Information Only)	ACCOMPLISHMENT DATE AND OUTCOME
			<p><i>February 23, 2016, meeting.</i></p> <p><b><u>Accomplished April 4, 2016:</u></b> The Committee reviewed the 2016 Committee Work Plan and took no action.</p> <p><b><u>July 11, 2016:</u></b> The Committee received information in the July meeting packet, however, there was no quorum for this meeting.</p> <p><b><u>Accomplished October 3, 2016:</u></b> The Committee reviewed the work plan and took no action.</p>
5	Review and Comment to the Board on the Fiscal Year 2017 Proposed Groundwater Production Charges.	<ul style="list-style-type: none"> <li>Review and comment to the Board on the Fiscal Year 2017 Proposed Groundwater Production Charges. <b>(Action)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<p><b><u>Accomplished April 4, 2016:</u></b> The Committee reviewed the Fiscal Year 2017 Proposed Groundwater Production Charges. and took the following action:</p> <p>The Committee unanimously approved to support the Fiscal Year 2016-2017 Proposed Groundwater Production Charges.</p> <p><i>The Board received this information at their May 10, 2016, board meeting.</i></p>

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Attachment 1

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# 2016 Annual Accomplishments Report: Agricultural Water Advisory Committee

Update: February 2017

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S) (Action or Information Only)	ACCOMPLISHMENT DATE AND OUTCOME
6	Review and Discuss The Economic Contribution of Agriculture to the County of Santa Clara 2014 Report, and staff's review and analysis of the economic data (study) and implications from page 17 of the report, and include this analysis as part of the Open Space Credit/Groundwater Production Charges Process.	<ul style="list-style-type: none"> <li>Review the Economic Contribution of Agriculture to the County of Santa Clara 2014 Report.</li> <li>Staff's Review and Analysis of the economic data (study) and implications from page 17 of the report. <b>(Action)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<b><u>Accomplished April 4, 2016:</u></b> The Committee reviewed the Economic Contribution of Agriculture to the County of Santa Clara 2014 Report and took no action.
7	Update on CA WaterFix (Bay Delta Conservation Plan and Imported Water with Respect to Board Ends Policy 2.1: Reliable Water)	<ul style="list-style-type: none"> <li>Receive an update on the CA Water Fix (Bay Delta Conservation Plan and Imported Water with Respect to Board Ends Policy 2.1:Reliable Water). <b>(Action)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<b><u>Accomplished April 4, 2016:</u></b> The Committee received an update on the Bay Delta Conservation Plan and Imported Water with Respect to Board Ends Policy 2.1:Reliable Water and took no action  <b><u>October 3, 2016:</u></b> <i>This agenda item was removed for this meeting because there was no new significant information for the Committee at this time. (removal approved by Committee Chair Long)</i>

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Attachment 1

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# 2016 Annual Accomplishments Report: Agricultural Water Advisory Committee

Update: February 2017

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S) (Action or Information Only)	ACCOMPLISHMENT DATE AND OUTCOME
8	Comprehensive Review of Safe, Clean Water (SCW) Program Grants and Partnership Projects	<ul style="list-style-type: none"> <li>Review the SCW Program Grants and Partnership Projects. <b>(Information)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<b>July 11, 2016:</b> The Committee received information in the July meeting packet, however, there was no quorum for this meeting.
9	Conceptual Development of a Pilot Mini-Grant Program for Wildlife Habitat Restoration Grants and Partnerships (Project D3) of the Safe, Clean Water (SCW) Program	<ul style="list-style-type: none"> <li>Discuss the conceptual development of a pilot mini-grant program for wildlife habitat restoration grants and partnership (Project D3) of the SCW Program). <b>(Information)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<b>July 11, 2016:</b> The Committee received information in the July meeting packet; however, there was no quorum for this meeting.
10	Discussion of the water quality conditions of waterways (rivers/streams/systems) within the county and if/how agricultural water does/does not influence water quality conditions.	<ul style="list-style-type: none"> <li>Discuss the water quality conditions of waterways (rivers/streams/systems) within the county and if/how agricultural water does/does not influence water quality conditions. <b>(Information)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<b>July 11, 2016:</b> The Committee received information in the July meeting packet; however, there was no quorum for this meeting.

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# 2016 Annual Accomplishments Report: Agricultural Water Advisory Committee

Update: February 2017

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S) (Action or Information Only)	ACCOMPLISHMENT DATE AND OUTCOME
11	Update on the Capital Expansion (CIP)	<ul style="list-style-type: none"> <li>Receive an update on the Capital Improvement Plan. <b>(Information)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<b>July 11, 2016:</b> The Committee received information in the July meeting packet; however, there was no quorum for this meeting.
12	Status Report on the Water Resources Master Plan.	<ul style="list-style-type: none"> <li>Receive an update on the Water Resources Master Plan. <b>(Information)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<b>July 11, 2016:</b> The Committee received information in the July meeting packet; however, there was no quorum for this meeting.
13	<del>Riparian Ordinance Report</del>	<ul style="list-style-type: none"> <li><del>Review the Board-approved Riparian Ordinance Report for Board consideration. <b>(Action)</b></del></li> <li><del>Provide comments to the Board, as necessary.</del></li> </ul>	<b>October 3, 2016:</b> <i>This item is postponed until staff gets the Board's direction as to what type of feedback they expect from the Committee regarding the Riparian Ordinance Report. (Committee Chair Long was apprised of this change).</i>
14	Discussion on finding ways that private well owners (farmers) can recharge their aquifers.	<ul style="list-style-type: none"> <li>Discuss ways that private well owners (farmers) can recharge their aquifers. <b>(Action)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<b>Accomplished October 3, 2016:</b> The Committee discussed ways that private well owners (farmers) can recharge their aquifers. The Committee took no action.

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# 2016 Annual Accomplishments Report: Agricultural Water Advisory Committee

Update: February 2017

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S) (Action or Information Only)	ACCOMPLISHMENT DATE AND OUTCOME
15	<del>Update on the progress of recharge costs upcoming for Fiscal Year 2017-2018.</del>	<ul style="list-style-type: none"> <li><del>Received an update on the Progress of recharge costs upcoming for Fiscal Year 2017- 2018. (Action)</del></li> <li><del>Provide comments to the Board, as necessary.</del></li> </ul>	<b><u>October 3, 2016:</u></b> <i>This information will be available during the Groundwater Production Charges discussion in April 2017. (Committee Chair Long was apprised of this change)</i>
16	Water Conservation Programs	<ul style="list-style-type: none"> <li>Received information on Water Conservation Programs. <b>(Information)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<b><u>Accomplished October 3, 2016:</u></b> The Committee discussed Water Conservation Programs and how to educate their respective communities. The Committee took no action.

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## 2016 Annual Accomplishments Report: Environmental and Water Resources Committee

Update: February 2017

GP8. Accordingly, the Board has established Advisory Committees, which bring respective expertise and community interest, to advise the Board, when requested, in a capacity as defined: prepare Board policy alternatives and provide comment on activities in the implementation of the District's mission for Board consideration. In keeping with the Board's broader focus, Advisory Committees will not direct the implementation of District programs and projects, other than to receive information and provide comment.

The annual work plan establishes a framework for committee discussion and action during the annual meeting schedule. The committee work plan is a dynamic document, subject to change as external and internal issues impacting the District occur and are recommended for committee discussion. Subsequently, an annual committee accomplishments report is developed based on the work plan and presented to the District Board of Directors.

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S) (Action or Information Only)	ACCOMPLISHMENT DATE AND OUTCOME
1	Annual Accomplishments Report	<ul style="list-style-type: none"> <li>Review and approve 2015 Accomplishments Report for presentation to the Board. <b>(Action)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<p><b><u>Accomplished January 25, 2016:</u></b> The Committee reviewed and approved 2015 Accomplishments Report for presentation to the Board.</p> <p><i>The Board received the Accomplishments Report at their May 10, 2016, board meeting.</i></p>
2	Election of Chair and Vice Chair for 2016	<ul style="list-style-type: none"> <li>Committee Elects Chair and Vice Chair for 2015. <b>(Action)</b></li> </ul>	<p><b><u>Accomplished January 25, 2016:</u></b> The Committee elected the 2016 Committee Chair and Vice-Chair, Hon. Dean Chu and Mr. Loren Lewis respectively.</p>
3	Update on 2016 Water Supply and Drought Response	<ul style="list-style-type: none"> <li>Receive update on water supply and drought response. <b>(Action)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<p><b><u>Accomplished January 25, 2016:</u></b> The Committee received information on the water supply and drought response and took no action.</p> <p><b><u>Accomplished October 17, 2016:</u></b> The Committee received information on the water supply and drought response and took no action.</p>

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Attachment 2

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# 2016 Annual Accomplishments Report: Environmental and Water Resources Committee

Update: February 2017

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S) (Action or Information Only)	ACCOMPLISHMENT DATE AND OUTCOME
4	Review of Environmental and Water Resources Committee Work Plan, the Outcomes of Board Action of Committee Requests and the Committee's Next Meeting Agenda	<ul style="list-style-type: none"> <li>Receive and review the 2016 Board-approved Committee work plan. <b>(Action)</b></li> <li>Submit requests to the Board, as appropriate.</li> </ul>	<p><b><u>Accomplished January 25, 2016:</u></b> The Committee reviewed the committee work plan and took the following action:</p> <p><b><u>Action #1</u></b> The Committee requested that the Board consider allowing the Committee to distribute the informal working groups' roster at each meeting; annually send out the working groups' guidelines; and, also, have a list of topics the working groups are discussing and advise the Board and request quarterly feedback, whenever, possible.</p> <p><b><u>Action #2</u></b> The Committee requested that the Board consider changing two information items on the Committee's 2016 work plan {Status Report on Water Resources Plan, Update on Bay Delta Conservation Plan and Imported Water with Respect to Board Ends Policy 2.1:Reliable Water} to action items. Also, have the Committee to review and comment on surface water charges and quality, imported water charges, flood protection activities, and securing imported water supplies to be paid by rate payers and /or land owners.</p> <p><i>The Board approved the Committee's requests at its February 23, 2016, meeting.</i></p>

Yellow = Update Since Last Meeting

Blue = Action taken by the Board of Directors

Attachment 2

Page 2 of 7

# 2016 Annual Accomplishments Report: Environmental and Water Resources Committee

Update: February 2017

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S) (Action or Information Only)	ACCOMPLISHMENT DATE AND OUTCOME
			<p><b><u>Accomplished April 18, 2016:</u></b> The Committee reviewed the committee work plan and took no action.</p> <p><b><u>Accomplished August 22, 2016:</u></b> The Committee reviewed the committee work plan and took the following action.</p> <p><b><u>Committee Action:</u></b> To approve the Committee's request for them to receive a brief report of the ongoing discussion with the Sierra Club and District on Water Planning. They would like to add it to their next meeting's agenda and place it on their work plan.</p> <p><b><u>Accomplished October 17, 2016:</u></b> The Committee reviewed the committee work plan and took the following action:</p> <p><b><u>Committee Action:</u></b></p> <ol style="list-style-type: none"> <li>1. To approve the Committee's request for them to receive information on fracking early 2017 and to note it as an action item so the Committee can make recommendations if needed.</li> <li>2. To approve the Committee's request for them to receive information on climate change and the District's policy response regarding flooding, sea level rise, wildfires.</li> <li>3. To approve the Committee's request for them to receive information on shallow</li> </ol>

Yellow = Update Since Last Meeting

Blue = Action taken by the Board of Directors

Attachment 2

Page 3 of 7

# 2016 Annual Accomplishments Report: Environmental and Water Resources Committee

Update: February 2017

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S) (Action or Information Only)	ACCOMPLISHMENT DATE AND OUTCOME
			aquifers, dewatering, recharge, well pumping (when to use or not).
5	Update of Status of Working Groups	<ul style="list-style-type: none"> <li>Receive updates on the status of the working groups. <b>(Action)</b></li> <li>Submit requests to the Board, as appropriate.</li> </ul>	<p><b><u>Accomplished January 25, 2016:</u></b> The Committee received updates on the status of the working groups and took no action.</p> <p><b><u>Accomplished April 18, 2016:</u></b> The Committee received updates on the status of the working groups and took no action.</p> <p><b><u>Accomplished August 22, 2016:</u></b> The Committee received updates on the status of the working groups and took no action.</p> <p><b><u>Accomplished October 17, 2016:</u></b> The Committee received updates on the status of the working groups and took no action.</p>
6	Review and Comment to the Board on the Fiscal Year 2017 Proposed Groundwater Production Charges	<ul style="list-style-type: none"> <li>Review and comment to the Board on the Fiscal Year 2017 Proposed Groundwater Production Charges. <b>(Action)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<p><b><u>Accomplished April 18, 2016:</u></b> The Committee reviewed the Fiscal Year 2017 Proposed Groundwater Production Charges and took no action.</p>
7	Update on the CAWater Fix (Bay Delta Conservation Plan) and Imported Water with Respect to Board Ends Policy 2.1: Reliable Water	<ul style="list-style-type: none"> <li>Receive an update on the Bay Delta Conservation Plan and Imported Water with Respect to Board Ends Policy 2.1:Reliable Water</li> </ul>	<p><b><u>Accomplished April 18, 2016:</u></b> The Committee received an update on the CAWater Fix (Bay Delta Conservation Plan) and Imported Water with Respect to Board Ends</p>

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Attachment 2

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# 2016 Annual Accomplishments Report: Environmental and Water Resources Committee

Update: February 2017

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S) (Action or Information Only)	ACCOMPLISHMENT DATE AND OUTCOME
		<p><b>(Action)</b></p> <ul style="list-style-type: none"> <li>Provide comments to the Board, as necessary.</li> </ul>	<p>Policy 2.1: Reliable Water took no action.</p> <p><b><u>October 17, 2016:</u></b> This agenda item was removed for this meeting because there was no new significant information for the Committee at this time. (Committee Chair Chu was apprised of the change)</p>
8	<b>Comprehensive Review of Safe, Clean Water Program Grants and Partnership Projects</b>	<ul style="list-style-type: none"> <li>Discuss the Comprehensive Review of Safe, Clean Water Program Grants and Partnership Projects <b>(Action)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<p><b><u>Accomplished August 22, 2016:</u></b> The Committee received a presentation on the Comprehensive Review of Safe, Clean Water Program Grants and Partnership Projects and took no action.</p>
9	<b>Conceptual Development of a Pilot Mini-Grant Program for Wildlife Habitat Restoration Grants and Partnerships (Project D3) of the Safe, Clean Water Program</b>	<ul style="list-style-type: none"> <li>Discuss the Conceptual Development of a Pilot Mini-Grant Program for Wildlife Habitat Restoration Grants and Partnerships (Project D3) of the Safe, Clean Water Program <b>(Action)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<p><b><u>Accomplished August 22, 2016:</u></b> The Committee received a presentation on Conceptual Development of a Pilot Mini-Grant Program for Wildlife Habitat Restoration Grants and Partnerships (Project D3) of the Safe, Clean Water Programs and took no action.</p>
10	<b>Update on the One Water Plan (formerly known as Water Resources Master Plan)</b>	<ul style="list-style-type: none"> <li>Receive an update on the One Water Plan (formerly known as Water Resources Master Plan). <b>(Action)</b></li> </ul>	<p><b><u>Accomplished August 22, 2016:</u></b></p>

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Attachment 2

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# 2016 Annual Accomplishments Report: Environmental and Water Resources Committee

Update: February 2017

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S) (Action or Information Only)	ACCOMPLISHMENT DATE AND OUTCOME
		<ul style="list-style-type: none"> <li>Provide comments to the Board, as necessary.</li> </ul>	The Committee received a presentation on the One Water Plan (formerly known as Water Resources Master Plan) and took no action.
11	Review and comment on surface water charges and quality, imported water charges, flood protection activities, and securing imported water supplies to be paid by rate payers and /or land owners.	<ul style="list-style-type: none"> <li>Review and comment on surface water charges and quality, imported water charges, flood protection activities, and securing imported water supplies to be paid by rate payers and /or land owners. <b>(Action)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<b><u>Accomplished August 22, 2016:</u></b> The Committee received a presentation on surface water charges and quality, imported water charges, flood protection activities, and securing imported water supplies to be paid by rate payers and /or land owners and took no action.
12	Receive Update on the Fisheries and Aquatic Habitat Collaborative Effort (FAHCE) Process	<ul style="list-style-type: none"> <li>Receive update on Fisheries Aquatic Habitat Collaborative Efforts Process. <b>(Information)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<b><u>Accomplished October 17, 2016:</u></b> The Committee received an update on Fisheries Aquatic Habitat Collaborative Efforts Process.
13	<del>Riparian Ordinance Report</del>	<ul style="list-style-type: none"> <li><del>Review and provide input on the Riparian Ordinance Report. <b>(Action)</b></del></li> <li><del>Provide comments to the Board, as necessary.</del></li> </ul>	<b><u>October 17, 2016:</u></b> <b><i>This item is postponed until staff gets the Board's direction as to what type of feedback they expect from the Committee regarding the Riparian Ordinance Report. (Committee Chair Chu was apprised of this change).</i></b>

Yellow = Update Since Last Meeting

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Attachment 2

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# 2016 Annual Accomplishments Report: Environmental and Water Resources Committee

Update: February 2017

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S) (Action or Information Only)	ACCOMPLISHMENT DATE AND OUTCOME
14	Overview of the Safe, Clean Water Program	<ul style="list-style-type: none"> <li>Receive an overview of the Safe, Clean Water Program. <i>(Information)</i></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<p><u><b>Accomplished October 17, 2016:</b></u> The Committee received an overview of the Safe, Clean Water Program.</p>

Yellow = Update Since Last Meeting

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# 2016 Annual Accomplishments Report: Santa Clara Valley Water Commission

Update: October 2016

GP8. Accordingly, the Board has established Advisory Committees, which bring respective expertise and community interest, to advise the Board, when requested, in a capacity as defined: prepare Board policy alternatives and provide comment on activities in the implementation of the District's mission for Board consideration. In keeping with the Board's broader focus, Advisory Committees will not direct the implementation of District programs and projects, other than to receive information and provide comment.

The annual work plan establishes a framework for committee discussion and action during the annual meeting schedule. The committee work plan is a dynamic document, subject to change as external and internal issues impacting the District occur and are recommended for committee discussion. Subsequently, an annual committee accomplishments report is developed based on the work plan and presented to the District Board of Directors.

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S)	ACCOMPLISHMENT DATE AND OUTCOME
1	<b>Annual Accomplishments Report</b> <i>(Governance Process-8:Policy Implementation)</i>	<ul style="list-style-type: none"> <li>Review and approve 2015 Accomplishments Report for presentation to the Board. <b>(Action)</b></li> <li>Submit requests to the Board, as appropriate.</li> </ul>	<p><b>Accomplished January 27, 2016:</b> The Commission reviewed and approved 2015 Accomplishments Report for presentation to the Board.</p> <p><i>The Board received this information at their May 10, 2016, meeting.</i></p>
2	<b>Election of Chair and Vice Chair for 2016</b>	<ul style="list-style-type: none"> <li>Committee Elects Chair and Vice Chair for 2016. <b>(Action)</b></li> </ul>	<p><b>Accomplished January 27, 2016:</b> The Commission elected the 2015 Commission Chair and Vice Chair, Hon. Tara Martin-Milius and Hon. Yoriko Kishimoto respectively.</p>
3	<b>Review and Comment to the Board on the Fiscal Year 2017 Preliminary Groundwater Production Charges</b>	<ul style="list-style-type: none"> <li>Receive and comment to the Board on the Fiscal Year 2017 Preliminary Groundwater Production Charges. <b>(Action)</b></li> <li>Submit requests to the Board, as appropriate.</li> </ul>	<p><b>Accomplished January 27, 2016:</b> The Commission received information on the Fiscal Year 2017 Preliminary Groundwater Production Charges. No action was taken.</p>

*Blue = Action taken by the Board of Directors*

# 2016 Annual Accomplishments Report: Santa Clara Valley Water Commission

Update: October 2016

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S)	ACCOMPLISHMENT DATE AND OUTCOME
4	Update on 2016 Water Supply and Drought Response	<ul style="list-style-type: none"> <li>Receive update on water supply and drought response. <b>(Action)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<p><b><u>Accomplished January 27, 2016:</u></b> The Commission received an update on 2016 Water Supply and Drought Response. No action was taken.</p>
5	Review of Santa Clara Valley Water Commission Work Plan, the Outcomes of Board Action of Commission Requests and the Commission's Next Meeting Agenda	<ul style="list-style-type: none"> <li>Receive and review the 2016 Board-approved Committee work plan. <b>(Action)</b></li> <li>Submit requests to the Board, as appropriate.</li> </ul>	<p><b><u>Accomplished January 27, 2016:</u></b> The Commission reviewed the 2016 Committee Work Plan and the action to approve the Commission having informal groups failed by majority no votes 4-9.</p> <p><b><u>Accomplished April 13, 2016:</u></b> The Commission reviewed the 2016 Committee Work Plan and took the following action: Unanimously approved Chairperson Tara Martin-Milius writing a letter to the Board requesting a response on the Plan Bay Area.</p> <p><i>Board Chair Keegan responded to Chairperson Martin-Milius on May 10, 2016 and the Commission received the information via email May 11, 2016.</i></p> <p><b><u>Accomplished September 8, 2016:</u></b> The Commission reviewed the 2016 Committee Work Plan and took no action.</p>

*Blue = Action taken by the Board of Directors*

# 2016 Annual Accomplishments Report: Santa Clara Valley Water Commission

Update: October 2016

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S)	ACCOMPLISHMENT DATE AND OUTCOME
6	Review and Comment to the Board on the Fiscal Year 2017 Proposed Groundwater Production Charges.	<ul style="list-style-type: none"> <li>Review and comment to the Board on the Fiscal Year 2017 Proposed Groundwater Production Charges. <b>(Action)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<p><b>Accomplished April 13, 2016:</b> The Commission received information on the Fiscal Year 2017 Proposed Groundwater Production Charges.</p> <p>The Commission took the following action: The Commission unanimously voted to support the Fiscal Year 2016-2017 Proposed Groundwater Production Charges.</p> <p><i>The Board received the Commission's comment at their April 26, 2016, meeting.</i></p>
7	Update on CA WaterFix (Bay Delta Conservation Plan and Imported Water with Respect to Board Ends Policy 2.1: Reliable Water)	<ul style="list-style-type: none"> <li>Receive an update on the Bay Delta Conservation Plan and Imported Water with Respect to Board Ends Policy 2.1:Reliable Water <b>(Information)</b></li> </ul>	<p><b>Accomplished April 13, 2016:</b> The Commission received an update on the CA WaterFix (Bay Delta Conservation Plan) and Imported Water with Respect to Board Ends Policy 2.1:Reliable Water.</p> <p>No action was taken.</p> <p><b>October 26, 2016:</b> <i>This agenda item was removed for this meeting because there was no new significant information for the Commission at this time. (removal approved by Water Commission Chair Martin-Milius)</i></p>

*Blue = Action taken by the Board of Directors*

**2016 Annual Accomplishments Report:  
Santa Clara Valley Water Commission**

Update: October 2016

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S)	ACCOMPLISHMENT DATE AND OUTCOME
8	<b>Comprehensive Review of Safe, Clean Water Program Grants and Partnership Projects</b>	<ul style="list-style-type: none"> <li>Discuss the Comprehensive Review of Safe, Clean Water Program Grants and Partnership Projects <b>(Action)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<b><u>Accomplished September 8, 2016:</u></b> The Commission received an update on the Comprehensive Review of Safe, Clean Water Program Grants and Partnership Projects. No action was taken.
9	<b>Conceptual Development of a Pilot Mini-Grant Program for Wildlife Habitat Restoration Grants and Partnerships (Project D3) of the Safe, Clean Water Program</b>	<ul style="list-style-type: none"> <li>Discuss the Conceptual Development of a Pilot Mini-Grant Program for Wildlife Habitat Restoration Grants and Partnerships (Project D3) of the Safe, Clean Water Program <b>(Action)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<b><u>Accomplished September 8, 2016:</u></b> The Commission received an update on the Conceptual Development of a Pilot Mini-Grant Program for Wildlife Habitat Restoration Grants and Partnerships (Project D3) of the Safe, Clean Water Program. No action was taken.
10	<b>Status Report on the One Water Plan (Water Resources Master Plan)</b>	<ul style="list-style-type: none"> <li>Receive an update on the One Water Plan (Water Resources Master Plan). <b>(Information)</b></li> </ul>	<b><u>Accomplished September 8, 2016:</u></b> The Commission received a status report on the One Water Plan (Water Resources Master Plan). No action was taken.
11	<del><b>Riparian Ordinance Report</b></del>	<ul style="list-style-type: none"> <li><del>Review the Riparian Ordinance Report and provide comments to the Board, as necessary. <b>(Information)</b></del></li> </ul>	<b><u>October 26, 2016:</u></b> <i>This item is postponed until staff gets the Board's direction as to what type of feedback they expect from the Commission regarding the Riparian Ordinance Report (Chair Martin-Milius was apprised of this change).</i>

# 2016 Annual Accomplishments Report: Santa Clara Valley Water Commission

Update: October 2016

ITEM	WORK PLAN ITEM BOARD POLICY	INTENDED OUTCOME(S)	ACCOMPLISHMENT DATE AND OUTCOME
12	Overview Forecast Modeling	<ul style="list-style-type: none"> <li>Discuss forecast modeling and provide comments to the Board, as necessary. <b>(Information)</b></li> </ul>	<b><u>Accomplished October 26, 2016:</u></b> The Commission received an overview of forecast modeling. No action was taken.
13	Water Supply Master Plan	<ul style="list-style-type: none"> <li>Receive information of the Water Supply Master Plan. <b>(Action)</b></li> <li>Provide comments to the Board, as necessary.</li> </ul>	<b><u>Accomplished October 26, 2016:</u></b> The Commission received a presentation of the Water Supply Master Plan. No action was taken.
14	San Francisco Estuary Institute	<ul style="list-style-type: none"> <li>Receive a presentation of the Resilience Landscapes Study Project. <b>(Information)</b></li> </ul>	<b><u>Accomplished October 26, 2016:</u></b> The Commission received a presentation from the San Francisco Estuary Institute on Resilience Landscapes. No action was taken.



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**File No.:** 17-0173

**Agenda Date:** 3/28/2017  
**Item No.:** \*2.2.

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## BOARD AGENDA MEMORANDUM

### **SUBJECT:**

Fiscal Year 2017-18 Second Pass Budget Development Process Overview.

### **RECOMMENDATION:**

Receive and discuss the overview information on the District's FY 2017-18 Second Pass Budget Development Process.

### **SUMMARY:**

The District develops the annual budget to allocate the public's funds that are necessary to provide Silicon Valley with safe, clean water for a healthy life, environment and economy. The development of the District's budget is accomplished in an open transparent process providing opportunity for Board and public input. This report presents the second pass budget process and schedule for development of the FY 2017-18 Budget. The process includes over ten (10) open session discussions providing the Board and public significant opportunity for input. In addition to the Board open sessions, Board Advisory committees have opportunities for input during the development of the Budget.

An overview of the District's 2<sup>nd</sup> Pass FY 2017-18 budget information, and a status of the budget development process will be provided. The Board has scheduled Budget work study sessions for April 26 through 28. The process is scheduled to conclude with the adoption of the budget on May 9, 2017.

The District's financial planning and budget development processes are governed by the District Act, section 13 for taxation and section 20 for adoption of the budget. In addition, state and federal laws require annual examinations of financial records. Board Governance Policy EL-4 guide financial planning, budgeting and ongoing financial activities.

### **FINANCIAL IMPACT:**

There is no financial impact related to this agenda. It is presented for information only.

### **CEQA:**

The recommended action does not constitute a project under CEQA because it does not have a

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potential for resulting in direct or reasonably, foreseeable indirect physical changes in the environment.

**ATTACHMENTS:**

\*Supplemental Agenda Memo

\*Supplemental Attachment 1: PowerPoint

**UNCLASSIFIED MANAGER:**

Darin Taylor, 408-630-3068



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**File No.:** 17-0029

**Agenda Date:** 3/28/2017

**Item No.:** \*2.2.

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## SUPPLEMENTAL BOARD AGENDA MEMORANDUM

### **SUBJECT:**

FY 2017-18 Preliminary Budget Development Process Overview.

### **REASON FOR SUPPLEMENTAL MEMORANDUM:**

This update conveys additional information received after the initial agenda memo was released, consistent with Executive Limitations Policy EL-7-10-5.

### **RECOMMENDATION:**

Receive and discuss the overview budget information on the District's FY 2017-18 Preliminary Budget Development Process.

### **SUMMARY:**

Review the FY 2017-18 budget development process and preliminary budget data. The FY 2017-18 preliminary total net outlay is \$498M, a 5% decrease from the FY 2016-17 adopted budget. The FY 2017-18 preliminary budget incorporates the Board's urgent priorities into the proposed unfunded needs and represents a shift in resources to adequately fund efforts that address urgent priorities while sustaining minimal increases to rates.

### **FINANCIAL IMPACT:**

There is no financial impact associated with this item.

### **CEQA:**

Explain changes to CEQA, if any, or utilize "Add-Ins" "Standard Language".

### **ATTACHMENTS:**

\*Attachment 1: PowerPoint

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**File No.:** 17-0029

**Agenda Date:** 3/28/2017  
**Item No.:** \*2.2.

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**UNCLASSIFIED MANAGER:**  
Darin Taylor, 408-630-3068

# FY 2017-18 Preliminary Budget

March 28, 2017



# FY 2017-18 Preliminary Budget

- **Board Schedule**
- **Budget Assumptions**
  - Revenues
  - Expenditures
- **FY 2017-18 Preliminary Budget**
- **Next Steps**



# FY 2017-18 Budget Schedule

## Board Budget Development Updates:

- ✓ December 13, 2016 – FY18 budget overview
- ➔ • March 28, 2017 – Preliminary Results
- April 26 to 28, 2017 – Board work study sessions

## Groundwater Production Charges Board Hearings:

- ✓ January 10, 2017
- ✓ February 14, 2017
- April 11, April 13 for So. County and April 25, 2017

## Capital Improvement Plan (CIP) Board Updates:

- ✓ January 10, 2017
- ✓ February 28, 2017

## Budget Adoption: (Budget, groundwater charges, and CIP)

- May 9, 2017

# FY 2017-18 Budget Assumptions

## FY 2017-18 Major Revenue Sources - Preliminary


Total Water Charge Revenue <ul style="list-style-type: none"><li>•Increase up to 9.6% in North County</li><li>•Increase up to 6.4% in South County</li></ul>	\$215.2 million
Property Tax (1% Ad-valorem)	\$87.2 million
Capital Reimbursements & State Subventions	\$49.8 million
Investment Interest Income	\$3.5 million

# FY 2017-18 Budget Assumptions

## FY 2017-18 Salaries & Benefits - Preliminary

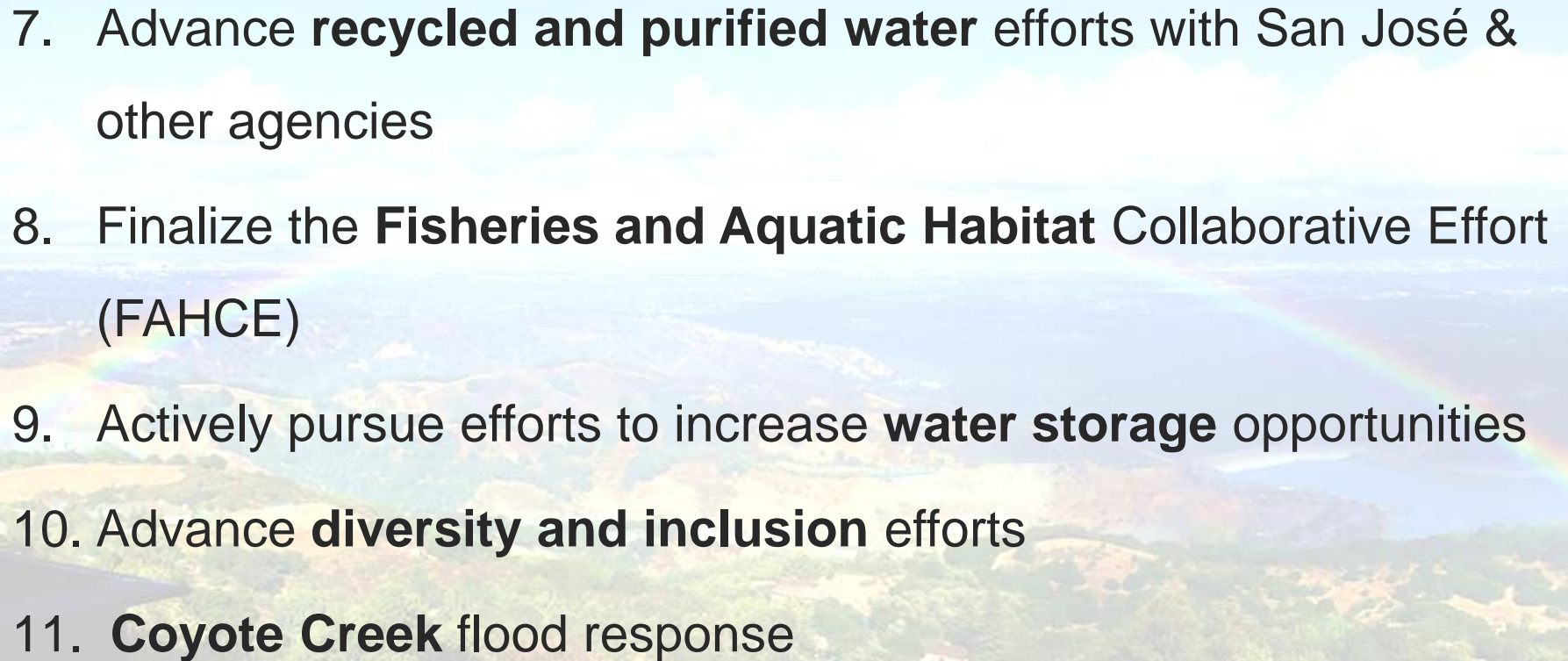
Salaries	\$97 million	5.3% increase
Includes new positions, salary and step increases		
Benefits	\$51.5 million	5% increase
Includes health benefits, CalPERS and retiree obligations		

# FY 2017-18 Board Urgent Priorities

- 
1. Make key decisions regarding the **California WaterFix**
  2. Prioritize the care of our **District facilities and assets**
  3. Advance the District's interest in **Countywide storm water** resource planning
  4. Provide for a watershed-wide **regulatory planning and permitting** effort
  5. Foster a coordinated approach to **environmental stewardship** efforts
  6. Advance the **Anderson Dam Seismic Retrofit Project**



# FY 2017-18 Board Urgent Priorities

- 
7. Advance **recycled and purified water** efforts with San José & other agencies
  8. Finalize the **Fisheries and Aquatic Habitat Collaborative Effort (FAHCE)**
  9. Actively pursue efforts to increase **water storage** opportunities
  10. Advance **diversity and inclusion** efforts
  11. **Coyote Creek** flood response

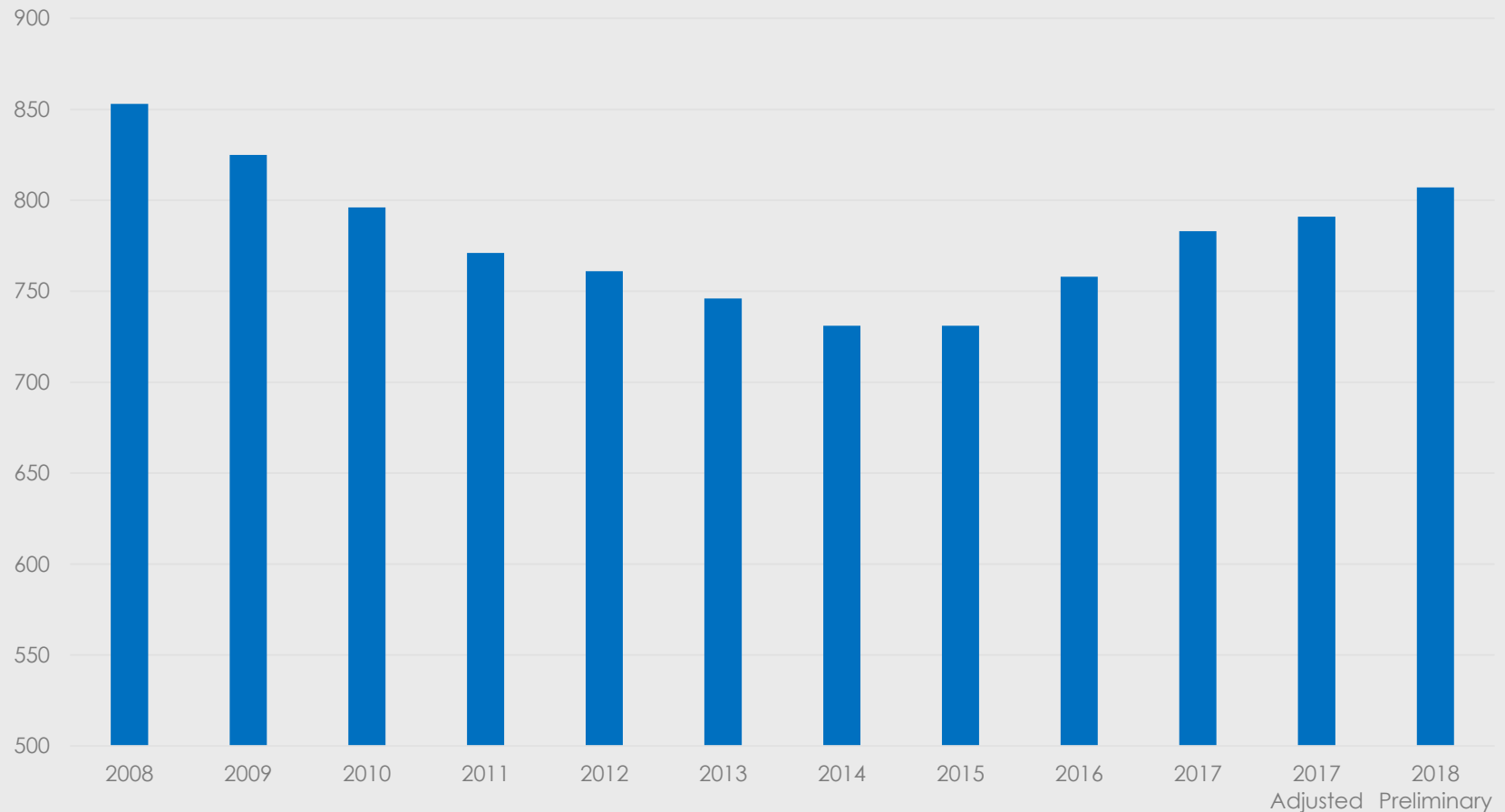
# FY 2017-18 Preliminary Operating & Capital Outlays

Category	FY17 Adopted (\$ in millions)	FY18 Preliminary (\$ in millions)	Over / (Under) FY17 (\$ in millions)	% Change
Operations	\$ 312.2	\$ 314.2	\$ 1.8	0.6%
Debt Service	\$ 39.5	\$ 49.8	\$ 10.3	26%
Subtotal	\$ 351.7	\$ 364.0	\$ 12.1	3%
Capital Projects	\$ 240.7	\$ 215.9	\$ (24.8)	(10%)
Intra-District Reimbursement*	\$ (68.0)	\$ (81.3)	\$ (13.3)	N/A
<b>Total</b>	<b>\$ 524.4</b>	<b>\$ 498.6</b>	<b>\$ (25.8)</b>	<b>(5%)</b>

\* Intra-district reimbursements are the amounts needed by the Administration funds to maintain adequate reserves

# Ten Year Staffing Trend FY08 – FY18

Regular Staffing  
Proposed FY18: 807 Positions



# FY 2017-18 Preliminary Results - Operations

Operations Budget (\$ in millions)	FY17 Adopted	FY18 Preliminary	Over/ (Under) FY17	% Change
Administration Funds	\$ 65.2	\$ 74.9	\$ 9.7	15%
Water Enterprise Funds	\$ 181.4	\$ 170.9	\$ (10.5)	(6%)
Watershed Fund	\$ 51.6	\$ 53.1	\$ 1.5	3%
Safe, Clean Water Fund	\$ 13.9	\$ 15.0	\$ 1.1	8%
<b>Total Operations</b>	<b>\$ 312.1</b>	<b>\$ 313.9</b>	<b>\$ 1.8</b>	<b>0.6%</b>

# FY 2017-18 Preliminary Results

Administration Funds				
Operations Budget (\$ in millions)	FY17 Adopted	FY18 Preliminary	Over / (Under) FY17	% Change
Administration Funds	\$ 65.2	\$ 74.9	\$ 9.7	15%

## 2nd Pass

## Variance

6 New Positions & COLA	\$ 3.6
Salary Savings	\$ (0.3)
Risk Insurance Charges	\$ 1.1
IT Fund Charges	\$ 1.5
President's Day Flood	\$ 2.4
Sacramento & Santa Teresa Lease	\$ 0.4
Training & Instruction	\$ 0.3
Drought Induced Tree Removal	\$ 0.2
Other Professional Services	\$ 0.5
<b>Total</b>	<b>\$ 9.7</b>

## **Improve Financial Planning**

- ▶ 1.0 Engineering Systems Analyst - Software Services
- ▶ 1.0 Sr. Mgmt. Analyst - Financial Planning & Mgmt Div

## **Engaging with the Community**

- ▶ 1.0 Public Info. Rep I - District Communications
- ▶ 1.0 Public Info. Rep II - Civic Engagement Unit
- ▶ 1.0 Executive Asst. - Office of Chief of External Affairs
- ▶ 1.0 Mgmt. Analyst II - Records & Library Services

# FY 2017-18 Preliminary Results

Water Enterprise Funds				
Operations Budget (\$ in millions)	FY17 Adopted	FY18 Preliminary	Over/ (Under) FY17	% Change
Water Enterprise Funds	\$ 181.4	\$ 170.9	\$ (10.5)	(6%)

## 2nd Pass Variance

2 mid-year FY17 and 3 FY18 positions, & COLA	\$ 4.5
Risk Insurance Charges	\$ 1.3
IT Fund Charges	\$ 1.6
Cost Sharing in Recycled Water	\$ (3.0)
Water Banking	\$ (4.0)
Water Purchases	\$ (10.9)
<b>Total</b>	<b>\$ (10.5)</b>

# FY 2016-17 Mid-Year Water Enterprise Positions

## FY 2016-17 Adjusted Budget

- ▶ 1.0 Assoc. Water Resources Specialist – Water Supply Planning & Conservation: Finalizing FAHCE
- ▶ 1.0 Water Plant Operator – No. Water Treatment Operations: Expanding Educational Outreach for the Silicon Valley Advanced Water Purification Center



# FY 2017-18 Water Enterprise Positions

## **Board Priorities: 1 (California WaterFix) 8 (FAHCE) 9 (Storage Opportunities)**

- ▶ 1.0 Assistant Officer – Office of COO Water Utility
- ▶ 1.0 Associate Civil Engineer – Imported Water
- ▶ 1.0 Engineering Systems Analyst – Raw Water Operations

# FY 2017-18 Preliminary Results

Watershed Fund				
Operations Budget (\$ in millions)	FY17 Adopted	FY18 Preliminary	Over/ (Under) FY17	%
Watershed Fund	\$ 51.6	\$ 53.1	\$ 1.5	3%

## 2nd Pass

### Variance

Partial funding for 7 new positions & COLA	\$ 0.9
Risk Insurance Charges	\$ 0.6
IT Fund Charges	\$ 0.7
Equipment Fund Charges	\$ (1.2)
Consultant for Guad River Mit. & Monitoring	\$ 0.5
Sediment Removal	\$ 1.5
Erosion Protection	\$ 0.6
Vegetation Services for Tree Removal	\$ 0.4
FEMA grant	\$ (0.8)
Maintenance Guideline	\$ (1.7)
<b>Total</b>	<b>\$ 1.5</b>

# FY 2017-18 Preliminary Results

Safe, Clean Water Fund				
Operations Budget (\$ in millions)	FY17 Adopted	FY18 Preliminary	Over/ (Under) FY17	% Change
Safe, Clean Water Fund	\$ 13.9	\$ 15.0	\$ 1.1	8%

## 2nd Pass Variance

Partial funding for 7 new positions & COLA	\$ 0.4
Sediment Removal	\$ 0.2
Pollution Prevention Grants	\$ 0.5
<b>Total</b>	<b>\$ 1.1</b>

## **Board Priority: 11 (Coyote Creek Flood Response)**

- ▶ 1.0 Staff Analyst - Security & Emergency Services

## **Board Priority: 8 (FAHCE)**

- ▶ 1.0 Sr. Water Resources Specialist – Envr. Mitigation & Monitoring

## **Board Priority: 4 (Regulatory Planning and Permitting)**

- ▶ 1.0 Maintenance Worker III - Vegetation Field Operations
- ▶ 1.0 Vegetation Program Spec II - Vegetation Field Operations
- ▶ 1.0 Water Resources Tech - Environmental Planning
- ▶ 1.0 Asst. Engineer - Community Projects
- ▶ 1.0 Assoc. Water Resources Specialist - Stream Maintenance Program

# FY 2017-18 Preliminary Results - Capital

Capital Budget (\$ in millions)	FY17 Adopted	FY18 Preliminary	Over / (Under) FY17	% Change
General Fund	\$ 8.1	\$ 1.7	\$ (6.4)	(79%)
Watershed Fund	\$ 43.4	\$ 25.4	\$ (18.0)	(41%)
Safe, Clean Water Fund	\$ 49.5	\$ 54.8	\$ 5.3	11%
Water Enterprise Fund	\$ 128.1	\$ 119.7	\$ (8.4)	(7%)
Fleet Fund	\$ 4.6	\$ 1.5	\$ (3.1)	(67%)
IT Fund	\$ 6.9	\$ 12.7	\$ 5.8	84%
<b>Total Capital</b>	<b>\$ 240.6</b>	<b>\$ 215.8</b>	<b>\$ (24.8)</b>	<b>(10%)</b>

# FY 2016-17 Mid-Year Capital Positions

## FY 2016-17 Adjusted Budget

### Watershed Design & Construction – Expedite Environmental Projects

- ▶ 1.0 Asst. Engineer II (Civil)
- ▶ 1.0 Sr. Water Resources Specialist
- ▶ 1.0 Assoc. Water Resources Spec

### Capital Prog Plan & Analysis – Streamline Contracts

- ▶ 2.0 Mgmt. Analyst II
- ▶ 1.0 Program Administrator

# Largest FY18 Capital Project Appropriations

Largest FY18 Capital Project Appropriations		
Fund	Project Description	(\$ in millions)
61	RWTP Reliability Improvement	\$ 48.1
61	RWTP FRP Residuals Management	\$ 17.1
26	Permanente Ck, Bay-Fthill CSC	\$ 16.9
61	10-Yr PL Inspection and Rehab	\$ 16.0
26	Main/Madrone PL Restoration	\$ 14.6
61	Anderson Dam Seismic Retrofit	\$ 7.9
26	San Francisquito Early Implemt	\$ 7.3
73	ERP PeopleSoft Upgrade	\$ 7.3
12	Watersheds Asset Rehabilitation Program	\$ 6.8
26	Guadalupe Rv-Upr, SPRR-BH 7-12	\$ 6.5
<b>Total</b>		<b>\$ 153.3</b>

# Next Steps

## **Groundwater Production Charges Board Hearings:**

- April 11, April 13 for So. County and April 25, 2017

## **Board Budget Development Updates:**

- April 26 to 28 – Board work study sessions

## **Budget Adoption: (Budget, GWP and CIP)**

- May 9, 2017



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**File No.:** 17-0141

**Agenda Date:** 3/28/2017

**Item No.:** 3.1.

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## BOARD AGENDA MEMORANDUM

### **SUBJECT:**

Memorandum of Understanding with the San Francisco Public Utilities Commission and the Bay Area Water Supply and Conservation Agency for Feasibility Studies Related to Purified Water Alternatives.

### **RECOMMENDATION:**

Authorize the Interim CEO to execute the Memorandum of Understanding (MOU) between the Santa Clara Valley Water District (District), the San Francisco Public Utilities Commission (SFPUC), and the Bay Area Water Supply and Conservation Agency (BAWSCA) to Participate in a Feasibility Study to Evaluate Alternatives for SFPUC Participation in the Expedited Purified Water Program.

### **SUMMARY:**

A proposed MOU for recycled and purified water has been developed with SFPUC and BAWSCA to assess the feasibility and potential cost-sharing related to the development of potable water reuse options in Santa Clara County (County). Both SFPUC and BAWSCA have approved and executed the MOU. On February 16, 2017, the Recycled Water Committee (Committee) recommended that the Board of Directors authorize the Interim CEO to execute the MOU.

### **Background**

Staff of the District, SFPUC, and BAWSCA prepared the proposed MOU to enable SFPUC and BAWSCA to participate with the District in a Feasibility Study to evaluate alternatives to improve regional water supply reliability. The specific objective of the Feasibility Study is to evaluate the concept of SFPUC's participation financially in the District's potable reuse program in exchange for receipt of a portion of the purified water or an equivalent quantity of other water. A potential benefit in such an arrangement could be increased water supply reliability for SFPUC customers in the County, including City of San José and City of Santa Clara. As stakeholders in the Feasibility Study, City of San José and City of Santa Clara may elect to provide input through BAWSCA. A draft of this MOU was discussed with the Committee at its November 9, 2016 meeting. The proposed MOU (Attachment 2) was presented to the Committee at its February 16, 2017 meeting.

### **FINANCIAL IMPACT:**

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Projected costs for the completion of the Feasibility Study are included in the Water Utility Enterprise FY2017 budget, Recycled and Purified Water project 91101004. The MOU specifies that the consultant costs to perform the work shall not exceed \$75,000; SFPUC and BAWSCA agree to reimburse the District up to \$37,500.

**CEQA:**

The recommended action does not constitute a project under CEQA because it does not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

**ATTACHMENTS:**

Attachment 1: PowerPoint

Attachment 2: District/SFPUC/BAWSCA MOU

**UNCLASSIFIED MANAGER:**

Garth Hall, 408-630-2750

# Memorandum of Understanding with the San Francisco Public Utilities Commission and the Bay Area Water Supply and Conservation Agency for Feasibility Studies Related to Purified Water Alternatives

March 28, 2017



# Staff Recommendation

- Authorize the Interim CEO to execute the Memorandum of Understanding (MOU) between the Santa Clara Valley Water District (District), the San Francisco Public Utilities Commission (SFPUC), and the Bay Area Water Supply and Conservation Agency (BAWSCA) to Participate in a Feasibility Study to Evaluate Alternatives for SFPUC Participation in the Expedited Purified Water Program.

# District/ SFPUC/ BAWSCA Milestones

Item	Milestone
<b>MOU Status</b>	Signed by SFPUC and BAWSCA
<b>Recycled Water Committee (Committee) Review</b>	Committee recommended Board approval on February 16, 2017
<b>Conduct Feasibility Studies</b>	Complete by December 2018

# District/ SFPUC/ BAWSCA MOU Terms of Agreement

Conduct joint Feasibility Study to evaluate potential SFPUC participation in District’s Expedited Purified Water Program

Feasibility Study	
1	SFPUC/ BAWSCA 50% financial contribution up to \$37,500
2	Consider allocation of 5 to 15 MGD of District’s purified water
3	Identify water delivery alternatives
4	Increase utilization of District purified water facilities

# **MEMORANDUM OF UNDERSTANDING**

## **BETWEEN**

### **SANTA CLARA VALLEY WATER DISTRICT AND**

### **THE SAN FRANCISCO PUBLIC UTILITIES COMMISSION AND BAY AREA WATER SUPPLY AND CONSERVATION AGENCY TO**

### **PARTICIPATE IN A FEASIBILITY STUDY TO EVALUATE ALTERNATIVES FOR SAN FRANCISCO PUBLIC UTILITIES COMMISSION AND BAY AREA WATER SUPPLY AND CONSERVATION AGENCY PARTICIPATION IN THE EXPEDITED PURIFIED WATER PROGRAM**

This MEMORANDUM OF UNDERSTANDING (“MOU”), made in the State of California on this \_\_\_\_\_ day of \_\_\_\_\_ 2017, is by and between the Santa Clara Valley Water District (“SCVWD”), an independent special district created by Legislature of the State of California, the Bay Area Water Supply and Conservation Agency (“BAWSCA”), and the San Francisco Public Utilities Commission (“SFPUC”), a department of the City & County of San Francisco, collectively referred herein as the “Parties” and singularly as a “Party.”

This MOU sets forth the respective roles and responsibilities of the Parties regarding the development of a Feasibility Study between the Parties to identify and evaluate options for the SFPUC/BAWSCA to participate in SCVWD’s Expedited Purified Water Program (“Program”).

## **RECITALS**

1. WHEREAS, current and future drought conditions in California threaten water supply reliability; and
2. WHEREAS, SCVWD is investigating the feasibility of developing up to 45,000 acre-feet per year (“AFY”) or 40 million gallons per day (“MGD”) of purified water capacity by 2025 to augment water supply in Santa Clara County (“County”) via indirect potable reuse and potential direct potable reuse; and
3. WHEREAS, the SFPUC and SCVWD share common customers in the County; and
4. WHEREAS, SCVWD, as part of its Program, may develop capacity to produce additional water supplies that could be available, including to the SFPUC/BAWSCA and customers common to the SCVWD; and
5. WHEREAS, the SFPUC and SCVWD independently deliver treated water to the cities of San Jose and Santa Clara; and

6. WHEREAS, the Parties will have access to and may use all of the deliverables produced through this Feasibility Study; and
7. WHEREAS, the Parties are partners on multiple projects and programs related to improving regional water supply reliability, including the Bay Area Regional Reliability Project; and
8. WHEREAS, the SFPUC and SCVWD developed and make beneficial use of a System Intertie, located in the city of Milpitas; and
9. WHEREAS, the Parties intend to continue working together on projects and programs of mutual interest.

NOW, THEREFORE, in consideration of the recitals and mutual obligations of the Parties herein expressed, the Parties agree as follows:

## **1. PREAMBLE**

The Parties seek to work cooperatively to determine whether a water supply project can be developed to mutually benefit the Parties and provide greater water supply reliability to their common customers. This Feasibility Study includes two distinct phases: 1) Prepare an initial screening with sufficient information for the Parties to determine whether to proceed with continued analysis of a water supply project(s) to supply between 5-15 MGD in excess of SCVWD's needs, which can be made available to SFPUC customers/BAWSCA members within Santa Clara County; and 2) If the initial screening demonstrates that a project(s) is viable, prepare a technical memorandum specifying in detail an arrangement in which the SFPUC/BAWSCA can commit financial and other resources to the SCVWD in exchange for the right to receive 5-15 MGD from SCVWD's Program, should the SCVWD decide to implement that program.

The scope of work for Phase 1 of the Feasibility Study is detailed herein. It will conclude with a Work Plan for Phase 2. Developing the scope of work and cost of Phase 2 is also envisioned as part of this Feasibility Study and will be finalized as an addendum to this MOU upon the completion of Phase 1.

## **2. DEFINITIONS**

- a) "CEQA" -The California Environmental Quality Act.
- b) "Consultant" - Consulting firms, engineering firms, scientific firms, public outreach firms, facilitation firms or other professional services firms retained by SCVWD to provide services for the Feasibility Study.
- c) "Consultant Contracts" – Consultant services contracts between SCVWD and Consultant for professional services for the development of the Feasibility Study.
- d) "ESA" – The Federal Endangered Species Act



- e) “NEPA” - The National Environmental Policy Act
- f) “Feasibility Study” - A proposed study of alternatives, analysis, and documentation of the feasibility of the concept broadly described in Article 1 of this MOU. The Feasibility Study will define objectives, evaluate project constraints, evaluate the delivery approach, conduct performance assessment, and estimate project costs.
- g) “Feasibility Study Staff Time” - Staff and management time from one or more of the Parties that is necessary for conducting the general project management and other duties as assigned under this MOU.
- h) “Participation Agreement” – An agreement in which SFPUC/BAWSCA shares in the costs of the Project in exchange for a right to receive a portion of the purified water produced by the Project, where the SCVWD may substitute such portion of purified water with other sources of SCVWD water.
- i) “Program” – more fully, “Expedited Purified Water Program – SCVWD’s planned development of up to 45,000 AFY or 40 MGD of purified water capacity by 2025 to augment water supply in the County via indirect potable reuse and potential direct potable reuse.
- j) “Project” – The constructed elements of the Expedited Purified Water Program.
- k) “Regional Facility” or “System Interties” - One or more facilities or interties between two neighboring agencies used to access (1) raw water or (2) treated water meeting drinking water standards administered by the California Division of Drinking Water.

### **3. TERM**

- a) This MOU shall become effective upon its execution by all Parties.
- b) This MOU will terminate on December 31, 2018 or when all obligations under this MOU have been performed, whichever occurs first.
- c) Payment obligations under Article 8, Cost Sharing and Payment, and Article 11, Cancellation, shall survive discharge or termination of this MOU until obligations are satisfied.

### **4. PURPOSE**

The purpose of this MOU is to:

- a) Define the roles and responsibilities of each Party in coordinating the development of the Feasibility Study by Consultant(s). All work associated with the Feasibility Study is to be conducted in accordance with the MOU.

- b) Establish the guidelines and principles for cost sharing between the Parties for the development of the Feasibility Study.
- c) Establish procedures for incurring costs such as contracting and payment of Consultant(s) for developing the Feasibility Study.
- d) Establish procedures for the SCVWD seeking reimbursement from SFPUC/BAWSCA for costs incurred by SCVWD for payment of Consultant(s) developing the Feasibility Study.

## 5. WORK TO BE PERFORMED

The Feasibility Study will be conducted cooperatively by the Parties and Consultant(s) in two phases. The focus of the first phase ("Phase 1") will be to identify the key project objectives for the Parties and define viable alternative(s) that can meet those objectives. Based on the results of Phase 1, viable project alternative(s) can be further analyzed in detail in Phase 2, providing sufficient technical and institutional information to evaluate a Project(s) that can mutually benefit the Parties. Subsequent tasks and work products may be added through addendum(s) to this MOU as agreed by the Parties.

At the conclusion of Phase 1, each Party reserves the right to not move forward with Phase 2 or subsequent activities envisioned under this MOU. However, any Party may use the analysis developed herein for any future planning or development.

The SCVWD is seeking to develop a drought-proof water supply through purifying treated wastewater through advanced water treatment technologies. This Program is expected to meet or exceed drinking water standards and may be utilized to replenish the Santa Clara County groundwater basin; to supplement the raw water treated at the SCVWD's water treatment plants; or to enable storage of the water through its participation in various banking programs and/or exchanges with other water agencies.

The following tasks have been identified for assessing the Phase 1 feasibility of SFPUC/BAWSCA's participation in the Program:

1. *Define objectives for the SCVWD and SFPUC/BAWSCA and their principles of participation*
  - a. Purpose: Identify the specific objectives that each Party has with respect to its participation in the Feasibility Study. These objectives will include conveyance, timing, quantity, quality and reliability of water supply and any other impacts or constraints of concern.
  - b. Elements:
    - i. The Parties will develop specific objectives and may solicit feedback from the following stakeholders, as appropriate:
      1. City of San Jose
      2. City of Santa Clara
    - ii. Synthesize preliminary findings

- iii. Hold a meeting between the Parties summarizing key areas of overlap, differences, and identifying issues that will require further analysis.
    - iv. Draft specific objectives, principles of participation, issues to be resolved in the near term, and those that require further study.
  - c. Deliverables:
    - i. Meeting agendas and summaries.
    - ii. Specific objectives, principles of participation, and list of issues to be resolved in Phase 1 (short-term) and Phase 2 (requiring further analysis).
- 2. *Conduct constraints analysis*
  - a. Purpose: Identify potential constraints/boundaries that would impact the Parties from entering into a Participation Agreement, and identify the particular terms and conditions of a Participation Agreement.
  - b. Elements:
    - i. Review and analyze the following areas of importance from each Party's perspective:
      - 1. Legal requirements and constraints
      - 2. SCVWD imported water contracts
      - 3. SCVWD treated water contracts
      - 4. Institutional/governance requirements
      - 5. Regulatory
      - 6. Environmental
      - 7. Financial
      - 8. Infrastructure
      - 9. Operational
      - 10. Water supply project commitments/availability of water
      - 11. Others as identified in Task 1
    - ii. Prepare draft findings and circulate among Parties for review and comment.
    - iii. Hold a joint meeting between the Parties to discuss draft findings and assess the need for further analysis (if necessary)
    - iv. Finalize findings
  - c. Deliverables: Memorandum (draft and final) summarizing findings.
- 3. *Identify conceptual alternatives*
  - a. Purpose: Identify conceptual alternatives that may be analyzed in further detail.
  - b. Elements:
    - i. Identify alternatives that meet the objectives identified in Task 1 and are not immediately omitted from further consideration under the constraints identified in Task 2.
      - 1. Groundwater extraction (SCVWD Campbell Well Field)
      - 2. New or leased wells.

3. Treated surface water deliveries to the SFPUC at the Intertie in Milpitas.
  4. Treated surface water deliveries to the SFPUC at a new Westside Intertie, to be developed.
  5. Treated water deliveries directly to San Jose and/or Santa Clara.
  6. Transfers/exchanges, either direct or indirect to SFPUC/BAWSCA, using Los Vaqueros, Semitropic, State Water Project, or other.
  7. Direct transfer of purified water to the San Francisco Regional Water System.
- ii. Select up to four (4) viable project alternatives from Task 3.b.i
    1. Develop Project schematic
    2. Identify infrastructure requirements for each alternative
    3. Identify preliminary (concept-level) capital and operations and maintenance costs
  - c. Deliverable: Technical Memorandum describing selected viable Project alternatives.
4. *Develop Work Plan for Phase 2*
    - a. Purpose: Identify hydraulic modeling and other needs for further analysis of each alternative.
    - b. Develop cost estimate for proposed scope of work for Phase 2.
    - c. Deliverable: Work plan description and cost estimate for Phase 2.
- 6. REGULATORY APPROVALS, ENVIRONMENTAL APPROVALS, ENVIRONMENTAL COMPLIANCE AND ENVIRONMENTAL REVIEWS**

The Parties agree that the work contemplated in this MOU, as it involves a feasibility study, is exempt from the requirements of CEQA pursuant to CEQA Guidelines and is similarly exempt from the National Environmental Policy Act (NEPA) and the ESA.

## **7. RESPONSIBILITIES OF THE PARTIES**

General responsibilities of all Parties are as follows:

- a) Work cooperatively to develop a work plan and the Feasibility Study.
- b) Commit Feasibility Study Staff Time to work with staff from the other Parties and the selected Consultant(s) in conducting the Feasibility Study.
- c) Share relevant engineering, permitting, regulatory and operational information regarding its own facilities and permits with the other Parties for the benefit of the Feasibility Study.
- d) Provide access to facilities and operational data that may be needed for developing the Feasibility Study (such as groundwater management,

hydrogeology, intakes, aqueducts and pumping plants, transmission lines, reservoirs, treatment plants, interties, etc.). If needed, commit Feasibility Study Staff Time to conduct necessary analysis of its own facilities, permits, operational data, modeling information, procedures or requirements, or any other data needed for the Feasibility Study and share the information with the other Parties. Access to facilities will be consistent with, and will follow, the facility owner's standard safety and notification requirements.

- e) Provide oversight and review of Feasibility Study work products.
- f) Conduct general work that is needed to advance the Feasibility Study development. These efforts may include State and Federal grant application and grant administration support, website update, and outreach.
- g) Accept that, if any Party chooses to move forward with individual projects and concepts also being evaluated as part of the Feasibility Study, those individual projects and concepts are not subject to the terms of this MOU.

The Parties hereby designate SCVWD as the contracting entity under this MOU. Subject to approval by SCVWD's authorized representative, SCVWD shall be responsible for entering into Consultant Contract(s) to undertake the Feasibility Study. SCVWD shall conduct a consultant procurement process that satisfies its own internal consultant procurement policies/criteria. Once a Consultant(s) is selected, and only after the Parties have funded the Feasibility Study preparation effort as provided in Article 8 of this MOU, shall SCVWD enter into Consultant Contract(s). If SCVWD fails to approve the necessary Consultant Contract(s) or SCVWD terminates Consultant Contract(s) for any reason, SCVWD may terminate its participation in this MOU under Article 11.

## **8. COST SHARING AND PAYMENT**

The estimated Consultant cost to complete this scope of work is \$75,000. SFPUC agrees to reimburse SCVWD for 50% of the total Consultant cost. BAWSCA's share of the cost will be paid to SFPUC through a separate agreement. The SFPUC funding commitment, therefore, shall not exceed \$37,500, unless additional funding is authorized in writing through a modification pursuant to Article 15 of this MOU. If the projected cost to complete the scope of work to be performed by Consultant(s) is likely to exceed \$75,000, then Parties shall meet and confer within two weeks (14 days) of the notification by SCVWD of the projected increase in cost. Within 7 days of the meet and confer, Parties may choose to amend Consultant Contract(s) and this MOU to include the newly negotiated costs or make alternate arrangements.

- a) SCVWD shall request disbursement of SFPUC's financial commitment on a reimbursement basis by submitting to SFPUC invoices(s) for incurred Consultant Contract costs. SCVWD shall submit an invoice to SFPUC for Consultant Contract costs no more than once a calendar quarter, which shall include the hourly rates, hours spent and task break down of the activities performed in support of this scope of services specified in Consultant Contract(s).

- b) Following the review and approval of an invoice by SFPUC, SFPUC shall disburse to SCVWD an approved amount thirty (30) days after receipt of that invoice.
  - c) An invoice may be rejected by the SFPUC only if:
    - a. it is submitted without signature;
    - b. is submitted under signature of a person other than SCVWD's duly authorized representative;
    - c. the invoice contains a material error; or
    - d. paying the invoice would result in SFPUC exceeding its financial commitment described in Article 8 of this MOU.
- SFPUC shall notify SCVWD of any invoice so rejected, and the reasons therefore.

Costs incurred on the Feasibility Study by a Party for "in-kind" services including Feasibility Study Staff Time and overhead costs, as well as costs for Consultant oversight, meetings, travel, and incidental expenses shall not be reimbursable by the other Party.

No work on the Feasibility Study shall commence until this MOU has been executed by all Parties. If a single Party chooses to terminate its participation under the terms of this MOU, said Party shall remain financially responsible for its contribution as detailed in Article 11, Cancellation.

## **9. HOLD HARMLESS, INDEMNIFICATION, REMEDIES AND INSURANCE**

To the extent permitted by California State law and in proportion to fault, each Party will indemnify, defend and hold all other Parties and their directors, officers, agents, and employees safe and harmless from any and all claims, suits, judgments, damages, penalties, costs, expenses, liabilities and losses (including without limitation, sums paid in settlement of claims, actual attorneys' fees, paralegal fees, consultant fees, engineering fees, expert fees and any other professional fees) that arise from or are related in any way to each Party's, its employees', officers', or other agents' in the operation and/or performance of this MOU; provided, however, that no Party shall indemnify or hold harmless another Party for that Party's own negligent acts, errors or omissions, or willful misconduct, in the operation and/or performance of this MOU or the performance of Consultant(s).

Notwithstanding the preceding paragraph, where more than one Party is named in a suit challenging the Feasibility Study, or made subject to a claim or penalty regarding the same, the Parties shall coordinate and undertake a joint defense, utilizing a joint defense agreement to the extent possible, subject to the approval of the Parties. Each Party agrees that, to the greatest extent practicable, it shall cooperate in such defense and execute any waivers and/or tolling agreements that may be necessary in order to provide for a single joint defense of such a suit, claim, or imposition of penalty. Any communications between the Parties and any of their respective consultants and attorneys engaged in the joint defense shall be privileged as joint defense communications. Work performed during the joint defense by Consultants or attorneys, to the extent allowed by law, shall

be considered attorney work product. Nothing in this paragraph is intended to require a joint defense under circumstances where it would be legally impermissible or under circumstances where it is wholly impractical.

This indemnity provision shall survive the termination of this MOU and the termination of any Party's participation in this MOU. Further, each Party will be liable to the other Party(s) for attorneys' fees, costs and expenses, and all other costs and expenses whatsoever, which are incurred by the other Party(s) in enforcing this indemnity provision.

In all Consultant Contracts funded in whole or part by the Parties, SCVWD shall name the SFPUC, BAWSCA, and their respective officers, agents and employees as additional insureds and additional indemnitees in the insurance coverage and indemnity provisions customarily used in the SCVWD's professional service contracts.

## **10. DISPUTES**

Any claim that a Party may have against the other Party regarding the performance of this MOU including, but not limited to, claims for compensation will be submitted to such other Party. The Parties will attempt to negotiate a resolution of such claim and if necessary process an amendment to this MOU or a settlement agreement to implement the terms of any such resolution.

## **11. CANCELLATION**

If a Party elects to terminate its participation in this MOU or in the Feasibility Study, it may do so by delivering to the other Party a written notice of intention to terminate. Termination shall take effect thirty days following the receipt of notice by the other Party. No portion of the terminating Party's financial contribution provided under this MOU for use in preparing the Feasibility Study shall be refunded to the terminating Party.

## **12. MAINTENANCE AND INSPECTION OF BOOKS, RECORDS, AND REPORTS**

The Parties will, upon reasonable advance written notice, make available for inspection to the other Parties all records, books and other documents directly relating to the Feasibility Study as well as any other work related to water supply institutional arrangements and MOU that are required for conducting the Feasibility Study. Prior to release of such documents (other than in response to a request under the California Public Records Act or San Francisco Sunshine Ordinance, a subpoena, or court order), all draft information shall to be approved by all Parties for finalization and release.

## **13. MOU NOT A PRECEDENT**

The Parties intend that the provisions of this MOU will not bind the Parties as to the provisions of any future agreement between them. This MOU was developed specifically for the specified MOU term.

#### **14. NOTICES**

Any notice, demand, or request made in connection with this MOU must be in writing and will be deemed properly served if delivered in person or sent by United States mail, postage prepaid, to the addresses specified herein.

Santa Clara Valley Water District  
Attention: Garth Hall, Deputy Operating Officer, Water Supply  
5750 Almaden Expressway  
San Jose, CA 95118

San Francisco Public Utilities Commission  
Attention: Paula Kehoe, Manager, Water Resources  
525 Golden Gate Avenue, 10<sup>th</sup> Floor  
San Francisco, CA 94102

Bay Area Water Supply and Conservation Agency  
Attention: Nicole Sankdula, Chief Executive Officer  
155 Bovet Road, Suite 650  
San Mateo, CA 94402

#### **15. MODIFICATION**

This MOU may be modified only upon the mutual written consent of the Parties.

#### **16. NO THIRD-PARTY BENEFICIARIES**

No third-party beneficiaries are intended or created by this MOU.

#### **17. AUDITS**

SFPUC may audit the District's records related to disbursements of SFPUC funds, per Article 8 of this MOU, during normal business hours by providing the District with a least five business days notice.

#### **18. CERTIFICATION OF FUNDS**

Any and all on-going costs under this MOU are subject to the budget and fiscal provisions of the City and County of San Francisco's Charter. Charges will accrue only after prior written authorization certified by the Controller, and the amount of the SFPUC's obligation hereunder shall not at any time exceed the amount certified for the purpose and period stated in such advance authorization. This MOU will terminate without penalty, liability or expense of any kind to the SFPUC at the end of any fiscal year if funds are not appropriated for the next succeeding fiscal year. If funds are appropriated for a portion of the fiscal year, this MOU will terminate, without penalty, liability or expense of any kind at the end of the term for which funds are appropriated. The SFPUC has no obligation to make appropriations for the Feasibility Study pursuant



to this MOU in lieu of appropriations for new or other agreements. The SFPUC budget decisions are subject to the discretion of the Mayor and the Board of Supervisors. THIS SECTION CONTROLS AGAINST ANY AND ALL OTHER PROVISIONS OF THIS MOU AND APPLIES TO ALL PARTIES' ABILITY TO PARTICIPATE IN THE ONGOING COSTS OF THE MOU AND ALL PARTIES MAY TERMINATE WITHOUT PENALTY IF FUNDS ARE NOT APPROPRIATED BY THEIR RESPECTIVE GOVERNING BODIES.

#### **19. SEVERABILITY**

If any term or provision of this MOU is deemed invalid or unenforceable by a court of competent jurisdiction or by operation of any applicable law, it will not affect the validity of any other provision, which will remain in full force and effect.

#### **20. COMPLETE AGREEMENT**

Other than as specified herein, no document or communication passing between the Parties to this MOU will be deemed to be part of this MOU.

#### **21. ASSIGNMENT**

This MOU is not assignable either in whole or in part, except upon mutual written consent of the Parties.

#### **22. AMENDMENT AND WAIVER**

Except as provided herein, no alteration, amendment, variation, or waiver of the terms of this MOU shall be valid unless made in writing and signed by all Parties. Waiver by any Party of the default, breach or condition precedent, shall not be constructed as a waiver of any other default, breach or condition precedent, or any right hereunder.

#### **23. SUCCESSORS**

This MOU shall bind the successors of the Parties in the same manner as if they were expressly named.

#### **24. INTERPRETATION**

This MOU shall be deemed to have been prepared equally by all Parties, and its individual provisions shall not be construed or interpreted more favorably for one Party on the basis that the other Parties prepared it.

#### **25. INTEGRATION**

This MOU represents the entire understanding of the Parties as those matters contained herein. No prior oral or written understanding shall be of any force or effect with respect to those matters covered hereunder.

**26. WAIVER**

The waiver at any time by any Party of its right with respect to default or other matter arising in connection with this MOU will not be deemed a waiver by that Party with respect to any subsequent default or matter.

**27. GOVERNING LAW**

This MOU is governed by and will be interpreted in accordance with the laws of the State of California.

**28. COUNTERPART**

This MOU may be executed in counterpart. Facsimile and electronic signatures shall be binding.

IN WITNESS WHEREOF, the Parties have executed this MOU by their duly authorized representatives, in counterpart.

**SANTA CLARA VALLEY WATER DISTRICT**

**APPROVED AS TO FORM**


By: \_\_\_\_\_  
Anthony Fulcher  
Senior Assistant District Counsel

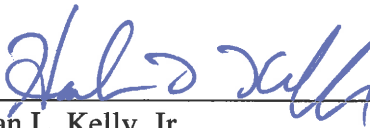
By: \_\_\_\_\_  
Norma Camacho  
Interim Chief Executive Officer

Dated: \_\_\_\_\_

**SAN FRANCISCO PUBLIC UTILITIES COMMISSION**

**APPROVED AS TO FORM**

By:   
Josh Milstein  
Deputy City Attorney  
Dated: 1-12-17

By:   
Harlan L. Kelly, Jr.  
General Manager

Dated: 1/13/17

Authorized by San Francisco Public Utilities Commission,  
**Resolution No. 17-0007**  
**Adopted January 10, 2017**

**BAY AREA WATER SUPPLY AND CONSERVATION AGENCY**

By: Nicole Sandkulla  
Nicole M. Sandkulla  
General Manager

Dated: 1/19/2017

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**File No.:** 17-0142

**Agenda Date:** 3/28/2017

**Item No.:** 3.2.

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## BOARD AGENDA MEMORANDUM

### **SUBJECT:**

Memorandum of Understanding with City of Sunnyvale for Collaboration on Assessing the Feasibility of Water Reuse Alternatives.

### **RECOMMENDATION:**

Authorize the Interim CEO to execute the Memorandum of Understanding (MOU) between the Santa Clara Valley Water District (District) and the City of Sunnyvale (Sunnyvale) for Collaboration on Assessing the Feasibility of Water Reuse Alternatives.

### **SUMMARY:**

A proposed MOU has been developed with Sunnyvale to assess the feasibility and potential cost-sharing in development of potable water reuse options in Santa Clara County (County). On February 16, 2017, the Recycled Water Committee (Committee) recommended that the Board of Directors authorize the Interim CEO to execute the MOU.

### **Background**

Since 2014, District staff has been evaluating project concepts in collaboration with Sunnyvale to produce purified water for potential potable reuse associated with the Sunnyvale Water Pollution Control Plant. The MOU describes the parties' further commitments to identify the requirements, issues, activities, resources, costs, and funding necessary to implement potable and non-potable water reuse alternatives. Draft terms intended for incorporation in the MOU were presented to the Joint Recycled Water Committee of elected officials from Mountain View, Palo Alto, and Sunnyvale on September 27, 2016. Additionally, since certain project alternatives intended for study by the District and Sunnyvale may also be of interest to the City of San Jose and City of Santa Clara in the context of the South Bay Water Recycling system, draft terms were also discussed with staff from the cities of San José and Santa Clara on November 4, 2016.

The terms of the MOU cover important assumptions and considerations such as source water availability, permitting, reverse osmosis concentrate management, land requirements, and governance. During the term of the MOU, Sunnyvale will not enter into any agreement to provide treated wastewater effluent to another entity or project that could materially reduce the amount of source water available to the District without the District's consent.

**FINANCIAL IMPACT:**

Funds to conduct the feasibility assessment are included in the Water Utility Enterprise FY2017 budget, Recycled and Purified Water project 91101004. The estimated District cost for the feasibility assessment is \$200,000. In addition, Sunnyvale will contribute funds to share the assessment cost for some of the project alternatives, as identified in the MOU.

**CEQA:**

The recommended action does not constitute a project under CEQA because it does not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

**ATTACHMENTS:**

Attachment 1: PowerPoint

Attachment 2: District/Sunnyvale MOU

**UNCLASSIFIED MANAGER:**

Garth Hall, 408-630-2750

# Memorandum of Understanding with City of Sunnyvale for Collaborating on Assessing the Feasibility of Water Reuse Alternatives

March 28, 2017



# Staff Recommendation

- Authorize the Interim CEO to execute the Memorandum of Understanding (MOU) between the Santa Clara Valley Water District (District) and the City of Sunnyvale (Sunnyvale) for Collaboration on Assessing the Feasibility of Water Reuse Alternatives.



# District/Sunnyvale Milestones

Item	Milestone
<b>MOU Status</b>	Finalized draft with City Manager
<b>Recycled Water Committee (Committee) Review</b>	Committee recommended Board approval on February 16, 2017
<b>Conduct Feasibility Studies</b>	Complete by December 2017

# District/Sunnyvale MOU Terms of Agreement

	MOU Terms of Agreement
	Sunnyvale
Source Water and Quality	<ul style="list-style-type: none"><li>• Assumes availability of 5-10 MGD tertiary</li><li>• District consent before other City agreements to provide water</li></ul>
Alternative Projects	<ul style="list-style-type: none"><li>• Several projects including purified water and/or expansion of recycled water</li></ul>
Land	<ul style="list-style-type: none"><li>• Alternative: City’s decommissioned landfill (5 acres)</li><li>• Alternative sites at/near WPCP</li></ul>
RO Concentrate	<ul style="list-style-type: none"><li>• Engineered wetlands, existing ponds, or San Francisco Bay</li></ul>
Governance	<ul style="list-style-type: none"><li>• Joint City-District Recycled Water Committee</li><li>• Technical Advisory Committee</li></ul>
Potential Impacts	<ul style="list-style-type: none"><li>• Reduced flow to Bay</li><li>• Loss of existing open space (for some siting alternatives)</li></ul>

**Memorandum of Understanding  
between the  
Santa Clara Valley Water District  
and the  
City of Sunnyvale  
for Collaborating on Assessing the Feasibility of Water Reuse Alternatives**

This Memorandum of Understanding (MOU) is made and entered into on \_\_\_\_\_ (Effective Date), by and between the City of Sunnyvale (Sunnyvale), a municipal corporation, and the Santa Clara Valley Water District (District), a special district created by Legislature of the State of California. Sunnyvale and District hereinafter may be referred to individually as “Party” or collectively as “Parties.”

**RECITALS**

- A. **Whereas**, the Parties desire to undertake efforts to develop certain plans and studies related to exploring opportunities to work together or with other governmental agencies to expand the production and use of recycled and purified water within Santa Clara County; and
- B. **Whereas**, the Parties understand that effective long-range planning requires a diverse water supply that supplements variable rainfall and imported water supplies, and that recycled and purified water are components of Santa Clara County’s water supply portfolio, which ensures the region’s continued economic health and quality of life; and
- C. **Whereas**, as a result of over four years of recent and current drought throughout California, the District’s surface, groundwater, and imported water supplies have been limited and substantial customer water use reductions were required to avoid severe groundwater depletion; and
- D. **Whereas**, Sunnyvale owns and operates a Water Pollution Control Plant (Sunnyvale WPCP or WPCP) that is capable of treating municipal wastewater in accordance with recycled water regulations for non-potable reuse by customers in its service area; and
- E. **Whereas**, Sunnyvale is currently in the design phase of a major upgrade to its WPCP to replace aging facilities and to meet anticipated future regulatory requirements for effluent discharge; and
- F. **Whereas**, the District is investigating the feasibility of developing up to 45,000 acre-feet per year (AFY) of purified water by the year 2025. The first phase of implementation focuses on developing at least 24,000 AFY of purified water through expansion of the Silicon Valley Advanced Water Purification Center (Expanded SVAWPC) and construction of a conveyance pipeline to the Los Gatos Recharge System. Subsequent phases of implementation may include further expansion of the SVAWPC and/or projects in Sunnyvale and the Ford Ponds area. Timing and implementation of subsequent phases will be contingent upon the District’s updated determination of water supply need, further economic analysis, and determinations of technical and regulatory feasibility; and

- G. **Whereas**, since 2014 the District and Sunnyvale have been working together in evaluating alternative plant layouts and facilities so that Sunnyvale may provide the District with treated wastewater and the District may further treat that water to meet potable reuse requirements; and
- H. **Whereas**, Sunnyvale has completed a master plan for improvements and expansion of its WPCP, which currently contemplates using conventional activated sludge (CAS) treatment, and which has an implementation schedule that may be different from the District's schedule for building and operating a District Advanced Water Purification Facility (AWPF); and
- I. **Whereas**, the Parties have evaluated three alternative plant layouts and facilities (Options 1, 2 and 3), of which Options 1 and 2 involve designing and constructing membrane bioreactor (MBR) facilities to be incorporated into the Sunnyvale WPCP upgrade. Under those two options, MBR effluent would supply water to an AWPF that the District would construct on the Sunnyvale WPCP site, which would further treat the water to meet water quality requirements for indirect potable reuse; and
- J. **Whereas**, Option 3 involves Sunnyvale making treated wastewater effluent available to a site not located at the Sunnyvale WPCP, but at a site close to the Sunnyvale WPCP, where the District would construct an AWPF for producing purified water; and
- K. **Whereas**, current District staff analysis indicates that Option 3 is the most cost effective among the three alternative plant layouts and facilities and has the added advantage of relative independence in scheduling, requiring limited coordination with Sunnyvale's upgrade work at the Sunnyvale WPCP; and
- L. **Whereas**, in addition to assisting the District with further evaluation of Options 1, 2 and 3, Sunnyvale desires to assist the District in evaluating a multi-level AWPF on the Sunnyvale WPCP site as well as evaluating other advanced water purification treatment and recycled water alternatives including: constructing a pipeline to convey treated wastewater from the Sunnyvale WPCP for treatment at the Expanded SVAWPC; constructing an intertie (or interties) to convey treated wastewater from the Sunnyvale WPCP to the South Bay Water Recycling (SBWR) system; constructing a small scale AWPF at the Sunnyvale WPCP to manage salinity of recycled water; and constructing an intertie to convey treated wastewater from Palo Alto's Regional Water Quality Control Plant (RWQCP) for advanced treatment at the Sunnyvale WPCP and/or the Expanded SVAWPC; and
- M. **Whereas**, the Parties desire to enter into this MOU to set forth the terms of their collaboration pertaining to assessing the feasibility of water use alternatives and efforts to engage the cities of Palo Alto, Mountain View, San Jose and Santa Clara to develop a multi-agency MOU to explore the feasibility of developing one or more of the alternatives identified in Recitals I through L above; and

**NOW, THEREFORE, IN CONSIDERATION OF THE FOREGOING AND THE MUTUAL PROMISES HEREINAFTER PROVIDED, THE PARTIES AGREE AS FOLLOWS:**

1. **SCOPE AND NATURE OF MOU.** This MOU is intended to broadly describe the Parties' commitments to study the feasibility of the alternatives identified in Recitals I through L above. Those alternatives shall be referred to collectively in this MOU as the Water Reuse Alternatives. The MOU is not intended to formalize a commitment by the Parties to implement any of the Water Reuse Alternatives, but the commitment by the Parties does extend to identify the requirements, issues, activities, resources, costs, and financing necessary to implement any of the Water Reuse Alternatives.
2. **RESPONSIBILITIES OF PARTIES.** Each Party will designate a project manager and identify additional staff contacts, and provide necessary resources to advance the work set forth in this MOU.
3. **DISTRICT'S NEW FACILITIES.** After investigating whether to implement any of the Water Reuse Alternatives, if the District decides to implement any of them, it understands that the cost of planning, designing, financing, constructing and operating any facilities comprising the Water Reuse Alternatives is to be borne by the District, unless Sunnyvale enters into a new agreement to undertake any of those costs.
4. **IDENTIFYING SITES RECEIVING THE ADVANCED TREATED RECYCLED WATER.** As part of its investigation, the District will identify land sites suitable for using purified water for groundwater infiltration, injection, and/or future facility connections suitable for implementation of direct potable reuse, subject to approval by the California Division of Drinking Water.
5. **ASSUMPTIONS RELATED TO THE FEASIBILITY OF IMPLEMENTING WATER REUSE ALTERNATIVES.** The Parties understand that the assumptions listed in a – g of this Section 5 are not intended to impose obligations onto either Party, but instead are assumptions the District will take into consideration as it investigates whether to implement any of the Water Reuse Alternatives. The Parties intend to address issues regarding commitments of source water, reverse osmosis (RO) concentrate management, land rights, and other matters related to pursuing any of the Water Reuse Alternatives in a comprehensive agreement to be negotiated by the Parties in the future (Comprehensive Agreement). For the purposes of exploring the feasibility of the Water Reuse Alternatives, the Parties shall use the following assumptions:
  - a. The Sunnyvale WPCP upgrade project will take priority over implementing any of the Water Reuse Alternatives that may impact Sunnyvale's implementation of the Sunnyvale WPCP upgrade project;
  - b. A projected average daily flow of 5 million gallons per day (mgd) of source water (effluent from the Sunnyvale WPCP dual media filters) will be made available to the District through the year 2020, and an additional 5 mgd of source water after 2020, for a total of 10 mgd. If the District determines that it wishes to increase the foregoing source water assumptions Sunnyvale will work in good faith to determine whether flows higher than these amounts can be included in this assumption;

- c. Though the above assumption for projected average daily flow of source water to be made available to the District is a good faith estimate, events beyond the control of Sunnyvale may adversely impact the quality or volume of source water, which may necessitate a temporary limit on the amount of source water made available to the District and the District will need to make its own estimates as to how any temporary limits on the amount of source water available to the District will impact the feasibility of the Water Reuse Alternatives. In making such an estimate the District may assume that Sunnyvale will use best efforts to reestablish the availability of source water to the District;
- d. Sunnyvale will temporarily interrupt the provision of source water or limit the amount of source water available to District when Sunnyvale experiences decreases in influent flows, operation difficulties, or an inability of the Sunnyvale WPCP to meet NPDES requirements. The District will need to make its own estimates as to how any temporary interruptions of the amount of source water available to the District will impact the feasibility of the Water Reuse Alternatives;
- e. District will need to make its own assumptions as to whether there will be a District cost to acquire treated wastewater from Sunnyvale. Terms and conditions for acquisition of treated wastewater will be included in the Comprehensive Agreement to be negotiated by the Parties in the future;
- f. During the term of this MOU, Sunnyvale will not enter into any agreement to provide treated wastewater effluent to another entity or project that could materially (defined as more than 0.2 mgd) reduce the amount of source water assumed to be available to the District in Section 5 b to d, without District's consent; and
- g. Sunnyvale does not have sufficient information at this time to determine whether requirements will be established by State and Federal regulatory agencies for the minimum discharge flow of treated effluent from the Sunnyvale WPCP to its outfall, which is connected to the San Francisco Bay, in order to meet fish, wildlife and other environmental requirements. The Parties will in collaboration determine whether such requirements are intended to be established by regulatory agencies responsible for these areas. The District will include the conclusions of this determination as a factor in deciding whether to proceed with the design and construction of a Water Reuse project.

## **6. DEVELOPMENT OF A RESIDUALS MANAGEMENT PLAN.**

- a. If District desires to implement any of the Water Reuse Alternatives, District and Sunnyvale will develop a residuals management plan describing the management of treatment residuals (Residuals Management Plan). In the Parties' development of this Residuals Management Plan, it is assumed that the District or its contractors will be responsible for processing and managing treatment residuals, including RO concentrate, related to the development of the District AWWP. If a Sunnyvale AWWP is developed for the purpose of reducing the salinity of Sunnyvale's non-potable recycled water, it is assumed that Sunnyvale will be responsible for managing treatment residuals from that facility. District will work with Sunnyvale to identify and design facilities to discharge or process treatment residuals, including conveyance systems to potentially bring RO concentrate from other locations to Sunnyvale

for treatment, discharge facilities, and receiving sites such as engineered wetlands, ponds or the San Francisco Bay. The Residuals Management Plan will identify the composition, quantity, and point of connection that will apply to the treatment residuals.

- b. The Residuals Management Plan shall also describe a process for the treatment and disposal of solid waste produced by the AWPf, and the conveyance of that treated solid waste to the Sunnyvale WPCP. The District will be responsible for treating and conveying solid waste generated by the AWPf. Sunnyvale will be responsible for managing and operating the Sunnyvale WPCP's solid waste disposal system. The operational and disposal costs related to the residuals and solids generated at the AWPf will be the responsibility of the District.

## **7. DEVELOPMENT OF A PERMITTING PLAN.**

- a. The Parties agree to investigate the potential environmental issues associated with reduced Sunnyvale WPCP effluent discharge into the San Francisco Bay due to Sunnyvale's planned delivery of treated wastewater to the District to implement any of the Water Reuse Alternatives.
- b. The Parties agree to investigate potential environmental issues due to the loss of existing open space if the District determines that Option 3 is the preferred option to construct an AWPf on Sunnyvale's decommissioned landfill located near the Sunnyvale WPCP site. The Parties will enter into negotiations to develop a process to retire this open space including the compensation needed resulting from this loss of open space.
- c. District and Sunnyvale will collaborate in developing a permitting acquisition plan (Permitting Plan). The Permitting Plan shall identify the permits necessary for the District's preferred option to construct an AWPf. The Permitting Plan shall also describe each Party's responsibility for pursuing such permits, including the preparation and filing of any and all applications necessary to secure the permits.

- 8. **CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) COMPLIANCE.** The Parties agree that the feasibility studies contemplated in this MOU are exempt from California Environmental Quality Act ("CEQA") requirements pursuant to Section 15262 of the CEQA Guidelines that exempt projects involving only feasibility or planning studies for future actions which have not been approved, adopted, or funded. This MOU is intended to broadly describe the Parties' commitments to study the feasibility of the alternatives identified in Recitals I through L above. Sunnyvale and the District mutually acknowledge that this MOU is not comprehensive or definitive, and that this MOU does not commit or obligate either party to any particular course of action with respect to any of the Water Reuse Alternatives. Sunnyvale and District do not intend to be bound with respect to the approval of a lease to Sunnyvale lands for the siting of an AWPf and its approval and construction, or the delivery of source water from the Sunnyvale WPCP, or the availability of outfall capacity from the Sunnyvale WPCP to discharge RO concentrate, until, among other things, any required environmental review, including any required public hearings, are completed in compliance with the CEQA. Depending on the Water Reuse Alternative selected, if any, the Parties will determine who will serve as the CEQA lead agency. District and Sunnyvale will collaborate in the preparation of the appropriate CEQA documentation.

**9. DEVELOPMENT OF A WATER QUALITY MONITORING PLAN.** The Parties agree to enter into negotiations to develop a Water Quality Monitoring Plan to conduct sampling and laboratory analyses necessary to monitor and determine water quality related to the Water Reuse Alternatives that the District selects as its preferred option. In the Plan, Sunnyvale will be responsible for sampling and laboratory analyses of source water supplied by the Sunnyvale WPCP while District will be responsible for sampling and laboratory analyses of water being processed within and by any AWPf implemented by District. Parties will share water quality and processing data associated with District's operation of an AWPf.

**10. PERMITS AND RIGHT OF ENTRY.** During the term of this MOU:

- a. Sunnyvale will facilitate obtaining permits necessary for the District to complete its assessment of the feasibility of the Water Reuse Alternatives.
- b. District may, subject to the issuance of a temporary permit or other document issued by Sunnyvale and the provision of insurance certificates in forms satisfactory to Sunnyvale's Risk Manager, enter sites owned by Sunnyvale to conduct tests and studies preliminary studies (including engineering, environmental, and geotechnical) to determine the feasibility of the Water Reuse Alternatives and possible locations for siting the AWPf on the Sunnyvale WPCP site or land off the Sunnyvale WPCP, site such as Sunnyvale's decommissioned landfill site located near the Sunnyvale WPCP site.

**11. ADDITIONAL INFORMATION.** The Parties may, during the term of this MOU, request additional information, data and records relevant to District's site investigations from one another. The Parties shall provide such additional information, data and records, if reasonably available, in a reasonably timely manner.

**12. LAND AND LEASE OPTION AGREEMENT.** If District and Sunnyvale find the decommissioned landfill site, including the nine-acre closed landfill site that is generally shown in Attachment A of this MOU, which is incorporated herein by this reference, suitable for construction of an AWPf, then District and Sunnyvale, subject to CEQA and all other legal requirements, will conduct preliminary studies (including engineering, environmental, and geotechnical) to determine the suitability of locating the AWPf on such site. If the landfill site is found to be suitable by District and Sunnyvale, the Parties, subject to CEQA and all other legal requirements, shall endeavor to enter into a land lease option agreement that provides District with a right to a long-term lease of the site for the purpose of constructing, operating and maintaining an AWPf. District will work with Sunnyvale to identify and acquire the necessary rights of way for the transmission pipes conveying source water from the Sunnyvale WPCP to the AWPf site, and disposing of AWPf RO concentrate by delivery to the Sunnyvale WPCP outfall, if this alternative proves to be feasible and is included in the Comprehensive Agreement. The parties intend that the future lease option agreement include a description of the preliminary AWPf layout, site dimensions, access and exit routes, potential compensation, areas designated for Sunnyvale's use, if any, and other applicable terms and conditions that are mutually acceptable.

District and Sunnyvale shall also work together to evaluate the feasibility of using Sunnyvale's oxidation ponds 1 and 2 (oxidation ponds) for RO concentrate management after



the oxidation ponds are no longer needed by Sunnyvale, or if the RO concentrate management allows concurrent use of the oxidation ponds, as treatment facilities. If Sunnyvale's oxidation ponds are found to be suitable by District for RO concentrate management, the Parties, subject to CEQA and all other legal requirements, shall endeavor to enter into a land lease option agreement that provides District with a right to a long-term lease of Sunnyvale oxidation ponds for the purpose of constructing, operating and maintaining RO concentrate treatment facilities.

- 13. COST SHARING.** Activities undertaken by the Parties in furtherance of this MOU shall be funded as shown on Table 1, unless otherwise agreed to in writing by both Parties.

Table 1.

<b>Activity</b>	<b>District Share</b>	<b>Sunnyvale Share</b>	<b>Lead Agency</b>
<b><u>Feasibility Studies</u></b>			
<b>Identifying sites receiving the advanced treated recycled water as described in Section 4</b>	<b>100%</b>	<b>0%</b>	<b>District</b>
<b>Studies to determine available source water quantity from WPCP as described in Section 5b and 5g</b>	<b>80%</b>	<b>20%</b>	<b>District</b>
<b>Management of treatment residuals from District facilities as described in Section 6</b>	<b>100%</b>	<b>0%</b>	<b>District</b>
<b>Management of treatment residuals from Sunnyvale AWPf as described in Section 6a</b>	<b>0%</b>	<b>100%</b>	<b>Sunnyvale</b>
<b>Preliminary studies to determine feasibility of District AWPf site as described in Section 10 and 12</b>	<b>100%</b>	<b>0%</b>	<b>District</b>
<b>Preliminary studies to determine feasibility of Sunnyvale AWPf site as described in Section 6</b>	<b>0%</b>	<b>100%</b>	<b>Sunnyvale</b>
<b><u>Permitting</u></b>			
<b>Permitting for WPCP upgrade project</b>	<b>0%</b>	<b>100%</b>	<b>Sunnyvale</b>

<b>Permitting Plan for District AWPf as described in Section 7</b>	<b>100%</b>	<b>0%</b>	<b>District</b>
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**Monitoring**

<b>Water quality monitoring of source water from WPCP as described in Section 9</b>	<b>0%</b>	<b>100%</b>	<b>Sunnyvale</b>
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<b>Water quality monitoring for District's AWPf as described in Section 9</b>	<b>100%</b>	<b>0%</b>	<b>District</b>
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**Management**

<b>CEQA for selected Water Reuse Alternative(s) as described in Section 8</b>	<b>90%</b>	<b>10%</b>	<b>District</b>
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<b>Joint evaluation of potential District role in Sunnyvale's non-potable recycled water system as described in Section 19</b>	<b>50%</b>	<b>50%</b>	<b>Sunnyvale</b>
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**14. GRANTS AND EXTERNAL LOANS.** District and Sunnyvale will collaborate to identify and evaluate possible state and federal grants for the planning, designing or constructing a Water Reuse Alternative including, but not limited to, transmission facilities for recycled water, sites for groundwater infiltration and injection, residuals and RO concentrate management facilities, and other related improvements to Sunnyvale's existing Title 22 non-potable recycled water system. For funding opportunities that are deemed reasonably feasible, the Parties will work together in preparation and support of grant and loan applications and if successful in negotiation of financing agreements.

**15. TERM.** The term of this MOU commences on the Effective Date and expires on the earlier of: December 31, 2020, or the date both Parties execute the comprehensive agreement referenced in Section 5 of this MOU.

**16. TERMINATION.**

- a. Termination for Breach of MOU: If either Party believes that the other Party has failed in any material respect to perform its obligations under this MOU, then that Party may provide written notice to the breaching party describing the alleged failure in reasonable detail. If the breaching Party does not cure or begin to cure the material failure within 60 calendar days after receiving such written notice, then the non-breaching Party may terminate this MOU by written notice to the breaching Party.

- b. Termination for Infeasibility. Additionally, either Party may terminate this MOU upon thirty days written notice to the other following a determination that the Water Reuse Alternatives are infeasible due to cost, environmental restrictions, regulatory or legal restrictions, size, or similar concerns.
- c. Failure to Appropriate Funding. The District or City may terminate this MOU immediately upon written notice to the other that the City Council or Board of Directors, respectively, has failed to appropriate funds for that party's cost sharing obligations under this MOU.

**17. DISPUTES.** Either Party may give the other Party written notice of any dispute. The Parties shall attempt in good faith to resolve any dispute arising out of or relating to this MOU promptly by negotiations between the District's Chief Executive Officer or designee, and the City Manager, or designee, on behalf of Sunnyvale. Within twenty calendar days after receipt of the notice of dispute, these executives shall meet at a mutually acceptable time and place, and thereafter as often as they reasonably deem necessary, to exchange information and attempt to resolve the dispute. If the matter has not been resolved within ninety calendar days of the first meeting, either Party may initiate mediation. The Parties shall select a mediator. If they cannot agree on a mediator, the Party demanding mediation shall request that the Superior Court of Santa Clara County appoint a mediator. The mediation meeting shall not exceed eight hours, unless the Parties agree to extend said time. The costs of the mediator shall be borne by the Parties equally. Mediation under this Section is a condition precedent to filing an action in any court. All negotiations and any mediation conducted pursuant to this Section are confidential and shall be treated as compromise and settlement negotiations to which Sections 1119 and 1152 of the California Evidence Code shall apply, and Sections 1119 And 1152 are incorporated herein by reference. Notwithstanding the foregoing provisions, a Party may seek a preliminary injunction or other provisional judicial remedy if in its judgment such action is necessary to avoid irreparable damage or to preserve the status quo.

## **18. COORDINATION.**

- a. District and Sunnyvale staff will continue to inform the District-Sunnyvale Joint Recycled Water Committee, including providing timely updates on concepts, proposals, issues, requirements, work progress, schedules, budgets, and work products on all aspects of Water Reuse Alternatives affecting both Parties.
- b. District and Sunnyvale will establish a Technical Advisory Committee (TAC) comprised of the District's Chief Executive Officer and Sunnyvale's City Manager, or their designees (collectively the Executive Managers), and other experts and individuals, as mutually agreed to by the Executive Managers to review work products and make recommendations to the District and Sunnyvale.

## **19. JOINT EVALUATION OF POTENTIAL DISTRICT ROLE IN SUNNYVALE'S NON-POTABLE RECYCLED WATER SYSTEM.**

- a. Sunnyvale currently owns and operates a non-potable recycled water system (Sunnyvale Non-Potable Recycled Water System) that supplies an average daily flow of 1 mgd of

recycled water that meets CA Title 22 requirements to existing customers within its service area. The Parties agree to collaborate in determining how best to continue to serve these existing customers in the future, and how the costs should be shared related to developing any Water Reuse Alternative that involves changes to Sunnyvale Non-Potable Recycled Water System.

- b. The Parties will continue to collaborate in exploring the future development of the Wolfe Road Recycled Water System for delivering recycled water to customers in Santa Clara County and in determining the service requirements for potential new recycled water customers to be connected to that system.
- c. The Parties will evaluate (i) continuation of the ownership, operation, and maintenance of the distribution component of Sunnyvale's recycled water system, or (ii) acquisition of Sunnyvale Non-Potable Recycled Water System by the District with the subsequent transfer of responsibilities for supplying and operating it by the District. The Parties shall mutually agree to a timeframe for this evaluation.

**20. NOTICES.** All notices or instruments required to be given or delivered by law or this MOU shall be in writing and shall be effective upon receipt thereof and shall be by personal service or delivered by depositing the same in any United States Post Office, registered or certified mail, postage prepaid, addressed to:

If to Sunnyvale:

Deanna J. Santana  
City Manager  
456 West Olive Avenue  
Sunnyvale, CA 94088

If to District:

Norma J. Camacho  
Interim Chief Executive Officer  
Santa Clara Valley Water District  
5750 Almaden Expressway, San Jose, CA 95118

Any party may change its address for receiving notices by giving written notice of such change to the other party in accordance with this section.

**21. AUTHORITY.** Each Party represents that the persons who execute this MOU have the authority to do so on behalf of the organization they represent. No other authority is granted as part of this MOU.

**22. WAIVER.** Nothing contained in this MOU will be construed as a waiver of any immunities or defenses that a Party may have under applicable provisions of law. This provision will survive expiration or termination of this MOU.

**23. MUTUAL INDEMNIFICATION.** In lieu of and notwithstanding the pro rata risk allocation that might otherwise be imposed between the Parties pursuant to Government

Code Section 895.6, the Parties agree that all losses or liabilities incurred by a Party shall not be shared pro rata but, instead, Sunnyvale and District agree that pursuant to Government Code Section 895.4, each Party shall fully indemnify and hold the other Party, its officers, governing board members, employees, and agents, harmless from any claim, expense or cost, damage or liability imposed for injury (as defined in Government Code Section 810.8) occurring by reason of the negligent acts or omissions or willful misconduct of the indemnifying Party, its officers, employees, or agents, under or in connection with or arising out of any work, authority, or jurisdiction delegated to such Party under this MOU. No Party, nor any board member, council member, officer, employee, or agent, thereof shall be responsible for any damage or liability occurring by reason of the negligent acts or omissions or willful misconduct of the other Party hereto, its officers, board members, council members, employees, or agents, under or in connection with or arising out of any work, authority or jurisdiction delegated to such other Party under this MOU. The obligations set forth in this Section 23 will survive termination and expiration of this MOU.

- 24. ASSUMPTION OF RISK.** District and Sunnyvale acknowledge that there is a risk entering into this MOU and that undertaking of any activities or the payment of any costs under this MOU is uncertain and that the activities contemplated by this MOU do not suggest that District may ever commence implementing any of the Water Reuse Alternatives.
- 25. MODIFICATION.** This MOU may be modified at any time by the mutual written agreement of the Parties.
- 26. NON-DISCRIMINATION.** In connection with this MOU, no Party will discriminate against or grant preferential treatment to any person on the basis of race, sex, color, age, marital status, religion, sexual orientation, actual or perceived gender identity, disability, ethnicity, national origin, or any other basis prohibited by state or federal law.
- 27. COMPLETE AND CURRENT AGREEMENT.** This MOU represents the entire understanding of the Parties with respect to the matters contained herein. No prior oral or written understanding shall be of any force or effect with respect to the matters in this MOU.
- 28. WAIVER.** Waiver by either party of any default, breach or condition precedent shall not be construed as a waiver of any other default, breach or condition precedent or any other right hereunder.
- 29. AMBIGUITY.** The parties acknowledge that this is a negotiated agreement, that they have had the opportunity to have this MOU reviewed by their respective legal counsel, and that the terms and conditions of this MOU are not to be construed against any party on the basis of such party's draftsmanship thereof.
- 30. SEVERABILITY.** If any provision in this MOU is found by a court of law to be illegal or unenforceable, the MOU will remain in full force and effect as if that provision, section or paragraph were not written into this MOU, unless the omitted language is integral to the Parties' intention and purpose of entering into this MOU.

**31. NO THIRD PARTY BENEFICIARIES.** Nothing in this MOU, express or implied, is intended to or shall confer upon any other person any right, benefit or remedy of any nature whatsoever under or by reason of this MOU.

**32. ASSIGNMENT.** District acknowledges that Sunnyvale desires to enter into this MOU because of the prior experience and qualifications of District. Therefore, District shall not assign, sell, or otherwise transfer any rights (collectively “assignment”) under this MOU without the prior written consent of Sunnyvale. No assignment shall be effective until the Sunnyvale City Council approves the assignment.

**33. COUNTERPARTS.** The parties may execute this MOU in one or more counterparts, each of which shall be deemed an original, but all of which together shall be deemed one and the same instrument.

This MOU will be effective as of the last date signed below.

**City of Sunnyvale,  
a municipal corporation**

\_\_\_\_\_  
Deanna J. Santana  
City Manager

\_\_\_\_\_  
Date

Approved as to form:

\_\_\_\_\_  
John A. Nagel, City Attorney

**Santa Clara Valley Water District,  
a Special District**

\_\_\_\_\_  
Norma Camacho  
Interim Chief Executive Officer

\_\_\_\_\_  
Date

Approved as to form:

\_\_\_\_\_  
Anthony Fulcher, Senior Assistant District Counsel

OFFICE OF COUNTY ASSESSOR — SANTA CLARA COUNTY, CALIFORNIA



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**File No.:** 17-0161

**Agenda Date:** 3/28/2017  
**Item No.:** 3.3.

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## BOARD AGENDA MEMORANDUM

### **SUBJECT:**

Recommended Position on Proposed Renewal and Replacement of the City of Palo Alto's Storm Drainage Fee with a Storm Water Management Fee That Would Apply to One District-Owned Parcel in the City of Palo Alto.

### **RECOMMENDATION:**

- A. Support the renewal and replacement of the existing City of Palo Alto Storm Drainage Fee of \$66.45 per month with a Storm Water Management Fee of \$69.62 per month, and associated annual inflation adjustment, for one District-owned parcel in the City of Palo Alto.
- B. Authorize the Chief Executive Officer to sign the Official Mail Ballot in favor of the proposed fee and associated inflation adjustment.

### **SUMMARY:**

The City of Palo Alto (City) recently provided the District with notice of a mail ballot election that they are conducting between February 24, 2017 and April 11, 2017 to allow property owners to decide whether to renew and replace the City's existing Storm Drainage Fee with a Storm Water Management Fee. This election applies to one District-owned parcel in the City.

If a majority of property owners approve the renewal of the fee, the District's existing fee of \$66.45 per month for that parcel would be replaced with a new fee of \$69.92 per month, plus an annual inflation adjustment of the lesser of: a) 6%, or b) the percentage change in the Consumer Price Index for the San Francisco-Oakland-San Jose area. If the fee is not approved by a majority of Palo Alto property owners, it would revert to its pre-2005 level of funding on June 1, 2017, which is estimated by the City to be approximately \$21.68 per month.

### Importance to the District

The proposed renewal and replacement fee would continue to pay for improving the quality of storm and surface water through storm water maintenance and operations, as well as through litter reduction, urban pollution prevention programs, commercial and residential rebates, flooding emergency-response services, and "green" storm water infrastructure projects.

These activities both prevent street flooding and protect the water quality and health of local streams, creeks, and the South San Francisco Bay, which support the Board's Ends Policies that speak to natural flood protection and water resources stewardship, as well as the Board's legislative guiding



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principles regarding supporting funding for infrastructure. In recognition of this, staff recommends that the Board support the renewal and replacement of the fee, and authorize the Chief Executive Officer to vote “Yes” on the official mail ballot, a copy of which is included as Attachment 1.

#### Background

The Palo Alto City Council established the Storm Drainage Fund and an associated Storm Drainage Fee in 1989 to fund municipal storm drain capital improvements, maintenance, and storm water quality protections programs. The fee was last authorized in a 2005 property owner election, and most of the current fee will sunset in June 2017. Revenue generated by the fee since 2005 has funded seven storm drain capital improvement projects as well as ongoing operational costs. If voters approve the renewal and replacement of the proposed fee, the City will implement additional drainage improvements throughout the City, including compliance with state permit requirements mandating green storm water infrastructure, which reduces runoff, improves storm water quality, and restores the natural water cycle by collecting and retaining and/or treating runoff rather than discharging it directly into storm drains.

#### Proposed Fee Structure

If approved by voters, the replacement fee would generate approximately \$6.9 million each year, to be adjusted for inflation in future years, and would be comprised of two components:

1. The Base Component (\$3.8 million per year) would fund items such as storm water quality protection, emergency response, floodplain management, and engineering. This component would continue to be collected until terminated by the City Council.
2. The Projects and Infrastructure Component (\$3.1 million per year) would fund the City’s Green Storm Water Infrastructure Projects, Incentive Projects, and the storm drain capital improvement program. The storm drain capital improvements would be paid for on a pay-as-you-go basis, without debt financing. This component has been calculated based on anticipated 15-year costs for those projects and the capital improvement program; consequently, this component would only run for a 15-year period, and would sunset on June 1, 2032 unless extended by the voters.

This fee applies to all developed parcels in the City of Palo Alto; only undeveloped parcels are exempt from the fee. A detailed breakdown of activities to be funded within each component is on page three of the Proposed Storm Water Management Fee Brochure, which is included as Attachment 2.

#### Oversight Committee

If the fee renewal and replacement is approved by voters, The City Council would appoint an oversight committee to monitor and review expenditures, and ensure that the money raised is spent properly. The City Council may choose to retain the current members of the existing Council-appointed Storm Drain Oversight Committee to perform this oversight function. The oversight committee would report its findings to the City Council at least annually.

**FINANCIAL IMPACT:**

If a majority of property owners approve the renewal of the fee, the District's existing fee of \$66.45 per month for that parcel would be replaced with a new fee of \$69.92 per month, plus an annual inflation adjustment of the lesser of: a) 6%, or b) the percentage change in the Consumer Price Index for the San Francisco-Oakland-San Jose area.

In simple terms, the new fee would add \$3.47 per month (or \$41.64 per year) in fees for the District's parcel, plus an annual inflation adjustment.

**CEQA:**

The recommended action does not constitute a project under CEQA because it does not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

**ATTACHMENTS:**

Attachment 1: Copy of Official Mail Ballot

Attachment 2: Proposed Storm Water Management Fee Brochure

**UNCLASSIFIED MANAGER:**

Rick Callender, 408-630-2017

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OFFICIAL MAIL BALLOT  
CITY OF PALO ALTO  
APRIL 11, 2017 MAIL BALLOT ELECTION

PROPOSED STORM WATER  
MANAGEMENT FEE

This Ballot is for the property designated as Assessor's Parcel Number: 008-01-014 located at: 2027 E BAYSHORE RD.

S C V W D  
5750 ALMADEN EXPY  
SAN JOSE CA 95118  
008-01-014

This is your official ballot for the Tuesday, April 11, 2017 City of Palo Alto Mail Ballot Election. You will receive a separate ballot for each parcel you own that is subject to the fees, and one vote may be cast for each such parcel.

To complete your ballot, mark an (X) in the line next to the word "YES" or next to the word "NO" below, sign and date the ballot, and return the entire ballot to the City Clerk's Office via mail at P.O. Box 50246, Palo Alto, CA 94303 or in person at 250 Hamilton Avenue, Palo Alto, CA. If you wrongly mark, tear, or deface this ballot, you may obtain a duplicate ballot by requesting one in writing from the Office of the City Clerk. All ballots must be received by the Office of the City Clerk no later than 5:30 PM on Tuesday, April 11, 2017.

Assessor's Parcel Number: 008-01-014

Proposed Storm Drain Management Fee: \$69.62 per month

This is a monthly fee. The amount shown above is the projected monthly charge for the indicated parcel based on the methodology described in the election notice and in Resolution No. 9635. As set forth in the notice and resolution, the proposed fee would be subject to an annual adjustment based on published inflation data, and capped at 6% per year.

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**MARK ONLY ONE OPTION**

☐ **YES** I support the proposed Storm Drain Management Fee (and associated inflation adjustment) upon my parcel.

☐ **NO** I oppose the proposed Storm Drain Management Fee (and associated inflation adjustment) upon my parcel.

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**IMPORTANT: BALLOT MUST BE SIGNED AND DATED BELOW IN ORDER TO BE COUNTED**

I hereby declare, under penalty of perjury, that I am an owner of the property identified on this ballot or I am legally entitled to submit a ballot on behalf of an owner.

Signed \_\_\_\_\_

Date \_\_\_\_\_

Print Name of Person Signing Ballot \_\_\_\_\_

This ballot will be accepted and tabulated pursuant to the City's "Procedures for the Conduct of Protest Hearing and Mail Ballot Election in Connection with Proposed Storm Water Management Fee." A copy of these procedures can be found online at [www.cityofpaloalto.org/stormwaterfee](http://www.cityofpaloalto.org/stormwaterfee).

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## STORM WATER MANAGEMENT PROGRAM

A Mail Ballot Election is being held between February 24, 2017 and April 12, 2017 in which property owners can vote on whether to renew the monthly fee that funds the City's Storm Water Management Program.

The Storm Water Management Program funds routine storm water system maintenance and operations that keep the system clean and at peak performance, and storm water system improvements that prevent street flooding. The Program also provides litter reduction, urban pollution prevention programs, commercial and residential rebates, and flooding emergency-response services.

If the Storm Water Management Fee is approved by a majority of Palo Alto property owners, then on June 1, 2017 the Fee will increase to approximately \$13.65 per month for a typical home. This is an average increase of 62 cents a month compared to the current Fee.

If the Fee is not approved by a majority of Palo Alto property owners, it will revert to its pre-2005 level of \$4.25 per month on June 1, 2017.

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## DESCRIPTION OF THE PROPOSED STORM WATER MANAGEMENT FEE

### A. Overview

The proposed Storm Water Management Fee of \$13.65 per ERU (Equivalent Residential Unit) per month would replace the existing Storm Drainage Fee of \$13.03 per ERU per month. The Storm Water Management Fee would have two components:

- 1) A Base Component of \$7.48 per ERU per month (adjusted annually for inflation as discussed later in this document), which would continue until terminated by the City Council.
- 2) A Projects and Infrastructure Component of \$6.17 per ERU per month (adjusted annually for inflation as discussed later in this document), which would end after 15 years, on June 1, 2032, unless extended by the voters.

If approved, the Storm Water Management Fee would go into effect June 1, 2017. Proceeds of the Storm Water Management Fee would be available to the City exclusively to pay for:

- Improving the quality of storm and surface water;
- The operation, maintenance, improvement and replacement of existing City storm drainage facilities; and
- The operation, maintenance, and replacement of future such facilities.

Permissible uses would include, but not be limited to, Green Storm Water Infrastructure programs (including financial incentives to property owners) intended to reduce the quantity of storm water entering the City's public storm water system or to improve the quality of storm water before it enters that system through measures including, but not limited to, rain gardens, rain barrels/cisterns, green roofs, tree wells, bio-retention/infiltration basins and planters, and permeable pavement.

### B. Background

The Palo Alto City Council established the Storm Drainage Fund and an associated Storm Drainage Fee in 1989 as an independent means to fund municipal storm drain capital improvements, maintenance, and storm water quality protections programs. The fee was last authorized in a 2005 property owner election, and most of the current fee will sunset in June 2017. Revenue generated by the fee since 2005 has funded seven high-priority storm drain capital improvement projects as well as ongoing operational costs. The new Storm Water Management Fee was recommended to the City Council by an appointed Blue Ribbon Storm Drain Committee of residents. Adoption of the proposed new fee will enable the implementation of additional drainage improvements throughout the City, including compliance with state permit requirements mandating green storm water infrastructure. Green storm water infrastructure reduces runoff, improves storm water quality, and restores the natural water cycle by collecting and retaining, and/or treating runoff rather than discharging it directly to storm drains.

### C. Budget

#### 1. Base Component

Each Year, the Base Component is anticipated to generate approximately \$3.8 million (to be adjusted for inflation in future years). The Base Component has been calculated based on the City's anticipated ongoing costs for the engineering, maintenance, storm water quality protection, operation and administration of the City's storm water system, including regulatory permit compliance.

Floodplain Management	\$ 101,000
Engineering	\$ 255,000
Storm Water Quality Protection	\$ 1,135,000
Storm Drain System Maintenance	\$ 1,293,000
Emergency Response	\$ 119,000
Administrative Support	<u>\$ 1,112,000</u>
<b>SUBTOTAL (partially funded by other revenue)</b>	<b>\$ 4,015,000</b>

## 2. **Projects and Infrastructure Component**

Each Year, the Projects and Infrastructure Component is anticipated to generate approximately \$3.1 million (to be adjusted for inflation in future years). The Projects and Infrastructure Component has been calculated based on anticipated 15-year costs for the Storm Drain Capital Improvement Program (which includes both major capacity upgrade projects and capital improvement repair and rehabilitation), Incentive Projects, and Green Storm Water Infrastructure Projects.

Storm Drain Capital Improvements	\$ 1,104,000
Debt Service for Past Capital Projects*	\$ 947,000
Storm Drain System Repairs	\$ 400,000
Capital Program Engineering Support	\$ 177,000
Green Storm Water Infrastructure Projects	\$ 375,000
Incentive Projects	\$ 125,000
<b>SUBTOTAL</b>	<b>\$ 3,128,000</b>

\* Debt service obligations end in Fiscal Year 2024, after which this budget is available for use for new capital improvements.

The fifteen-year budget for major capital improvements was based on the following projects depicted on the attached exhibit:

- a. Loma Verde Avenue (Louis Road to Sterling Canal) storm drain capacity upgrade (Midtown) \$2,200,000
- b. Corporation Way/East Bayshore Road Pump Station to Adobe Creek (Baylands) \$2,420,000
- c. West Bayshore Road to Adobe Creek storm drain capacity upgrade (Palo Verde) \$1,390,000
- d. West Bayshore Road Pump Station to Adobe Creek (Palo Verde) \$1,040,000
- e. East Charleston Road to Adobe Creek storm drain capacity upgrade (Charleston Terrace) \$1,300,000
- f. East Meadow Circle storm drain connection to Adobe Creek Pump Station (E Meadow Circle) \$360,000
- g. East Meadow Drive to Adobe Creek Pump Station storm drain capacity upgrade (Ortega) \$400,000
- h. Fabian Way storm drain capacity upgrade (Fabian Way) \$580,000
- i. Hamilton Avenue (Center Drive to Rhodes Drive) storm drain capacity upgrade (Duveneck-St Francis) \$3,440,000
- j. Louis Road (Embarcadero Road to Seale-Wooster Canal) storm drain capacity upgrade (Garland/Midtown) \$6,910,000
- k. Louis Road (Seale-Wooster Canal to Matadero Creek) overflow storm drain (Midtown) \$1,560,000
- l. Colorado Pump Station integration with Matadero Pump Station (Midtown) \$430,000
- m. Center Drive storm drain capacity upgrade (Crescent Park) \$1,620,000

Project costs were estimated based upon the best information currently available for the purpose of developing a reasonable and appropriate capital improvement program budget. Final selection and sequencing of individual projects is subject to further study and analysis, such as analysis under the California Environmental Quality Act.

### D. **Annual Inflation Adjustment**

In order to offset the effects of inflation on labor and material costs, the maximum rate for the Storm Water Management Fee (and each component of the Storm Water Management Fee) will be increased annually each July 1 (beginning July 1, 2018), by the lesser of (i) the percentage change in the Consumer Price Index [CPI] for the San Francisco-Oakland-San Jose CSMA, published by the United States Department of Labor, Bureau of Labor Statistics during the prior calendar year or (ii) 6%.



The City Council would have the authority to set the rate for the Storm Water Management Fee (and each component of the Storm Water Management Fee) at any rate that is less than or equal to the inflation adjusted maximum rate.

E. **Method of Collection and Calculated**

As a general rule, ERU's are assigned to each parcel subject to the fee on the following basis:

Single-Family Residential Parcels:

<u>Lot Size</u>	<u>ERU's</u>
<6,000 sq. ft.	0.8 ERU
6,000 - 11,000 sq. ft.	1.0 ERU
>11,000 sq. ft.	1.4 ERU

All Other Improved Parcels:

Number of ERU = Impervious Area (Sq. Ft.) / 2,500.

Assigned ERU's are rounded to the nearest one-tenth of an ERU.

Fees are generally collected on water bills. The Storm Water Management Fee would be collected and calculated in the manner set forth in City of Palo Alto Utilities Rule and Regulation No. 25 (available online at [www.cityofpaloalto.org/sdbrc](http://www.cityofpaloalto.org/sdbrc)), subject to the following exemptions:

Unimproved parcels are not subject to the Storm Water Management Fee, and the fee will not be charged for developed parcels that (i) have their own maintained storm drainage facility or facilities, and which do not utilize City facilities or (ii) make no substantial contribution of storm or surface water to the City's storm drainage facilities.

F. **Oversight provision for proposed fee increase**

The City Council would appoint an oversight committee to monitor and review expenditures for all storm water funding elements, including, but not limited to, Green Storm Water Infrastructure projects, storm water Capital Improvement Program projects, and Incentive Project funding and ensure that the money raised from the increased storm water management fee is spent properly. The Committee would be empowered to consider and recommend consolidation of Green Storm Water Infrastructure and Incentive Project funding for particular projects. The City Council may choose to retain the members of the existing Council-appointed Storm Drain Oversight Committee to perform this oversight function. The oversight committee would report its findings to the City Council at least annually.

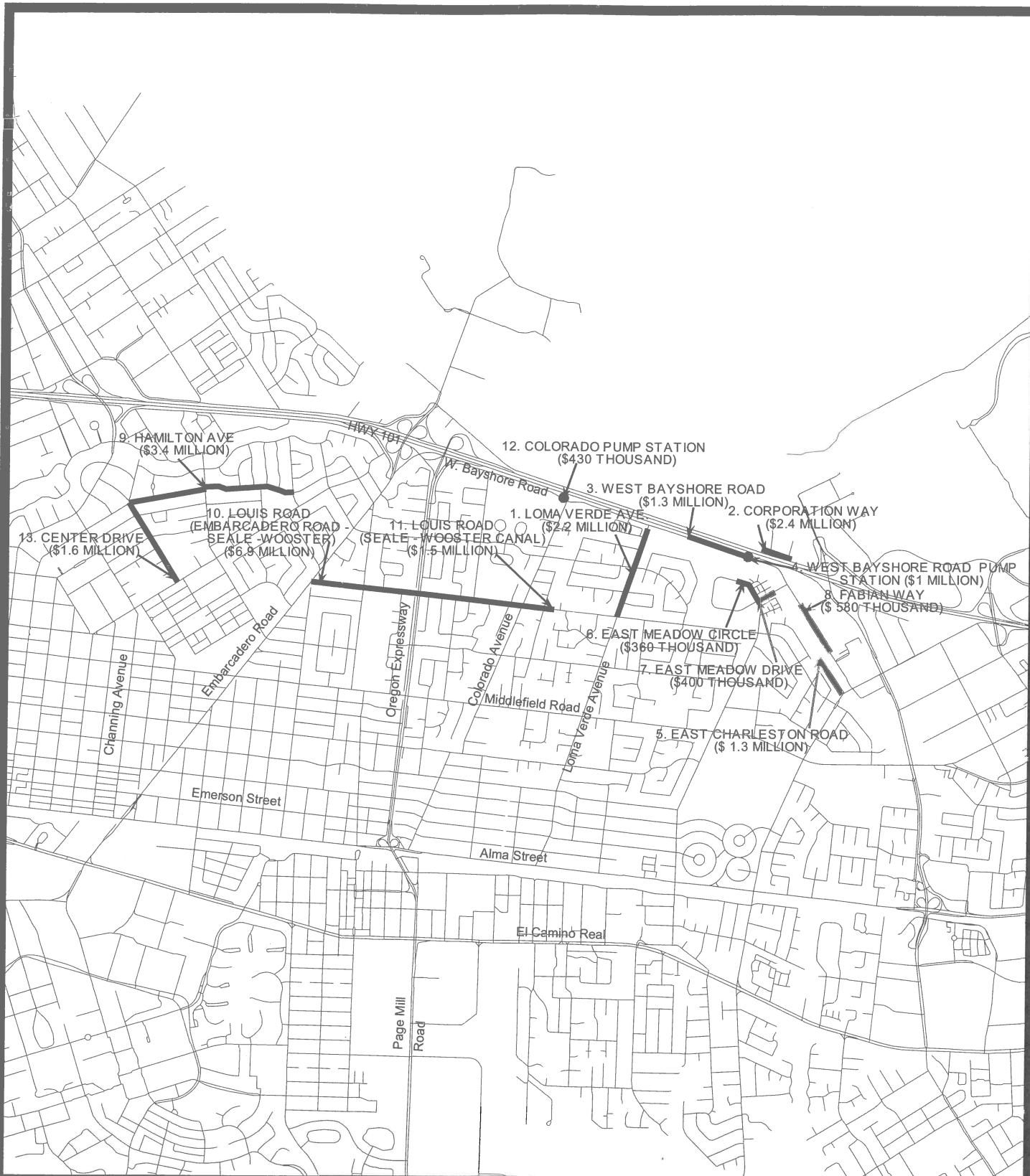
G. **Pay-as-you-go funding of capital improvements**

The storm drain capital improvements to be funded through the proposed Storm Water Management Fee would be paid for on a pay-as-you-go basis, without debt financing.

H. **Additional Information**

Should you have any questions about the public hearing, please call or write to: Beth Minor, City Clerk, P.O. Box 10250, Palo Alto, CA 94303. Telephone: (650) 329-2571.

For questions about the proposed fee, please call Joe Teresi in the Public Works Engineering Services Division at (650) 329-2129 or visit the City's web site at [www.cityofpaloalto.org/sdbrc](http://www.cityofpaloalto.org/sdbrc).



The City of  
Palo Alto



### Proposed Storm Drain Capital Improvements For Storm Water Management Fee

This map is a product of the  
City of Palo Alto GIS



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**File No.:** 17-0171

**Agenda Date:** 3/28/2017

**Item No.:** \*3.4.

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## BOARD AGENDA MEMORANDUM

### **SUBJECT:**

CEO Bulletins for the Weeks of March 10-16, and 17-23, 2017.

### **RECOMMENDATION:**

Accept the CEO Bulletins.

### **SUMMARY:**

The CEO Bulletin is a weekly communication for the CEO, to the Board of Directors, assuring compliance with Executive Limitations Policy EL-7: The BAOs inform and support the Board in its work. Further, a BAO shall: Inform the Board of relevant trends, anticipated adverse media coverage, or material external and internal changes, particularly changes in the assumptions upon which any Board policy has previously been established. Report in a timely manner an actual or anticipated noncompliance with any policy of the Board.

CEO Bulletins are produced and distributed to the Board weekly as informational items, and then placed on the bimonthly, regular Board meeting agendas to allow opportunity for Board discussion on any of the matters contained therein.

### **FINANCIAL IMPACT:**

There is no financial impact associated with this item.

### **CEQA:**

The recommended action does not constitute a project under CEQA because it does not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

### **ATTACHMENTS:**

Attachment 1: 031617 CEO Bulletin

\*Attachment 2: 032317 CEO Bulletin

### **UNCLASSIFIED MANAGER:**

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**File No.:** 17-0171

**Agenda Date:** 3/28/2017  
**Item No.:** \*3.4.

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Norma Camacho, 408-630-2084

To: Board of Directors  
From: Norma J. Camacho, Interim CEO

## Chief Executive Officer Bulletin Week of March 10 – March 16, 2017

### Board Executive Limitation Policy EL-7:

*The Board Appointed Officers shall inform and support the Board in its work. Further, a BAO shall 1) inform the Board of relevant trends, anticipated adverse media coverage, or material external and internal changes, particularly changes in the assumptions upon which any Board policy has previously been established and 2) report in a timely manner an actual or anticipated noncompliance with any policy of the Board.*

Page	IN THIS ISSUE
<u><a href="#">1</a></u>	<b><u>Director Santos</u></b> Provide Board with Anderson Dam release data collected since 1983 and identify if any release data is comparable to releases over President's Day storm. R-17-0006
<u><a href="#">2</a></u>	<b><u>Director Varela</u></b> Staff to create a website and send mailer to all agricultural well owners with information and frequently asked questions about crop factors, rate increases, and water production statement. I-17-0001
<u><a href="#">2</a></u>	<b><u>Director Varela</u></b> Request for information on the Boardroom Audio Visual Project I-17-0005

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### **Director Santos**

Provide Board with Anderson Dam release data collected since 1983 and identify if any release data is comparable to releases over President's Day storm.  
R-17-0006

The following is a list of dates for peak flows from the Anderson Reservoir spillway discharges since 1983:

- March 1, 1983 - 4,720 cubic feet per second (cfs)
- March 24, 1995 - 2,200 cfs
- February 23, 1996 - 1,020 cfs
- January 26, 1997 - 6,280 cfs
- February 8, 1998 - 3,750 cfs

- April 6, 2006 - 1,340 cfs
- February 21, 2017 - 7,120 cfs (President's Day Event – preliminary data)

For further information, please contact Katherine Oven at (408) 630-3126.

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**Director Varela**

**Staff to create a website and send mailer to all agricultural well owners with information and frequently asked questions about crop factors, rate increases, and water production statement.**

**I-17-0001**

The water district prepared a Frequently Asked Question document that addresses the crop factor change, rate increases, and the water production statement.

The water district Act requires that the amount of groundwater being pumped from non-metered wells be disclosed by well owners to the water district in a water production statement. On September 22, 2015, the board approved a resolution adopting and amending the Agricultural Table of Average Uses for agricultural water use. The Agricultural Table of Average Uses is used to estimate the amount of water being pumped by factoring the amount of land and the crops being grown. The table had not been updated in decades. The refined Agricultural Table of Average Uses is based on a study prepared by ERA Economics.

The Frequently Asked Question information and the Agricultural Table of Average Uses can be found at <http://www.valleywater.org/ReportingRequirements/>. This page links from the [www.valleywater.org home page](http://www.valleywater.org/home).

Information on crop factors, rate increases and water production will be included in the next scheduled water production statement which will be mailed to the well owners.

For further information, please contact Darin Taylor at (408) 630-3068.

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**Director Varela**

**Request for information on the Boardroom Audio Visual Project**

**I-17-0005**

In response to IBMR I-17-0005, Deputy Administrative Officer, Sudhanshu Tikekar, provided Chair Varela on March 13, 2017, with information relevant to his request.

For further information, please contact Susan Stanton at (408) 630-2208.

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To: Board of Directors  
From: Norma J. Camacho, Interim CEO

## Chief Executive Officer Bulletin

Week of Week of March 17 to March 23, 2017

### Board Executive Limitation Policy EL-7:

*The Board Appointed Officers shall inform and support the Board in its work. Further, a BAO shall 1) inform the Board of relevant trends, anticipated adverse media coverage, or material external and internal changes, particularly changes in the assumptions upon which any Board policy has previously been established and 2) report in a timely manner an actual or anticipated noncompliance with any policy of the Board.*

Page	IN THIS ISSUE
<a href="#"><u>2</u></a>	Grant Funds at Work: Final Report of the Vasona Creek Stream Stabilization and Habitat Enhancement Phase 2 Project by West Valley College
<a href="#"><u>2</u></a>	Alamitos Pond Field Trip Aim to Foster Learning and Career
<a href="#"><u>3</u></a>	<u>Director LeZotte</u> Staff is to return with information and potential policy language on "Wall Street" banks and how we deal with them in the future on financing R-16-0048
<a href="#"><u>3</u></a>	<u>Director Estremera</u> Staff to provide the Board with information on how many times in the last 12 months, staff has authorized work on expired contracts/agreements, and identify a process for improvement R-17-0007
<a href="#"><u>3</u></a>	<u>Director Keegan</u> Staff to provide information on previous Board presentations and direction on opportunities for flood management on the Anderson Dam project, and provide analysis of benefits to operation of dam R-17-0008

**Grant Funds at Work: Final Report of the Vasona Creek Stream Stabilization and Habitat Enhancement Phase 2 Project by West Valley College**

West Valley College received a \$300,000, Safe, Clean Water, and Natural Flood Protection grant to fund habitat restoration on Vasona Creek at the West Valley College campus. The project included the reconstruction of a 740-foot long channel segment to add habitat complexity and stabilize a highly eroding portion of the channel. Non-native vegetation along the reconstructed channel and adjacent floodplain areas was removed and replaced with native plants.

The final report on the completed Vasona Creek Stream Stabilization and Habitat Enhancement Phase 2 Project is included in the board's March 24, 2017, Non-Agenda packet.

For further information, please contact Chris Elias at 408-630-2379.

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**Alamitos Pond Field Trip Aim to Foster Learning and Career**

As part of the water district's Water Education Program, a tour of the Alamitos Percolation pond was hosted on March 20, 2017, for seventy, seventh grade students from Sylvandale Middle School in the Franklin-McKinley School District.

During their visit, the students and their teachers visited the following:

- Groundwater Model Station: to learn where water comes from in Santa Clara County, the importance of groundwater, and latest innovations at the Silicon Valley Advanced Water Purification Center.
- Enviroscape Model: to discuss and learn about point and non-point source pollution and how it affects local water supply in the San Francisco Bay and the Pacific ocean.
- Wetlands Game station: to learn about the importance of wetlands as a habitat for endangered species and the issues posed by wetland habitat loss.

Throughout their visit, the students were engaged and were able to connect what they learned to the importance of water resources in supporting the environment and the quality of life in the local community.

The teachers expressed their appreciation to the Water Education Program and the water district for providing the students with a hands-on learning experience and an interactive field trip.

In the coming week, the Water Education program will follow up with a visit to Sylvandale Middle school to teach an additional ninety students on information from the field trip at workstations and have discussions on career opportunities in the water industry.

For further information, please contact Chris Elias at 408-630-2379.

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**Director LeZotte**

**Staff is to return with information and potential policy language on "Wall Street" banks and how we deal with them in the future on financing**

**R-16-0048**

The water district recommends that when a financial institution chooses to participate and qualify in negotiated sales of water district debt instruments, the institutions must not be under any suspension from negotiated sales activity by the California State Treasurer's Office.



A supporting memorandum regarding this policy was issued by District Counsel on January 11, 2017. The water district updated the Debt Management Policy, Ad-3.7, to include the following language: "For negotiated sale, any underwriters that are currently suspended by the California State Treasurer's Office from its negotiated underwriting pool may not participate in the water district's negotiated sale, pending board approval." At the March 14, 2017, water district board meeting, the board approved the suspension of Wells Fargo Bank from the water district's Negotiated Sale Underwriter Pool through September 27, 2017. The Board Policy and Planning Committee plans to add to their workplan, at their April 10, 2017 meeting, the topic of potential changes to water district policies that relate to engaging with socially responsible businesses, including Wall Street banks.

For further information, please contact Darin Taylor at (408) 630-3068.

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**Director Estremera**

**Staff to provide the Board with information on how many times in the last 12 months, staff has authorized work on expired contracts/agreements, and identify a process for improvement**

**R-17-0007**

Due to a significant workload from the Presidents' Day Storm Event, a response to this Board Member Request will be provided by March 30, 2017.

For further information, please contact Katherine Oven at (408) 630-3126.

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**Director Keegan**

**Staff to provide information on previous Board presentations and direction on opportunities for flood management on the Anderson Dam project, and provide analysis of benefits to operation of dam**

**R-17-0008**

Updates on the Anderson Dam Seismic Retrofit project were provided to the board on January 22, 2013, July 9, 2013, April 10, 2014, June 9, 2015, November 10, 2015, June 28, 2016, and December 13, 2016.

In the July 9, 2013, board agenda memo, the components of the recommended project were described, which included the following: "Construction of a high-level outlet that will discharge to the existing spillway with a maximum discharge of about 4,600 cfs. This outlet will be installed to meet DSOD emergency drawdown requirements and may be used in the future to improve flood management in Coyote Creek."

The water district may perform an analysis in the future to determine the benefits to operation of the dam with the incorporation of a flood management component once the current project focus on seismic retrofit has been completed. The report from the analysis would serve as an opportunity for the board to provide direction on flood management as part of the operations at the Anderson Dam.

For further information, please contact Katherine Oven at (408) 630-3126.

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**File No.:** 16-0432

**Agenda Date:** 3/28/2017

**Item No.:** 4.1.

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## BOARD AGENDA MEMORANDUM

### **SUBJECT:**

Fiscal Year 2017 Board Policy Planning and Performance Monitoring Calendar.

### **RECOMMENDATION:**

Review and revise the Fiscal Year 2017 Board Policy Planning and Performance Monitoring Calendar.

### **SUMMARY:**

This item provides the Board an opportunity to review and discuss its Fiscal Year 2017 Board Policy Planning and Performance Monitoring Calendar (FY17 Board Calendar) and identify appropriate items for Board Advisory Committee work plans for committee discussion and feedback to the Board.

The current FY17 Board Calendar is attached for Board information and review.

### **FINANCIAL IMPACT:**

There is no financial impact associated with this item.

### **CEQA:**

The recommended action does not constitute a project under CEQA because it does not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

### **ATTACHMENTS:**







Attachment 1: FY17 Board Calendar

### **UNCLASSIFIED MANAGER:**

Michele King, 408-630-2711

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# Board Policy Planning Calendar

FY 2016-17 Board Policy Planning Calendar Items	Frequency	Planned Meeting Dates		Advisory Committees Work Plan Yes/Timing	Advisory Committee Outcome Advice/ Information
		July-Dec	Jan-June		
 <b>Board Governance and Monitoring Organization Performance</b>					
Board Sets Strategic Direction and Priorities	Annually	10/4/16 (Special Meeting)		N	
Board Policy Review and Revision	Annually	10/4/16 (Special Meeting)		N	
Board Support	One Time	7/26/16		N	
Legislative Outlook 2017	Annually		1/24/17	N	
Small Claims Policy	One Time	10/11/16		N	
 <b>Community Linkage</b>					
Civic Engagement	One Time	TBD		Y-After Board	All Committees for feedback (per Transparency Audit)
Board Feedback on Safe, Clean Water Program (Topics TBD)	Annually	9/27/16		Y-After Board	All Committees for Info
 <b>E.2.1. Current and future water supply for municipalities, industries, agriculture, and the environment is reliable.</b>					
Imported Water— Eco Restore, Delta Fix Updates, and Alternative Water Supplies	TBD by Committee			N	
Expedited Recycled/Purified Water Program Planning	TBD by Committee	9/20/16		N	
FAHCE Strategies	TBD by Committee			N	
Demand Management Strategies and Portfolio	TBD by Committee			Y-After Board	All Committees for info after Water Conservation Ad Hoc provides input
Water Supply Portfolio Strategy	Annually		6/27/17	N	
Alternative Water Supply Portfolios	TBD	TBD			
New/Increased Development Paying for Increased Water & Cost	TBD	TBD			Water Commission
 <b>E.2.3. Reliable high quality drinking water is delivered.</b>					
 <b>E.3.1. Provide natural flood protection for residents, businesses, and visitors.</b>					
 <b>E.3.2. Reduce potential for flood damages.</b>					

FY 2016-17 Board Policy Planning Calendar Items	Frequency	Planned Meeting Dates		Advisory Committees Work Plan Yes/Timing	Advisory Committee Outcome Advice/Information
		July-Dec	Jan-June		



#### E.4.1. Protect and restore creek, bay, and other aquatic ecosystems.

Reduce Homeless Encampments along County Waterways	TBD by Committee			N	
Riparian Corridor Ordinance, Encroachment Process Discussion	One Time	10/18/16 (Special Mtg)		Y-After Board	Water Commission & EWRC for Info/feedback
Environmental Issues—Endangered Species, Drought Environmental Impacts	One Time	TBD		Y-After Board	EWRC for feedback
One Water - Integrated Water Resources Master Plan	Annually	9/13/16		N	
Acceleration of Environmental Projects	TBD by Comm				



#### E.4.2. Improved quality of life in Santa Clara County through appropriate public access to trails, open spaces, and District facilities.

Update on Joint Use of Trails	One Time		1/10/17	Y-Before Board	All Committees for feedback on issues & what's working/not working
Support of Trails (Update Board Policy Language)	TBD	TBD			
Discussion of 1982 Llagas Creek Ordinance	One Time		1/10/17	N	



#### E.4.3. Strive for zero net greenhouse gas emission or carbon neutrality.

Renewable Energy and Vacant Land	TBD	TBD			
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#### EL-3. Human Resources

Diversity and Inclusion Program	Quarterly		2/28/17	N	
Workforce Development and Succession Plan	Annually		2/28/17	N	



#### EL-4. Capital Improvement Program

FY 18-22 CIP	3 to 4 meetings between Dec & May		1/10/17 2/28/17 4/25/17 5/09/17	N	
Regulatory Permits Strategy	TBD by Comm			N	



#### EL-4. Financial Management






Open Space Credit	One Time	8/23/16		Y-with Farm Bureau before Board	Provide input to the Board
FY 17-18 Financial Planning, Budget Message, Budget Development, and Groundwater Production Charges	6 to 8 meetings (Dec thru May)	12/13/16	03/28/17 4/11/17 4/25/17 5/09/17	N	











#### EL-6. Asset Protection

Risk Analysis District Assets	One Time		5/9/17	N	
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# Board Organization Performance Monitoring Calendar

FY 2016-17 Board Organization Performance Monitoring Items	Frequency	Planned Meeting Dates		Advisory Committees Work Plan Yes/Timing	Advisory Committee Outcome Advice/ Information
		July-Dec	Jan-June		
 <b>Board Governance and Monitoring Organization Performance</b>					
Board Self-Assessment	Annual	9/13/16	2/28/17	N	
Board Expense Report	Quarterly	9/13/16 12/13/16	3/14/17 6/13/17	N	
BAOs Performance Evaluation (per CEO & DC Contracts, Semi-Annual review completed by Jan. 31 <sup>st</sup> and Annual review completed by July 31 <sup>st</sup> .)	Quarterly	10/18/16 10/25/16 11/8/16 11/22/16		N	
BAOs Compensation Review (Per CEO & DC Contracts, salary adjust should be completed no later than Oct. 1 <sup>st</sup> .)	Annually			N	
Cyber Security/Security in General (Closed Session)	One Time		5/9/17		
 <b>Community Linkage</b>					
District Communication Program Update	Semi-Annually	9/13/16	2/28/17 4/11/17	Y-Before Board	All Committees for feedback/comparative advice
Safe, Clean Water Programs Update	Annually	9/27/16		Y-After Board	Water Commission for Info
 <b>E.2.1. Current and future water supply for municipalities, industries, agriculture, and the environment is reliable.</b>					
Water Supply Outlook and Drought Response Update	Bi-Monthly	Exception Reporting		Y-After Board	All Committees as info
Water Supply and Infrastructure Master Plan (2012) Update	Annually		1/31/17	N	
Groundwater Management Program Update including Salt/Nutrient Management	Annually		2/2017	N	
 <b>E.2.3. Reliable high quality drinking water is delivered.</b>					
Rinconada Reliability Improvement Project Progress Report	Exception Reporting			N	
 <b>E.3.1. Provide natural flood protection for residents, businesses, and visitors.</b>					

FY 2016-17 Board Organization Performance Monitoring Items	Frequency	Planned Meeting Dates		Advisory Committees Work Plan Yes/Timing	Advisory Committee Outcome Advice/ Information
		July-Dec	Jan-June		
 <b>E.3.2. Reduce potential for flood damages.</b>					
Winter Preparedness Update	Annually	10/25/16		Y-After Board	All Committees for feedback on what worked/didn't work
 <b>E.4.1. Protect and restore creek, bay, and other aquatic ecosystems.</b>					
Status of Measure AA Projects	Exception Reporting		TBD		
 <b>E.4.2. Improved quality of life in Santa Clara County through appropriate public access to trails, open spaces, and District facilities.</b>					
 <b>E.4.3. Strive for zero net greenhouse gas emission or carbon neutrality.</b>					
Climate Change Mitigation—Carbon Neutrality by 2020 Program Update	Semi-Annually	10/25/16		Y-After Board	All Committees as info/feedback (share fact sheets, links, etc.)
Climate Change and Sea Level Rise Adaptation—Water Supply, Flood Protection, Ecosystems Protection	Semi-Annually		4/2017	Y-After Board	All Committees as info/feedback (share fact sheets, links, etc.)
 <b>EL-3. Human Resources</b>					
 <b>EL-4. Capital Improvement Program</b>					
Federal Appropriation Requests/Priorities	Annually		2/28/17	N	
COE Projects/Partnership Update	Annually		03/2017	N	
Water Utility Capital Projects and Regulatory Permits Update	Annually		4/25/17	N	
Watershed Capital Projects (Non COE) and Regulatory Permits Update	Annually		4/25/17	N	
Building & Ground Capital Projects Update	Annually		4/25/17	N	
Information Technology Capital Projects Update	Annually		4/25/17	N	
 <b>EL-4. Financial Management</b>					
 <b>EL-6. Asset Protection</b>					
Dam Safety Program	Annually	8/23/16		N	
Asset Management Program	Semi-Annually		03/14/17 8/8/17	N	
Information Technology Master Plan Implementation	Annually		4/2017	N	



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**File No.:** 17-0154

**Agenda Date:** 3/28/2017

**Item No.:** \*4.3.

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## BOARD AGENDA MEMORANDUM

### **SUBJECT:**

Capital Improvement Program Ad Hoc Committee Recommendations from February 27, 2017 Meeting, Revising Committee Status and Purpose.

### **RECOMMENDATION:**

Consider and approve the following recommendations made by the Capital Improvement Program Ad Hoc Committee (Committee) during its February 27, 2017 meeting:

- A. Revise the Committee's status from ad hoc to standing; and
- B. Revise the Committee's purpose statement to read: *The CIP Committee is established to provide a venue for more detailed discussions regarding capital project validation, including recommendations on prioritizing, deleting, and/or adding projects to the CIP, as well as monitoring implementation progress of key projects in the CIP.*

### **SUMMARY:**

Each year a five-year Capital Improvement Program (CIP) is prepared for Board consideration and approval. The CIP communicates the District's capital investment priorities, and provides information on the planned capital projects and possible sources of funding for the projects. The CIP works in concert with the annual budget process, wherein funding is appropriated to the individual projects.

At the January 24, 2012 Board meeting, the Board formed the CIP Ad Hoc Committee to facilitate in-depth discussion about the CIP. Its purpose was later defined by the Committee on April 17, 2012 as follows: *The CIP Ad Hoc Committee is established to provide a venue for more detailed discussions regarding capital project validation, as well as recommendations on prioritizing, deleting and/or adding projects to the CIP.*

During its March 11, 2016 meeting, the CIP Ad Hoc Committee defined project prioritization, funding, permitting, and resources issues as critical items for Committee discussion. The Committee subsequently reviewed and made recommendations on the priority criteria process and rating system, and resulting prioritizations of funded vs. unfunded projects. Discussion on strategies to address project permit issues and the efficiency of retaining external professional consultant services remain on the Committee's work plan. Additionally, the Committee continues to consider the

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integration of Environmental Stewardship Capital Projects into the CIP process, an issue referred to the Committee by the Board during the Board of Directors October 4, 2016 Strategic Planning Work Study Session.

During the February 27, 2017 meeting, the Committee reviewed these goals in light of its currently defined purpose and status, and as a result, recommends the Board consider revising the Committee's status from ad hoc to standing, and revise the Committee's purpose statement as follows: *The CIP ~~Ad Hoc~~ Committee is established to provide a venue for more detailed discussions regarding capital project validation, ~~as well as~~ including recommendations on prioritizing, deleting, and/or adding projects to the CIP, as well as monitoring implementation progress of key projects in the CIP.*

**FINANCIAL IMPACT:**

There is no financial impact associated with this item. Funding for support of Board Committees is included in the Clerk of the Board's Fiscal Year 2016-17 budget.

**CEQA:**

The recommended action does not constitute a project under CEQA because it does not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

**ATTACHMENTS:**

Attachment 1: 2017 CIP Ad Hoc Committee Work Plan

**UNCLASSIFIED MANAGER:**

Michele King, 408-630-2711

# 2017 WORK PLAN – CAPITAL IMPROVEMENT PLAN AD HOC COMMITTEE

3/17/17

Updated:



The CIP Ad Hoc Committee was enacted by the Board on January 24, 2012. Its purpose was defined by the Committee on April 17, 2012 as follows: *The CIP Ad Hoc Committee is established to provide a venue for more detailed discussions regarding capital project validation, as well as recommendations on prioritizing, deleting and/or adding projects to the CIP.*

The CIP Ad Hoc Committee defined its priorities in fulfilling its purpose during its March 11, 2016 meeting, as follows:

Priority	Subject	Details	Desired Outcome
1	Prioritization	<ul style="list-style-type: none"> <li>Priority criteria process</li> <li>Representation of under-represented areas</li> </ul>	Hold a daytime, single-focus, Board work study session on CIP prioritization and funding combined.
2	Funding	<ul style="list-style-type: none"> <li>Funding unfunded, high priority projects</li> <li>Holding encumbered, approved project funds in reserves and how this is communicated to the Board and public</li> </ul>	
3	Permitting	<ul style="list-style-type: none"> <li>Changing the strategy for managing permitting issues</li> <li>Changing the "Kill the Goose" regulatory agency strategy</li> <li>Informing the public of regulatory impacts on ability to perform projects</li> </ul>	Hold permitting strategy discussion with the Board, including engagement of Board members in regulatory issues.
4	Resources	<ul style="list-style-type: none"> <li>Analysis of staff vs. consultant work</li> <li>Identifying where in the staffing plan it becomes more efficient to hire and develop employees vs. executing contracts with external consultants</li> </ul>	Conduct staff vs. consultant resource cost and benefit analysis reviews with the CIP Ad Hoc Committee, prior to recommending the Board approve large dollar value consultant agreements to the Board.

The Board of Directors further identified the following Issues/Challenges, and desired Board Discussion Outcomes, during their October 4, 2016 Priorities and Strategic Directions Work/Study Session, and referred to the CIP Ad Hoc Committee to develop Strategies/Opportunities for the following:

Issue/Challenge	Board Discussion Outcomes
Regulatory Permits and individual agencies exceeding statutory authority limits.	Use Board members' political connection w/communities they represent and local/state/federal elected officials to resolve project issues, such as permits/funding. Leverage Board connections and leave the politics to the Board. Specific suggestions are: <ul style="list-style-type: none"> <li>Communication of staff (including legal) to Board on status of permits, federal funding, etc.;</li> <li>Communication with stakeholders for their support of regulatory permits/issues;</li> <li>Encourage staff to have dialogue with Board members during the planning of public meetings so all interested groups can be notified;</li> <li>Continue to meet with local/federal delegation; and</li> <li>Continue to have ceremonies for completed projects (elected officials).</li> </ul>
Projects do not have consistent criterion of sensitive design that has art form and function.	Committee should evaluate ways of addressing environmental justice and sensitive design and bring back to the Board for discussion.
Slow/No progress on fish barrier removal projects. Environmental Stewardship is a "step child," should be equal. Funding competition for Stream Stewardship funds.	Committee to discuss issue/challenge and provide recommendations to the Board.

The annual work plan establishes a framework for committee discussion and action during the annual meeting schedule. The committee work plan is a dynamic document, subject to change as external and internal issues impacting the District occur and are recommended for committee discussion. Subsequently, an annual committee accomplishments report is developed based on the work plan and presented to the District Board of Directors.

# 2017 WORK PLAN – CAPITAL IMPROVEMENT PLAN AD HOC COMMITTEE

3/17/17

Updated:



MEETING DATE	WORK PLAN ITEM, BOARD POLICY, & POLICY CATEGORY	ASSIGNED STAFF	INTENDED OUTCOME(S)	ACCOMPLISHMENT DATE AND OUTCOME
04/10/17	Approval of Minutes, 02/27/17, 03/10/17	M. Meredith	Approve minutes.	
	Status of Rock Springs Flood Risk Reduction Study (2012 SCW Program) and Mid-Coyote Creek from Montague Expressway to Hwy 280 (2000 CSC Program)  <i>*Assigned at 2/28 Board meeting, Board Agenda Item 6.1</i>	N. Nguyen/ V. Gin	Receive a status on the Rock Springs Flood Risk Study and Mid Coyote Creek Projects  Discuss Strategies  Formulate recommendation to the Board  <i>*Staff to provide large map showing street names, Coyote Creek, identification of various neighborhoods, and project impact areas.</i>	
	Capital Project Consultant Agreements <i>*Assigned at 2/28 Board meeting</i>	K. Oven, A. Comelo	Identify Board issues regarding Capital Project Consultant Agreements.	
	Review Committee Work Plan	Committee	Confirm Agenda Topics for Next Meeting(s)	
	Next Meeting Date	Committee	Confirm/Adjust Next Meeting Date(s)	
05/08/17	Approval of Minutes, 04/10/17	M. Meredith	Approve minutes.	
	Watershed Capital Projects Funding (Flood & Stewardship) <i>*Continued from 2/27/17</i>	N. Nguyen	Analyze funding requirements for Capital Projects funded by stream Stewardship Fund (12) and SCW/CSC Fund (26)  Identify funding issues  Formulate recommendation to the Board	
	Review Committee Work Plan	Committee	Confirm Agenda Topics for Next Meeting(s)	
	Next Meeting Date	Committee	Confirm/Adjust Next Meeting Date(s)	

# 2017 WORK PLAN – CAPITAL IMPROVEMENT PLAN AD HOC COMMITTEE

3/17/17

Updated:



MEETING DATE	WORK PLAN ITEM, BOARD POLICY, & POLICY CATEGORY	ASSIGNED STAFF	INTENDED OUTCOME(S)	ACCOMPLISHMENT DATE AND OUTCOME
06/12/17	Approval of Minutes, 05/08/17	M. Meredith	Approve minutes.	
	Capital Project Consultant Agreements <i>*Continued from 4/10/17</i>	K. Oven, A. Comelo	Analyze and discuss identified issues  Formulate recommendation to the Board	
	Review Committee Work Plan	Committee	Confirm Agenda Topics for Next Meeting(s)	
	Next Meeting Date	Committee	Confirm/Adjust Next Meeting Date(s)	
07/10/17	Approval of Minutes, 06/12/17	M. Meredith	Approve minutes.	
	Monitor Implementation of 2018-22 CIP <i>*Expanded Committee Purpose 2/27, to be approved by the Board</i>	B. Redmond	Identify projects and issues to monitor, monitor and review: 1. Input solicited from the Board 2. *Winfield Warehouse project 3. *Watershed-wide regulatory planning and permitting 4. *Anderson, Almaden, Chesbro, and Guadalupe Dam Seismic retrofit projects 5. Fishery barrier removal projects 6. Coyote Creek Project 7. FY17-18 new consultant contracts 8. FY17-18 planned amendments to existing consultant contracts 9. Monitoring of maintenance of CIP project mitigation commitments <i>*From Board Budget Message and Strategic Directions</i>	
	Review Committee Work Plan	Committee	Confirm Agenda Topics for Next Meeting(s)	
	Next Meeting Date	Committee	Confirm/Adjust Next Meeting Date(s)	

# 2017 WORK PLAN – CAPITAL IMPROVEMENT PLAN AD HOC COMMITTEE

3/17/17

Updated:



MEETING DATE	WORK PLAN ITEM, BOARD POLICY, & POLICY CATEGORY	ASSIGNED STAFF	INTENDED OUTCOME(S)	ACCOMPLISHMENT DATE AND OUTCOME
08/14/17	Approval of Minutes, 07/10/17	M. Meredith	Approve minutes.	
	Monitor Implementation of 2018-22 CIP <i>*Expanded Committee Purpose 2/27, to be approved by the Board</i> <i>*Continued from 07/10/17</i>	B. Redmond	Identify projects and issues to monitor, monitor and review: 1. Input solicited from the Board 2. *Winfield Warehouse project 3. *Watershed-wide regulatory planning and permitting 4. *Anderson, Almaden, Chesbro, and Guadalupe Dam Seismic retrofit projects 5. Fishery barrier removal projects 6. Coyote Creek Project 7. FY17-18 new consultant contracts 8. FY17-18 planned amendments to existing consultant contracts 9. Monitoring of maintenance of CIP project mitigation commitments <i>*From Board Budget Message and Strategic Directions</i>	
	Review Committee Work Plan	Committee	Confirm Agenda Topics for Next Meeting(s)	
	Next Meeting Date	Committee	Confirm/Adjust Next Meeting Date(s)	
09/11/17	Approval of Minutes, 08/14/17	M. Meredith	Approve minutes.	
	Water Utilities Capital Project Funding (Alternate funding mechanisms) <i>*Continued from 01/30/17</i>	C. Hakes	Study feasible alternate funding sources other than water charges	
	Review Committee Work Plan	Committee	Confirm Agenda Topics for Next Meeting(s)	
	Next Meeting Date	Committee	Confirm/Adjust Next Meeting Date(s)	

# 2017 WORK PLAN – CAPITAL IMPROVEMENT PLAN AD HOC COMMITTEE

3/17/17

Updated:



MEETING DATE	WORK PLAN ITEM, BOARD POLICY, & POLICY CATEGORY	ASSIGNED STAFF	INTENDED OUTCOME(S)	ACCOMPLISHMENT DATE AND OUTCOME
10/09/17	Approval of Minutes, 09/11/17	M. Meredith	Approve minutes.	
	Water Utilities Capital Project Funding (Alternate funding mechanisms) <i>*Continued from 09/11/17</i>	C. Hakes	Study feasible alternate funding sources other than water charges	
	Review Committee Work Plan	Committee	Confirm Agenda Topics for Next Meeting(s)	
	Next Meeting Date	Committee	Confirm/Adjust Next Meeting Date(s)	
11/13/17	Approval of Minutes, 10/09/17	M. Meredith	Approve minutes.	
	Water Utilities Capital Project Funding (Alternate funding mechanisms) <i>*Continued from 10/09/17</i>	C. Hakes	Study feasible alternate funding sources other than water charges  Formulate recommendation to the Board	
	Review Committee Work Plan	Committee	Confirm Agenda Topics for Next Meeting(s)	
	Next Meeting Date	Committee	Confirm/Adjust Next Meeting Date(s)	
12/11/17	Approval of Minutes, 11/13/17	M. Meredith	Approve minutes.	
	2019-23 Preliminary CIP	B. Redmond	Review staff proposed preliminary project lists.	
	Review Committee Work Plan	Committee	Confirm Agenda Topics for Next Meeting(s)	
	Next Meeting Date	Committee	Confirm/Adjust Next Meeting Date(s)	

# 2017 WORK PLAN – CAPITAL IMPROVEMENT PLAN AD HOC COMMITTEE

3/17/17

Updated:



## 2017 ACCOMPLISHMENTS

MEETING DATE	WORK PLAN ITEM, BOARD POLICY, & POLICY CATEGORY	ASSIGNED STAFF	INTENDED OUTCOME(S)	ACCOMPLISHMENT DATE AND OUTCOME
01/30/17	Election of Chair and Vice Chair	M. Meredith	Elect Committee Officers 1. Chair 2. Vice Chair	Elected as follows: Chair – N. Hsueh Vice Chair – T. Estremera
	Approval of Minutes, 12/15/16	M. Meredith	Approved minutes.	Approved
	Water Utility Capital Project Prioritization.	C. Hakes	Review and discuss Water Utility capital Program, provide direction on project refinements or modifications to be incorporated into Draft/Final FY18-22 CIP.	<ul style="list-style-type: none"> <li>• Break down EAPW Program in FY18-22 CIP so funding for EAPW Project is separated from EAPW Expansion;</li> <li>• Refer to RWC for feedback on timelines for implementation of the EAPW Expansion Project</li> <li>• Bring EAPW Expansion discussion back to full Board;</li> <li>• Prepare scenario where Winfield Project is deferred to future and funding is shifted back to General Funds.</li> </ul>
	Review Committee Work Plan	Committee	Establish Agenda Topics for Next Meeting(s)	Schedule 2/27/17 meeting, agendize Watershed Streams Stewardship Funding and staff presentation on Almaden Lake Separation Project, including issues raised by McMurtry/Poeschel.
	Next Meeting Date	Committee	Establish Next Meeting Date(s)	February 27, 2017



# 2017 WORK PLAN – CAPITAL IMPROVEMENT PLAN AD HOC COMMITTEE

3/17/17

Updated:



MEETING DATE	WORK PLAN ITEM, BOARD POLICY, & POLICY CATEGORY	ASSIGNED STAFF	INTENDED OUTCOME(S)	ACCOMPLISHMENT DATE AND OUTCOME
02/27/17	Approval of Minutes, 01/30/17	M. Meredith	Approved minutes.	Approved as amended.
	Watershed Stream Stewardship Funding.	N. Nguyen	Review and discuss the Watershed Capital Program; and Provide direction for project refinements or modifications to be incorporated into the Final FY 2018-22 CIP.	Staff to come back with a complete list of unfunded Watershed Capital Projects, identify those waiting for planning/feasibility study to be completed vs. those that are ready to move forward but have no identified funds, and add on old projects such as the Mid-Coyote Creek and Rock Springs; and identify projects for Governor's \$1.5 billion funding.
	Alternative Analysis for Almaden Lake/Creek Separation Project	N. Nguyen	Receive information on the Almaden Lake Improvements Project water options.	
	Response to Letter from Mr. Richard McMurtry, dated January 28, 2017, and Submitted to the Committee on January 31, 2017 as Handout 2-A.	G. Hall	Receive information from staff and discuss an approach for addressing the various requests from stakeholders for fish habitat improvement projects into the CIP.	Staff is to come back with discussion to develop a process/approach for addressing requests from stakeholders, and advise Mr. Holmes of internal process and steps involved in qualifying a project for the preliminary CIP.
	Discuss Committee Purpose	Committee	TBD	Staff is to prepare a Board item regarding new purpose and name change for Board consideration.
	Review Committee Work Plan	Committee	Establish Agenda Topics for Next Meeting(s)	Schedule 03/10/17 10am meeting for discussion of Committee Work Plan
	Next Meeting Date	Committee	Establish Next Meeting Date(s)	03/10/17 10:00 a.m.
3/10/17	Committee Work Plan	Committee	Discuss 2017 Work Plan	Discussed and established discussion schedules for 2017
	Next Meeting Date	Committee	Establish Next Meeting Date(s)	Established regular monthly meeting schedule, 2 <sup>nd</sup> Mondays of Month, 10am – 12pm. Rescheduled next meeting from 4/17/17 1pm to 4/10/17 10am.



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**File No.:** 16-0792

**Agenda Date:** 3/28/2017

**Item No.:** 5.1.

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## BOARD AGENDA MEMORANDUM

### **SUBJECT:**

Water Utility Asset Management and Maintenance Program Update.

### **RECOMMENDATION:**

Receive update on the District's Water Utility Asset Management and Maintenance Program.

### **SUMMARY:**

#### **Background and Purpose of Update**

The Board of Directors has adopted the following Board Governance Policies that provide guidance on managing and maintaining Water Utility assets:

E-2.1. Current and future water supply for municipalities, industries, agriculture, and the environment is reliable.

E-2.2. Raw water transmission and distribution assets are managed to ensure efficiency and reliability.

E-2.3. Reliable high quality drinking water is delivered.

EL-6. The BAOs shall protect and adequately maintain corporate assets.

6.4. Maintain an Asset Management Program

In addition, at the Board Strategic Direction and Priorities Special Board meeting on October 4, 2016 and in subsequent Board Policy and Planning Committee discussions, issues, challenges, strategies and opportunities associated with water supply infrastructure were identified. They include: aging, vulnerability, understanding the District's level of risk, and knowledge of operations and maintenance (O&M) priorities. The Board also identified several outcomes to address these issues and challenges, including: continuing existing asset management strategies and looking at best practices, reviewing O&M prioritization process similar to the Capital Improvement Program (CIP) process, and elevating the role of O&M.

This update provides a semi-annual update on the asset management program as scheduled in the Board Policy Planning Calendar and describes: 1) Water Utility asset management planning and prioritization process and how this process drives annual maintenance and capital projects; 2) Water

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Utility maintenance and prioritization of daily maintenance work; 3) Performance Monitoring and Improvement program; and 4) additional Water Utility asset management activities.

Asset risk, operations priorities, security, and watershed and administration asset management programs are planned to be covered in future Board updates.

### **1. Water Utility Asset Management Planning and Prioritization Process**

One objective of asset management is to optimize asset performance and renewal strategies to minimize lifecycle costs while providing required levels of service at an acceptable level of risk. To meet this objective, the water utility asset management program carefully plans, prioritizes, and monitors asset renewal work for all water utility assets.

The District owns approximately 8,000 water utility assets. The replacement value of these assets was estimated at \$7.05 Billion in the 2014 District-wide Asset Management Plan. The 8,000 assets include the District's dams, pipelines, pump stations, water treatment plants, purification center, recharge ponds, and wells. Examples of specific assets include: large civil structures such as spillways, pipelines, operations buildings; mechanical equipment such as pumps, valves, and HVAC equipment; electrical components such as transformers, motors, and electrical control panels; and instrumentation such as temperature or pressure monitoring devices. Assets with an individual replacement value of at least \$2,500 or that are critical to continuous operation are included in the inventory.

#### Establishing Preventive and Planned Maintenance Schedules

The Water Utility has established maintenance schedules for all existing assets. When a new facility is constructed, staff adds the new assets (tanks, pipe, pumps, valves, electrical panels, instruments, etc.) to the asset register and establishes an asset's maintenance schedule. Maintenance schedules are typically based on manufacturers' recommendations, subject matter expertise, and maintenance schedules for similar existing assets. Schedules are optimized periodically based on field and operating conditions. For example, if a pump is due for a re-build, but has not been in service as long as expected, the re-build may be delayed.

There are two types of maintenance activities that are scheduled: preventive maintenance work and planned work. Another type of maintenance, corrective maintenance, is unscheduled because it addresses unplanned failures. The 'Water Utility Maintenance Program' section of this memo provides further information on corrective maintenance.

- Preventive Maintenance (PM) work is planned routine maintenance to prevent premature asset failure, such as an oil change for a gear box. PM activities occur weekly, monthly, quarterly, semi-annually, or annually, depending on the activity. When a PM work task becomes due for an asset, Maximo, the District's computerized maintenance management system, automatically generates a work order for maintenance staff to perform the task. The water utility completes approximately 14,000 PM work orders each year.
- Planned Work (PW) refers to planned asset rehabilitations and replacements, such as a pump rebuild or tank re-lining. PW activities occur less frequently, usually every 5 to 10 years. The

water utility's annual maintenance planning process is used to identify what PW activities are due each year, and to prioritize, execute and track PW, as described below.

#### Annual Maintenance Planning Process

Asset management program staff track PW schedules and develop forecasts of future infrastructure rehabilitation and replacement costs using a software application 'Asset Management Planning Tool' (AMPT). AMPT contains a database of all assets and their scheduled rehabilitations and replacements, and the costs of the rehabilitations and replacements. Staff also generates 100-year financial projections of all asset rehabilitation and replacement projects for all assets using this tool.

Each year staff uses AMPT to develop a list of all PW activities required for all water utility assets for the next five years. The list is validated and prioritized by an internal cross-functional team of maintenance, operations, engineering, and asset management staff. The PW list is prioritized based on asset risk. Rehabilitation of higher risk assets is prioritized above rehabilitation of lower risk assets. Asset risk is measured by probability and consequence of failure.

- Probability of Failure measures how likely an asset is to fail based on its condition. For all scheduled PW projects, staff confirms field condition and estimates remaining asset life. If assets are found in good condition, PW projects are rescheduled to future years.
- Consequence of Failure measures the impact of asset failure on service delivery, public safety, community property, the environment, finances, and reputation. These parameters are measured using the consequence of failure matrix shown in Attachment 1. For example, if an asset failure could cause an entire water treatment plant shutdown and stop service delivery, it has a high consequence of failure.

Projects to rehabilitate high risk assets (poor condition and/or high consequence of failure) are considered high priority, and are planned for implementation sooner than projects for lower risk assets. Additional information on asset risk assessment and how probability and consequence of failure are measured is provided in Attachment 1. In addition, a Board update on asset risk is scheduled for summer 2017, which will provide more detail on asset risk assessment.

From 2006 to 2016, the list of PW activities was compiled into the 'Annual Maintenance Work Plan'. These annual plans identified the PW projects for the following fiscal year. In 2017, staff began publishing a Five-Year Maintenance Work Plan to better plan, budget, and schedule the labor and resources needed for the projects. The Five-Year Maintenance Work Plan is a rolling five-year plan, and is updated annually. The Five-Year Maintenance Work Plan does not currently include rehabilitation or replacement of dam assets because dam maintenance requirements are driven by the State of California Department of Safety of Dams (DSOD) and Federal Energy Regulatory Commission (FERC). DSOD and FERC annual inspections identify required maintenance activities which the District implements.

#### PW Project Execution as Capital or Operating Projects

The PW projects in the Five-Year Maintenance Work Plan are budgeted and executed as either operating projects, small capital projects, or individual capital projects, as described below. In past

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Annual Maintenance Work Plans, many PW projects were executed as operating projects. In recent years, the Water Utility has shifted to executing most PW projects as small capital projects, as most PW projects include an asset replacement or major rehabilitation, which constitutes a capital investment.

- Operating Projects: PW projects that involve inspection or testing activities are not capital investments and are conducted under one of the maintenance operating projects identified in the District's budget (i.e., Raw Water T&D General Maintenance, Rinconada WTP General Maintenance). Biannual electrical testing or chemical tank inspection are examples of PW activities budgeted under operating projects. These projects are completed by maintenance staff and may require engineering, environmental and/or contractor support.
- Small Capital Projects: Smaller scope replacement or rehabilitation projects, for example a single pump re-build, are planned, bundled and executed in the Water Treatment, Treated Water Transmission, Raw Water Transmission, or San Felipe Reach 1-3 Small Capital Improvement Projects in the District's five-year CIP. The scopes of each of the Small Capital Improvement Projects change annually based on the work identified in the Five-Year Maintenance Work Plan. The replacement of the chain and flight system in the sedimentation basins at Penitencia Water Treatment Plant is an example of a PW project completed in the Water Treatment Small Capital Improvement Project in 2016. These projects are completed by maintenance staff and may require engineering, environmental and/or contractor support.
- Individual Capital Projects: Occasionally, the PW projects can be grouped together to create an individual capital project. In this case, staff initiates a new project in the CIP for the PW. On average, one new capital project is identified in the Five-Year Maintenance Work Plan each year. One example is the Vasona Pumping Plant Upgrades, a project in the District's current five-year CIP. Several pumps, motors, drives, valves, and other equipment within the pump station were due for replacement in 2016. The multiple asset replacements were combined into one project, to be executed under the CIP.

In addition, the pipeline inspection and rehabilitation projects are identified in the Five-Year Maintenance Work Plan and are executed as individual capital projects. For the past five years, pipeline inspection and rehabilitation projects have been budgeted and executed in the Five-Year Pipeline Rehabilitation Capital Project. This project is closing, and the inspections and rehabilitations planned for the next ten years will be budgeted and executed in the Ten-Year Pipeline Rehabilitation Capital Project.

#### FY17-21 Five-Year Maintenance Work Plan

The current Five-Year Maintenance Work Plan for FY17-21 is provided in Attachment 2. The projects are grouped by facility in the plan. As an example, the FY17 PW projects for Rinconada Water Treatment Plant are listed below. There are fewer projects than usual at RWTP in recent years due to the Rinconada Reliability Improvements Project currently underway which will replace much of the existing plant.

- Clean and inspect alum-ferric storage tanks 1, 2 and 3; Estimated cost: \$36,000
- Clean, inspect, and paint phosphoric acid tanks 1 and 2; Estimated cost: \$26,000

- Electrical system testing; Estimated Cost: \$22,000
- Inspect and repair motors and rebuild pumps for More Avenue Pump Station units 3 and 4  
Estimated Cost: \$53,000
- Replace batteries in raw and treated water uninterruptible power systems; Estimated Cost:  
\$5,300

The FY17-21 Maintenance Work Plan identifies \$6.1M of asset rehabilitation and replacement work in FY17, \$3.7M in FY18, \$8.0M in FY19, \$7.7M in FY20, and \$6.0 in FY21. The estimates for FYs 18 through 21 will change as work lists are refined annually.

The projects in the District's FY17-21 CIP that originated in past Annual Maintenance Work Plans or the current FY17-21 Five-Year Maintenance Work Plan are listed below. The total cost of these projects is \$548.3 Million. The RWTP Reliability Improvement Project makes up almost half this amount, with an estimated cost of \$252 Million.

- Coyote Pumping Plant ASD Replacement
- Small Capital Improvements, San Felipe Reach 1-3
- Five-Year Pipeline Rehabilitation
- Ten-Year Pipeline Rehabilitation
- Small Capital Improvements, Raw Water Transmission
- Small Capital Improvements, Treated Water Transmission
- Vasona Pumping Plant Upgrade
- PWTP Clearwell Recoating & Repair
- PWTP Residuals Management
- RWTP FRP Residuals Management Modifications
- RWTP Reliability Improvement Project
- Small Capital Improvements, Water Treatment

## **2. Water Utility Maintenance Program**

The Water Utility maintenance program consists of 16 operating projects with an overall operating budget of \$19.8M in FY17. These projects are responsible for executing preventive, planned, and corrective maintenance work orders scheduled or generated in the fiscal year. PM completion is a high priority for maintenance staff because the work keeps assets in good working order and prevents premature failure. PM work orders account for almost 90% of all work orders generated each year. The overall PM completion target is set at 90% (i.e., 90% of the PM work orders scheduled for completion during a month, quarter, or year are targeted for completion in that month, quarter or year) which is based on achieving what the maintenance industry considers the hallmark of an effective PM program.

When an asset operates outside of its intended range or fails unexpectedly, a Corrective Maintenance (CM) work order is generated. CM work orders are also generated for modifications requested by operations or engineering that would improve upon current installations. CM work orders account for approximately 9% of all work orders generated each year. The overall CM completion target is set at 80% (i.e., 80% of the CM work orders scheduled for completion during a

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fiscal year are targeted for completion in that fiscal year). Since CM work orders vary in priority and complexity, staff places emphasis on completing all higher priority repairs quickly by rearranging daily work schedules and completing lower priority repairs when time and resources permit. As an example, if a pipeline leak were to occur, a high priority corrective maintenance work order would be generated. Staff would conduct repairs immediately and PM work orders that would normally be completed during that time would be rescheduled. Whereas if a pump were to fail in a system where there are three other pumps available for operation, staff would classify the corrective work order to be lower in priority and schedule repairs when time, resources, and operational conditions are more optimal. In some cases, the best and safest opportunity to conduct repairs is when a plant is offline, so these repairs are queued and executed during a plant shutdown.

PW work orders, which are identified in the Five-Year Maintenance Work Plan, account for approximately 1% of all work orders generated each year. The PW completion target is set at 80% for the scheduled year (i.e., 80% of the asset rehabilitations and replacements scheduled for FY17 are targeted for completion in FY17). PW not completed in the scheduled year is carried forward to the following year until the work is completed. Eventually, 100% of PW is completed though it may occur over multiple years.

There are two maintenance planners in the Treatment Plant Maintenance Unit and two maintenance planners in the Raw Water Field Operations & Pipeline Maintenance Unit that are primarily responsible for planning and executing PW work orders under the Five-Year Maintenance Work Plan. The maintenance planners purchase parts, coordinate with engineering and environmental staff to develop drawings and obtain permits, and procure and manage contractor services to perform the work.

#### Maintenance Prioritization

Work orders are prioritized as shown below:.

- Priority 1 - Emergencies
- Priority 2 - High priority CM
- Priority 3 - Most PM, CM, and PW
- Priority 4 - Lower priority PM, CM, and PW
- Priority 5 - Very low priority CM or limited added value

Once the appropriate priority is determined, maintenance staff rebalances their work and first work to completes the priority 1 and 2 work orders. To accomplish emergency, high, and medium priority CM work orders which are unplanned by nature, some PM work orders are postponed until the next PM cycle. A PM cycle is the frequency at which a PM is scheduled: weekly, monthly, quarterly, etc. The PMs that are postponed are usually higher frequency (weekly or monthly) routine inspections.

Another critical responsibility of maintenance staff is to provide support services to capital projects. By interacting with each asset on a regular basis, maintenance staff provides detailed field based perspective on asset performance and application that are captured and incorporated into the design phase of each capital project. Once construction is underway, maintenance staff provides support services in the field. An example is the current Rinconada Reliability Improvements Project where



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two five-year term positions were created and filled by seasoned maintenance personnel to provide maintenance support to the project. These two positions act as liaisons between the project and the plant maintenance team to coordinate daily project work with routine plant maintenance work, review submittals and drawings, and manage all change orders requested by maintenance.

In summary, maintenance staff complete their work according to the following priorities:

1. Priority 1 and 2 CM work
2. Work in support of capital projects under construction
3. PM work
4. Priority 3 CM work and PW
5. Lower priority PM and CM work

### Emergency Response

The District's water treatment and conveyance system is a 24/7 operation. To ensure continuous operation and proper emergency response, maintenance staff are on-call on a rotational basis to be able to respond after hours, on weekends and holidays. As is the case with all infrastructure, there are times a pipeline can leak or break or a critical system at a treatment plant can stop functioning requiring emergency response by water utility staff. At times like these, water utility staff have a history of coming together quickly and working tirelessly until the pipeline or system is restored, a reflection of staff dedication and resiliency.

The Water Utility Department Operations Center (DOC) activates in emergency events that are complex in nature and extend over multiple days. When the Santa Clara Conduit failed on Saturday morning at 5:30 am in August 2015 staff began making notifications by email and phone calls at 6:00 a.m., and the first responder, the pipeline maintenance supervisor, arrived on-site by 6:30 a.m. meeting with the property owner. The Water Utility DOC activated that morning to organize response efforts. Water utility and watersheds staff mobilized to respond to the pipeline break. District staff from many different functions supported the recovery effort which lasted a month.

Although the Santa Clara Conduit recovery effort was one of the more visible efforts, throughout a normal year, smaller scale response efforts occur from time to time, with operations, maintenance and engineering staff responding outside of business hours because of the continuous operation of many water utility facilities.

## **3. Performance Monitoring and Improvement**

### Maintenance Tracking and Reporting

As stated above, each maintenance work type, PM, CM and PW has completion targets. Key Performance Indicators (KPI) measure how well the targets are met. Current KPIs report basic work order completion rates by work type. The current PM completion rate is in the 80% range which is considered 'average' by industry standards. The KPI data and trends are reported quarterly to senior management and shared with the maintenance staff.

Because these basic KPI reports are not currently automated, and can take several days to compile the data, staff recently developed 27 automated KPIs for the water treatment plant assets within

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Maximo. The KPIs track PM, CM, and PW completion and the ratio of PM work to CM work by craft (Electricians, Control Technicians, and Mechanics) and by water treatment plant. These KPIs will be implemented for pipeline and pump station assets in FY18 after Maximo is upgraded to the latest version. Additional data points and KPI reporting to spotlight asset reliability are also due to be implemented after Maximo is upgraded. The expanded KPIs will help quantify and better report overall asset performance, and provide information for optimizing maintenance strategies.

In addition, asset management staff annually tracks PW completion in an Annual Maintenance Work Plan Review Report. PW that was not completed in the last fiscal year is carried over to the following fiscal year. The Water utility typically completes 60 - 70% of PW work projects identified for a single fiscal year, with the remainder typically being completed in the following year, eventually achieving 100% completion over two to three fiscal years.

#### Continuous Improvement

Maintenance and asset management staff track asset maintenance costs and failure data to optimize maintenance strategies and costs, mitigate risk, and better plan and budget for future maintenance activities. For an asset that fails frequently, staff may adjust the asset's planned renewal and PM schedule to reduce the number of failures. One example is treated water meters, which have a high financial consequence of failure because if one fails, revenue is not collected. After a recent failure of a treated water meter, staff reduced the replacement frequency from 20 years to 10 years, and increased the PM frequency from annual to every 6 months.

If staff finds an asset to be in good condition longer than anticipated, its renewal activities or PMs may be changed to optimize lifecycle costs. One example is sample pumps at water treatment plants. Sample pumps are low cost assets at \$650 per pump and were previously on a monthly PM schedule, and replaced as needed. Over the life of the pump, the cost of monthly PMs was exceeding \$650. Staff eliminated the monthly PMs and now keeps spare pumps in stock so one can be replaced immediately if it fails. As assets are replaced, actual costs are updated in the asset management databases to improve the accuracy of financial projections and asset valuations.

#### Alignment with Asset Management Standards

The District has employed consultant support in the past to assist with standardizing and improving its asset management programs. The foundation of the District's asset management program is the Environmental Protection Agency's (EPA) ten step asset management planning model, shown in Attachment 3. This ten-step model adheres to guidelines set forth in the International Infrastructure Management Manual (IIMM); the British Standards Institution's Publicly Available Specification for asset management (PAS 55); and, the International Organization for Standardization's guidelines for asset management (ISO 55000). District asset management staff monitors changes in asset management standards to ensure that the District's asset management programs continue to be aligned with internationally recognized standards.

#### New Technology

The Water Utility participates in two water technology forums, Imagine H2O, a non-profit organization, and the Norcal Technology Approval Group led by Isle, Inc. These groups act as technology accelerators by introducing new water technologies to water agencies. Staff participates

in these groups to monitor new technologies that may help optimize operations and maintenance activities and thereby decrease asset lifecycle costs or reduce risk of failure. In addition, maintenance and engineering staff are continuously reviewing and testing new technologies, often times as part of a new capital project or asset replacement. Some examples of new technologies that have been tested are pipeline condition monitoring technologies, pipeline pressure surge monitoring devices, instrumentation (better resolution and data gathering devices), new SCADA hardware, and corrosion control products.

#### **4. Additional Water Utility Asset Management Activities**

The water utility continues to be successful in implementing the initial steps of the ten-step asset management model provided in Attachment 3 as it has established an asset inventory, continuously monitors asset condition and remaining life, and has documented replacement costs. Staff is working on improving steps five through ten of the process, which include developing level of service goals, understanding risk profiles, and optimizing management strategies. An asset's 'management strategy' describes the activities performed over its life, including PM and PW activities described above. Ideally, these activities are optimized based on the level of service the asset is required to provide, and on the risk associated with the asset.

Rather than analyzing all assets at once, staff is taking an in-depth look at one or two major facilities or asset classes per year. Focusing on one specific group of assets at a time allows staff to thoroughly analyze each asset and optimize management strategies. In FY 16, the San Felipe Division Reach 1 facilities were analyzed. In FYs 17 and 18, the program will analyze all pipe infrastructure, followed by water treatment plants and pump stations. Staff estimates it will take five to seven years to work through all the water utility facilities in detail. As facilities are reviewed and maintenance strategies and future costs are refined, the 100 year financial projection will become a more accurate representation of future investments needed in water utility infrastructure.

The asset management program is staffed by several engineers that develop the Five-Year Maintenance Work Plan, develop facility asset management plans, and analyze asset maintenance data to make improvements to asset strategies. The unit also has a program administrator who ensures Maximo user requests and recommendations for system improvements are addressed; and a field operations administrator that oversees the asset condition assessment program and maintains asset databases. The group oversees not only the water utility asset management program, but also the administration and watershed asset management programs.

#### **Next Steps**

The Water Utility will continue its maintenance work planning and execution processes and will provide the FY18-22 Five-Year Maintenance Work Plan to the Board for information in August 2017. The water utility asset management and maintenance programs will continue to work together to optimize facility specific asset strategies. The asset management program is beginning work on a pipeline infrastructure asset management plan that will be complete by the end of 2018.

Future Board updates will provide information on asset risk, operations priorities, security, and watershed and administration asset management programs.

**FINANCIAL IMPACT:**

There is no financial impact associated with this item.

The approved FY17 budget for the water utility asset management program is \$936,270.

The total approved FY17 budget for the water utility maintenance units and their budgeted projects is \$26,267,168. This includes \$19,827,629 in operations costs, and \$6,439,939 in capital costs and includes the following budgeted amounts:

- Treatment Plant Maintenance Unit - \$8,791,650
- Raw Water and Pipeline Maintenance Unit - \$9,696,227
- Silicon Valley Advanced Water Purification Center Maintenance - \$1,339,452
- San Felipe Reach 1-3 Small Capital Improvements - \$3,608,922
- Water Treatment Small Capital Improvements - \$2,831,017

**CEQA:**

The recommended action does not constitute a project under CEQA because it does not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

**ATTACHMENTS:**

Attachment 1: Asset Risk Assessment  
Attachment 2: FY17-21 Water Utility Maintenance Work Plan  
Attachment 3: EPA 10-Step Asset Management Model  
Attachment 4: PowerPoint

**UNCLASSIFIED MANAGER:**

Jim Fiedler, 408-630-2736

## Attachment 1 – Asset Risk Assessment

### Overview

The District measures risk as Business Risk Exposure (BRE). BRE is calculated as follows:

$$\text{BRE} = (\text{Probability of Failure}) \times (\text{Consequence of Failure}) \times (\text{Redundancy})$$

Each of these components is discussed in more detail below.

### Probability of Failure (PoF)

PoF is equal to an asset's condition score. The condition score indicates how close the asset is to failure. Scores range from 1 to 5, as shown below:

1 – Excellent (Normal Maintenance Required)

2 – Minor Defects Only

3 – Maintenance Required

4 – Major Renewal Required

5 – Unserviceable or Failed

The Asset Management Unit assesses asset condition every two years, and assigns an overall condition score, which becomes the asset's PoF. An example of asset condition assessment criteria for a mixer is shown in Table 1. The assessor evaluates the asset for each inspection criteria, and assigns the appropriate rating. The assessor then assigns an overall condition score, typically equal to the worst scoring criteria. For example, if 'Corrosion' is 'excessive', but all other criteria are 'excellent', the asset would receive an overall score of 5, because it requires immediate maintenance. The overall condition/PoF score is loaded into the asset databases in Maximo and AMPT and is monitored for changes over time.

**Table 1. Mixer Assessment Criteria**

Inspection Criteria	Rating				
	1	2	3	4	5
Corrosion	Negligible	Minor	Moderate	Major	Excessive
Support	Excellent		Moderate		Inadequate, Failure Imminent
Functional	Excellent Mixing at all flows	Mixing adequate under all flow conditions	Mixing adequate under most flow conditions	Mixing inadequate 50% of time	Inadequate Mixing
Shaft Alignment	Excellent	Minor Wear but no Misalignment	Moderate Wear or Misalignment	Major Wear	Failure Imminent
Belt/Chain	Excellent	Minor Wear	Moderate Wear	Major Wear	Failure Imminent

### Consequence of Failure (CoF)

Consequence of failure measures impacts of asset failure. The District evaluates the social, environmental, and financial effects of asset failure to determine CoF. To calculate CoF, staff subject matter experts assign a one to five score for six categories using a standardized matrix, shown in Table 4. The total CoF score is the sum of the scores for each of the six categories. The minimum CoF score is zero, which would occur if an asset scored zero in each of the six categories. The maximum CoF score is 30, which would occur if an asset scored five in each of the six categories. CoF scores do not vary much over time, unless external conditions change, such as an area becoming more populated.

### Redundancy

Redundancy accounts for back-up assets or extra capacity within a system. The Asset Management Program doesn't currently include a separate factor for redundancy in the BRE calculation, but rather accounts for redundancy in the CoF score. For example, staff would assign a lower CoF score for a chemical metering pump with two back-up pumps than for a single pump with no back-up. The consequence of one of three pumps failing is low, while the consequence of a single pump failing is higher.

The asset management program is working to develop standards for measuring redundancy and incorporate a redundancy factor into the BRE score.

### Total BRE Score

To recap, the District measures risk associated with an asset with a Business Risk Exposure (BRE) score.

$$\text{BRE} = (\text{Probability of Failure}) \times (\text{Consequence of Failure}) \times (\text{Redundancy})$$

Probability of Failure equals the asset's condition score, which ranges from one to five. Consequence of Failure is determined using the matrix in Table 4, and ranges from zero to thirty. Total BRE scores, therefore, can range from 0 to 150.

The total BRE score is used to determine when an asset requires action or a changed maintenance strategy. The Water Utility has set the BRE score thresholds below. These thresholds identify when an adjustment in an asset's management strategy is needed. The thresholds may be adjusted over time as risk scores are refined.

BRE Score	Risk Category	Action
61 – 150	Critical	Develop and implement a risk mitigation strategy such as accelerated asset replacement or rehabilitation
51 – 60	Moderate	Implement more frequent condition monitoring
0 – 50	Low	Continue routine maintenance program as planned

In addition, the total BRE score is useful in determining relative risk among assets. Rehabilitation work on an asset with a higher BRE score should be prioritized over work on an asset with a lower BRE score.

### History and Maintenance of Water Utility BRE Scores

The Water Utility Asset Management Program developed risk scores for all assets when the program began in 2003. The scores at that time were not "BRE" scores, but have been

converted to BRE scores. The probability of failure component of the risk score has been updated periodically for almost all assets through routine condition assessments.

Consequence of failure scores don't typically change much over time, but have been updated recently for San Felipe Division Reach 1, pond and canal systems, and pre-stressed concrete cylinder pipe (PCCP); but not for most water treatment plant, pump station, or welded steel pipeline assets.

The Asset Management Unit will update CoF scores for remaining assets; however, rather than updating CoF for all assets at once, staff will evaluate scores as part of developing asset management plans. The Asset Management Unit will develop an asset management plan for one or two major facilities or asset classes per year. In the process of developing an asset management plan, staff subject matter experts will review and update CoF scores. In fiscal years 2017 and 2018, the program will analyze all pipe infrastructure.

#### Additional BRE Modifications

Some improvements related to BRE that the Asset Management Unit will be working on in the coming years include:

- Developing standards for measuring redundancy and incorporating a redundancy factor into the BRE score
- Evaluating and refining thresholds for critical, moderate, and low risk scores
- Refining and updating the CoF matrix
- Incorporating BRE into capital project prioritization
- Updating CoF scores for assets that have not had scores updated since 2003

#### Water Utility Risk Summary

The most recent comprehensive assessment of Water Utility asset condition and risk was compiled for the 2014 District-wide Asset Management Plan, and is shown in Tables 2 and 3 below.

**Table 2. Water Utility Asset Condition Summary from 2014 District-wide AMP**

Condition Score	No. of Assets	% by Number	Value of Assets	% by Value
<b>1 – Excellent</b>	902	11%	\$58,329,000	<1%
<b>2 – Minor Defects</b>	3,477	43%	\$3,301,437,000	47%
<b>3 – Maintenance Required</b>	2,277	28%	\$2,037,709,000	29%
<b>4 – Major Renewal Required</b>	585	7%	\$139,946,000	2%
<b>5 – Unserviceable/Failed</b>	227	3%	\$5,535,000	<1%
<b>Land (Not Scored)</b>	300	4%	\$915,705,000	13%
<b>Other Not Scored</b>	285	4%	\$596,201,000	8%
<b>Total</b>	8,053	100%	\$7,054,861,000	100%

**Table 3. Water Utility Asset Risk Summary from 2014 District-wide AMP**

<b>Risk Level</b>	<b>No. of Assets</b>	<b>% by Number</b>	<b>Value of Assets</b>	<b>% by Value</b>
<b>Low</b>	6,186	83%	\$1,298,885,000	22%
<b>Moderate</b>	712	9%	\$2,320,677,000	39%
<b>Critical</b>	570	7%	\$2,323,802,000	39%

Staff will provide a more detailed update on asset risk at a Board meeting in May 2017, including an updated condition and risk profile.



Table 4. Consequence of Failure Matrix

	Impact	None	Very Low	Low	Medium	High	Critical
	Score->	0	1	2	3	4	5
Social (Score 0 to 10)	Service Delivery	No impact	Failure of asset results in <b>short term (&lt; 30 days), local reduction</b> in service delivery	Failure of asset likely to result in <b>long term (&gt; 30 days), local reduction</b> in service delivery	Failure of asset likely to result in <b>short term (&lt;30 days), wide spread reduction</b> in service delivery	Failure of asset likely to result in a <b>long term (&gt; 30 days), localized total loss</b> in service delivery	Failure of asset likely to result in a <b>long term (&gt; 30 days), wide spread total loss</b> in service delivery
	Impact to Community Property	No impact/damage	Failure of the asset results in <b>minor, localized damage</b> to community property	Failure of the asset results in <b>minor, wide spread damage</b> to community property	Failure of asset results in <b>major, localized damage</b> to community property	Failure of asset results in <b>major, wide spread damage</b> to community property	Failure of asset results in <b>catastrophic, wide spread damage</b> to community property
Environmental (Score 0 to 10)	Environmental Impacts	No impact	Failure of the asset does <b>minor</b> environmental damage	Failure of asset likely to cause non-lasting <b>(short term) repairable damage</b> and expect recovery within one year	Failure of asset likely to cause medium-term repairable damage and expect <b>recovery within 3 years</b>	Failure of asset likely to cause long-term repairable damage and recovery requires <b>more than 5 years</b> and may significantly compromise habitat	Failure of the asset likely to cause environmental damage with lasting consequences (permanent change to habitat) and <b>permanent damage to habitat</b>
	Life Safety	No Impact	Failure of the asset results in <b>minor</b> reportable injuries	Failure of asset results in <b>significant</b> reportable injuries	Failure of asset results in <b>short-term</b> disabilities	Failure of asset results in <b>long-term</b> disabilities	Failure of asset likely to result in <b>death</b>
Economic (Score 0 to 10)	Financial Impact	No impact	Failure of asset results in <b>&lt;\$10,000</b> rehab/replacement/penalty cost	Failure of asset results in <b>\$10,000 - \$50,000</b> rehab/replacement/penalty cost	Failure of asset results in <b>\$50,000 - \$100,000</b> rehab/replacement/penalty cost	Failure of asset results in <b>\$100,000 - \$500,000</b> rehab/replacement/penalty cost	Failure of asset results in <b>&gt;\$500,000</b> rehab/replacement/penalty cost
	Impact to Reputation	No impact	Failure of asset likely to cause minor impact to reputation	Failure of asset likely to cause minor public complaints to District	Failure of asset likely to get attention of Board Members	Failure of asset likely to create negative media coverage	Failure of asset likely to bring criminal charges to District

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# FY17–21 Maintenance Work Plan



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# FY2017-2021 Maintenance Work Plan

## Water Utility Enterprise District-Wide Asset Management Program

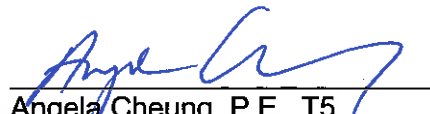
June 30, 2016

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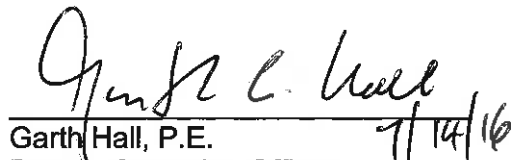
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## **I. Introduction and Purpose**

The Annual Maintenance Work Plan (AMWP) has been relabeled the Maintenance Work Plan (MWP) which now spans a five-year timeframe. This endeavor was undertaken at the request of management and staff in an effort to plan and schedule projects, look for efficiencies, and to provide a better five-year forecast for project plans, the District budget, and the Capital Improvement Program (CIP). The work lists in the first year of the five-year rolling plan will be fixed, while future years may be adjusted based on changing conditions. The plan will continue to be updated annually.

The MWP is a product of the district-wide asset management program that identifies high value water utility infrastructure improvements and inspection projects for implementation during each fiscal year. The MWP includes a planned work project list that is finalized through a collaboration process with Water Utility Operations & Maintenance, Water Utility Technical Support and Water Supply Divisions.

Planned work (PW) is maintenance work that is neither routine preventative maintenance work (PM) or corrective maintenance work (CM). Planned work consists of the intermittent rehabilitation or overhaul of an existing asset, or replacement of an asset that has reached the end of its useful life. Planned work can also be classified as minor (Small Caps) or major capital projects (CIP), depending on the effort involved and the extent to which it must be performed by supplemental contractors and major materials expenditures. PM work is proactively undertaken in order to keep District assets performing to their required level of service, as opposed to CM work, which is undertaken to repair a deficiency in an asset.

The PW projects are selected to optimize asset performance, maintain or improve reliability within an acceptable risk tolerance, and to minimize asset life-cycle costs. Maintenance history, equipment failure rates, maintenance cost over the previous year, asset condition, replacement and overhaul schedules, and risk are taken into consideration during the process of developing the PW projects for the MWP.

The PW projects are identified in the MWP with estimated costs that are intended to support the district's operations and long term capital budgeting processes. Execution of the planned work projects is predominately performed through the Treatment Plant Maintenance Unit (555) and the Raw Water Field Operations and Pipeline Maintenance Unit (585); with additional technical support from the Utility Maintenance Engineering Unit (435), the Operations Planning and Analysis Unit (455), the Utility Electrical and Control Systems Engineering Unit (545), and other district units including watershed field operations units. Other outside contractors are used as needed. Thus, the MWP is a support document provided to these units to help focus maintenance efforts.

Copies of this document are available on the District intranet on the asset management web site at <http://www.aqua.gov/annual-maintenance-work-plans-amwp>.

## **II. Maintenance Work Plan Development Methodology**

Each year, the water utility asset management program develops a list of planned work (PW) activities for the utility to complete the following fiscal year. This list of equipment replacement, overhaul, and inspection projects is developed systematically, with operations, maintenance, and engineering input; and is provided to the maintenance units for input to the Long Term

Funding Forecast Model (LTFM). This helps ensure asset management needs are included in the upcoming fiscal year's budget.

This year, a draft FY17 PW project list was completed in July 2015, prior to the first pass budget submission and review by the budget committee, in order to contribute to, and be a foundation for, the budget process. The intent of the draft PW project list was to provide the necessary background and justification for the water utility maintenance budget for the upcoming fiscal year. The PW project list for the AMWP takes into account several data streams in order to best reflect the asset management needs of the water utility. The information sources that feed into the analysis are:

- Long term replacement, overhaul, and inspection plans contained in the Infrastructure Capital Asset Management Toolkit (ICAM) database
- Condition assessment and risk data (BRE)
- Maintenance histories including equipment failure rate and maintenance cost over the previous year contained in the Computerized Maintenance Management System (CMMS), Maximo
- Interviews with operations, maintenance, and engineering management and staff
- Other inputs as appropriate

The development of the MWP starts with a review of the water utility's long term funding forecast database called the Infrastructure Capital Asset Management Toolkit (ICAM). ICAM contains an extensive list of replacement, overhaul, and inspection projects that are uniquely assigned to individual assets and scheduled out through 2040. Each project has a cost and a scheduled year for execution resulting in an ability to sum up all anticipated asset replacement, overhaul, and inspection needs by fiscal year. The projects identified in ICAM for the next fiscal year are evaluated for completeness and accuracy of cost estimates, taking into consideration cost data from the utility's most recent maintenance activities.

After reviewing and updating the data, a 15 year projection of ICAM generated projects commencing in the upcoming fiscal year is provided to the maintenance and engineering unit managers for inclusion in their project plans, and the associated LTFM maintained by the District's financial planning program for budget and rate development purposes. The 15 year look ahead is one of the foundational inputs in the process of setting rates and building the upcoming fiscal year budget for the maintenance units.

The graphics in Section VII depict a high level view of the funding demand captured in the ICAM model for the next 15 years. The graphs represent the set of assets residing in the ICAM model, and do not represent a complete picture of all the assets of the water utility<sup>1</sup>. Recharge facilities, most dam and reservoir assets, new plant assets, and assets at new facilities such as the Silicon Valley Advanced Water Purification Center, are not included in the 15 year funding needs forecast shown in Section VII.

The data presented in the 15 year forecast is intended to provide a snapshot of the anticipated investment needs, represented as services and supplies funding for known asset replacement, refurbishment, and inspection. The data included in the graphics are raw, un-analyzed data from

---

<sup>1</sup> Not all utility assets are included in the ICAM model. The model mainly contains mechanical assets located at the water treatment plants as well as pipeline assets. The model does not contain water supply field facilities such as recharge ponds, dam related assets, or many electrical, control systems, and civil assets at the water treatment plants.

the ICAM application. Additionally, the funding demands reflected are not full cost projections, and in most cases include only the cost of the equipment and materials, not labor.

The ICAM output of projects from the first five-years of the 15 year look ahead is the starting point and one of the initial inputs into the MWP analysis process. The second input is the water utility's condition assessment and risk analysis data. The water utility assesses condition of assets and assigns condition ratings of 1 through 5 (5 being worst condition). Condition ratings contribute to risk scores, which consider the probability of failure and the consequence of failure or impact to levels of service should the asset fail.

Maintenance history data from Maximo, the District's CMMS, supplements the ICAM and risk data. Maximo data helps identify those assets with high failure rates and high maintenance cost compared to replacement value. Finally, District operations, maintenance, and engineering management and staff provide input on the assets and projects included in the PW list for the MWP.

Once an initial PW list has been developed, projects are placed into one of three categories:

- Projects may be recommended as a Capital Improvement Project (CIP), in which case a new capital project is requested and submitted to the Capital Program Services Division. Some Capital Projects including pipeline rehabilitation projects are managed by the Technical Support Division.
- Projects may be rescheduled to a future year if it appears to be unnecessary based on condition, risk, and maintenance history data.
- Projects may be scheduled in the MWP as either maintenance or a small capital project (Small Caps); these are listed in the PW tables on pages 5-19.

The PW project list underwent several iterations from February 2015 to June 2015 based on input from maintenance units. From an initial list of assets and projects developed from the ICAM model, meetings were held with maintenance and engineering staff, who recommended additional projects for inclusion in the MWP as well as projects to be delayed to future years.

In July 2015, a final list of projects was prepared. This list of projects is found in this report, and was included in the budget request of the maintenance units.

Changes and improvements to the MWP process over the past are discussed in Section VIII. Some major proposed changes to next years' MWP process and report are discussed below:

- Beginning next year, the MWP lists will be generated on the newly implemented CMMS, the Asset Management Planning Tool (AMPT). This tool supports our goal of continuous improvement, in that it contains an updated register of assets including water supply facilities, dam related assets, many electrical, control systems, and civil assets at the water treatment plants, and the new advanced water purification center. None of these assets are currently included in the ICAM model. Furthermore, the AMPT includes equipment, material, and labor costs while the ICAM model included only equipment and material costs. Therefore, next year's MWP project lists and costs will vary from this plan due to the updated register of assets and costs.
- In order to better plan resources and funding, all PW activities will identify the necessary support needs (engineering, maintenance, craft, etc.) in order to complete the work in

year one of the five-year MWP. The long-term goal of this effort is to resource load all five-years of the MWP in order to better estimate the total resources required to maintain assets at an established level of service. This will enable units to better plan and schedule projects, and will provide a better five-year forecast for project plans, the District's budget, and the Capital Improvement Program (CIP).

- Maximo work orders that require the assistance of the watershed field operations unit will reference the Access Valley Water (AVW) number within the Maximo work order in an effort to capture the total cost of performing the maintenance activities for Water Utility assets and document in the Annual Maintenance Work Plan Review Report authored by the Asset Management Unit.

### **III. Fiscal Year 2017 Planned Work**

The core of the MWP is the list of planned work (PW) to be conducted over the upcoming fiscal year.

Tables 1 through 12 summarize the PW, pipeline rehabilitation projects, and small capital projects to be completed in FY 2017. Small capital projects are differentiated from PW within these tables by being represented in a **dark red** font color. Large capital projects are listed in Section V. The project costs provided in the tables include services and supply costs, but do not include labor costs. Work order numbers are provided, and are used for tracking all work associated with the projects as explained in Section V.

Tables 1 through 3, which represent the water treatment facilities, include information identifying the necessary staff support needs (engineering, maintenance, craft, etc.) for FY17, as detailed within the cells on the right. As mentioned in Section II, in future MWPs, all PW activities will identify the necessary support staff needed (engineering, maintenance, craft, etc.) to complete the work in year one of the five-year MWP as part of continuous improvement and to better understand the resources needed to maintain assets at an established level of service.

Table 1. Penitencia Water Treatment Plant Planned Work Projects

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.	Maintenance Unit 555				Watersheds	EH&S	MT Engineering	E&C Engineering	Painter	Environ-mental
										MT	CT	ET	PL						
										Hrs	Hrs	Hrs	Hrs						
1	E10021	PWT_15PMP10021	Alum Pump 1	Replace Pump	\$ 7,500	Order pump & motor together	WPL1000801	93231099	6626	9		2	2			5	5		
2	E10022	PWT_15MTR10022	Alum Pump Motor 1	Replace Motor	\$ 750		WPL1000802	93231099	6626				2						
3	E10025	PWT_15MTR10025	Alum Pump Motor 2	Replace Motor	\$ 750	If changing to different pump manufacturer on pump 1, the same should be done on pump 2 and budget in a new pump.	WPL1000803	93231099	6626	9		2	2						
4	E10023	PWT_15EDR10023	Alum Pump Motor Var Freq Drive 1	Replace VFD	\$ 3,000		WPL1000804	93231099	6626		5	5	2				5		
5	E10026	PWT_15EDR10026	Alum Pump Motor Var Freq Drive 2	Replace VFD	\$ 3,000		WPL1000805	93231099	6626		5	5	2				5		
6	E10061	PWT_47PMP10061	Belt Press Feed Pump	Rehab Rebuild Pump	\$ 3,792		WPL1000806	93231099	6626	5	5	5	2						
7	E10063	PWT_47MIS10063	BP Conveyor Belt	Replace Pans	\$ 50,000	Small Cap Project	WPL1000807	93764004	6626										
8	E10063	PWT_47MIS10063	BP Conveyor Belt	Replace BFP	\$ 225,000		WPL1000808	93764004	6626								5		
9	E10101	PWT_17PMP10101	Carbon Feed Pump 1	Replace Pump	\$ 7,500	Due to infrequent use, replace parts until new filters are online.	WPL1000809	93231099	6626										
10	E10104	PWT_17PMP10104	Carbon Feed Pump 2	Replace Pump	\$ 7,500		WPL1000810	93231099	6626										
11	E10102	PWT_17MTR10102	Carbon Feed Pump Motor 1	Replace Motor	\$ 750		WPL1000811	93231099	6626										
12	E10105	PWT_17MTR10105	Carbon Feed Pump Motor 2	Replace Motor	\$ 750		WPL1000812	93231099	6626										
13	E10103	PWT_17EDR10103	Carbon Feed Pump Var Freq Drive 1	Replace VFD	\$ 3,000		WPL1000813	93231099	6626										
14	E10106	PWT_17EDR10106	Carbon Feed Pump Var Freq Drive 2	Replace VFD	\$ 3,000		WPL1000814	93231099	6626										
15	E10107	PWT_17PMP10107	Carbon Recirculation Pump	Replace Pump	\$ 18,000		WPL1000815	93231099	6626										
16	E10108	PWT_17MTR10108	Carbon Recirculation Pump Motor	Replace Motor	\$ 750		WPL1000816	93231099	6626										

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.	Maintenance Unit 555				Watersheds	EH&S	MT Engineering	E&C Engineering	Painter	Environmental
										MT	CT	ET	PL						
										Hrs	Hrs	Hrs	Hrs						
17	E10091	PWT_17TNK10091	Carbon Tank 1	Rehab Re-coat	\$ 25,000	Due to infrequent use, replace parts until new filters are online.	WPL1000817	93231099	6169										
18	E10094	PWT_17TNK10094	Carbon Tank 2	Rehab Re-coat	\$ 25,000		WPL1000818	93231099	6169										
19	E10092	PWT_17MIX10092	Carbon Tank Mixer #1	Overhaul mixer	\$ 12,000		WPL1000819	93231099	6626										
20	E10095	PWT_17MIX10095	Carbon Tank Mixer #2	Overhaul mixer	\$ 12,000		WPL1000820	93231099	6626										
21	E10668	PWT_18INS10668	Caustic Pump Control Panel POHPCP	Replace panel	\$ 33,000	Replace components only	WPL1000821	93231099	6626		18	18	9				6		
22	E10666	PWT_18INS10666	Caustic Tank Control Panel POHTCP	Replace panel	\$ 33,000		WPL1000822	93231099	6626		18	18					6		
23	E10111	PWT_18MIS10111	Caustic Tank Heater	Replace HVAC	\$ 2,250		WPL1000823	93231099	6626	18		2	2						
24	E10115	PWT_18INS54362	Caustic Tank Level Inst LIT-200	Replace instrument	\$ 2,500		WPL1000824	93231099	6626		5								
25			Electrical System Testing	Electrical testing	\$ 12,000		WPL1000825	93231099	6626			180	9				50		
26	E10458	PWT_28STR10458	Entrance Doors	Replace PWTP PERMANGANATE FEED ROOM ENTRANCE DOORS	\$ 1,000	Facilities work	WPL1000826	93231099											
27	E10434	PWT_54INS10434	Filter 1 Turbidmeter	Replace I&C	\$ 3,750		WPL1000827	93231099	6626		5	2	2						
28	E10435	PWT_54INS10435	Filter 2 Turbidmeter	Replace I&C	\$ 3,750		WPL1000828	93231099	6626		5	2	2						
29	E10436	PWT_54INS10436	Filter 3 Turbidmeter	Replace I&C	\$ 3,750		WPL1000829	93231099	6626		5	2	2						
30	E10437	PWT_54INS10437	Filter 4 Turbidmeter	Replace I&C	\$ 3,750		WPL1000830	93231099	6626		5	2	2						
31	E10438	PWT_54INS10438	Filter 5 Turbidmeter	Replace I&C	\$ 3,750		WPL1000831	93231099	6626		5	2	2						
32	E10439	PWT_54INS10439	Filter 6 Turbidmeter	Replace I&C	\$ 3,750		WPL1000832	93231099	6626		5	2	2						
33	E10433	PWT_54INS10433	Finished Water Turbidimeter	Replace I&C	\$ 3,750		WPL1000833	93231099	6626		5	2	2						
34	E10460	PWT_28PIP10460	Fire Sprinkler System	Replace PWTP PERMANGANATE FEED ROOM FIRE SPRINKLER SYSTEM	\$ 2,000	Facilities work	WPL1000834	93231099											

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.	Maintenance Unit 555				Watersheds	EH&S	MT Engineering	E&C Engineering	Painter	Environ-mental
										MT	CT	ET	PL						
										Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs
35	E10300	PWT_33MTR54343	Non Ionic Poly Mixer Motor 301	Replace Motor	\$ 750		WPL1000835	93231099	6626	5		2							
36	E10305	PWT_33MTR54344	Non Ionic Poly Mixer Motor 401	Replace Motor	\$ 750		WPL1000836	93231099	6626	5		2							
37	E10462	PWT_28ELC10462	Permanganate Outdoor Lighting	Replace	\$ 10,000		WPL1000837	93231099	6626			18							
38	E46731	PWT_26MIS46731	Ozone Generator Shell #1 (POZOG01)	Clean shell & dielectrics	\$ 20,000	To be combined with like work at other plants.	WPL1000838	93231099	6169			2							
39	E46732	PWT_26MIS46732	Ozone Generator Shell #2 (POZOG02)	Clean shell & dielectrics	\$ 20,000		WPL1000839	93231099	6169			2							
40	E46733	PWT_26MIS46733	Ozone Generator Shell #3 (POZOG03)	Clean shell & dielectrics	\$ 20,000		WPL1000840	93231099	6169			2							
41			Particle Counter Calibration		\$ 5,000	Setup at the same time as STWP	WPL1000841	93231099	6169										
42	E10555	PWT_32PMP10555	Phosphoric Acid Feed Pump	Replace pump	\$ 6,000	Order pump & motor together	WPL1000842	93231099	6626	9		2							
43	E10553	PWT_32MTR10553	Phosphoric Acid Feed Pump Motor	Replace Motor	\$ 750		WPL1000843	93231099	6626	9		2							
44	E10554	PWT_32EDR10554	Phosphoric Acid Feed Pump VFD	Replace VFD	\$ 3,000		WPL1000844	93231099	6626		5	2					5		
45	E10463	PWT_28STR10463	Roll Up Doors	Replace PWTP PERMANGANATE FEED ROOM ROLL UP DOORS	\$ 20,000	Facilities work	WPL1000845	93231099											
46	E10431	PWT_54INS10431	Settled Water Turbidimeter	Replace I&C	\$ 3,750		WPL1000846	93231099	6626		5	2	2						
47	E10174	PWT_74MCC10174	MCC-US in utility building	Replace	\$ 150,000	Work requires a plant shutdown. Small Cap Project.	WPL1001737	93231099	6626										
48	E10179	PWT_74MCC10179	MCC-UN in utility building	Replace	\$ 80,000		WPL1001738	93231099	6626										
49	E10177	PWT_74MCC10177	MCC-CS in ops. building	Replace	\$ 100,000		WPL1001739	93231099	6626										
			FY17 PWTP Sub-Total = \$ 356,042						Labor Totals	69	101	287	48	0	0	5	87	0	0
			FY17 PWTP Small Cap Sub-Total = \$ 605,000																
			FY 17 PWTP TOTAL = \$ 961,042																

Planned work items #9-20 pertain to the carbon system. A cost benefit analysis of this system at PWTP and SWTP is currently underway and may lead to a recommendation to maintain or decommission the assets in this system. If the accepted recommendation is to maintain the asset, PW work orders will be developed in Maximo for completion in FY17. If the accepted recommendation is to decommission the system, no PW work orders will be created and the assets will be decommissioned in Maximo.



Table 2. Riconada Water Treatment Plant Planned Work Projects

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.	Maintenance Unit 555				Watersheds	EH&S	MT Engineering	ET Engineering	Painter	Environ-mental
										MT	CT	ET	PL						
										Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs	
1	E20024	RWT_15TNK20024	Alum-Ferric Storage Tank 1	Clean and inspect tank	\$12,000	Inspections to be combined with other plants in the same year	WPL1001741	93291099	6169	3			2		5	2			
2	E20025	RWT_15TNK20025	Alum-Ferric Storage Tank 2	Clean and Inspect Tank	\$12,000		WPL1001742	93291099	6169	3			2		5	2			
3	E20026	RWT_15TNK20026	Alum-Ferric Storage Tank 3	Clean and Inspect Tank	\$12,000		WPL1001743	93291099	6169	3			2		5	2			
4			Electrical System Testing	Electrical Testing	\$22,000		WPL1001744	93291099	6633			108	9				36		
5	E21044	RWT_57MTR21044	MAPS Unit 3 Motor (40HP)	Inspect and repair motor	\$6,500	Motor & Pump bid together. Contract work out.	WPL1001745	93764004	6626			9	2						
6	E21039	RWT_57PMP21039	MAPS Unit 3 Pump	Rebuild pump	\$20,000		WPL1001746	93764004	6626	108			9	12		5		8	
7	E45338	RWT_57MTR45338	MAPS Unit 4 Motor (40HP)	Inspect and repair motor	\$6,500		WPL1001747	93764004	6626			9	2						
8	E45337	RWT_57PMP45337	MAPS Unit 4 Pump	Rebuild pump	\$20,000		WPL1001748	93764004	6626	108			9	12		5		8	
9	E52074	RWT_74ELC52074	Raw Water UPS	Replace batteries	\$2,633		WPL1001749	93291099	6626			18	9						
10	E52073	RWT_74ELC52073	Treated Water UPS	Replace batteries	\$2,633		WPL1001750	93291099	6626			18	9						
11	E50744	RWT_32TNK50744	Phosphoric Acid Tank #1	Clean, inspect and paint	\$13,000	Inspections to be combined with other plants in the same year	WPL1001751	93291099	6169	2			2		6	2			
12	E50745	RWT_32TNK50745	Phosphoric Acid Tank #2	Clean, inspect and paint	\$13,000		WPL1001754	93291099	6169	2			2		6	2			
			FY 17 RWTP Sub-Total =		\$89,266				Labor Totals	229	0	162	59	24	27	20	36	16	0
			FY17 RWTP Small Cap Sub-Total =		\$53,00														
			FY17 RWTP TOTAL =		\$142,266														



Table 3. Santa Teresa Water Treatment Plant Planned Work Projects

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.	Maintenance Unit 555				Watersheds	EH&S	MT Engineering	ET Engineering	Painter	Environmental
										MT	CT	ET	PL	Hrs	Hrs	Hrs	Hrs	Hrs	Hrs
										Hrs	Hrs	Hrs	Hrs						
1	E30003	SWT_15TNK30003	Alum Tank 2 - T5 Ferric Chloride	Inspect & clean 004	\$14,000	Inspections to be combined with other plants in same year	WPL1001755	93281099	6169	2			2		7	5		72	
2	E30056	SWT_16INS30056	Ammonia Leak Detector	Replace STWTP AMMONIA LEAK DETECTOR 2875 2014	\$5,000		WPL1001756	93281099	6626		18		2						
3	E45066	SWT_24INS45066	Ambient O2 Analyzer (AIT-717)	Replace O2 analyzer 001	\$5,000		WPL1001757	93281099	6626		27		1						
4	E45084	SWT_24INS45084	Ambient O2 Analyzer (AIT-727-West)	Replace O2 analyzer 001	\$5,000		WPL1001758	93281099	6626		27		1						
5	E45085	SWT_24INS45085	Ambient O2 Analyzer (AIT-726-West)	Replace O2 analyzer 001	\$5,000		WPL1001759	93281099	6626		27		1						
6	E45053	SWT_26INS45053	OGB Ambient O2 (AIT-716-OZS)	Replace O2 analyzer 001	\$5,000		WPL1001760	93281099	6626		27		1						
7	E30620	SWT_32PMP30620	Zinc Phosphate Pump 2	Replace Pump 001	\$6,000		WPL1001761	93281099	6626	5		2	3						
8	E54392	SWT_33PMP54392	Nonionic Poly Blend Pump #2	Replace Pump 001	\$9,000		WPL1001762	93281099	6626	9		2	3						
9	E30238	SWT_49VOP30238	Filter 4E Washwater Vlv V-F-51 Act	Replace Operator 001	\$9,000		WPL1001763	93281099	6626	12		2	2						
10	E30248	SWT_49VOP30248	Filter 5E Washwater Vlv V-F-52 Act	Replace Operator 001	\$9,000		WPL1001764	93281099	6626	12		2	2						
11	E30258	SWT_49VOP30258	Filter 6E Washwater Vlv V-F-53 Act	Replace Operator 001	\$9,000		WPL1001765	93281099	6626	12		2	2						
12	E30415	SWT_52CMP30415	Plant Water Tank Air Compressor	Replace Blower 001	\$6,000	Purchase compressor & motor together	WPL1001766	93281099	6626	36			9			2			
13	E30416	SWT_52MTR30416	Plant Water Tank Air Comp Motor	Replace Motor 001			WPL1001767	93281099	6626			2					2		

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.	Maintenance Unit 555				Watersheds	EH&S	MT Engineering	ET Engineering	Painter	Environmental
										MT	CT	ET	PL						
										Hrs	Hrs	Hrs	Hrs						
14	E30148	SWT_25MTR30148	OCL Meter Pump 1 Motor	Replace STWTP OCL METER PUMP MOTOR #1 2977 2036	\$750		WPL1001768	93281099	6626										
15	E30154	SWT_25MTR30154	OCL Meter Pump 3 Motor	Replace STWTP OCL METER PUMP MOTOR #3 2979 2016	\$750		WPL1001769	93281099	6626										
16	E30151	SWT_25MTR30151	OCL Meter Pump 2 Motor	Replace STWTP OCL METER PUMP MOTOR #2 2978 2016	\$750		WPL1001772	93281099	6626										
17	E30147	SWT_25PMP30147	OCL Meter Pump 1	Replace STWTP OCL METER PUMP #1 2965 2016	\$7,500		WPL1001771	93281099	6626										
18	E30150	SWT_25PMP30150	OCL Meter Pump 2	Replace STWTP OCL METER PUMP #2 2966 2016	\$7,500		WPL1001773	93281099	6626										
19	E30153	SWT_25PMP30153	OCL Meter Pump 3	Replace STWTP OCL METER PUMP #3 2967 2016	\$7,500		WPL1001774	93281099	6626										
20	E30183	SWT_74MCC30183	MCC - West Filter Deck DP-2A	Replace STWTP OPERATIONS BLDG - ELECTRICAL LINEUP MCC-1M 3001 2019	\$110,000	Work requires a plant shutdown. Small Cap Project.	WPL1001775	93764004	6626			54							
21	E30188	SWT_74MCC30188	MCC - East Filter Deck DP2	Replace STWTP MOTOR CONTROL CENTER EAST FILTER GALLERY MCC-DP2 3006 2019	\$110,000		WPL1001776	93764004	6626			54							
22	E30196	SWT_74MCC30196	MCC - West Filter Deck DP-1A	Replace STWTP MOTOR CONTROL CENTER WEST FILTER GALLERY MCC-DP1 3014 2019	\$110,000		WPL1001777	93764004	6626			54							
23	E30152	SWT_25EDR30152	OCL Meter Pump 2 VFD	Replace STWTP OCL METER PUMP MOTOR FREQUENCY DRIVE #2	\$3,000		WPL1001778	93281099	6626		9	9	1						
24	E30149	SWT_25EDR30149	OCL Meter Pump 1 VFD	Replace STWTP OCL METER PUMP MOTOR FREQUENCY DRIVE #1 2971 2026	\$3,000		WPL1001779	93281099	6626		9	9	1						

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.	Maintenance Unit 555				Watersheds	EH&S	MT Engineering	ET Engineering	Painter	Environmental
										MT	CT	ET	PL						
										Hrs	Hrs	Hrs	Hrs						
25	E30155	SWT_25EDR30155	OCL Meter Pump 3 VFD	Replace STWTP OCL METER PUMP MOTOR FREQUENCY DRIVE #3 2973 2011	\$3,000		WPL1001780	93281099	6626		9	9	1						
26	E30158	SWT_25EDR30158	OCL Meter Pump 4 VFD	Replace STWTP OCL METER PUMP MOTOR FREQUENCY DRIVE #4 2974 2011	\$3,000		WPL1001781	93281099	6626		9	9	1						
27	E30161	SWT_25EDR30161	OCL Meter Pump 5 VFD	Replace STWTP OCL METER PUMP MOTOR FREQUENCY DRIVE #5 2975 2011	\$3,000		WPL1001782	93281099	6626		9	9	1						
28	E30469	SWT_25EDR30469	OCL Meter Pump 6 VFD	Replace VFD 001	\$3,000		WPL1001783	93281099	6626		9	9	1						
									Labor Hours	88	180	228	35	0	7	7	2	72	0
					FY17 STWTP Sub-Total = \$129,750														
					FY STWTP Small Cap Sub-Total = \$330,000														
					FY STWTP TOTAL = \$459,750														

Table 4. Silicon Valley Advanced Water Purification Center Planned Work Project

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.
1	E52770	SVA_64TNK52770	PRODUCT WATER STORAGE TANK (PWST-4001)	Inspection	\$8,000		WPL1001784	91281008	6169
2	E70378	SVA_61TNK70378	INTER-PROCESS STORAGE TANK (IST-1301)	Inspection	\$6,000		WPL1001785	91281008	6169
3	E73453	SVA_74ELC73453	Battery Charger	Electrical Testing	\$40,000		WPL1001786	91281008	6633
4	E73441	SVA_74ELC73441	21 kV Switchgear 9801 (SWGR-9801)	Electrical Testing			WPL1001787	91281008	6633
5	E73442	SVA_74ELC73442	21 kV Switchgear 9802 (SWGR-9802)	Electrical Testing			WPL1001788	91281008	6633
6	E73443	SVA_74ELC73443	480 V Switchgear 9803 (SWGR-9803)	Electrical Testing			WPL1001789	91281008	6633
7	E73444	SVA_74ELC73444	480 V Switchgear 9804 (SWGR-9804)	Electrical Testing			WPL1001790	91281008	6633
8	E52602	SVA_60ELC52602	Transformer	Electrical Testing			WPL1001793	91281008	6633
9	E73432	SVA_65ELC73432	Transformer	Electrical Testing			WPL1001794	91281008	6633
10	E73300	SVA_64ELC73300	Transformer	Electrical Testing			WPL1001795	91281008	6633
11	E53082	SVA_16ELC53082	Transformer	Electrical Testing			WPL1001796	91281008	6633
FY17 SVAWPC Sub-Total =					\$54,000				
FY17 SVAWPC Small Cap Sub-Total =					\$0				
FY17 SVAWPC TOTAL =					\$54,000				

Table 5. Treated Water Transmission and Distribution Planned Work Projects

All proposed FY2017 Treated Water Transmission and Distribution Planned Work have been rescheduled to future years.

Table 6. Raw Water Transmission and Distribution Planned Work Projects

All proposed FY2017 Raw Water Transmission and Distribution Planned Work have been rescheduled for FY2018.

Table 7. Gilroy Reclamation Line Planned Work Projects

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.
1	E66534	GRL_04PIP66534	Gilroy Reclamation Line - 12"	Inspection, video 001	\$198,500		201703028	92761008	6165
					<b>FY17 GRL Sub-Total = \$198,500</b>				
					<b>FY17 GRL Small Cap Sub-Total = \$0</b>				
					<b>FY17 GRL TOTAL = \$198,500</b>				

Table 8. Vasona Pumping Plant Facility Planned Work Projects

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.
1				Biennial Electrical Testing	\$8,000		201703030	92261099	6633
2			Upgrade control systems including PLC, RTU and control cabinets	Upgrade control systems including PLC, RTU and control cabinets	\$30,000		201703032	92261099	6633
					<b>FY17 VPP Sub-Total = \$38,000</b>				
					<b>FY17 VPP Small Cap Sub-Total = \$0</b>				
					<b>FY17 VPP TOTAL = \$38,000</b>				

Table 9. Anderson Hydroelectric Facility Planned Work Projects

Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.
1			Electrical Testing	Electrical testing	\$12,000		201703033		
2	E41006	AHY_01ELC41006	Anderson Hydro UPS	Replace UPS batteries	\$1,000		201703035		
					<b>FY17 AHY Sub-Total = \$13,000</b>				
					<b>FY17 AHY Small Cap Sub-Total = \$0</b>				
					<b>FY17 AHY TOTAL = \$13,000</b>				

Table 10. San Felipe Division Planned Work Projects

Item	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.	
1	San Felipe Division Reach 1	PPP	E41473	PPP_75PMP41473	Fire Pump	Replace PACHECO PUMP FIRE PUMP 2112 2017	\$50,000		201703093	91211099	6219
2		PPP			PPP WAPA Maintenance Contract	PPP WAPA Maint. Contract 007	\$40,000		201703094	91211099	6229
3		PPP			Electrical Testing	Electrical testing 004	\$12,000		201703095	91211099	6633
		Pump Unit 2 Rebuild									
4		PPP	E42003	PPP_02MTR42003	Pump Unit 2 Motor	Refurbish motor windings and bearings	\$40,000	Purchase from 1 vendor (UNICO) contractor	201703096	91214010	6219
5		PPP	E42004	PPP_02PMP42004	Pump Unit 2 Pump	Rebuild pump with new coupling & nuts. Rebuild pump and rehab shafting.	\$700,000		201703097		
6		PPP	E42005	PPP_02VLV42005	Pump Unit 2 Pump Alr Release Valve	Replace PACHECO PUMP UNIT #2 PUMP AIR RELEASE VALVE 2135 2012	\$600		201703099		
7		PPP	E42007	PPP_02VOP42007	Pump Unit 2 Pump Disch Vlv Hyd Op	Rehab PACHECO PUMP UNIT #2 PUMP DISCH VALVE HYD OP	\$1,500		201703100		
8		PPP	E42006	PPP_02VLV42006	Pump Unit 2 Pump Discharge Valve	Replace bushings	\$5,000		201703101		
		Pump Unit 4 Rebuild									
9		PPP	E42029	PPP_02MTR42029	Pump Unit 4 Motor	Refurbish motor windings and bearings	\$40,000	Purchase from 1 vendor (UNICO) contractor	201703102	91214010	6219
10		PPP	E42030	PPP_02PMP42030	Pump Unit 4 Pump	Rebuild pump with new couplings & nuts. Rebuild pump and shafting	\$700,000		201703103		
11		PPP	E42031	PPP_02VLV42031	Pump Unit 4 Pump Alr Release Valve	Replace PACHECO PUMP UNIT #4 PUMP AIR RELEASE VALVE 2147 2012	\$600		201703104		
12		PPP	E42033	PPP_02VOP42033	Pump Unit 4 Pump Disch Vlv Hyd Op	Rehab PACHECO PUMP UNIT #4 PUMP DISCH VALVE HYD OP	\$1,500		201703105		
13		PPP	E42032	PPP_02VLV42032	Pump Unit 4 Pump Discharge Valve	Replace bushings	\$5,000		201703107		
14		PPP				Installation of fall protection on the 60-ton overhead crane (fixed access ladder is recommended).	\$25,000	Per USBR 2008-2-I; photos S-1 & S-2	201703108	91211099	6229
15		PPP				Clean the rusted valve in the utility room next to the office room		Per USBR 2014-3-J, pg 10; photo S-13	201703109	91211099	6229
16		PPP				Repair the metal guard railing posts on top of the CMP drainage culver (inlet & outlet) located near the main entrance to the facility.		Per USBR 2014-3-R; Photos S-21 & S-22	201703110	91211099	6229
17		PPP				The PRV's have been tested on all pressure vessels and new ones have been order for installation		Per USBR 2014-2-F	201703111	91211099	6229
18		PPP				Clean and recoat the guard valve casings, particularly around the bonnet flange.		Per USBR; 2014-3-E	201703112	91211099	6229
19		PPP				The hydraulic actuator oil need to be replaced		Per USBR 2014-3-F	201703114	91211099	6229
20	PPP				Replace the Cathodic protection wiring box located at the top of the tunnel intake structure.		Per USBR 2014-3-P; Photo S-25	201703115	91211099	6229	
21	PPP				Electrical equipment needs to be adjusted to allow for attaching personnel protective grounds.	\$5,000	Per USBR 2014-2-C	201703116	91211099	6229	
22	SFD R2	SCC				Seal cracks at the SC tunnel	\$700,000	Per Brown & Caldwell	201703117	91224010	6219
23	SFD R3	CPP			CPP WAPA maintenance contract	CPP WAPA Maint. Contract 007	\$40,000		201703118	91224010	6219
24	SFD R3	CPP	E42509	CVY_06VOP42509	Discharge Valve Op	Replace COYOTE PUMP DISCHARGE VALVE OPERATOR 4861 2017	\$9,000		201703130	91231099	6219

Item	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.
25	CPP	E42516	CDL_06FLO42516	Discharge Line - Flowmeter	Replace COYOTE DISCHARGE LINE - FLOWMETER 2075 2017	\$45,000			91231099	6626
26		E42492	CPP_06VOP42492	Pump Iso Vlv Str Cont Vlv 1 Oper.	Replace COYOTE PUMP ISOLATION VALVE CONTROL VALVE OPERATOR #1 2063 2017	\$6,750			91231099	6219
27		E42494	CPP_06VOP42494	Pump Iso Vlv Str Cont Vlv 2 Oper.	Replace COYOTE PUMP ISOLATION VALVE CONTROL VALVE OPERATOR #2 2065 2017	\$6,750			91231099	6219
28		E42496	CPP_06VOP42496	Pump Iso Vlv Str Cont Vlv 3 Oper.	Replace COYOTE PUMP ISOLATION VALVE CONTROL VALVE OPERATOR #3 2066 2017	\$6,750			91231099	6219
29		E42498	CPP_06VOP42498	Pump Iso Vlv Str Cont Vlv 4 Oper.	Replace COYOTE PUMP ISOLATION VALVE CONTROL VALVE OPERATOR #4 2067 2017	\$6,750			91231099	6219
30		E42500	CPP_06VOP42500	Pump Iso Vlv Str Main Line Vlv - Op	Replace COYOTE PUMP ISOLATION VALVE MAIN LINE VALVE OPERATOR 2069 2017	\$6,750			91231099	6216
31		CPP		Electrical Testing	Electrical testing 004	\$9,000			91231099	6633
32		E42447	CPP_07EDR42447	CPP Unit #4 Pump Motor ASD	Maintenance and testing (MT)	\$5,000	Performed by independent testing company	201703140		
33		E42454	CPP_07EDR42454	CPP Unit #5 Pump Motor ASD	Maintenance and testing (MT)	\$5,000		201703141		
34		E42461	CPP_07EDR42461	CPP Unit #6 Pump Motor ASD	Maintenance and testing (MT)	\$5,000		201703142		
35		E42433	CPP_07EDR42433	CPP Unit #2 Pump Motor ASD	Maintenance and testing (MT)	\$5,000		201703144		
36		E42426	CPP_07EDR42426	CPP Unit #1 Pump Motor ASD	Maintenance and testing (MT)	\$5,000		201703145		
37		E42440	CPP_07EDR42440	CPP Unit #3 Pump Motor ASD	Maintenance and testing (MT)	\$5,000		201703147		
38		CPP			Relocate or repair the leaking water problem that is going into the electrical conduit located in the vault.	\$30,000	Per USBR 2014-2-H		91231099	6169
39		CPP			Mitigate all corrosion in the isolation valve structure, investigating the cause of the corrosion at the bolt on the flange to the 43-inch BFV.		Per USBR 2014-2-O		91231099	6169
40		CPP			Retire all older versions of the SOP and replace with the newer official SOP; provide Reclamation with a copy of new SOP		Per USBR 2014-2-A		91231099	6169
41		CPP			Replace road sign warning of the overhead power lines on locations where traffic passes under the power lines		Per USBR 2014-2-I		91231099	6169

<b>FY17 SFD R1 Sub-Total =</b>	<b>\$132,000</b>
<b>FY17 SFD R1 Small Cap Sub-Total =</b>	<b>\$1,494,200</b>
<b>FY17 SFD R1 TOTAL =</b>	<b>\$1,626,200</b>

<b>FY17 SFD R2 Sub-Total =</b>	<b>\$ 0</b>
<b>FY17 SFD R2 Small Cap Sub-Total =</b>	<b>\$700,000</b>
<b>FY17 SFD R2 TOTAL =</b>	<b>\$ 700,000</b>

<b>FY17 SFD R3 Sub-Total =</b>	<b>\$ 196,750</b>
<b>FY17 SFD R3 Small Cap Sub-Total =</b>	<b>\$0</b>
<b>FY17 SFD R3 TOTAL =</b>	<b>\$ 196,750</b>

<b>FY17 San Felipe Division TOTAL =</b>	<b>\$2,522,950</b>
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Table 11. Water Supply Management System (Maintenance) Planned Work Projects

Item	Asset #	Asset Name	Type	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.
1	E65177	Mabury Diversion Fish Ladder	Repair	Sediment removal	\$15,000		201703036	92761010	
2	E65095	Helmsley Pipeline	Inspection	Video inspection	\$4,800	Contractor	201703042	92761010	
3	E65095	Helmsley Pipeline	Replace	Valve replacement	\$21,430		201703043	92761010	
4	E65159	City Park Pond	Replace	Replace drain valve	\$21,430		201703044	92761010	
5	E65217	Alamitos Diversion Facility	Repair/replace	Replace dam. Replace valve from creek to pond. Minor maintenance	\$16,400		201703045	92761010	
6	E65246	Alamitos Ponds	Replace	Install new replacement flowmeter	\$15,000		201703046	92761010	
7	E65266	Alamitos Pipeline	Inspection	Video inspection	\$1,820	Contractor	201703047	92761010	
8	E65266	Alamitos Pipeline	Repair/replace	Replace inlet valve from pond #11. Address root issues	\$21,500		201703048	92761010	
9	E65324	Kooser Pipeline	Inspection	Video inspection	\$4,000	Contractor	201703049	92761010	
10	E65331	Masson Fish Ladder	Repair	Sediment removal	\$15,000		201703050	92761010	
11	E65346	Los Capitancillos Ponds	Replace	Replace valve and pipe #8-9	\$41,430		201703051	92761010	
12	E65396	Almaden-Calero Canal	Inspection	Video inspection of Siphons #1, #2 and #3	\$6,150	Contractor	201703052	92761010	
13	E65396	Almaden-Calero Canal	Repair	Perform repairs as needed	\$25,000		201703053	92761010	
14	E10777	Budd Avenue Ponds	Repair/replace	Replace flowmeter. Embankment repair	\$135,000		201703054	92761010	
15	E65526	Page Ditch	Inspection	Video inspection of pipe reaches	\$10,600	Contractor	201703055	92761010	
16	E65526	Page Ditch	Repair/replace	Replace Page Ditch Desilt Basin drain valve. Perform repairs.	\$25,000		201703056	92761010	
17	E10792	Sunnyoaks Ponds	Repair/replace	Replace all valves. Erosion repairs	\$64,290		201703063	92761010	
18	E65683	Kirk Diversion Facility	Replace	Replace Page local valve and Kirk local valve	\$42,860		201703064	92761010	
19	E65746	Kirk Dist. System - Vasona Chemical Storage	Replace	Replace storage tanks	\$30,000		201703065	92761010	
20	E65860	Coyote Canal	Replace	Replace inlet valves (L and R) and Blow off valves	\$107,150		201703068	92761010	
21	E65954	Coyote-Alamitos Canal	Inspection	Video inspection and roots removal	\$25,000		201703069	92761010	
22	E65954	Coyote-Alamitos Canal	Repair	As needed repairs / Sediment / Vegetation removal	\$79,000		201703070	92761010	
23	E66105	Ford Road Percolation Facility	Repair	Remove old fish ladder channels	\$15,000		201703073	92761010	
24	E66137	Main Avenue Ponds and Desilt basin	Repair	Embankment repair and Vegetation removal	\$120,000		201703075	92761010	
25	E66216	Madrone Pipeline	Inspection	Video inspection	\$9,000	Inspect in 2017 or 2018; contractor	201703076	92761010	
26	E66216	Madrone Pipeline	Repair	Address any root issues	\$25,000		201703078	92761010	
27	E66221	Madrone Channel Percolation Facility	Repair	Facility Repairs	\$25,000		201703079	92761010	
28	E66324	Church Avenue Ponds	Repair	Embankment repair and Vegetation removal	\$120,000		201703080	92761010	
FY17 WS Maint. Sub-Total =					\$1,041,860				
FY17 WS Maint. Small Cap Sub-Total =					\$0				
FY17 WS Maint. TOTAL =					\$1,041,860				



Table 12. Water Supply Management Systems (Operations) Planned Work Projects

Item	Asset #	Asset Name	Activity	Cost	Efficiencies and Comments	Work Order No.	Project	Acct.
1	E10792	Sunnyoaks Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$55,580		201703083	92761009	
2	E10791	Page Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$139,915		201703085	92761009	
3	E10777	Budd Avenue Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$154,153		201703086	92761009	
4	E66166	San Pedro Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$298,869		201703087	92761009	
5	E65526	Page Ditch	Pond grooming/Cleaning/Capacity restoration projects	\$100,000	Drain and clean	201703088	92761009	
6	E65541	Page Ditch Desilting Basin	Pond grooming/Cleaning/Capacity restoration projects	\$80,000		201703090	92761009	
				FY17 WS Ops. Sub-Total = \$828,517				
				FY17 WS Ops. Small Cap Sub-Total = \$0				
				FY WS Ops. TOTAL = \$828,517				

#### IV. Fiscal Year 2018-21 Planned Work Summary

This section provides a high level summary of the planned work (PW) activities for year two through five of the five-year MWP; the detailed project lists can be found in Appendix A. Figures 1 through 12 summarize the projected PW, small and large capital projects to be completed in FY 2018-2021. The project costs provided in the figures include equipment and material costs, but do not include labor costs.

Expanding the MWP horizon from a single year to five-years allows staff to review the work load by year and see trends and peaks either in work load, asset class, or by facility. This also provides staff with an opportunity to look for efficiencies and balance the work between the years. Future MWP work lists will be based on the new Asset Management Planning Tool (AMPT), which contains an updated asset registry list in addition to equipment, material and labor costs. Therefore, costs will change in the next MWP report as the tool includes comprehensive data on District assets.

Figure 1. Penitencia Water Treatment Plan (PWTP) FY18-21 Projected Planned Work

##### PWTP FY18-21 Projected Planned Work Total Value = \$3.5M

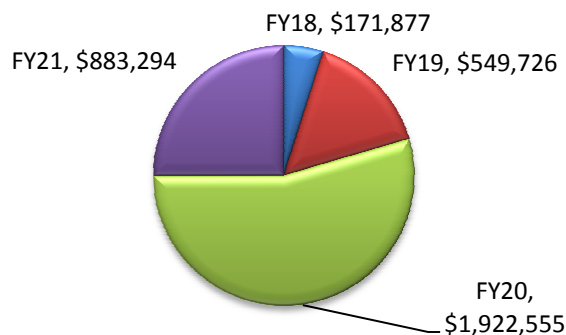


Figure 2. Rinconada Water Treatment Plant (RWTP) FY18-21 Projected Planned Work

##### RWTP FY18-21 Projected Planned Work Total Value = \$873K

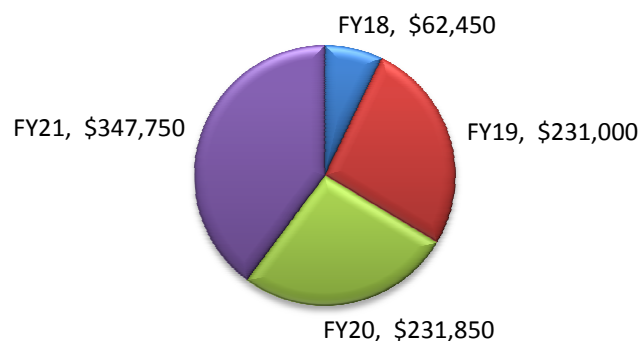


Figure 3. Santa Teresa Water Treatment Plant (STWTP) FY18-21 Projected Planned Work

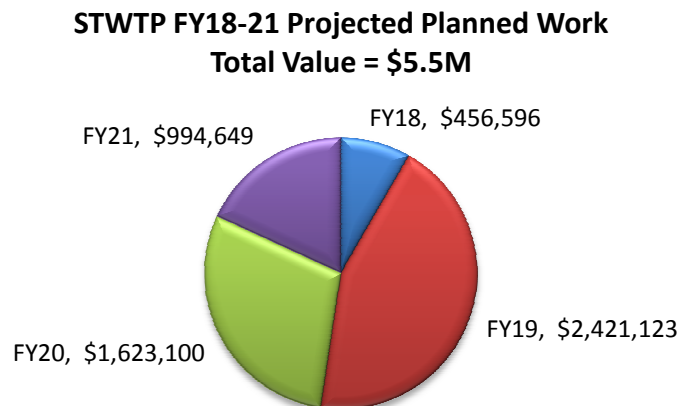


Figure 4. Silicon Valley Advanced Water Purification Center (SVAWPC) FY18-21 Projected Planned Work

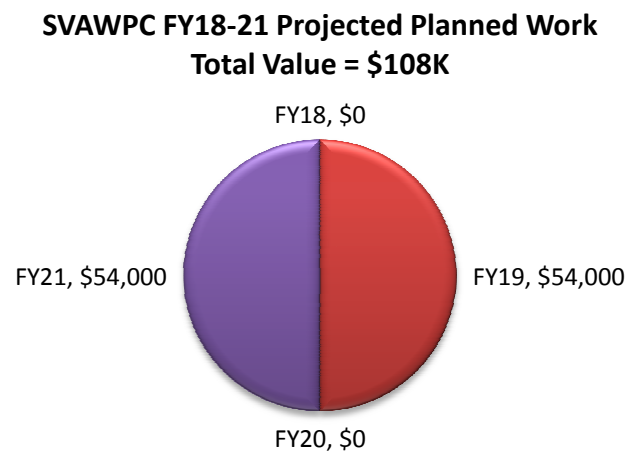


Figure 5. Treated Water Transmission and Distribution FY18-21 Planned Work Projects

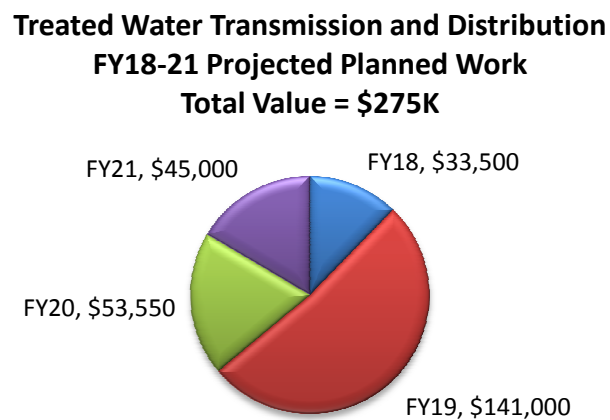


Figure 6. Raw Water Transmission and Distribution FY18-21 Planned Work Projects

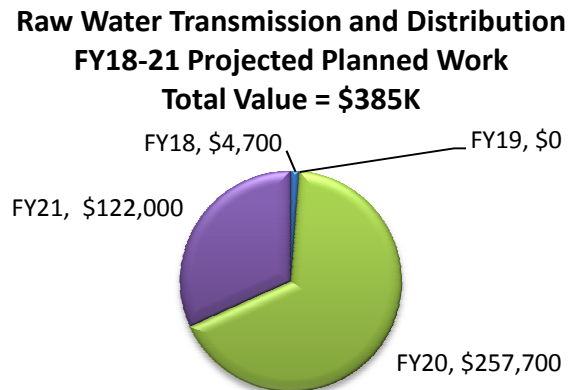


Figure 7. Gilroy Reclamation Line (GRL) FY18-21 Planned Work Projects

There is no planned work for the GRL during years FY18-21.

Figure 8. Vasona Pumping Plant (CPP) Facility FY18-21 Planned Work Projects

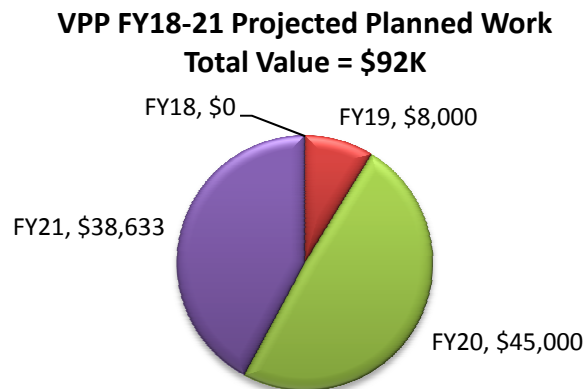


Figure 9. Anderson Hydroelectric (AHY) Facility FY18-21 Planned Work Projects

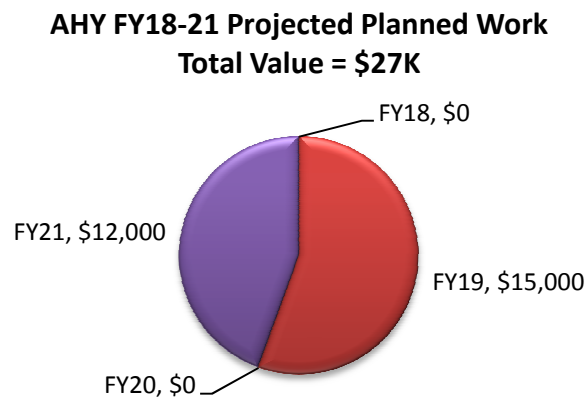


Figure 10. San Felipe Division (SFD) FY18-21 Planned Work Projects

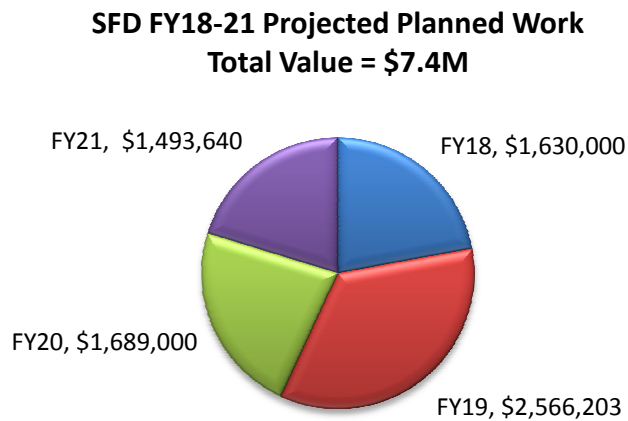


Figure 11. Water Supply Management System (Maintenance) FY18-21 Planned Work Projects

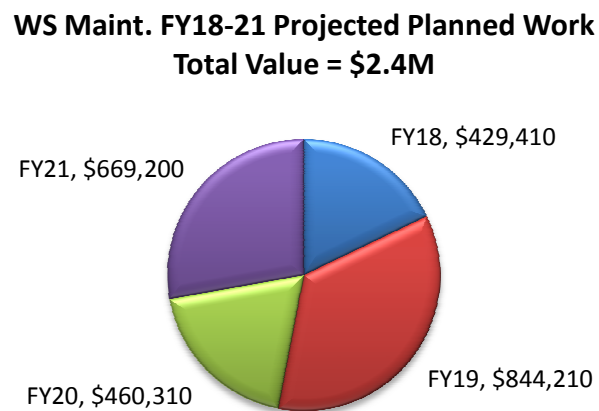
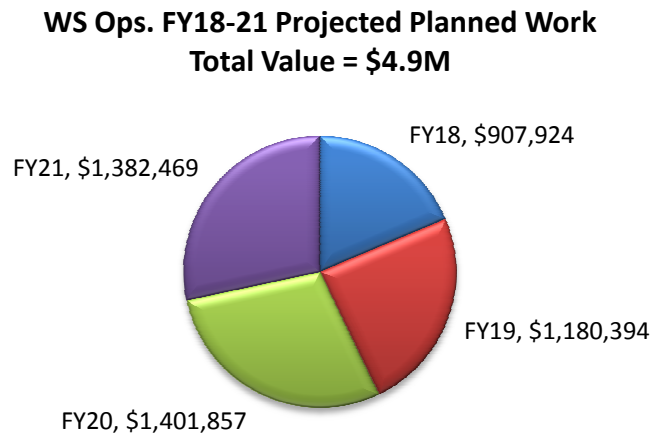


Figure 12. Water Supply Management System (Operations) FY18-21 Planned Work Projects



## V. Capital Improvement Plan (CIP) Project Recommendations

The MWP recommends some activities for execution as formal capital projects. As the capabilities of the District's asset management program improves with new planning models and software, the identification of future capital projects to address existing asset failure modes will become a critical output of the program.

Capital projects represent major work efforts that are beyond the capabilities of the maintenance units to perform, requiring relatively large budget commitments (greater than \$50K), technical complexity, or are likely to require multi-year planning and extensive design efforts.

During the FY17 MWP development process 2 infrastructure projects were recommended by staff and management for consideration and possible inclusion into the Capital Improvement Program (CIP). The MWP recommends the following individual capital projects for FY 2017:

- **Pacheco Conduit (PAC) Rehabilitation Project:** The project covers the inspection, rehabilitation, and repair of the 7.9 miles of 120" diameter PAC (raw water transmission). The project includes the following:
  - Perform visual, sounding, and electromagnetic inspections
  - Replacing two sectionalizing valves
  - Modifying bypass piping at valves and installing supports
  - Replacing pipeline appurtenance assemblies and piping
  - Performing internal maintenance and repair activities, as required
  - Performing internal pipeline structural lining, as required
  - Installing a new line valve to facilitate future maintenance
  - Installing a new pump system to facilitate future pipeline dewatering
  - Upgrading facilities to allow future unmanned inspections
  - Performing transient flow analysis
  - Upgrade Cathodic Protection
- **Cathodic Protection (CP):** The project covers the installation, rehabilitation, or replacement of rectifiers with RMUs and CP signage throughout the San Felipe Division.

In addition, staff and management recommended funding and providing resources for the following two projects, which were submitted to the Capital Improvement Program in previous years:

- **Coyote Pumping Plant ASD:** To improve plant operation and reliability while reducing operation and maintenance cost, this project would replace the existing adjustable speed drives (ASDs) and associated electrical power distribution equipment at the Coyote Pumping Plant. Many of the assets that will be replaced in the ASD project are due for replacement in the next few years. To incorporate lessons learned from the Pacheco Pumping Plant ASD project, it is recommended that the 4160 volt DZ1A and DZ2A unit-sub assemblies, 4160 volt overhead buss way, and new switchgear(s) to replace existing motor control equipment (MCEs) be incorporated into this project.
- **PWT Residuals Management:** To extend the useful life of the treatment plant, improve efficiency, minimize risk of discharge violations, and improve the reliability of the PWT plant. This project would perform an analysis, plan, and construct modifications to the PWT residuals management process.

Small Capital Projects recommended include:

- PWT - Conveyor Belt Replacement
- PWT - MCC Replacement
- SWT - MCC Replacement
- PPP - Rebuild pump unit #2 and #4

The following pipeline rehabilitation and repair projects listed are part of the five-year Pipeline Rehabilitation Project (CIP), which includes the following facility for FY2017:

- Santa Clara Tunnel (SCT) – inspection and lining (raw water transmission)

## **VI. Execution and Measuring Performance/Completion of the AMWP**

Actual scheduling, execution, and reporting on the projects in the plan are the responsibility of the units assigned the work in the Maximo work order system. The Asset Management Unit prepares an Annual Maintenance Work Plan Review Report at the close of each fiscal year to assess what work was completed. In order to prepare an accurate review report, planned work (PW) must be tracked accurately.

More importantly, it is critical to track PW because if work is not completed as planned, risk of asset failure increases. Tracking PW ensures that projects that could not be completed are rescheduled to a future year. Tracking PW also ensures the District is capturing accurate asset life-cycle costs. In order to enable accurate PW tracking, the Asset Management Unit provides the following recommendations:

- Ensure that staff uses the work order numbers provided in this report for each project. If additional work orders are needed to complete a single work list item, a child work order should be established in Maximo and linked to the work order listed in this plan to enable complete and accurate cost tracking. This includes work performed by watershed field operations units under the Access Valley Water (AVW) tool, by referencing the AVW tracking number within the work order number listed in this plan.
- Ensure staff appropriately changes work order status in Maximo, particularly upon completion of work. During development of the FY15 Annual Maintenance Work Plan Review Report, staff found that several projects had been completed, but work orders had not been closed. Completion percentages for planned work will not be accurate if the correct status is not provided in Maximo.
- Work list items that involve the replacement of an asset (piece of equipment) must also include processing the change in Maximo. This is accomplished using the new 'Asset Replaced' feature in Maximo. The Asset Management Unit then downloads the "replacement" list from Maximo and ensures the old asset was properly decommissioned and the new asset has been properly added to Maximo and ICAM/AMPT.

## **VII. Financial Forecasts**

Future forecasts for asset renewal and replacement work from ICAM are provided in the figures below. The ICAM-generated funding demand is related to the level of effort and the magnitude of future MWP work. The dark blue portions of the graphics represent operating budget demand. The light blue portions represent formal capital work. Where future work is identified

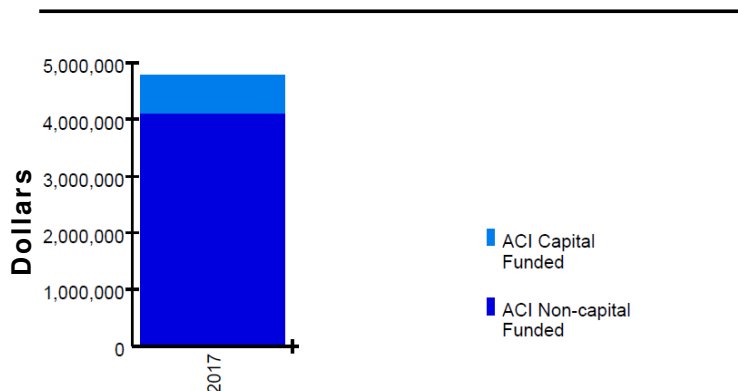
that has a high likelihood of being executed under a formal Capital Improvement Project (CIP) due to scope, required expertise, or cost; the funding demand has been included in ICAM and classified as “capital” in the database. In all probability, the magnitude of those capital investments will be several times the magnitude shown in the charts as the charts generally identify only the equipment/asset costs, and not the planning, design, and engineering costs associated with formal capital projects.

To provide greater clarity of the District’s financial commitments to maintenance activities, the funding demand for a single year, five-years, and 15 years is provided in the figures below. The first figure of the series shows the funding demand for all the assets included in ICAM. The following three figures of the series show a subset of funding demand for different asset types: water treatment plants, San Felipe Division, and the pipelines. In future years these charts will come from the new AMPT model.

## A. One Year

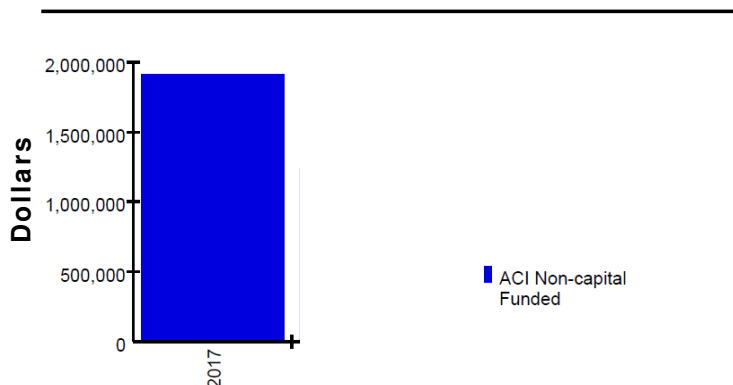
**Figure 13. Water Utility Operations Division Funding Demand<sup>2</sup>**

**Funding Demand for Water Utility Operations Division Scenario: Do Everything**



**Figure 14. Treatment Plant Funding Demand**

**Funding Demand for Treatment Plants Scenario: Do Everything**



**Figure 15. San Felipe Division Funding Demand**

<sup>2</sup> This figure represents the total funding demand for Water Utility Operations except for the water supply field facilities such as recharge ponds, some dam related assets, or many electrical, control systems, and civil assets at the water treatment plans.



#### Funding Demand for San Felipe Division Scenario: Do Everything

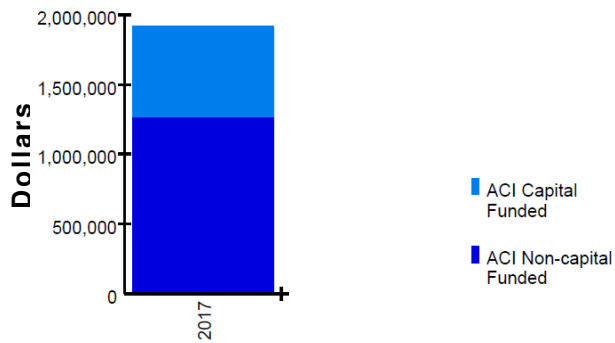
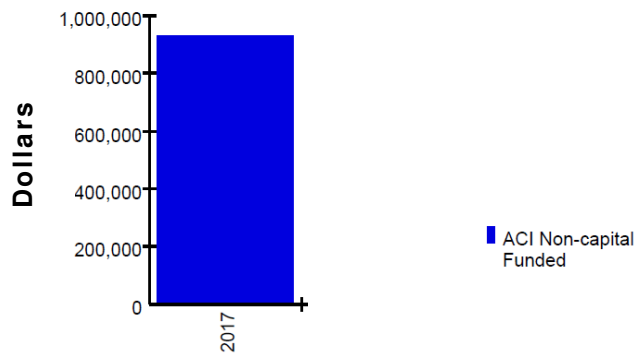


Figure 16. Pipeline Funding Demand

#### Funding Demand for Pipelines Scenario: Do Everything



## B. Five-year

Figure 17. Water Utility Operations Division Funding Demand<sup>3</sup>

#### Funding Demand for Water Utility Operations Division Scenario: Do Everything

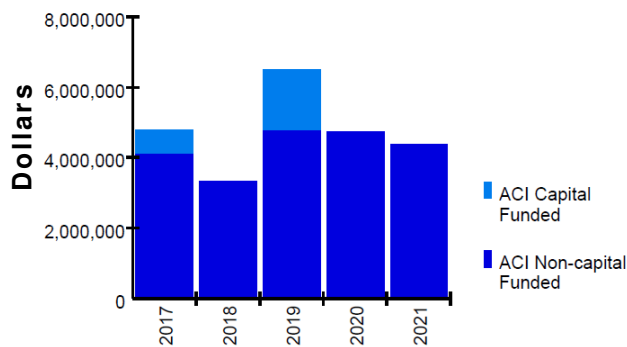


Figure 18. Treatment Plant Funding Demand

<sup>3</sup> This figure represents the total funding demand for Water Utility Operations except for the water supply field facilities such as recharge ponds, some dam related assets, or many electrical, control systems, and civil assets at the water treatment plans.

Funding Demand for Treatment Plants Scenario: Do Everything

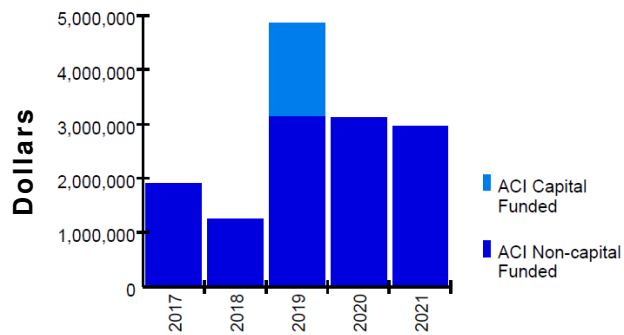


Figure 19. San Felipe Division Funding Demand

Funding Demand for San Felipe Division Scenario: Do Everything

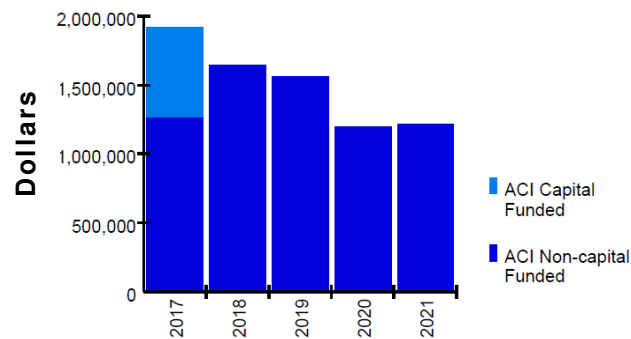
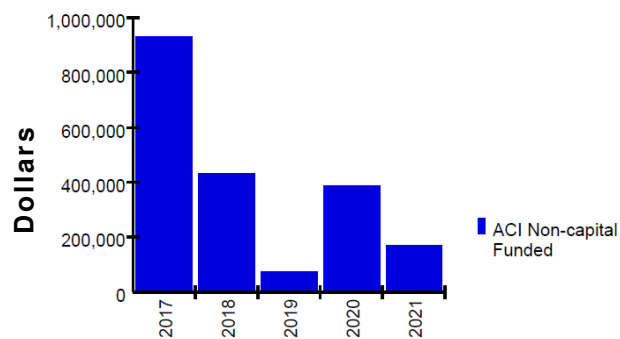


Figure 20. Pipeline Funding Demand

Funding Demand for Pipelines Scenario: Do Everything



## C. 15 Year

Figure 21. Water Utility Operations Division Funding Demand<sup>4</sup>

Funding Demand for Water Utility Operations Division Scenario: Do Everything

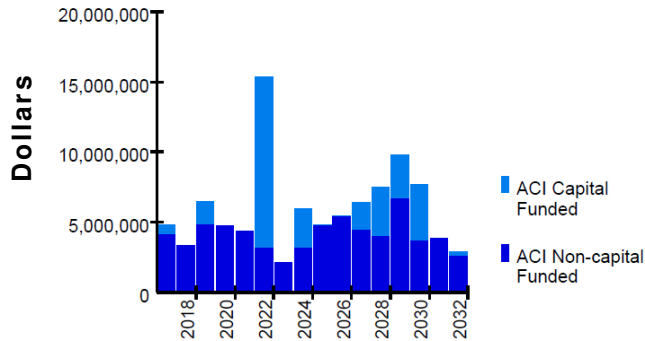


Figure 22. Treatment Plant Funding Demand

Funding Demand for Treatment Plants Scenario: Do Everything

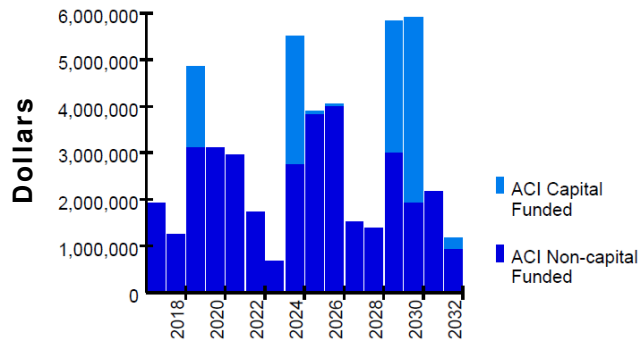
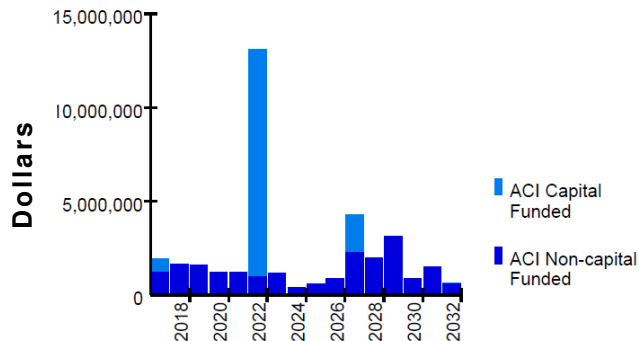


Figure 23. San Felipe Division Funding Demand

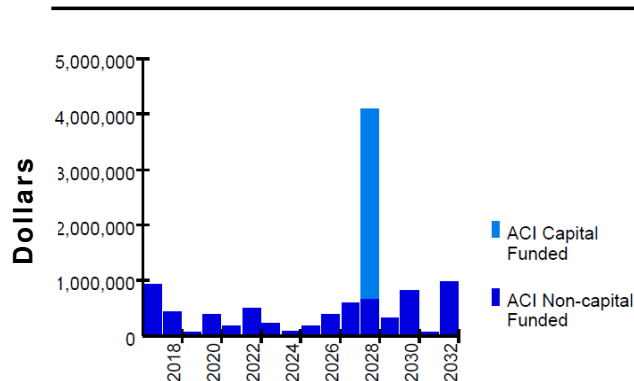
Funding Demand for San Felipe Division Scenario: Do Everything



<sup>4</sup> This figure represents the total funding demand for Water Utility Operations except for the water supply field facilities such as recharge ponds, some dam related assets, or many electrical, control systems, and civil assets at the water treatment plans.

Figure 24. Pipeline Funding Demand

Funding Demand for Pipelines Scenario: Do Everything



## VIII. Modifications, Improvements, and Efficiencies

Based on experience gained through previous MWP development efforts, input from management and staff, and survey data; certain modifications and improvements to the MWP document and development process have been implemented as a means of continual improvement. Improvements and changes identified and recently implemented in the MWP are summarized below.

- The Annual Maintenance Work Plan (AMWP) has been relabeled the Maintenance Work Plan (MWP) which spans a five-year timeframe. This was at the request of management and staff in an effort to plan and schedule projects, look for efficiencies, and provide a better five-year forecast for project plans, the District budget, and the Capital Improvement Program (CIP). The work lists in the first year of the five-year rolling plan will be fixed, while future years may be adjusted based on changing conditions.
- The MWP planned work list has been restructured to include project numbers, account numbers, and work order numbers for each work item in order to facilitate reporting and fiscal accountability.
- Management and staff have requested starting the AMWP development process earlier in the year, prior to preparation of project plans and long term funding proposals. Now the process begins in January of each year in order to have the work lists prepared prior to the first pass budget in September of that same year.
- The Scope of the MWP has been expanded by the addition of the planned work projects on the recharge and raw water facilities (RRWF), which are overseen by the Water Supply Operations Planning and Analysis Unit (455) as well as the Silicon Valley Advanced Water Purification Center (SVAWPC), which is overseen by the North Water Treatment Operations Unit (565).
- Although the preventative maintenance (PM) work on the District's dams and reservoirs is ongoing and critical to their functioning, there is not an equivalent set of planned work projects performed at the dams that would be considered maintenance activities, and

therefore, candidates for inclusion in this report. The work that is planned for the dams is major capital work, and is outlined in the District's Capital Improvement Plan (CIP).

- In previous years, all work scheduled in the previous AMWP that had not been completed by the end of the fiscal year was carried forward on the work list as "work carried forward". Because this AMWP is being published prior to the end of the fiscal year, it does not include incomplete work, this information can be found in the annual review reports.
- During the budget review process, management requested increased detail and linkage of work items and cost estimates to account numbers within operating projects. In response, the FY 2010 through FY 2015 AMWP included Project Work Sheets in an effort to bring greater clarity to the budget development and review processes, and to provide supporting documentation on scope of work and rationale for the work activity. As improvements have been incorporated into the planned work list over time, the Project Work Sheets and planned work lists contained duplicate information. Therefore, upon consultation and with the support of the operations, maintenance, and engineering units the Project Work Sheets have been discontinued beginning with the FY 2016 AMWP.

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## **APPENDIX A: FY 2018-2021 Planned Work Lists**

Table 1 through Table 12 summarizes the planned work and small capital projects to be completed in FY18 - 21. Small capital projects are differentiated from planned work within these tables by being represented in a **dark red** font color. Large capital projects are listed in Section V. The project costs provided in the tables include services and supply costs, but do not include labor costs. Work order numbers are provided, and are used for tracking all work associated with the projects as explained in Section V.

Table 1. Penitencia Water Treatment Plant Planned Work Projects

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	E10033	PWT_16PMP10033	Aqua NH4 Meter Pump 1	Replace Pump	\$ 7,500	Order pump & motor together
2018	E10034	PWT_16MTR10034	Aqua NH4 Meter Pump Motor 1	Replace Motor	\$ 750	
2018	E10035	PWT_16PMP10035	Aqua NH4 Meter Pump 2	Replace Pump	\$ 7,500	
2018	E10036	PWT_16MTR10036	Aqua NH4 Meter Pump Motor 2	Replace Motor	\$ 750	
2018	E10029	PWT_16TNK10029	Aqua NH4 Storage Tank	Inspect tank thickness	\$ 3,000	Contractor Work
2018	E50428	PWT_47INS50428	Blend Tank Turbidity Meter	Replace instrument	\$ 3,000	
2018	E10056	PWT_47MIX10056	BP Blend Tank Mixer	Rehab Rebuild Gearbox	\$ 3,377	Replace vs. rehab
2018	E10429	PWT_54INS10429	Combined Filtered Water pH Meter	Replace I&C	\$ 2,700	
2018	E10432	PWT_54INS10432	Combined Water Turbidimeter	Replace I&C	\$ 3,750	
2018	E10426	PWT_54INS10426	CW Free Chlorine Analyzer pH & Temp	Replace I&C	\$ 4,050	
2018	E10658	PWT_54INS10658	CW pH Meter (CW Bypass Vault)	Replace Instrument	\$ 2,700	
2018	E10500	DPF_02FLO10500	Dutard Turnout Flowmeter	Replace I&C	\$ 10,500	
2018	E10191	PWT_49VOP10191	Filter 1 Effluent Valve Operator	Replace VOP	\$ 6,750	Replace with LimitorqueMX, contractor install
2018	E10193	PWT_49VOP10193	Filter 1 Filter to Waste Valve Op	Replace actuator	\$ 7,000	
2018	E10195	PWT_49VOP10195	Filter 1 Gullet Valve Operator	Replace actuator	\$ 7,000	
2018	E10197	PWT_49VOP10197	Filter 1 Inlet Valve Operator	Replace actuator	\$ 7,000	
2018	E10234	PWT_49VOP10234	Filter 4 Effluent Valve Operator	Replace actuator	\$ 7,000	
2018	E10236	PWT_49VOP10236	Filter 4 Filter to Waste Valve Op	Replace actuator	\$ 7,000	
2018	E10238	PWT_49VOP10238	Filter 4 Gullet Valve Operator	Replace actuator	\$ 7,000	
2018	E10240	PWT_49VOP10240	Filter 4 Inlet Valve Operator	Replace actuator	\$ 7,000	



Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	E10430	PWT_54INS10430	Finished Water pH Meter (EPL Vault)	Replace I&C	\$ 2,700	
2018	E10485	PWT_85MTR10485	Irrigation Pump Motor	Replace Motor	\$ 750	
2018	E10600	PWT_54INS10600	Lab Combined pH Meter	Replace Instrument	\$ 2,700	
2018	E10428	PWT_54INS10428	Lab Settled Water pH Meter	Replace I&C	\$ 2,700	
2018	E10427	PWT_54INS10427	Lab Unsettled Water pH Meter	Replace I&C	\$ 2,700	
2018	E10127	PWT_25TNK10127	OCL Storage Tank 1	Inspect lining	\$ 10,000	
2018	E10131	PWT_25TNK10131	OCL Storage Tank 2	Inspect lining	\$ 10,000	
2018	E10134	PWT_25TNK10134	OCL Storage Tank 3	Inspect lining	\$ 10,000	
2018		PWT_29TNK	SA Spill Tank	Inspect tank	\$ 15,000	Contract Work
2018	E49987	PWT_29TNK49987	SA Storage Tank (PSAT01)	Inspect tank	\$ 10,000	
2019	E10029	PWT_16TNK10029	Aqua NH4 Storage Tank	Inspect Rehab Tank	\$ 15,000	This work requires a plant shutdown. Contract Work
2019	E10038	PWT_46PMP10038	Backwash Pump	Rehab Rebuild Pump	\$ 45,000	
2019	E10039	PWT_46MTR10039	Backwash Pump Motor	Rehab Rewind motor	\$ 15,000	
2019	E10074	PWT_56TNK10074	BP Blended Poly Mixing Tank 1	Rehab Paint	\$ 8,523	
2019	E10077	PWT_56TNK10077	BP Blended Poly Mixing Tank 2	Rehab Paint	\$ 8,523	
2019	E10160	PWT_48VLV10160	Bypass Vault Air Relief Valve	Replace Valve	\$ 2,250	
2019	E10285	PWT_19TNK10285	Cationic Batch Tank 101	Rehab Paint	\$ 1,730	
2019	E10288	PWT_19TNK0003	Cationic Batch Tank 201	Rehab Paint	\$ 1,730	
2019	E10116	PWT_18PMP10116	Caustic Feed Pump 1	Replace Pump	\$ 7,500	Order pump & motor together
2019	E10117	PWT_18MTR10117	Caustic Feed Pump 1 Motor	Replace Motor	\$ 750	
2019	E10118	PWT_18EDR10118	Caustic Feed Pump 1 VFD	Replace VFD	\$ 3,000	
2019	E10120	PWT_18PMP10120	Caustic Feed Pump 2	Replace Pump	\$ 7,500	Order pump & motor together
2019	E10121	PWT_18MTR10121	Caustic Feed Pump 2 Motor	Replace Motor	\$ 750	
2019	E10122	PWT_18EDR10122	Caustic Feed Pump 2 VFD	Replace VFD	\$ 3,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	E10128	PWT_25PMP10128	OCL Transfer Pump 1	Rehab Rebuild Pump (Wetted P	\$ 2,634	
2019	E10132	PWT_25PMP10132	OCL Transfer Pump 2	Rehab Rebuild Pump (Wetted P	\$ 2,634	
2019	E10135	PWT_25PMP10135	OCL Transfer Pump 3	Rehab Rebuild Pump (Wetted P	\$ 2,634	
2019	E10110	PWT_18TNK10110	Caustic Tank	clean, inspect and repair tank	\$ 10,000	Contract Work
2019			Electrical System Testing	Electrical testing	\$ 12,000	
2019	E10188	PWT_49STR10188	Filter 1	Rehab Re-coat	\$ 50,000	
2019	E10220	PWT_49VOP10220	Filter 3 Effluent Valve Operator	Replace VOP	\$ 6,750	Replace with LimitorqueMX; Contract Work
2019	E10222	PWT_49VOP10222	Filter 3 Filter to Waste Valve Op	Replace actuator	\$ 7,000	
2019	E10224	PWT_49VOP10224	Filter 3 Gullet Valve Operator	Replace actuator	\$ 7,000	
2019	E10225	PWT_49VLV10225	Filter 3 Inlet Valve Operator	Replace VOP	\$ 6,750	
2019	E10231	PWT_49STR10231	Filter 4	Rehab recoat filter	\$ 50,000	
2019	E10262	PWT_49VOP10262	Filter 6 Effluent Valve Operator	Replace valve actuator	\$ 7,000	Replace with LimitorqueMX; Contract Work
2019	E10264	PWT_49VOP10264	Filter 6 Filter to Waste Valve Op	Replace valve actuator	\$ 7,000	
2019	E10266	PWT_49VOP10266	Filter 6 Gullet Valve Operator	Replace valve actuator	\$ 7,000	
2019	E10268	PWT_49VOP10268	Filter 6 Inlet Valve Operator	Replace valve actuator	\$ 7,000	
2019	E10641	PWT_79INS10641	Floc 1, 2, and 3 Streaming Current	Replace instrument	\$ 4,000	
2019	E42737	PWT_85ELC0001	Grounds - Electrical	Replace	\$ 5,000	
2019	E10171	PWT_73PMP10171	Hot Water Circulation Pump	Replace Pump	\$ 600	Coordinate this work with heater replacement
2019	E10483	PWT_85PIP10483	Irrigation Pipe	Replace	\$ 20,000	
2019	E10484	PWT_85PMP10484	Irrigation Pump	Replace Pump	\$ 1,200	
2019	E20608	PWT_74ELC20608	Lighting Systems	Replace	\$ 50,000	
2019	E50402	PWT_33INS50402	Non Ionic Batch Tk 1 Level LIT-221	Replace level instrument	\$ 2,550	
2019	E50552	PWT_33INS50552	Non Ionic Neat Tk Level LIT-220	Replace level instrument	\$ 2,550	
2019	E10294	PWT_33PMP10294	Non-Ionic Poly Pump 301	Replace Pump	\$ 7,500	Order pump & motor together

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	E10295	PWT_33MTR10295	Non-Ionic Poly Pump Motor 301	Replace motor	\$ 750	
2019			Non-Ionic Poly Pump 302	Replace Pump	\$ 7,500	
2019	E10295	PWT_33MTR10295	Non-Ionic Poly Pump Motor 302	Replace Motor	\$ 750	
2019	E10301	PWT_33PMP10301	Non-Ionic Poly Pump 401	Replace Pump	\$ 7,500	
2019	E10302	PWT_33MTR10302	Non-Ionic Poly Pump Motor 401	Replace Motor	\$ 750	
2019	E10296	PWT_33PMP10296	Non-Ionic Poly Pump 501	Replace Pump	\$ 7,500	
2019	E10297	PWT_33MTR10297	Non-Ionic Poly Pump Motor 501	Replace Motor	\$ 750	
2019	E10291	PWT_33TNK10291	Non-Ionic Poly Tank	Rehab Paint	\$ 1,730	
2019	E10139	PWT_25PMP10139	OCL Meter Pump 1	Replace Pump	\$ 7,500	Order pump & motor together
2019	E10140	PWT_25MTR10140	OCL Meter Pump 1 Motor	Replace Motor	\$ 750	
2019	E10141	PWT_25PMP10141	OCL Meter Pump 2	Replace Pump	\$ 7,500	
2019	E10142	PWT_25MTR10142	OCL Meter Pump 2 Motor	Replace Motor	\$ 750	
2019	E10143	PWT_25PMP10143	OCL Meter Pump 3	Replace Pump	\$ 7,500	
2019	E10144	PWT_25MTR10144	OCL Meter Pump 3 Motor	Replace Motor	\$ 750	
2019	E10145	PWT_25PMP10145	OCL Meter Pump 4	Replace Pump	\$ 7,500	
2019	E10146	PWT_25MTR10146	OCL Meter Pump 4 Motor	Replace Motor	\$ 750	
2019	E10147	PWT_25PMP10147	OCL Meter Pump 5	Replace Pump	\$ 7,500	
2019	E10148	PWT_25MTR10148	OCL Meter Pump 5 Motor	Replace Motor	\$ 750	
2019			Particle Counter Calibration	Calibrate instrument	\$ 500	Setup at the same time as STWP
2019	E10552	PWT_32TNK10552	Phosphoric Acid Tank	Rehab Paint	\$ 8,523	
2019	E10495	DPF_02PMP10495	Pump 1	Rehab Rebuild Pump	\$ 18,000	Contract Work
2019	E10497	DPF_02PMP10497	Pump 2	Rehab Rebuild Pump	\$ 12,000	
2019	E10496	DPF_02MTR10496	Pump Motor 1	Rewind motor	\$ 2,800	
2019	E10498	DPF_02MTR10498	Pump Motor 2	Rewind motor	\$ 2,800	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	E10440	PWT_54INS10440	Raw Water Scatter Turbidmeter	Replace I&C	\$ 3,750	
2019	E10448	PWT_79INS10448	SBA Tank Level Gauge	Replace I&C	\$ 2,550	
2019	E10327	PWT_50ELC10327	Sed Basin 1 Rake Controller	Replace	\$ 5,000	
2019	E10359	PWT_50ELC10359	Sed Basin 2 Rake Controller	Replace	\$ 5,000	
2019	E10388	PWT_50ELC10388	Sed Basin 3 Rake Controller	Replace	\$ 5,000	
2019	E10537	PWT_53PMP10537	Sludge Dewatering Pump 2	Rehab Packing Replacement	\$ 258	
2019	E46530	PWT_29PMP46530	Sulfuric Acid Pump #1 (PSAP-01)	Replace Pump	\$ 6,000	
2019	E46531	PWT_29PMP46531	Sulfuric Acid Pump #2 (PSAP-02)	Replace Pump	\$ 6,000	
2019	E10441	PWT_54INS10441	Washwater Scatter Turbidmeter	Replace I&C	\$ 3,750	
2019	E10510	PWT_51PMP10510	Washwater Underflow Pump	Rehab Packing Replacement	\$ 258	
2020	E10165	PWT_72CMP10165	Air Compressor 2	Replace Blower	\$ 30,000	
2020	E10164	PWT_72MTR10164	Air Compressor Motor 1	Replace Motor	\$ 1,200	
2020	E10166	PWT_72MTR10166	Air Compressor Motor 2	Replace Motor	\$ 1,200	
2020	E10029	PWT_16TNK10029	Aqua NH4 Storage Tank	Inspect tank thickness	\$ 3,000	Contract Work
2020	E10029	PWT_16TNK10029	Aqua NH4 Storage Tank	Replace Tank	\$ 120,000	
2020	E10058	PWT_47MIS10058	Belt Press	Replace BFP	\$ 700,000	
2020	E10070	PWT_55PMP10070	BP Anionic Neat Poly Pump (P-P-3)	Replace Pump	\$ 6,000	
2020	E10055	PWT_47TNK10055	BP Blend Tank	Replace Tank	\$ 75,000	Contract Work
2020	E10055	PWT_47TNK10055	BP Blend Tank	Clean, Inspect & ReportPWTP BP	\$ 25,000	
2020	E10081	PWT_56VLV10086	BP Blended Poly Feed Pump 1	Replace Pump	\$ 2,250	Order pump & motor together
2020	E10082	PWT_56MTR10082	BP Blended Poly Feed Pump Motor 1	Replace Motor	\$ 750	
2020	E10083	PWT_56PMP10083	BP Blended Poly Feed Pump 2	Replace Pump	\$ 2,250	
2020	E10084	PWT_56MTR10084	BP Blended Poly Feed Pump Motor 2	Replace Motor	\$ 750	
2020	E10075	PWT_56MIX10075	BP Blended Poly Mixer 1	Replace Mechanical	\$ 15,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
				Drive		
2020	E10078	PWT_56MIX10078	BP Blended Poly Mixer 2	Replace Mechanical Drive	\$ 15,000	
2020	E10065	PWT_47PMP10065	BP Filtrate Recycle Pump	Replace Pump	\$ 50,000	
2020	E10068	PWT_55MIX10068	BP Neat Poly Mixer	Replace Mechanical Drive	\$ 15,000	
2020	E10283	PWT_19PMP10283	Cationic Poly Pump 201	Replace Pump	\$ 15,000	Order pump & motor together
2020	E10284	PWT_19MTR10284	Cationic Poly Pump Motor 201	Replace Motor	\$ 750	
2020	E10281	PWT_19PMP10281	Cationic Poly Pump 101	Replace Pump	\$ 15,000	
2020	E10280	PWT_19TNK10280	Cationic Poly Tank	Clean, Inspect, & Report Condi	\$ 10,000	Contract Work
2020	E10280	PWT_19TNK10280	Cationic Poly Tank	Replace Tank	\$ 90,000	
2020	E10189	PWT_49INS10189	Filter 1 Controls	Replace	\$ 16,500	
2020	E10201	PWT_49INS10201	Filter 1 Rate of Flow Headloss Mtr	Replace I&C	\$ 2,550	
2020	E10203	PWT_49INS10203	Filter 2 Controls	Replace	\$ 16,500	
2020	E10205	PWT_49VOP10205	Filter 2 Effluent Valve Operator	Replace VOP	\$ 6,750	Replace with LimitorqueMX; Contract Work
2020	E10207	PWT_49VOP10207	Filter 2 Filter to Waste Valve Op	Replace actuator	\$ 7,000	
2020	E10210	PWT_49VOP10210	Filter 2 Gullet Valve Operator	Replace actuator	\$ 7,000	
2020	E10212	PWT_49VOP10212	Filter 2 Inlet Valve Operator	Replace VOP	\$ 6,750	
2020	E10216	PWT_49INS10216	Filter 2 Rate of Flow Headloss Mtr	Replace I&C	\$ 2,550	
2020	E10217	PWT_49STR10217	Filter 3	Rehab Re-coat	\$ 50,000	
2020	E10218	PWT_49INS10218	Filter 3 Controls	Replace	\$ 16,500	
2020	E10230	PWT_49INS10230	Filter 3 Rate of Flow Headloss Mtr	Replace I&C	\$ 2,550	
2020	E10232	PWT_49INS10232	Filter 4 Controls	Replace	\$ 16,500	
2020	E10244	PWT_49INS10244	Filter 4 Rate of Flow Headloss Mtr	Replace I&C	\$ 2,550	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	E10246	PWT_49INS10246	Filter 5 Controls	Replace	\$ 16,500	
2020	E10248	PWT_49VOP10248	Filter 5 Effluent Valve Operator	Replace valve	\$ 7,000	Replace with LimitorqueMX; Contract Work
2020	E10250	PWT_49VOP10250	Filter 5 Filter to Waste Valve Op	Replace valve actuator	\$ 7,000	
2020	E10252	PWT_49VOP10252	Filter 5 Gullet Valve Operator	Replace valve actuator	\$ 7,000	
2020	E10254	PWT_49VOP10254	Filter 5 Inlet Valve Operator	Replace valve actuator	\$ 7,000	
2020	E10258	PWT_49INS10258	Filter 5 Rate of Flow Headloss Mtr	Replace I&C	\$ 2,550	
2020	E10259	PWT_49STR10259	Filter 6	Rehab Re-coat	\$ 50,000	
2020	E10260	PWT_49INS10260	Filter 6 Controls	Replace	\$ 16,500	
2020	E10272	PWT_49INS10272	Filter 6 Rate of Flow Headloss Mtr	Replace I&C	\$ 2,550	
2020	E10273	PWT_49STR10273	Filter Control House 1	Replace Building	\$ 33,000	Contract Work
2020	E10274	PWT_49STR10274	Filter Control House 2	Replace Building	\$ 33,000	
2020	E10278	PWT_49STR10278	Filter Control House 3	Replace Building	\$ 33,000	
2020	E10307	PWT_50MDR10307	Floc 1 Unit A Mech. Drive	Replace Mechanical Drive	\$ 15,000	Order drive & motor together
2020	E10308	PWT_50MTR10308	Floc 1 Unit A Mech. Drive Motor	Replace motor	\$ 1,200	
2020	E10310	PWT_50MDR10310	Floc 1 Unit B Mech. Drive	Replace Mechanical Drive	\$ 15,000	
2020	E10311	PWT_50MTR10311	Floc 1 Unit B Mech. Drive Motor	Replace Motor	\$ 1,200	
2020	E10313	PWT_50MDR10313	Floc 1 Unit C Mech. Drive	Replace Mechanical Drive	\$ 15,000	Order drive & motor together. Motor should be replaced if rehab cost is more than 1/2 of new
2020	E10314	PWT_50MTR10314	Floc 1 Unit C Mech. Drive Motor	Rehab Motor	\$ 733	
2020	E10316	PWT_50MDR10316	Floc 1 Unit D Mech. Drive	Replace Mechanical Drive	\$ 15,000	
2020	E10317	PWT_50MTR10317	Floc 1 Unit D Mech. Drive Motor	Replace Motor	\$ 1,200	
2020	E10336	PWT_50MDR10336	Floc 2 Unit A Mech. Drive	Replace Mechanical Drive	\$ 15,000	Order drive & motor together. Contractor to install.
2020	E10337	PWT_50MTR10337	Floc 2 Unit A Mech. Drive Motor	Replace Motor	\$ 1,200	
2020	E10339	PWT_50MDR10339	Floc 2 Unit B Mech.	Replace Mech.	\$ 15,000	



Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
			Drive	drive		
2020	E10340	PWT_50MTR10340	Floc 2 Unit B Mech. Drive Motor	Replace motor	\$ 1,200	
2020	E10342	PWT_50MDR10342	Floc 2 Unit C Mech. Drive	Replace Mech. drive	\$ 15,000	
2020	E10343	PWT_50MTR10343	Floc 2 Unit C Mech. Drive Motor	Replace Motor	\$ 1,200	
2020	E10347	PWT_50MDR10347	Floc 2 Unit D Mech. Drive	Replace Mech drive	\$ 15,000	
2020	E10346	PWT_50MTR10346	Floc 2 Unit D Mech. Drive Motor	Replace Motor	\$ 1,200	
2020	E10372	PWT_50MTR10372	Floc 3 Drive Unit B Mech. Drive	Replace Mechanical Drive	\$ 15,000	
2020	E10372	PWT_50MTR10372	Floc 3 Unit B Mech. Drive Motor	Replace motor	\$ 1,200	
2020	E10370	PWT_50EDR10370	Floc 3 Unit A Mech. Drive	Replace Mech. Drive	\$ 15,000	
2020	E10369	PWT_50MTR10369	Floc 3 Unit A Mech. Drive Motor	Replace Motor	\$ 1,200	
2020	E10374	PWT_50MDR10374	Floc 3 Unit C Mech. Drive	Replace Drive	\$ 15,000	
2020	E10375	PWT_50MTR10375	Floc 3 Unit C Mech. Drive Motor	Replace Motor	\$ 1,200	
2020	E10377	PWT_50MDR10377	Floc 3 Unit D Mech. Drive	Replace drive	\$ 15,000	
2020	E10378	PWT_50MTR10378	Floc 3 Unit D Mech. Drive Motor	Replace Motor	\$ 1,200	
2020	E10607	PWT_50MIX10607	Flocculator 1 Flash Mixer Motor	Replace motor	\$ 1,200	
2020	E10350	PWT_50MTR10350	Flocculator 2 Flash Mixer Motor	Replace Motor	\$ 1,200	
2020	E10380	PWT_50MIX10380	Flocculator 3 Flash Mixer	Replace Mechanical Drive	\$ 15,000	
2020	E10608	PWT_50MTR10608	Flocculator 3 Flash Mixer Motor	Replace motor	\$ 1,200	
2020	E10298	PWT_33TNK10298	Non Ionic Poly Batch Tank 301	Replace Tank	\$ 4,000	
2020	E10303	PWT_33TNK10303	Non Ionic Poly Batch Tank 401	Replace Tank	\$ 4,000	
2020	E10299	PWT_33MIX10299	Non Ionic Poly Mixer 301	Replace Mechanical Drive	\$ 2,250	
2020	E10304	PWT_33MIX10304	Non Ionic Poly Mixer 401	Replace Mechanical Drive	\$ 2,250	
2020	E10292	PWT_33MIX10292	Non-Ionic Poly Mixer	Rehab Rebuild Gearbox	\$ 3,377	
2020	E10129	PWT_25MTR10129	OCL Transfer Pump Motor 1	Replace Motor	\$ 750	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	E10133	PWT_25MTR10133	OCL Transfer Pump Motor 2	Replace Motor	\$ 750	
2020	E10136	PWT_25MTR10136	OCL Transfer Pump Motor 3	Replace Motor	\$ 750	
2020			Permanganate Building SCADA-PLC Sys	Replace SCADA	\$ 33,000	
2020	E10552	PWT_32TNK10552	Phosphoric Acid Tank	Clean and Inspect Tank	\$ 8,500	Contract Work
2020	E10151	PWT_48TNK10151	PWTP Clearwell	Inspect clearwell	\$ 25,000	
2020			Sed Basin 1 Drive Chains	Replace drive chains	\$ 700	
2020	E10328	PWT_50MDR10328	Sed Basin 1 Rake Mech. Drive	Rehab Rebuild Gearbox	\$ 3,377	
2020			Sed Basin 2 Drive Chains	Replace drive chains	\$ 700	
2020			Sed Basin 2 Rake Chains	Replace flight chains	\$ 13,684	
2020			Sed Basin 2 Rake Drive Sprockets	Replace drive sprockets	\$ 24,000	
2020	E10362	PWT_50MIS10362	Sed Basin 2 Rake Flights	Replace rake flights	\$ 13,530	
2020	E10360	PWT_50MDR10360	Sed Basin 2 Rake Mech. Drive	Rehab Rebuild Gearbox	\$ 3,377	
2020			Sed Basin 3 Drive Chains	Replace drive chains	\$ 700	
2020	E10389	PWT_50MDR10389	Sed Basin 3 Rake Mech. Drive	Rehab Rebuild Gearbox	\$ 3,377	
2021	E49920	PWT_75INS49920	10" BFV B/P Sensor 483	Replace sensor	\$ 500	
2021	E49922	PWT_75INS49922	10" BFV B/P Sensor 484	Replace sensor	\$ 500	
2021	E46602	PWT_23VLV46602	1-1/4" Ball Valve (HP-2)	Replace valve	\$ 3,100	
2021	E46604	PWT_23VLV46604	2" Ball Valve (HP-12)	Replace valve	\$ 3,100	
2021	E10659	PWT_15INS10659	Alum Pump Control Panel	Replace Panel	\$ 33,000	
2021	E10017	PWT_15TNK10017	Alum Tank 1	Clean, inspect and repair tank	\$ 8,523	Contract Work
2021	E50340	PWT_15INS50340	Alum Tank 1 Level (PFC/LA-LIT-201)	Replace Level Instrument	\$ 2,500	
2021	E10018	PWT_15TNK10018	Alum Tank 2	Clean and inspect tank	\$ 8,523	
2021	E50343	PWT_15INS50343	Alum Tank 2 Level (PFC/LA-LIT-202)	Replace level instrument	\$ 2,500	
2021	E10019	PWT_15TNK10019	Alum Tank 3	Clean and inspect	\$ 8,523	Contract Work
2021	E50346	PWT_15INS50346	Alum Tank 3 Level (PFC/LA-LIT-203)	Replace level instrument	\$ 2,500	
2021	E10584	PWT_15PMP10584	Alum Transfer Pump	Rehab Rebuild Pump (Wetted P	\$ 2,634	



Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E10664	PWT_15INS10664	Alum Truck Unloading Panel (PFCTUP)	Replace Panel	\$ 33,000	
2021	E52050	PWT_74TNK52050	Backup Generator Buried Fuel Tank	Inspect Tank	\$ 15,000	
2021	E50370	PWT_17FLO50370	Basin 1 B/P Carbon Flow Mtr FIT307	Replace flow meter	\$ 8,000	
2021	E50366	PWT_17FLO50366	Basin 1 Carbon Flow Meter FIT303	Replace flow meter	\$ 8,000	
2021	E50371	PWT_17FLO50371	Basin 2 B/P Carbon Flow Mtr FIT308	Replace flow meter	\$ 8,000	
2021	E50372	PWT_17FLO50372	Basin 3 B/P Carbon Flow Mtr FIT309	Replace flow meter	\$ 8,000	
2021	E50357	PWT_17INS50357	Carbon Bldg Truck Unloading Panel	Replace panel	\$ 33,000	
2021	E50365	PWT_17FLO50365	Carbon Feed Rm Plt Wtr Flow Totaliz	Replace flow totalizer	\$ 2,050	
2021	E50361	PWT_17INS50361	Carbon Tk 1 Level Inst PPAC-LIT201	Replace level instrument	\$ 2,500	
2021	E50364	PWT_17INS50364	Carbon Tk 2 Level Inst PPAC-LIT202	Replace level instrument	\$ 2,500	
2021	E50405	PWT_19INS50405	Cat Poly Batch Tk 1 Level CPLI-231	Replace instrument	\$ 2,500	
2021	E50406	PWT_19INS50406	Cat Poly Batch Tk 2 Level CPLI-232	Replace instrument	\$ 2,500	
2021	E50398	PWT_19INS50398	Cat Poly Control PLC/IO Panel	Replace Panel	\$ 33,000	
2021	E10616	PWT_19FLO10616	Cat Poly Flow Meter FIT301	Replace flow meter	\$ 8,000	
2021	E10568	PWT_19INS10568	Cat Poly Tank Level Inst	Replace level instrument	\$ 2,500	
2021	E10280	PWT_19TNK10280	Cationic Poly Tank	Rehab Paint	\$ 8,523	
2021			Electrical System Testing	Electrical testing	\$ 12,000	
2021	E50331	PWT_79ELC50331	Filter Gallery IO Panel 11UPS	Replace UPS	\$ 3,000	
2021	E50329	PWT_79ELC50329	Filter Gallery IO Panel 7&8 UPS	Replace UPS	\$ 3,000	
2021	E10319	PWT_50MIX10319	Flocculator 1 Flash Mixer	Replace Mechanical Drive	\$ 15,000	
2021	E10348	PWT_50MIX10348	Flocculator 2 Flash Mixer	Replace Mechanical Drive	\$ 15,000	
2021	E46599	PWT_23PMP46599	HP Meter Pump #1 (PHPP-01)	Replace Pump	\$ 1,300	
2021	E46600	PWT_23PMP46600	HP Meter Pump #2 (PHPP-02)	Replace Pump	\$ 1,300	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E46601	PWT_23PMP46601	HP Meter Pump #3 (PHPP-03)	Replace Pump	\$ 1,300	
2021	E50009	PWT_23INS50009	HP Tank Level Inst. (HP-LIT-242)	Replace level instrument	\$ 2,550	
2021	E50008	PWT_23INS50008	HP Tank Temp. Inst. (TIT-586)	Replace temp instrument	\$ 2,100	
2021	E46625	PWT_24VLV46625	LOX 3" Ball Valve (OX-04)	Replace valve	\$ 3,100	Combine with like work at other plants/Contracted work
2021	E46626	PWT_24VLV46626	LOX 3" Ball Valve (OX-05)	Replace valve	\$ 3,100	
2021	E46627	PWT_24VLV46627	LOX 3" Ball Valve (OX-06)	Replace valve	\$ 3,100	
2021	E50012	PWT_24VLV50012	LOX Emergency Shut Off Vlv. (OX-7)	Replace valve	\$ 3,100	
2021	E50017	PWT_24INS50017	LOX Press. Instrument (OX-PIT-103)	Replace press. instrument	\$ 2,550	
2021	E46522	PWT_24TNK46522	LOX Tank #1 (PLOX01)	Paint LOX tank	\$ 10,000	
2021	E46524	PWT_24INS46524	LOX Tank #1 Pressure Transmitter	Replace pressure instr.	\$ 2,550	
2021	E46523	PWT_24TNK46523	LOX Tank #2 (PLOX02)	Paint LOX tank	\$ 10,000	
2021	E46525	PWT_24INS46525	LOX Tank #2 Pressure Transmitter	Replace pressure instr.	\$ 2,550	
2021	E50015	PWT_24INS50015	LOX Temp Instrument (TE-501)	Replace temp. instrument	\$ 2,550	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E46513	PWT_24FLO46513	Mass Flow Meter (OX-FIT-305)	Replace flow meter	\$ 5,000	
2021	E46514	PWT_24FLO46514	Mass Flow Meter (OX-FIT-306)	Replace flow meter	\$ 5,000	
2021	E46515	PWT_24FLO46515	Mass Flow Meter (OX-FIT-307)	Replace flow meter	\$ 5,000	
2021	E49834	PWT_36INS49834	OCW Temp. Instrument	Replace temp. instrument	\$ 2,100	
2021	E46498	PWT_27INS46498	OD D/P Instrument #1 (OD-PDIT-136)	Replace D/P instr.	\$ 2,550	
2021	E46499	PWT_27INS46499	OD D/P Instrument #2 (OD-PDIT-137)	Replace D/P instr.	\$ 2,550	
2021	E46552	PWT_27INS46552	OD Temp. Inst. #1 (OD-TE/TIT-534)	Replace Temp. instr.	\$ 2,100	
2021	E46553	PWT_27INS46553	OD Temp. Inst. #2 (OD-TE/TIT-536)	Replace Temp. instr.	\$ 2,100	
2021	E46519	PWT_27INS46519	OD Temp. Inst. (OD-TIT-531)	Replace Temp. instr.	\$ 2,100	
2021	E46610	PWT_27BLW46610	Off Gas Blower #1 (POGB01)	Replace blower	\$ 15,000	
2021	E49972	PWT_27MTR49972	Off Gas Blower #1 Motor	Replace motor	\$ 750	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E46611	PWT_27BLW46611	Off Gas Blower #2 (POGB02)	Replace blower	\$ 15,000	
2021	E49973	PWT_27MTR49973	Off Gas Blower #2 Motor	Replace motor	\$ 750	
2021	E49979	PWT_26INS49979	Off Gas Press Inst. (OG-PIT-125)	Replace pressure instr.	\$ 2,550	
2021	E49980	PWT_26INS49980	Off Gas Press Inst. (OG-PIT-131)	Replace pressure instr.	\$ 2,550	
2021	E46596	PWT_26VLV46596	Off Gas Vacuum Valve (OG-4)	Replace valve	\$ 6,300	
2021	E46597	PWT_26VLV46597	Off Gas Vacuum Valve (OG-5)	Replace valve	\$ 6,300	
2021	E46598	PWT_26VLV46598	Off Gas Vacuum Valve (OG-6)	Replace valve	\$ 6,300	
2021	E49978	PWT_26VLV49978	Off Gas Vacuum Valve (OG-7)	Replace valve	\$ 6,300	
2021	E48104	PWT_24VLV48104	OZ Gen. #1 LOX Ball Valve (OX-12)	Replace valve	\$ 3,100	
2021	E48105	PWT_24VLV48105	OZ Gen. #2 LOX Ball Valve (OX-13)	Replace valve	\$ 3,100	
2021	E48106	PWT_24VLV48106	OZ Gen. #3 LOX Ball Valve (OX-14)	Replace valve	\$ 3,100	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E45058	PWT_86PMP45058	Ozonated H2O Sample Drain (POCSP01)	Replace pump	\$ 24,000	
2021	E45059	PWT_86PMP45059	Ozonated H2O Sample Drain (POCSP02)	Replace pump	\$ 24,000	
2021			Particle Counter Calibration	Calibrate instrument	\$ 500	Setup at same time as STWP
2021	E10670	PWT_32INS10670	Phosphoric Acid Control Panel PZNCP	Replace panel	\$ 33,000	
2021	E10476	PWT_52PMP10476	Plant Water Pump 2 (PPWP02)	Rehab Rebuild Pump	\$ 17,000	Contract Work
2021	E49914	PWT_52EDR49914	Plant Water Pump 2 VFD	Replace VFD	\$ 20,000	
2021	E10478	PWT_52PMP10478	Plant Water Pump 3 (PPWP03)	Rehab Rebuild Pump	\$ 17,000	Contract Work
2021	E49916	PWT_52EDR49916	Plant Water Pump 3 VFD	Replace VFD	\$ 20,000	
2021	E10477	PWT_52MTR10477	Plant Water Pump Motor 2	Rehab Rewind motor	\$ 1,634	
2021	E10479	PWT_52MTR10479	Plant Water Pump Motor 3	Rehab Rewind Unit	\$ 1,634	
2021	E49840	PWT_52INS49840	PW Pressure Inst. (PW-PIT-188)	Replace pressure instr.	\$ 2,550	
2021	E49832	PWT_52INS49832	PW Suction Press. Inst (PW-PIT-181)	Replace pressure instr.	\$ 2,550	
2021	E49990	PWT_29INS49990	SA Tank Level Inst. (SA-LIT-231)	Replace level instr.	\$ 2,550	
2021	E49982	PWT_29INS49982	SA Tank Temp. Inst. (TE/TIT-580)	Replace temperature instr.	\$ 2,100	
2021	E46536	PWT_29VLV46536	SA Vacuum/Press Relief Valve (SA-2)	Replace valve	\$ 6,300	
2021	E46608	PWT_35MIS46608	SN Air Dryer #1 (PDD01)	Replace air dryer	\$ 2,500	
2021	E46609	PWT_35MIS46609	SN Air Dryer #2 (PDD02)	Replace air dryer	\$ 2,500	
2021	E46606	PWT_35CMP46606	SN Compressor #1 (PSNCMP01)	Replace compressor	\$ 5,500	
2021	E46607	PWT_35CMP46607	SN Compressor #2 (PSNCMP02)	Replace compressor	\$ 5,500	
2021	E46550	PWT_35FLO46550	SN Mass Flow Meter (SN-FIT-346)	Replace flow meter	\$ 5,000	
2021	E46497	PWT_35INS46497	SN Pressure Inst. (SN-PIT-142)	Replace pressure instr.	\$ 2,550	
2021	E46551	PWT_35INS46551	SN Temp. Inst. (SN-TE/TIT-541)	Replace temperature instr.	\$ 2,100	
2021	E46524	PWT_24INS46524	Tank #1 Press. Inst. (LOX-PIT-101)	Replace press. Instrument	\$ 2,550	Contract Work

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E46525	PWT_24INS46525	Tank #2 Press. Inst. (LOX-PIT-102)	Replace press. Instrument	\$ 2,550	
2021	E46620	PWT_26ELC46620	Unit #1 PSU (POZPSU01)	Replace power supply unit	\$ 60,000	
2021	E46621	PWT_26ELC46621	Unit #2 PSU (POZPSU02)	Replace power supply unit	\$ 60,000	
2021	E46622	PWT_26ELC46622	Unit #3 PSU (POZPSU03)	Replace power supply unit	\$ 60,000	
2021	E49107	PWT_24VOP49107	Valve OX-12 Electric Actuator	Replace valve actuator	\$ 10,000	Combine with like work at other plants
2021	E49108	PWT_24VOP49108	Valve OX-13 Electric Actuator	Replace valve actuator	\$ 10,000	
2021	E49107	PWT_24VOP49107	Valve OX-14 Electric Actuator	Replace valve actuator	\$ 10,000	
2021	E50373	PWT_17FLO50373	WWR Carbon B/P Flow Mtr FIT306	Replace flow meter	\$ 8,000	
2021	E50369	PWT_17FLO50369	WWR Carbon Flow Mtr FIT302	Replace flow meter	\$ 8,000	
<b>FY18-21 PWTP TOTAL =</b>					<b>\$3,527,451</b>	

Table 2. Riconada Water Treatment Plant Planned Work Projects

Year	Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	1	E20030	RWT_16TNK20030	Aqua NH4 Storage Tank	Inspect tank thickness	\$3,000	Inspections to be combined with other plants in the same year
2018	2	E50144	RWT_19VLV50144	Cat Poly Tank 1 Outlet Valve	Replace valve and actuator	\$3,100	Planner to purchase spare part
2018	3	E50147	RWT_19VLV50147	Cat Poly Tank 2 Outlet Valve	Replace valve and actuator	\$3,100	
2018	4	E20119	RWT_19PMP20119	Cationic Polymer Pump 1	Replace pump	\$9,000	Order pump & motor together. Contract work out.
2018	5	E20747	RWT_19MTR20747	Cationic Polymer Pump 1 Mtr	Replace motor	\$750	
2018	6	E20749	RWT_19EDR20749	Cationic Polymer Pump 1 VFD	Replace VFD	\$3,000	Contract work out.
2018	7	E20120	RWT_19PMP20120	Cationic Polymer Pump 2	Replace pump	\$9,000	Order pump & motor together. Contract work out.
2018	8	E20748	RWT_19MTR20748	Cationic Polymer Pump 2 Mtr	Replace motor	\$750	
2018	9	E20750	RWT_19EDR20750	Cationic Polymer Pump 2 VFD	Replace VFD	\$3,000	Contract work out
2018	10	E20121	RWT_19PMP20121	Cationic Polymer Pump 3	Replace pump	\$9,000	Order pump & motor together. Contract work out.
2018	11	E20751	RWT_19MTR20751	Cationic Polymer Pump 3 Mtr	Replace motor	\$750	
2018	12	E20752	RWT_19EDR20752	Cationic Polymer Pump 3 VFD	Replace VFD	\$3,000	Contract work out
2018	13	E20122	RWT_18TNK20122	Caustic Tank	Clean, Inspect & Paint	\$15,000	Inspections to be combined with other plants in the same year
2019	1	E20024	RWT_15TNK20024	Alum-Ferric Storage Tank 1	Clean and inspect tank	\$16,000	Inspections to be combined with other plants in the same year
2019	2	E20025	RWT_15TNK20025	Alum-Ferric Storage Tank 2	Clean and Inspect Tank	\$16,000	
2019	3	E20026	RWT_15TNK20026	Alum-Ferric Storage Tank 3	Clean and Inspect Tank	\$16,000	
2019	4	E20030	RWT_16TNK20030	Aqua NH4 Storage Tank	Clean, inspect and repair	\$18,000	
2019	5			Automatic Transfer Switch	Replace ATS	\$10,000	
2019	6	E20117	RWT_19TNK20117	Cat Poly Storage Tank 1	Clean & inspect tank	\$18,000	Inspections to be combined with other plants in the same year
2019	7	E20117	RWT_19TNK20117	Cat Poly Storage Tank 1	Repair and paint tank	\$12,000	

Year	Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	8	E20118	RWT_19TNK20118	Cat Poly Storage Tank 2	Clean & inspect tank	\$18,000	Inspections to be combined with other plants in the same year
2019	9	E20118	RWT_19TNK20118	Cat Poly Storage Tank 2	Repair and paint tank	\$12,000	
2019	10	E20151	RWT_48INS20151	CW East Elevation Meter	Replace I&C	\$5,000	
2019	11	E20161	RWT_48INS20161	CW West Elevation Meter	Replace I&C	\$5,000	
2019	12			Electrical System Testing	Electrical Testing	\$25,000	
2019	13	E20264	RWT_33TNK20264	Non-Ionic Polymer Storage Tank	Clean and inspect tank	\$18,000	Inspections to be combined with other plants in the same year
2019	14	E20264	RWT_33TNK20264	Non-Ionic Polymer Storage Tank	Paint tank	\$18,000	
2019	15	E52075		UPS 1B		\$12,000	
2019	16	E52076		UPS 2B		\$12,000	
2020	1	E20024	RWT_15TNK20024	Alum-Ferric Storage Tank 1	Paint tank	\$5,000	
2020	2	E20025	RWT_15TNK20025	Alum-Ferric Storage Tank 2	Paint tank	\$5,000	
2020	3	E20026	RWT_15TNK20026	Alum-Ferric Storage Tank 3	Paint tank	\$5,000	
2020	4	E20030	RWT_16TNK20030	Aqua NH4 Storage Tank	Inspect tank thickness	\$3,000	Inspections to be combined with other plants in the same year
2020	5	E20625	RWT_85STR20625	Fuel Island	Repair roof	\$40,000	
2020	6	E20411	RWT_77PMP20411	Hot Water Recirc Pump # 6	Replace pump	\$1,200	
2020	7	E20410	RWT_77MIS20410	HVAC Unit - Computer Room	Replace HVAC	\$12,000	
2020	8	E54311	RWT_54INS54311	More Ave Reservoir CL Analyzer	Replace analyzer	\$4,050	
2020	9	E50194	RWT_54INS50194	More Ave Reservoir pH/Temp Analyzer	Replace analyzer	\$2,700	
2020	10	E20100	RWT_17MIS20100	PAC Dust Collector 1	Replace Misc	\$10,000	Contract out if not exact unit
2020	11	E20103	RWT_17MIS20103	PAC Dust Collector 2	Replace Misc	\$10,000	
2020	12	E20111	RWT_17PMP20111	PAC Recirc-Transfer Pump	Replace pump	\$16,000	
2020	13	E20098	RWT_17TNK20098	PAC Storage Tank 1	Clean and inspect	\$9,000	Inspections to be combined with other plants in the same year
2020	14	E20101	RWT_17TNK20101	PAC Storage Tank 2	Clean and inspect	\$9,000	
2020	15	E20782	RWT_52EDR20782	Plant Water Pump 1 VFD	Replace VFD	\$20,000	



Year	Item	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	16	E20784	RWT_52EDR20784	Plant Water Pump 2 VFD	Replace VFD	\$20,000	
2020	17	E20786	RWT_52EDR20786	Plant Water Pump 3 VFD	Replace VFD	\$20,000	
2020	18	E20505	RWT_28INS0008	PP Bldg SCADA/PLC	Replace SCADA	\$33,000	
2020	19	E20189	RWT_74TNK20189	Standby Generator Fuel Tank	Inspect Tank	\$3,000	Inspections to be combined with other plants in the same year
2020	20	E20947	RWT_86PMP20947	Sump Pump	Replace pump	\$1,200	
2020	21	E54286	RWT_54INS54286	West Pipeline pH/Temp. Analyzer	Replace analyzer	\$2,700	
2021	1	E20024	RWT_15TNK20024	Alum-Ferric Storage Tank 1	Clean and inspect tank	\$17,000	Inspections to be combined with other plants in the same year
2021	2	E20025	RWT_15TNK20025	Alum-Ferric Storage Tank 2	Clean and Inspect Tank	\$17,000	
2021	3	E20026	RWT_15TNK20026	Alum-Ferric Storage Tank 3	Clean and Inspect Tank	\$17,000	
2021	4	E20928	RWT_19FLO20928	Cat Poly Combined FLO FE/FIT-301	Replace Flow Meter	\$5,000	
2021	5	E21032	RWT_19PIP21032	Cat Poly Piping	Replace piping	\$50,000	Contract out
2021	6	E20935	RWT_19INS20935	Cat Poly Tank Cntrl. Panel (RCPTCP)	Replace Control Panel	\$25,000	
2021	7	E20146	RWT_48STR20146	Clearwell - East	Inspect clearwell	\$40,000	
2021	8	E20155	RWT_48STR20155	Clearwell - West	Inspect clearwell	\$40,000	
2021	9	E20721	RWT_54INS20721	E. Clearwell Turbidimeter	Replace Instrument	\$3,750	
2021	10			Electrical System Testing	Electrical Testing	\$35,000	
2021	11	E20430	RWT_15INS20430	Local Control Panel 11 Alum/Cat	Replace I&C	\$33,000	Contract out
2021	12	E20267	RWT_33PMP20267	Non-Ionic Poly Blend Recirc Pump	Replace pump	\$8,000	
2021	13	E20465	RWT_28ELC20465	Permanganate Bldg LCP	Replace I&C	\$33,000	
2021	14	E52074	RWT_74ELC52074	Raw Water UPS	Replace batteries	\$12,000	
2021	15	E52073	RWT_74ELC52073	Treated Water UPS	Replace batteries	\$12,000	
<b>FY18-21 RWTP TOTAL =</b>						<b>\$873,050</b>	

Table 3. Santa Teresa Water Treatment Plant Planned Work Projects

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	E30050	SWT_16TNK30050	Aqua NH4 Tank	Inspect tank thickness	\$3,000	
2018	E30329	SWT_19TNK30329	Cationic Poly Mixing Tank 10	Clean, inspect and repair tank	\$8,523	Inspections to be combined with other plants in same year
2018	E42837	SWT_23TNK42837	HP Spill Tank	Inspect tank	\$2,500	
2018	E45041	SWT_23TNK45041	HP Storage Tank	Inspect tank	\$10,000	
2018	E30157	SWT_25MTR30157	OCL Meter Pump 4 Motor	Replace Motor	\$750	
2018	E30160	SWT_25MTR30160	OCL Meter Pump 5 Motor	Replace Motor	\$750	
2018	E43066	SWT_25MTR43066	OCL Meter Pump 6 Motor	Replace motor	\$750	
2018	E30156	SWT_25PMP30156	OCL Meter Pump 4	Replace Pump	\$7,500	
2018	E30159	SWT_25PMP30159	OCL Meter Pump 5	Replace Pump	\$7,500	
2018	E30162	SWT_25PMP30162	OCL Meter Pump 6	Replace Pump	\$7,500	
2018	E30141	SWT_25TNK30141	OCL Storage Tank 2	repair lining	\$25,000	
2018	E42846	SWT_26VLV42846	EOZ Regulating Valve (OG-3)	Replace valve	\$8,200	
2018	E42847	SWT_26VLV42847	WOZ Regulating Valve (OG-10)	Replace valve	\$8,200	
2018	E42838	SWT_29TNK42838	SA Storage Tank (SSAT-01)	Inspect Tank	\$10,000	Inspections to be combined with other plants in same year
2018	E42839	SWT_29TNK42839	SA Spill Tank (SSAT-02)	Inspect tank	\$62,500	
2018	E30344	SWT_33TNK30344	Nonionic Poly Mixing Day Tank 13	Clean, inspect and repair tank	\$8,523	
2018	E30045	SWT_45VOP30045	Air Wash Blower 1 Disch Vlv Act	Replace VOP	\$8,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	E30049	SWT_45VOP30049	Air Wash Blower 2 Disch Vlv Act	Replace VOP	\$8,000	
2018	E30132	SWT_72CMP30132	Plant Air Compressor 1	Replace Compressor	\$40,000	Contract work out
2018	E30134	SWT_72CMP30134	Plant Air Compressor 2	Replace Compressor	\$40,000	
2018	E30133	SWT_72MT30133	Plant Air Compressor 1 Motor	Replace motor	\$2,000	
2018	E30135	SWT_72MTR30135	Plant Air Compressor 2 Motor	Replace motor	\$2,000	
2018			Particle Counter Calibrations	Factory Calibration	\$5,000	Contract work out; combine with PWTP 2017.
2018	E30016	SWT_15MIS30016	Alum - Ferric Strainer Baskets	Replace Valve	\$5,400	
2018	E30105	SWT_17MIX30105	Carbon Mixer - North	Overhaul mixer	\$6,000	Contract work out
2018	E30110	SWT_17MIX30110	Carbon Mixer - South	Overhaul mixer	\$6,000	
2018	E30140	SWT_25PMP30140	OCL Transfer Pump 1	Replace pump	\$12,000	
2018	E30143	SWT_25PMP30143	OCL Transfer Pump 2	Replace pump	\$12,000	
2018	E30146	SWT_25PMP30146	OCL Transfer Pump 3	Replace pump	\$12,000	
2018	E42810	SWT_26MIS42810	OZ Gen. Shell 1 (SOZOG01)	clean shell & dielectrics	\$20,000	
2018	E42811	SWT_26MIS42811	OZ Gen. Shell 2 (SOZOG02)	clean shell & dielectrics	\$20,000	
2018	E42812	SWT_26MIS42812	OZ Gen. Shell 3 (SOZOG03)	clean shell & dielectrics	\$20,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	E42844	SWT_26MIX42844	WOZ Pump Mixer (SSAMIX02)	Rebuild pump/mixer	\$10,000	
2018	E42845	SWT_26MIX42845	EOZ Pump Mixer (SSAMIX01)	Rebuild pump/mixer	\$10,000	
2018	E42794	SWT_26PMP42794	EOZ Ozonated Drain Pump (SOWP-01)	Overhaul pump	\$5,000	
2018			Electrical System Testing	Electrical System Testing	\$35,000	
2018			Electrical Testing	Electrical testing	\$7,000	
2019	E30773	SWT_03FLO30773	Inflow Meter	Replace I&C	\$30,000	
2019	E30781	SWT_03VOP30781	Sleeve Valve V-I-4 Actuator	Replace VOP	\$12,000	
2019	E30002	SWT_15INS30002	Alum Tank 1 - Level Transmitter	Replace I&C	\$4,500	
2019	E30005	SWT_15INS30005	Alum Tank 2 - Level Transmitter	Replace I&C	\$4,500	
2019	E30008	SWT_15INS30008	Alum Tank 3 - Level Transmitter	Replace I&C	\$4,500	
2019	E30015	SWT_15PMP30015	Alum Tank Transfer Pump	Replace Pump	\$18,000	
2019	E30000	SWT_15TNK30000	Alum Tank 1 - T3 Liquid Alum	Clean, inspect and repair tank	\$20,000	Inspection to be combined with other plants in same year
2019	E30006	SWT_15TNK30006	Alum Tank 3	Clean, inspect and repair tank	\$20,000	
2019	E30001	SWT_15VOP30001	Alum Tank 1 - Supply Valve Mov	Replace VOP	\$6,750	
2019	E30004	SWT_15VOP30004	Alum Tank 2 - Supply Valve Mov	Replace VOP	\$6,750	
2019	E30007	SWT_15VOP30007	Alum Tank 3 - Supply Valve Mov	Replace VOP	\$6,750	
2019	E30050	SWT_16TNK30050	Aqua NH4 Tank	Clean, inspect and repair	\$18,000	Inspection to be combined with other plants in same year
2019	E30112	SWT_18TNK30112	Caustic Tank	Clean, inspect and repair tank	\$21,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	E30326	SWT_19TNK30326	Cationic Poly Tank	Clean, inspect and repair tank	\$16,000	
2019	E30331	SWT_19TNK30331	Cationic Poly Mixing Tank 11	Clean, inspect and repair tank	\$8,523	
2019	E30815	SWT_25PIP30815	OCL Feed Piping	Replace Piping	\$75,000	Contract work out
2019	E42793	SWT_26PMP42793	WOZ Ozonated Drain Pump (SOWP-04)	Overhaul pump	\$9,000	
2019	E30342	SWT_33MIX30342	Nonionic Poly Tank 12 Mixer	Replace Mechanical Drive	\$15,000	Order motor with mixer (line item #124, E30343)
2019	E30343	SWT_33MTR30343	Nonionic Poly Tank 12 Mixer Motor	Replace Motor	\$750	Inspection to be combined with other plants in same year
2019	E30345	SWT_33MIX30345	Nonionic Poly Mix Day Tank 13 Mixer	Replace Mechanical Drive	\$15,000	
2019	E30341	SWT_33TNK30341	Nonionic Poly Storage Tank 12	Clean, inspect and repair tank	\$20,000	
2019	E50630	SWT_46FLO50630	Backwash Flow Meter	Replace	\$30,000	
2019	E30081	SWT_46VLV30081	Filter 1W Backwash Vlv V-F-7 Act	Replace actuator	\$10,000	
2019	E30070	SWT_46VOP30070	Filter 1E Backwash Vlv V-F-41 Act	Replace actuator	\$10,000	
2019	E30072	SWT_46VOP30072	Filter 2E Backwash Vlv V-F-42 Act	Replace actuator	\$10,000	
2019	E30074	SWT_46VOP30074	Filter 3E Backwash Vlv V-F-43 Act	Replace actuator	\$10,000	
2019	E30076	SWT_46VOP30076	Filter 4E Backwash Vlv V-F-44 Act	Replace actuator	\$10,000	
2019	E30078	SWT_46VOP30078	Filter 5E Backwash Vlv V-F-45 Act	Replace actuator	\$10,000	
2019	E30080	SWT_46VOP30080	Filter 6E Backwash Vlv V-F-46 Act	Replace actuator	\$10,000	
2019	E30082	SWT_46VOP30082	Filter 1W Backwash Valve V-F-7	Replace VOP	\$10,000	
2019	E30084	SWT_46VOP30084	Filter 2W Backwash Vlv V-F-8 Act	Replace actuator	\$10,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	E42738	SWT_48STR42738	Clearwell	Rehab Re-coat	\$100,000	Contract work out
2019	E30124	SWT_48VOP30124	Clearwell Drain Valve-Actuator	Replace VOP	\$7,000	
2019	E30125	SWT_48VOP30125	Clearwell Outlet Valve-Actuator	Replace VOP	\$7,000	
2019	E30127	SWT_48VOP30127	Bypass Sluice Gate Actuator	Replace VOP	\$10,000	
2019	E30129	SWT_48VOP30129	Sluice Gate North Actuator	Replace VOP	\$10,000	
2019	E30131	SWT_48VOP30131	Sluice Gate South Actuator	Replace VOP	\$10,000	
2019	E30210	SWT_49INS30210	Filter 1E Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30220	SWT_49INS30220	Filter 2E Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30229	SWT_49INS30229	Filter 3E Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30239	SWT_49INS30239	Filter 4E Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30249	SWT_49INS30249	Filter 5E Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30259	SWT_49INS30259	Filter 6E Head Loss Filter Lev	Replace I&C	\$3,500	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	E30272	SWT_49INS30272	Filter 1W Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30282	SWT_49INS30282	Filter 2W Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30292	SWT_49INS30292	Filter 3W Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30302	SWT_49INS30302	Filter 4W Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30312	SWT_49INS30312	Filter 5W Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30322	SWT_49INS30322	Filter 6W Head Loss Filter Lev	Replace I&C	\$3,500	
2019	E30202	SWT_49VOP30202	East Filtered Water Iso Vlv Act	Replace VOP	\$10,000	
2019	E30264	SWT_49VOP30264	West Filtered Water Iso Vlv Act	Replace VOP	\$10,000	
2019	E30676	SWT_50STR30676	Floc - Sed Basin 1 - East	Rehab Re-coat	\$500,000	Contract work out
2019	E30442	SWT_51MTR30422	WWR Pump P-15 Motor	Replace motor	\$3,750	
2019	E30444	SWT_51MTR30444	WWR Pump P-16 Motor	Replace motor	\$3,750	
2019	E30446	SWT_51MTR30446	WWR Pump P-17 Motor	Replace motor	\$3,750	
2019	E30441	SWT_51PMP30441	WWR Pump P-15	Replace pump	\$30,000	
2019	E30443	SWT_51PMP30443	WWR Pump P-16	Replace pump	\$30,000	
2019	E30445	SWT_51PMP30445	WWR Pump P-17	Replace pump	\$30,000	
2019	E30453	SWT_51STR30453	Washwater Recovery Pond East	Clean, inspect & Repair Pond	\$10,000	Inspection to be combined with other plants in

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	E30456	SWT_51STR30456	Washwater Recovery Pond West	Clean, inspect & Repair Pond	\$10,000	same year. Ops to wash out, eng & maint. to inspect.
2019	E30414	SWT_52TNK30414	Plant Water Hydro Tank	Inspect tank thickness	\$3,000	Inspection to be combined with other plants in same year
2019	E30497	SWT_53MDR30497	Sludge Cross Collector 1W ME-32	Replace Mechanical Drive	\$60,000	
2019	E30505	SWT_53MDR30505	Sludge Cross Collector 2W ME-37	Replace Mechanical Drive	\$60,000	
2019	E30541	SWT_53VLV30541	Sludge Pond 8 Manual Fill Valve	Replace Valve	\$3,000	Contract work out.
2019	E30544	SWT_53VLV30544	Sludge Pond 9 Manual Fill Valve	Replace Valve	\$3,000	
2019	E30546	SWT_53VLV30546	Sludge Pond 10 Manual Drain Valve	Replace Valve	\$3,000	
2019	E30547	SWT_53VLV30547	Sludge Pond 10 Manual Fill Valve	Replace Valve	\$3,000	
2019	E30187	SWT_74MCC30178	MCC - BW Bldg 5M	Replace Elec Equip	\$75,000	Propose combining all MCC replacement in a small capitol project
2019	E30184	SWT_74MCC30184	MCC - 1M	Replace Elec Equip	\$6,000	
2019	E30185	SWT_74MCC30185	MCC - Electrical Lineup DSB	Replace Elec Equip	\$75,000	
2019	E30186	SWT_74MCC30186	MCC - BW Bldg 2G	Replace Elec Equip	\$75,000	



Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	E30189	SWT_74MCC30189	MCC - East Floe/Sed 3M	Replace Elec Equip	\$180,000	
2019	E30190	SWT_74MCC30190	MCC - West Floe/Sed 2M	Replace Elec Equip	\$180,000	
2019	E30191	SWT_74MCC30191	MCC - Gen Bldg 1G	Replace Elec Equip	\$90,000	
2019	E30192	SWT_74MCC30192	MCC - Gen Bldg 7M	Replace Elec Equip	\$90,000	
2019	E30195	SWT_74MCC30195	MCC - Washwater BL	Replace Elec Equip	\$120,000	
2019	E30361	SWT_77PMP30361	Chilled Water Pump	Rebuild pump	\$5,000	
2019	E30833	SWT_85PIP30833	Irrigation	Replace	\$20,000	
2019	E30435	GPP_02ELC30435	MCC - Graystone PS	Replace Elec Equip	\$60,000	Propose combining all MCC replacement in a small capitol project
2019	E30829	SWT_87INS30829	Evacuation Alarm System	Replace	\$10,000	
2019	E30474	SWT_53MDR30474	ME-38 Train Wear Strip Material	Replace wear strip	\$5,000	
2019	E30474	SWT_53MDR30474	ME-39 Train Wear Strip Material	Replace wear strip	\$5,000	
2019	E30476	SWT_53MDR30476	ME-40 Train Wear Strip Material	Replace wear strip	\$5,000	
2019	E30476	SWT_53MDR30476	ME-41 Train Wear Strip Material	Replace wear strip	\$5,000	
2019	E30483	SWT_53MDR30483	ME-43 Train Drive Chain	Replace Drive Chain	\$425	
2019	E30483	SWT_53MDR30483	ME-44 Train Drive Chain	Replace Drive Chain	\$425	
2020	E30050	SWT_16TNK30050	Aqua NH4 Tank	Inspect tank thickness	\$3,000	Inspections to be combined with other plants in same year

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	E30106	SWT_17MTR30106	Carbon Mixer Motor - North	Replace motor	\$3,750	
2020	E30111	SWT_17MTR30111	Carbon Mixer Motor - South	Replace motor	\$3,750	
2020	E30104	SWT_17TNK30104	Carbon Tank - North	Clean and inspect tank	\$5,000	Inspections to be combined with other plants in same year
2020	E30109	SWT_17TNK30109	Carbon Tank - South	Clean and inspect tank	\$5,000	
2020	E30138	SWT_25TNK30138	OCL Storage Tank 1	repair lining	\$25,000	
2020	E30144	SWT_25TNK30144	OCL Storage Tank 3	Repair lining	\$25,000	
2020	E42810	SWT_26MIS42810	OZ Gen. Shell 1 (SOZOG01)	clean shell & dielectrics	\$20,000	
2020	E42811	SWT_26MIS42811	OZ Gen. Shell 2 (SOZOG02)	clean shell & dielectrics	\$20,000	
2020	E42812	SWT_26MIS42812	OZ Gen. Shell 3 (SOZOG03)	clean shell & dielectrics	\$20,000	
2020	E30234	SWT_49VOP30234	Filter 4E Effluent Vlv V-F-57 Act	Replace VOP	\$6,750	
2020	E30244	SWT_49VOP30244	Filter 5E Effluent Vlv V-F-58 Act	Replace VOP	\$6,750	
2020	E30254	SWT_49VOP30254	Filter 6E Effluent Vlv V-F-59 Act	Replace VOP	\$6,750	
2020	E46000	SWT_58PMP46000	WWC Poly Metering Pump #1	Replace pump	\$1,300	
2020	E46001	SWT_58PMP46001	WWC Poly Metering Pump #2	Replace pump	\$1,300	
2020	E30460	SWT_53MTR30460	Sludge Transfer Pump P-6 Motor	Replace motor	\$1,200	
2020	E30462	SWT_53MTR30462	Sludge Transfer Pump P-7 Motor	Replace motor	\$1,200	
2020	E30519	SWT_53VLV30519	Sludge Pond 1 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30522	SWT_53VLV30522	Sludge Pond 2 Manual Drain Valve	Replace Valve	\$3,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	E30525	SWT_53VLV30525	Sludge Pond 3 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30528	SWT_53VLV30528	Sludge Pond 4 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30531	SWT_53VLV30531	Sludge Pond 5 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30534	SWT_53VLV30534	Sludge Pond 6 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30537	SWT_53VLV30537	Sludge Pond 7 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30540	SWT_53VLV30540	Sludge Pond 8 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30543	SWT_53VLV30543	Sludge Pond 9 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30558	SWT_53VLV30558	Sludge Pond 14 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30559	SWT_53VLV30559	Sludge Pond 14 Manual Fill Valve	Replace Valve	\$3,000	
2020	E30561	SWT_53VLV30561	Sludge Pond 15 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30562	SWT_53VLV30562	Sludge Pond 15 Manual Fill Valve	Replace Valve	\$3,000	
2020	E30564	SWT_53VLV30564	Sludge Pond 16 Manual Drain Valve	Replace Valve	\$3,000	
2020	E30565	SWT_53VLV30565	Sludge Pond 16 Manual Fill Valve	Replace Valve	\$3,000	
2020			Particle Counter Calibrations	Factory Calibration	\$4,800	
2020	E30267	SWT_49VOP30267	Filter 1W Effluent Vlv V-F-20 Act	Replace STWTP WEST FILTER #1 E	\$8,000	
2020	E30277	SWT_49VOP30277	Filter 2W Effluent Vlv V-F-21 Act	Replace VOP	\$6,750	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	E30741	SWT_50STR30741	Floc - Sed Basin 2 - West	Recoat basin	\$500,000	
2020	E30474	SWT_53MDR30474	Sludge Rake Drive 1E ME-38/39	Replace Mechanical Drive	\$15,000	
2020	E30476	SWT_53MDR30476	Sludge Rake Drive 1E ME-40/41	Replace Mechanical Drive	\$15,000	
2020	E30478	SWT_53MDR30478	Sludge Cross Collector 1E ME-42	Replace Mechanical Drive	\$15,000	
2020	E30483	SWT_53MDR30483	Sludge Rake Drive 2E ME-43/44	Replace Mechanical Drive	\$15,000	
2020	E30485	SWT_53MDR30485	Sludge Rake Drive 2E ME-45/46	Replace Mechanical Drive	\$15,000	
2020	E30487	SWT_53MDR30487	Sludge Cross Collector 2E ME-47	Replace Mechanical Drive	\$15,000	
2020	E30475	SWT_53MTR30475	Sludge Rake Drive Motor ME-38/39	Replace motor	\$1,200	
2020	E30477	SWT_53MTR30477	Sludge Rake Drive Motor ME-40/41	Replace motor	\$1,200	
2020	E30479	SWT_53MTR30479	Sludge Cross Collector ME-42 Motor	Replace Motor	\$1,200	
2020	E30484	SWT_53MTR30484	Sludge Rake Drive ME-43/44 Motor	Replace Motor	\$750	
2020	E30486	SWT_53MTR30486	Sludge Rake Drive ME-45/46 Motor	Replace Motor	\$750	
2020	E30488	SWT_53MTR30488	Sludge Cross Collector ME-47 Motor	Replace Motor	\$1,200	
2020	E30459	SWT_53PMP30459	Sludge Transfer Pump P-6	Replace Pump	\$20,000	
2020	E30461	SWT_53PMP30461	Sludge Transfer Pump P-7	Replace Pump	\$20,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	E30469	SWT_53STR30469	Pig Launching STA 1	Overhaul vault	\$10,000	
2020	E30470	SWT_53STR30470	Pig Launching STA 2	Overhaul vault	\$10,000	
2020	E30471	SWT_53STR30471	Pig Launching STA 3	Overhaul vault	\$10,000	
2020	E30472	SWT_53STR30472	Pig Launching STA 4	Overhaul vault	\$10,000	
2020	E30473	SWT_53STR30473	Pig Launching STA 5	Overhaul vault	\$10,000	
2020	E30480	SWT_53STR30480	Underflow Vault Basin 1 East	Overhaul Vault	\$8,000	
2020	E30489	SWT_53STR30489	Underflow Vault Basin 2 East	Overhaul Vault	\$8,000	
2020	E30498	SWT_53STR30498	Underflow Vault Basin 1 West	Overhaul vault	\$4,000	
2020	E30507	SWT_53STR30507	Underflow Vault Basin 2 West	Overhaul vault	\$4,000	
2020	E30513	SWT_53VLV30513	Sludge Decant Pump Guard Valve 1	Replace Valve	\$1,800	
2020	E30517	SWT_53VLV30517	Sludge Decant Pump Guard Valve 2	Replace Valve	\$1,800	
2020	E30520	SWT_53VLV30520	Sludge Pond 1 Manual Fill Valve	Replace Valve	\$3,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	E30523	SWT_53VLV30523	Sludge Pond 2 Manual Fill Valve	Replace Valve	\$3,000	
2020	E30526	SWT_53VLV30526	Sludge Pond 3 Manual Fill Valve	Replace Valve	\$3,000	
2020	E30529	SWT_53VLV30529	Sludge Pond 4 Manual Fill Valve	Replace Valve	\$3,000	
2020	E30566	SWT_54INS30566	Chlorine Analyzer - East Coagulated	Replace I&C	\$4,050	
2020	E30567	SWT_54INS30567	Chlorine Analyzer - East Filtered	Replace I&C	\$4,050	
2020	E30568	SWT_54INS30568	Chlorine Analyzer - East Settled	Replace I&C	\$4,050	
2020	E30569	SWT_54INS30569	Chlorine Analyzer - West Coagulated	Replace I&C	\$4,050	
2020	E30570	SWT_54INS30570	Chlorine Analyzer - West Filtered	Replace I&C	\$4,050	
2020	E30571	SWT_54INS30571	Chlorine Analyzer - West Settled	Replace I&C	\$4,050	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	E30572	SWT_54INS30572	Chlorine Analyzer - Graystone	Replace I&C	\$4,050	
2020	E30573	SWT_54INS30573	Chlorine Analyzer - Snell	Replace I&C	\$4,050	
2020	E45140	SWT_24INS45140	Ambient O2 Analyzer (AIT-726-East)	Replace O2 analyzer	\$3,000	
2020	E43072	SWT_17EDR43072	Carbon Pump 1 VFD	Replace VFD	\$3,000	
2020	E43073	SWT_17EDR43073	Carbon Pump 2 VFD	Replace VFD	\$3,000	
2020	E43074	SWT_17EDR43074	Carbon Pump 3 VFD	Replace VFD	\$3,000	
2020	E30695	SWT_50STR30695	Floc - Sed Basin 2 - East	Recoate basin	\$500,000	
2020	E30492	SWT_53MDR30492	ME-28 Train Drive Chain	Replace drive chain	\$425	
2020	E30492	SWT_53MDR30492	ME-29 Train Drive Chain	Replace drive chain	\$425	
2020	E30494	SWT_53MDR30494	ME-30 Train Drive Chain	Replace drive chain	\$425	
2020	E30494	SWT_53MDR30494	ME-31 Train Drive Chain	Replace drive chain	\$425	
2020	E30501	SWT_53MDR30501	ME-33 Train Chain	Replace flight chain	\$10,340	Coordinate work after basin coating project
2020	E30501	SWT_53MDR30501	ME-33 Train Drive Chain	Replace drive chain	\$425	
2020	E30501	SWT_53MDR30501	ME-33 Train Wear Strip Material	Replace wear strip	\$1,760	
2020	E30501	SWT_53MDR30501	ME-34 Train Chain	Replace flight chain	\$10,340	
2020	E30501	SWT_53MDR30501	ME-34 Train Drive Chain	Replace drive chain	\$425	
2020	E30501	SWT_53MDR30501	ME-34 Train Wear Strip Material	Replace wear strip	\$1,760	
2020	E30503	SWT_53MDR30503	ME-35 Train Chain	Replace flight chain	\$10,340	
2020	E30503	SWT_53MDR30503	ME-35 Train Drive Chain	Replace drive chain	\$425	
2020	E30503	SWT_53MDR30503	ME-35 Train Wear Strip Material	Replace wear strip	\$1,760	
2020	E30503	SWT_53MDR30503	ME-36 Train Chain	Replace flight chain	\$10,340	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	E30503	SWT_53MDR30503	ME-36 Train Drive Chain	Replace drive chain	\$425	
2020	E30503	SWT_53MDR30503	ME-36 Train Wear Strip Material	Replace wear strip	\$1,760	
2020	E30474	SWT_53MDR30474	ME-38 Train Drive Chain	Replace drive chain	\$425	
2020	E30474	SWT_53MDR30474	ME-39 Train Drive Chain	Replace drive chain	\$425	
2020	E30476	SWT_53MDR30476	ME-40 Train Drive Chain	Replace drive chain	\$425	
2020	E30476	SWT_53MDR30476	ME-41 Train Drive Chain	Replace drive chain	\$425	
2020	E30330	SWT_19MIX30330	Cationic Poly Tank 10 Mixer	Replace mixer	\$4,500	
2020	E30332	SWT_19MIX30332	Cationic Poly Tank 11 Mixer	Replace mixer	\$4,500	
2020	E30086	SWT_46VOP30086	Filter 3W Backwash Vlv V-F-9 Act	Replace actuator	\$7,000	
2020	E30088	SWT_46VOP30088	Filter 4W Backwash Vlv V-F-10 Act	Replace actuator	\$7,000	
2020	E30512	SWT_53VLV30512	Sludge Decant Pump Check Valve 1	Replace	\$1,000	
2020	E30516	SWT_53VLV30516	Sludge Decant Pump Check Valve 2	Replace	\$1,000	
2020	E45154	SWT_29PMP45154	SA Metering Pump 1 VFD	Replace VFD	\$3,000	
2020	E45156	SWT_29PMP45156	SA Metering Pump 2 VFD	Replace VFD	\$3,000	
2020	E45157	SWT_29PMP45157	SA Metering Pump 3 VFD	Replace VFD	\$3,000	
2020	E30348	SWT_33MTR30348	Nonionic Poly Transfer Pump Motor	Replace Motor	\$750	
2020	E30347	SWT_33PMP30347	Nonionic Poly Transfer Pump	Replace Pump	\$2,250	
2020			Electrical System Testing	Electrical System Testing	\$35,000	
2020			Electrical Testing	Electrical testing	\$7,000	



Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E30096	SWT_17MTR30096	Carbon Pump 1 Motor	Replace motor	\$750	
2021	E30098	SWT_17MTR30098	Carbon Pump 2 Motor	Replace motor	\$750	
2021	E30100	SWT_17MTR30100	Carbon Pump 3 Motor	Replace motor	\$750	
2021	E30095	SWT_17PMP30095	Carbon Pump 1	Replace pump	\$6,000	
2021	E30097	SWT_17PMP30097	Carbon Pump 2	Replace pump	\$6,000	
2021	E30099	SWT_17PMP30099	Carbon Pump 3	Replace pump	\$6,000	
2021	E45063	SWT_24INS45063	Oxygen Gas Temp. Inst. (TIT-501-OZ)	Replace temperature instr.	\$2,100	
2021	E45493	SWT_24INS45493	LOX Press. Inst. (PIT-101-LOX)	Replace pressure instr.	\$2,550	
2021	E45000	SWT_24TNK45000	LOX Tank 1	Paint tank	\$10,000	
2021	E45001	SWT_24TNK45001	LOX Tank 2	Paint tank	\$10,000	
2021	E42826	SWT_26FLO42826	Mass Flow Meter (OZ-FIT-311)	Replace flow meter	\$5,000	
2021	E42828	SWT_26FLO42828	Mass Flow Meter (OZ-FIT-331)	Replace flow meter	\$5,000	
2021	E42872	SWT_26FLO42872	Mass Flow Meter (OZ-FIT-321)	Replace flow meter	\$5,000	
2021	E45113	SWT_26FLO45113	West OZ Gas Flow Meter	Replace flow meter	\$5,000	
2021	E45122	SWT_26FLO45122	East OZ Gas Flow Meter	Replace flow meter	\$5,000	
2021	E45088	SWT_26INS45088	WOZ Off Gas Temp. (TE/TIT-501-WOZD)	Replace temperature instr.	\$2,100	
2021	E45488	SWT_26INS45488	EOZ Press. Inst. (PIT-111-EOZ)	Replace pressure instr.	\$2,550	
2021	E45489	SWT_26INS45489	WOZ Press. Inst. (PIT-111-WOZ)	Replace pressure instr.	\$2,550	
2021	E45490	SWT_26INS45490	WOZ Press. Inst. (PIT-116-WOZ)	Replace pressure instr.	\$2,550	
2021	E45491	SWT_26INS45491	EOZ Press. Inst. (PIT-116-EOZ)	Replace pressure instr.	\$2,550	
2021	E45492	SWT_26INS45492	OGB Press. Inst. (PIT-101-OZ)	Replace pressure instr.	\$2,550	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E46479	SWT_26INS46479	EOZ Contactor Level (LIT-204-EOW)	Replace level instr.	\$2,550	
2021	E46481	SWT_26INS46481	WOZ Contactor Level (LIT-204-WOW)	Replace level instr.	\$2,550	
2021	E42791	SWT_26PMP42791	EOZ Underdrain Pump (SUDP-01)	Overhaul pump	\$5,000	
2021	E42792	SWT_26PMP42792	WOZ Underdrain Pump (SUDP-02)	Overhaul pump	\$5,000	
2021	E42848	SWT_26VLV42848	EOZ CA Reg. Valve (CA-4)	Replace valve	\$3,200	
2021	E42849	SWT_26VLV42849	EOZ CA Reg. Valve (CA-5)	Replace valve	\$3,200	
2021	E42851	SWT_26VLV42851	OZ Gen Air Press. Reg. Valve (CA-1)	Replace valve	\$3,200	
2021	E49881	SWT_26VLV49881	East OZ VAR (OG-4)	Replace valve	\$6,300	
2021	E49882	SWT_26VLV49882	East OZ VAR (OG-5)	Replace valve	\$6,300	
2021	E49883	SWT_26VLV49883	East OZ VAR (OG-6)	Replace valve	\$6,300	
2021	E49884	SWT_26VLV49884	East OZ VAR (OG-7)	Replace valve	\$6,300	
2021	E49885	SWT_26VLV49885	West OZ VAR (OG-11)	Replace valve	\$6,300	
2021	E49886	SWT_26VLV49886	West OZ VAR (OG-12)	Replace valve	\$6,300	
2021	E49887	SWT_26VLV49887	West OZ VAR (OG-13)	Replace valve	\$6,300	
2021	E49888	SWT_26VLV49888	West OZ VAR (OG-14)	Replace valve	\$6,300	
2021	E45132	SWT_27INS45132	Off Gas Temp. (TE/TIT-501-EOZD)	Replace temperature instr.	\$2,100	
2021	E45186	SWT_27INS45186	EOZ Temp Unit 1 (TE/TIT-511A-EOZD)	Replace temperature instr.	\$2,100	
2021	E45187	SWT_27INS45187	EOZ Temp Unit 2 (TE/TIT-521A-EOZD)	Replace temperature instr.	\$2,100	
2021	E45188	SWT_27INS45188	WOZ Temp Unit 1 (TE/TIT-511A-WOZD)	Replace temperature instr.	\$2,100	
2021	E45189	SWT_27INS45189	WOZ Temp Unit 2 (TE/TIT-521A-WOZD)	Replace temperature instr.	\$2,100	
2021	E45190	SWT_27INS45190	EOZ D/P Inst. Unit 1(PDIT-111-EOZD)	Replace pressure instr.	\$2,550	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E45191	SWT_27INS45191	EOZ D/P Inst. Unit 2(PDIT-121-EOZD)	Replace pressure instr.	\$2,550	
2021	E45192	SWT_27INS45192	WOZ D/P Inst. Unit 1(PDIT-121-WOZD)	Replace pressure instr.	\$2,550	
2021	E45193	SWT_27INS45193	WOZ D/P Inst. Unit 1(PDIT-111-WOZD)	Replace pressure instr.	\$2,550	
2021	E30630	SWT_28INS30630	PP Bldg MUX 14	Replace I&C	\$33,000	
2021	E45151	SWT_29FLO45151	SA Mass Flow Meter (FE/FIT-301-SA)	Replace flow meter	\$5,000	
2021	E45152	SWT_29FLO45152	SA Mass Flow Meter (FE/FIT-302-SA)	Replace flow meter	\$5,000	
2021	E46486	SWT_29INS46486	SA Tank Level Inst. (LIT-201-SA)	Replace level instr.	\$2,550	
2021	E49894	SWT_29INS49894	SA Tank Temp. Inst. (TE/TIT-504-SA)	Replace temperature instr.	\$2,100	
2021	E49895	SWT_29INS49895	SA Spill Tank Level (LE-207-SA)	replace level instr.	\$2,550	
2021	E42861	SWT_29PMP42861	SA Sump Pump (SSAP-06)	Replace pump	\$24,000	
2021	E45154	SWT_29PMP45154	SA Metering Pump 1 (SSAP01)	Replace pump	\$6,000	
2021	E45156	SWT_29PMP45156	SA Metering Pump 2 (SSAP02)	Replace pump	\$6,000	
2021	E45157	SWT_29PMP45157	SA Metering Pump 3 (SSAP03)	Replace pump	\$6,000	
2021	E42850	SWT_29VLV42850	SA CA Regulating Valve (CA-6)	Replace valve	\$3,200	
2021	E46484	SWT_34INS46484	OZQ Tnk 1 Level Inst. (LIT-201-OQA)	Replace level instr.	\$2,550	
2021	E49868	SWT_34INS49868	OZQ Tnk 2 Level Inst. (LIT-202-OQA)	Replace level instr.	\$2,550	
2021	E45003	SWT_34PMP45003	OQA Metering Pump 1 (SOQAP01)	Replace Pump	\$6,000	
2021	E45004	SWT_34PMP45004	OQA Metering Pump 2 (SOQAP02)	Replace Pump	\$6,000	
2021	E45006	SWT_34PMP45006	OQA Metering Pump 3 (SOQAP03)	Replace Pump	\$6,000	
2021	E45007	SWT_34PMP45007	OQA Metering Pump 4 (SOQAP04)	Replace Pump	\$6,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E45008	SWT_34PMP45008	OQA Metering Pump 5 (SOQAP05)	Replace Pump	\$6,000	
2021	E45002	SWT_34VLV45002	OQA CA Unloading Sta. Valve (CA-8)	Replace valve	\$3,200	
2021	E45020	SWT_34VLV45020	OQA Tank 1 Outlet Valve (OQA-12)	Replace valve	\$500	
2021	E45022	SWT_34VLV45022	OQA Tank 2 Outlet Valve (OQA-13)	Replace valve	\$500	
2021	E42775	SWT_35CMP42775	SN Compressor #1	Replace compressor	\$5,500	
2021	E42776	SWT_35CMP42776	SN Compressor #2	Replace compressor	\$5,500	
2021	E45194	SWT_35FLO45194	SN Mass Flow Meter (FIT-301-SN)	Replace flow meter	\$5,000	
2021	E42863	SWT_35INS42863	SN Press. Inst. (PIT-105-SN)	Replace pressure instr.	\$2,550	
2021	E45195	SWT_35INS45195	SN Temp. Inst. (TIT-301-SN)	Replace temperature instr.	\$2,100	
2021	E42777	SWT_35MIS42777	SN Air Dryer #1	Replace air dryer	\$2,500	
2021	E42778	SWT_35MIS42778	SN Air Dryer #2	Replace air dryer	\$2,500	
2021	E30203	SWT_49STR30203	Filter 1 East	Recoat filter tank	\$50,000	
2021	E30213	SWT_49STR30213	Filter 2 East	Recoat filter tank	\$50,000	
2021	E30232	SWT_49STR30232	Filter 4 East	Recoat filter tank	\$50,000	
2021	E30242	SWT_49STR30242	Filter 5 East	Recoat filter tank	\$50,000	
2021	E30252	SWT_49STR30252	Filter 6 East	Recoat filter tank	\$50,000	
2021	E30838	SWT_49STR30838	Filter 3 East	Recoat filter tank	\$50,000	
2021	E30667	SWT_50FLO30667	Poly Floc Mag Meter	Replace flow meter	\$5,000	
2021	E30671	SWT_50MTR30671	Gas Master Motor	Replace motor	\$1,200	
2021	E30671	SWT_50MTR30671	Gas Master Motor	Replace motor	\$1,200	
2021	E30212	SWT_54INS30212	Filter 1E Turbidimeter	Replace instrument	\$5,000	
2021	E30222	SWT_54INS30222	Filter 2E Turbidimeter	Replace instrument	\$5,000	
2021	E30231	SWT_54INS30231	Filter 3E Turbidimeter	Replace instrument	\$5,000	
2021	E30241	SWT_54INS30241	Filter 4E Turbidimeter	Replace instrument	\$5,000	
2021	E30251	SWT_54INS30251	Filter 5E Turbidimeter	Replace instrument	\$5,000	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E30261	SWT_54INS30261	Filter 6E Turbidimeter	Replace instrument	\$5,000	
2021	E45175	SWT_58EDR45175	WWC Return Pump (SCWWP-01) VFD-11	Replace VFD	\$20,000	
2021	E45176	SWT_58EDR45176	WWC Return Pump (SCWWP-02) VFD-12	Replace VFD	\$20,000	
2021	E45177	SWT_58EDR45177	WWC Return Pump (SCWWP-03) VFD-13	Replace VFD	\$20,000	
2021	E45178	SWT_58EDR45178	WWC Return Pump (SCWWP-04) VFD-14	Replace VFD	\$20,000	
2021	E49874	SWT_58INS49874	Wet Well Level Inst. (LE/LIT-FWR)	Replace level instr.	\$2,550	
2021	E46217	SWT_58MDR46217	Longitudinal Collector (SWWCSL01)	Rebuild mechanical drive	\$3,376	
2021	E46218	SWT_58MDR46218	Cross Collector (SWWCSL02)	Rebuild mechanical drive	\$3,376	
2021	E46219	SWT_58MDR46219	Longitudinal Collector (SWWCSL03)	Rebuild mechanical drive	\$3,376	
2021	E46220	SWT_58MDR46220	Cross Collector (SWWCSL04)	Rebuild mechanical drive	\$3,376	
2021	E46211	SWT_58MIX46211	WWC Floc Mixer (SWWCFL01)	Overhaul mixer	\$2,000	
2021	E46212	SWT_58MIX46212	WWC Floc Mixer (SWWCFL02)	Overhaul mixer	\$2,000	
2021	E46213	SWT_58MIX46213	WWC Floc Mixer (SWWCFL03)	Overhaul mixer	\$2,000	
2021	E46214	SWT_58MIX46214	WWC Floc Mixer (SWWCFL04)	Overhaul mixer	\$2,000	
2021	E46215	SWT_58MIX46215	WWC Floc Mixer (SWWCFL05)	Overhaul mixer	\$2,000	
2021	E46216	SWT_58MIX46216	WWC Floc Mixer (SWWCFL06)	Overhaul mixer	\$2,000	
2021	E45171	SWT_58MTR45171	WWC Pump SWWP-01 Motor	Rehab motor	\$2,800	
2021	E45172	SWT_58MTR45172	WWC Pump SWWP-02 Motor	Rehab motor	\$2,800	
2021	E45173	SWT_58MTR45173	WWC Pump SWWP-03 Motor	Rehab motor	\$2,800	
2021	E45174	SWT_58MTR45174	WWC Pump SWWP-04 Motor	Rehab motor	\$2,800	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E42790	SWT_58PMP42790	WWC Underdrain Sump Pump (SUDP-03)	Replace pump	\$13,000	
2021	E42869	SWT_58PMP42869	WWC Return Pump (SWWP-01)	Overhaul pump	\$17,000	
2021	E42870	SWT_58PMP42870	WWC Return Pump (SWWP-02)	Overhaul pump	\$17,000	
2021	E42871	SWT_58PMP42871	WWC Return Pump (SWWP-03)	Overhaul pump	\$25,000	
2021	E42872	SWT_58PMP42872	WWC Return Pump (SWWP-04)	Overhaul pump	\$25,000	
2021	E30189	SWT_74ELC30189	Auto Transfer Switch ATS1	Replace ATS	\$10,000	
2021	E30197	SWT_74MIS30197	Electrical Shop Hoist	Rehab STWTP ELECTRICAL SHOP HO	\$7,579	
2021	E46218	SWT_58MDR46218	Cross Collector Chain (SWWCSLC02)	Replace chain	\$583	
2021	E46220	SWT_58MDR46220	Cross Collector Chain (SWWCSLC04)	Replace chain	\$583	
2021	E46217	SWT_58MDR46217	Drive Chains for (SWWCSLC01)	Replace drive chain	\$275	
2021	E46218	SWT_58MDR46218	Drive Chains for (SWWCSLC02)	Replace drive chain	\$275	
2021	E46219	SWT_58MDR46219	Drive Chains for (SWWCSLC03)	Replace drive chain	\$275	
2021	E46220	SWT_58MDR46220	Drive Chains for (SWWCSLC04)	Replace drive chain	\$275	
2021	E46217	SWT_58MDR46217	Flights for (SWWCSLC01)	Replace flights	\$10,000	
2021	E46218	SWT_58MDR46218	Flights for (SWWCSLC02)	Replace flights	\$2,500	
2021	E46219	SWT_58MDR46219	Flights for (SWWCSLC03)	Replace flights	\$10,000	
2021	E46220	SWT_58MDR46220	Flights for (SWWCSLC04)	Replace flights	\$2,500	
2021	E45035	SWT_23PMP45035	HP Metering Pump 1 VFD	Replace VFD	\$3,000	
2021	E45037	SWT_23PMP45037	HP Metering Pump 2 VFD	Replace VFD	\$3,000	
2021	E45039	SWT_23PMP45039	HP Metering Pump 3 VFD	Replace VFD	\$3,000	
2021	E46217	SWT_58MDR46217	Long. Collector Chain (SWWCSLC01)	Replace chain	\$4,180	

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	E46219	SWT_58MDR46219	Long. Collector Chain (SWWCSC03)	Replace chain	\$4,180	
2021	E30483	SWT_53MDR30483	ME-43 Train Wear Strip Material	Replace wear strip	\$1,760	
2021	E30483	SWT_53MDR30483	ME-44 Train Wear Strip Material	Replace wear strip	\$1,760	
2021	E30485	SWT_53MDR30485	ME-45 Train Drive Chain	Replace drive chain	\$425	
2021	E30485	SWT_53MDR30485	ME-45 Train Wear Strip Material	Replace wear strip	\$1,760	
2021	E30485	SWT_53MDR30485	ME-46 Train Drive Chain	Replace drive chain	\$425	
2021	E30485	SWT_53MDR30485	ME-46 Train Wear Strip Material	Replace wear strip	\$1,760	
2021	E45003	SWT_34PMP45003	OQA Metering Pump 1 VFD	Replace VFD	\$3,000	
2021	E45004	SWT_34PMP45004	OQA Metering Pump 2 VFD	Replace VFD	\$3,000	
2021	E45006	SWT_34PMP45006	OQA Metering Pump 3 VFD	Replace VFD	\$3,000	
2021	E45007	SWT_34PMP45007	OQA Metering Pump 4 VFD	Replace VFD	\$3,000	
2021	E45008	SWT_34PMP45008	OQA Metering Pump 5 VFD	Replace VFD	\$3,000	
2021	E42859	SWT_86PMP42859	OQA Sump Pump (SOQAP06)	Replace pump	\$6,250	
2021			Underground Diesel Storage Tank	Inspect tank	\$15,000	Inspections to be combined with other plants in same year
2021	E30090	SWT_46VOP30090	Filter 5W Backwash Vlv V-F-11 Act	Replace actuator	\$7,000	
2021	E30092	SWT_46VOP30092	Filter 6W Backwash Vlv V-F-12 Act	Replace actuator	\$7,000	
<b>FY18-21 STWTP TOTAL =</b>					<b>\$5,495,468</b>	



Table 4. Silicon Valley Advanced Water Purification Center

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	E52770	SVA_64TNK52770	PRODUCT WATER STORAGE TANK (PWST-4001)	Inspection	\$8,000	
2019	E70378	SVA_61TNK70378	INTER-PROCESS STORAGE TANK (IST-1301)	Inspection	\$6,000	
2019	E73453	SVA_74ELC73453	Battery Charger	Electrical Testing	\$40,000	
2019	E73441	SVA_74ELC73441	21 kV Switchgear 9801 (SWGR-9801)	Electrical Testing		
2019	E73442	SVA_74ELC73442	21 kV Switchgear 9802 (SWGR-9802)	Electrical Testing		
2019	E73443	SVA_74ELC73443	480 V Switchgear 9803 (SWGR-9803)	Electrical Testing		
2019	E73444	SVA_74ELC73444	480 V Switchgear 9804 (SWGR-9804)	Electrical Testing		
2019	E52602	SVA_60ELC52602	Transformer	Electrical Testing		
2019	E73432	SVA_65ELC73432	Transformer	Electrical Testing		
2019	E73300	SVA_64ELC73300	Transformer	Electrical Testing		
2019	E53082	SVA_16ELC53082	Transformer	Electrical Testing		
2021	E52770	SVA_64TNK52770	PRODUCT WATER STORAGE TANK (PWST-4001)	Inspection	\$8,000	
2021	E70378	SVA_61TNK70378	INTER-PROCESS STORAGE TANK (IST-1301)	Inspection	\$6,000	
2021	E73453	SVA_74ELC73453	Battery Charger	Electrical Testing	\$40,000	
2021	E73441	SVA_74ELC73441	21 kV Switchgear 9801 (SWGR-9801)	Electrical Testing		
2021	E73442	SVA_74ELC73442	21 kV Switchgear 9802 (SWGR-9802)	Electrical Testing		
2021	E73443	SVA_74ELC73443	480 V Switchgear 9803 (SWGR-9803)	Electrical Testing		
2021	E73444	SVA_74ELC73444	480 V Switchgear 9804 (SWGR-9804)	Electrical Testing		
2021	E52602	SVA_60ELC52602	Transformer	Electrical Testing		
2021	E73432	SVA_65ELC73432	Transformer	Electrical Testing		
2021	E73300	SVA_64ELC73300	Transformer	Electrical Testing		
2021	E53082	SVA_16ELC53082	Transformer	Electrical Testing		
<b>FY18-21 SVAWPC TOTAL =</b>					<b>\$108,000</b>	



Table 5. Treated Water Transmission and Distribution Planned Work Projects

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	WPL	E54004	WPL_05FLO54004	Granger T.O. Flow Meter	Replace meter	\$10,500	
2018	WPL	E54003	WPL_05FLO54003	Farndon T.O. Flow Meter	Replace flow meter	\$10,500	
2018	WPL	E54001	WPL_05FLO54001	Congress T.O. Flow Meter	Replace flow meter	\$12,500	
2019	PEP	E40175	PEP_05PIP40175	Ocala L.V. to Aborn Turnout. 54"	Inspection, Visual	\$15,000	Work will need the support watersheds to dewater line and water quality, operations, and lab for disinfection and BACTI testing.
2019	PEP	E40206	PEP_05STR40206	Manhole - Sta. 113+50	Rehab vault	\$8,000	
2019	PEP	E40202	PEP_05STR40202	Manhole - Sta. 95+00	Rehab vault	\$10,000	
2019	PEP	E40200	PEP_05STR40200	Manhole - Sta. 89+75	Rehab vault	\$8,000	
2019	PEP	E40199	PEP_05STR40199	Manhole - Sta. 84+90	Rehab vault	\$10,000	
2019	PEP	E40197	PEP_05STR40197	Manhole - Sta. 73+70	Rehab vault	\$8,000	
2019	PEP	E40196	PEP_05STR40196	Manhole - Sta. 69+90	Rehab vault	\$10,000	
2019	PEP	E40191	PEP_05STR40191	Manhole - Sta. 61+90	Rehab vault	\$8,000	
2019	PEP	E40190	PEP_05STR40190	Manhole - Sta. 57+60	Rehab vault	\$10,000	
2019	PEP	E40183	PEP_05STR40183	Manhole -Sta. 28+30	Rehab vault	\$10,000	
2019	PEP	E40182	PEP_05STR40182	Manhole - Sta. 23+22	Rehab vault	\$8,000	
2019	PEP	E40177	PEP_05STR40177	Manhole - Sta. 11+75	Overhaul Vault	\$10,000	
2019	PEP	E40189	PEP_05STR40189	Manhole - Sta. 47+40	Rehab vault	\$8,000	
2019	PEP	E40218	PEP_05STR40218	Manhole - Sta. 133+70	Rehab vault	\$10,000	
2019	PEP	E40213	PEP_05STR40213	Manhole - Sta. 120+46	Rehab vault	\$8,000	
2020	EPL	E40119	EPL_05PIP40119	Ocala L.V. to Aborn T.O.	Inspection, video	\$34,050	Work will need the support watersheds to dewater line and water quality, operations, and lab for disinfection and BACTI testing.
2020	EPL	E54013	EPL_05FLO54013	Norwood T.O. Flow Meter	Replace flow meter	\$7,500	
2020	EPL	E54012	EPL_05FLO54012	Ocala T.O. Flow Meter	Replace flow meter	\$12,000	

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	EPL			Patt Ave L.V. to Ocala L.V.	Inspection, video	\$45,000	Work will need the support watersheds to dewater line and water quality, operations, and lab for disinfection and BACTI testing. Coordination with PWTP.
FY18-21 TW TOTAL =						\$273,050	

Table 6. Raw Water Transmission and Distribution Planned Work Projects

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	AFM	E40276	AFM_03PIP40276	CPP to Coyote Cr.	Inspect pipeline	\$4,700	Work will need the support of utility field maintenance
2020	AVP	E41398	AVP_03STR41398	Shannon L.V. Calero Resrvoir 78 In	Inspection, eddy current	\$38,700	Work will need the support of utility field maintenance, raw water ops, and watersheds to dewater line
2020	AVP	E41354	AVP_03STR41354	Coleman L.V. - Shannon L.V. 72 In	Inspection, eddy current	\$52,050	
2020	AVP			Coleman L.V. - Shannon L.V. - 78 In	Inspection, eddy current	\$13,800	
2020	AVP	E41398	AVP_03STR41398	Shannon L.V. Calero Resrvoir- 48 In	Inspection	\$1,400	
2020	SCP	E40545	SCP_03STR40545	Rodeo T.O.- Stevens Creek TO 30 In A	Inspection, video	\$34,300	May need watershed support to dewater line
2020	SCP	E40538	SCP_03STR40538	Saratoga T.O. To Rodeo TO 33"	Inspection, video	\$11,300	
2020	SCP	E40540	SCP_03STR0018	Stevens Cr. L.V. - Sta. 0+84	Replace valve	\$100,000	
2020	STFM	E44006	STF_03STR44006	Valve Structure to STWTP	Inspection, eddy current	\$6,150	To be done in conjunction with AVP
2021	CDL		CPP to Coyote Cr.	Inspect pipeline		\$ 10,000	
2021	CPL	E41532	CPL_03STR41532	Conc Vault at Grd. - Sta. 243+96.6	Overhaul vault - Refurb	\$2,000	Will need watershed support to dewater line
2021	CPL	E41515	CPL_03STR41515	Manhole - Sta. 103+00	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41516	CPL_03STR41516	Manhole - Sta. 117+99	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41521	CPL_03STR41521	Manhole - Sta. 156+90	Overhaul vault - Refurb	\$2,000	

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	CPL	E41522	CPL_03STR41522	Manhole - Sta. 167+50	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41523	CPL_03STR41523	Manhole - Sta. 170+10	Overhaul vault - Refurb	\$8,000	
2021	CPL	E41524	CPL_03STR41524	Manhole - Sta. 173+57	Overhaul vault - Refurb	\$8,000	
2021	CPL	E41527	CPL_03STR41527	Manhole - Sta. 191+19	Overhaul vault - Refurb	\$8,000	
2021	CPL	E41528	CPL_03STR41528	Manhole - Sta. 204+93.06	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41529	CPL_03STR41529	Manhole - Sta. 215+17.75	Overhaul vault - Refurb	\$8,000	
2021	CPL	E41533	CPL_03STR41533	Manhole - Sta. 259+47.46	Overhaul vault - Refurb	\$8,000	
2021	CPL	E41509	CPL_03STR41509	Manhole - Sta. 27+00	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41534	CPL_03STR41534	Manhole - Sta. 270+02	Overhaul vault - Refurb	\$8,000	
2021	CPL	E41512	CPL_03STR41512	Manhole - Sta. 54+22	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41513	CPL_03STR41513	Manhole - Sta. 71+00	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41514	CPL_03STR41514	Manhole - Sta. 87+00	Overhaul vault - Refurb	\$2,000	
2021	CPL			Piedmont L.V. - Sta (-0+21) VOP	Replace actuator	\$10,000	
2021	CPL	E41526	CPL_03PIP41526	Pump Out Riser - Sta. 186+25	Overhaul vault - Renewal	\$2,000	
2021	CPL	E41530	CPL_03PIP41530	Pump Out Riser - Sta. 228+96.80	Overhaul vault - Renewal	\$2,000	
2021	CPL	E41519	CPL_03STR41519	Raised Conc Vault - Sta. 141+40	Overhaul vault - Refurb	\$8,000	
2021	CPL	E41505	CPL_03STR41505	Raised Conc Vault - Sta. 0+32	Overhaul vault - Renewal	\$2,000	
2021	CPL	E41502	CPL_03STR41502	Raised Conc Vault - Sta. -0+41.50	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41506	CPL_03STR41506	Raised Conc Vault - Sta. 0+67	Overhaul vault - Refurb	\$12,000	
2021	CPL	E41518	CPL_03STR41518	Raised Conc Vault - Sta. 126+20	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41507	CPL_03STR41507	Raised Conc Vault - Sta. 13+00	Overhaul vault - Refurb	\$2,000	
2021	CPL	E41510	CPL_03STR41510	Raised Conc Vault - Sta. 41+00	Overhaul vault - Refurb	\$2,000	
<b>FY18-21 RW TOTAL =</b>						<b>\$384,400</b>	

Table 7. Gilroy Reclamation Line Planned Work Projects

There is no planned work for the GRL during years FY 2018-2021.

Table 8. Vasona Pumping Plant Facility Planned Work Projects

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019				Biennial Electrical Testing	\$ 8,000	
2020	E42202	VPP_74GEN42202	VPP Standby Generator	Replace generator	\$45,000	
2021	E42201	VPP_74ELC42201	Local Ctrl PC Battery Backup	Replace batteries 001	\$ 1,000	
2021	E42274	VPP_19TNK42274	Cat Poly Tank #1	Clean and inspect 002	\$ 5,000	
2021	E42274	VPP_19TNK42274	Cat Poly Tank #1	Repair tank & paint 001	\$ 8,500	
2021	E42275	VPP_19TNK42275	Cat Poly Tank #2	Clean and inspect 002	\$ 5,000	
2021	E42275	VPP_19TNK42275	Cat Poly Tank #2	Repair tank & paint 001	\$ 8,500	
2021	E42290	VPP_74ELC42290	Building UPS	Replace Batteries 001	\$ 2,633	
2021				Biennial Electrical Testing	\$ 8,000	
<b>FY18-21 VPP TOTAL =</b>					<b>\$91,633</b>	

Table 9. Anderson Hydroelectric Facility Planned Work Projects

Year	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019			Oil Leak detector	Replace detector	\$3,000	
2019			Electrical Testing	Electrical testing	\$12,000	
2021			Electrical Testing	Electrical Testing	\$12,000	
<b>FY18-21 AHY TOTAL =</b>					<b>\$27,000</b>	

Table 10. San Felipe Division Planned Work Projects

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	PPP			PPP WAPA Maintenance Contract	PPP WAPA Maint. Contract 008	\$ 40,000	
2018	PPP	E42042	PPP_02MTR42042	Pump Unit 5 Motor	Refurbish motor windings and bearings	\$ 40,000	Contractor UNICO
2018	PPP	E42043	PPP_02PMP42043	Pump Unit 5 Pump	Rebuild pump with new couplings & nuts 001	\$ 700,000	
2018	PPP	E42068	PPP_02MTR42068	Pump Unit 7 Motor	Refurbish motor windings and bearings	\$ 40,000	Contractor UNICO

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2018	PPP	E42069	PPP_02PMP42069	Pump Unit 7 Pump	Rebuild pump with new couplings & nuts	\$ 700,000	
2018	CPP			CPP WAPA maintenance contract	CPP WAPA Maint. Contract 008	\$ 40,000	
2018	CPP	E42339	CPP_77PMP42339	Chilled Water Circulating Pump 1	Rebuild pump	\$ 10,000	
2018	CPP	E42340	CPP_77PMP42340	Chilled Water Circulating Pump 2	Rebuild pump	\$ 10,000	
2018	SCC	E40714	SCC_06STR40714	Santa Clara Tunnel - 102 In.	Tunnel inspection	\$ 20,000	Work will need the support of watersheds, operations, and pipeline maintenance for dewatering BMP's
2018	SCC	E40700	SCC_06STR40700	Fault Crossing - Twin 66 In.	Inspection, eddy current 004	\$ 30,000	
2019	PPP			3rd Party Condition Assessment	Formal assessment 002	\$ 500,000	
2019	PPP	E41484	PPP_78INS41484	Accumulator 1 Level Switch	Replace PACHECO PUMP ACCUMULATOR # 1 LEVEL DETECTOR 4421 2019	\$ 2,550	
2019	PPP	E41486	PPP_78INS41486	Accumulator 2 Level Switch	Replace PACHECO PUMP ACCUMULATOR # 2 LEVEL DETECTOR 4422 2019	\$ 2,550	
2019	PPP	E41488	PPP_78CMP41488	HVOS Air Compressor 2	Replace PACHECO PUMP HVOS AIR COMPRESSOR #2 4426 2019	\$ 4,500	
2019	PPP			PPP WAPA Maintenance Contract	PPP WAPA Maint. Contract 009	\$ 40,000	
2019	PPP	E42109	PPP_02VLV42109	Pump Unit 10 Pump Air Release Valve	Replace PACHECO PUMP UNIT #10 PUMP AIR RELEASE VALVE 2183 2012	\$ 600	
2019	PPP	E42110	PPP_02VLV42110	Pump Unit 10 Pump Discharge Valve	Rehab valve bushings and packing	\$ 5,000	

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	PPP	E42120	PPP_02MTR42120	Pump Unit 11 Motor	Refurbish motor windings and bearings	\$ 40,000	Contractor UNICO
2019	PPP	E42121	PPP_02PMP42121	Pump Unit 11 Pump	Rebuild pump with new couplings & nuts	\$ 700,000	
2019	PPP	E42055	PPP_02MTR42055	Pump Unit 6 Motor	Refurbish motor windings and bearings	\$ 40,000	Contractor UNICO
2019	PPP	E42056	PPP_02PMP42056	Pump Unit 6 Pump	Rebuild pump with new couplings & nuts 001. Most recent engineering information	\$ 700,000	
2019	PPP	E42155	PPP_85INS42155	Streaming Current Detector	Replace PACHECO PUMP WATER QUALITY INSTRUMENTATION 2280 2019	\$ 3,750	
2019	PPP			Electrical Testing	Electrical testing 005	\$ 12,000	
2019	PAC	E40600	PAC_06STR40600	Pacheco Tunnel Reach 2 - 114 Inch	Inspect Tunnel 003	\$ 20,000	Work will need the support of watersheds, operations, and pipeline maintenance for dewatering BMP's
2019	SCC	E40734	SCC_06STR40734	SC County Line To SV-1 - 96 In	Inspection, Eddy Current 002	\$ 310,000	
2019	SCC	E40700	SCC_06STR40700	BIF to SC County Line - 96 In	Inspection, Eddy Current 002	\$ 93,000	
2019	CPP	E42349	CPP_78INS42349	Accumulator 1 Level Switch	Replace COYOTE PUMP HVOS ACCUMULATOR #1 LEVEL SWITCH 4410 2019	\$ 2,550	
2019	CPP	E42351	CPP_78INS42351	Accumulator 2 Level Switch	Replace COYOTE PUMP ACCUMULATOR #2 LEVEL SWITCH 4411 2019	\$ 2,550	
2019	CPP	E42466	CPP_84CMP42466	Air Compressor Fixed	Replace COYOTE PUMP SHOP AIR COMPRESSOR (FIXED) 2041 2019	\$ 4,500	
2019	CPP	E42339	CPP_77PMP42339	Chilled Water Circulating Pump 1	Replace COYOTE PUMP CHILLED WATER CIRCULATING PUMP #1 1922 2019	\$ 600	

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	CPP	E42340	CPP_77PMP42340	Chilled Water Circulating Pump 2	Replace COYOTE PUMP CHILLED WATER CIRCULATING PUMP #2 1923 2019	\$ 600	
2019	CPP	E42330	CPP_77PMP42330	Chilled Water Condenser Water Pmp1	Replace COYOTE PUMP CHILLED WATER CONDENSER WATER PUMP #1 (NP3) 1915 2019	\$ 600	
2019	CPP	E42331	CPP_77PMP42331	Chilled Water Condenser Water Pmp2	Replace COYOTE PUMP CHILLED WATER CONDENSER WATER PUMP #2 (NP4) 1916 2019	\$ 600	
2019	CPP	E42332	CPP_77PMP42332	Chilled Water Condenser Water Pmp3	Replace COYOTE PUMP CHILLED WATER CONDENSER WATER PUMP #3 (NP5) 1917 2019	\$ 600	
2019	CPP	E42327	CPP_77CMP42327	Chiller Compressor 1	Replace COYOTE PUMP BUILDING CHILLER COMPRESSOR #1 1912 2019	\$ 4,500	
2019	CPP	E42328	CPP_77CMP42328	Chiller Compressor 2	Replace COYOTE PUMP BUILDING CHILLER COMPRESSOR #2 1913 2019	\$ 4,500	
2019	CPP			CPP WAPA maintenance contract	CPP WAPA Maint. Contract 009	\$ 40,000	
2019	CPP	E42478	CPP_85INS42478	Graywater Tank Level Monitor 1	Replace COYOTE PUMP GRAYWATER TANK LEVEL MONITOR #1 2053 2019	\$ 2,550	
2019	CPP	E42480	CPP_85INS42480	Graywater Tank Level Monitor 2	Replace COYOTE PUMP GRAYWATER TANK LEVEL MONITOR #2 2054 2019	\$ 2,550	



Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	CPP	E42344	CPP_78INS42344	HVOS Pressure Switches	Replace COYOTE PUMP HVOS PRESSURE SWITCHES 4417 2019	\$ 2,550	
2019	CPP	E42465	CPP_84CMP42465	Portable Air Compressor	Replace COYOTE PUMP PORTABLE AIR COMPRESSOR 2040 2019	\$ 4,500	
2019	CPP	E42506	CPP_06PMP42506	Pump Iso Vlv Str Sump Pump	Replace COYOTE PUMP ISOLATION VALVE SUMP PUMP 2074 2019	\$ 600	
2019	CPP	E42363	CPP_02MTR42363	Pump Unit 1 Mtr Cool Water Sup	Replace COYOTE PUMP UNIT #1 PUMP MOTOR COOL WATER SUP PUMP 1950 2019	\$ 600	
2019	CPP	E42368	CPP_02VOP42368	Pump Unit 1 Pmp HVOS Disc Vlv Act	Rehab COYOTE PUMP UNIT #1 PUMP HVOS DISCHARGE VALVE ACTUATOR 1954 2019	\$ 884	
2019	CPP	E42373	CPP_02MTR42373	Pump Unit 2 Mtr Cool Water Sup	Replace COYOTE PUMP UNIT #2 PUMP MOTOR COOL WATER SUP PUMP 1959 2019	\$ 600	
2019	CPP	E42378	CPP_02VOP42378	Pump Unit 2 Pmp HVOS Disc Vlv Act	Rehab COYOTE PUMP UNIT #2 PUMP HVOS DISCHARGE VALVE ACTUATOR 1963 2019	\$ 884	
2019	CPP	E42383	CPP_02MTR42383	Pump Unit 3 Mtr Cool Water Sup	Replace COYOTE PUMP UNIT #3 PUMP MOTOR COOL WATER SUP PUMP 1968 2019	\$ 600	
2019	CPP	E42388	CPP_02VOP42388	Pump Unit 3 Pmp HVOS Disc Vlv Act	Rehab COYOTE PUMP UNIT #3 PUMP HVOS DISCHARGE VALVE ACTUATOR 1972 2019	\$ 884	



Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2019	CPP	E42393	CPP_02MTR42393	Pump Unit 4 Mtr Cool Water Sup	Replace COYOTE PUMP UNIT #4 PUMP MOTOR COOLWATER SUP PUMP 1977 2019	\$ 600	
2019	CPP	E42398	CPP_02VOP42398	Pump Unit 4 Pmp HVOS Disc Vlv Act	Rehab COYOTE PUMP UNIT #4 PUMP HVOS DISCHARGE VALVE ACTUATOR 1981 2019	\$ 884	
2019	CPP	E42403	CPP_02MTR42403	Pump Unit 5 Mtr Cool Water Sup	Replace COYOTE PUMP UNIT #5 MOTOR COOL WATER SUP PUMP 1986 2019	\$ 600	
2019	CPP	E42408	CPP_02VOP42408	Pump Unit 5 Pmp HVOS Disc Vlv Act	Rehab COYOTE PUMP UNIT #5 PUMP HVOS DISCHARGE VALVE ACTUATOR 1990 2019	\$ 884	
2019	CPP	E42413	CPP_02MTR42413	Pump Unit 6 Mtr Cool Water Sup	Replace COYOTE PUMP UNIT #6 MOTOR COOL WATER SUP PUMP 1995 2019	\$ 600	
2019	CPP	E42418	CPP_02VOP42418	Pump Unit 6 Pmp HVOS Disc Vlv Act	Rehab COYOTE PUMP UNIT #6 PUMP HVOS DISCHARGE VALVE ACTUATOR 1999 2019	\$ 884	
2019	CPP			Electrical Testing	Electrical testing 005	\$ 9,000	
2020	PPP			PPP WAPA Maintenance Contract	PPP WAPA Maint. Contract 010	\$ 40,000	
2020	PPP	E41490	PPP_02MTR41490	Pump Unit 1 Motor	Rehab Motor 001	\$ 40,000	Contractor UNICO
2020	PPP	E41491	PPP_02PMP41491	Pump Unit 1 Pump	Rebuild pump with new couplings & nuts 001. Most recent engineering information	\$ 700,000	
2020	PPP	E42133	PPP_02MTR42133	Pump Unit 12 Motor	Refurbish motor windings and bearings	\$ 40,000	Contractor UNICO

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2020	PPP	E42134	PPP_02PMP42134	Pump Unit 12 Pump	Rebuild pump with new couplings & nuts. Rebuild pump and rehab shafting	\$ 700,000	
2020	PPP	E42160	PPP_84CMP42160	Shop Air Compressor	Replace PACHECO PUMP SHOP AIR COMPRESSOR 2286 2019	\$ 4,500	
2020	PPP	E42147	PPP_84CMP42147	Portable Air Compressor	Replace PACHECO PUMP PORTABLE AIR COMPRESSOR 2273 2019	\$ 4,500	
2020	PAC	E40599	PAC_06PIP40599	Pacheco Tunnel Reach 1 - 135 Inch	Inspect Reach 1 tunnel	\$ 120,000	
2020	CPP			CPP WAPA maintenance contract	CPP WAPA Maint. Contract 010	\$ 40,000	
2021	PPP			PPP WAPA Maintenance Contract	PPP WAPA Maint. Contract 011	\$ 40,000	
2021	PPP			Electrical Testing	Electrical testing 005	\$ 12,000	
2021	PPP	E42070	PPP_02VLV42070	Pump Unit 7 Pump Air Release Valve	Replace PACHECO PUMP UNIT #7 PUMP AIR RELEASE VALVE 2165 2012	\$ 600	
2021	PPP	E42072	PPP_02VOP42072	Pump Unit 7 Pump Disch Vlv Hyd Op	Rehab PACHECO PUMP UNIT #7 PUMP DISCH VALVE HYD OP	\$ 1,500	
2021	PPP	E42071	PPP_02VLV42071	Pump Unit 7 Pump Discharge Valve	Replace bushings	\$ 5,000	
2021	PPP	E42081	PPP_02MTR42081	Pump Unit 8 Motor	Refurbish motor windings and bearings	\$ 40,000	Contractor UNICO
2021	PPP	E42082	PPP_02PMP42082	Pump Unit 8 Pump	Rebuild pump with new couplings & nuts 001. Most recent engineering information	\$ 700,000	
2021	CPP			CPP WAPA maintenance contract	CPP WAPA Maint. Contract 011	\$ 40,000	
2021	CPP			Formal Condition Assessment	Formal assessment 002	\$ 300,000	

Year	Facility	Asset #	Asset Tag	Asset Name	Activity	Cost	Efficiencies and Comments
2021	CPP			Electrical Testing	Electrical testing 005	\$ 9,000	
2021	SCC			SV-2 to CPP - 96 Inch	Inspection, Eddy Current 002	\$ 163,060	Work will need the support of watersheds, operations, and pipeline maintenance for dewatering BMP's
2021	SCC			SV-1 to SV-2 - 96 Inch	Inspection, Eddy Current 002	\$ 157,480	
2021	SCC			CFI/CFO Levee Road	Repair road 002	\$ 25,000	
<b>FY18-21 SFD TOTAL =</b>						<b>\$7,378,843</b>	

Table 11. Water Supply Management System (Maintenance) Planned Work Projects

Year	Asset #	Asset Name	Type	Description	Cost	Efficiencies and Comments
2018	E65177	Mabury Diversion Fish Ladder	Repair	Sediment removal	\$15,000	
2018	E65186	Overfelt Pipeline	Inspection	Video inspection	\$5,000	
2018	E65206	Mabury Pond	Repair	Repair plugged overflow pipe	\$10,000	
2018	E65217	Alamitos Diversion Facility	Repair	Minor maintenance	\$10,000	
2018	E65270	Guadalupe Pipeline	Inspection	Video inspection	\$8,900	
2018	E65270	Guadalupe Pipeline	Replace	Replace inlet valve	\$21,430	
2018	E65331	Masson Fish Ladder	Repair	Sediment removal	\$15,000	
2018	E65344	Masson Pipeline	Inspection	Video inspection	\$3,400	
2018	E65393	Meridian pipeline	Inspection	Video inspection	\$2,320	
2018	E65393	Meridian pipeline	Repair	Address root issues	\$8,000	
2018	E65706	Kirk Ditch	Repair/replace	Replace inlet valve and bypass valve. Refurbish blockhouse and chemical feed system	\$42,860	
2018	E10794	McGlinchy Ponds	Repair	Grout pipes between ponds #4-#5, #5-#6	\$15,000	
2018	E65954	Coyote-Alamitos Canal	Repair	Sediment / Vegetation removal	\$15,000	
2018	E66059	Coyote Percolation Pond	Inspection	Inspect levee	\$0	
2018	E66070	Coyote Percolation Dam	Repair	Minor maintenance	\$7,500	
2018	E66137	Main Avenue Ponds and Desilt basin	Repair	Embankment repair and Vegetation removal	\$120,000	
2018	E66166	San Pedro Ponds	Repair	Vegetation removal	\$0	

Year	Asset #	Asset Name	Type	Description	Cost	Efficiencies and Comments
2018	E66324	Church Avenue Ponds	Repair	Embankment repair and Vegetation removal	\$120,000	
2018		San Tomas Injection Well	Repair	Repaint valves and pipes	\$10,000	
2019	E65177	Mabury Diversion Fish Ladder	Repair	Sediment removal	\$15,000	
2019	E65075	Piedmont Ponds	Replace	Replace fencing	\$14,000	
2019	E65174	Mabury Diversion Dam	Inspection	Inspect Mabury Diversion Dam	\$0	
2019	E65217	Alamitos Diversion Facility	Repair	Minor maintenance	\$10,000	
2018	E65281	Guadalupe Ponds	Replace	Replace valves from Guadalupe Pipeline to ponds #1, #2 and #3	\$64,290	
2018	E65331	Masson Fish Ladder	Repair	Sediment removal	\$15,000	
2019	E10777	Budd Avenue Ponds	Repair	Embankment repair	\$120,000	
2019	E10791	Page Ponds	Replace	Replace valve and pipe in crossing	\$41,430	
2019	E65678	Sunnyoaks Pipeline	Inspection	Video inspection	\$5,000	
2019	E10792	Sunnyoaks Ponds	Repair	Embankment repairs	\$120,000	
2019	E65683	Kirk Diversion Facility	Repair	Inspect dam and perform minor repairs	\$10,000	
2019	E10793	Oka Lane Ponds	Replace	Replace inlet valves to ponds #1, #2 and #3	\$64,290	
2019	E65824	Vasona Canal	Repair	Repair pipe at dam	\$75,000	
2019	E65954	Coyote-Alamitos Canal	Repair	Sediment / Vegetation removal	\$15,000	
2019	E66137	Main Avenue Ponds and Desilt basin	Repair	Embankment repair and Vegetation removal	\$120,000	
2019	E66166	San Pedro Ponds	Repair	Vegetation removal	\$0	
2019	E66324	Church Avenue Ponds	Repair	Embankment repair and Vegetation removal	\$120,000	
2019	E66301	Uvas-Llagas Transfer Pipeline	Inspection	Video inspection	\$35,200	
2020	E65177	Mabury Diversion Fish Ladder	Repair	Sediment removal	\$15,000	
2020	E65217	Alamitos Diversion Facility	Repair	Minor maintenance	\$10,000	
2020	E65246	Alamitos Ponds	Replace	Replace blow off valve to Guadalupe Creek (overflow)	\$21,430	
2020	E65328	Masson Diversion Facility	Repair	Minor maintenance	\$10,000	
2020	E65331	Masson Fish Ladder	Repair	Sediment removal	\$15,000	
2020	E10777	Budd Avenue Ponds	Inspection	Inspect pipes	\$3,000	
2020	E65860	Coyote Canal	Repair	Refurbish facility	\$0	CIP
2020	E65954	Coyote-Alamitos Canal	Repair	Sediment / Vegetation removal	\$15,000	
2020	E66070	Coyote Percolation Dam	Repair	Minor maintenance	\$10,000	
2020	E66137	Main Avenue Ponds and Desilt basin	Repair	Embankment repair and Vegetation removal	\$120,000	

Year	Asset #	Asset Name	Type	Description	Cost	Efficiencies and Comments
2020	E66166	San Pedro Ponds	Repair	Vegetation removal	\$0	
2020	E66324	Church Avenue Ponds	Inspection	Video inspection	\$880	
2020	E66324	Church Avenue Ponds	Repair	Sleeve pipes, repair/replace catwalks at pond#1, inspect valves. Embankment repair and Vegetation removal	\$240,000	Steel Catwalk. Approx. \$100K for pipe repair
2021	E65177	Mabury Diversion Fish Ladder	Repair	Sediment removal	\$15,000	
2021	E65217	Alamitos Diversion Facility	Repair	Minor maintenance	\$10,000	
2021	E65331	Masson Fish Ladder	Repair	Sediment removal	\$15,000	
2021	E10777	Budd Avenue Ponds	Repair	Embankment repair	\$120,000	
2021	E10790	Camden Ponds	Repair	Embankment repair	\$120,000	
2021	E10792	Sunnyoaks Ponds	Repair	Embankment repairs	\$120,000	
2021	E65954	Coyote-Alamitos Canal	Repair	Sediment / Vegetation removal	\$15,000	
2021	E66137	Main Avenue Ponds and Desilt basin	Repair	Embankment repair and Vegetation removal	\$120,000	
2021	E66135	Main Avenue Pipeline	Inspection	Video inspection	\$14,200	
2021	E66166	San Pedro Ponds	Repair	Vegetation removal	\$0	
2021	E66324	Church Avenue Ponds	Repair	Embankment repair and Vegetation removal	\$120,000	
<b>FY18-21 WS Maint. TOTAL =</b>					<b>\$2,403,130</b>	

Table 12. Water Supply Management Systems (Operations) Planned Work Projects

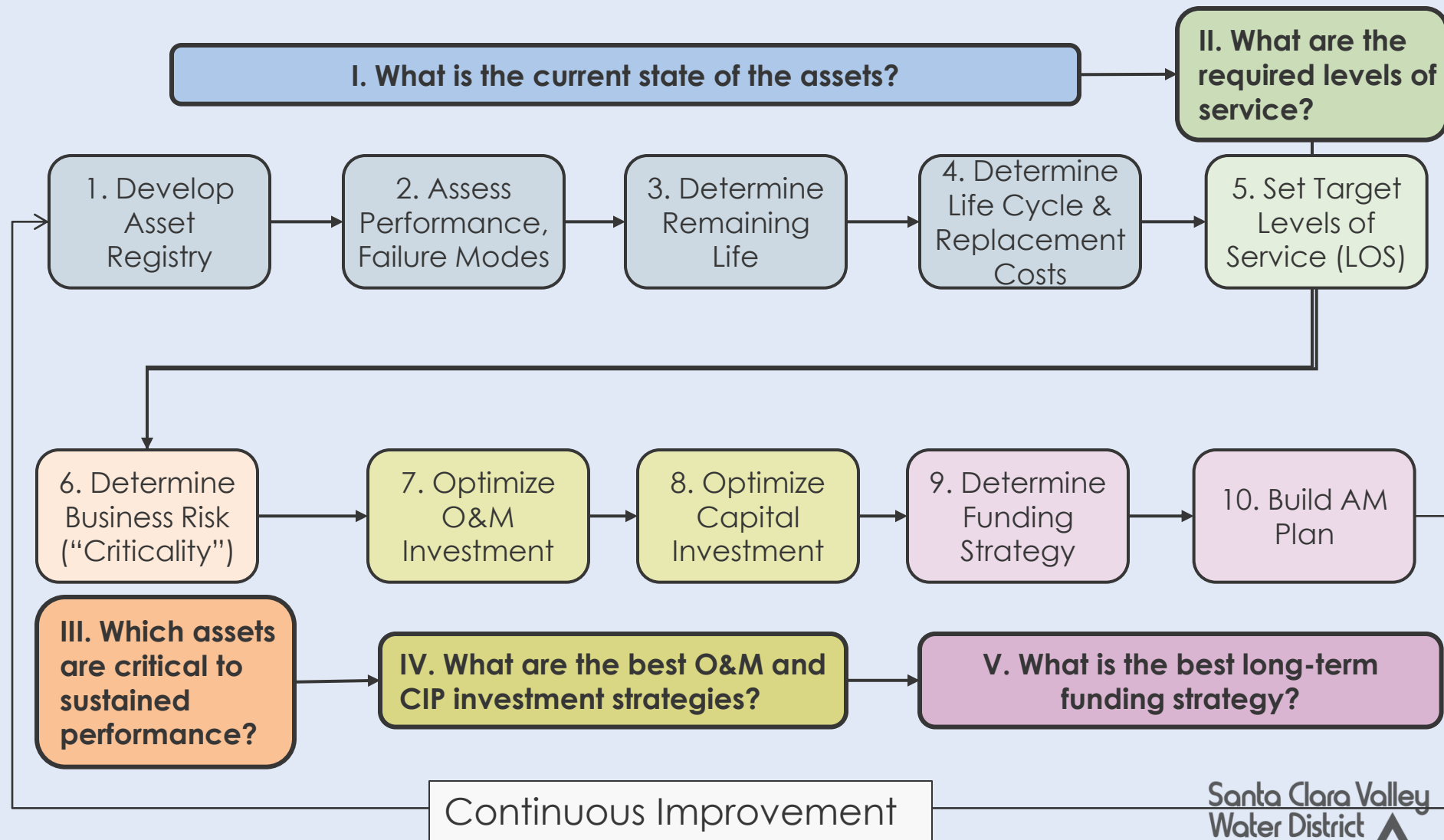
Year	Asset #	Asset Name	Description	Cost	Efficiencies and Comments
2018	E10794	Mcglincy Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$174,540	
2018	E66137	Main Avenue Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$103,682	Inc. Main Ave desilt basin
2018	E66272	Madrone Pond (8)	Pond grooming/Cleaning/Capacity restoration projects	\$63,117	
2018	E66281	Madrone Pond (9)	Pond grooming/Cleaning/Capacity restoration projects	\$69,135	
2018	E66286	Madrone Pond (10)	Pond grooming/Cleaning/Capacity restoration projects	\$75,466	
2018	E65031	Penitencia (Gross) Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$241,984	
2018	E65706	Kirk Ditch	Pond grooming/Cleaning/Capacity restoration projects	\$100,000	Drain and clean
2018	E65717	Kirk Desilting Basin	Pond grooming/Cleaning/Capacity restoration projects	\$80,000	
2019	E10792	Sunnyoaks Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$55,580	
2019	E10791	Page Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$139,915	
2019	E10777	Budd Avenue Ponds	Pond grooming/Cleaning/Capacity restoration projects	\$154,153	
2019	E66250	Madrone Pond (5)	Pond grooming/Cleaning/Capacity restoration projects	\$69,127	
2019	E66255	Madrone Pond (6)	Pond grooming/Cleaning/Capacity restoration projects	\$39,979	
2019	E66263	Madrone Pond (7)	Pond grooming/Cleaning/Capacity restoration projects	\$45,868	
2019	E66346	McClellan Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$95,928	
2019	E10793	Oka Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$315,577	
2019	E65116	Capitol Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$64,267	
2019	E65526	Page Ditch	Pond grooming/Cleaning/ Capacity restoration projects	\$100,000	Drain and clean
2019	E65075	Piedmont Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$100,000	
2020	E10794	Mcglincy Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$174,540	
2020	E66137	Main Avenue Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$103,682	Inc. Main Ave desilt basin
2020	E66222	Madrone Pond (1)	Pond grooming/Cleaning/ Capacity restoration projects	\$128,345	
2020	E66230	Madrone Pond (2)	Pond grooming/Cleaning/ Capacity restoration projects	\$93,486	

Year	Asset #	Asset Name	Description	Cost	Efficiencies and Comments
2020	E66238	Madrone Pond (3)	Pond grooming/Cleaning/ Capacity restoration projects	\$132,020	
2020	E66242	Madrone Pond (4)	Pond grooming/Cleaning/ Capacity restoration projects	\$97,372	
2020	E66324	Church Avenue Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$572,412	
2020	E65706	Kirk Ditch	Pond grooming/Cleaning/ Capacity restoration projects	\$100,000	Drain and clean
2021	E10792	Sunnyoaks Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$55,580	
2021	E10791	Page Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$139,915	
2021	E10777	Budd Avenue Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$154,153	
2021	E10790	Camden Ponds	Pond grooming/Cleaning/ Capacity restoration projects	\$802,832	
2021	E65103	Helmsley Pond	Pond grooming/Cleaning/ Capacity restoration projects	\$49,989	
2021	E65526	Page Ditch	Pond grooming/Cleaning/ Capacity restoration projects	\$100,000	Drain and clean
2021	E65347	Los Capitancillos Desilt Basin	Pond grooming/Cleaning/ Capacity restoration projects	\$80,000	
<b>FY18-21 WS Ops. TOTAL =</b>				<b>\$4,872,644</b>	

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# 10-step Asset Management Planning Model



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# Water Utility Asset Management and Maintenance Program Update

SCVWD Board of Directors  
March 28, 2017



# Overview

- ▶ Background
- ▶ Water Utility Asset Management Planning
- ▶ Water Utility Maintenance Program
- ▶ Performance Monitoring and Improvement
- ▶ Additional WU Asset Management Activities
- ▶ Next Steps



- ▶ E-2.1. Current and future water supply for municipalities, industries, agriculture, and the environment is reliable.
- ▶ E-2.2. Raw water transmission and distribution assets are managed to ensure efficiency and reliability.
- ▶ E-2.3. Reliable high quality drinking water is delivered.
- ▶ EL-6. The BAOs shall protect and adequately maintain corporate assets.
  - ▶ 6.4. Maintain an Asset Management Program

- ▶ Board Organization Performance Monitoring Calendar:
  - ▶ Semi-annual asset management updates
- ▶ Board Policy and Planning Committee Discussions:
  - ▶ Board wanted better understanding of O&M prioritization process and priorities
  - ▶ Role of O&M needs to be elevated/celebrated

# Overview

- ▶ Background
- ▶ **Water Utility Asset Management Planning**
- ▶ Water Utility Maintenance Program
- ▶ Performance Monitoring and Improvement
- ▶ Additional WU Asset Management Activities
- ▶ Next Steps

# Water Utility Asset Management Planning

## Establish Maintenance Schedules

- ▶ Preventive Maintenance(PM): routine periodic activities to prevent premature asset failure
- ▶ Planned Work (PW): planned asset rehabilitations and replacements

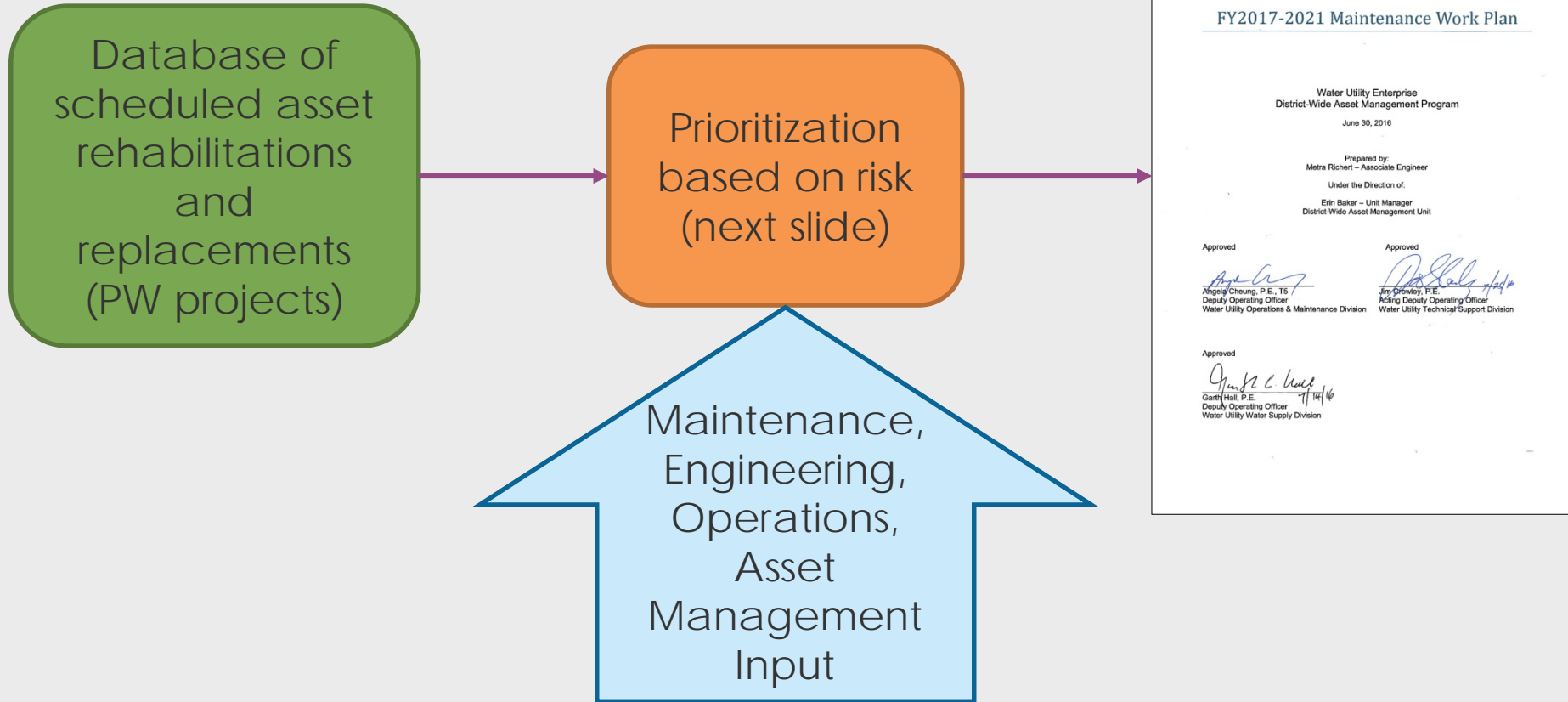
Recommended PW Activities - Motor			
	Type	Freq., Yr	Cost
1	Replacement	50	\$ 1,800,000
2	Rehabilitation, Motor	12	\$ 82,500
3	Rehabilitation, Stator and/or Rotor re-wind	12	\$ 100,500
4	Rehabilitation, Bearings	12	\$ 120,000
5	Rehabilitation (cooler)	24	\$ 16,000





# Water Utility Asset Management Planning

## Annual Maintenance Work Planning



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# Water Utility Asset Management Planning

## Annual Prioritization of Planned Maintenance Work

- ▶ Planned Work Projects are prioritized annually based on asset risk
  - ▶ Probability of Failure – Asset Condition

Condition Score = 2



Condition Score = 3



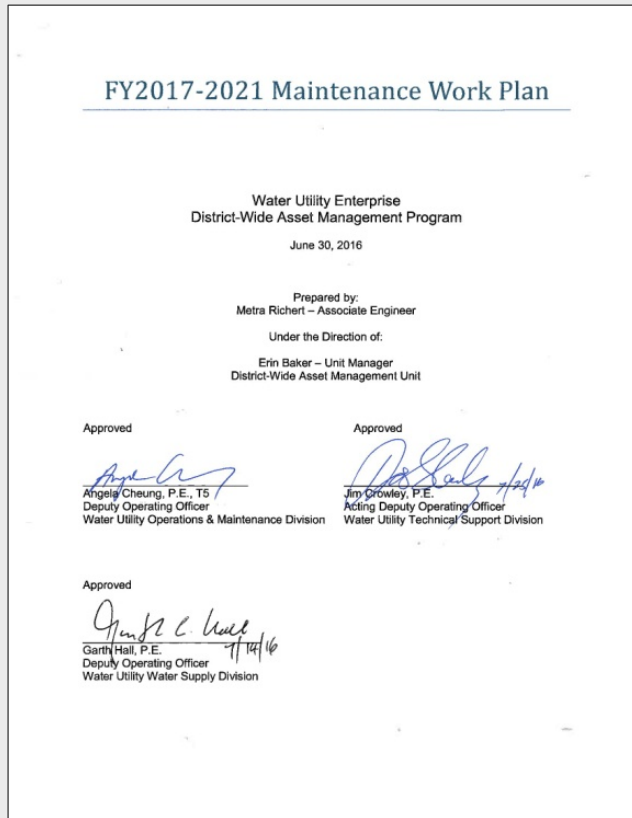
- ▶ Consequence of Failure – What happens if asset fails
  - ▶ Index Score from 0 – 30
  - ▶ Evaluates asset failure impacts on service delivery, community property, environment, life safety, financial, and reputation

# Water Utility Asset Management Planning

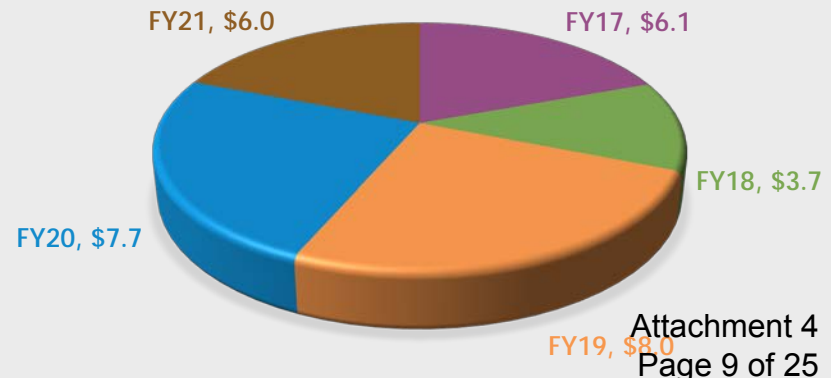
## FY 17-21 Maintenance Work Plan

### ► Example Projects:

- Replace Ammonia Leak Detector
- Replace Filter Valve Operator
- Replace Sodium Hypochlorite Meter Pump Variable Frequency Drive
- Clean, Inspect and Paint Phosphoric Acid Tank



### PW PROJECT COST PER FISCAL YEAR (MILLIONS)

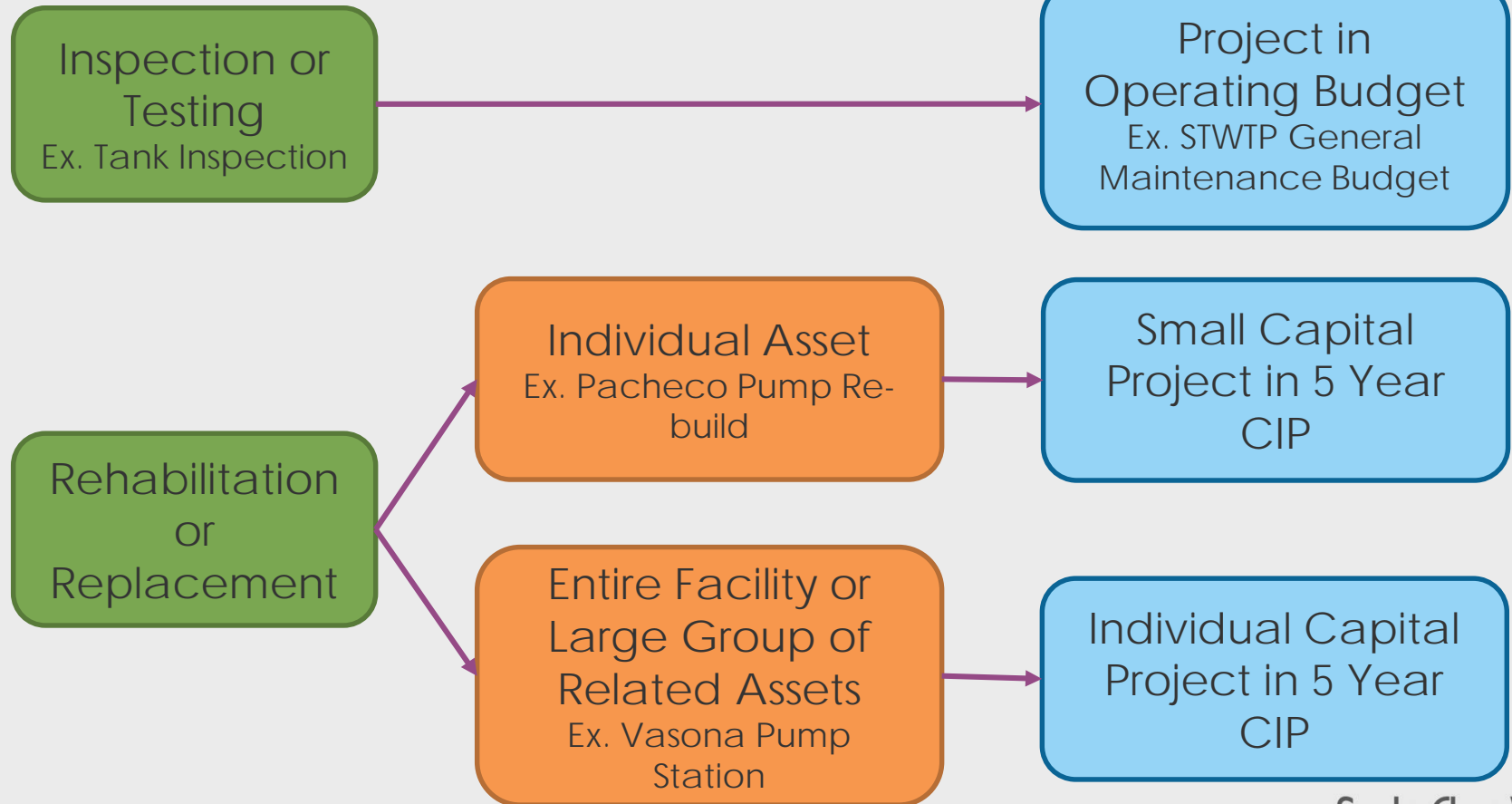


# Water Utility Asset Management Planning

## Execution of Planned Work

### Type of PW Project

### PW Executed As



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# Water Utility Asset Management Planning

## Capital Projects in FY17-21 CIP that Originated in Maintenance Work Plans

- ▶ Coyote Pumping Plant ASD Replacement
- ▶ Small Capital Improvements, San Felipe Reach 1-3
- ▶ Five-Year Pipeline Rehabilitation
- ▶ Ten-Year Pipeline Rehabilitation
- ▶ Small Capital Improvements, Raw Water
- ▶ Small Capital Improvements, Treated Water
- ▶ Vasona Pumping Plant Upgrade
- ▶ PWTP Clearwell Recoating & Repair
- ▶ PWTP Residuals Management
- ▶ RWTP FRP Residuals Management Modifications
- ▶ RWTP Reliability Improvement Project
- ▶ Small Capital Improvements, Water Treatment

<b>Project</b>	<b>Small Capital Improvements, San Felipe</b>
<b>Program</b>	Water Supply – Storage
<b>Priority No.</b>	78
<b>Project No.</b>	91214010s
<b>District Contact</b>	Angela Cheung acheung@valleywater.org



Suction wear ring bacterial corrosion of Impeller. Similar rehabilitation projects will be done in this project.

### PROJECT DESCRIPTION

This project provides resources for the improvement of small capital investments that replace or extend the life of an asset. This project implements a systematic approach to equipment replacement and renewal at facilities contained within San Felipe Division by designing and constructing improvements identified through the District's 10-year asset management program. Infrastructure within this project includes tunnels, large diameter pipelines and valve structures, pumps and associated equipment, as well as a large above ground storage tank. The Reach 1 renewal and replacement activities are conducted in coordination and cooperation with San Felipe Division Reach 1 contractors, partner cities, and other agencies. Planned projects for FY 2017 include:

- 91214010-Reach 1: Replace Pacheco Pumping Plant Fire Pump
- 91224010-Reach 2: Fix Calaveras Fault Inlet/Outlet road access; Fix Santa Clara Tunnel leakage, grouting and lining; Cathodic protection for 2 rectifiers and Anodes Well.
- 91234010-Reach 3: Cathodic protection for 2 rectifiers and Anodes Well; Replace Coyote pump discharge valve operator, flowmeter, HVOS air compressor, and isolation valve control valve operator.

All three projects have positive NPV saving at feasibility study phase subject to design phase validation.

### PROJECT LOCATION



2017-2021 Five-Year Capital Improvement Program :: II-19

# Overview

- ▶ Background
- ▶ Water Utility Asset Management Planning
- ▶ **Water Utility Maintenance Program**
- ▶ Performance Monitoring and Improvement
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- ▶ Next Steps

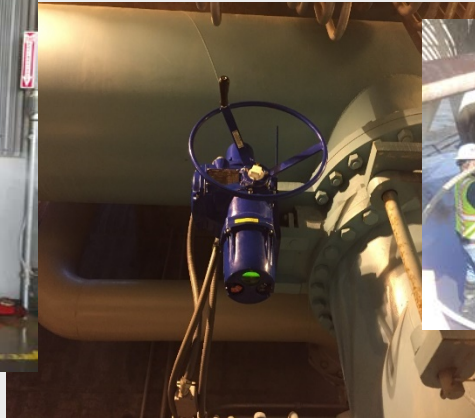


# Water Utility Maintenance Program

## Workload



Treatment Plants	4
Miles of Distribution Pipe	142
Total Assets	8,000
Total Working Level Staff	45
Total FY16 Work Orders	16,000
Total FY17 Maintenance and Small Capital Project Budget	\$26.2 M



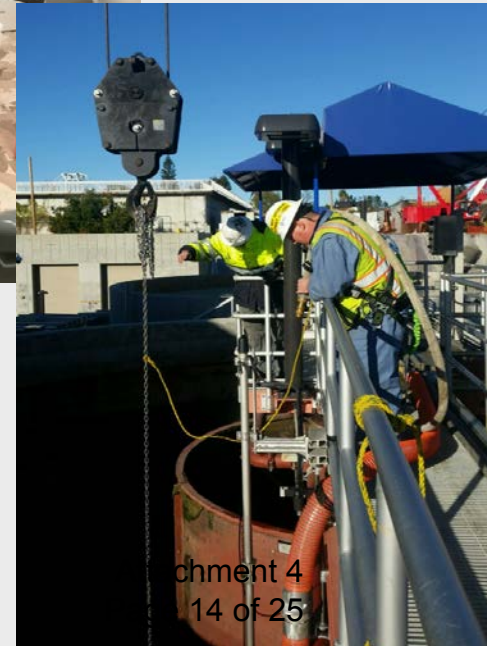
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# Water Utility Maintenance Program

## Maintenance Workforce

Craft Type	Number of Staff
Industrial Electrician	6
Control Systems Technician	10
Plant Maintenance Mechanic	17
Industrial Painter	2
Maintenance Planner (FOA)	4
Maintenance Supervisor	4
Capital Support Liaison	2
Total	45





# Water Utility Maintenance Program

## Maintenance Work Prioritization

Priority Level	Work Types
1	Emergencies
2	High priority CM
3	Most PM, CM and PW
4	Lower priority PM, CM and PW
5	Very low priority / limited value added work

- ▶ Maintenance staff balances their work for the day in real time to complete priority 1 and 2 work orders first
- ▶ Some PM work orders are postponed until the next PM cycle



# Water Utility Maintenance Program

## Capital Construction Support

### Pre-Construction

- ▶ Provide input and review during design phase
- ▶ Support asset preparation for construction

### During Construction

- ▶ Coordinate concurrent daily work with construction
- ▶ Review new equipment submittals
- ▶ Provide functional testing input
- ▶ Work with Asset Management and Engineering to develop PM program
- ▶ Set up required special tooling and spare parts inventories

### Post Construction

- ▶ Follow up with project engineers on repairs during post construction warranty period



# Water Utility Maintenance Program

## Emergency Response

- ▶ 24/7 operation of water utility facilities
  - ▶ After hours on-call support
- ▶ Emergency response by staff is immediate/quick
- ▶ WU DOC opens for multiple day, complex recovery efforts



# Overview

- ▶ Background
- ▶ Water Utility Asset Management Planning
- ▶ Water Utility Maintenance Program
- ▶ **Performance Monitoring and Improvement**
- ▶ Additional WU Asset Management Activities
- ▶ Next Steps

# Performance Monitoring & Improvement

## Maintenance KPI Development

### Problem

- ▶ Standard Key Performance Indicator (KPI) reports not automated in Maximo
- ▶ Each group had variations of reporting KPIs

### Solution

- ▶ Develop standard KPI reports in Maximo
- ▶ Expand KPIs to help optimize maintenance strategies

### Implementation Plan

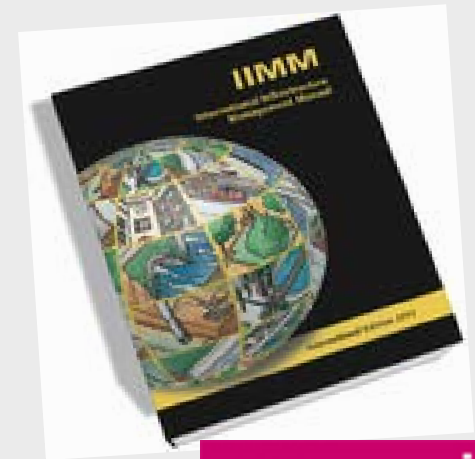
- ▶ Develop automated reports using data from CMMS – Currently 30% completed; est. completion FY18
- ▶ Establish reasonable performance targets and train field staff
- ▶ Deploy ‘continuous improvement’ processes utilizing KPI data as the primary drivers



# Performance Monitoring and Improvement

## Asset Management Standards

- ▶ AM staff monitors standards to ensure programs are up to date
  - ▶ International Infrastructure Management Manual (IIMM)
  - ▶ British Standards Institution's Publicly Available Specification for asset management (PAS 55)
  - ▶ International Organization for Standardization's guidelines for asset management (ISO 55000)
  - ▶ EPA 10-Step Asset Management Planning Model





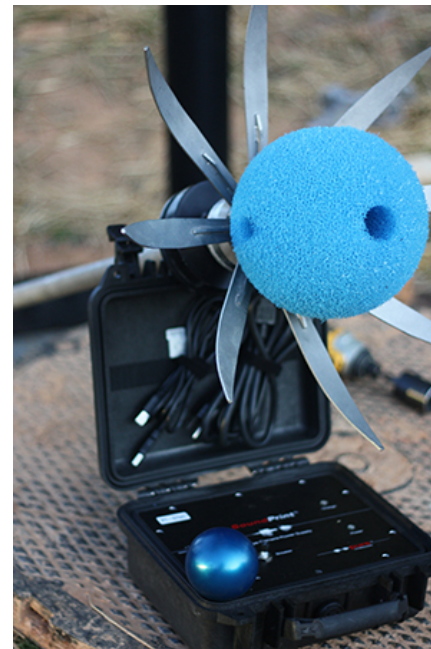
# Performance Monitoring & Improvement

## New Technology

- ▶ District monitors and tests new water technologies for opportunities to improve efficiency, reduce cost, and reduce risk



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Water District



# Overview

- ▶ Background
- ▶ Water Utility Asset Management Planning
- ▶ Water Utility Maintenance Program
- ▶ Performance Monitoring and Improvement
- ▶ **Additional WU Asset Management Activities**
- ▶ Next Steps



# Water Utility Asset Management Program Activities

- ▶ Continuing registry maintenance, asset condition assessments, and maintenance work planning
- ▶ Advancing work on advanced AM principals:  
Thorough evaluation of one unique asset class or facility each year (FY17/18 – Pipelines)
  - ▶ Refine risk scores
  - ▶ Optimize maintenance schedules and lifecycle costs
  - ▶ Document in an asset management plan

# Overview

- ▶ Background
- ▶ Water Utility Asset Management Planning
- ▶ Water Utility Maintenance Program
- ▶ Performance Monitoring and Improvement
- ▶ Additional WU Asset Management Activities
- ▶ **Next Steps**

# Next Steps

- ▶ Continue maintenance planning and execution
  - ▶ Provide FY18-22 Maintenance Work Plan to Board in August 2017
- ▶ Continue facility asset management plans
- ▶ Future Board Updates: Asset Risk, Operations Priorities, Security, Watershed and Administration Asset Management Programs



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**File No.:** 16-0800

**Agenda Date:** 3/28/2017  
**Item No.:** 5.2.

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## BOARD AGENDA MEMORANDUM

### **SUBJECT:**

Cost-Sharing Agreement for Consulting Services to Evaluate Increasing Water Storage in Lake Del Valle Reservoir.

### **RECOMMENDATION:**

- A. Approve the Cost-Sharing Agreement between the Alameda County Water District (ACWD), Zone 7 Water Agency (Zone 7), Santa Clara Valley Water District (District), and East Bay Regional Parks District (EBRPD) for a District contribution of \$75,000 towards an evaluation of increasing water storage in Lake Del Valle Reservoir, and
- B. Authorize the Interim Chief Executive Officer (ICEO) to execute the Cost-Sharing Agreement.

### **SUMMARY:**

Alameda County Water District (ACWD), Zone 7 Water Agency (Zone 7), and the Santa Clara Valley Water District (District) (collectively, SBA Contractors), as well as East Bay Regional Parks District (EBRPD), are evaluating the feasibility of increasing the accessible storage capacity in Lake Del Valle Reservoir by as much as 25,000 Acre-feet (AF). Currently the reservoir has a total capacity of 77,000 AF, but existing flood rule curves limit the storage capacity to 40,000 AF. In anticipation of potential cost-sharing, and since it wished to proceed expeditiously with a planning study, ACWD secured the services of consultants to evaluate the potential to increase accessible storage in Lake Del Valle Reservoir. The consultants are evaluating: (1) the degree to which storage could be increased prudently given that local storm runoff has the potential to induce spills and downstream flooding when the reservoir is operated in a nearly-full mode, and (2) the feasibility and cost of relocating any facilities, including EBRPD recreation facilities, that would be displaced or otherwise impacted by the operational changes. These studies are anticipated to be complete by the end of April. ACWD is administering the consultant agreements, which collectively have a cost-not-to-exceed amount of \$225,000. The cost-share agreement seeks to reimburse ACWD based on equal contributions by the three SBA Contractors, who would be the direct beneficiaries of a storage enhancement project, if implemented. The District's contribution to the studies would not exceed \$75,000.

The current studies are a necessary precursor to the proposed next phase, in which the potential water supply and water quality benefits of increasing accessible storage will be estimated. ACWD, in coordination with Zone 7 and the District, have been discussing approaches to estimate those benefits. If staff determines that this next phase is of sufficient promise for District participation, a

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separate or amended cost-share agreement will be recommended for Board approval.

ACWD is also considering submitting an application for Proposition 1 funding from the State's Water Storage Investment Program if a storage enhancement project is identified and may request that Zone 7 and the District participate. There is insufficient information for staff to make any recommendation, at this time, with regard to participating in a Proposition 1 application process.

### *Background*

Lake Del Valle is a storage reservoir located 10 miles southeast of Livermore, in Alameda County. It is within Del Valle Regional Park. The lake is formed by Del Valle Dam, completed in 1968.

The lake and dam are part of the California State Water Project (SWP), as part of the South Bay Aqueduct (SBA). The lake serves, in part, as off-stream storage for the SBA. It was built as a storage facility for the SBA, but also for flood protection and for recreation. The capacity of the lake is 77,000 acre feet; however, existing flood rule curves limit storage to about 40,000 AF. The lake is a popular destination for hikers, bikers, and boaters.

Lake Del Valle Reservoir regulate flows in the SBA and to store local supplies for ACWD and Zone 7. The SBA Contractors receive their SWP supply as well as the majority of their transfer and exchange supplies and Semitropic bank withdrawals, through the SBA. The Department of Water Resources (DWR) manages the SBA deliveries to either augment deliveries or to manage water quality by blending with releases from Lake Del Valle Reservoir. The District is located at the end of the SBA system, with up to 153 cfs delivery capacity upstream of Del Valle Reservoir and 184 cfs downstream. DWR meets the District's high summer and fall demands by supplementing water from Del Valle storage. The District typically uses the water from the SBA to serve the Penitencia Water Treatment Plant (WTP) and Rinconada WTP, and/or to recharge groundwater basins within the County. Delta water deliveries through the SBA can be greatly influenced by algae and salinity intrusions during summer and fall months.

In drier years, effectively treating algae and salinity at the District's water treatment plants, especially at Rinconada WTP, has been a challenge. Lake Del Valle-stored water is utilized to blend with water pumped directly from the Delta to minimize Delta algae problems which typically occur during summer months when temperatures are high and nutrient levels are elevated. Blending for salinity and bromide typically occurs from late summer through fall to control disinfection by-products at the water treatment plants. During recent drought years, SBA contractors were challenged by the limited amount of water in Del Valle Reservoir available for blending during extended periods of poor Delta water quality.

If Lake Del Valle Reservoir's operational storage capacity is increased, staff expects up to 22,000 AF of additional average monthly operational storage could be gained for use by the three SBA Contractors. The allocation percentage of this additional operational storage is yet to be determined. Increasing the operational storage in Lake Del Valle could improve the District's ability to utilize its share of SWP water allocated by DWR -- for example, by increasing the flexibility of delivery patterns to better meet demands during summer and fall months. Additional water stored in Lake Del Valle might also provide emergency supplies to the SBA Contractors, for example in the event of an earthquake that impacted Delta facilities but not the SBA. A larger amount of higher quality water

could also be used to extend the period over which Lake Del Valle supplies are available for water quality blending.

In December 2016, ACWD hired consultants to evaluate the potential to increase accessible storage in Lake Del Valle Reservoir. The alternatives being evaluated include: 1) reservoir reoperation to reduce seasonal flood control limitations to provide for short-term emergency storage, 2) reservoir reoperation with changes to the seasonal/annual flood control storage limitations to gain longer-term storage, and 3) structural modifications for potentially increasing storage capacity in part to capture additional local watershed runoff. All alternatives would require relocation of EBRPD facilities. ACWD's consulting services will determine the extent of any EBRPD facility relocation, and the potential costs of such relocation. District staff has reviewed the consultants' scope of services and has been consulted by ACWD during progression of the study. If the District executes the Cost-Sharing Agreement, District staff will take an active role in guiding and reviewing the work. The current studies are targeted for completion by the end of April 2017.

The consulting services are estimated to cost up to \$225,000. ACWD will be fronting the consultant costs and will seek reimbursement from the District and Zone 7. The attached cost sharing agreement provides for payment of up to \$225,000 in consultant costs, with costs shared equally among the three SBA Contractors. The District's contribution is anticipated to be no greater than \$75,000.

The current studies are a necessary precursor to the proposed next phase, in which the potential water supply and water quality benefits of increasing accessible storage will be estimated. ACWD, in coordination with Zone 7 and the District, have been discussing approaches to estimate those benefits. The next phase would also include cost estimation for CEQA/permitting, design and construction of a preferred project. If staff determines that this next phase is of sufficient promise for District participation, a separate or amended cost-share agreement will be recommended for Board consideration.

Also as a follow-on to the current studies, ACWD is considering submitting an application for Proposition 1 funding from the State's Water Storage Investment Program if a suitable storage enhancement project is identified and may request that Zone 7 and the District participate. There is insufficient information for staff to make any recommendation, at this time, with regard to participation in a Proposition 1 application process.

#### **FINANCIAL IMPACT:**

Execution of the Cost-Sharing Agreement would require a financial commitment of up to \$75,000. The FY 2017 Imported Water Program (Project #91131004) budget contains sufficient funds to cover this expense.

#### **CEQA:**

The recommended action is to contribute to planning studies only and therefore does not constitute a

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project under CEQA since it does not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

**ATTACHMENTS:**

Attachment 1: Cost Sharing Agreement

Attachment 2: PowerPoint

**UNCLASSIFIED MANAGER:**

Garth Hall, 408-630-2750



## **COST-SHARING AGREEMENT FOR CONSULTING SERVICES TO EVALUATE INCREASING WATER STORAGE IN LAKE DEL VALLE RESERVOIR**

This Cost Sharing Agreement ("Agreement") is made as of \_\_\_\_\_, 2016, by and between the Alameda County Water District ("ACWD"), East Bay Regional Parks District ("EBRPD"), Santa Clara Valley Water District (SCVWD), and Zone 7 of the Alameda County Flood Control and Water Conservation District ("Zone 7 Water Agency" or "Zone 7"). Throughout this Agreement ACWD, EBRPD, SCVWD, and Zone 7 may be collectively referred to as the "Parties", or individually as a "Party." Throughout this Agreement ACWD, SCVWD, and Zone 7 may be referred to as the "Funding Partners."

### **RECITALS**

WHEREAS, ACWD's mission is to provide a reliable supply of high quality water at a reasonable price to its customers; and

WHEREAS, EBRPD's mission is to preserve a rich heritage of natural and cultural resources and provide open space, parks, trails, safe and healthful recreation and environmental education. An environmental ethic guides the District in all of its activities; and

WHEREAS, SCVWD's mission is to provide Silicon Valley safe, clean water for a healthy life, environment, and economy; and

WHEREAS, Zone 7's mission is to provide a reliable supply of high quality water and an effective flood control system in a fiscally responsible, innovative, proactive, and environmentally sensitive way; and

WHEREAS, Lake Del Valle Reservoir ("Lake Del Valle") is connected to the South Bay Aqueduct ("SBA") and is owned by the State Water Project (SWP); and

WHEREAS, ACWD, SCVWD, and Zone 7 are all contracted customers of the State Water Project ("SWP") and are served by the SBA; and

WHEREAS, EBRPD manages and operates Lake Del Valle in Alameda County, California pursuant to an Operating Agreement with the State of California; and

WHEREAS the SWP has insufficient gravity-fed storage to supply the SBA during a disruption of the Sacramento-San Joaquin River Delta such as that which may occur as a result of earthquake, flooding, or severe drought; and

WHEREAS, ACWD, SCVWD, and Zone 7 are signatories to the 2014 Guiding Principles for Bay Area Regional Water Supply Reliability Partnership Development, and have agreed to evaluate near and long term joint water supply reliability projects; and

WHEREAS, ACWD, SCVWD, and Zone 7 recognize that Lake Del Valle may have more accessible water storage potential than is currently utilized; and

WHEREAS, EBRPD owns and operates facilities that would be impacted by raising or lowering the nominal operating levels of Lake Del Valle; and

WHEREAS, the Parties agree to study the potential to increase accessible storage in Lake Del Valle without negatively impacting flood management or recreation, and to assess the cost of suitable replacements for any facilities that would be displaced or otherwise impacted by operational changes that increase or decrease the nominal operating levels in Lake Del Valle; and

WHEREAS, the Funding Partners agree to pay for the costs of the study.

NOW, THEREFORE, ACWD, EBRPD, SCVWD, and Zone 7 agree that the above recitals are hereby incorporated into and made a part of this Agreement, and further agree as follows:

## **1. SCOPE OF SERVICES**

The scope of services includes (1) an evaluation of the potential to increase water storage in Lake Del Valle by utilizing a greater portion of the existing reservoir capacity currently designated for flood protection or storage below the currently designated conservation pool, which may involve relocating or replacing existing EBRPD facilities to accommodate potential changed operating levels ("Evaluation Services"); and (2) an asset valuation of recreation facilities that would be impacted by changed water storage operations in Lake Del Valle ("Cost Services"). The scope of services for the Evaluation Services and Cost Services is described in more detail in Exhibit A, which is attached and incorporated by this reference.

## **2. CONSULTANTS**

ACWD will be responsible for entering into a contract and administering the contract with a consultant for both the Evaluation Services and Cost Services. The selection of the consultant for the Evaluation Services will be approved by all the Parties prior to ACWD entering into a contract with the consultant. The Parties agree that the Cost Services consultant will be EBRPD's contracted assessor.

## **3. CONSULTANT FEES**

The Funding Parties will share equally in the consultant fees to perform the Evaluation and the Cost Services and estimate the combined cost of both services not to exceed two hundred and twenty-five thousand dollars (\$225,000). ACWD will not authorize Services that exceed this amount without the written consent of SCVWD and Zone 7. EBRPD will not be responsible for paying any consultant fees.

Staff time contributed by each Party toward implementing this Agreement will be at each Party's own expense.

## **4. PAYMENT OF CONSULTANT FEES**

ACWD will be responsible for paying the consultants for the services rendered. ACWD will provide SCVWD and Zone 7 with the monthly invoices submitted by the consultants for said services. ACWD will provide monthly invoices that will reflect one-third of the consultant invoice for that month. SCVWD and Zone 7 shall pay ACWD within thirty days from the date of receipt of the invoice.

## 5. GRANT FUNDING

The Parties will work cooperatively together to pursue any grant funds that may be available for the Evaluation Services and Cost Services. If grant funds are obtained, the grant funds will be applied to these services and the Funding Parties will be responsible for paying the balance of the fees as set forth above.

If the Parties agree to pursue future grant funding opportunities based on the results of the Evaluation Services and Cost Services, a separate agreement, or an amendment to this Agreement, shall be required.

## 6. SCHEDULE

The Evaluation Services and the Cost Services will be completed by July 1, 2017.

## 7. TERM

This Agreement will be effective on the date all Parties have signed this Agreement and will remain in effect until December 31, 2017.

## 8. DISPUTE RESOLUTION

In the event of any dispute, the Parties will promptly meet and confer, first at a staff level and then elevated to a meeting of Executive Management, in a good faith attempt to resolve the dispute. If a dispute cannot be resolved by the Parties independently, they may agree to submit such dispute to non-binding mediation by a mutually agreed-upon neutral third party with offices in the San Francisco Bay Area. The cost of mediation will be shared equally.

## 9. NOTICE

Day-to-Day communications regarding the Evaluation Services and the Cost Services will be among the following representatives:

	<b>Name</b>	<b>Phone Number</b>	<b>Email</b>
<b>EBRPD</b>	Jeff Manley	510-544-3233	JManley@ebparks.org
<b>ACWD</b>	Thomas Niesar	510-668-6549	Thomas.Niesar@ACWD.com
<b>SCVWD</b>	Melih Ozbilgin	408-630-2725	MOzbilgin@valleywater.org
<b>Zone 7</b>	Amparo Flores	925-454-5019	AFflores@zone7water.com

All other notices will be given in writing and deposited in the United States mail, registered and postage prepaid and addressed as follows:

If to EBRPD: East Bay Regional Park District  
2950 Peralta Oaks Ct. P.O box 5381  
Oakland, CA 94605-0381

Attention: Jeff Manley

If to ACWD: Alameda County Water District  
43885 S. Grimmer Boulevard  
P.O. Box 5110  
Fremont, CA 94537-5110  
Attention: Thomas Niesar

If to SCVWD: Santa Clara Valley Water District  
5750 Almaden Expressway  
San Jose, CA 95118  
Attention: Cindy Kao

If to Zone 7: Zone 7 Water Agency  
100 North Canyons Parkway  
Livermore, CA 94551  
Attention: Amparo Flores

Notification of a change in the name of the contact person shall be in writing.

## **10. INTERPRETATION**

Section headings are solely for convenience and are not intended to affect the interpretation of the Agreement. The Agreement will be interpreted reasonably, not in favor of or against either party.

## **11. SEVERABILITY**

If any provision of this Agreement or any portion thereof is held to be invalid or unenforceable for any reason, that provision will be reformed and/or construed consistently with applicable law as nearly as possible to reflect the original intentions of this Agreement, and in any event such provision will be severable and will not affect the validity or enforceability of any other provision.

## **12. APPLICABLE LAW**

This Agreement, its interpretation and all services performed under it will be governed by the laws of the State of California.

## **13. ENTIRE AGREEMENT**

This Agreement, including its exhibits, constitutes the complete agreement between the Parties and supersedes any prior agreements, promises, and understandings whether written or oral. This Agreement may be modified or amended only by written instrument signed by all Parties.

## **14. COUNTERPARTS**

This Agreement may be signed in counterparts, which together constitute one Agreement.

IN WITNESS WHEREOF the parties have executed this Agreement by their duly authorized officers as of the day and year first above written.

**EAST BAY REGIONAL PARK DISTRICT**

By: \_\_\_\_\_ Date: \_\_\_\_\_, 2016

Title: \_\_\_\_\_

**ALAMEDA COUNTY WATER DISTRICT**

By: \_\_\_\_\_ Date: \_\_\_\_\_, 2016

Title: \_\_\_\_\_

**SANTA CLARA VALLEY WATER DISTRICT**

By: \_\_\_\_\_ Date: \_\_\_\_\_, 2016  
Norma Camacho

Title: Interim Chief Executive Officer

**ZONE 7 OF ALAMEDA COUNTY FLOOD CONTROL  
AND WATER CONSERVATION DISTRICT**

By: \_\_\_\_\_ Date: \_\_\_\_\_, 2016

Title: \_\_\_\_\_

EXHIBIT A

SCOPE OF SERVICES

## **AGREEMENT FOR SERVICES**

THIS AGREEMENT is made by and between the ALAMEDA COUNTY WATER DISTRICT ("DISTRICT") located at 43885 South Grimmer Boulevard, Fremont, CA 94538 and VFA, INC. ("CONSULTANT"), located at 4000 Barranca Parkway, Suite 250, Irvine, CA 92604 ("PARTIES").

WHEREAS, the DISTRICT desires to obtain appraisal services (Services) and the CONSULTANT is ready, willing and able to furnish such services and has submitted a proposal dated, November 8, 2016, a copy of which is attached and incorporated as Attachment 1.

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

### **1. RENDITION OF SERVICES**

The CONSULTANT agrees to provide professional services to the DISTRICT in accordance with the terms and conditions of this Agreement. CONSULTANT represents that it will exercise the same degree of professional care, skill, efficiency, and judgment ordinarily used by consultants providing similar professional services. CONSULTANT at all times will comply with all federal, state, and local laws, regulations and policies applicable to the services performed pursuant to this Agreement.

### **2. SCOPE OF SERVICES**

The scope of the CONSULTANT's services is set forth in Attachment 1. However, to the extent that Attachment 1 is inconsistent with this Agreement, this Agreement will govern over Attachment 1.

### **3. TERM OF AGREEMENT**

The term of this Agreement shall commence upon the DISTRICT's issuance of a written Notice to Proceed (NTP) and conclude upon the DISTRICT's final acceptance of the Services.

It is further understood that the term of the Agreement is subject to the DISTRICT's right to terminate the Agreement in accordance with Section 15 of this Agreement.

### **4. OWNERSHIP OF WORK**

All reports, designs, drawings, plans, specifications, and other materials prepared, or in the process of being prepared, by CONSULTANT, its employees, subcontractors, or agents under this Agreement ("Work Product") shall be and are the property of the DISTRICT.

The DISTRICT shall be entitled to access and to copy the Work Product during the progress of the work. If requested by DISTRICT, CONSULTANT shall deliver one copy of the Work Product remaining in the hands of the CONSULTANT, or in the hands of any subcontractor, upon completion or termination of the work.

CONSULTANT assigns to DISTRICT all right, title, and interest in and to the Work Product, including ownership of copyright in the Work Product. The DISTRICT may utilize any material prepared or work performed by CONSULTANT pursuant to this Agreement, including computer software, in any manner which the DISTRICT deems proper without additional compensation to

CONSULTANT. CONSULTANT shall have no responsibility or liability for any revisions, changes, or corrections to the Work Product made by the DISTRICT, nor for any use or reuse of the Work Product for any purpose other than the Work unless CONSULTANT accepts such responsibility in writing.

The CONSULTANT shall not disclose Work related data or information without the prior written consent of the DISTRICT.

5. **USE OF SUBCONTRACTORS**

CONSULTANT shall not subcontract any Services to be performed under this Agreement without the prior written approval of the DISTRICT. CONSULTANT may subcontract with service firms engaged in drawing, reproduction, typing and printing without the prior written consent of the DISTRICT. CONSULTANT shall be solely responsible for reimbursing any subcontractor and the DISTRICT shall have no obligation to them.

6. **CHANGES**

The DISTRICT may, at any time, by written order, make changes within the scope of work and services described in this Agreement. If such changes cause an increase or decrease in the budgeted cost of or the time required for performance of the agreed upon work, an equitable adjustment as mutually agreed shall be made in the limit on compensation as set forth in Section 9 or in the term of the Agreement as set forth in Section 3, or both. In the event that CONSULTANT encounters any unanticipated conditions or contingencies that may affect the scope of work or services and result in an adjustment in the amount of compensation specified herein, CONSULTANT shall so advise the DISTRICT immediately upon notice of such condition or contingency. The written notice shall explain the circumstances giving rise to the unforeseen condition or contingency and shall set forth the proposed adjustment in compensation. This notice shall be given to the DISTRICT prior to the time that CONSULTANT performs work or services related to the proposed adjustment in compensation. The pertinent changes shall be expressed in a written supplement to this Agreement prior to implementation of such changes.

7. **RESPONSIBILITY; INDEMNIFICATION**

Notwithstanding any other provision of this Agreement, CONSULTANT agrees to indemnify, defend and hold harmless the DISTRICT, East Bay Recreational Parks District (EBRPD), Santa Clara Valley Water District (SCVWD), and Zone 7 of the Alameda County Flood Control and Water Conservation District (Zone 7), their agents, officers, directors, and employees from and against any and all demands, claims, damages, losses and reasonable expenses, (including without limitation interest, penalties and reasonable attorney's fees), fines, taxes, levies, imposts, assessment, demands, damages or judgments of any kind or nature, whether in law or equity (including without limitation, death or injury to any person, property damage, administrative and judicial orders and consents, or any other loss) to the extent they arise out of, pertain to, or relate to the consultant's performance of services as described in Exhibit A, including its negligence, recklessness, or willful misconduct. The foregoing does not limit any strict liability imposed onto the consultant by law. The rights, duties,



and obligations of the Parties as set for above in this paragraph 7, indemnification; survive termination, expiration, and suspension of this Agreement.

## 8. **INSURANCE**

The CONSULTANT will be required to secure insurance as indicated below.

- A. **Insurance Requirements**: The CONSULTANT shall, at their expense, maintain during the life of the Contract all the insurance on all of their operations in companies acceptable to the District, as required by this section, and shall endeavor to submit Certificates of Insurance to the District. The notice to proceed shall not be issued, and the CONSULTANT shall not commence work until such insurance has been approved by the District. Acceptance of the Certificates shall not relieve the CONSULTANT of any of the insurance requirements, nor decrease the liability of the CONSULTANT. The District reserves the right to require the CONSULTANT to provide Insurance Policies for review by the District in the event there is a dispute regarding the scope and coverage of insurance.
- B. **Workers' Compensation Insurance**: The CONSULTANT shall take out and maintain during the life of the Contract, Workers' Compensation and Employers' Liability Insurance for all employees on the project. Employers' liability insurance shall be provided in amounts not less than \$1,000,000 each accident for bodily injury by accident, \$1,000,000 policy limit for bodily injury by disease, and \$1,000,000 each employee for bodily injury by disease. In lieu of evidence of Workers' Compensation Insurance, the District will accept a Self-Insuring Certificate from the State of California. The CONSULTANT shall require any subcontractor to provide evidence of Workers' Compensation and Employers' Liability Insurance, all in strict compliance with California State Laws.
- C. **General Liability Insurance**: The CONSULTANT shall also secure and maintain during the life of the Contract such General Liability Insurance as shall protect the District, its directors, officers, employees, and agents from claim which may arise from operations under this Contract, whether such operations are by itself, by any subcontractor, or by anyone directly or indirectly employed by either of them. CONSULTANT shall carry Comprehensive General Liability or Commercial General Liability insurance covering all operations by or on behalf of District for bodily injury, property damage, and personal injury liability for the limits of liability indicated below and including, but not limited to, coverage for:

- premises and operations;
- products and completed operations;
- contractual liability insuring the obligations assumed by CONSULTANT in this contract;
- broad form property damage (including completed operations);
- explosion, collapse and underground hazards;
- bodily injury;
- property damage;

arrest, false imprisonment, malicious prosecution, defamation of character, libel and slander alleged to have been caused by CONSULTANT or employees of CONSULTANT or subcontractors;

personal injury liability; and

accidental spillage, cleanup and other related costs.

Except with respect to bodily injury and property damage included within the products and completed operations hazards, the aggregate limits where applicable.

This Liability Insurance shall be in an amount not less than \$1,000,000 for each occurrence, \$1,000,000 for each occurrence for work on public roadways.

Broad form property damage liability must be afforded. Permission is granted for deductible which shall not exceed \$25,000 without approval of the District.

- 1) One of the following coverage forms is required:
  - a. Comprehensive General Liability Commercial
  - b. General Liability (Occurrence)
- 2) If CONSULTANT carries a Comprehensive General Liability policy, the limits of liability shall not be less than a Combined Single Limit for bodily injury, property damage and Personal Injury Liability of:
  - a. \$1,000,000 each occurrence
  - b. \$2,000,000 Aggregate
- 3) If CONSULTANT carries a Commercial General Liability (Occurrence) policy, the limits of liability shall not be less than:
  - a. \$1,000,000 each occurrence (combined single limit for bodily injury and property damage)
  - b. \$1,000,000 for Personal Injury Liability
  - c. \$2,000,000 Aggregate for Products-Completed Operations
  - d. \$2,000,000 General Aggregate

If the policy does not have an endorsement providing that the General Aggregate Limit applies separately to this Contract or if Defense Costs are included in the aggregate limits, then the required aggregate limits shall be \$2,000,000.

- 4) With respect to whichever general liability policy form is furnished, the DISTRICT, East Bay Recreational Parks District (EBRPD), Santa Clara Valley Water District (SCVWD), and Zone 7 of the Alameda County Flood Control and Water Conservation District (Zone 7), their officers, directors, employees and agents shall be included as Additional Insured per Additional Insured Endorsement CG20 10 10 93 or equivalent. This Endorsement is to be attached to insurance certificates submitted to the District. The policy shall stipulate that the insurance afforded the Additional Insured shall apply as primary insurance and that any other

insurance carried by District, its officers, directors, employees and agents will be excess only and will not contribute with Contractors insurance. Exclusions of contractual liability as to bodily injuries, personal injuries and property damage MUST BE ELIMINATED from the basic policy and endorsements.

- D. Automobile Liability Insurance: The CONSULTANT shall take out and maintain during the life of the Contract, Automobile Liability Insurance (Bodily Injury and Property Damage Liability) including coverage for all hired, rented, leased and non-owned automobiles. The limits of liability shall be not less than \$1,000,000 Combined Single Limit for each accident and \$1,000,000 for each occurrence for work on public roadways.
- 1) If a CONSULTANT's vehicle is used in the performance of work on District property or at a jobsite then with respect to the automobile liability policy that is furnished, District, its officers, directors, employees and agents shall be named as Additional Insured. The policy shall stipulate that the insurance afforded the Additional Insured shall apply as primary insurance and that any other insurance carried by District, its officers, directors, employees and agents will be excess only and will not contribute with this insurance. The policy must cover complete contractual liability. Exclusions of contractual liability as to bodily injuries, personal injuries and property damage MUST BE ELIMINATED from the basic policy and endorsements.
- E. Technology Professional Liability Insurance. CONSULTANT also shall maintain Technology Professional Liability Insurance covering CONSULTANT's performance under this Agreement with a limit of liability of One Million Dollars (\$1,000,000) for any one claim.
- F. Certificates of Insurance: Consultant shall endeavor to furnish Certificates of Insurance to District before any work is commenced hereunder by CONSULTANT. The required insurance shall be subject to the approval of the District, but any acceptance of insurance certificates by District shall not limit or relieve CONSULTANT of the duties and responsibilities assumed by it under this Contract.
- G. Waiver of Subrogation: With the exception of the Technology Professional Liability, the referenced policies and any Excess or Umbrella policies, where applicable, shall contain a waiver of subrogation in favor of the Alameda County Water District and their respective directors, officers, employees, volunteers and agents while acting in such capacity, and their successors or assignees, as they now or as they may hereafter be constituted, singly, jointly or severally.
- H. Deductibles and Self-insured Retention:  
Any deductibles or self-insured retention must be declared to ACWD.
- I. District and CONSULTANT waive all rights against each other and against all other contractors for loss or damage to the extent covered by Builder's Risk or any other property or equipment insurance applicable to the work, except such rights as they may have to the proceeds of such

insurance. If the policies of insurance referred to in this Section require an endorsement or consent of the insurance company to provide for continued coverage where there is a waiver of subrogation, the owners of such policies will cause them to be endorsed or obtain such consent.

J. The requirement for carrying insurance hereunder is cumulative and shall not be in derogation of other provisions of this Contract.

K. Insurance carrier must have a Best's Rating of "A-VII" or better.

### **IMPORTANT**

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

### **DISCLAIMER**

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsements(s).

## **9. COMPENSATION**

The CONSULTANT agrees to perform all of the work set forth in Attachment 1, on a firm-fixed fee basis. Total compensation shall not to exceed Twenty-Eight Thousand One Hundred Eighty-Two Dollars (\$28,182). The amount shall include all labor, materials, taxes, profit, overhead, insurance, travel, subcontractor costs, and all other costs and expenses incurred by the CONSULTANT.

## **10. MANNER OF PAYMENT**

Payment shall be made upon approval of invoices, no more than once a month. All invoices shall reference the agreement number. The DISTRICT shall make payments to the CONSULTANT for satisfactory Services performed and the costs of such services within thirty (30) calendar days from the date the DISTRICT receives the CONSULTANT's invoice. All invoices and supporting documentation, clearly identifying the Agreement number, shall be submitted by email, addressed to Thomas Niesar, Water Resources Planning Manager, at [accounting@acwd.com](mailto:accounting@acwd.com).

## **11. CONSULTANT'S STATUS**

Neither the CONSULTANT nor any party contracting with the CONSULTANT shall be deemed to be an agent or employee of the DISTRICT. The CONSULTANT is and shall be an independent contractor, and the legal relationship of any person performing services for the CONSULTANT shall be one solely between that person and the CONSULTANT.

## **12. ASSIGNMENT**

CONSULTANT shall not assign any of its rights nor transfer any of its obligations under this Agreement without the prior written consent of DISTRICT.

13. **DISTRICT WARRANTIES**

The DISTRICT makes no warranties, representations or agreements, either expressed or implied, beyond such as are explicitly stated in this Agreement.

14. **DISTRICT REPRESENTATIVES**

Except when approval or other action is required to be given or taken by the Board of Directors of the DISTRICT, the General Manager of the DISTRICT, or such person or persons as the General Manager shall designate in writing from time to time, shall represent and act for the DISTRICT on the day to day activities under this Agreement. For strictly contractual matters relating to this Agreement, an authorized representative of the Procurement and Contracts Division, shall represent and act for the District.

15. **TERMINATION**

The DISTRICT shall have the right to terminate this Agreement at any time for cause or convenience by giving written notice to the CONSULTANT. Upon receipt of notice of termination for convenience, the CONSULTANT shall not commit itself to any further expenditure of time or resources. Upon receipt of notice of default, CONTRACTOR shall be afforded thirty days to correct the identified deficiency(ies). If said deficiency(ies) are not corrected to the DISTRICT's satisfaction, the Agreement will be terminated immediately.

If the Agreement is terminated for any reason other than a default by CONSULTANT, the DISTRICT shall pay to CONSULTANT in accordance with the provisions of Sections 9 and 10 all sums actually due and owing from DISTRICT for all services satisfactorily performed up to the day written notice of termination is given, plus any costs reasonably and necessarily incurred by CONSULTANT to effect such suspension or termination. If the Agreement is terminated for default, the DISTRICT shall remit final payment to CONSULTANT in an amount to cover only those services performed in full accordance with the terms and conditions of this Agreement up to the effective date of termination.

16. **MAINTENANCE, AUDIT, AND INSPECTION OF RECORDS**

The CONSULTANT shall permit the authorized representatives of the DISTRICT to inspect, audit, make copies and transcriptions of books and all data and records of the CONSULTANT relating to its performance under the Agreement, if requested.

17. **CONFIDENTIAL INFORMATION**

A. **Definition.** The CONSULTANT acknowledges that it may receive Confidential Information from the DISTRICT, Santa Clara Valley Water District (SCVWD) or the Alameda County Flood Control and Water Conservation District (Zone 7) (hereafter collectively referred to as "AGENCIES") in connection with this Agreement. "**Confidential Information**" means all information or material that AGENCIES treat as confidential and any information relating to third parties that a party has an obligation to treat as confidential, which is disclosed by or obtained by a party in connection with this Agreement, whether such information is in oral,

written, graphic or electronic form, which: is (A) marked "Confidential," "Restricted," or "Proprietary Information" or other similar marking, (B) known by the parties to be considered confidential or proprietary, or (C) which should be known or understood to be confidential or proprietary by an individual exercising reasonable commercial judgment in the circumstances. Confidential Information does not include information to the extent that such information: (i) is or becomes generally known to the public by any means other than a breach of the obligations of a receiving party hereunder; (ii) was previously known to the receiving party as evidenced by its written records; (iii) is rightly received by the receiving party from a third party who is not under an obligation of confidentiality; or (iv) is independently developed by the receiving party without reference to or use of the other party's Confidential Information which such independent development can be established by evidence that would be acceptable to a court of competent jurisdiction.

**B. Confidentiality Obligations.** Each of the PARTIES agree:

- 1) to maintain the Confidential Information of the other party in confidence and to take all reasonable steps, which shall be no less than those steps it takes to protect its own confidential and proprietary information, to protect the Confidential Information of the other party from unauthorized use, disclosure, copying or publication;
- 2) not to use the Confidential Information of the other party other than in the course of exercising its rights or performing its obligations under this Agreement;
- 3) not to disclose or release such Confidential Information except to the extent required by applicable law or during the course of or in connection with any litigation, arbitration or other proceeding based upon or in connection with the subject matter of this Agreement, provided that the receiving party shall first give reasonable notice to the disclosing party prior to such disclosure so that the disclosing party may obtain a protective order or equivalent and provided that the receiving party shall comply with any such protective order or equivalent;
- 4) not to disclose or release such Confidential Information to any third person without the prior written consent of the disclosing party, except for authorized employees or agents of the receiving party who have a need to know such information for the purpose of performance under this Agreement and exercising its rights under this Agreement, and who are bound by confidentiality obligations at least as protective of the disclosing party's Confidential Information as this Agreement; and
- 5) to take such actions as may be reasonably necessary to enforce its agreements with its employees and agents, including commencing legal proceedings.

**C. Information Subject to the Public Records Act.** CONSULTANT understands and agrees that the DISTRICT is a public entity and is thus subject to the California Public Records Act (Government Code Section 6250 et seq.) and its relevant disclosure requirements. Under certain

circumstances, the DISTRICT may be required to disclose information including the contents of this Agreement in accordance with the California Public Records Act. If CONSULTANT requests that the DISTRICT withhold from disclosure information identified by CONSULTANT as confidential, and the DISTRICT complies with CONSULTANT's request, CONSULTANT shall assume all responsibility for any challenges resulting from the non-disclosure, indemnify and hold harmless the DISTRICT from and against all damages (including but not limited to attorneys' fees that may be awarded to the party requesting CONSULTANT's information), and pay any and all costs and expenses related to the withholding of CONSULTANT's information.

#### **18. RELEASE OF INFORMATION**

CONSULTANT shall not release any reports or other information prepared in connection with this Agreement without the approval of the General Manager or his designee.

#### **19. KEY PERSONNEL**

Michael Wentz shall serve as the primary staff person of CONSULTANT to oversee all of the services under this Agreement. The other principal participants shall be individuals identified by position title in Attachment 1.

#### **20. NOTICES**

All communications relating to the day to day activities of the project shall be exchanged between the DISTRICT's Contract Administrator and the CONSULTANT's Account Manager.

All other notices and communications deemed by either party to be necessary or desirable to be given to the other party shall be in writing and may be given by personal delivery to a representative of the parties or by mailing the same postage prepaid, addressed as follows:

If to the DISTRICT: Alameda County Water District  
43885 South Grimmer Blvd  
Fremont, California 94538

Attention: Procurement & Contracts Division

If to the CONSULTANT: VFA, Inc.  
4000 Barranca Parkway, Suite 250  
Irvine, CA 92604

Attention: Michael Wentz

The address to which mailings may be made may be changed from time to time by mailed notice as described above. Any notice given by mail shall be deemed given on the day after that on which it is deposited in the United States Mail as provided above.



**20. ATTORNEYS' FEES**

If any legal proceeding should be instituted by either of the parties to enforce the terms of this Agreement or to determine the rights of the parties under this Agreement, the prevailing party in said proceeding shall recover, in addition to all court costs, reasonable attorneys' fees.

**21. APPLICABLE LAW**

This Agreement, its interpretation and all work performed under it shall be governed by the laws of the State of California, venue the courts of the County of Alameda.

**22. BINDING ON SUCCESSORS**

All of the terms, provisions and conditions of this Agreement shall be binding upon and inure to the benefit of the parties and their respective successors, assigns and legal representatives.

**23. NON-DISCRIMINATION**

The District is an equal opportunity employer and requires all parties it contracts with to have and adhere to a policy of equal opportunity and non-discrimination. In the performance of this Agreement, CONSULTANT will comply with all applicable federal, state, local laws and regulations, and will not discriminate against any subcontractor, employee, or applicant for employment, in the recruitment, selection for training including apprenticeship, hiring, employment, utilization, promotion, layoff rates of pay, or other forms of compensation, or against any other person, on the basis of age (40 and over), ancestry, color, religious creed (including religious dress and grooming practices), disability (mental and physical) including HIV and AIDS, marital status, medical condition (cancer and genetic characteristics), genetic information, military and veteran status, national origin (including language use restrictions), race, sex (which includes pregnancy, childbirth, breastfeeding and medical conditions related to pregnancy, childbirth or breastfeeding), gender, gender identity and gender expression, and sexual orientation. The CONSULTANT's policy must conform with applicable state and federal guidelines including the Federal Equal Opportunity Clause, "Section 60-1.4 of Title 41, Part 60 of the Code of Federal Regulations," Title VII of the Civil Rights Act of 1964 as amended; the American's with Disabilities Act of 1990; the Rehabilitation Act of 1973 (Sections 503 and 504); California Fair Employment and Housing Act (Government Code Section 12900 et. Seq.); California Labor Code Sections 1101 and 1102.

**24. SEVERABILITY**

Should any provision, or portion of a provision, herein be found or deemed to be invalid, this Agreement shall be construed as not containing such provision, or portion of such provision, and all other provisions which are otherwise lawful shall remain in full force and effect, and to this end the provisions of this Agreement are declared to be severable.



## **25. LIMITATION OF LIABILITIES**

With the exception of the indemnification obligations set forth in Section 7, to the fullest extent permitted by law, each party's total liability (including attorney's fees awarded under the agreement) to the other for any claim under this agreement will be limited to the fees paid for the prior twelve (12) months for the service which is the subject matter of the claim.

## **26. EXCLUSION OF INDIRECT AND CONSEQUENTIAL DAMAGES**

In no event will either party be liable to the other for any indirect, special, incidental, exemplary punitive, treble or consequential damages (including, without limitation, loss of business, revenue, profits, staff time, goodwill, use, data, or other economic advantage), whether based on breach of contract, breach of warranty, tort (including negligence), product liability or otherwise, whether or not a party has previously been advised of the possibility of such damages.

[illegible]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement by their duly authorized officers as of the last signature date set forth below.

ALAMEDA COUNTY WATER DISTRICT

VFA, INC. \*

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

DocuSigned by:

*Van Goodrich*

9AC3D5BBF0D3485...

Name: Steven Inn

Name: Van Goodrich

Title: Manager of Water Resources

Title: CFO

Date: \_\_\_\_\_

Date: 11/9/2016

Signature: \_\_\_\_\_

DocuSigned by:

*Kelly Connery*

792F72B0674E459...

Name: Kelly Connery

Title: Chief Revenue Officer

Date: 11/13/2016

\*If Consultant is a corporation, the Contract must be executed by two corporate officers, one from each of the following categories 1) the President, the Vice President or the Chair of the Board, and 2) the Secretary, Assistant Secretary, Chief Financial Officer, or Assistant Treasurer.

Attachment 1  
Proposal

### Facility Condition Assessment Services - FIXED FEE STATEMENT OF WORK

This Statement of Work ("SOW" and "Statement of Work") incorporates by reference and is governed by the terms and conditions of the "Contract for Services dated November 8, 2016 between Alameda County Water District ("Client") and VFA, Inc. ("VFA"), ("Agreement") and is effective as of November 8, 2016 ("Statement of Work Effective Date"). When in conflict, the terms of this SOW shall supersede those of the Agreement solely in relation to the Project listed below.

GENERAL INFORMATION	
Client Name:	Alameda County Water District
Project Name:	2017 Del Valle Park Facility Condition Assessment
Issue Date:	November 8, 2016
Issued By:	Lee Kaufman, <a href="mailto:lkaufman@accruent.com">lkaufman@accruent.com</a> , 677.772.8160

TERM INFORMATION	
Term of Offer:	VFA, Inc. ("VFA") reserves the right to reject this Statement of Work if it is not signed and returned to Accruent sent to Mike Wintz; <a href="mailto:mwintz@accruent.com">mwintz@accruent.com</a> ; (949) 468-7179 by November 30, 2016
Term of Services:	The Comprehensive Facility Condition Assessment Services ordered hereunder will be available to Client for 180 days from Statement of Work Effective Date. After such date any unused portion of the Services defined will be forfeited. Services shall not be scheduled or started pursuant to this SOW if Client has an Accounts Receivable balance with VFA that is more than thirty (30) days delinquent.

The parties accept and agree to this Statement of Work, as follows:

CLIENT CONTACT INFORMATION					
Contact Type	Name	Address	E-Mail	Phone	Mobile Phone
SOW Contact	Robert Ferro	43885 S. Grimmer Blvd., Fremont, CA 94538	<a href="mailto:Robert.Ferro@acwd.com">Robert.Ferro@acwd.com</a>	510-668-4291	
Invoicing Contact	Robert Ferro	43885 S. Grimmer Blvd., Fremont, CA 94538	<a href="mailto:Robert.Ferro@acwd.com">Robert.Ferro@acwd.com</a>	510-668-4291	

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CLIENT BILLING INFORMATION	
<b>Does Client require a purchase order for this order? IF YES IS SELECTED, PO Number Must Be Provided</b>  <input checked="" type="checkbox"/> No. <input type="checkbox"/> Yes. If yes, PO#:	<b>Please provide PO number or other Customer Internal Reference Code to be Included with Invoice(s):</b>
<b>Special Invoicing Requirements</b>	<b>Please indicate any customer specific invoicing requirements (expense backup, format of invoice, customer specific internal numbers, etc).</b>

SERVICE FEES		
Item	Description	One Time Fee
	Facility Condition Assessment Services – Scope of Work per Exhibit 2 on assets listed in Exhibit 1- Building List.	\$28,182
<b>FEE SUMMARY:</b>  <b>All fees exclude applicable taxes and include expenses</b>		<b>\$28,182</b>

PAYMENT TERMS	
INVOICING	<u>Assessment Services</u>  Accruent will invoice Alameda County Water District at the end of every month based on percent complete of the overall fee plus any applicable taxes. Payment will be due within thirty (30) days of invoice date. The monthly invoicing will be inclusive of any applicable expenses.
TERMS:	<u>Ownership.</u> Client acknowledges that Client acquires only the right to use the output of Services and Accruent shall retain sole and exclusive ownership of and all rights, title, and interest in the output of Services, including all copies and derivative works thereof. The Services hereunder are not "works for hire".

By signing below, I represent that I am authorized to make this commitment on behalf of the company indicated above.

**Alameda County Water District**

**VFA, Inc.**

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Print Name: Van Goodrich

Title: \_\_\_\_\_

Title: CFO

Date: \_\_\_\_\_

Date: 11/9/2016

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**Exhibit 1- Building List**

<b>Asset</b>	<b>Park</b>	<b>SF</b>
Kiosk	Del Valle	
Residence	Del Valle	1,122
Residence Garage	Del Valle	800
Residence	Del Valle	1,650
Workshop	Del Valle	1,152
Storage Area	Del Valle	633
Storage Area	Del Valle	180
Office	Del Valle	1,065
Amphitheater	Del Valle	4,000
Changing Room	Del Valle	893
Changing Room	Del Valle	893
Changing Room	Del Valle	893
Changing Room	Del Valle	893
Changing Room	Del Valle	893
Changing Room	Del Valle	893
Changing Room	Del Valle	893
Changing Room	Del Valle	893
Visitor Center/Concession	Del Valle	968
Restroom	Del Valle	340
Restroom	Del Valle	340
Restroom	Del Valle	552
Restroom	Del Valle	552
Restroom	Del Valle	552
Restroom	Del Valle	552
Restroom	Del Valle	552
Restroom	Del Valle	552
Concession/Boat House	Del Valle	225
WTP: Chlorine Building	Del Valle	225
dock - Marina Service Yard	Del Valle	35
dock - West Shore Marina	Del Valle	35

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dock - East Shore Marina	Del Valle	35
dock - boat launch	Del Valle	35
dock - boat launch	Del Valle	75
dock - kayak launch	Del Valle	75
Wastewater pumping Station #1 @ Main Entry	Del Valle	
Station #2@ Eagle	Del Valle	
Wastewater pumping Station #5@ Campground	Del Valle	
Wastewater pumping Station #3 @ Oak Point	Del Valle	
Station #6 @ West Beach	Del Valle	
Water Treatment Plant	Del Valle	
Station #4@ Del Valle Rd.	Del Valle	

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**EXHIBIT 2****Statement of Work – Description of Services****Facilities Inspection and Assessment**

VFA will provide a facility condition assessment of the Del Valle park using the assessment methodology described below. VFA's assessment methodology includes the use of industry standards, like BOMA for system lifecycle standards, RSMeans construction cost estimator for developing deferred maintenance and renewal costs, and, ASTM designation E2018-01 for Property Condition Assessments. These standards are very reliable sources of information. However, experience has taught us that your staff will have valuable insight into the maintenance history and local costing of the ongoing operation for much of your portfolio. Our assessors with combined average of 20 years' experience with the local knowledge of your staff and the standards mention before to achieve the highest level of accuracy possible within the scope of services being delivered.

VFA provides consistent, reliable data and transparent, easy-to-follow program management advice that will enable you to effectively and efficiently manage your facility capital program. Figure 1 shows VFA's process for conducting facility assessments and providing deliverables that enable customers to more effectively manage their asset portfolios.



*Figure 1 VFA's assessment process has been refined and proven through the assessment of more than 4 billion square feet of assets under management.*

Details about each phase of this process are provided in the following sections.

***Pre-Assessment Preparation Phase***





**Set Goals** - To kick off the project, VFA will set up a meeting via teleconference with your key stakeholders to confirm the goals and objectives for the project. Understanding what you want to achieve with this project is the key to its success and will drive the project effort. This will ensure that the end deliverable is exactly what you are expecting and will best meet your goals.

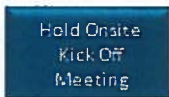
**Confirm Scope and Deliverables** - During this planning phase, VFA will work with your key stakeholders to establish and document the parameters for the assessment / survey. A scoping meeting also via teleconference will be held to discuss and confirm schedules, assessment/survey criteria, data classifications, prioritizations and categorizations, and the best method for storing asset data to support your analysis, reporting, and planning needs. We'll also assist you in determining which assets to input into the CPMS system, (VFA.facility). Often the goal setting and confirmation of scope and deliverables can be discussed and agreed in one

meeting.

**Collect Baseline Data / Documentation** - The VFA team will communicate with your facility managers, plant maintenance managers, and staff members (via email or teleconference) to help them gather information that the VFA assessment and survey teams will need. This data typically includes asset location, number, use and name, photos, dates of initial construction and any renovations, number of floors, gross area, types of heating and cooling systems, and any other relevant data. Data that will be uploaded into VFA.facility must be provided to VFA in spreadsheet or database format. Additionally, any information regarding site maps, principal asset activities, occupancy schedules, any outstanding asset code violations, recent studies such as ADA or roofing inspections, that are provided to VFA, and that will impact how VFA conducts our assessment work, will also be reviewed.

As a result from the discussions of the scope parameters, VFA will configure our software tools to align with the level of assessments / surveys agreed to in the workshop.

**The Assessment phase** is the on-site work performed by VFA's assessment professional and subsequent data entry/analysis done at VFA's offices. Included is the assessment of the remaining lifecycle of major asset systems and the identification of deferred maintenance requirements. By the end of this stage, the assessment data will be collected and populated in VFA.facility; this includes analysis of the data, such as cost estimates for corrective actions.



On the morning of the first day of the field visit, VFA will organize a meeting with the staff that will be involved with the field assessment phases of the project to kick off the on-site survey work. This meeting will enable your staff to meet the VFA assessment professional and understand the project schedule. It will also include discussion of the logistics of the site visit, such as gaining access to all elements of a facility, located all assets across the park and other practical information important to undertaking the physical assessment. VFA will ensure that all functional teams understand project objectives, conditions, and goals.

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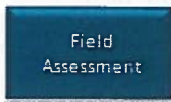
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As part of the meeting the following information is typically discussed as part of our assessment needs:

- Basic building information
- Systems to be assessed
- Special data that needs to be tracked
- Previous assessments performed and success rates working with the results
- Current process for capital planning
- Assessment logistics



VFA's assessment professional will visually inspect all of the assets included in the scope of the project to identify deficient conditions and assess the remaining lifecycle of designated asset systems. Requirements will be documented, including digital photographs of asset exteriors and any observed conditions within the assets. The survey will include a visual inspection of the asset including all architectural, mechanical, electrical, and site systems listed in Table 1.

**Table 1 VFA assesses architectural, mechanical, and electrical systems as classified by the Uniformat standards.**

- Building exterior systems: roofs, walls, window systems, exterior doors, and structural
- Major components
- Building interior systems: walls, doors, floors and ceilings
- Linear utility systems (within 10ft perimeter of major asset)
- Heating, ventilation and air conditioning, controls and instrumentation, special equipment
- Electrical service and distribution
- Lighting and branch wiring
- Communications and security
- Plumbing
- Fire protection
- Elevators
- Bridges, piers and docks (if included in the Asset List of Exhibit 1)

The inspection of the asset interiors will include all mechanical and electrical rooms, as well as a representative sampling of rooms. Resultant requirements will be identified for the entire asset or system (not by individual room or component). The inspections of the asset exteriors will include an approximate ten-foot perimeter around the asset and the areas adjacent to and/or attached to

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the asset that are inherent to the asset's use, such as ramps, stairs, paving, landscaping, and exterior, wall-mounted lighting.

VFA does not include intrusive and destructive testing such as infrared, roofing core sampling, soil testing, generator testing, and hazardous material testing as part of the standard assessment methodology. If observed field conditions warrant further testing, VFA will make recommendations for such investigation as appropriate.

#### Data Entry & Cost Estimation

After the on-site work is complete, the assessment professional will review their notes and findings and begin entering all of the collected data into VFA facility. This will include descriptive narratives, field entries, and photos as described in the following list:

*Asset Descriptions:* A narrative summary of each assessed facility/asset will be documented in the asset description. Additional details of each of the asset's systems will be recorded in system descriptions. This information is useful for having documentation regarding the basic information about an asset, such as construction information.

*System Models and Conditions:* Assets (buildings or site) are broken down into their component systems in the database. These system models provide an up-to-date record of what exists within the building at the time of the assessment (i.e., what type of roof?), and how much of it is present (i.e., how much acoustical ceiling tile vs. gypsum wallboard ceilings). System models record the expected useful lifespan of each system (i.e., how long should this roof last?) and how much useful life remains based on the visual inspection (i.e., how long can we expect the roof will last?). A replace-in-kind replacement value is established for each system as well as a projected renewal cost (i.e., how much should we expect to pay when the system is at the end of its life?). Based on the information gathered in the inspection, you will have an understanding of the reinvestment rate required on an annual basis to replace system components that have reached or exceeded the end of their useful lives.

*Requirements:* Requirements are issues such as systems or components that are unsafe, broken/damaged, can no longer perform the intended function, are approaching or have exceeded their useful life spans, do not conform to current codes, or may be an improvement to the facility, such as an energy conservation project. The survey will typically include capital needs rather than operational, such as major repair to air handling unit vs. changing a fan belt. (Capital vs. operational expenses is often set by a dollar minimum threshold, such as \$5,000 and will be agreed upon at the beginning of project.) Each requirement is individually classified by priority, category (cause of issue), system, and inspector, thereby allowing for multiple queries and flexible data analysis. If required, additional classifications for specific needs can also be created by the project manager or your site administrator.

Each Requirement must be assigned a Priority that indicates its severity and the ideal time frame for correction. The VFA standard Priorities are described in detail below.

The chart below lists the current Priorities along with their definitions and default years offset.

**Table 2 Priorities associate requirements with a timeframe; standard priorities shown here can be tailored to meet client requirements.**

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Priority	Definition	Years Offset
Priority 1	Due within 1 Year of Inspection	1
Priority 2	Due within 2 Years of Inspection	2
Priority 3	Due within 5 Years of Inspection	5
Priority 4	Not Time Based	null

Each Requirement must be assigned a category that indicates the general issue or the reason for the deficiency. The standard Requirement Categories, listed below, include a broad range of topical causes for adding the Requirement to the Asset, but may be customized by the client if necessary.

While the software allows a user to assign a parent or child category to a Requirement, the VFA standard is to use the child categories only. All types of Requirements can be categorized within the child categories, and doing so allows for a more precise classification of the issue. Standard categories are shown in Table 3.

**Table 3 Categories group requirements by cause or reason.**

Category	Sub-category
Integrity	Lifecycle Reliability
Regulatory	Life Safety Building Code HazMat Accessibility
Optimization	Technological Improvements Capacity Mission Maintenance Abandoned Energy Sustainability

*Corrective Actions:* VFA's assessors will recommend a corrective action for each requirement. The actions are based upon the materials and equipment required to repair or replace the identified deficiency along with necessary labor. VFA will work with your organization to identify any soft costs (e.g., permitting fees, project management fees, etc.) that should also be included.

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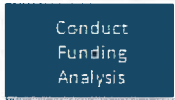
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*Digital Photos:* VFA will import digital photos taken during the assessment to visually illustrate existing conditions. A selection of photographs of the asset exterior and the critical requirements within each asset will be stored and linked to requirements where a supporting photo is beneficial.



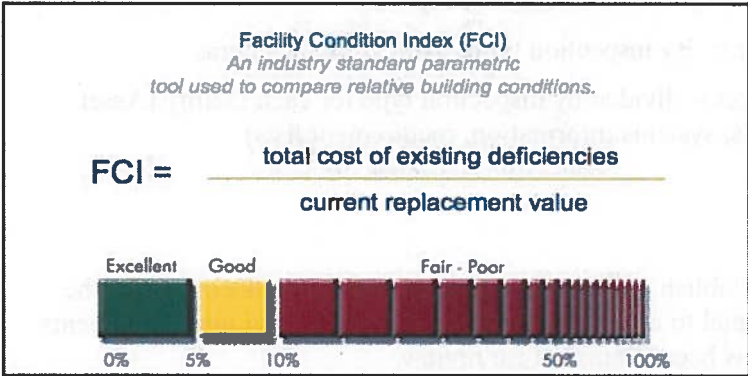
VFA ensures a quality project through a comprehensive Quality Assurance program. Data is reviewed by team members, project managers, and the designated QA manager for the project before submission to you for review.



Data in VFA facility will be used to determine the long-term system renewal costs and timing, develop multiple funding options, and perform a comparative analysis of these funding options; these analyses will be discussed with you. The VFA Team will equip your organization with information to make sound decisions about long-term capital reinvestment in your existing assets. VFA understands that facility conditions are not the only factor in determining what renovations, replacements, or repairs to undertake, and are in many cases considered in support of other drivers such as impact on mission, risk, space planning needs, or changes in use.

After the facilities assessment data has been entered into the database and action methodologies and costs have been established, benchmarking the condition of the facilities can begin. VFA has automated a standard process to assess the relative condition of assets, facilitating comparison both within and among organizations and locations. A Facility Condition Index (FCI) will be calculated for each asset (building) evaluated, providing a key benchmark indicator to quantify the condition of the property (see Figure 2). It is calculated as the deferred maintenance and renewal needs (typically over a 5 year period) divided by the current replacement value of the building. The lower the FCI value, the better the condition of the building.

Your organization will be able to ascertain the impact of various funding levels on the FCI of the assets, or alternatively, the funding requirements to achieve a specific asset FCI.



**Figure 2 FCI is an extremely useful metric for assessing asset condition.**

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Based on the criteria selected (i.e., assets, building systems, requirement priorities and categories, number of years forecasted, etc.), VFA facility will calculate the long-term renewals for the assets and systems included in the project utilizing the previously developed system model and systems conditions evaluation. In addition, VFA will also explore and analyze alternative funding strategies for restoring and maintaining a targeted level of asset condition. By varying levels of funding, timing and project content, the impact on facilities/infrastructure condition over time can be understood. These alternative strategies will be reviewed and discussed with your organization.

Using these analytical capabilities, competing funding requirements can be analyzed based on criteria and logic that VFA will establish with you to ensure consistent, equitable, goal-oriented, needs-based, and efficient capital planning. The resulting funding analysis can then be used by you to establish funding levels to support the development of your capital plan.

Prepare Draft  
Reports

During this phase, VFA's capital planning and management software will be used by VFA's Project Manager to determine the long-term system renewal costs and timing, multiple funding options will be developed, and a comparative analysis of these funding options will be discussed with you. A preliminary draft report will be submitted to you after the data has been evaluated and entered into VFA facility. This preliminary report will give you an opportunity to review content, including a review of data classifications (such as priorities, categories, and systems), general consistency of overall estimates, and report formats.

The draft report will contain:

- **Narrative Summary:** A complete description of the facility and a summary of deficiencies listed within each section of the detailed report. (Asset lists and summaries – by age, use, FCI)
- **Facility Work Type Summary:** A summary breakdown of type of work and total costs for each facility. (Deferred maintenance summaries – presented by priority, system and category and cross tabular format)
- **Facility System Summary:** A summary breakdown of the total costs for a facility by assessed system. (System renewal forecasts and SCI reports)
- **Major Deficiency Photographs:** By inspection types using digital cameras
- **Inspection Details:** This report is divided by inspection type for each facility (Asset snapshots – asset descriptions, systems information, requirement lists)

Draft  
Review  
by Client

In addition, VFA will establish a read-only user account during the course of the project which will allow your personnel to monitor progress, review data, and make comments on facility assessment data once it has been submitted for review.

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Following your review of the Draft Building Evaluation Report format, the VFA Project Manager will make any adjustments to the format of the report and will prepare The Final Building Evaluation Report for the remainder of the assets. The Final Building Evaluation Report will document the findings and present analyses of the FCA, and will include the following sections:

- Executive Summary
- Assessment Methodology
- Funding Scenarios
- Capital Renewal Requirements
- Client Summary Data Reports (Requirement Summaries and Cross-tabular Reports)
- Detailed Requirement Reports (Including Asset Summary, Requirement Descriptions)

### ***Post-Assessment Phase***

Once the assessment and analysis is complete, VFA will present their findings.



***Presentation of Findings*** - The final key step in the assessment process is the Presentation of Findings. This is a formal meeting, presented by the VFA Project Manager or Project Director via WebEx or at your site to present the final results of the assessment. The data will be presented logically and methodically.

### **Client Responsibilities:**

Client acknowledges that its participation and cooperation is both required and critical for the success of the Project. Deviations from these responsibilities may lead to commensurate changes in the timeline and fees:

- a. VFA utilizes the WebEx platform. Clients must be able access WebEx and to download active X controls required.
- b. Participants in WebEX must have computers with Internet access.
- c. Client shall provide a Project Manager who will be responsible for the coordination of the client's resources as necessary for the Project. The Client acknowledges that the Project Manager has the ability to plan and commit resources (human and otherwise) on behalf of Client that are necessary to execute the Project.
- d. Ensure appropriate levels of Client executive and Client project team resources will be made available to the VFA project team to ensure successful completion of tasks by jointly developed timelines. If certain areas are identified as more complex than initially identified, additional Client or VFA resources may be

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requested to supplement the team in order to ensure timely delivery, which would be addressed separately under the Change Control procedures described in this SOW.

#### Assumptions

1. In addition, this SOW is based upon the following assumptions:
  - a. Any change in the specified Services must be mutually agreed upon in writing by VFA and Client. Until such agreement has been made, VFA will continue performing the Services in accordance with the SOW.
  - b. Any work not explicitly stated in this SOW will be considered out of scope.
  - c. If additional services are needed, an approved Change Request will be required.
  - d. VFA resources are not dedicated solely to the Client during the engagement. Reasonable notice is required by the Client to request VFA resources whether work is performed on-site or off-site.
  - e. Client will be required to provide VFA with a minimum of ten (10) business days prior notice ("Resource Request Notification Period") of Client's requested services date for allocation of VFA consultant resources and provision of Services ("Requested Dates"). While VFA will use commercially reasonable efforts to allocate resources in accordance with the Requested Dates, VFA shall be under no obligation or penalty to meet such Requested Dates and shall be entitled to reject or offer alternative dates to Client for any reason.
  - f. In the event Client cancels or reschedules any on-site engagements with VFA Consultant(s) with less than fourteen (14) business days lead time but more than ten (10) business days, VFA will invoice Client and Client will pay for fifty percent (50%) of the cancellation and/or change fees associated with rebooking travel and arrangement. In the event Client cancels or reschedules any VFA resource(s) with less than ten (10) business days lead time, VFA will invoice Client and Client will pay for one hundred percent (100%) of the associated fee.
  - g. In the event VFA cancels or reschedules any on-site engagements with the Client one hundred percent (100%) of the cancellation and/or change fees associated with rebooking travel and arrangements will be absorbed by VFA.
  - h. Product enhancements are not part of this SOW and considered out of scope.
  - i. Once Client and VFA agree on a Project plan that identifies specific dates when VFA and Client will perform the work described herein, Client will pay for fifty percent (50%) of the costs associated with any change in VFA's resource scheduling tied to a change in the Project schedule or VFA staffing plan introduced by Client. Any such charge will be over and above the fees provided within this SOW.
  - j. Further, Client acknowledges that its timely provision of and access to offices accommodations; skilled personnel; facilities; equipment; assistance; cooperation; complete and accurate information and data from its officers, agents, and employees; and suitably configured computer products (collectively, "Cooperation") are essential to performance of any Services as set forth in this SOW. VFA shall not be responsible for any deficiency in performing Services if such deficiency results from Client's failure to provide full Cooperation. Client agrees to allow VFA to post, at a site at which Services are performed, any documents necessary for VFA to provide Services in compliance with the law.
  - k. VFA reserves the right to update pricing should there be a change in scope or building list.

10801-2 N. Mo-Pac Expressway | Suite 400 | Austin, TX 78759 | 512.861.0726

[www.vfa.com](http://www.vfa.com)

[www.accruent.com](http://www.accruent.com)

Page 13 of 13



## **AGREEMENT FOR SERVICES**

THIS AGREEMENT is made by and between the ALAMEDA COUNTY WATER DISTRICT ("DISTRICT") located at 43885 South Grimmer Boulevard, Fremont, CA 94538 and DAVID FORD CONSULTING ENGINEERS, INC. ("CONSULTANT"), located at 2015 J Street, Suite 200, Sacramento, CA 95811 ("PARTIES").

WHEREAS, the DISTRICT desires to obtain consulting services (Services) and requested a proposal from CONSULTANT, dated October 03, 2016, a copy of which is attached and incorporated as Attachment 1.

WHEREAS, the CONSULTANT is ready, willing and able to furnish such services and has submitted a revised proposal dated, October 7, 2016, a copy of which is attached and incorporated as Attachment 2.

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

### **1. RENDITION OF SERVICES**

The CONSULTANT agrees to provide professional services to the DISTRICT in accordance with the terms and conditions of this Agreement. CONSULTANT represents that it will exercise the same degree of professional care, skill, efficiency, and judgment ordinarily used by consultants providing similar professional services. CONSULTANT at all times will comply with all federal, state, and local laws, regulations and policies applicable to the services performed pursuant to this Agreement.

### **2. SCOPE OF SERVICES**

The scope of the CONSULTANT's services is set forth in Attachment 1, as supplemented by Attachment 2. However, to the extent that Attachment 2 is inconsistent with Attachment 1, Attachment 1 will govern over Attachment 2.

### **3. TERM OF AGREEMENT**

The term of this Agreement shall commence upon the DISTRICT's issuance of a written Notice to Proceed (NTP) and conclude upon the DISTRICT's final acceptance of the Services.

It is further understood that the term of the Agreement is subject to the DISTRICT's right to terminate the Agreement in accordance with Section 15 of this Agreement.

### **4. OWNERSHIP OF WORK**

All reports, designs, drawings, plans, specifications, and other materials prepared, or in the process of being prepared, by CONSULTANT, its employees, subcontractors, or agents under this Agreement ("Work Product") shall be and are the property of the DISTRICT.

The DISTRICT shall be entitled to access and to copy the Work Product during the progress of the work. If requested by DISTRICT, CONSULTANT shall deliver one copy of the Work Product remaining in the hands of the CONSULTANT, or in the hands of any subcontractor, upon completion or termination of the work.

CONSULTANT assigns to DISTRICT all right, title, and interest in and to the Work Product, including ownership of copyright in the Work Product. The DISTRICT may utilize any material prepared or work performed by CONSULTANT pursuant to this Agreement, including computer software, in any manner which the DISTRICT deems proper without additional compensation to CONSULTANT. CONSULTANT shall have no responsibility or liability for any revisions, changes, or corrections to the Work Product made by the DISTRICT, nor for any use or reuse of the Work Product for any purpose other than the Work unless CONSULTANT accepts such responsibility in writing.

The CONSULTANT shall not disclose Work related data or information without the prior written consent of the DISTRICT.

5. **USE OF SUBCONTRACTORS**

CONSULTANT shall not subcontract any Services to be performed under this Agreement without the prior written approval of the DISTRICT. CONSULTANT may subcontract with service firms engaged in drawing, reproduction, typing and printing without the prior written consent of the DISTRICT. CONSULTANT shall be solely responsible for reimbursing any subcontractor and the DISTRICT shall have no obligation to them.

6. **CHANGES**

The DISTRICT may, at any time, by written order, make changes within the scope of work and services described in this Agreement. If such changes cause an increase or decrease in the budgeted cost of or the time required for performance of the agreed upon work, an equitable adjustment as mutually agreed shall be made in the limit on compensation as set forth in Section 9 or in the term of the Agreement as set forth in Section 3, or both. In the event that CONSULTANT encounters any unanticipated conditions or contingencies that may affect the scope of work or services and result in an adjustment in the amount of compensation specified herein, CONSULTANT shall so advise the DISTRICT immediately upon notice of such condition or contingency. The written notice shall explain the circumstances giving rise to the unforeseen condition or contingency and shall set forth the proposed adjustment in compensation. This notice shall be given to the DISTRICT prior to the time that CONSULTANT performs work or services related to the proposed adjustment in compensation. The pertinent changes shall be expressed in a written supplement to this Agreement prior to implementation of such changes.

7. **RESPONSIBILITY; INDEMNIFICATION**

To the fullest extent permitted by law, CONSULTANT shall indemnify, keep and save harmless the DISTRICT, and its board members, officers, agents, and employees against any and all suits, claims, actions, damages, liabilities, costs, and expenses (collectively, "Liabilities") for any personal injury (including death, bodily injury, emotional or mental distress, and loss of consortium), property damage, intellectual property infringement, or financial or economic loss that arises out of, pertains to, or relates to the negligence, recklessness, or the willful misconduct of the CONSULTANT, its employees, subcontractors, or agents to the extent that such Liabilities arise out of the performance

(or non-performance) of this Agreement. This duty to indemnify includes any proceedings, actions, damages, or penalties due to the violation of any governmental law or regulation, the compliance with which is the responsibility of the CONSULTANT, its employees, subcontractors, or agents. CONSULTANT further agrees to defend any and all such actions, suits, or claims, and pay all charges of attorneys and all other incurred costs and expenses relating to the investigation, defense, negotiation, or settlement of any action, suit, or claim, and to reimburse the DISTRICT for any and all legal and other costs and expenses incurred by the DISTRICT in connection with the defense of such actions, suits, or claims. If any judgment is rendered against the DISTRICT or any of the other individuals enumerated above in any such action, CONSULTANT shall, at its expense, satisfy and discharge the same to the extent that the judgment is based on the CONSULTANT's agreement to indemnify as set forth in this section. This indemnification obligation will survive the termination or expiration of this Agreement. CONSULTANT shall require its subcontractors to similarly indemnify, defend, and keep and save harmless, the DISTRICT.

8. **INSURANCE**

The CONSULTANT will be required to secure insurance as indicated below.

- A. **Insurance Requirements:** The CONSULTANT shall, at their expense, procure and maintain during the life of the Contract all the insurance on all of their operations in companies acceptable to the District, as required by this section, and shall submit Certificates of Insurance to the District. The notice to proceed shall not be issued, and the CONSULTANT shall not commence work until such insurance has been approved by the District. Acceptance of the Certificates shall not relieve the CONSULTANT of any of the insurance requirements, nor decrease the liability of the CONSULTANT. The District reserves the right to require the CONSULTANT to provide Insurance Policies for review by the District in the event there is a dispute regarding the scope and coverage of insurance.
- B. **Workers' Compensation Insurance:** The CONSULTANT shall take out and maintain during the life of the Contract, Workers' Compensation and Employers' Liability Insurance for all employees on the project. Employers' liability insurance shall be provided in amounts not less than \$1,000,000 each accident for bodily injury by accident, \$1,000,000 policy limit for bodily injury by disease, and \$1,000,000 each employee for bodily injury by disease. In lieu of evidence of Workers' Compensation Insurance, the District will accept a Self-Insuring Certificate from the State of California. The CONSULTANT shall require any subcontractor to provide evidence of Workers' Compensation and Employers' Liability Insurance, all in strict compliance with California State Laws.
- C. **General Liability Insurance:** The CONSULTANT shall also secure and maintain during the life of the Contract such General Liability Insurance as shall protect the District, its directors, officers, employees, and agents from claim which may arise from operations under this Contract, whether such operations are by itself, by any subcontractor, or by anyone directly or indirectly employed by either of them. CONSULTANT shall carry Comprehensive General Liability or Commercial General Liability insurance covering all operations by or on behalf of District for

bodily injury, property damage, and personal injury liability for the limits of liability indicated below and including, but not limited to, coverage for:

- premises and operations;
- products and completed operations;
- contractual liability insuring the obligations assumed by CONSULTANT in this contract;
- broad form property damage (including completed operations);
- explosion, collapse and underground hazards;
- bodily injury;
- property damage;
- arrest, false imprisonment, malicious prosecution, defamation of character, libel and slander alleged to have been caused by CONSULTANT or employees of CONSULTANT or subcontractors;
- personal injury liability; and
- accidental spillage, cleanup and other related costs.

Except with respect to bodily injury and property damage included within the products and completed operations hazards, the aggregate limits where applicable, shall apply separately to CONSULTANT work under this Contract.

This Liability Insurance shall be in an amount not less than \$1,000,000 for each occurrence, \$1,000,000 for each occurrence for work on public roadways.

Contractors performing construction work shall carry the required Commercial General Liability Insurance for ten (10) years following completion of CONSULTANT's work under this Contract and CONSULTANT shall furnish Certificates of Insurance to District at the inception of each of these subsequent policies for ten (10) years as evidence of this required insurance.

Broad form property damage liability must be afforded. Permission is granted for deductible which shall not exceed \$25,000 without approval of the District.

- 1) One of the following coverage forms is required:
  - a. Comprehensive General Liability Commercial
  - b. General Liability (Occurrence)
- 2) If CONSULTANT carries a Comprehensive General Liability policy, the limits of liability shall not be less than a Combined Single Limit for bodily injury, property damage and Personal Injury Liability of:
  - a. \$1,000,000 each occurrence
  - b. \$2,000,000 Aggregate
- 3) If CONSULTANT carries a Commercial General Liability (Occurrence) policy, the limits of liability shall not be less than:

- a. \$1,000,000 each occurrence (combined single limit for bodily injury and property damage)
- b. \$1,000,000 for Personal Injury Liability
- c. \$2,000,000 Aggregate for Products-Completed Operations
- d. \$2,000,000 General Aggregate

If the policy does not have an endorsement providing that the General Aggregate Limit applies separately to this Contract or if Defense Costs are included in the aggregate limits, then the required aggregate limits shall be \$2,000,000.

- 4) With respect to whichever general liability policy form is furnished, District, its officers, directors, employees and agents shall be named as Additional Insured per Additional Insured Endorsement CG20 10 10 93 or equivalent. This Endorsement is to be attached to insurance certificates submitted to the District. The policy shall stipulate that the insurance afforded the Additional Insured shall apply as primary insurance and that any other insurance carried by District, its officers, directors, employees and agents will be excess only and will not contribute with Contractors insurance. Exclusions of contractual liability as to bodily injuries, personal injuries and property damage MUST BE ELIMINATED from the basic policy and endorsements.
- D. Automobile Liability Insurance: The CONSULTANT shall take out and maintain during the life of the Contract, Automobile Liability Insurance (Bodily Injury and Property Damage Liability) including coverage for all owned, hired, rented, leased and non-owned automobiles. The limits of liability shall be not less than \$1,000,000 Combined Single Limit for each accident and \$1,000,000 for each occurrence for work on public roadways.
- 1) If a CONSULTANT's vehicle is used in the performance of work on District property or at a jobsite then with respect to the automobile liability policy that is furnished, District, its officers, directors, employees and agents shall be named as Additional Insured. The policy shall stipulate that the insurance afforded the Additional Insured shall apply as primary insurance and that any other insurance carried by District, its officers, directors, employees and agents will be excess only and will not contribute with this insurance. The policy must cover complete contractual liability. Exclusions of contractual liability as to bodily injuries, personal injuries and property damage MUST BE ELIMINATED from the basic policy and endorsements.
- E. Professional Liability Insurance. CONSULTANT also shall maintain Professional Liability Insurance covering CONSULTANT's performance under this Agreement with a limit of liability of One Million Dollars (\$1,000,000) for any one claim.
- F. Certificates of Insurance: Certificates of Insurance shall be furnished by CONSULTANT to District before any work is commenced hereunder by CONSULTANT. The Certificate of Insurance shall provide that there will be no cancellation, reduction or modification of coverage without thirty (30) days prior written notice to District. District is to be notified if insurance is

cancelled for any reason. If CONSULTANT does not comply with this Section, District may, at its option, provide insurance coverage to protect District and charge CONSULTANT for the cost of that insurance. The required insurance shall be subject to the approval of the District, but any acceptance of insurance certificates by District shall not limit or relieve CONSULTANT of the duties and responsibilities assumed by it under this Contract.

G. Waiver of Subrogation: The referenced policies and any Excess or Umbrella policies, where applicable, shall contain a waiver of subrogation in favor of the Alameda County Water District and their respective directors, officers, employees, volunteers and agents while acting in such capacity, and their successors or assignees, as they now or as they may hereafter be constituted, singly, jointly or severally.

H. Deductibles and Self-insured Retention:

Any deductibles or self-insured retention must be declared to ACWD.

I. District and CONSULTANT waive all rights against each other and against all other contractors for loss or damage to the extent covered by Builder's Risk or any other property or equipment insurance applicable to the work, except such rights as they may have to the proceeds of such insurance. If the policies of insurance referred to in this Section require an endorsement or consent of the insurance company to provide for continued coverage where there is a waiver of subrogation, the owners of such policies will cause them to be endorsed or obtain such consent.

J. The requirement for carrying insurance hereunder is cumulative and shall not be in derogation of other provisions of this Contract.

K. Insurance carrier must have a Best's Rating of "A-VII" or better.

### **IMPORTANT**

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

### **DISCLAIMER**

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsements(s).

## **9. COMPENSATION**

The CONSULTANT agrees to perform all of the work set forth in Attachment 1 further supplemented by Attachment 2, on a firm fixed price basis. Total compensation shall not to exceed One Hundred Twenty-Four Thousand Eight Hundred Sixty-Two Dollars and Seventy-Five Cents (\$124,862.75). The amount shall include all labor, materials, taxes, profit, overhead, insurance, travel, subcontractor costs, and all other costs and expenses incurred by the CONSULTANT.

**10. MANNER OF PAYMENT**

Payment shall be made upon approval of invoices, no more than once a month. All invoices shall reference the agreement number. The DISTRICT shall make payments to the CONSULTANT for satisfactory Services performed and the costs of such services within thirty (30) calendar days from the date the DISTRICT receives the CONSULTANT's invoice. All invoices and supporting documentation, clearly identifying the Agreement number, shall be submitted by email, addressed to Thomas Niesar, Water Resources Planning Manager, at [accounting@acwd.com](mailto:accounting@acwd.com).

**11. CONSULTANT'S STATUS**

Neither the CONSULTANT nor any party contracting with the CONSULTANT shall be deemed to be an agent or employee of the DISTRICT. The CONSULTANT is and shall be an independent contractor, and the legal relationship of any person performing services for the CONSULTANT shall be one solely between that person and the CONSULTANT.

**12. ASSIGNMENT**

CONSULTANT shall not assign any of its rights nor transfer any of its obligations under this Agreement without the prior written consent of DISTRICT.

**13. DISTRICT WARRANTIES**

The DISTRICT makes no warranties, representations or agreements, either expressed or implied, beyond such as are explicitly stated in this Agreement.

**14. DISTRICT REPRESENTATIVES**

Except when approval or other action is required to be given or taken by the Board of Directors of the DISTRICT, the General Manager of the DISTRICT, or such person or persons as the General Manager shall designate in writing from time to time, shall represent and act for the DISTRICT on the day to day activities under this Agreement. For strictly contractual matters relating to this Agreement, an authorized representative of the Procurement and Contracts Division, shall represent and act for the District.

**15. TERMINATION**

The DISTRICT shall have the right to terminate this Agreement at any time for cause or convenience by giving written notice to the CONSULTANT. Upon receipt of notice of termination for convenience, the CONSULTANT shall not commit itself to any further expenditure of time or resources. Upon receipt of notice of default, CONTRACTOR shall be afforded thirty days to correct the identified deficiency(ies). If said deficiency(ies) are not corrected to the DISTRICT's satisfaction, the Agreement will be terminated immediately.

If the Agreement is terminated for any reason other than a default by CONSULTANT, the DISTRICT shall pay to CONSULTANT in accordance with the provisions of Sections 9 and 10 all sums actually due and owing from DISTRICT for all services satisfactorily performed up to the day written notice of termination is given, plus any costs reasonably and necessarily incurred by



CONSULTANT to effect such suspension or termination. If the Agreement is terminated for default, the DISTRICT shall remit final payment to CONSULTANT in an amount to cover only those services performed in full accordance with the terms and conditions of this Agreement up to the effective date of termination.

16. **MAINTENANCE, AUDIT, AND INSPECTION OF RECORDS**

The CONSULTANT shall permit the authorized representatives of the DISTRICT to inspect, audit, make copies and transcriptions of books and all data and records of the CONSULTANT relating to its performance under the Agreement, if requested.

17. **CONFIDENTIAL INFORMATION**

A. **Definition.** The CONSULTANT acknowledges that it may receive Confidential Information from the DISTRICT, Santa Clara Valley Water District (SCVWD) or the Alameda County Flood Control and Water Conservation District (Zone 7) (hereafter collectively referred to as "AGENCIES") in connection with this Agreement. "**Confidential Information**" means all information or material that AGENCIES treat as confidential and any information relating to third parties that a party has an obligation to treat as confidential, which is disclosed by or obtained by a party in connection with this Agreement, whether such information is in oral, written, graphic or electronic form, which: is (A) marked "Confidential," "Restricted," or "Proprietary Information" or other similar marking, (B) known by the parties to be considered confidential or proprietary, or (C) which should be known or understood to be confidential or proprietary by an individual exercising reasonable commercial judgment in the circumstances. Confidential Information does not include information to the extent that such information: (i) is or becomes generally known to the public by any means other than a breach of the obligations of a receiving party hereunder; (ii) was previously known to the receiving party as evidenced by its written records; (iii) is rightly received by the receiving party from a third party who is not under an obligation of confidentiality; or (iv) is independently developed by the receiving party without reference to or use of the other party's Confidential Information which such independent development can be established by evidence that would be acceptable to a court of competent jurisdiction.

B. **Confidentiality Obligations.** Each of the PARTIES agree:

- 1) to maintain the Confidential Information of the other party in confidence and to take all reasonable steps, which shall be no less than those steps it takes to protect its own confidential and proprietary information, to protect the Confidential Information of the other party from unauthorized use, disclosure, copying or publication;
- 2) not to use the Confidential Information of the other party other than in the course of exercising its rights or performing its obligations under this Agreement;
- 3) not to disclose or release such Confidential Information except to the extent required by applicable law or during the course of or in connection with any litigation, arbitration or



other proceeding based upon or in connection with the subject matter of this Agreement, provided that the receiving party shall first give reasonable notice to the disclosing party prior to such disclosure so that the disclosing party may obtain a protective order or equivalent and provided that the receiving party shall comply with any such protective order or equivalent;

- 4) not to disclose or release such Confidential Information to any third person without the prior written consent of the disclosing party, except for authorized employees or agents of the receiving party who have a need to know such information for the purpose of performance under this Agreement and exercising its rights under this Agreement, and who are bound by confidentiality obligations at least as protective of the disclosing party's Confidential Information as this Agreement; and
- 5) to take such actions as may be reasonably necessary to enforce its agreements with its employees and agents, including commencing legal proceedings.

C. Information Subject to the Public Records Act. CONSULTANT understands and agrees that the DISTRICT is a public entity and is thus subject to the California Public Records Act (Government Code Section 6250 et seq.) and its relevant disclosure requirements. Under certain circumstances, the DISTRICT may be required to disclose information including the contents of this Agreement in accordance with the California Public Records Act. If CONSULTANT requests that the DISTRICT withhold from disclosure information identified by CONSULTANT as confidential, and the DISTRICT complies with CONSULTANT's request, CONSULTANT shall assume all responsibility for any challenges resulting from the non-disclosure, indemnify and hold harmless the DISTRICT from and against all damages (including but not limited to attorneys' fees that may be awarded to the party requesting CONSULTANT's information), and pay any and all costs and expenses related to the withholding of CONSULTANT's information.

## **18. RELEASE OF INFORMATION**

CONSULTANT shall not release any reports or other information prepared in connection with this Agreement without the approval of the General Manager.

## **19. KEY PERSONNEL**

David Ford shall serve as the primary staff person of CONSULTANT to oversee all of the services under this Agreement. The other principal participants shall be individuals identified by position title in Attachment 2.

## **20. NOTICES**

All communications relating to the day to day activities of the project shall be exchanged between the DISTRICT's Contract Administrator and the CONSULTANT's Account Manager.

All other notices and communications deemed by either party to be necessary or desirable to be given to the other party shall be in writing and may be given by personal delivery to a representative of the parties or by mailing the same postage prepaid, addressed as follows:

If to the DISTRICT:	Alameda County Water District 43885 South Grimmer Blvd Fremont, California 94538
Attention:	Procurement & Contracts Division
If to the CONSULTANT:	David Ford Consulting Engineers 2015 J Street, Suite 200 Sacramento, CA 95811
Attention:	David Ford

The address to which mailings may be made may be changed from time to time by mailed notice as described above. Any notice given by mail shall be deemed given on the day after that on which it is deposited in the United States Mail as provided above.

## **20. ATTORNEYS' FEES**

If any legal proceeding should be instituted by either of the parties to enforce the terms of this Agreement or to determine the rights of the parties under this Agreement, the prevailing party in said proceeding shall recover, in addition to all court costs, reasonable attorneys' fees.

## **21. APPLICABLE LAW**

This Agreement, its interpretation and all work performed under it shall be governed by the laws of the State of California, venue the courts of the County of Alameda.

## **22. BINDING ON SUCCESSORS**

All of the terms, provisions and conditions of this Agreement shall be binding upon and inure to the benefit of the parties and their respective successors, assigns and legal representatives.

## **23. SEVERABILITY**

Should any provision, or portion of a provision, herein be found or deemed to be invalid, this Agreement shall be construed as not containing such provision, or portion of such provision, and all other provisions which are otherwise lawful shall remain in full force and effect, and to this end the provisions of this Agreement are declared to be severable.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement by their duly authorized officers as of the last signature date set forth below.

ALAMEDA COUNTY WATER DISTRICT

DAVID FORD CONSULTING ENGINEERS\*

Signature: 

Signature: 

Name: Robert T. Shaver

Name: David Ford

Title: General Manager

Title: President

Date: 10/26/16

Date: October 20, 2016

Signature: 

Name: Nathan Pingel

Title: Vice President

Date: October 20, 2016

ATTEST:

  
District Secretary

\*If Consultant is a corporation, the Contract must be executed by two corporate officers, one from each of the following categories 1) the President, the Vice President or the Chair of the Board, and 2) the Secretary, Assistant Secretary, Chief Financial Officer, or Assistant Treasurer.

# Attachment 1

## Request for Proposal

DIRECTORS

JAMES G. GUNTHER  
JUDY C. HUANG  
MARTIN L. KOLLER  
PAUL SETHY  
JOHN H. WEED

43885 SOUTH GRIMMER BOULEVARD • FREMONT, CALIFORNIA 94538  
(510) 668-4200 • FAX (510) 770-1793 • [www.acwd.org](http://www.acwd.org)

MANAGEMENT

ROBERT  
SHAVER  
General  
Manager  
  
SHELLEY  
BURGETT  
Finance  
  
STEVEN D.  
INN Water  
Resources  
  
STEVE PETERSON  
Operations and  
Maintenance  
  
ED STEVENSON  
Engineering and Technology  
Services

October 3, 2016

SENT VIA EMAIL: [FORD@FORD-CONSULTING.COM](mailto:FORD@FORD-CONSULTING.COM)

Mr. David T. Ford  
David Ford Consulting Engineers  
2015 J Street  
Suite 200  
Sacramento, CA 95811

Subject: Request for Proposal 16/17-18 for the Provision of Consulting Services

Dear Mr. Ford:

The Alameda County Water District (District), in conjunction with Santa Clara Valley Water District (SCVWD), Alameda County Flood Control and Water Conservation District (Zone 7) and East Bay Regional Park District (hereafter collectively referred to as “Agencies”), have identified a potential avenue to increase water storage at the Del Valle Reservoir, located in Livermore, CA. In order to verify the aforementioned avenue the Agencies require that a feasibility study of Forecast-Informed Reservoir Operations (FIRO) at Lake Del Valle Reservoir be conducted.

Scope of Services

The objective of the study is to answer three overarching questions:

1. What storage and water supply enhancements can be achieved by implementing FIRO at Del Valle Reservoir?
2. What storage and water supply enhancements can be achieved by implementing FIRO and redrawing the existing rule curves for flood management?
3. What storage and water supply enhancements can be achieved by changing the structure of the dam (i.e. raise the spillway)?

In order to answer these questions, the study itself should answer, at a minimum, the following questions:

1. What are the components of a FIRO system at Lake Del Valle Reservoir?
  - a. Who will provide these components?
  - b. What agencies will be involved and need to be coordinated with?
2. What policy and procedural shifts are required by the agencies involved to implement FIRO?
3. Will FIRO alone at Lake Del Valle improve water supply availability? If so, when and how are improvements made?
4. If FIRO alone improves water supply, are there any negative impacts on flood management? If so, when and how are these impacts made?
5. If FIRO alone improves water supply, are there any negative impacts on recreation facilities at Lake Del Valle? If so, when, where, and how are these impacts made?
6. Will FIRO in conjunction with storage reallocation of Lake Del Valle improve water supply availability? If so, when and how are improvements made?
7. If FIRO and storage reallocation improve water supply, are there any negative impacts on flood management? If so, when and how are these impacts made?
8. If FIRO and storage reallocation improve water supply, are there any negative impacts on recreation facilities at Lake Del Valle? If so, when, where, and how are these impacts made?
9. Will FIRO in conjunction with structural changes to the dam improve water supply availability? If so, when and how are improvements made?
10. If FIRO and structural changes improve water supply, are there any negative impacts on flood management? If so, when and how are these impacts made?
11. If FIRO and structural changes improve water supply, are there any negative impacts on recreation facilities at Lake Del Valle? If so, when, where, and how are these impacts made?

#### Agencies' Responsibilities

The Agencies shall provide all the required information, in the form of access, interviews, correspondence, reports, models and drawings in order to complete the analysis.

#### Deliverables

The expected deliverables include:

- Draft and final technical study describing the scope, methods, and findings of the analysis
- Weekly progress reports, via email or telephone
- Monthly in-person progress reports
- All models and hydrologic datasets at completion of the study

The resulting Agreement will be the District's standard Agreement for Services, a sample of which is

attached as Appendix A.

### Submittal Requirements

Please ensure that your proposal includes:

- A fully burdened hourly rate;
- A level of effort, expressed in a number of hours required to complete the study;
- a proposed timeline for completion;
- name(s) of proposed personnel who will provide the services, a resume(s); and
- Any exceptions to the proposed terms and conditions in the Agreement.

For technical questions, please contact Thomas Niesar, Water Resources Planning Manager, at 510-668-6549. For contractual questions or questions regarding this request, please contact me at 510-668-4291 or [robert.ferro@acwd.com](mailto:robert.ferro@acwd.com).

Please submit your proposal no later than October 6, 2016, either electronically to [robert.ferro@acwd.com](mailto:robert.ferro@acwd.com) or mail a hard copy to:

Alameda County Water District  
Procurement and Contracts Division  
43885 S. Grimmer Boulevard  
Fremont, CA 94538

Thank you.  
Sincerely,

A handwritten signature in blue ink, appearing to be 'Rf' followed by a horizontal line.

Robert Ferro  
Senior Buyer

# Appendix A

## Sample

### Agreement for Services



## **AGREEMENT FOR SERVICES**

THIS AGREEMENT is made by and between the ALAMEDA COUNTY WATER DISTRICT ("DISTRICT") located at 43885 South Grimmer Boulevard, Fremont, CA 94538 and DAVID FORD CONSULTING ENGINEERS, INC. ("CONSULTANT"), located at 2015 J Street, Suite 200, Sacramento, CA 95811 ("PARTIES").

WHEREAS, the DISTRICT desires to obtain consulting services (Services) and requested a proposal from CONSULTANT, dated October 03, 2016, a copy of which is attached and incorporated as Attachment 1.

WHEREAS, the CONSULTANT is ready, willing and able to furnish such services and has submitted a proposal dated, October 7, 2016, a copy of which is attached and incorporated as Attachment 2.

NOW, THEREFORE, THE PARTIES AGREE AS FOLLOWS:

### **1. RENDITION OF SERVICES**

The CONSULTANT agrees to provide professional services to the DISTRICT in accordance with the terms and conditions of this Agreement. CONSULTANT represents that it will exercise the same degree of professional care, skill, efficiency, and judgment ordinarily used by consultants providing similar professional services. CONSULTANT at all times will comply with all federal, state, and local laws, regulations and policies applicable to the services performed pursuant to this Agreement.

### **2. SCOPE OF SERVICES**

The scope of the CONSULTANT's services is set forth in Attachment 1, as supplemented by Attachment 2. However, to the extent that Attachment 2 is inconsistent with Attachment 1, Attachment 1 will govern over Attachment 2.

### **3. TERM OF AGREEMENT**

The term of this Agreement shall commence upon the DISTRICT's issuance of a written Notice to Proceed (NTP) and conclude upon the DISTRICT's final acceptance of the Services.

It is further understood that the term of the Agreement is subject to the DISTRICT's right to terminate the Agreement in accordance with Section 15 of this Agreement.

### **4. OWNERSHIP OF WORK**

All reports, designs, drawings, plans, specifications, and other materials prepared, or in the process of being prepared, by CONSULTANT, its employees, subcontractors, or agents under this Agreement ("Work Product") shall be and are the property of the DISTRICT.

The DISTRICT shall be entitled to access and to copy the Work Product during the progress of the work. If requested by DISTRICT, CONSULTANT shall deliver one copy of the Work Product remaining in the hands of the CONSULTANT, or in the hands of any subcontractor, upon completion or termination of the work.

CONSULTANT assigns to DISTRICT all right, title, and interest in and to the Work Product, including ownership of copyright in the Work Product. The DISTRICT may utilize any material prepared or work performed by CONSULTANT pursuant to this Agreement, including computer software, in any manner which the DISTRICT deems proper without additional compensation to CONSULTANT. CONSULTANT shall have no responsibility or liability for any revisions, changes, or corrections to the Work Product made by the DISTRICT, nor for any use or reuse of the Work Product for any purpose other than the Work unless CONSULTANT accepts such responsibility in writing.

The CONSULTANT shall not disclose Work related data or information without the prior written consent of the DISTRICT.

5. **USE OF SUBCONTRACTORS**

CONSULTANT shall not subcontract any Services to be performed under this Agreement without the prior written approval of the DISTRICT. CONSULTANT may subcontract with service firms engaged in drawing, reproduction, typing and printing without the prior written consent of the DISTRICT. CONSULTANT shall be solely responsible for reimbursing any subcontractor and the DISTRICT shall have no obligation to them.

6. **CHANGES**

The DISTRICT may, at any time, by written order, make changes within the scope of work and services described in this Agreement. If such changes cause an increase or decrease in the budgeted cost of or the time required for performance of the agreed upon work, an equitable adjustment as mutually agreed shall be made in the limit on compensation as set forth in Section 9 or in the term of the Agreement as set forth in Section 3, or both. In the event that CONSULTANT encounters any unanticipated conditions or contingencies that may affect the scope of work or services and result in an adjustment in the amount of compensation specified herein, CONSULTANT shall so advise the DISTRICT immediately upon notice of such condition or contingency. The written notice shall explain the circumstances giving rise to the unforeseen condition or contingency and shall set forth the proposed adjustment in compensation. This notice shall be given to the DISTRICT prior to the time that CONSULTANT performs work or services related to the proposed adjustment in compensation. The pertinent changes shall be expressed in a written supplement to this Agreement prior to implementation of such changes.

7. **RESPONSIBILITY; INDEMNIFICATION**

To the fullest extent permitted by law, CONSULTANT shall indemnify, keep and save harmless the DISTRICT, and its board members, officers, agents, and employees against any and all suits, claims, actions, damages, liabilities, costs, and expenses (collectively, "Liabilities") for any personal injury (including death, bodily injury, emotional or mental distress, and loss of consortium), property damage, intellectual property infringement, or financial or economic loss that arises out of, pertains to, or relates to the negligence, recklessness, or the willful misconduct of the CONSULTANT, its employees, subcontractors, or agents to the extent that such Liabilities arise out of the performance

(or non-performance) of this Agreement. This duty to indemnify includes any proceedings, actions, damages, or penalties due to the violation of any governmental law or regulation, the compliance with which is the responsibility of the CONSULTANT, its employees, subcontractors, or agents. CONSULTANT further agrees to defend any and all such actions, suits, or claims, and pay all charges of attorneys and all other incurred costs and expenses relating to the investigation, defense, negotiation, or settlement of any action, suit, or claim, and to reimburse the DISTRICT for any and all legal and other costs and expenses incurred by the DISTRICT in connection with the defense of such actions, suits, or claims. If any judgment is rendered against the DISTRICT or any of the other individuals enumerated above in any such action, CONSULTANT shall, at its expense, satisfy and discharge the same to the extent that the judgment is based on the CONSULTANT's agreement to indemnify as set forth in this section. This indemnification obligation will survive the termination or expiration of this Agreement. CONSULTANT shall require its subcontractors to similarly indemnify, defend, and keep and save harmless, the DISTRICT.

8. **INSURANCE**

The CONSULTANT will be required to secure insurance as indicated below.

- A. **Insurance Requirements:** The CONSULTANT shall, at their expense, procure and maintain during the life of the Contract all the insurance on all of their operations in companies acceptable to the District, as required by this section, and shall submit Certificates of Insurance to the District. The notice to proceed shall not be issued, and the CONSULTANT shall not commence work until such insurance has been approved by the District. Acceptance of the Certificates shall not relieve the CONSULTANT of any of the insurance requirements, nor decrease the liability of the CONSULTANT. The District reserves the right to require the CONSULTANT to provide Insurance Policies for review by the District in the event there is a dispute regarding the scope and coverage of insurance.
- B. **Workers' Compensation Insurance:** The CONSULTANT shall take out and maintain during the life of the Contract, Workers' Compensation and Employers' Liability Insurance for all employees on the project. Employers' liability insurance shall be provided in amounts not less than \$1,000,000 each accident for bodily injury by accident, \$1,000,000 policy limit for bodily injury by disease, and \$1,000,000 each employee for bodily injury by disease. In lieu of evidence of Workers' Compensation Insurance, the District will accept a Self-Insuring Certificate from the State of California. The CONSULTANT shall require any subcontractor to provide evidence of Workers' Compensation and Employers' Liability Insurance, all in strict compliance with California State Laws.
- C. **General Liability Insurance:** The CONSULTANT shall also secure and maintain during the life of the Contract such General Liability Insurance as shall protect the District, its directors, officers, employees, and agents from claim which may arise from operations under this Contract, whether such operations are by itself, by any subcontractor, or by anyone directly or indirectly employed by either of them. CONSULTANT shall carry Comprehensive General Liability or Commercial General Liability insurance covering all operations by or on behalf of District for

bodily injury, property damage, and personal injury liability for the limits of liability indicated below and including, but not limited to, coverage for:

- premises and operations;
- products and completed operations;
- contractual liability insuring the obligations assumed by CONSULTANT in this contract;
- broad form property damage (including completed operations);
- explosion, collapse and underground hazards;
- bodily injury;
- property damage;
- arrest, false imprisonment, malicious prosecution, defamation of character, libel and slander alleged to have been caused by CONSULTANT or employees of CONSULTANT or subcontractors;
- personal injury liability; and
- accidental spillage, cleanup and other related costs.

Except with respect to bodily injury and property damage included within the products and completed operations hazards, the aggregate limits where applicable, shall apply separately to CONSULTANT work under this Contract.

This Liability Insurance shall be in an amount not less than \$1,000,000 for each occurrence, \$1,000,000 for each occurrence for work on public roadways.

Contractors performing construction work shall carry the required Commercial General Liability Insurance for ten (10) years following completion of CONSULTANT's work under this Contract and CONSULTANT shall furnish Certificates of Insurance to District at the inception of each of these subsequent policies for ten (10) years as evidence of this required insurance.

Broad form property damage liability must be afforded. Permission is granted for deductible which shall not exceed \$25,000 without approval of the District.

- 1) One of the following coverage forms is required:
  - a. Comprehensive General Liability Commercial
  - b. General Liability (Occurrence)
- 2) If CONSULTANT carries a Comprehensive General Liability policy, the limits of liability shall not be less than a Combined Single Limit for bodily injury, property damage and Personal Injury Liability of:
  - a. \$1,000,000 each occurrence
  - b. \$2,000,000 Aggregate
- 3) If CONSULTANT carries a Commercial General Liability (Occurrence) policy, the limits of liability shall not be less than:

- a. \$1,000,000 each occurrence (combined single limit for bodily injury and property damage)
- b. \$1,000,000 for Personal Injury Liability
- c. \$2,000,000 Aggregate for Products-Completed Operations
- d. \$2,000,000 General Aggregate

If the policy does not have an endorsement providing that the General Aggregate Limit applies separately to this Contract or if Defense Costs are included in the aggregate limits, then the required aggregate limits shall be \$2,000,000.

- 4) With respect to whichever general liability policy form is furnished, District, its officers, directors, employees and agents shall be named as Additional Insured per Additional Insured Endorsement CG20 10 10 93 or equivalent. This Endorsement is to be attached to insurance certificates submitted to the District. The policy shall stipulate that the insurance afforded the Additional Insured shall apply as primary insurance and that any other insurance carried by District, its officers, directors, employees and agents will be excess only and will not contribute with Contractors insurance. Exclusions of contractual liability as to bodily injuries, personal injuries and property damage MUST BE ELIMINATED from the basic policy and endorsements.
- D. Automobile Liability Insurance: The CONSULTANT shall take out and maintain during the life of the Contract, Automobile Liability Insurance (Bodily Injury and Property Damage Liability) including coverage for all owned, hired, rented, leased and non-owned automobiles. The limits of liability shall be not less than \$1,000,000 Combined Single Limit for each accident and \$1,000,000 for each occurrence for work on public roadways.
- 1) If a CONSULTANT's vehicle is used in the performance of work on District property or at a jobsite then with respect to the automobile liability policy that is furnished, District, its officers, directors, employees and agents shall be named as Additional Insured. The policy shall stipulate that the insurance afforded the Additional Insured shall apply as primary insurance and that any other insurance carried by District, its officers, directors, employees and agents will be excess only and will not contribute with this insurance. The policy must cover complete contractual liability. Exclusions of contractual liability as to bodily injuries, personal injuries and property damage MUST BE ELIMINATED from the basic policy and endorsements.
- E. Professional Liability Insurance. CONSULTANT also shall maintain Professional Liability Insurance covering CONSULTANT's performance under this Agreement with a limit of liability of One Million Dollars (\$1,000,000) for any one claim.
- F. Certificates of Insurance: Certificates of Insurance shall be furnished by CONSULTANT to District before any work is commenced hereunder by CONSULTANT. The Certificate of Insurance shall provide that there will be no cancellation, reduction or modification of coverage without thirty (30) days prior written notice to District. District is to be notified if insurance is

cancelled for any reason. If CONSULTANT does not comply with this Section, District may, at its option, provide insurance coverage to protect District and charge CONSULTANT for the cost of that insurance. The required insurance shall be subject to the approval of the District, but any acceptance of insurance certificates by District shall not limit or relieve CONSULTANT of the duties and responsibilities assumed by it under this Contract.

G. Waiver of Subrogation: The referenced policies and any Excess or Umbrella policies, where applicable, shall contain a waiver of subrogation in favor of the Alameda County Water District and their respective directors, officers, employees, volunteers and agents while acting in such capacity, and their successors or assignees, as they now or as they may hereafter be constituted, singly, jointly or severally.

H. Deductibles and Self-insured Retention:

Any deductibles or self-insured retention must be declared to ACWD.

I. District and CONSULTANT waive all rights against each other and against all other contractors for loss or damage to the extent covered by Builder's Risk or any other property or equipment insurance applicable to the work, except such rights as they may have to the proceeds of such insurance. If the policies of insurance referred to in this Section require an endorsement or consent of the insurance company to provide for continued coverage where there is a waiver of subrogation, the owners of such policies will cause them to be endorsed or obtain such consent.

J. The requirement for carrying insurance hereunder is cumulative and shall not be in derogation of other provisions of this Contract.

K. Insurance carrier must have a Best's Rating of "A-VII" or better.

### **IMPORTANT**

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

### **DISCLAIMER**

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsements(s).

## **9. COMPENSATION**

The CONSULTANT agrees to perform all of the work set forth in Attachment 1 further supplemented by Attachment 2, on a time and materials basis. Total compensation shall not to exceed (\$XXXXXXX). The amount shall include all labor, materials, taxes, profit, overhead, insurance, travel, subcontractor costs, and all other costs and expenses incurred by the CONSULTANT.

**10. MANNER OF PAYMENT**

Payment shall be made upon approval of invoices, no more than once a month. All invoices shall reference the agreement number. The DISTRICT shall make payments to the CONSULTANT for satisfactory Services performed and the costs of such services within thirty (30) calendar days from the date the DISTRICT receives the CONSULTANT's invoice. All invoices and supporting documentation, clearly identifying the Agreement number, shall be submitted by email, addressed to Thomas Niesar, Water Resources Planning Manager, at [accounting@acwd.com](mailto:accounting@acwd.com).

**11. CONSULTANT'S STATUS**

Neither the CONSULTANT nor any party contracting with the CONSULTANT shall be deemed to be an agent or employee of the DISTRICT. The CONSULTANT is and shall be an independent contractor, and the legal relationship of any person performing services for the CONSULTANT shall be one solely between that person and the CONSULTANT.

**12. ASSIGNMENT**

CONSULTANT shall not assign any of its rights nor transfer any of its obligations under this Agreement without the prior written consent of DISTRICT.

**13. DISTRICT WARRANTIES**

The DISTRICT makes no warranties, representations or agreements, either expressed or implied, beyond such as are explicitly stated in this Agreement.

**14. DISTRICT REPRESENTATIVES**

Except when approval or other action is required to be given or taken by the Board of Directors of the DISTRICT, the General Manager of the DISTRICT, or such person or persons as the General Manager shall designate in writing from time to time, shall represent and act for the DISTRICT on the day to day activities under this Agreement. For strictly contractual matters relating to this Agreement, an authorized representative of the Procurement and Contracts Division, shall represent and act for the District.

**15. TERMINATION**

The DISTRICT shall have the right to terminate this Agreement at any time for cause or convenience by giving written notice to the CONSULTANT. Upon receipt of notice of termination for convenience, the CONSULTANT shall not commit itself to any further expenditure of time or resources. Upon receipt of notice of default, CONTRACTOR shall be afforded thirty days to correct the identified deficiency(ies). If said deficiency(ies) are not corrected to the DISTRICT's satisfaction, the Agreement will be terminated immediately.

If the Agreement is terminated for any reason other than a default by CONSULTANT, the DISTRICT shall pay to CONSULTANT in accordance with the provisions of Sections 9 and 10 all sums actually due and owing from DISTRICT for all services satisfactorily performed up to the day written notice of termination is given, plus any costs reasonably and necessarily incurred by

CONSULTANT to effect such suspension or termination. If the Agreement is terminated for default, the DISTRICT shall remit final payment to CONSULTANT in an amount to cover only those services performed in full accordance with the terms and conditions of this Agreement up to the effective date of termination.

16. **MAINTENANCE, AUDIT, AND INSPECTION OF RECORDS**

The CONSULTANT shall permit the authorized representatives of the DISTRICT to inspect, audit, make copies and transcriptions of books and all data and records of the CONSULTANT relating to its performance under the Agreement, if requested.

17. **CONFIDENTIAL INFORMATION**

A. **Definition.** The CONSULTANT acknowledges that it may receive Confidential Information from the DISTRICT, Santa Clara Valley Water District (SCVWD) or the Alameda County Flood Control and Water Conservation District (Zone 7) (hereafter collectively referred to as "AGENCIES") in connection with this Agreement. "**Confidential Information**" means all information or material that AGENCIES treat as confidential and any information relating to third parties that a party has an obligation to treat as confidential, which is disclosed by or obtained by a party in connection with this Agreement, whether such information is in oral, written, graphic or electronic form, which: is (A) marked "Confidential," "Restricted," or "Proprietary Information" or other similar marking, (B) known by the parties to be considered confidential or proprietary, or (C) which should be known or understood to be confidential or proprietary by an individual exercising reasonable commercial judgment in the circumstances. Confidential Information does not include information to the extent that such information: (i) is or becomes generally known to the public by any means other than a breach of the obligations of a receiving party hereunder; (ii) was previously known to the receiving party as evidenced by its written records; (iii) is rightly received by the receiving party from a third party who is not under an obligation of confidentiality; or (iv) is independently developed by the receiving party without reference to or use of the other party's Confidential Information which such independent development can be established by evidence that would be acceptable to a court of competent jurisdiction.

B. **Confidentiality Obligations.** Each of the PARTIES agree:

- 1) to maintain the Confidential Information of the other party in confidence and to take all reasonable steps, which shall be no less than those steps it takes to protect its own confidential and proprietary information, to protect the Confidential Information of the other party from unauthorized use, disclosure, copying or publication;
- 2) not to use the Confidential Information of the other party other than in the course of exercising its rights or performing its obligations under this Agreement;
- 3) not to disclose or release such Confidential Information except to the extent required by applicable law or during the course of or in connection with any litigation, arbitration or



other proceeding based upon or in connection with the subject matter of this Agreement, provided that the receiving party shall first give reasonable notice to the disclosing party prior to such disclosure so that the disclosing party may obtain a protective order or equivalent and provided that the receiving party shall comply with any such protective order or equivalent;

- 4) not to disclose or release such Confidential Information to any third person without the prior written consent of the disclosing party, except for authorized employees or agents of the receiving party who have a need to know such information for the purpose of performance under this Agreement and exercising its rights under this Agreement, and who are bound by confidentiality obligations at least as protective of the disclosing party's Confidential Information as this Agreement; and
- 5) to take such actions as may be reasonably necessary to enforce its agreements with its employees and agents, including commencing legal proceedings.

C. Information Subject to the Public Records Act. CONSULTANT understands and agrees that the DISTRICT is a public entity and is thus subject to the California Public Records Act (Government Code Section 6250 et seq.) and its relevant disclosure requirements. Under certain circumstances, the DISTRICT may be required to disclose information including the contents of this Agreement in accordance with the California Public Records Act. If CONSULTANT requests that the DISTRICT withhold from disclosure information identified by CONSULTANT as confidential, and the DISTRICT complies with CONSULTANT's request, CONSULTANT shall assume all responsibility for any challenges resulting from the non-disclosure, indemnify and hold harmless the DISTRICT from and against all damages (including but not limited to attorneys' fees that may be awarded to the party requesting CONSULTANT's information), and pay any and all costs and expenses related to the withholding of CONSULTANT's information.

## **18. RELEASE OF INFORMATION**

CONSULTANT shall not release any reports or other information prepared in connection with this Agreement without the approval of the General Manager.

## **19. KEY PERSONNEL**

David Ford shall serve as the primary staff person of CONSULTANT to oversee all of the services under this Agreement. The other principal participants shall be individuals identified by position title in Attachment 2.

## **20. NOTICES**

All communications relating to the day to day activities of the project shall be exchanged between the DISTRICT's Contract Administrator and the CONSULTANT's Account Manager.

All other notices and communications deemed by either party to be necessary or desirable to be given to the other party shall be in writing and may be given by personal delivery to a representative of the parties or by mailing the same postage prepaid, addressed as follows:

If to the DISTRICT:                      Alameda County Water District  
43885 South Grimmer Blvd  
Fremont, California 94538

Attention:                                      Procurement & Contracts Division

If to the CONSULTANT:                  David Ford Consulting Engineers  
2015 J Street, Suite 200  
Sacramento, CA 95811

Attention:                                      David Ford

The address to which mailings may be made may be changed from time to time by mailed notice as described above. Any notice given by mail shall be deemed given on the day after that on which it is deposited in the United States Mail as provided above.

## **20. ATTORNEYS' FEES**

If any legal proceeding should be instituted by either of the parties to enforce the terms of this Agreement or to determine the rights of the parties under this Agreement, the prevailing party in said proceeding shall recover, in addition to all court costs, reasonable attorneys' fees.

## **21. APPLICABLE LAW**

This Agreement, its interpretation and all work performed under it shall be governed by the laws of the State of California, venue the courts of the County of Alameda.

## **22. BINDING ON SUCCESSORS**

All of the terms, provisions and conditions of this Agreement shall be binding upon and inure to the benefit of the parties and their respective successors, assigns and legal representatives.

## **23. SEVERABILITY**

Should any provision, or portion of a provision, herein be found or deemed to be invalid, this Agreement shall be construed as not containing such provision, or portion of such provision, and all other provisions which are otherwise lawful shall remain in full force and effect, and to this end the provisions of this Agreement are declared to be severable.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement by their duly authorized officers as of the last signature date set forth below.

ALAMEDA COUNTY WATER DISTRICT

DAVID FORD CONSULTING ENGINEERS\*

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

ATTEST:

\_\_\_\_\_  
District Secretary

\*If Consultant is a corporation, the Contract must be executed by two corporate officers, one from each of the following categories 1) the President, the Vice President or the Chair of the Board, and 2) the Secretary, Assistant Secretary, Chief Financial Officer, or Assistant Treasurer.

# Attachment 2

## Proposal



**DAVID FORD  
CONSULTING  
ENGINEERS**

2015 J Street, Suite 200  
Sacramento, CA 95811  
Ph. 916.447.8779 Fx. 916.588.9566

## MEMORANDUM

To: Robert Ferro and Thomas Niesar, PE

From: Michael Konieczki, PE (Lic # CA 74357) and David Ford, PE, PhD

Date: 10/7/2016

Subject: Scope of work and cost proposal for feasibility study of forecast-informed reservoir operations (FIRO) at Lake Del Valle Reservoir in response to your letter of October 3, 2016

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### Summary

David Ford Consulting Engineers, Inc. (Ford Engineers) proposes to provide labor and materials to complete a feasibility study of FIRO at Lake Del Valle Reservoir for a fixed price of \$124,862.75. This price includes labor and direct costs. This proposal is valid for 30 days.

In addition, we propose an optional task of 3 in-person progress reports for an additional fixed price of \$11,474.88. This price includes labor and direct costs. This optional task may be exercised at any time before project completion.

As requested in your letter of October 3, we provide in this proposal:

- A detailed scope of work (SOW).
- A proposed schedule for project completion.
- Identification of the proposed project team, including resumes.
- Detailed cost information.

We take no exceptions with the standard agreement for services that was included with your letter. We will request certificates of insurance upon execution of the contract.

### Scope of Work

Task 1. Identify and document FIRO system components (Question 1 in your letter)

To complete this task we will:

1. Coordinate with Alameda County Water District (ACWD), Santa Clara Valley Water District (SCVWD), Alameda County Flood Control and Water Conservation District (Zone 7), East Bay Regional Park District (EBRPD), and other agencies, as required (collectively, the Stakeholder Agencies), to identify:

- The components of a FIRO system at Lake Del Valle Reservoir.
  - The agencies that will provide those components.
  - All of the agencies that should be included in the set of Stakeholder Agencies, i.e., all the agencies that will be involved and need to be coordinated with.
2. Summarize findings for inclusion in the technical study report (Task 16).

Task 2. Identify and document required policy and procedural shifts for FIRO implementation (Question 2)

To complete this task, we will:

1. Coordinate with the Stakeholder Agencies to identify policy and procedural shifts required by the FIRO system components defined in Task 1.
2. Summarize findings for inclusion in the technical study report (Task 16).

Task 3. Identify and document metrics for assessing water supply availability, flood management, and recreational facilities impacts (Questions 3-11)

To complete this task, we will:

1. Coordinate with the Stakeholder Agencies to identify metrics for assessing water supply availability, flood management, and recreational facilities impacts.
2. Develop, in coordination with the Stakeholder Agencies, methods for computing metric values if needed.
3. Summarize findings for inclusion in the technical study report (Task 16).

Task 4. Review HEC-ResSim model, document findings, and modify as needed (Questions 3-11)

To complete this task, we will:

1. Coordinate with ACWD to obtain the HEC-ResSim model and flow dataset of Lake Del Valle developed by Zone 7.
2. Obtain and review the water control manual (WCM) for Lake Del Valle Reservoir.
3. Review the Zone 7 HEC-ResSim model and identify modifications required to represent the Lake Del Valle operations, as defined by the WCM.
4. Modify the HEC-ResSim model given the required modifications identified in step 3.
5. Summarize findings for inclusion in the technical study report (Task 16).

Task 5. Develop period of record hydrologic dataset and document methods (Questions 3-11)

To complete this task, we will:

1. Review the revised HEC-ResSim model from Task 4 and identify the hydrologic data required as boundary conditions for simulation of the FIRO system defined in Task 1.

2. Coordinate with the Stakeholder Agencies to identify sources of hydrologic data identified in step 1 of this task.
3. Compile all data and develop, for each required boundary condition, time series for the period of record.
4. Review developed time series and identify, in coordination with ACWD, the common period of record.
5. Identify "gaps" and potential enhancements in the hydrologic dataset for the common period of record.
6. Develop and implement methods for "filling-in," or otherwise enhancing, hydrologic dataset deficiencies.
7. Construct the hydrologic dataset for the common period of record.
8. Summarize findings and methods for inclusion in the technical study report (Task 16).

Task 6. Configure baseline HEC-ResSim model, and simulate hydrologic period of record (Questions 3-11)

To complete this task, we will:

1. Configure the revised HEC-ResSim model (from Task 4) to use the appropriate time series from the hydrologic dataset to represent baseline conditions.
2. Simulate baseline conditions for the common period of record, defined in Task 5.
3. Summarize findings for inclusion in the technical study report (Task 16).

Task 7. Analyze baseline HEC-ResSim model results and identify impacts (Questions 3-11)

To complete this task, we will:

1. Review the baseline results simulated in Task 6.
2. Identify, or compute as needed, the metrics required to assess water supply availability, flood management, and recreational facilities impacts, defined in Task 3.
3. Summarize findings for inclusion in the technical study report (Task 16).

Task 8. Configure FIRO in HEC-ResSim model, and simulate hydrologic period of record (Questions 3-5)

To complete this task, we will:

1. Modify the Lake Del Valle HEC-ResSim model from Task 4 to represent the FIRO system, defined in Task 1.
2. Configure the revised HEC-ResSim model to use the appropriate time series from the hydrologic dataset.
3. Simulate FIRO for the common period of record, defined in Task 5.

Task 9. Analyze FIRO results and identify impacts (Questions 3-5)

To complete this task, we will:

1. Review the FIRO results from Task 8.

2. Identify, or compute as needed, the metrics required to assess water supply availability, flood management, and recreational facilities impacts, defined in Task 3.
3. Summarize findings for inclusion in the technical study report (Task 16).

Task 10. Identify and document water supply reallocation volume to be analyzed (Questions 6-8)

To complete this task, we will:

1. Coordinate with the Stakeholder Agencies to identify 1 scenario for reallocating reservoir storage from flood control to water supply to be analyzed in conjunction with FIRO at Lake Del Valle.
2. Summarize findings for inclusion in the technical study report (Task 16).

Task 11. Configure FIRO and water supply reallocation in HEC-ResSim model, and simulate hydrologic period of record (Questions 6-8)

To complete this task, we will:

1. Modify the Lake Del Valle FIRO HEC-ResSim model from Task 8 to represent the water supply reallocation scenario defined in Task 10.
2. Configure the revised HEC-ResSim model to use the appropriate time series from the hydrologic dataset.
3. Simulate FIRO and reallocation scenario for the common period of record, defined in Task 5.

Task 12. Analyze FIRO and water supply reallocation simulation results and identify impacts (Questions 6-8)

To complete this task, we will:

1. Review the FIRO and water supply reallocation scenario results from Task 11.
2. Identify, or compute as needed, the metrics required to assess water supply availability, flood management, and recreational facilities impacts, defined in Task 3.
3. Summarize findings for inclusion in the technical study report (Task 16).

Task 13. Identify and document structural changes to be analyzed (Questions 9-11)

To complete this task, we will:

1. Coordinate with the Stakeholder Agencies to identify 1 structural change scenario, such as dam raise and/or outlet works modifications, to be analyzed in conjunction with FIRO at Lake Del Valle.
2. Summarize findings for inclusion in the technical study report (Task 16).

Task 14. Configure FIRO and structural changes in HEC-ResSim model, simulate hydrologic period of record, and analyze results (Questions 9-11)

To complete this task, we will:

1. Modify the Lake Del Valle FIRO HEC-ResSim model from Task 8 to represent the structural change scenario defined in Task 13.



2. Configure the revised HEC-ResSim model to use the appropriate time series from the hydrologic dataset.
3. Simulate FIRO and structural change scenario for the common period of record, defined in Task 5.

Task 15. Analyze FIRO and structural change simulation results and identify impacts (Questions 9-11)

To complete this task, we will:

1. Review the FIRO and structural change scenario results from Task 14.
2. Identify, or compute as needed, the metrics required to assess water supply availability, flood management, and recreational facilities impacts, defined in Task 3.
3. Summarize findings for inclusion in the technical study report (Task 16).

Task 16. Develop draft and final technical study report

To complete this task, we will:

1. Develop a draft technical study report that details our methods and presents our findings.
2. Submit the draft technical study report to ACWD for review within 90 days of receiving notice to proceed. ACWD and its agents will have 7 days to review the draft technical study and provide comments.
3. Revise the technical study after addressing the comments provided, if any.
4. Submit the final technical study report 5 days after receipt of comments.

Task 17. 12 weekly progress reports

To complete this task, we will report project status to ACWD, and other agencies as required, via email or teleconference.

Task 18. Develop final model and hydrologic dataset package

To complete this task, we will package and provide all final study materials, including models, hydrologic datasets, technical memoranda, and technical study reports to ACWD. We will provide this package electronically

Optional Task 19. 3 monthly in-person progress reports

To complete this task, we will visit ACWD's offices to provide in-person reports of project status.

## Schedule

We will complete all tasks described in the scope of work within 102 days of notice to proceed. This presumes that all material to be furnished by you will be made available on the date we receive notice to proceed and that all reviews of submittals will be completed as shown in the SOW. Any such delays will result in corresponding delays in completion.

## Understandings and clarification of scope items

We note the items below to confirm and clarify our understanding of the scope of work. Our cost proposal is based upon this understanding; if any of

the items shown below are unacceptable to you, we respectfully reserve the right to revise our cost to be consistent with your requirements.

- For Tasks 1, 2, 3, 10, and 13, we have included direct costs of mileage for 1 in-person meeting to be held at ACWD's offices for all items.
- For Task 5, the hydrologic datasets we develop will be stored in HEC-DSS format.
- For Tasks 4, 6, 8, 11, and 14, any model modifications will be coordinated with, and approved by, ACWD and Zone 7. Such modifications will be limited to creation of networks, alternatives, and simulations required to complete this study.
- For Task 16, all comments will be provided electronically by reviewers within 7 days of receipt of the draft technical study. We will revise and finalize the technical study report within 5 days of receipt of comments.
- For Task 18, we will provide final study products electronically via our secure FTP service.
- For Optional Task 19, we include direct costs of mileage for 3 meetings to be held at ACWD's offices.

## Project team

Table 1 lists the Ford Engineers project team and applicable rate categories.

*Table 1. Ford Engineers project team*

ID (1)	Team member (2)	Rate category (3)
1	David Ford, PE, PhD, D.WRE	Principal engineer
2	Michael Konieczki, PE (project engineer)	Senior engineer
3	Max Barry	Senior technical specialist
4	Teresa Bowen, PE	Senior engineer
5	Holly Canada, PE	Engineer
6	Marilyn Hurst	Senior technical specialist
7	Donna Lee, CFM	Senior technical specialist
8	Nathan Pingel, PE, D.WRE	Principal engineer
9	Rhonda Robins, JD, CFM	Senior technical specialist
10	Adam Schneider, PE	Senior engineer

## Cost by task

Table 2 summarizes the cost by task required to complete a feasibility study of FIRO at Lake Del Valle Reservoir as defined by the SOW. Table 3 summarizes the cost of the optional task.

Table 4 displays the proposed labor required for each task in the SOW. Table 5 displays the proposed labor required for each optional task in the SOW. All labor costs shown are fully burdened.

Table 2. Cost estimates by task

Task (1)	Description (2)	Cost <sup>1</sup> (3)
1	Identify and document FIRO system components (Question 1 from your letter)	\$4,522.72
2	Identify and document required policy and procedural shifts for FIRO implementation (Question 2)	\$4,522.72
3	Identify and document metrics for assessing water supply availability, flood management, and recreational facilities impacts (Questions 3-11)	\$4,522.72
4	Review HEC-ResSim model, document findings, and modify as needed (Questions 3-11)	\$10,382.07
5	Develop period of record hydrologic dataset and document methods (Questions 3-11)	\$8,865.00
6	Configure baseline HEC-ResSim model, and simulate hydrologic period of record (Questions 3-11)	\$9,255.88
7	Analyze baseline HEC-ResSim model results and identify impacts (Questions 3-11)	\$10,244.90
8	Configure FIRO in HEC-ResSim model, and simulate hydrologic period of record (Questions 3-5)	\$9,255.88
9	Analyze FIRO results and identify impacts (Questions 3-5)	\$10,244.90
10	Identify and document water supply reallocation volume to analyze (Questions 6-8)	\$3,337.28
11	Configure FIRO and water supply reallocation in HEC-ResSim model, and simulate hydrologic period of record (Questions 6-8)	\$6,907.62
12	Analyze FIRO and water supply reallocation simulation results and identify impacts (Questions 6-8)	\$7,896.63
13	Identify and document structural changes to analyze (Questions 9-11)	\$3,337.28
14	Configure FIRO and structural changes in HEC-ResSim model, simulate hydrologic period of record, and analyze results (Questions 9-11)	\$6,907.62
15	Analyze FIRO and structural changes simulation results and identify impacts (Questions 9-11)	\$7,896.63
16	Develop draft and final technical study report	\$11,671.57
17	12 weekly progress reports	\$3,556.32
18	Develop final model and hydrologic dataset package	\$1,416.22
<i>Labor subtotal for all tasks</i>		<i>\$124,743.95</i>
Direct costs	Mileage expense (1 roundtrip to ACWD offices at 220 miles)	\$118.20
Total cost		\$124,862.75

1. Labor costs shown represent fully burdened costs.

*Table 3. Cost estimates by optional task*

Task (1)	Description (2)	Cost <sup>1</sup> (3)
19	Optional Task. 3 monthly in-person progress reports	\$11,118.48
Direct costs	Mileage expense (3 round trips to ACWD offices at 220 miles per trip)	\$356.40
Total optional cost		\$11,474.88

1. Labor costs shown represent fully burdened costs.

Table 4. Detailed labor estimate breakdown by task

Labor					
Task	Labor hours				Task cost
	Principal Eng	Sr. Eng	Eng	Sr. Tech Spec	
	282.04	155.34	138.19	143.88	
1 Identify and document FIRO system components (Q1 in your letter)	4	20		2	\$ 4,522.72
2 Identify and document required policy and procedural shifts for FIRO implementation (Q2)	4	20		2	\$ 4,522.72
3 Identify and document metrics for assessing water supply availability, flood management, and recreational facilities impacts (Q3-11)	4	20		2	\$ 4,522.72
4 Review HEC-ResSim model, document findings, and modify as needed (Q3-11)	2	40	24	2	\$ 10,382.07
5 Develop period of record hydrologic dataset and document methods (Q3-11)	2	16	40	2	\$ 8,865.00
6 Configure baseline HEC-ResSim model, and simulate hydrologic period of record (Q3-11)		24	40		\$ 9,255.88
7 Analyze baseline HEC-ResSim model results and identify impacts (Q3-11)	2	32	32	2	\$ 10,244.90
8 Configure FIRO in HEC-ResSim model, and simulate hydrologic period of record (Q3-5)		24	40		\$ 9,255.88
9 Analyze FIRO results and identify impacts (Q3-5)	2	32	32	2	\$ 10,244.90
10 Identify and document water supply reallocation volume to analyze (Q6-8)	2	16		2	\$ 3,337.28
11 Configure FIRO and water supply reallocation in HEC-ResSim model, and simulate hydrologic period of record (Q6-8)		16	32		\$ 6,907.62
12 Analyze FIRO and water supply reallocation simulation results and identify impacts (Q6-8)	2	24	24	2	\$ 7,896.63
13 Identify and document structural changes to analyze (Q9-11)	2	16		2	\$ 3,337.28
14 Configure FIRO and structural changes in HEC-ResSim model, simulate hydrologic period of record, and analyze results (Q9-11)		16	32		\$ 6,907.62
15 Analyze FIRO and structural changes simulation results and identify impacts (Q9-11)	2	24	24	2	\$ 7,896.63
16 Develop draft and final technical study report	4	24	16	32	\$ 11,671.57
17 12 weekly progress reports	6	12			\$ 3,556.32
18 Develop final model and hydrologic dataset package		2	8		\$ 1,416.22
Labor subtotal for all tasks	38	378	344	54	\$ 124,743.95
Subcontracts					
Other	0	hr @	\$0.00/hr		\$ -
Subcontract subtotal					\$ -
Direct cost					
Reproduction 8- 1/2 X 11	0	copies @	\$0.07/page		\$ -
Reproduction 11 X17	0	copies @	\$0.14/page		\$ -
Reproduction color 8-1/2 X 11	0	copies @	\$0.79/page		\$ -
Reproduction color 11 X 17	0	copies @	\$1.58/page		\$ -
Mileage (1 roundtrip to ACWD @ 220 miles)	220	mi @	\$0.54/mi		\$ 118.80
Other costs					\$ -
Direct cost subtotal					\$ 118.80
Total cost					
Labor subtotal for all tasks					\$ 124,743.95
Direct cost					\$ 118.80
Total					\$ 124,862.75

Table 5. Detailed labor estimate breakdown by optional task

Labor					
Optional Task	Labor hours				Task cost
	Principal Eng	Sr. Eng	Eng	Sr. Tech Spec	
	282.04	282.04	282.04	282.04	
19 Optional Task. 3 monthly in-person progress reports	24	28			\$ 11,118.48
Labor subtotal for all tasks	24	28	0	0	\$ 11,118.48
Subcontracts					
Other	0	hr @	\$0.00/hr		\$ -
Subcontract subtotal					\$ -
Direct cost					
Reproduction 8-1/2 X 11	0	copies @	\$0.07/page		\$ -
Reproduction 11 X17	0	copies @	\$0.14/page		\$ -
Reproduction color 8-1/2 X 11	0	copies @	\$0.79/page		\$ -
Reproduction color 11 X 17	0	copies @	\$1.58/page		\$ -
Optional Task 19. Mileage (3 roundtrips to ACWD @ 220 miles per trip)	660	mi @	\$0.54/mi		\$ 356.40
Other costs					\$ -
Direct cost subtotal					\$ 356.40
Total cost					
Labor subtotal for all tasks					\$ 11,118.48
Direct cost					\$ 356.40
Total					\$ 11,474.88

## Attachment 1. Resumes for Ford Engineers' project team

# David Ford, PhD, PE, D.WRE, Principal engineer

Years of experience: 42 years total, 26 with Ford Engineers

Education: PhD Water resources systems and hydrologic engineering (1978); MS Engineering (1975); BS Civil engineering (1973) (all from University of Texas)

Professional registrations: All registrations in civil engineering— Alabama; Arizona; California; Colorado; Iowa; Kansas; Nevada; North Carolina; Ohio; Oklahoma; Tennessee; Texas; NCEES

## Overview

DR. DAVID FORD is an internationally recognized expert in hydrologic, hydraulic, and water resources engineering, planning, and management, and has provided consulting services to local, state, and federal governmental agencies throughout the US and internationally. Ford has been a key advisor to the California Department of Water Resources (DWR) in the development of flood risk reduction policy for the State of California, including the Statewide Flood Management Planning Program, the Central Valley Flood Protection Plan, and the Urban Levee Design Criteria Program. His areas of expertise include management of complex, multi-agency projects; surface water hydrologic analysis; fluvial hydraulic analysis; flood risk management; and real-time forecasting, flood warning, and decision support analysis. He has trained thousands of engineers and scientists in hydrologic and hydraulic engineering principles; and prepared dozens of training documents, engineering manuals, and other guidance for local government agencies, state agencies, USACE, NWS, and UN agencies; (ghost)written and/or revised, in whole or in part, USACE guidance documents such as the Engineer Manuals (EMs) on risk-based analysis and hydrologic engineering requirements for flood risk management studies, chapters for the flood-runoff analysis EM, the technical reference manual and applications guide for HEC-HMS, the application guides for HEC-FDA and HEC-FIA, and Engineer Regulations (ERs) on water control management; authored numerous articles published in professional engineering journals, and appeared as a speaker at many professional hydrologic, hydraulic, and water resource engineering conferences.

## Professional associations and committees

- Diplomate Water Resources Engineers (D.WRE), American Academy of Water Resource Engineers
- American Society of Civil Engineers, member; past chair, Water Resources Systems Committee, Water Resource Planning and Management Division; past associate editor, Journal of Water Resource Planning and Management
- Association of State Floodplain Managers, member
- National Hydrologic Warning Council, member
- ALERT Users Group, member
- Southwestern Association of ALERT Systems, member
- National Research Council (NRC) committee on Missouri River ecosystem science, past member
- NRC committee on Grand Canyon monitoring and research, past member
- NRC standing committee on hydrologic science, past member
- NRC ad hoc committee examining FEMA's treatment of levees within the National Flood Insurance Program, member
- NRC committee on risk-based methods for insurance premiums of negatively elevated structures in the National Flood Insurance Program, past chair



## Professional recognition

- ALERT Users Group Outstanding Service Award (2004)
- David N. Kennedy Water Resources Award, ASCE Sacramento Section (2014)
- Julian Hinds Award, ASCE Environmental and Water Resources Institute (2015)

## Project-specific experience

Membership on Dam Safety Review Board (DSRB), for the FERC Part 12D Safety Inspection of Project No. 2426, Alamo-William E. Warne, Castaic, and Mojave Siphon-Devil Canyon powerplant complexes (DWR, Ongoing). As a member of the DSRB for the Project 2426 powerplant complex facilities, Ford is investigating and deliberating with unrestricted access to DWR infrastructure design, operation, maintenance, and inspection information. DSRB findings are reported directly to the Director, they form the basis for reports to FERC, and they guide DWR's decisions on investments for long-term care of this backbone of California's water delivery system. Fee: \$75,000. Role: Principal engineer.

Facilitation of technical expert panels, various clients. Examples of expert panels that Ford has facilitated include (1) an expert elicitation session for the Corps of Engineers to develop a strategy for accounting for climate change impacts in designs for flood protection for the Fargo, ND-Moorhead, MN metropolitan area (2009); (2) for the DWR Division of Flood Management, a panel of geotechnical engineers, leading them to develop a set of levee fragility curves that were used for risk analyses for the 2012 Central Valley Flood Protection Plan (CVFPP) (2011); and (3) for the Sacramento County Department of Water Resources, an expert panel that reviewed stormwater and environmental water storage policy and advised the county on changes to that policy (2013).

Lake Mendocino forecast-informed reservoir operations (FIRO) viability study, Sonoma County Water Agency (SCWA) (Ongoing). Ford is serving as hydrologic and hydraulic engineering consultant on a project in which SCWA is partnering with the National Oceanic and Atmospheric Administration (NOAA), US Geological Survey (USGS), USACE, Scripps Institution, and others to develop the Lake Mendocino Forecast Informed Reservoir Operations (FIRO) work plan. This plan describes an approach for using modeling, forecasting tools, and improved information, such as a greater understanding of the role of atmospheric rivers in filling Lake Mendocino, to determine whether the Lake Mendocino water control manual can be adjusted to improve flood control and water supply operations. Fee: \$94,000. Role: Principal-in-charge.

Dambreak inundation mapping for emergency response planning, DWR (2012). In support of the development of dambreak inundation maps for potential flooded areas under various conditions for emergency response planning, Ford Engineers modeled the dambreak flood wave over land and identified the inundation limits for hypothetical breaches of eight dams using HEC-RAS, FLO-2D, and GIS tools. Preparation of inundation maps required the use of data from topographic maps and river channel and cross-sections and discharge data. Fee: \$1,200,000. Role: Principal-in-charge.

Hydrologic engineering analysis, modeling, and studies for USACE Hydrologic Engineering Center (Ongoing). Currently managing USACE HEC W91238-14-D-0001, which is a five-year contract with a \$6.4M capacity for hydrologic engineering analysis, modeling, and studies support. This is our fourth consecutive IDIQ-type contract with HEC. Under the first three contracts, we completed 102 task orders; we have completed one task order under this contract. Role: Principal-in-charge.

Hydrologic, hydraulic, and water resources management engineering services for the USACE Sacramento District (2013). Currently managing USACE Sacramento District IDIQ W91238-15-D-0004, which is a five-year (three-year base period, two-year option period) contract with a \$5M capacity, for hydrologic, hydraulic, and water management engineering. This is our fourth consecutive IDIQ contract with USACE SPK to provide on-call hydrologic and hydraulic engineering services, and have two task orders in progress under that contract. Under our first three IDIQ contracts, we completed 32 task orders. Role: Principal-in-charge.

# Michael Konieczki, PE, Senior engineer

Years of experience: 11 years total, 9 with Ford

Education: MS Engineering (University of Texas, 2007); BS Engineering (University of Michigan, 2005)

Professional registrations: PE Civil engineering (CA 2009 #74357)

## Overview

MICHAEL KONIECZKI's areas of expertise include computer modeling of complex hydrologic and hydraulic systems, statistical hydrology, including flood frequency analysis, and flood warning system development. His project experience with hydrologic software programs includes HEC-GeoHMS, HEC-HMS, HEC-RAS, HEC-ResSim, FLO-2D, esri's GIS tools, SEI's Water Evaluation and Planning System, and EPANET. Konieczki has developed and presented an HEC-HMS advanced training course, an HEC-RAS unsteady flow training course, and a flood forecasting and warning training workshop. He presented "Flood forecasting and warning solutions for the Trinity River and Fort Worth Floodway" at the ALERT User's Group conference in Reno, NV (Spring 2012).

## Project-specific experience

Dam safety evaluation of Coyote Dam, Chesbro Dam, and Uvas Dam (DSE 1), Santa Clara Valley Water District, CA (2016). Ford Engineers is partnered with a large prime contractor to complete probable maximum flood (PMF) studies as part of a dam safety evaluation for 3 dams. Ford Engineers' role includes using Arc Hydro, ArcGIS, and HEC software to develop hydrologic and hydraulic models for use in the PMF study. Fee: \$54,000. Role: Senior engineer.

Hydraulic modeling in support of floodplain mapping for the Central Valley Floodplain Evaluation and Delineation (CVFED) project, California Department of Water Resources (2015). We worked with our teaming partners to establish an overall hydraulic model development strategy, oversee and coordinate hydraulic model development, develop 1-dimensional unsteady HEC-RAS system models and 2-dimensional unsteady FLO-2D models, and perform quality assurance (QA) and review. Fee: \$1,309,000. Role: Engineer.

Hydrologic analysis and reservoir operations modeling in support of the Folsom Dam Joint Federal Project Study, USACE Sacramento District (Ongoing). In early part of project, determined critical storm duration for Folsom Dam; developed a software tool that allows users to analyze historical events given a flow-duration-frequency curve, and balance hydrographs to multiple durations and frequencies derived from a family of flow frequency curves; produced a period of record of daily flows; and assessed the runoff potential of the American River watershed above Folsom Dam for various spring storm scenarios. In later part of project, developed and tested candidate forecast-based operation for water control manual update, which takes into account new spillway; developed and applied techniques to process National Weather Service ensemble forecast information for use within the HEC-ResSim reservoir operation model; routed historical and scaled floods; and refined operation rules in the model to meet flood control objectives, including emergency flood operations, with consideration of water supply and other objectives. Fee: \$1,200,000 to date. Role: Senior engineer.

Addition of ensemble forecasting to forecast-coordinated operations (F-CO), Yuba County Water Agency, CA (2015). Determined how the existing Yuba-Feather F-CO decision support system (DSS) could be modified to (1) implement the use of ensemble forecasts, and (2) facilitate uncertainty analysis. Task included developing information display options for the F-CO DSS interface; testing the candidate HEC-ResSim ver. 3.2; developing and testing scripts that execute HEC-ResSim within the F-CO DSS using the forecast ensemble with a coordinated release schedule; developing an application to retrieve results of the ensemble analysis and store those results in the CDEC database; developing a statistical analysis application; and developing an application to store the statistical results in the CDEC database. Fee: \$180,000. Role: Engineer.

CWMS modeling support and CAVI integration for Cape Fear river basin, USACE MMC for Wilmington District (2015). In support of implementation of CWMS for the Thames and Cape Fear river basin in the Wilmington District, we provided a 2-day HEC-ResSim modeling workshop, HEC-ResSim modeling support and review, a 2-day CAVI integration workshop, CAVI integration support and review, and other modeling support such as refining HEC-HMS, HEC-RAS, and HEC-FIA, and technical review for the final basin report. Fee: \$182,000. Role: Engineer.

Hydrologic studies in support of floodplain mapping of the Central Valley (Central Valley Hydrology Study), USACE Sacramento District (2014). As principal contractor for USACE, managed hydrologic analyses to support floodplain delineation behind all the Federal-State levees in the Sacramento and San Joaquin river basins. This project included flow-frequency analysis of large watersheds, simulation of reservoir operations, and estimation of flows for ungaged watersheds. Configured HEC-ResSim and HEC-RAS models to simulate period-of-record regulated and unregulated flows. Also developed procedures for determining how climate variability may affect the flow-frequency analysis completed for the Central Valley Hydrology Study; developed project management plan for climate variability study. Fee: \$8 million. Role: Engineer.

Development of flood forecast system, Tarrant Regional Water District (2013). Developed, tested, and deployed a rainfall-runoff model and upper basin forecasting system for the Fort Worth Floodway. Tasks included design, development, deployment, and documentation of applications to connect to and retrieve real-time data from a data warehouse, display data, monitor threshold exceedences and notify users, forecast watershed behavior, simulate channel behavior, simulate reservoir operation, display forecasts and simulation results, and archive and publish forecasts. We also documented the system and trained users. Fee: \$524,000. Role: Engineer.

Asset exposure information to support Delta levee improvement prioritization, California Department of Water Resources (2013). Developed and implemented a prioritization method using exposure criteria (that is, the number and value of assets behind levees that could be inundated in the event of levee failure), building upon the statewide flood exposure analysis completed for the Statewide Flood Management Program (SFMP). We identified assets, collected GIS data, conducted GIS exposure analysis, assigned economic values to assets, developed performance indicators, conducted quality assurance and control, and prepared a technical memorandum. Fee: \$ 196,000. Role: Engineer.

Dambreak inundation mapping for emergency response planning, California Department of Water Resources, Sacramento, CA (2012). In support of the development of dambreak inundation maps for potential flooded areas under various conditions for emergency response planning, Ford Engineers modeled the dambreak flood wave over land and identified the inundation limits for hypothetical breaches of eight dams using HEC-RAS, FLO-2D, and GIS tools. Preparation of inundation maps required the use of data from topographic maps and river channel and cross-sections and discharge data. Fee: \$1,200,000. Role: Engineer.

North-of-Delta offstream storage (NODOS) analysis (Sites Reservoir), California Department of Water Resources, Colusa County, CA (2011). Investigated the potential for flood damage reduction benefits of increased flood storage in Lake Oroville through integration of Lake Oroville operations with proposed north-of-Delta off-stream storage (NODOS). Tasks included using HEC-RAS for the hydraulic analysis, using HEC-ResSim for reservoir routings through the Feather-Yuba river system, and using HEC-FDA to complete the consequence analysis. Fee: \$95,000. Role: Engineer.

Hydrologic studies in support of Lower San Joaquin River Feasibility Study, USACE Sacramento District (2011). As part of the Lower San Joaquin River Feasibility Study (LSJRFS), we developed unregulated volume-frequency curves at the reservoirs and other study points; simulated reservoir releases and routed historical and scaled floods, including local flows, on two streams; fitted flow transforms to the event maxima datasets; developed regulated flow-frequency curves and associated volumes; and developed "expected" outflow hydrographs for each reservoir for eight flood frequencies. Fee: \$272,500. Role: Engineer.

# Max Barry, Technical specialist (information technology/programming)

Years of experience: 19 years total, 15 with Ford

Education: MS Mechanical engineering (University of Nevada, 1997); BS Computer science (CSU Sacramento, 2001)

## Overview

Max Barry develops custom applications for hydrologic and hydraulic engineering analysis and water resources management. He has designed and developed information technology tools and graphical user interfaces for data collection, data transmission, and database management systems; for threat recognition systems and forecasting systems; and for threat dissemination systems.

He is an expert programmer in multiple languages, including Java, C and C++, Visual Basic, Visual Basic .NET, Python, Jython, and FORTRAN, has database system management experience with MS Access, MS SQL Server, PostgreSQL, and HEC-DSS. He has development and support experience in Windows, Linux, and UNIX environments, including Sun Solaris.

Barry has extensive project experience covering the entire software development life cycle, from identifying an application's requirements and developing design documentation, to code and script development, application deployment, testing, and fixing bugs, to developing technical reference documentation and user guidance and providing ongoing support for clients across the US.

Prior to joining Ford Engineers, Barry worked at the National Weather Service servicing rain gages and NEXRAD equipment.

## Project-specific experience

Folsom Dam Joint Federal Project, US Army Corps of Engineers (USACE) Sacramento District, Folsom, CA (Ongoing). Ford Engineers has provided hydrologic and hydraulic analyses for the Folsom Dam modification project, including developing the hydrologic engineering management plan (HEMP) for the array of modeling simulations required for development of an updated water control manual; seasonal flood frequency analysis for Folsom Dam inflow; development of spreadsheet algorithms for modeling alternative configurations of outlets, quality control review of the reservoir operations models for the Folsom Dam permanent operations study; development of a forecast-informed operations scheme for Folsom Reservoir; and we are currently developing the updated Water Control Manual for Folsom Dam. Fee: \$1,200,000 (to date). Role: Technical specialist (information technology/programming).

Overland Park Aviso FS (flood forecasting system) development and enhancements, Overland Park, KS (Ongoing). David Ford Consulting Engineers has had and continues to have a major role in development and incremental enhancement of Overland Park's complete flood warning system, including data collection equipment; data management, threat recognition, and flood forecasting applications; plans and procedures; and trained personnel. Fee: \$510,000 (to date). Role: Technical specialist/programmer.

Development of software application for Central Valley Hydrology Study, USACE Sacramento District (2015). Developed software that facilitates the extraction of model results and processes those results to create the required hydrologic outputs. Fee: \$800,000. Role: Technical specialist/programmer.

Independent testing of CWMS v. 3.0, USACE HEC (2014). Coordinated with HEC to test software according to the agreed-upon testing plan and two data sets. Testing results were recorded in a testing log, and described in reports: component verification reports, issue classification reports, minor bug detection reports, moderate bug detection reports, and modification or enhancement design reports. Fee: \$198,000. Role: Technical specialist/programmer.

Development of flood forecast system, Tarrant Regional Water District (2014). Developed, tested, and deployed a rainfall-runoff model and upper basin forecasting system for the Fort Worth Floodway. Tasks included design, development, deployment, and documentation of applications to connect to and retrieve real-time data from a data warehouse, display data, monitor threshold exceedences and notify users, forecast watershed behavior, simulate channel behavior, simulate reservoir operation, display forecasts and simulation results, and archive and publish forecasts. We also documented the system and trained users. Fee: \$559,000. Role: Technical specialist/programmer.

Flood forecast system Aviso FS customization and enhancements, City of Charlotte and County of Mecklenburg, NC (2013). Implemented Ford Engineers' proprietary Aviso Watch flood threat identification system and Aviso FS forecasting model for three watersheds in Mecklenburg County. Specific tasks included integration of watershed models into the system, configuring Aviso Watch to use flood threat recognition rules, and model testing. We developed scripts and programs that allow Aviso FS to use HEC-HMS when running forecasts and scripts to automate the running of Aviso FS at a specified time interval and updated the Aviso Watch system to monitor forecasts from Aviso FS. Fee: \$183,000. Role: Technical specialist/programmer.

SacCalc development and enhancement, USACE Sacramento District (2010). Developed components of and made subsequent substantial enhancements to SacCalc, a decision support system for drainage design for Sacramento County. Fee: \$31,000. Role: Technical specialist/programmer.

Hydrograph balancing and reporting tool (HyBART) development, USACE Sacramento District (2010). Developed hydrograph balancing and reporting tool in VB.NET for USACE SPK. This tool allows users to query flow duration-frequency curves, analyze historical hydrographs, and develop balanced hydrographs. Fee: \$314,000. Role: Technical specialist/programmer.

Forecast-coordinated operations (F-CO) development, Yuba County Water Agency (YCWA) (2009; one task in an ongoing project). Developed a system of programs for forecast-coordinated operations for the Yuba-Feather River and Reservoir System. This F-CO system executes scripts to execute HEC-ResSim for both Windows and Linux. The system, written in Python and VBscript, stores observed and forecast data and runs HEC-ResSim simulations on demand. The system then transmits the forecasted results to the California Data Exchange Center (CDEC). Fee: \$320,000. Role: Technical specialist/programmer.

Forecast-coordinated software application development—flow calculator and transmitter system, Yuba County Water Agency (YCWA) (2007). Developed applications, written in VB.NET, to allow the Colgate Powerhouse operators to enter spillway gate settings and low-level outflow values from New Bullards Bar Reservoir. Role: Technical specialist/programmer.

Risk and Uncertainty Analyzer (RUA), Flood Control District of Maricopa County, AZ (2005). Developed RUA, an uncertainty and risk analysis tool for HEC-1 and HEC-RAS. RUA extends the agency's existing flood management decision support tools by adding the capability to examine how specific input parameters and conditions affect the peak flows and stages computed by HEC-1 and HEC-RAS. Tasks included designing and developing a graphical user interface and writing the user's manual. Fee: \$48,000. Role: Technical specialist/programmer.



# Teresa Bowen, PE, Senior engineer

Years of experience: 38 years total, 7 with Ford

Education: MS Civil engineering (UC Davis, 1987); BS Civil engineering (University of Minnesota, 1978)

Professional registrations: PE Civil engineering (CA 1986 #40122)

## Overview

TERESA BOWEN specializes in hydrology, reservoir regulation, and water management analysis. She has expertise in analysis of multi-purpose, multi-reservoir systems; computer modeling of complex hydrologic and hydraulic systems; and computations of water supply reallocation. Prior experience includes staff positions with US Army Corps of Engineers' St. Paul District, Pacific Ocean Division, and Hydrologic Engineering Center.

## Project-specific experience

Folsom Dam Joint Federal Project, USACE Sacramento District, Folsom, CA (Ongoing). Ford Engineers has provided hydrologic and hydraulic analyses for the Folsom Dam modification project, including developing the hydrologic engineering management plan (HEMP) for the array of modeling simulations required for development of an updated water control manual; seasonal flood frequency analysis for Folsom Dam inflow; development of spreadsheet algorithms for modeling alternative configurations of outlets, quality control review of the reservoir operations models for the Folsom Dam permanent operations study; development of a forecast-informed operations scheme for Folsom Reservoir; and we are currently developing the updated Water Control Manual for Folsom Dam. Fee: \$1,200,000 (to date). Role: Senior engineer.

Support expansion of forecast-coordinated operations program in the San Joaquin river basin, California Department of Water Resources (2015). We attended San Joaquin River forecast-coordinated operations meetings; provided exercise and training support; and completed technical assignments. Goals of the project include converting the existing snowmelt-based reservoir simulation model from an Excel and Access framework to a Java Oracle application; develop a graphical user interface for the new application; and training. Fee: \$29,000. Role: Senior engineer.

Addition of ensemble forecasting to forecast-coordinated operations (F-CO) for the Yuba-Feather river system, Yuba County Water Agency (2015). Determined how the existing Yuba-Feather F-CO decision support system (DSS) could be modified to (1) implement the use of ensemble forecasts, and (2) facilitate uncertainty analysis. Task included developing information display options for the F-CO DSS interface; testing the candidate HEC-ResSim ver. 3.2; developed and tested scripts that execute HEC-ResSim within the F-CO DSS using the forecast ensemble with a coordinated release schedule; developed an application to retrieve results of the ensemble analysis and store those results in the CDEC database; developed a statistical analysis application; and developed an application to store the statistical results in the CDEC database. Fee: \$180,000. Role: Senior engineer.

Hydrologic studies in support of floodplain mapping of the Central Valley, USACE Sacramento District (2014). As principal contractor for USACE, Ford Engineers managed hydrologic analyses to support floodplain delineation behind the 1600-mile system of Federal-State levees in the Sacramento and San Joaquin river basins. Project included flow-frequency analysis of large watersheds, simulation of reservoir operations for regulated curve development, and estimation of flow for ungaged watershed analysis. The study team used HEC-ResSim and HEC-RAS models to simulate period of record regulated and unregulated flows. Also developed a procedures document and hydrologic engineering management plan for a study of the effect of climate variability on the CVHS flow frequency analysis. Other aspects of this project included development and implementation of procedures for determining how climate variability may affect the flow-frequency analysis completed for the CVHS; and development of a software application to facilitate the extraction of model results and process those results to create the required hydrologic outputs. Fee: \$8 million. Role: Senior engineer.

Flood risk reduction benefit analysis for New Bullards Bar forecast-coordinated operations, Yuba County Water Agency (2014). Studied the flood risk reduction benefits of forecast-based operations (F-BO) of Oroville and New Bullards Bar reservoirs. The studies include flood risk reduction benefits of Oroville and NBB F-BO alone and with other complementary projects. We used standard hydrologic, hydraulic, risk, and economic analysis procedures; available hydrologic inputs; and reservoir simulation, channel, and economic models developed and used for other inundation-reduction benefit analyses in the Feather-Yuba system. We also assisted with a functional exercise. Cost: \$74,000. Role: Project manager; senior engineer.

Update to Alabama-Coosa-Tallapoosa and Apalachicola-Chattahoochee-Flint (ACT/ACF) unimpaired flow data set, USACE Mobile District (2014). The original unimpaired flow data set developed as part of the ACT/ACF River Basins Comprehensive Water Resources Study included data at over 50 locations for the 1939 to 1993 period of record. These data serve as input to HEC-ResSim reservoir system models used for the ACF Water Control Manual Update Study. Under this task order, we extended the unimpaired flow data set for 2002-2012. Data sets included reservoir data (elevation, inflow, outflow, evaporation), observed rainfall and pan evaporation data, gaged river flow data, and computed incremental local flow data. Tasks included an examination of possible software tools for various computation steps; review of data quality; modification of streamflow, reservoir, evaporation/precipitation, municipal and industrial water use, and agricultural withdrawals and returns data; computation of local flows; and preparation of a report. Fee: \$141,000. Role: Senior engineer.

Reservoir operation and watershed modeling to support water control manual update, USACE Sacramento District, Weber Basin, UT (2012). Ford Engineers developed HEC-ResSim and HEC-HMS models of the Weber Basin reservoir system in north central Utah: incorporated diversions, routing, and channel capacities into the model; developed evaporation; built time series data sets in HEC-DSS of flow and storage; and verified the model. Also developed a Weber Basin HEC-HMS model with snowmelt capabilities; calibrated and verified the model; and prepared documentation. Cost: \$198,000. Role: Project manager; senior engineer.

Accelerated Corps Water Management System (CWMS) deployment through the American Recovery and Reinvestment Act of 2009, USACE Hydrologic Engineering Center, Buffalo Bayou, TX; Red River of the North, MN/ND; and Sacramento, CA (2011). Deployed CWMS on the Buffalo Bayou (Galveston District), Red River of the North (St. Paul District), and American River (Sacramento District). In addition to overall project management, site-specific tasks include developing, updating, and calibrating component models of CWMS. Cost: management \$609,000; deployment \$1,030,000. Role: Task order manager, senior engineer.

Hydrologic analyses of New Hogan and Farmington reservoirs for Lower San Joaquin River Feasibility Study, California (2011). As part of the Lower San Joaquin River Feasibility Study (LSJRFS), we developed unregulated volume-frequency curves at the reservoirs and other study points, simulated reservoir releases and routed historical and scaled floods, including local flows, on two streams, fitted flow transforms to the event maxima datasets, developed regulated flow-frequency curves and associated volumes, and developed "expected" outflow hydrographs for each reservoir for eight flood frequencies. Fee: \$273,000. Role: Senior engineer.

Revision of Engineer Regulation 1110-2-240, Water control management, USACE HEC (2009). To enhance understanding of Corps water management requirements and in light of issues that arose since the previous edition of the ER, we identified and proposed resolution to new policy issues, consulted with Corps staff, and developed final draft of revised ER. Topics included Corps policies regarding water control manuals, plans, and agreements; real-time data acquisition and management; and water system management operation. Fee: \$80,000. Role: Senior engineer.

Sacramento and San Joaquin Comprehensive Study, USACE Sacramento District (2000). Provided independent technical review of procedures, methods, assumptions, and data used in an HEC-5 model representing baseline conditions in two multi-purpose, multi-reservoir systems. Fee: \$9,000. Role: Senior engineer/independent technical reviewer (not with Ford Engineers).

# Holly Canada, PE, Engineer

Years of experience: 6 years total, 2 with Ford

Education: MS Civil and environmental engineering (UC Davis, 2012); BS Civil engineering (Lehigh University, 2010); BS Integrated business and engineering (Lehigh University, 2010)

Professional registrations: PE Civil engineering (CA)

## Overview

HOLLY CANADA's areas of expertise include water supply modeling for planning and management, systems analysis in water resources, deterministic and probabilistic optimization, and risk assessment. Her experience includes 2.5 years as a water resources engineer with the California Department of Water Resources. She designed operations and planning studies using the CalSim and CalLite models and acted as DWR's team leader for the latest CalLite GUI development and testing effort. Prior to joining DWR, Ms. Canada contributed to a 1.7 million dollar research project at UC Davis, where she analyzed water supply alternatives and funding and policy options to groundwater nitrate affected communities in California's Salinas Valley and Tulare Lake Basin as part of a larger report to the California State Water Resources Control Board. She later expanded on this research with a risk analysis of nitrate contamination in the study area, giving special focus to point-of-use water treatment devices in small communities. Ms. Canada has experience applying the following to recent projects: CalLite, CalSim, DWR's Water Resources Simulation Language (WRESL), WRIMS simple GUI, WRIMS 2.0 GUI/IDE, C2VSim, HEC-ResSim, HEC-FDA, HEC-RAS, HEC-HMS, ArcGIS, MATLAB, AutoCAD, SPSS statistical software, Visual C++, Java, and VBA. She has received formal training with HEC-FDA, C2VSim, and IWFM.

## Project-specific experience

Hydrology, hydraulics, and risk analyses for Lower Elkhorn Levee setback project, California Department of Water Resources (Ongoing). The Lower Elkhorn Levee setback project includes the permitting, design, and construction of a levee setback along the Yolo Bypass and Sacramento Bypass in California's Central Valley. This project will reduce flood risk for several communities along the Sacramento River and allow for ecosystem restoration. Ford Engineers is providing technical guidance to DWR to execute the hydrologic, hydraulic, and risk analyses for the Lower Elkhorn Levee setback project to complete the so-called "Section 408" analysis. Fee: \$310,000. Role: Engineer.

Risk analysis activities for the 2012 and 2017 Central Valley Flood Protection Plan (CVFPP), California Department of Water Resources (Ongoing). Helped the study team identify updated HEC-FDA modeling requirements; designed a database to contain parcel data and other relevant data and information used in the HEC-FDA models; researched and developed a method to estimate flood loss of life using the HEC-FDA models; researched methods to evaluate benefits for potential CVFPP multi-purpose measures; reviewed the final HEC-FDA models for technical accuracy and consistency; supported agency policy development; developed guidance on how to assess flood risk reduction investments; and currently investigating benefits of nonstructural flood risk reduction measures. Fee: \$4 million (to date). Role: Engineer.

Hydrologic analysis and reservoir operations modeling in support of the Folsom Dam Joint Federal Project Study, USACE Sacramento District (Ongoing). In early part of project, determined critical storm duration for Folsom Dam; developed a software tool that allows users to analyze historical events given a flow-duration-frequency curve, and balance hydrographs to multiple durations and frequencies derived from a family of flow frequency curves; produced a period of record of daily flows; and assessed the runoff potential of the American River watershed above Folsom Dam for various spring storm scenarios. In later part of project, developed and tested candidate forecast-based operation for water control manual update, which takes into account new spillway; developed and applied techniques to process National Weather Service ensemble forecast information for use within the HEC-ResSim reservoir operation model; routed historical and scaled



floods; and refined operation rules in the model to meet flood control objectives, including emergency flood operations, with consideration of water supply and other objectives. Fee: \$1,200,000 to date. Role: Engineer.

Economic flood risk analysis of the Dry Creek feasibility study, Reclamation District 2103 (2016). Quantified economic inundation-reduction (IR) benefit of the proposed improvements and repairs to the Dry Creek levees. Fee: \$42,000. Role: Engineer.

Risk assessment to estimate benefits attributable to flood fighting and levee maintenance in the Central Valley, California Department of Water Resources (DWR) (2016). We assessed flood risk reduction as economic damage avoided and reduction in potential lives lost attributable to flood fighting at 4 sites and attributable to levee maintenance at 5 sites in the Central Valley. In addition, at one of the sites for the levee maintenance assessment, we measured the reduction in the acreage of giant garter snake (GGS) habitat lost. A unique feature of this analysis was that a detailed geotechnical engineering analysis to assess levee performance function changes attributable to flood fighting and maintenance is not attainable, so the risk analysis used levee performance curves based on information obtained through a process of expert opinion elicitation (EOE). With this project, we demonstrated the development of a systematic, repeatable, understandable method for estimating benefit that incorporated EOE. Fee: \$160,000. Role: Engineer.

Comparison of C2VSim model flow routing with CVHS/CVFPP HEC-RAS model flow routing and additional hydraulic modeling support, DWR (2016). DWR sought to evaluate the two versions of its channel flow routing method within its California Central Valley Groundwater-Surface Water Simulation Model (C2VSim): the original model that uses a water balance approach to move surface water at each model time step, and a version that uses kinematic wave stream routing. For two events, we compared C2VSim stream depths, velocities, and travel times with those from the CVFPP/CVFED HEC-RAS system routing model. Based on the results of our analysis, we identified options for enhancing C2VSim's stream routing capabilities. Under another task order, we developed rating curves and channel invert elevations at every C2VSim-FG stream mode within the CVHS/CVFPP model extent. Fee: \$48,000. Role: Engineer.

Identification of benefits attributable to Central Valley flood warning system enhancements, California Department of Water Resources (2015). Ford Engineers evaluated the benefit resulting from reduced residential content inundation damage as a result of implementation of flood warning system components described in the Enhanced Flood Response and Emergency Preparedness Initial Project report (USACE 2003 and USACE 2005). We also described water supply benefits derived from those flood emergency response enhancements. Fee: \$36,000. Role: Engineer.

Development of meteorological and runoff models for the White River, US Army Corps of Engineers, Little Rock District (2015). Ford Engineers developed an HEC-HMS rainfall-runoff model of the White River watershed and calibrated and verified the model to historical hydrographs at locations throughout the watershed. Fee: \$142,000. Role: Engineer.

Projects for the California Department of Water Resources (2012-2014). Supported decisions for operating, planning, and managing California's water project facilities through the application and development of CalLite and CalSim; designed studies using models, computer programs, and spreadsheets to evaluate the effect of water management alternatives on California's statewide water supply deliveries and outflow to the Sacramento and San Joaquin Delta; created tools to better evaluate and disseminate model results; and prepared technical reports and presentations. Cost: n/a. Role: Water resources engineer.

# Marilyn Hurst, Senior technical specialist

Years of experience: 45 years total, 4 with Ford

Education: Completed coursework towards a Mathematics degree at the University of Houston, TX, and University of California, Davis

## Overview

MARILYN HURST has 48 years' technical and project management experience, including staff positions at the Water Resource Systems Division and Training Division of USACE HEC. She develops, designs, maintains, and supports USACE reservoir operations modeling software applications. Her expertise is in adaptation of watershed characteristics for rainfall-runoff analysis, reservoir system simulation analysis, water quality analysis, and flood risk reduction analysis. She excels at providing training and user support for the Corps' reservoir operation simulation and optimization software.

## Project-specific experience

Folsom Dam Joint Federal Project, USACE Sacramento District, Folsom, CA (Ongoing). Ford Engineers has provided hydrologic and hydraulic analyses for the Folsom Dam modification project, including developing the hydrologic engineering management plan (HEMP) for the array of modeling simulations required for development of an updated water control manual; seasonal flood frequency analysis for Folsom Dam inflow; development of spreadsheet algorithms for modeling alternative configurations of outlets, quality control review of the reservoir operations models for the Folsom Dam permanent operations study; development of a forecast-informed operations scheme for Folsom Reservoir; and we are currently developing the updated Water Control Manual for Folsom Dam. Fee: \$1,114,000 (to date). Role: Senior technical specialist.

CWMS modeling support and CAVI integration, USACE Modeling, Mapping, and Consequence Center for Wilmington District, Norfolk District, Little Rock District, and New England District (Ongoing). The Corps' Modeling, Mapping, and Consequence (MMC) Center, which is part of the Corps' Dam Safety Program, is sponsoring implementation of the Corps Water Management System (CWMS) at several sites throughout the US. Ford Engineers, as subcontractor, has supported this effort for the Thames and Cape Fear watershed, the Jackson James watershed, the Arkansas River watershed, and the Blackstone River watershed. Typical tasks include HEC-ResSim modeling support and review, refinement of HEC-HMS, HEC-RAS, and HEC-FIA models; and integration of models with the CWMS Control and Visual Interface (CAVI). Fee: \$363,824.00. Role: Senior technical specialist.

Update to Alabama-Coosa-Tallapoosa and Apalachicola-Chattahoochee-Flint (ACT/ACF) unimpaired flow data set, USACE Mobile District (2014). The original unimpaired flow data set developed as part of the ACT/ACF River Basins Comprehensive Water Resources Study included data at over 50 locations for the 1939 to 1993 period of record. These data serve as input to HEC-ResSim reservoir system models used for the ACF Water Control Manual Update Study. Under this task order, we extended the unimpaired flow data set for 2002-2012. Data sets included reservoir data (elevation, inflow, outflow, evaporation), observed rainfall and pan evaporation data, gaged river flow data, and computed incremental local flow data. Tasks included an examination of possible software tools for various computation steps; review of data quality; modification of streamflow, reservoir, evaporation/precipitation, municipal and industrial water use, and agricultural withdrawals and returns data; computation of local flows; and preparation of a report. Fee: \$141,000. Role: Senior technical specialist.

Development of Unimpaired Flows for ACF watershed, USACE Mobile District (2013). Extend unimpaired flow dataset to include data for 2002-2012. Data sets include reservoir data (elevation, inflow, outflow, evaporation), observed rainfall and pan evaporation data, gaged river flow data, and computed incremental local flow data. Fee: \$140,000. Role: Senior technical specialist.

Assessing status of CWMS deployment nationwide, HEC (2012). Assisting HEC in collecting information necessary to develop the estimated value of a nationwide deployment of CWMS. Verifying reports on the

current extent of deployment of CWMS in districts nationwide, describing the geographic extent CWMS watersheds, and estimating the cost of deploying CWMS for the watersheds that are not yet modeled with CWMS. Fee: \$79,000. Role: Senior technical specialist.

Representative project experience while employed as computer specialist/hydrologic technician at USACE HEC:

ACT/ACF reservoir modeling in support of water control manual updates, HEC, Mobile, AL (2011).

Developed HEC-ResSim models for the Alabama-Coosa-Tallapoosa and Apalachicola-Chattahoochee-Flint river basins, including transitioning from HEC-5 to HEC-ResSim reservoir models. Provided support and guidance to the USACE Mobile District in developing modeling techniques to transition from HEC-5 options to HEC-ResSim capabilities; developed baseline and alternative operations; analyzed results; and developed project study reports. Role: Computer specialist/hydrologic technician.

Delaware River Basin reservoir operations and streamflow routing components, USACE HEC, Philadelphia, PA (2008). Multi-agency [Delaware River Basin Commission (DRBC), USACE (HEC & Philadelphia District), USGS, and NWS] study to develop flood analysis model for the Delaware River Basin to evaluate the effects of various reservoir operating alternatives to reduce flooding at locations downstream of the reservoirs. Provided HEC-ResSim watershed model development, software design, implementation, and testing, documentation of new routing method (Variable Lag & K), training to stakeholders, developed the study report. Role: Computer specialist/hydrologic technician.

Projects for USACE, Afghanistan Engineering District (2004-2006). provided extensive technical review of and revisions to the hydrologic data used for watershed modeling and initial HEC-ResSim model development for the Helmand Valley Water Management Study, Afghanistan; assisted in the development of the HEC-ResSim model for Kajakai Reservoir Water Balance alternatives and corresponding report for the Helmand Valley Water Management Study, Afghanistan; developed preliminary HEC-5 storage-yield optimization model for Kajakai Reservoir; helped develop scope of work and prepared data for delivery to contractor for Helmand Valley Data Quality Control; assisted in the development of the "Period of Record" and "PMF" simulations and corresponding write-up of the HEC-ResSim model for Kajakai Reservoir for the Helmand Valley Water Management Study, Phase II, Afghanistan; assisted with HEC-ResSim and HEC-DSSVue training of visiting Afghan engineers; assisted in development of SWLRI (Iraq) ResSim model; provided training to Iraqi engineers in the use of HEC-DSS and HEC-ResSim. Role: Computer specialist/hydrologic technician.

Development of HEC-ResSim documentation (2000-2012): Assisted in preparation of software design and software design documents, task orders, user support documents (User's Manuals), watershed model development, testing and user support for the HEC-ResSim program. Required understanding of reservoir simulation, operations, rule (guide) curves, and release diagrams. Role: Computer specialist/hydrologic technician.

Technical review of user support documentation (2000-2012). Review and usability testing for user's manuals, application guides, and technical reference manuals; and installation and webpage testing for various HEC software packages for public release including HEC-5, HEC-6, HEC-UNET, HEC-HMS, HEC-GeoHMS, HEC-RAS, HEC-GeoRAS, HEC-ResSim, and HEC-DSSVue. Role: Computer specialist/hydrologic technician.

CWMS development (2001-2009). Team member and participant in coordination telephone conferences, development meetings, preparation and review of CWMS user documentation, software testing and user support for the real time data acquisition and modeling Corps Water Management System (CWMS) software. Assisted in CWMS Working Sessions at HEC for USACE Division offices (North Atlantic, South Atlantic, Great Lakes and Ohio River, Mississippi Valley, Southwestern, Northwestern--Missouri River and Portland, and South Pacific). Performed on-site implementation and training at District offices (New England, Vicksburg, Kansas City, Wilmington, Charleston, Mobile, and Sacramento). Role: Computer specialist/hydrologic technician.

USACE PROSPECT courses at HEC (1990-2012). Provided preparation, testing, and training assistance for HEC-5, HEC-ResSim, HEC-DSS/HEC-DSSVue, and CWMS. Role: Computer specialist/hydrologic technician.

## Donna Lee, CFM, Senior technical specialist

Years of experience: 11 years total, 7 with Ford

Education: BA Molecular and cell biology (UC Berkeley, 2004); MS Journalism (Columbia University, 2009)

Professional registration: Certified Floodplain Manager (Association of State Flood Plain Managers); Project Management Professional (Project Management Institute, 2015)

### Overview

DONNA LEE specializes in water resources planning, technical writing and editing, and project management. Her project experience includes developing flood risk management policy, flood emergency response plans, and hydrologic and hydraulic engineering plans, reports, and memoranda. Ms. Lee has published both scientific and journalistic articles in a wide variety of publications including the Department of Energy Journal of Undergraduate Research; The New York Times; the Statesman Journal (a Gannett daily newspaper); the Sacramento News & Review (an alternative weekly); and InfoTejo, a Portuguese water resources newsletter. She specializes in managing complex projects, coordinating multi-agency workgroups, and communicating complex ideas through writing, graphics, slideshows, and video.

### Project-specific experience

Hydrologic analysis and reservoir operations modeling in support of the Folsom Dam Joint Federal Project Study, USACE Sacramento District (Ongoing). In early part of project, determined critical storm duration for Folsom Dam; developed a software tool that allows users to analyze historical events given a flow-duration-frequency curve, and balance hydrographs to multiple durations and frequencies derived from a family of flow frequency curves; produced a period of record of daily flows; and assessed the runoff potential of the American River watershed above Folsom Dam for various spring storm scenarios. In later part of project, developed and tested candidate forecast-based operation for water control manual update, which takes into account new spillway; developed and applied techniques to process National Weather Service ensemble forecast information for use within the HEC-ResSim reservoir operation model; routed historical and scaled floods; and refined operation rules in the model to meet flood control objectives, including emergency flood operations, with consideration of water supply and other objectives. Fee: \$900,000 to date. Role: Senior technical specialist.

Buchanan Dam and Hidden Dam water control manual datum revisions, USACE Sacramento District (2016). Updated the datum and modified figures in these water control manuals. Fee: \$36,000. Role: Senior technical specialist.

Development of portions of the 2012 Central Valley Flood Protection Plan (CVFPP) and related policies, California Department of Water Resources (2012). As part of a larger effort to assess and communicate flood risk in California's Central Valley, Ford Engineers (1) developed innovative, simplified method to represent expected annual life loss from flooding; (2) developed a regional flood damage analysis comparing flood risk reduction approaches; (3) facilitated an expert panel on levee fragility curves for use in the CVFPP; (4) facilitated development of a statewide benefit policy and a hydraulic impact policy; and (5) managed program team meetings. Cost: \$450,000. Role: Assistant project manager (PM), technical specialist (writer/editor).

Project management of CWMS deployment at 11 sites in the US, HEC (2011). Assisted the USACE HEC with managing CWMS deployment at 11 district offices, a \$5 million project overall. The project was funded by the American Recovery and Reinvestment Act (ARRA) of 2009. As the "lead contractor," Ford Engineers helped HEC oversee the three contractors deploying CWMS. Cost: \$610,000. Role: Assistant PM, technical specialist (writer/editor).

Flood response plan template development, California Department of Water Resources (2012). Developed flood response plans for three California communities representing diverse flood hazards. Gather information from communities to include in flood response plans and research state and local guidelines to ensure that

plans conform. In addition, supported development of a template for statewide use and related documentation. Cost: \$350,000. Role: Technical specialist (writer/editor).

Hydraulic modeling in support of floodplain mapping for the Central Valley Floodplain Evaluation and Delineation (CVFED) project, California Department of Water Resources (2015). Working with our teaming partners to establish an overall hydraulic model development strategy, oversee and coordinate hydraulic model development, develop 1-D unsteady HEC- RAS system models, develop 2-D unsteady FLO-2D models, perform quality assurance (QA) and review, and describe our work in numerous technical reports. Cost: \$1,309,000. Role: Technical specialist (writer/editor).

Revision of CWMS version 3.0 user manual, USACE HEC (2015). The Corps Water Management System (CWMS) is used throughout USACE to provide information that supports water control decision making. CWMS integrated USACE simulation models with data management and reporting capabilities under a common user interface. Recent development of CWMS has made revision of the software user manual necessary. We provided independent testing of version 3.0 of the Corps Water Management System (CWMS). Version 3.0 added new simulation, data management, and reporting capabilities, as well as enhanced capabilities for users to adjust model calibration and configuration. Updated the CWMS version 3.0 user's manual to conform to revisions made to the CWMS Control and Visual Interface (CAVI). Added three new chapters on HEC-HMS forecast parameter adjustment editors, rating editors, and HEC-MetVue. (The user's manual was revised in parallel with CWMS ver. 3.0 testing also done by Ford Engineers.) Cost: \$198,000 (testing) + \$145,000 (manual). Role: Senior technical specialist (writer/editor).

Dambreak inundation mapping for statewide emergency response planning, California Department of Water Resources (2012). CA DWR undertook a study on behalf of the California Emergency Management Agency and the California Natural Resources Agency to develop dambreak inundation maps for emergency response planning. We modeled the movement of the dambreak flood wave over land and identified the inundation limits for hypothetical breaches of eight dams. The study team used HEC-RAS for the dam breach modeling, FLO-2D for the inundation modeling, and GIS tools for the inundation mapping. Cost: \$1,201,000. Role: Assistant PM, technical specialist (writer/editor).

Expert Opinion Elicitation for examining issues related to initial storage conditions in flood detention basins, Sacramento County Department of Water Resources (2013). Real estate developers have submitted master drainage studies for areas of Sacramento County that incorporate both hydromodification flow duration control (FDC) and flood detention into a single detention basin. These plans assume that the FDC basins are completely empty at the beginning of the design storm event. However, Sacramento County Department of Water Resources and the developers' engineers disagree on what the initial storage conditions in the basins should be at the start of flood control modeling. We convened a panel of independent experts to recommend initial storage conditions. We reported the experts' consensus recommendation to the county. Cost: \$23,000. Role: Technical specialist (writer/editor).

Cost-benefit study of remediating West Sacramento levees for seismic hazard, California Department of Water Resources (2013). To address levee deficiencies, the City of West Sacramento initiated the West Sacramento Levee Improvement Program (WSLIP) to rehabilitate and strengthen the West Sacramento levees, thereby reducing the risk to people and property from the flood event with an annual exceedence probability of 0.005. The City is evaluating alternatives for meeting this goal. Our tasks in support of this study included: review of seismic fragility curves prepared by other contractors; computing the estimated annual damage for three scenarios (no pre-earthquake fixes, pre-earthquake fixes, and post-earthquake repairs); preparation of a technical memorandum summarizing our procedures and results. Cost: \$15,000. Role: Technical specialist (writer/editor).



# Nathan Pingel, PE, D.WRE, Principal engineer

Years of experience: 18 years total, 15 with Ford

Education: MS Civil and environmental engineering (UC Davis, 1999); BS Civil engineering (Loyola Marymount University, 1998)

Professional registrations: PE Civil engineering (CA); Diplomate, Water Resources Engineer (D.WRE) by the American Academy of Water Resource Engineers

## Overview

NATHAN PINGEL specializes in the management of diverse complex water resource public works projects and is an expert in the use of modeling applications in hydrologic and hydraulic engineering and USACE risk and uncertainty analysis. He is co-author of "Interior floodplain flood-damage reduction study," by N. D. Pingel and D. T. Ford, in *Journal of Water Resources Planning and Management*, Vol. 130, No. 2, March 2004; and "Multiple flood source expected annual damage computations," by N. D. Pingel and D. Watkins, in *Journal of Water Resources Planning and Management*, Vol. 136, No. 3, May 2010.

## Project-specific experience

Hydrologic analysis and reservoir operations modeling in support of the Folsom Dam Joint Federal Project Study, USACE Sacramento District (Ongoing). In early part of project, determined critical storm duration for Folsom Dam; developed a software tool that allows users to analyze historical events given a flow-duration-frequency curve, and balance hydrographs to multiple durations and frequencies derived from a family of flow frequency curves; produced a period of record of daily flows; and assessed the runoff potential of the American River watershed above Folsom Dam for various spring storm scenarios. In later part of project, developed and tested candidate forecast-based operation for water control manual update, which takes into account new spillway; developed and applied techniques to process National Weather Service ensemble forecast information for use within the HEC-ResSim reservoir operation model; routed historical and scaled floods; and refined operation rules in the model to meet flood control objectives, including emergency flood operations, with consideration of water supply and other objectives. Fee: \$900,000 to date. Role: Ford Engineers' project manager (PM); principal engineer.

Risk analysis activities for the 2012 and 2017 Central Valley Flood Protection Plan (CVFPP), California Department of Water Resources (Ongoing). Helped the study team identify updated HEC-FDA modeling requirements; designed a database to contain parcel data and other relevant data and information used in the HEC-FDA models; researched and developed a method to estimate flood loss of life using the HEC-FDA models; researched methods to evaluate benefits for potential CVFPP multi-purpose measures; reviewed the final HEC-FDA models for technical accuracy and consistency; supported agency policy development; developed guidance on how to assess flood risk reduction investments; and currently investigating benefits of nonstructural flood risk reduction measures. Fee: \$4 million (to date). Role: Ford Engineers' PM, principal engineer.

Expanded analysis to support channel capacity atlas preparation, California Department of Water Resources (2015). In support of DWR's development of a map atlas for State Plan of Flood Control system performance, Ford Engineers conducted analyses to prepare regulated-flow frequency curves based on one of the CVFED program system model and the Central Valley Hydrology Study (CVHS) products, tools, and procedures. We provided updated regulated flow-frequency curves and water surface profiles for all CVHS analysis points in summary table(s) for the State Plan of Flood Control facilities specifically for the  $p=0.01$  (100-year) and  $p=0.005$  (200-year) flood events in the Sacramento River Basin. Then, Ford Engineers developed summary tables which indicate scale factors closest to the  $p=0.01$  and  $p=0.005$  events. Fee: \$85,000. Role: Ford Engineers' PM, principal engineer.

Hydraulic modeling for the Central Valley Floodplain Evaluation and Delineation (CVFED) program, California Department of Water Resources (2015). Ford Engineers (1) established an overall hydraulic model development strategy, (2) oversaw and coordinated hydraulic model development, (3) developed one-dimensional unsteady HEC-RAS system models, (4) developed two-dimensional unsteady FLO-2D models, and (5) provided technical review. Fee: \$1,309,000. Role: Principal engineer.

Hydrologic studies in support of floodplain mapping of the Central Valley, USACE Sacramento District (2014). As principal contractor for USACE, Ford Engineers managed hydrologic analyses to support floodplain delineation behind the 1600-mile system of Federal-State levees in the Sacramento and San Joaquin river basins. Project included flow-frequency analysis of large watersheds, simulation of reservoir operations for regulated curve development, and estimation of flow for ungaged watershed analysis. The study team used HEC-ResSim and HEC-RAS models to simulate period of record regulated and unregulated flows. Also developed a procedures document and hydrologic engineering management plan for a study of the effect of climate variability on the CVHS flow frequency analysis. Other aspects of this project included development and implementation of procedures for determining how climate variability may affect the flow-frequency analysis completed for the CVHS; and development of a software application to facilitate the extraction of model results and process those results to create the required hydrologic outputs. Fee: \$8 million. Role: Ford Engineers' PM, principal engineer.

Hydrologic analysis in support of Sutter Basin feasibility study, USACE Sacramento District (2011). In support of feasibility-level engineering alternatives analysis, recommended procedure for analyzing interior drainage, including concurrent flow analysis, completed precipitation-frequency analysis to develop design storm events to support the rainfall-runoff modeling effort, and completed "most-likely" wave-runup analysis for flood risk reduction analysis. Fee: \$154,000. Role: Ford Engineers' PM; senior engineer.

Hydrologic analyses of New Hogan and Farmington reservoirs for the Lower San Joaquin Feasibility Study, USACE Sacramento District (2011). As part of the Lower San Joaquin River Feasibility Study (LSJRFS), we developed unregulated volume-frequency curves at the reservoirs and other study points, simulated reservoir releases and routed historical and scaled floods, including local flows, on two streams, fitted flow transforms to the event maxima datasets, developed regulated flow-frequency curves and associated volumes, and developed "expected" outflow hydrographs for each of two reservoirs for eight flood frequencies. Fee: \$273,000. Role: Ford Engineers' PM, senior engineer.

Natomas Levee Improvement Project developer fee economic analysis, USACE Sacramento District, Sacramento, CA (2007). Ford Engineers evaluated the economic impacts of increased development and the effectiveness of proposed mitigation measures, including evaluating system improvements such as increased resiliency and erosion control enhancements on levees. Fee: \$115,000. Role: Senior engineer.

Yuba-Feather Supplemental Flood Control Project, Phase IV, Feather River Levee Repair Project, Yuba County Water Agency (2006). To compute economic benefits for three proposed inundation-reduction alternatives, assembled an economic analysis model that considered potential flood damages in three major impact areas adjacent to the confluence of the Yuba and Feather rivers. Used HEC-FDA, including uncertainty analysis methods, to compute expected annual damage for the without-project condition and each alternative. Fee: \$150,000. Role: Ford Engineers' PM; senior engineer.

Oroville and New Bullards Bar reservoirs flood operations analysis, Yuba County Water Agency (2004). Developed and evaluated scenarios for the operation of New Bullards Bar and Oroville reservoirs (multi-purpose reservoirs used for flood control, water supply, hydroelectricity, and recreation) with different modeling assumptions of unregulated downstream flows, river travel times, operating limitations, and inflow forecast uncertainty. Fee: \$223,000. Role: Ford Engineers' PM; engineer.

## Rhonda Robins, JD, CFM, Senior technical specialist

Years of experience: 21 years total, 9 with Ford

Education: BA Genetics/biochemistry (UC Berkeley, 1983); JD Law (UC Hastings College of Law, 1988); Project Management certificate (UC Davis Extension, 2016)

Professional registration: Member, California Bar Association; Certified Floodplain Manager (Association of State Flood Plain Managers)

### Overview

RHONDA ROBINS is a senior technical specialist with David Ford Consulting Engineers in water resources planning, technical writing/editing, project management, and legal/policy research and interpretation. She is adept at communicating complex hydrologic and hydraulic engineering and water resource economics concepts to diverse audiences. Her areas of expertise include managing complex hydrologic and hydraulic engineering documentation projects; communicating complex hydrologic and hydraulic engineering concepts to diverse audiences; legal research and interpretation related to water resources engineering, planning analysis, and floodplain management; and technical writing, such as flood emergency response plan development, software application user documentation, and engineering guidance. She is well-versed in the requirements of DWR grant programs, and has project experience developing flood safety plans in compliance with AB 156/Water Code Section 9650. Robins is a member of the California Bar and is a certified floodplain manager.

### Project-specific experience

Development of flood safety plans, Sutter Butte Flood Control Agency, Sutter and Butte counties (2016). Developing flood safety plans in accordance with new California Water Code Section 9650 requirements for the Sutter Butte Flood Control Agency (SBFCA), Levee District 9 in Sutter County, and the cities of Live Oak, Gridley, and Biggs. Tasks included writing the original grant proposal for funds under the first round of DWR's flood emergency response grant program; invoice management; research and comparison of existing flood emergency response plans in southern Butte and northern Sutter counties; organizing and facilitating stakeholder meetings, including representatives from county emergency operations agencies and public works departments, city administrators/emergency directors and public works departments, Cal OES, and DWR; drafting outlines and first drafts for agency approval; revising drafts; and preparing plans for board approval. Fee: \$154,000. Role: Ford Engineers' project manager; senior technical specialist.

Risk assessment to estimate benefits attributable to flood fighting and levee maintenance in the Central Valley, California Department of Water Resources (DWR) (2016). We assessed flood risk reduction as economic damage avoided and reduction in potential lives lost attributable to flood fighting at 4 sites and attributable to levee maintenance at 5 sites in the Central Valley. In addition, at one of the sites for the levee maintenance assessment, we measured the reduction in the acreage of giant garter snake (GGS) habitat lost. A unique feature of this analysis was that a detailed geotechnical engineering analysis to assess levee performance function changes attributable to flood fighting and maintenance is not attainable, so the risk analysis used levee performance curves based on information obtained through a process of expert opinion elicitation (EOE). With this project, we demonstrated the development of a systematic, repeatable, understandable method for estimating benefit that incorporated EOE. Fee: \$160,000. Role: Senior technical specialist.

Development of hydraulic impact policy and risk transfer policy, California Department of Water Resources (2015). (1) Presented alternatives and supported management-level decision making to determine how the Central Valley Flood Protection Project Delivery Team (CVFPPDT) will determine if a potential alteration of the existing or authorized federal system will be injurious to the public interest or affect the ability of the project to meet its authorized purpose, and thus whether a Section 408 permit will be approved. (2) Presented policy and procedure alternatives and supported management-level decision making on how the CVFPPDT will



determine if flood risk management alternatives formulated for the Sacramento and San Joaquin Basin Wide Feasibility Studies transfer risk. Fee: \$52,000. Role: Ford Engineers' PM; senior technical specialist.

Development of NFIP Quick Guide Coastal Supplement, California Department of Water Resources, Sacramento, CA (2015). Working with CA DWR, Ocean Science Trust, and Scripps Institution, Ford Engineers developed the *National Flood Insurance Program in California Quick Guide Coastal Supplement: Planning for Sea-Level Rise*. This supplement summarizes for floodplain managers many issues to consider when including sea-level rise in future planning. Fee: \$108,000. Role: Ford Engineers' PM; senior technical specialist.

Development or revision of USACE engineer guidance documents, USACE Hydrologic Engineering Center (various). Served as project manager and provided research, writing, and editing services for revision of USACE guidance, including EM 1110-2-1619, Risk-based analysis of flood risk reduction studies, ER 1110-2-240, Water control management, ER 1110-2-241, Use of storage allocated for flood control and navigation at non-Corps projects, and EM 1110-2-1413, Hydrologic analysis of interior areas. Fee: \$90,000; \$65,000; and \$90,000, respectively. Role: Ford Engineers' project manager; senior technical specialist.

Economic analysis procedures for integrated flood risk management studies, California Department of Water Resources, Sacramento, CA (2014). For DWR, providing research, writing, and editing services in the revision of a manual that describes how to estimate the benefits and costs associated with integrated flood risk management projects undertaken by DWR. Fee: \$230,000. Role: Senior technical specialist/editor.

User documentation for water supply accounting software, USACE Little Rock District (2013). Developed the user documentation ("Help" file) for a desktop application for tracking, managing, and reporting water supply information for the district's reservoirs. Cost: part of \$85,000 project. Role: Senior technical specialist.

Flood emergency preparedness, response, and recovery plan template for California communities, California Department of Water Resources (2011). For CA DWR's FloodSAFE program, developed template for local communities to enhance their existing flood emergency preparedness, response, and recovery plans. Applied template to develop three example plans for communities in CA. Wrote flood emergency response scenarios that illustrate DWR's role in flood emergency response under California's Standardized Emergency Management System framework. Fee: \$350,000. Role: Ford Engineers' PM; senior technical specialist.

USACE software user guidance. For the USACE Risk Management Center, developed the combined *Application Guide* and *User Manual* for the Levee Screening Tool (2012); for HEC, developed the *User's Manual* for LifeSim, a life loss simulation program (2012); and for HEC, supported development of the *HEC-FIA Technical Reference Guide* (2011). Fee: \$75,000; \$93,000, and \$49,000, respectively. Role: Ford Engineers' PM; senior technical specialist.

User documentation for Ford Engineers' proprietary flood warning system (Aviso). Developed and/or revised the user documentation ("Help" file) for Ford Engineers' customized flood forecasting system for several agencies and communities, including Tarrant Regional Water District (TX) and Mecklenburg County/Charlotte (NC). Fee: varies. Role: Senior technical specialist.

Facilitation of Expert Opinion Elicitation on climate variability in Fargo-Moorhead; USACE, St. Paul District (2009). Task order manager for facilitation of expert opinion elicitation for USACE St. Paul District, in which a panel of experts was invited to share views on climate variability trends in the Fargo-Moorhead region. Tasks included gathering and distributing research materials, reporting on session outcomes, and summarizing experts' opinions in a format useful to the Corps in its planning for flood risk management measures in Fargo-Moorhead. Fee: \$55,000. Role: Senior technical specialist.

## Adam Schneider, PE, Senior engineer

Years of experience: 11 years total, 7 with Ford

Education: MS Civil engineering (UC Davis, 2007); BS Civil engineering (University of Wisconsin, 2005)

Professional registrations: PE Civil engineering (CA 2009 #74084; WI 2013 #42932-6)

### Overview

ADAM SCHNEIDER's areas of expertise include watershed modeling, reservoir system modeling, hydraulic modeling, statistical analysis, water supply forecasting, climate variability studies, and data quality control. Schneider is an expert user of HEC-HMS (HEC-1), HEC-GeoHMS, HEC-ResSim(HEC-5), HEC-RAS, and HEC-DSS/utilities, ESRI's GIS, the USGS Precipitation Runoff Modeling System (PRMS), and statistical software such as R and S-Plus. He presented "Emergency reservoir inflow forecasting for the Sheyenne River, ND, in March 2010" at the 2011 National Hydrologic Warning Council conference.

### Project-specific experience

Support for CWMS deployment nationwide, US Army Corps of Engineers (USACE) Modeling, Mapping, and Consequence (MMC) Center (Ongoing). As a subcontractor under a Mapping, Modeling, Consequence Analysis IDIQ contract with the USACE, providing modeling support (e.g., refinements to the HEC-HMS, HEC-RAS, HEC-ResSim, and HEC-FIA models) and CAVI integration for the CWMS modeling of river basins across the U.S. Locations to date include Jackson-James River, Norfolk District; Cape Fear River, Wilmington District; Susquehanna, Juniata, and Chemung rivers, Baltimore District; Blackstone River, New England District; Big Sandy River, Huntington District; and Arkansas River, Little Rock District. Fee: varies by task order. Role: Ford Engineers' project manager (PM); senior engineer.

Folsom Dam Joint Federal Project, USACE Sacramento District, Folsom, CA (Ongoing). Ford Engineers has provided hydrologic and hydraulic analyses for the Folsom Dam modification project, including developing the hydrologic engineering management plan (HEMP) for the array of modeling simulations required for development of an updated water control manual; seasonal flood frequency analysis for Folsom Dam inflow; development of spreadsheet algorithms for modeling alternative configurations of outlets, quality control review of the reservoir operations models for the Folsom Dam permanent operations study; development of a forecast-informed operations scheme for Folsom Reservoir; and we are currently developing the updated Water Control Manual for Folsom Dam. Fee: \$1,200,000 (to date). Role: Senior engineer.

Dam safety evaluation of Coyote Dam, Chesbro Dam, and Uvas Dam (DSE 1), Santa Clara Valley Water District, CA (2016). Ford Engineers is partnered with a large prime contractor to complete probable maximum flood (PMF) studies as part of a dam safety evaluation for 3 dams. Ford Engineers' role includes using Arc Hydro, ArcGIS, and HEC software to develop hydrologic and hydraulic models for use in the PMF study. Fee: \$54,000. Role: Senior engineer.

Hydrologic engineering services for Marin County, CA (Ongoing). Since February 2012, we have been providing on-call hydrologic engineering services for Marin County Public Works under a time and materials contract. Tasks have included watershed delineation using the Golden Gate LiDAR dataset, HEC-GeoHMS software, and other GIS applications; HEC-HMS watershed model development; historical data compilation and review; HEC-HMS watershed model calibration and verification; hands-on HEC-GeoHMS and HEC-HMS training for county staff; and independent technical review of hydrologic engineering reports prepared for Marin County Public Works by other contractors. Fee: \$51,000 to date. Role: Ford Engineers' PM; senior engineer.

Overland Park Aviso FS development and enhancements, Overland Park, KS (Ongoing). Developed a flood threat recognition system ("Aviso Watch") for the city; integrated additional watershed models into flood threat recognition system; identified additional warning thresholds; evaluated the suitability of Aviso FS (a

flood warning system developed by Ford Engineers) for the city; and determined precipitation gage weights for computing mean areal precipitation over NWS subbasins. We continue to provide support. Fee: \$510,000. Role: Senior engineer.

Hydraulic modeling in support of mapping for the Central Valley (CA) Floodplain and Delineation (CVFED) program, California Department of Water Resources (2015). For this DWR project, aimed at improving the quality and accuracy of flood hazard data and mapping in the Central Valley, Ford Engineers (1) established an overall hydraulic model development strategy, (2) oversaw and coordinated hydraulic model development, (3) developed one-dimensional unsteady HEC-RAS system models, (4) developed two-dimensional unsteady FLO-2D models, and (5) provided technical review. Fee: \$1,309,000. Role: Senior engineer.

Hydrologic studies in support of floodplain mapping of the Central Valley (Central Valley Hydrology Study), USACE Sacramento District (2014). As principal contractor for USACE, Ford Engineers managed hydrologic analyses to support floodplain delineation behind all the Federal-State levees in the Sacramento and San Joaquin river basins. This project included flow-frequency analysis of large watersheds, simulation of reservoir operations, and estimation of flows for ungaged watersheds. We configured HEC-ResSim and HEC-RAS models to simulate period-of-record regulated and unregulated flows. Also developed procedures for determining how climate variability may affect the flow-frequency analysis completed for the Central Valley Hydrology Study; and developed project management plan for climate variability study. Fee: \$8 million. Role: Senior engineer.

PMF analyses for Calero and Guadalupe dams seismic retrofit projects, Santa Clara Valley Water District (2014). As part of a project to complete planning and environmental studies that support a final design to resolve the seismic stability, flood, and outlet deficiencies at Calero and Guadalupe dams, Ford Engineers completed the updated Probable Maximum Flood (PMF) studies for each dam. Tasks included computing probable maximum precipitation (PMP) and PMF inflow to each reservoir for acceptance by Santa Clara Valley Water District and California Division of Dam Safety; evaluating the ability of the reservoirs and existing spillway structures to pass the PMF and maintain sufficient freeboard at the dam crests; evaluating the ability of the spillway discharge channels to pass the PMF peak reservoir outflow without overtopping of the spillway channel's lining; and proposing approximate dam and spillway modifications that would result in acceptable freeboard at the dam crests. Note: we are about to begin the next phase of this project, which includes supporting design of the new spillway. Fee: \$106,000. Role: Senior engineer.

Reservoir operation and watershed modeling to support water control manual update, USACE Sacramento District, Weber Basin, UT (2012). Developed HEC-ResSim and HEC-HMS models of the Weber Basin reservoir system in north central Utah: incorporated diversions, routing, and channel capacities into the model; built time series data sets in HEC-DSS of flow and storage; verified the model; and prepared documentation. Also developed a Weber Basin HEC-HMS model with snowmelt capabilities; calibrated and verified the model; and prepared documentation. Fee: \$198,000. Role: Ford Engineers' PM; senior engineer.

Implementation of CWMS in Galveston, TX, St. Paul, MN, and Sacramento, CA, HEC (2011). Implemented CWMS for the Buffalo Bayou watershed near Houston, TX, the Red River of the North watershed near Fargo, ND, and the American River watershed near Sacramento, CA. Developed and calibrated HEC-HMS models of all watersheds, surveyed sources of real-time data, and configured test forecasts. Fee: \$1,027,000. Role: Engineer.

Red River of the North emergency inflow forecasting, USACE St. Paul District (2011). Used gridded HEC-HMS watershed models, real-time data, and current precipitation and temperature forecasts to predict spring snowmelt inflows for reservoirs in the Red River of the North watershed in North Dakota, South Dakota, and Minnesota. Developed all HEC-HMS models using HEC-GeoHMS. Fee: \$273,000. Role: Ford Engineers' PM; engineer.

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# Cost Sharing Agreement for Consulting Services To Evaluate Increasing Water Storage In Lake Del Valle Reservoir

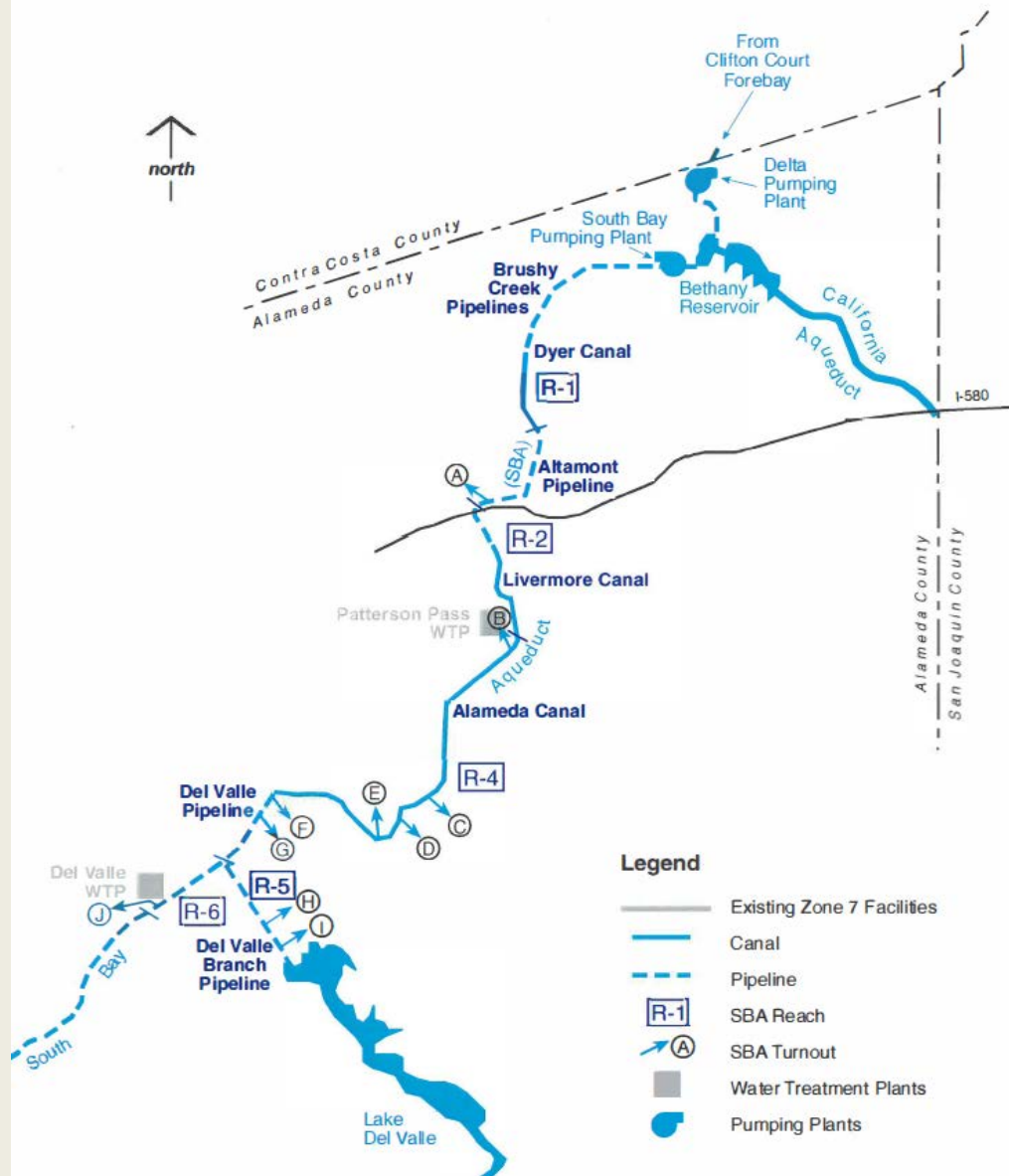
March 28, 2017



# Recommendation

- A. Approve the Cost-Sharing Agreement between the Alameda County Water District (ACWD), Zone 7 Water Agency (Zone 7), Santa Clara Valley Water District (District), and East Bay Regional Parks District (EBRPD) for a District contribution of \$75,000 towards an evaluation of increasing water storage in Lake Del Valle Reservoir; and
- B. Authorize the Interim Chief Executive Officer (ICEO) to execute the Cost-Sharing Agreement.

# South Bay Aqueduct





# Cost-Sharing Agreement for Lake Del Valle Storage Expansion

- Parties: ACWD, Zone 7, EBRPD, and the District
- Purpose: Procure consulting services to evaluate:
  - Increasing accessible storage
  - Costs to relocate/replace EBRPD facilities
- Consulting services: Estimated to cost \$225,000
  - Costs shared equally among the SBA Contractors
  - District's contribution will be up to \$75,000
  - ACWD will front the costs and seek reimbursement from Zone 7 and the District



# Background: Lake Del Valle Reservoir

- Del Valle is an off-stream storage facility constructed in 1968 to:
  - Regulate flows in the South Bay Aqueduct (SBA)
  - Store local supplies for ACWD and Zone 7
  - Provide recreational opportunities for public
- DWR uses Del Valle to manage Delta water quality in SBA deliveries by blending to reduce:
  - Algae during summer
  - Salinity and bromide during late summer – early fall
- EBRPD manages the recreational facilities

# Lake Del Valle Storage Expansion Project - Progress

- ACWD has procured consultants and work is ongoing to:
  - Evaluate accessible storage
  - Determine cost to relocate EBRPD facilities
- District staff
  - Reviewed the consultant scopes of services
  - Participated in study development
  - Currently reviewing preliminary study results

# Lake Del Valle Storage Expansion Project – Next Steps

- Complete the current studies by April 2017
- Undertake further studies to quantify water supply benefits and project costs, requiring further/amended cost-share agreement
- Evaluate whether desirable to:
  - Prepare and submit Proposition 1 application, if time allows
  - Look for other grant funding opportunities

# Potential Benefits to the District

- Preliminary results: potentially up to 22,000 AF of additional operational storage capacity for the three SBA contractors.
- Potential water supply benefits may include improved operational flexibility, blending capacity, and emergency supplies, but additional studies are needed to confirm and quantify.

## Recommendation (recap)

- A. Approve the Cost-Sharing Agreement between the Alameda County Water District (ACWD), Zone 7 Water Agency (Zone 7), Santa Clara Valley Water District (District), and East Bay Regional Parks District (EBRPD) for a District contribution of \$75,000 towards an evaluation of increasing water storage in Lake Del Valle Reservoir; and
- B. Authorize the Interim Chief Executive Officer (ICEO) to execute the Cost-Sharing Agreement.



**File No.:** 17-0188

**Agenda Date:** 3/28/2017

**Item No.:** \*7.1.

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## BOARD AGENDA MEMORANDUM

### **SUBJECT:**

Recommended Position on State Legislation: AB 18 (Garcia) California Clean Water, Climate, and Coastal Protection and Outdoor Access for All Act of 2018, SB 3 (Beall) Affordable Housing Bond Act of 2018, SB 5 (De Leon) California Drought, Water, Parks, Climate, Coastal Protection and Outdoor Access for All Act of 2018, SB 231 (Hertzberg) Local Government: Storm Water Management and other legislation which may require urgent consideration for a position by the Board.

### **RECOMMENDATION:**

- A. Adopt a position of "Support if Amend" on: AB 18 (Garcia) California Clean Water, Climate, and Coastal Protection and Outdoor Access for All Act of 2018.
- B. Adopt a position of "Support" on: SB 3 (Beall) Affordable Housing Bond Act of 2018.
- C. Adopt a position of "Support if Amend" on: SB 5 (De Leon) California Drought, Water, Parks, Climate, Coastal Protection and Outdoor Access for All Act of 2018.
- D. Adopt a position of "Support" on: SB 231 (Hertzberg) Local Government: Storm Water Management.

### **SUMMARY:**

#### **\*AB 18 (E. Garcia) California Clean Water, Climate, and Coastal Protection and Outdoor Access for All Act of 2018 (A-2/23/17)**

**Position Recommendation: Support if Amended**

**Priority Recommendation: 1**

AB 18 (E. Garcia) is a \$3 billion water and parks bond, which if passed by a two-thirds vote of the Legislature, will be placed on the June 2018 statewide ballot. This measure would authorize bond expenditures across 9 funding categories as follows:

- (1) \$900 million for investments in environmental and social equity;
- (2) \$525 million for investments in protecting, enhancing, and accessing California's local and regional outdoor spaces (for which \$110 million is for competitive grants to regional park districts, counties, and special districts for regional trails, regional sports complexes, low-cost accommodations in park facilities, and interpretative facilities that serve youth and communities of

color);

(3) \$330 million for restoration and preservation of existing state park facilities and units, to preserve and increase public access, and to protect natural, cultural and historic resources in the parks;

(4) \$45 million for competitive grants to local agencies, conservancies, tribes, and nonprofit organizations for non-motorized access to parks, waterways, and other natural environments;

(5) \$40 million for competitive grants to cities, counties and districts in non-urbanized areas for rural recreation, tourism, and economic enrichment investment;

(6) \$70 million for rivers and creeks including \$5 million for the Guadalupe River and its headwaters or contributing tributaries, including Los Gatos Creek, as well as an addition \$165 million for appropriation by the Legislature;

(7) \$145 million for state conservancies enumerated in Proposition 1, the Water Quality, Supply, and Infrastructure Improvement Act of 2014, including \$25 million to the State Coastal Conservancy;

(8) \$180 million for ocean, bay, and coastal protection, including \$40 million for the San Francisco Bay Area Conservancy Program and an additional \$95 million to the State Coastal Conservancy; and

(9) \$600 million for climate adaptation and resiliency projects that improve a community's ability to adapt to climate change.

It has been 15 years since California last approved a bond dedicated to parks and park lands. Since 2000, the state has enacted three bond acts for the development and enhancement of state and local parks and recreational facilities:

- Proposition 12 in 2000, totaling \$2.1 billion, included \$780 million for local, regional parks, primarily through block grant awards, and \$400 million for state parks to address deferred maintenance and acquisition priorities.
- Proposition 40 in 2002, totaling \$2.4 billion, included \$946 million for local, regional parks through both block grants and competitive grant awards, and \$250 million for State Parks to address deferred maintenance and acquisition priorities.
- Proposition 84 in 2006, totaling \$5.4 billion, which primarily was a water and flood control bond, but which included \$457 million for funding park-poor disadvantaged communities and nature center investments, and \$400 million for state parks to address deferred maintenance and acquisition priorities.

### *Importance to the District*

AB 18 (E. Garcia) is a \$3 billion parks and water bond, which provides substantial funding toward land conservation, parks and trails, and habitat resiliency programs. Presently, the legislation authorizes \$5 million in bond funding for the Guadalupe River and its headwaters or contributing tributaries, including Los Gatos Creek, which would serve to protect valuable habitat, species, and water quality within those watersheds.

During the 2016 legislative session, the District adopted a "Support if Amended" position on AB 2444 (E. Garcia) and requested amendments allocating \$25 million to the Los Gatos Creek and Upper Guadalupe Watersheds and \$30 million to establish a Guadalupe River



Conservancy. The bill was amended to include \$10 million in bond expenditures only for the Guadalupe River watersheds. We also requested language that would identify disadvantaged communities based on regional median income instead of the statewide median. While initially these amendments were accepted, later they were dropped from the final version of AB 2444, and are absent in AB 18 due to the author prioritizing disadvantaged communities in the Central Valley.

\*AB 18 and SB 5 are very similar, except that SB 5 includes \$1 billion in supplemental funding for water related programs established by Proposition 1 and includes \$500 million for flood protection. It is expected that these two measures will be merged later in the legislative process.

If the District partners with regional open space or conservation agencies to purchase lands within local watersheds, it is possible AB 18 funded programs could benefit the District. For example, the District could seek mitigation credits for listed species and habitat found within lands procured with AB 18 funds, which could help advance District projects.

Staff recommends that the Board adopt a position of "Support if Amended" on AB 18.

*\*Amendments Recommended*

- Increase the authorization of \$5 million for the Guadalupe River watershed to \$10 million, which is the negotiated amount included in the final version of AB 2444 (E. Garcia, 2016).
- \*Seek supplemental funding for Proposition 1 grant programs comparable to the funding included in SB 5 (De León).
- \*Seek funding for flood protection comparable to the February 23, 2017 amendments to SB 5 (De León) with aim to qualify project funding for Coyote Creek.
- \*Seek funding for the stat Flood Control Subventions program.
- \*Seek funding for the retrofitting or reconstruction of dams to which the California Department of Water Resources Division of Dam Safety has assigned a seismic restriction limiting storage capacity.

*Pros*

- Authorizes \$5 million in bond expenditures for the Guadalupe River watershed in Santa Clara County.

- Provides needed investment in parks, recreation facilities, and protection of California's natural and historical resources.

#### *Cons*

- This legislation does not authorize bond expenditures for projects under Proposition 1 (2014), such as, recycled water, groundwater, water quality, and integrated watershed funding.
- \*This legislation does not include funding for flood protection included in the February 23, 2017 version of SB 5 (De León).

### **SB 3 (Beall) Affordable Housing Bond Act of 2018 (I-12/05/16)**

**Position Recommendation: Support**

**Priority Recommendation: 3**

In 2006, voters passed Proposition 1C, the Housing and Emergency Shelter Trust Fund Act of 2006, which authorized \$2.85 billion in general obligation bonds for housing and related capital improvements. A report by the California Department of Housing and Community Development's Division of Financial Assistance states that, as of June 30, 2015, Santa Clara County (County) has received \$146,815,755 from Proposition 1C (6.4% of total bond funds available), which has assisted in the creation of 7,804 units of affordable housing throughout the County. The cost per unit has averaged \$18,812.89. Proposition 1C was approved by voters by a margin of 57.8% to 42.2%.

The Federal Budget Control Act of 2011, also referred to as "sequestration" initiated automatic federal spending cuts of \$85 billion, which severely impacted homeless services and affordable housing programs. The Center on Budget and Policy Priorities estimates that by the end of 2014 in California nearly 15,000 housing vouchers were lost, and nationally between 125,000 and 185,000 low-income families lost housing assistance because of federal spending cuts.

SB 3 would authorize the issuance of \$3 billion in general obligation bonds, subject to the approval of a simple majority of voters in the November 2018 general election, for the following affordable housing purposes.

1. \$1.5 billion to the Multifamily Housing Program, to be used to assist in the construction, rehabilitation, and preservation of permanent and transitional rental housing for persons with incomes of up to 60 percent of the area's medium income (\$56,312.40 in 2014 dollars).
2. \$600 million for the Transit-Oriented Development Implementation Fund, which shall be used for the following purposes.
  - a. \$200 million for the Transit-Oriented Development Implementation Fund;
  - b. \$300 million for the Infill Infrastructure Financing Account, to be used to assist in the new construction and rehabilitation of infrastructure that supports high-density affordable and mixed-income housing in locations designed as infill; and
  - c. \$100 Million for the Building Equity and Growth in Neighborhoods (BEGIN), to be used for down payment assistance for low- and moderate-income buyers purchasing newly

constructed homes in a BEGIN project.

3. \$600 million to be deposited in the Special Populations Housing Account, which shall be used for the following purposes:
  - a. \$300 million for the Joe Serna, Jr. Farmworker Housing Grant Fund; and
  - b. \$300 million for the Local Housing Trust Matching Grant Program Account, which provides matching grant funds for public agencies and nonprofit organizations that raise money for affordable housing.
4. \$300 million for the Home Ownership Development Account to be used for the CalHome Program.

### ***Importance to the District***

The Regional Water Quality Control Board's San Francisco Bay Water Quality Control Plan prohibits the discharge of rubbish, refuse, or other solid wastes into surface waters or any place where they will eventually be transported to surface waters. As a National Pollution Discharge Elimination System (NPDES) stormwater co-permittee, the District is a responsible party for rubbish and solid wastes discharge from District controlled waterways, including homeless encampments.

In order to, comply with the Regional Water Quality Control Board permit, the District engages in the cleanup of homeless encampments in creeks and streams throughout Santa Clara County in partnership with the county, cities, social services agencies, and homeless advocate organizations.

In Fiscal Years 2013 through 2015, the District spent \$2.6 million cleaning up almost 600 homeless encampments, and that number has been growing each year.

SB 3 would provide state residents an opportunity in November of 2018 to approve an initiative to provide state and local housing agencies with funding to improve the state housing crisis. SB 3 would provide local governments and community assistance organizations with funding to build new or rehabilitated housing for low- to moderate-income residents. The funding would also provide with assistance for a variety of rent and mortgage assistance programs.

SB 3, along with the implementation of a broad range of homelessness measures, will further the District's goal to reduce the number of residents living in encampments along the District's creeks and waterways. SB 3 may result in potential savings in encampment clean-up costs and allow the District to improve the integrity of our water supply and public safety along our waterways while at the same time aiding a broad range of Santa Clara Counties residents.

Staff recommends that the Board adopt a position of "Support" on SB 3.

### ***Pros***

- A significant amount of general obligation bond funds will be allocated to state and local

housing agencies to address affordable housing.

- May potentially improve the homeless crises by making more affordable housing available.
- The District may save on encampment clean-up costs as homeless populations decrease.

*Cons*

- Adds cost pressure to the State's General Fund from which bond principal and interest payments are funded.

**\*SB 5 (De León) California Drought, Water, Parks, Climate, Coastal Protection and Outdoor Access for All Act of 2018 (A-3/15/17)**

**Position Recommendation: Support if Amended**

**Priority Recommendation: 1**

\*SB 5 (De León) is a \$3 billion water and parks bond, which if passed by a two-thirds vote of the Legislature, will be placed on the June 2018 statewide ballot. This bill authorizes \$500 million in bond expenditures for flood protection. Additionally, it allocates \$1 billion to supplement water related programs established by Proposition 1, the Water Quality, Supply, and Infrastructure Improvement Act of 2014. This bond proposal also would authorize \$1.5 billion in funding for parks.

\*SB 5 authorizes \$500 million in bond expenditures for flood protection, specifically \$300 million for flood protection, \$100 million for levee repairs and restoration in the Sacramento-San Joaquin Delta, and \$100 million for stormwater, mudslide, and other flash flood related protections.

\*SB 5 also authorizes a total of \$1 billion in bond expenditures, allocating \$250 million to each of four different programs established by Proposition 1 (2014), including: (1) water quality, (2) groundwater protection, (3) integrated watershed funding, and (4) recycled water programs.

Finally, SB 5 authorizes \$1.5 billion for parks, allocated as follows: (1) \$600 million for safe neighborhood parks in park-poor communities, (2) \$400 million for habitat resiliency, resource enhancement, and innovation, (3) \$125 million for river parkways programs, and allocates 60% of this to the Santa Monica Mountains Conservancy, (4) \$120 million for state conservancies, (5) \$100 million for State Parks, (6) \$80 million for oceans and coastal programs, (7) \$30 million for local park rehabilitation, (8) \$25 million for trails programs, and (9) \$20 million for rural parks.

*\*Importance to the District*

\*Presently, SB 5 authorizes bond expenditures in the amounts of \$100 million for levee repairs and restoration in the Sacramento-San Joaquin Delta and \$250 million for recycled water programs established pursuant to Proposition 1 (2014).

AB 18 (E. Garcia), the competing bond measure detailed above, allocates funds for the Guadalupe River watershed, but SB 5 does not.

Like AB 18, SB 5's program funding includes competitive grants for local land conservation that the District, in partnership with local open space and conservation agencies, might use as mitigation credits for listed species and habitat.

\*It is expected that AB 18 and SB 5 will be merged into a single measure later in the legislative process. AB 18 directly allocates \$5 million state bond funding for the Guadalupe River Watershed in Santa Clara County, while SB 5 appropriates an unspecified amount for the Guadalupe River Watershed. Staff will work towards a consolidation of the bills that favors the District.

Staff recommends that the Board adopt a position of "Support if Amended" on SB 5.

*\*Amendments Recommended*

- \*Ensure that qualification criteria for flood protection funding included in the Bond does not exclude projects in Santa Clara County with aim to qualify project funding for Coyote Creek and other projects important to the District.
- \*Seek funding for the state Flood Control Subventions Program.
- Seek language similar to AB 18 authorizing \$10 million in bond expenditures for the Guadalupe River watershed.

*\*Pros*

- \*This legislation authorizes \$500 million in bonds for flood protection, including \$300 million for flood protection located anywhere in the state, \$100 million for levees in the Delta, and \$100 million for storm water, mudslide and other flash-flood-related investments.
- \*This legislation authorizes \$1.5 billion in bonds for water related programs established by Proposition 1 (2014), including \$250 for recycled water.

*\*Cons*

- \*This legislation, while indicating an appropriation for the Guadalupe River Watershed, it does not yet specify a dollar amount.
- The flood protection funding is modest considering statewide and local needs.
- This legislation does not authorize bonds for dams with seismic restrictions that limit storage capacity.

**SB 231 (Hertzberg) Local Government: Storm Water Management (I-02/02/17)**  
**Position Recommendation: Support**  
**Priority Recommendation: 3**

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In 1996, California voters passed Proposition 218, the Right to Vote on Taxes Act, which added Articles XIII C and XIII D to the California Constitution. Article XIII C requires voter approval for local tax levies and provides that any local government tax, fee, assessment, or charge is subject to reduction or repeal by local ballot initiative. Article XIII D concerns assessments and property-related fees and includes prescriptive requirements for increasing or establishing new local government assessments or fees on real property, including fees for utility services by local governments. Among these requirements is approval of the assessment or fee by either a majority of property owners or by 2/3 of the general electorate, at the option of the local agency.

Article XIII D also includes an alternative and easier approval process specifically for water, sewer, or trash fees, that includes an opportunity for impacted property owners to submit written protests that are counted at a public hearing. If a majority of property owners protest the fee or charge, it may not be increased. However, this process for water, sewer, or trash fees does not require an election, making it both less expensive implement and more likely to yield fee increases.

SB 231 seeks to define the term “sewer” as it applies to Proposition 218’s requirements. Specifically, the bill would define the term “sewer” to include storm water, thereby allowing storm water management fees to be approved by the easier process. The question of whether storm water and drainage systems are included in the term “sewer” was litigated in *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal. App. 4th 1351. In that case, the court of appeal concluded that the term “sewer,” as used in Proposition 218, is ambiguous and determined that storm water and drainage systems are not included in the term “sewer” as it applies to Proposition 218.

If SB 231 is enacted, it is widely believed further litigation would result. Taxpayer advocacy groups likely would argue that the bill constitutes an amendment of the California Constitution, requiring statewide voter approval. Particularly relevant to a court seeking to glean the voters’ intent when they passed Proposition 218, is the usual, ordinary, and commonsense meaning of the word “sewer.” Seeking to address this question, SB 231 includes several findings regarding long-standing definitions of “sewer” that include storm water.

### *Importance to the District*

The Regional Water Quality Control Board’s San Francisco Bay Water Quality Control Plan prohibits the discharge of trash or other contaminants into surface waters or any place where they will eventually be transported to surface waters. As a permit participant, the District is a responsible party for rubbish and other contaminants discharged from District-controlled waterways, including trash and other contaminants in storm water.

By making storm water management fees more likely to be enacted, SB 231 would benefit the District in its compliance with state and federal water quality requirements. Local governments discharging storm water into District-controlled waterways would be more likely to enact storm water management fees, creating a reliable funding source for storm water and drainage infrastructure, including infrastructure that supports groundwater recharge and compliance with water quality requirements.

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Staff recommends that the Board adopt a position of “Support” on SB 231.

*Pros*

- Storm water management fees would be more easily enacted, creating a reliable funding source for storm water and drainage infrastructure.
- More funding to divert storm water for groundwater recharge, which would benefit local water supply and potentially reduce flows in District-controlled waterways.
- Over time, there is a potential for improved water quality in District-controlled waterways and reduced costs for complying with state and federal water quality requirements.

*Cons*

- Will likely result in further litigation of the voters’ intent regarding the meaning of the word “sewer” as it applies to Proposition 218.
- Depending on how they are enacted, storm water management and drainage system fees may increase the cost of owning real-property, including the cost of housing.

**FINANCIAL IMPACT:**

There is no financial impact associated with this item.

**CEQA:**

The recommended action does not constitute a project under CEQA because it does not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

**ATTACHMENTS:**

\*Original Board Agenda Memo

\*Supplemental Board Agenda Memo

**UNCLASSIFIED MANAGER:**

Rick Callender, 408-630-2017

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**File No.:** 16-0551

**Agenda Date:** 3/28/2017

**Item No.:** 7.1.

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## BOARD AGENDA MEMORANDUM

### SUBJECT:

Recommended Position on State Legislation: AB 18 (Garcia) California Clean Water, Climate, and Coastal Protection and Outdoor Access for All Act of 2018, SB 3 (Beall) Affordable Housing Bond Act of 2018, SB 5 (De Leon) California Drought, Water, Parks, Climate, Coastal Protection and Outdoor Access for All Act of 2018, SB 231 (Hertzberg) Local Government: Storm Water Management and other legislation which may require urgent consideration for a position by the Board.

### RECOMMENDATION:

- A. Adopt a position of "Support if Amend" on: AB 18 (Garcia) California Clean Water, Climate, and Coastal Protection and Outdoor Access for All Act of 2018.
- B. Adopt a position of "Support" on: SB 3 (Beall) Affordable Housing Bond Act of 2018.
- C. Adopt a position of "Support if Amend" on: SB 5 (De Leon) California Drought, Water, Parks, Climate, Coastal Protection and Outdoor Access for All Act of 2018.
- D. Adopt a position of "Support" on: SB 231 (Hertzberg) Local Government: Storm Water Management.

### SUMMARY:

#### **AB 18 (E. Garcia) California Clean Water, Climate, and Coastal Protection and Outdoor Access for All Act of 2018 (A-2/23/17)**

**Position Recommendation: Support if Amended**

**Priority Recommendation: 1**

AB 18 (E. Garcia) is a \$3 billion water and parks bond, which if passed by a two-thirds vote of the Legislature, will be placed on the June 2018 statewide ballot. This measure would authorize bond expenditures across 9 funding categories as follows:

- (1) \$900 million for investments in environmental and social equity;
- (2) \$525 million for investments in protecting, enhancing, and accessing California's local and regional outdoor spaces (for which \$110 million is for competitive grants to regional park districts, counties, and special districts for regional trails, regional sports complexes, low-cost accommodations in park facilities, and interpretative facilities that serve youth and communities of

color);

(3) \$330 million for restoration and preservation of existing state park facilities and units, to preserve and increase public access, and to protect natural, cultural and historic resources in the parks;

(4) \$45 million for competitive grants to local agencies, conservancies, tribes, and nonprofit organizations for non-motorized access to parks, waterways, and other natural environments;

(5) \$40 million for competitive grants to cities, counties and districts in non-urbanized areas for rural recreation, tourism, and economic enrichment investment;

(6) \$70 million for rivers and creeks including \$5 million for the Guadalupe River and its headwaters or contributing tributaries, including Los Gatos Creek, as well as an addition \$165 million for appropriation by the Legislature;

(7) \$145 million for state conservancies enumerated in Proposition 1, the Water Quality, Supply, and Infrastructure Improvement Act of 2014, including \$25 million to the State Coastal Conservancy;

(8) \$180 million for ocean, bay, and coastal protection, including \$40 million for the San Francisco Bay Area Conservancy Program and an additional \$95 million to the State Coastal Conservancy; and

(9) \$600 million for climate adaptation and resiliency projects that improve a community's ability to adapt to climate change.

It has been 15 years since California last approved a bond dedicated to parks and park lands. Since 2000, the state has enacted three bond acts for the development and enhancement of state and local parks and recreational facilities:

- Proposition 12 in 2000, totaling \$2.1 billion, included \$780 million for local, regional parks, primarily through block grant awards, and \$400 million for state parks to address deferred maintenance and acquisition priorities.
- Proposition 40 in 2002, totaling \$2.4 billion, included \$946 million for local, regional parks through both block grants and competitive grant awards, and \$250 million for State Parks to address deferred maintenance and acquisition priorities.
- Proposition 84 in 2006, totaling \$5.4 billion, which primarily was a water and flood control bond, but which included \$457 million for funding park-poor disadvantaged communities and nature center investments, and \$400 million for state parks to address deferred maintenance and acquisition priorities.

### *Importance to the District*

AB 18 (E. Garcia) is a \$3 billion parks and water bond, which provides substantial funding toward land conservation, parks and trails, and habitat resiliency programs. Presently, the legislation authorizes \$5 million in bond funding for the Guadalupe River and its headwaters or contributing tributaries, including Los Gatos Creek, which would serve to protect valuable habitat, species, and water quality within those watersheds.

During the 2016 legislative session, the District adopted a "Support if Amended" position on AB 2444 (E. Garcia) and requested amendments allocating \$25 million to the Los Gatos Creek and Upper Guadalupe Watersheds and \$30 million to establish a Guadalupe River

Conservancy. The bill was amended to include \$10 million in bond expenditures only for the Guadalupe River watersheds. We also requested language that would identify disadvantaged communities based on regional median income instead of the statewide median. While initially these amendments were accepted, later they were dropped from the final version of AB 2444, and are absent in AB 18 due to the author prioritizing disadvantaged communities in the Central Valley.

AB 18 and SB 5 are very similar, except that SB 5 includes \$1.5 billion in supplemental funding for water related programs established by Proposition 1 and includes \$500 million for flood protection. It is expected that these two measures will be merged later in the legislative process.

If the District partners with regional open space or conservation agencies to purchase lands within local watersheds, it is possible AB 18 funded programs could benefit the District. For example, the District could seek mitigation credits for listed species and habitat found within lands procured with AB 18 funds, which could help advance District projects.

Staff recommends that the Board adopt a position of “Support if Amended” on AB 18.

#### *Amendments Recommended*

- Increase the authorization of \$5 million for the Guadalupe River watershed to \$10 million, which is the negotiated amount included in the final version of AB 2444 (E. Garcia, 2016).
- Seek supplemental funding for Proposition 1 grant programs comparable to the \$1.5 billion included in SB 5 (De León).
- Seek funding for flood protection comparable to the February 23, 2017 amendments to SB 5 (De León) with aim to qualify project funding for Rock Springs and clarify that qualifying projects may include the retrofitting or reconstruction of dams to which the California Department of Water Resources Division of Dam Safety has assigned a seismic restriction limiting storage capacity.

#### *Pros*

- Authorizes \$5 million in bond expenditures for the Guadalupe River watershed in Santa Clara County.
- Provides needed investment in parks, recreation facilities, and protection of California’s natural and historical resources.

*Cons*

- This legislation does not authorize bond expenditures for projects under Proposition 1 (2014), such as, recycled water, groundwater, water quality, and integrated watershed funding.
- This legislation does not include \$500 million for flood protection included in the February 23, 2017 version of SB 5 (De León).

**SB 3 (Beall) Affordable Housing Bond Act of 2018 (I-12/05/16)****Position Recommendation: Support****Priority Recommendation: 3**

In 2006, voters passed Proposition 1C, the Housing and Emergency Shelter Trust Fund Act of 2006, which authorized \$2.85 billion in general obligation bonds for housing and related capital improvements. A report by the California Department of Housing and Community Development's Division of Financial Assistance states that, as of June 30, 2015, Santa Clara County (County) has received \$146,815,755 from Proposition 1C (6.4% of total bond funds available), which has assisted in the creation of 7,804 units of affordable housing throughout the County. The cost per unit has averaged \$18,812.89. Proposition 1C was approved by voters by a margin of 57.8% to 42.2%.

The Federal Budget Control Act of 2011, also referred to as "sequestration" initiated automatic federal spending cuts of \$85 billion, which severely impacted homeless services and affordable housing programs. The Center on Budget and Policy Priorities estimates that by the end of 2014 in California nearly 15,000 housing vouchers were lost, and nationally between 125,000 and 185,000 low-income families lost housing assistance because of federal spending cuts.

SB 3 would authorize the issuance of \$3 billion in general obligation bonds, subject to the approval of a simple majority of voters in the November 2018 general election, for the following affordable housing purposes.

1. \$1.5 billion to the Multifamily Housing Program, to be used to assist in the construction, rehabilitation, and preservation of permanent and transitional rental housing for persons with incomes of up to 60 percent of the area's medium income (\$56,312.40 in 2014 dollars).
2. \$600 million for the Transit-Oriented Development Implementation Fund, which shall be used for the following purposes.
  - a. \$200 million for the Transit-Oriented Development Implementation Fund;
  - b. \$300 million for the Infill Infrastructure Financing Account, to be used to assist in the new construction and rehabilitation of infrastructure that supports high-density affordable and mixed-income housing in locations designed as infill; and
  - c. \$100 Million for the Building Equity and Growth in Neighborhoods (BEGIN), to be used for down payment assistance for low- and moderate-income buyers purchasing newly constructed homes in a BEGIN project.
3. \$600 million to be deposited in the Special Populations Housing Account, which shall be used for the following purposes:

- a. \$300 million for the Joe Serna, Jr. Farmworker Housing Grant Fund; and
  - b. \$300 million for the Local Housing Trust Matching Grant Program Account, which provides matching grant funds for public agencies and nonprofit organizations that raise money for affordable housing.
4. \$300 million for the Home Ownership Development Account to be used for the CalHome Program.

### ***Importance to the District***

The Regional Water Quality Control Board's San Francisco Bay Water Quality Control Plan prohibits the discharge of rubbish, refuse, or other solid wastes into surface waters or any place where they will eventually be transported to surface waters. As a National Pollution Discharge Elimination System (NPDES) stormwater co-permittee, the District is a responsible party for rubbish and solid wastes discharge from District controlled waterways, including homeless encampments.

In order to, comply with the Regional Water Quality Control Board permit, the District engages in the cleanup of homeless encampments in creeks and streams throughout Santa Clara County in partnership with the county, cities, social services agencies, and homeless advocate organizations.

In Fiscal Years 2013 through 2015, the District spent \$2.6 million cleaning up almost 600 homeless encampments, and that number has been growing each year.

SB 3 would provide state residents an opportunity in November of 2018 to approve an initiative to provide state and local housing agencies with funding to improve the state housing crisis. SB 3 would provide local governments and community assistance organizations with funding to build new or rehabilitated housing for low- to moderate-income residents. The funding would also provide with assistance for a variety of rent and mortgage assistance programs.

SB 3, along with the implementation of a broad range of homelessness measures, will further the District's goal to reduce the number of residents living in encampments along the District's creeks and waterways. SB 3 may result in potential savings in encampment clean-up costs and allow the District to improve the integrity of our water supply and public safety along our waterways while at the same time aiding a broad range of Santa Clara Counties residents.

Staff recommends that the Board adopt a position of "Support" on SB 3.

### ***Pros***

- A significant amount of general obligation bond funds will be allocated to state and local housing agencies to address affordable housing.
- May potentially improve the homeless crises by making more affordable housing available.

- The District may save on encampment clean-up costs as homeless populations decrease.

*Cons*

- Adds cost pressure to the State's General Fund from which bond principal and interest payments are funded.

**SB 5 (De León) California Drought, Water, Parks, Climate, Coastal Protection and Outdoor Access for All Act of 2018**

**Position Recommendation:** Support if Amended

**Priority Recommendation:** 1

SB 5 (De León) is a \$3 billion water and parks bond, which if passed by a two-thirds vote of the Legislature, will be placed on the June 2018 statewide ballot. This bill was amended on February 23, 2017 to authorize \$500 million in bond expenditures for flood protection. Additionally, it allocates \$1.5 billion to supplement water related programs established by Proposition 1, the Water Quality, Supply, and Infrastructure Improvement Act of 2014. This bond proposal also would authorize \$1.45 billion in funding for parks.

SB 5 authorizes \$500 million in bond expenditures for flood protection, specifically \$300 million for flood protection in the Central Valley, \$100 million for levee repairs and restoration in the Sacramento-San Joaquin Delta, and \$100 million for stormwater, mudslide, and other flash flood related protections.

SB 5 also authorizes a total of \$1.5 billion in bond expenditures, allocating \$375 million to each of four different programs established by Proposition 1 (2014), including: (1) water quality, (2) groundwater protection, (3) integrated watershed funding, and (4) recycled water programs.

Finally, SB 5 authorizes \$1.5 billion for parks, allocated as follows: (1) \$600 million for safe neighborhood parks in park-poor communities, (2) \$400 million for habitat resiliency, resource enhancement, and innovation, (3) \$125 million for river parkways programs, and allocates 60% of this to the Santa Monica Mountains Conservancy, (4) \$120 million for state conservancies, (5) \$100 million for State Parks, (6) \$80 million for oceans and coastal programs, (7) \$30 million for local park rehabilitation, (8) \$25 million for trails programs, and (9) \$20 million for rural parks.

*Importance to the District*

Presently, SB 5 authorizes bond expenditures in the amounts of \$100 million for levee repairs and restoration in the Sacramento-San Joaquin Delta and \$375 million for recycled water programs established pursuant to Proposition 1 (2014).

AB 18 (E. Garcia), the competing bond measure detailed above, allocates funds for the Guadalupe River watershed, but SB 5 does not.

Like AB 18, SB 5's program funding includes competitive grants for local land conservation that the District, in partnership with local open space and conservation agencies, might use as mitigation credits for listed species and habitat.

It is expected that AB 18 and SB 5 will be merged into a single measure later in the legislative process. AB 18 directly allocates state bond funding for projects in Santa Clara County, while SB 5 does not. Staff will work towards a consolidation of the bills that favors the District.

Staff recommends that the Board adopt a position of "Support if Amended" on SB 5.

#### *Amendments Recommended*

- Seek amendments to increase funding for flood protection with aim to qualify project funding for Rock Springs and clarify that qualifying projects may include the retrofitting dams to which the California Department of Water Resources Division of Dam Safety has assigned a seismic restriction limiting storage capacity.
- Seek language similar to AB 18 authorizing \$10 million in bond expenditures for the Guadalupe River watershed.

#### *Pros*

- This legislation authorizes \$500 million in bonds for flood protection, including \$100 million for levees in the Delta.
- This legislation authorizes \$1.5 billion in bonds for water related programs established by Proposition 1 (2014), including \$375 for recycled water.

#### *Cons*

- This legislation does not directly authorize bonds for any projects in Santa Clara County.
- The flood protect funding is modest considering statewide and local needs.
- This legislation does not authorize bonds for dams with seismic restrictions that limit storage capacity.

### **SB 231 (Hertzberg) Local Government: Storm Water Management (I-02/02/17)**

**Position Recommendation: Support**

**Priority Recommendation: 3**

In 1996, California voters passed Proposition 218, the Right to Vote on Taxes Act, which added Articles XIII C and XIII D to the California Constitution. Article XIII C requires voter approval for local tax levies and provides that any local government tax, fee, assessment, or charge is subject to reduction or repeal by local ballot initiative. Article XIII D concerns assessments and property-related

fees and includes prescriptive requirements for increasing or establishing new local government assessments or fees on real property, including fees for utility services by local governments. Among these requirements is approval of the assessment or fee by either a majority of property owners or by 2/3 of the general electorate, at the option of the local agency.

Article XIII D also includes an alternative and easier approval process specifically for water, sewer, or trash fees, that includes an opportunity for impacted property owners to submit written protests that are counted at a public hearing. If a majority of property owners protest the fee or charge, it may not be increased. However, this process for water, sewer, or trash fees does not require an election, making it both less expensive implement and more likely to yield fee increases.

SB 231 seeks to define the term “sewer” as it applies to Proposition 218’s requirements. Specifically, the bill would define the term “sewer” to include storm water, thereby allowing storm water management fees to be approved by the easier process. The question of whether storm water and drainage systems are included in the term “sewer” was litigated in *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal. App. 4th 1351. In that case, the court of appeal concluded that the term “sewer,” as used in Proposition 218, is ambiguous and determined that storm water and drainage systems are not included in the term “sewer” as it applies to Proposition 218.

If SB 231 is enacted, it is widely believed further litigation would result. Taxpayer advocacy groups likely would argue that the bill constitutes an amendment of the California Constitution, requiring statewide voter approval. Particularly relevant to a court seeking to glean the voters’ intent when they passed Proposition 218, is the usual, ordinary, and commonsense meaning of the word “sewer.” Seeking to address this question, SB 231 includes several findings regarding long-standing definitions of “sewer” that include storm water.

### *Importance to the District*

The Regional Water Quality Control Board’s San Francisco Bay Water Quality Control Plan prohibits the discharge of trash or other contaminants into surface waters or any place where they will eventually be transported to surface waters. As a permit participant, the District is a responsible party for rubbish and other contaminants discharged from District-controlled waterways, including trash and other contaminants in storm water.

By making storm water management fees more likely to be enacted, SB 231 would benefit the District in its compliance with state and federal water quality requirements. Local governments discharging storm water into District-controlled waterways would be more likely to enact storm water management fees, creating a reliable funding source for storm water and drainage infrastructure, including infrastructure that supports groundwater recharge and compliance with water quality requirements.

Staff recommends that the Board adopt a position of “Support” on SB 231.

### *Pros*



- Storm water management fees would be more easily enacted, creating a reliable funding source for storm water and drainage infrastructure.
- More funding to divert storm water for groundwater recharge, which would benefit local water supply and potentially reduce flows in District-controlled waterways.
- Over time, there is a potential for improved water quality in District-controlled waterways and reduced costs for complying with state and federal water quality requirements.

*Cons*

- Will likely result in further litigation of the voters' intent regarding the meaning of the word "sewer" as it applies to Proposition 218.
- Depending on how they are enacted, storm water management and drainage system fees may increase the cost of owning real-property, including the cost of housing.

**FINANCIAL IMPACT:**

There is no financial impact associated with this item.

**CEQA:**

The recommended action does not constitute a project under CEQA because it does not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

**ATTACHMENTS:**

None

**UNCLASSIFIED MANAGER:**

Rick Callender, 408-630-2017

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**File No.:** 17-0181

**Agenda Date:** 3/28/2017

**Item No.:** \*7.1.

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## SUPPLEMENTAL BOARD AGENDA MEMORANDUM

### SUBJECT:

Recommended Position on State Legislation: \*AB 18 (Garcia) California Clean Water, Climate, and Coastal Protection and Outdoor Access for All Act of 2018, SB 3 (Beall) Affordable Housing Bond Act of 2018, \*SB 5 (De Leon) California Drought, Water, Parks, Climate, Coastal Protection and Outdoor Access for All Act of 2018, SB 231 (Hertzberg) Local Government: Storm Water Management and other legislation which may require urgent consideration for a position by the Board.

### REASON FOR SUPPLEMENTAL MEMORANDUM:

This report conveys additional information received after the initial report was released, consistent with Executive Limitations Policy EL-7-10-5.

### RECOMMENDATION:

- A. \*Adopt a position of "Support if Amend" on: AB 18 (Garcia) California Clean Water, Climate, and Coastal Protection and Outdoor Access for All Act of 2018.
- B. Adopt a position of "Support" on: SB 3 (Beall) Affordable Housing Bond Act of 2018.
- C. \*Adopt a position of "Support if Amend" on: SB 5 (De Leon) California Drought, Water, Parks, Climate, Coastal Protection and Outdoor Access for All Act of 2018.
- D. Adopt a position of "Support" on: SB 231 (Hertzberg) Local Government: Storm Water Management.

### SUMMARY:

**\*AB 18 (E. Garcia) California Clean Water, Climate, and Coastal Protection and Outdoor Access for All Act of 2018 (A-2/23/17)**

**Position Recommendation: Support if Amended**

**Priority Recommendation: 1**

AB 18 (E. Garcia) is a \$3 billion water and parks bond, which if passed by a two-thirds vote of the Legislature, will be placed on the June 2018 statewide ballot. This measure would authorize bond expenditures across 9 funding categories as follows:

(1) \$900 million for investments in environmental and social equity;

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(2) \$525 million for investments in protecting, enhancing, and accessing California's local and regional outdoor spaces (for which \$110 million is for competitive grants to regional park districts, counties, and special districts for regional trails, regional sports complexes, low-cost accommodations in park facilities, and interpretative facilities that serve youth and communities of color);

(3) \$330 million for restoration and preservation of existing state park facilities and units, to preserve and increase public access, and to protect natural, cultural and historic resources in the parks;

(4) \$45 million for competitive grants to local agencies, conservancies, tribes, and nonprofit organizations for non-motorized access to parks, waterways, and other natural environments;

(5) \$40 million for competitive grants to cities, counties and districts in non-urbanized areas for rural recreation, tourism, and economic enrichment investment;

(6) \$70 million for rivers and creeks including \$5 million for the Guadalupe River and its headwaters or contributing tributaries, including Los Gatos Creek, as well as an addition \$165 million for appropriation by the Legislature;

(7) \$145 million for state conservancies enumerated in Proposition 1, the Water Quality, Supply, and Infrastructure Improvement Act of 2014, including \$25 million to the State Coastal Conservancy;

(8) \$180 million for ocean, bay, and coastal protection, including \$40 million for the San Francisco Bay Area Conservancy Program and an additional \$95 million to the State Coastal Conservancy; and

(9) \$600 million for climate adaptation and resiliency projects that improve a community's ability to adapt to climate change.

It has been 15 years since California last approved a bond dedicated to parks and park lands. Since 2000, the state has enacted three bond acts for the development and enhancement of state and local parks and recreational facilities:

- Proposition 12 in 2000, totaling \$2.1 billion, included \$780 million for local, regional parks, primarily through block grant awards, and \$400 million for state parks to address deferred maintenance and acquisition priorities.
- Proposition 40 in 2002, totaling \$2.4 billion, included \$946 million for local, regional parks through both block grants and competitive grant awards, and \$250 million for State Parks to address deferred maintenance and acquisition priorities.
- Proposition 84 in 2006, totaling \$5.4 billion, which primarily was a water and flood control bond, but which included \$457 million for funding park-poor disadvantaged communities and nature center investments, and \$400 million for state parks to address deferred maintenance and acquisition priorities.

### *Importance to the District*

AB 18 (E. Garcia) is a \$3 billion parks and water bond, which provides substantial funding toward land conservation, parks and trails, and habitat resiliency programs. Presently, the legislation authorizes \$5 million in bond funding river recreation and restoration along the Guadalupe River and its headwaters or contributing tributaries, including Los Gatos Creek, which would serve to protect valuable habitat, species, and water quality within those

watersheds.

During the 2016 legislative session, the District adopted a “Support if Amended” position on AB 2444 (E. Garcia) and requested amendments allocating \$25 million to the Los Gatos Creek and Upper Guadalupe Watersheds and \$30 million to establish a Guadalupe River Conservancy. The bill was amended to include \$10 million in bond expenditures only for the Guadalupe River watersheds. We also requested language that would identify disadvantaged communities based on regional median income instead of the statewide median. While initially these amendments were accepted, later they were dropped from the final version of AB 2444, and are absent in AB 18 due to the author prioritizing disadvantaged communities in the Central Valley.

AB 18 and SB 5 are very similar, except that SB 5 includes \$1 billion in supplemental funding for water related programs established by Proposition 1 and includes \$500 million for flood protection. It is expected that these two measures will be merged later in the legislative process.

If the District partners with regional open space or conservation agencies to purchase lands within local watersheds, it is possible AB 18 funded programs could benefit the District. For example, the District could seek mitigation credits for listed species and habitat found within lands procured with AB 18 funds, which could help advance District projects.

Staff recommends that the Board adopt a position of “Support if Amended” on AB 18.

#### *Amendments Recommended*

- Increase the authorization of \$5 million for the Guadalupe River watershed to \$10 million, which is the negotiated amount included in the final version of AB 2444 (E. Garcia, 2016).
- Seek supplemental funding for Proposition 1 grant programs comparable to the funding included in SB 5 (De León).
- Seek funding for flood protection comparable to the February 23, 2017 amendments to SB 5 (De León) with aim to qualify project funding for Coyote Creek.
- Seek funding for the state Flood Control Subventions Program.
- Seek funding for the retrofitting or reconstruction of dams to which the California Department of Water Resources Division of Dam Safety has assigned a seismic restriction limiting storage capacity.

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*Pros*

- Authorizes \$5 million in bond expenditures for the Guadalupe River watershed in Santa Clara County.
- Provides needed investment in parks, recreation facilities, and protection of California's natural and historical resources.

*Cons*

- This legislation does not authorize bond expenditures for projects under Proposition 1 (2014), such as, recycled water, groundwater, water quality, and integrated watershed funding.
- This legislation does not include funding for flood protection included in the February 23, 2017 version of SB 5 (De León).

**\*SB 5 (De León) California Drought, Water, Parks, Climate, Coastal Protection and Outdoor Access for All Act of 2018 (A-3/15/17)**

**Position Recommendation: Support if Amended**

**Priority Recommendation: 1**

SB 5 (De León) is a \$3 billion water and parks bond, which if passed by a two-thirds vote of the Legislature, will be placed on the June 2018 statewide ballot. This bill authorizes \$500 million in bond expenditures for flood protection. Additionally, it allocates \$1 billion to supplement water related programs established by Proposition 1, the Water Quality, Supply, and Infrastructure Improvement Act of 2014. This bond proposal also would authorize \$1.5 billion in funding for parks.

SB 5 authorizes \$500 million in bond expenditures for flood protection, specifically \$300 million for flood protection, \$100 million for levee repairs and restoration in the Sacramento-San Joaquin Delta, and \$100 million for stormwater, mudslide, and other flash flood related protections.

SB 5 also authorizes a total of \$1 billion in bond expenditures, allocating \$250 million to each of four different programs established by Proposition 1 (2014), including: (1) water quality, (2) groundwater protection, (3) integrated watershed funding, and (4) recycled water programs.

Finally, SB 5 authorizes \$1.5 billion for parks, allocated as follows: (1) \$600 million for safe neighborhood parks in park-poor communities, (2) \$400 million for habitat resiliency, resource enhancement, and innovation, (3) \$125 million for river parkways programs, and allocates 60% of this to the Santa Monica Mountains Conservancy, (4) \$120 million for state conservancies, (5) \$100 million for State Parks, (6) \$80 million for oceans and coastal programs, (7) \$30 million for local park rehabilitation, (8) \$25 million for trails programs, and (9) \$20 million for rural parks.

### *Importance to the District*

Presently, SB 5 authorizes bond expenditures in the amounts of \$100 million for levee repairs and restoration in the Sacramento-San Joaquin Delta and \$250 million for recycled water programs established pursuant to Proposition 1 (2014).

AB 18 (E. Garcia), the competing bond measure detailed above, allocates \$5 million in river recreation and restoration funding for the Guadalupe River watershed, while SB 5 includes language that would appropriate an unspecified amount for the same purpose.

Like AB 18, SB 5's program funding includes competitive grants for local land conservation that the District, in partnership with local open space and conservation agencies, might use as mitigation credits for listed species and habitat.

It is expected that AB 18 and SB 5 will be merged into a single measure later in the legislative process. Staff will work towards a consolidation of the bills that favors the District.

Staff recommends that the Board adopt a position of "Support if Amended" on SB 5.

### *Amendments Recommended*

- Ensure that qualification criteria for flood protection funding included in the bond does not exclude projects in Santa Clara County with the aim to qualify project funding for Coyote Creek and other projects important to the District.
- Seek funding for the state Flood Control Subventions Program.
- Seek funding for retrofitting dams to which the California Department of Water Resources Division of Dam Safety has assigned a seismic restriction limiting storage capacity.
- Seek language similar to AB 18 authorizing \$10 million in bond expenditures for the Guadalupe River watershed.

### *Pros*

- This legislation authorizes \$500 million in bonds for flood protection, including \$300 million for flood protection located anywhere in the state, \$100 million for levees in the Delta, and \$100 million for storm water, mudslide, and other flash-flood-related investments.
- This legislation authorizes \$1 billion in bonds for water related programs established by Proposition 1 (2014), including \$250 million for recycled water.

### *Cons*

- This legislation, while indicating an appropriation for the Guadalupe River watershed, it does not yet specify a dollar amount.
- The flood protection funding is modest considering statewide and local needs.

- This legislation does not authorize bonds for dams with seismic restrictions that limit storage capacity.

**FINANCIAL IMPACT:**

There is no financial impact associated with this item.

**CEQA:**

The recommended action does not constitute a project under CEQA because it does not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

**ATTACHMENTS:**

None

**UNCLASSIFIED MANAGER:**

Rick Callender, 408-630-2017



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**File No.:** 17-0117

**Agenda Date:** 3/28/2017

**Item No.:** 7.2.

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## BOARD AGENDA MEMORANDUM

### **SUBJECT:**

Recommended Position on Federal Legislation: HR 547 (DeLauro) - National Infrastructure Development Bank Act of 2017; and HR 434 (Denham) - New WATER Act.

### **RECOMMENDATION:**

- A. Adopt a position of "Support if Amended" on: HR 547 (DeLauro) - National Infrastructure Development Bank Act of 2017; and
- B. Adopt a position of "Support" on: HR 434 (Denham) - New WATER Act;

### **SUMMARY:**

**A. HR 547 (DeLauro) - National Infrastructure Development Bank Act of 2017**

**Recommendation: Support if Amended**

**Priority Recommendation: 2**

Bill would establish the National Infrastructure Development Bank as a wholly owned government corporation.

The legislation authorizes funding of transportation, environmental, energy, and telecommunications infrastructure projects. Requires the Bank's Board of Directors to establish criteria for determining project eligibility for financial assistance under this Act. In general, the Bank would conduct an analysis that takes into account the economic, environmental, social benefits, and costs of each project under consideration for financial assistance under this Act, prioritizing projects that contribute to economic growth, lead to job creation, and are of regional or national significance. The legislation also would provide for additional consideration for specific types of infrastructure. For example, for environmental infrastructure, the criteria should consider job creation, public health benefits, pollution reduction, reductions in greenhouse gas, increased coastal and inland flood mitigation and protection, and reduction in risk of structural failure over the service life of the project.

The Bank would be capitalized with \$5 billion in each of FY 2014 through FY 2018. As this is an authorizations bill, this program would be funded through the appropriations process once authorized.

Similar bills were introduced in previous sessions of Congress by Representative DeLauro, but were not successful in being passed and enacted into law.

**Status:**

HR 547 was introduced on January 13, 2017. The bill was referred to the Committee on Energy and Commerce, and Committees on Transportation and Infrastructure, Financial Services, and Ways and Means. To date, no hearings have been held.

**Proposed Amendment:**

Proposed amendment to this bill is to request including funding for water infrastructure projects. Without water infrastructure included in the bill, it is unlikely that any water agency will receive any amount of funding from the Bank.

**Importance to the District:**

Staff is recommending a “Support if Amended” position on this bill.

A national infrastructure bank would support infrastructure development by providing relatively low-interest loans and other types of credit assistance in such a way as to stimulate investment and would be complementary to direct federal investment in infrastructure. However, without establishing a priority for water infrastructure projects in the bill, it is unlikely that water agencies will receive any amount of funding. This is the same position that ACWA took on a previous version of the bill.

**Pros:**

- A national infrastructure bank could increase the total amount of investment in infrastructure by leveraging resources.
- It could accelerate construction of projects that may be impeded due to the lack of availability of funding.
- This bill could provide an additional source of funding for the District’s infrastructure projects.

**Cons:**

- Legislation is not specific to water infrastructure projects.

**B. HR 434 (Denham) - New WATER Act****Recommendation: Support****Priority Recommendation: 2**

This bill authorizes a pilot project for an innovative water project financing program to help finance

development of water resources infrastructure in reclamation states, such as California.

This bill authorizes the Department of the Interior, for 15 years after this bill's enactment, to provide financial assistance, such as secured loans or loan guarantees, to entities that contract under federal reclamation law to carry out water projects including: non-federal water infrastructure projects that would contribute to safe, adequate water supply for domestic, agricultural, environmental, or municipal and industrial use; enhanced energy efficiency in the operation of a water system, accelerated repair and replacement of an aging water distribution facility; brackish or sea water desalination project; and acquisition of real property or an interest in real property for water storage, reclaimed or recycled water, or wastewater, if the acquisition is integral to a project described above.

In order to be approved, projects must be capable of generating sustainable revenue streams, whether through user fees or other dedicated sources, determined to be creditworthy and be anticipated to have project costs of at least \$20 million. The maximum amount of a secured loan under this bill would be 49 percent of the reasonably anticipated project costs.

**Status:**

HR 434 was introduced on January 11, 2017. The bill was referred to the House Natural Resources Committee. To date, no hearings have been held.

**Importance to the District:**

Staff is recommending a "Support" position on this bill.

This bill would provide a source of funding water infrastructure projects through the Department of the Interior. This could provide a source of needed funding for the District's recycled water projects.

**Pros:**

- Provides a loan program for water infrastructure projects.
- It could accelerate construction of projects that may be impeded due to the lack of availability of funding.
- This bill could provide an additional source of funding for the District's recycled water projects.

**Cons:**

- None identified at this time.

**FINANCIAL IMPACT:**

None.

**CEQA:**

The recommended action does not constitute a project under CEQA because it does not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

**ATTACHMENTS:**

None.

**UNCLASSIFIED MANAGER:**

Rick Callender, 408-630-2017

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**File No.:** 17-0172

**Agenda Date:** 3/28/2017  
**Item No.:** \*7.3.

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## BOARD AGENDA MEMORANDUM

### **SUBJECT:**

Federal Authorization and Appropriation Requests for Federal Fiscal Years 2017 and 2018.

### **RECOMMENDATION:**

Adopt the recommended Federal Fiscal Year 2017 and Fiscal Year 2018 authorization and appropriation requests for District-sponsored and District-supported projects.

### **SUMMARY:**

The White House is expected to submit President Trump's fiscal year 2018 budget plan to Congress the week of March 13, 2017. It will be a high-level overview. The President's FY 2018 project level recommendations to the U.S. Army Corps of Engineers (USACE) is expected in May 2017. The fiscal year 2017 workplan is expected to be released in mid-June, although it is dependent on Congress finalizing the fiscal year 2017 bills by April 28, 2017, the expiration date of the Continuing Resolution.

In order to influence the authorization and appropriations process, staff is requesting that the Board support a list of federally partnered flood protection and water utility project funding requests. The requests are shown on Attachment 1 and are coordinated with the District's federal and local partners to ensure that authorizations are obtained and the appropriations will fully fund the programs and projects.

Approval of this item will allow District Board members and staff traveling to Washington D.C. on April 29, 2017 through May 3, 2017, to influence both the 2017 USACE workplan as well as the budget process by requesting workplan and Fiscal Year 2018 funding needs which includes establishing a position on anticipated appropriation bills.

During this trip, Board members and staff plan to meet, based on availability, with Congressional representatives and staff, House and Senate committee staff, U.S. Army Corps of Engineers; Office of Management and Budget; Department of the Interior's Natural Resource Investment Center, Office of the Assistant Secretary for Water & Science, U.S. Bureau of Reclamation; U.S. Department of the Treasury and other agencies and congressional committees.

During these meetings, the District's authorization and appropriation requests and other issues will be discussed with the goal of having the District's interests represented in the President's budget, USACE work plans and policies that Congress undertakes.

In fall 2017, prior to the fall trip to Washington D.C., staff will bring an updated list of authorization and appropriation requests for Fiscal Year 2019 for the Board's endorsement.

**FINANCIAL IMPACT:**

None.

**CEQA:**

The recommended action does not constitute a project under CEQA because it does not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

**ATTACHMENTS:**

Attachment 1: Authorization/Appropriation Requests

\*Supplemental Agenda Memo

\*Supplemental Attachment 1: Revised Authorization/Appropriation Requests

**UNCLASSIFIED MANAGER:**

Rick Callender, 408-630-2017

**Summary of Federal Authorization and Appropriation Requests for Federal Fiscal Years 2017 and 2018  
for Projects that Affect Santa Clara County, California  
U.S. Army Corps of Engineers, U.S. Bureau of Reclamation, and Natural Resources Conservation Service Funding**

Project/Program Name	Project/Program Stage	FY 17 District Request	FY 18 District Request
<b>Flood Protection Projects of Direct Interest to the Santa Clara Valley Water District</b>			
Coyote Creek Watershed Project	New Start or Restart Feasibility Study	\$100,000 <sup>1</sup>	\$100,000 <sup>1</sup>
Upper Guadalupe River Project	FY 17 - Project Design FY 18 - Construction of Reaches 7 and 8	\$1.2 million <sup>1</sup>	\$72 million <sup>1</sup>
Llagas Creek Project	Technical reviews of design documents and EIR/EIS, an LRR; and for construction docs	\$635,000 <sup>1</sup>	\$610,000 <sup>1</sup>
	Construction	\$10 million <sup>4</sup>	\$10 million <sup>4</sup>
South San Francisco Bay Shoreline Study	EIA 11: FY 17- Complete PED Phase I; FY 18 - Start initial construction contracts and start remaining design.	\$450,000 <sup>1</sup> (remaining from \$500,000 in FY17 President's Budget)	\$15 million <sup>1</sup>
	EIAs 1-10 FY 17 -Execute feasibility cost share agreement; FY 18 initiate feasibility study	\$50,000 <sup>1</sup>	\$300,000 <sup>1</sup>
Coyote/Berryessa Creek Project	Complete Project Construction	Currently funded through completion	Currently funded through completion
San Francisquito Creek Project	FY 17 - Complete Tentatively Selected Plan; FY 18 Complete Agency Decision Milestone	\$315,000 <sup>1</sup>	\$365,000 <sup>1</sup>
Upper Penitencia Creek Project	Restart Feasibility Study	\$100,000 <sup>1</sup>	\$100,000 <sup>1</sup>
<b>Water Supply Projects of Regional or Statewide Interest to the Santa Clara Valley Water District</b>			
Expedited Purified Water Program*	Project Construction	\$293.2 million <sup>3</sup>	\$293.2 million <sup>3</sup>
South Santa Clara County Recycled Water Project	Design and Construction	\$1.7 million <sup>3</sup>	\$1.7 million <sup>3</sup>
	Increase existing \$7M authorization to \$18M (additional \$11M) to continue Design and Construction	Increase authorization to \$18 million <sup>3</sup>	Increase authorization to \$18 million <sup>3</sup>
San Jose Area Water Reclamation and Reuse Program (City of San Jose)	Planning Study (Chlorine Contact)	\$0.5 million <sup>3</sup>	\$0.5 million <sup>3</sup>
San Jose Area Water Reclamation and Reuse Program (District)	Construction of Expedited Recycled and Purified Water Program Projects	Up to \$47 million <sup>3</sup> Available	Up to \$47 million <sup>3</sup> Available
California Bay-Delta Restoration Program	Continuing Program	\$36 million <sup>2</sup>	\$36 million <sup>2</sup>
San Luis Lowpoint Improvement Project	Complete final EIR/EIS and Feasibility Study	\$1.5 million <sup>2</sup> in Bay Delta Restoration Request	\$1.5 million <sup>2</sup> in Bay Delta Restoration Request
<b>Regional and National Projects</b>			
South San Francisco Bay Emergency Port Access Project	Initiate Study	\$100,000 <sup>1</sup>	\$100,000 <sup>1</sup>
National Priorities Water Research Program	Continue Program Funding in FY18		\$5 million

\*Estimated project costs in dollars projected at mid-point of construction. Based on 25% of the \$1,172.7M cost for the projects in the program.

**Funding Sources:**

<sup>1</sup>U.S. Army Corps of Engineers

<sup>2</sup>U.S. Bureau of Reclamation - General Funding

<sup>3</sup>U.S. Bureau of Reclamation - Title XVI Funding (Recycled Water)

<sup>4</sup>Natural Resources Conservation Service Funding

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**File No.:** 17-0175

**Agenda Date:** 3/28/2017

**Item No.:** \*7.3.

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## SUPPLEMENTAL BOARD AGENDA MEMORANDUM

### **SUBJECT:**

Federal Authorization and Appropriation Requests for Federal Fiscal Years 2017 and 2018.

### **REASON FOR SUPPLEMENTAL MEMORANDUM:**

Projects were added or revised in the attachment too late to be included in the original board agenda memo.

### **RECOMMENDATION:**

Adopt the recommended Federal Fiscal Year 2017 and Fiscal Year 2018 authorization and appropriation requests for District-sponsored and District-supported projects.

### **SUMMARY:**

After the original agenda memo was submitted, staff received revised and new information for inclusion in the Santa Clara Valley Water District's (District) Summary of Federal Appropriation Requests for Federal Fiscal Years 2017 and 2018.

Staff received a revised fiscal year funding request for the San Francisquito Creek Flood Project. Previously the requests for fiscal year 2017 and 2018 were \$315,000 and \$365,000 respectively. The U.S. Corps of Engineers revised its optimum capability to \$471,000 for fiscal year 2017 and \$500,000 for fiscal year 2018.

The Dam Evaluation, Rehabilitation and Repair request for funding was added to the list of projects in the attachment. The Anderson Dam Seismic Retrofit project has an estimated project cost of \$400 million. Staff wants to ensure that representatives from the District have an opportunity to seek paths for federal funding for our dams.

In addition, the Collaborative Science and Adaptive Management Program was added to the list. This program seeks new research funding to improve water supply and species health.

Finally, the Community Development Block Grants Program was added to the list. This program was funded in FY 2017 at \$3 billion. The community development program provides funding for affordable housing, for public facilities improvements like parks, health-care and child-care facilities, neighborhood rehabilitation and disaster relief. It also provides public services for seniors, youth and

the disabled.

**FINANCIAL IMPACT:**

None.

**CEQA:**

The recommended action does not constitute a project under CEQA because it does not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

**ATTACHMENTS:**

\*Supplemental Attachment 1: Revised Authorization/Appropriation Requests

**UNCLASSIFIED MANAGER:**

Rick Callender, 408-630-2017

**Revised Summary of Federal Authorization and Appropriation Requests for Federal Fiscal Years 2017 and 2018  
for Projects that Affect Santa Clara County, California  
U.S. Army Corps of Engineers, U.S. Bureau of Reclamation, and Natural Resources Conservation Service Funding**

Project/Program Name	Project/Program Stage	FY 17 District Request	FY 18 District Request
<b>Flood Protection Projects of Direct Interest to the Santa Clara Valley Water District</b>			
Coyote Creek Flood Protection Project	New Start or Restart Feasibility Study	\$100,000 <sup>1</sup>	\$100,000 <sup>1</sup>
Upper Guadalupe River Project	FY 17 - Project Design FY 18 - Construction of Reaches 7 and 8	\$1.2 million <sup>1</sup>	\$72 million <sup>1</sup>
Llagas Creek Project	Technical reviews of design documents and EIR/EIS, an LRR; and for construction docs	\$635,000 <sup>1</sup>	\$610,000 <sup>1</sup>
	Construction	\$10 million <sup>4</sup>	\$10 million <sup>4</sup>
South San Francisco Bay Shoreline Study	EIA 11: FY 17- Complete PED Phase I; FY 18 - Start initial construction contracts and start remaining design.	\$450,000 <sup>1</sup> (remaining from \$500,000 in FY17 President's Budget)	\$15 million <sup>1</sup>
	EIAs 1-10 FY 17 -Execute feasibility cost share agreement; FY 18 initiate feasibility study	\$50,000 <sup>1</sup>	\$300,000 <sup>1</sup>
Coyote/Berryessa Creek Project	Complete Project Construction	Currently funded through completion	Currently funded through completion
San Francisquito Creek Project	FY 17 - Complete Tentatively Selected Plan; FY 18 Complete Agency Decision Milestone	\$471,000 <sup>1</sup>	\$500,000 <sup>1</sup>
Upper Penitencia Creek Project	Restart Feasibility Study	\$100,000 <sup>1</sup>	\$100,000 <sup>1</sup>
<b>Water Supply Projects of Regional or Statewide Interest to the Santa Clara Valley Water District</b>			
Expedited Purified Water Program*	Project Construction	\$293.2 million <sup>3</sup>	\$293.2 million <sup>3</sup>
South Santa Clara County Recycled Water Project	Design and Construction	\$1.7 million <sup>3</sup>	\$1.7 million <sup>3</sup>
	Increase existing \$7M authorization to \$18M (additional \$11M) to continue Design and Construction	Increase authorization to \$18 million <sup>3</sup>	Increase authorization to \$18 million <sup>3</sup>
San Jose Area Water Reclamation and Reuse Program (City of San Jose)	Planning Study (Chlorine Contact)	\$0.5 million <sup>3</sup>	\$0.5 million <sup>3</sup>
San Jose Area Water Reclamation and Reuse Program (District)	Construction of Expedited Recycled and Purified Water Program Projects	Up to \$47 million <sup>3</sup> Available	Up to \$47 million <sup>3</sup> Available
California Bay-Delta Restoration Program	Continuing Program	\$36 million <sup>2</sup>	\$36 million <sup>2</sup>
San Luis Lowpoint Improvement Project	Complete final EIR/EIS and Feasibility Study	\$1.5 million <sup>2</sup> in Bay Delta Restoration Request	\$1.5 million <sup>2</sup> in Bay Delta Restoration Request
<b>Regional and National Projects</b>			
South San Francisco Bay Emergency Port Access Project	Initiate Study	\$100,000 <sup>1</sup>	\$100,000 <sup>1</sup>
National Priorities Water Research Program	Continue Program Funding in FY18	Not applicable	\$5 million <sup>9</sup>
Dam Evaluation, Rehabilitation, and Repair	Program Funding	Not applicable	Seek authorization and maximum appropriations
Collaborative Science and Adaptive Management Program	New Program Funding	Not applicable	\$20 million total <sup>6,7</sup>
Community Development Block Grants	Continue Program Funding in FY18	Not applicable	\$3 billion <sup>8</sup>

\*Estimated project costs in dollars projected at mid-point of construction. Based on 25% of the \$1,172.7M cost for the projects in the program.

**Funding Sources:**

<sup>1</sup>U.S. Army Corps of Engineers

<sup>2</sup>U.S. Bureau of Reclamation - General Funding

<sup>3</sup>U.S. Bureau of Reclamation - Title XVI Funding (Recycled Water)

<sup>4</sup>Natural Resources Conservation Service Funding

<sup>5</sup>Department of Homeland Security/FEMA

<sup>6</sup>Department of Interior

<sup>7</sup>Department of Commerce

<sup>8</sup>Department of Housing and Urban Development

<sup>9</sup>Environmental Protection Agency

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**File No.:** 17-0166

**Agenda Date:** 3/28/2017

**Item No.:** 7.4-A

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## BOARD AGENDA MEMORANDUM

**SUBJECT:**

Storm Report Update, March 15 - 27, 2017.

**RECOMMENDATION:**

Receive and discuss current Storm Report information.

**SUMMARY:**

The Storm Report Update is a weekly communication to the Board of Directors, consistent with Executive Limitations Policy EL-7.

Storm Report Updates are produced and distributed to the Board as bi-monthly, regular Board meeting agendas items to allow opportunity for Board discussion on any of the matters contained therein.

**FINANCIAL IMPACT:**

There is no financial impact associated with this item.

**CEQA:**

The recommended action does not constitute a project under CEQA because it does not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

**ATTACHMENTS:**

The Storm Report Update for March 15-27, 2017 will be distributed at the March 28, 2017, regular Board meeting.

**UNCLASSIFIED MANAGER:**

Melanie Richardson, 408-630-2035