



Santa Clara Valley Water District Board of Directors Meeting

Headquarters Building Boardroom
5700 Almaden Expressway
San Jose, CA 95118

***AMENDED/APPENDED**
11:00 A.M. CLOSED SESSION AND 1:00 P.M. REGULAR
MEETING
AGENDA

Tuesday, April 9, 2019
11:00 AM

***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

Linda J. LeZotte, Chair, District 4
Nai Hsueh, Vice Chair, District 5
John L. Varela, District 1
Barbara Keegan, District 2
Richard P. Santos, District 3
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
Chief Executive Officer

MICHELE L. KING, CMC
Clerk of the Board
(408) 265-2600
Fax (408) 266-0271
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/APPEDED
AGENDA**

***ITEMS AMENDED AND/OR APPENDED SINCE THE ORIGINAL PUBLICATION OF THIS AGENDA
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Tuesday, April 9, 2019

11:00 AM

Headquarters Building Boardroom

1. CALL TO ORDER:

1.1. Roll Call.

2. TIME CERTAIN:

11:00 AM

Notice to the Public: The Board of Directors meets in Closed Session in accordance with the Ralph M. Brown Act. Following the conclusion of Closed Session discussion, the Board will return for the remaining items on the regular meeting agenda.

- 2.1. CLOSED SESSION [19-0364](#)
CONFERENCE WITH LEGAL COUNSEL- ANTICIPATED LITIGATION
Significant exposure to litigation
Pursuant to Government Code Section 54956.9(d)(2)
One potential case

1:00 PM

- 2.2. District Counsel Report
- 2.3. Pledge of Allegiance/National Anthem.
- 2.4. Orders of the Day.
*A. Approximate Discussion Time (Board); and
B. Adjustments to the Order of Agenda Items.*

2.5. 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.

2.6. Public Hearing - Annual Report on the Protection and Augmentation of Water Supplies - February 2019 and Recommended Groundwater Production and Other Water Charges for Fiscal Year 2019-2020 (FY 2019-20).

[19-0322](#)

Recommendation:

- A. Conduct a public hearing pursuant to Section 26.6 of the District Act to consider the District FY 2019-20 Annual Report on the Protection and Augmentation of Water Supplies, and direct staff to review such report with, and solicit comments from Valley Water's advisory committees;
- B. Hear public comments from groundwater producers and any interested persons regarding such report; and
- C. Continue the public hearing regarding such report to the April 11, 2019 special meeting, at 7:00 pm.

Manager: Nina Hawk, 408-630-2736

Attachments: [Attachment 1: Staff Report](#)
[Attachment 2: PowerPoint](#)
[Attachment 3: SCVWD Resolution 12-10](#)

Est. Staff Time: 20 Minutes

3. CONSENT CALENDAR: (3.1 - 3.10) (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. Notice of Completion of Contract and Acceptance of Work for the [19-0316](#)
Almaden Valley Pipeline Inspection and Rehabilitation Project, Con-Quest
Contractors, Inc., Contractor, Project No. 95084002, Contract No. C0631
(San Jose, Los Gatos, Unincorporated Santa Clara County) (Districts 4
and 7).

Recommendation: A. Accept the work as complete on the Almaden Valley
Pipeline Inspection and Rehabilitation Project,
Con-Quest Contractors, Inc., Contractor, Project No.
95084002, Contract No. C0631; and
B. Direct the Clerk of the Board to sign the Notice of
Completion of Contract and Acceptance of Work, and
submit for recording to the County of Santa Clara Office
of the Clerk-Recorder.

Manager: Katherine Oven, 408-630-3126

Attachments: [Attachment 1: Notice of Completion and Acceptance of Work](#)
[Attachment 2: Construction Contract Acceptance](#)
[Attachment 3: Project Completion Letter](#)
[Attachment 4: Construction Summary](#)
[Attachment 5: Project Delivery Process Chart](#)

- 3.2. Notice of Completion of Contract and Acceptance of Work for the [19-0317](#)
Almaden Valley Pipeline Emergency Response Support Project,
Con-Quest Contractors, Inc., Contractor, Project No. 95084002, Contract
No. C0640 (San Jose, Unincorporated Santa Clara County) (Districts 4
and 7).

Recommendation: A. Accept the work as complete on the Almaden Valley
Pipeline Emergency Response Support Project,
Con-Quest Contractors, Inc., Contractor, Project No.
95084002, Contract No. C0640; and
B. Direct the Clerk of the Board to sign the Notice of
Completion of Contract and Acceptance of Work, and
submit for recording to the County of Santa Clara Office
of the Clerk-Recorder.

Manager: Katherine Oven, 408-630-3126

Attachments: [Attachment 1: Notice of Completion and Acceptance of Work](#)
[Attachment 2: Construction Contract Acceptance](#)
[Attachment 3: Project Completion Letter](#)
[Attachment 4: Construction Summary](#)
[Attachment 5: Project Delivery Process Chart](#)

- 3.3. Budget Adjustment, Increase to the Construction Contract Contingency Sum, and Notice of Completion of Contract and Acceptance of Work for the Permanente Creek Flood Protection Project - Permanente Creek Channel Improvements, Robert A. Bothman Construction, Inc., Contractor, Project No. 26244001, Contract No. C0625 (Mountain View, Los Altos) (District 7). [19-0319](#)

Recommendation:

- A. Approve a budget adjustment transferring an amount of \$708,223.83 from Fund 26 Operating and Capital Reserves to the Permanente Creek Flood Protection Project, Project No. 26244001, Fund 26;
- B. Approve an increase of \$108,223.83 to the construction contract contingency sum for the Permanente Creek Flood Protection Project - Permanente Creek Channel Improvements;
- C. Accept the work as complete for the Permanente Creek Flood Protection Project - Permanente Creek Channel Improvements, Robert A. Bothman Construction, Inc., Contractor, Project No. 26244001, Contract No. C0625; and
- D. Direct the Clerk of the Board to sign the Notice of Completion of Contract and Acceptance of Work and submit for recording to the County of Santa Clara Office of the Clerk-Recorder.

Manager: Ngoc Nguyen, 408-630-2632

Attachments: [Attachment 1: Notice of Completion and Acceptance of Work](#)
[Attachment 2: Construction Contract Acceptance](#)
[Attachment 3: Project Completion Letter](#)
[Attachment 4: Construction Summary](#)
[Attachment 5: Project Delivery Process Chart](#)

- 3.4. Adopt Plans and Specifications and Authorize Advertisement for Bids for Construction of the Uvas Creek Levee Rehabilitation Project Phase 2, Project No. 62084001, Task No. 5175, Contract No. C0648, (Gilroy) (District 1). [19-0293](#)

Recommendation: A. Adopt Plans and Specifications and Authorize Advertisement for Bids for Construction of the Uvas Creek Levee Rehabilitation Project Phase 2 per the Notice to Bidders; and
 B. Authorize the Designated Engineer to issue addenda, as necessary, during the bidding process.

Manager: Ngoc Nguyen, 408-630-2632

Attachments: [Attachment 1: Project Location Map](#)
 [Attachment 2: Notice to Bidders](#)
 [Attachment 3: Project Delivery Process Chart](#)

- 3.5. Resolution Recognizing April 22, 2019 as Earth Day. [19-0335](#)

Recommendation: Adopt the Resolution RECOGNIZING APRIL 22, 2019 AS EARTH DAY.

Manager: Katherine Oven, 408-630-3126

Attachments: [Attachment 1: Resolution](#)

- 3.6. Designation of Impartial Third Party to Oversee Validation and Tabulation of Written Protests for Fiscal Year 2019-2020 Surface Water Charges. [19-0336](#)

Recommendation: Designate the Clerk of the Board as the impartial third party to oversee the verification and tabulation of the written surface water protests for Fiscal Year 2019-2020.

Manager: Michele King, 408-630-2711

Attachments: [Attachment 1: SCVWD Resolution No. 12-10](#)

- 3.7. Providing Notice of Time and Place of Public Hearing Regarding Flood Control Benefit Assessments for Fiscal Year 2019-2020 (FY 2019-20). [19-0342](#)

Recommendation: Set a time and place for the public hearing on Flood Control Benefit Assessments for FY 2019-20 at 1:00 p.m. on May 14, 2019, at the Santa Clara Valley Water District, 5700 Almaden Expressway, San Jose, California.

Manager: Melanie Richardson, 408-630-2035

Attachments: [Attachment 1: Flood Control Benefit Assessment Report](#)
 [Attachment 2: Notice of Public Hearing](#)

- 3.8. Membership Nomination for Committee Appointment to the Environmental and Water Resources Committee (EWRC). [19-0366](#)

Recommendation: Consider nomination for a two-year membership appointment of Ms. Susan Blake to the Environmental and Water Resources Committee.

Manager: Michele King, 408-630-2711

Attachments: [Attachment 1: Blake Application](#)
[Attachment 2: SCVWD Resolution No. 15-28](#)

- *3.9. CEO Bulletin for the Week of March 22-28, and March 29-April 4, 2019. [19-0399](#)

Recommendation: Accept the CEO Bulletins.

Manager: Norma Camacho, 408-630-2084

Attachments: [Attachment 1: 032819 CEO Bulletin](#)
[*Attachment 2: 040419 CEO Bulletin](#)

- *3.10 Report of Bids Received, Award of Construction Contract to Silicon Valley Paving, Inc. for the Construction of Gold Street Median Removal Project, Project No. 00761023, Contract No. C0646 (San Jose), (District 3). [19-0393](#)

Recommendation:

- A. Ratify Addendum Nos.1 and 2 to the Contract documents for the Gold Street Median Removal Project;
- B. Waive minor irregularities in Silicon Valley Paving, Inc.'s Bid;
- C. Award the Contract to Silicon Valley Paving, Inc, in the sum of \$74,993; and
- D. Approve a contingency sum of \$7,500 and authorize the Operations & Maintenance Engineering Support Unit Manager to approve individual change orders up to the designated amount.

Manager: Sue Tippetts, 408-630-2253

Attachments: [Attachment 1: Addenda](#)
[Attachment 2: Project Delivery Process Chart](#)

REGULAR AGENDA:

4. BOARD OF DIRECTORS:

4.1. District Living Wage Policy.

[19-0329](#)

- Recommendation:
- A. Receive information on the District's current Living Wage Policy; and
 - B. Direct District staff to return with proposed updates to the Living Wage Policy, for future discussion and approval by the Board.

Manager: Michael Baratz, 408-630-2361

Est. Staff Time: 15 Minutes

4.2. Board Committee Reports.

[19-0367](#)

- A. Delta Conveyance Design and Construction Authority Update.
- B. Delta Conveyance Finance Authority Update.
- C. Water Conservation and Demand Management Committee Update

Attachments: [Handout 4.2-A - 032519 WCDM Chair Meeting Summary](#)

5. WATER UTILITY ENTERPRISE:

5.1. Agreement with GEI Consultants, Inc., for Engineering Services for the Lenihan and Stevens Creek Dams Safety Evaluations and Budget Adjustment for Supplemental Tasks for the Dam Seismic Stability Evaluations Project, Project No. 91084019 (Los Gatos, Cupertino) (District 7).

[18-1121](#)

- Recommendation:
- A. Approve a budget adjustment transferring an amount not-to-exceed \$1,700,000 from the Almaden Dam Improvements Project (Project No. 91854001) to the Dam Seismic Stability Evaluations Project (Project No. 91084019) to fund the Lenihan and Stevens Creek Dams Safety Evaluations; and
 - B. Approve the Agreement with GEI Consultants, Inc., for engineering services for the Lenihan and Stevens Creek Dams Safety Evaluations for a not-to-exceed fee of \$2,453,283.

Manager: Christopher Hakes, 408-630-3796

Attachments: [Attachment 1: Agreement](#)

Est. Staff Time: 10 Minutes

5.2. Calero Reservoir Operations and System Reliability.

[19-0303](#)

- Recommendation:
- A. Receive an update on the operation and use of Calero Reservoir; and
 - B. Direct staff to proceed with the Calero Seismic Retrofit Project.

Manager: Kurt Arends, 408-630-2284

Attachments: [Attachment 1: Powerpoint](#)

Est. Staff Time: 5 Minutes

6. WATERSHEDS:

6.1. Proposed Pilot Project for Using Unmanned Aerial Vehicles (UAV) in Land Surveying and Mapping Activities.

[19-0058](#)

- Recommendation:
- A. Receive information and discuss issues identified for using UAV in land surveying and mapping activities; and
 - B. Provide direction to staff.

Manager: Ngoc Nguyen, 408-630-2632

Attachments: [Attachment 1: Flight Operations Manual, UAV](#)
[Attachment 2: FAA Part 107 Commercial Act](#)
[Attachment 3: Powerpoint](#)
[Attachment 4: Uses of UAVs](#)

Est. Staff Time: 10 Minutes

7. EXTERNAL AFFAIRS:

8. CHIEF EXECUTIVE OFFICER:

8.1. CEO and Chiefs' Report.

9. ADMINISTRATION:

10. DISTRICT COUNSEL:

11. ADJOURN:

11.1. Board Member Reports/Announcements.

11.2. Proposed Future Board Member Agenda Items.

11.3. Clerk Review and Clarification of Board Requests.

11.4. Adjourn to Special Meeting at 7:00 p.m., on April 11, 2019, at Morgan Hill City Hall, Council Chambers, 17555 Peak Avenue, Morgan Hill, California.

File No.: 19-0364

Agenda Date: 4/9/2019
Item No.: 2.1.

NON-EXHIBIT/CLOSED SESSION ITEM

SUBJECT:

CLOSED SESSION
CONFERENCE WITH LEGAL COUNSEL- ANTICIPATED LITIGATION
Significant exposure to litigation
Pursuant to Government Code Section 54956.9(d)(2)
One potential case

File No.: 19-0322

Agenda Date: 4/9/2019

Item No.: 2.6.

BOARD AGENDA MEMORANDUM

SUBJECT:

Public Hearing - Annual Report on the Protection and Augmentation of Water Supplies - February 2019 and Recommended Groundwater Production and Other Water Charges for Fiscal Year 2019-2020 (FY 2019-20).

RECOMMENDATION:

- A. Conduct a public hearing pursuant to Section 26.6 of the District Act to consider the District FY 2019-20 Annual Report on the Protection and Augmentation of Water Supplies, and direct staff to review such report with, and solicit comments from Valley Water's advisory committees;
- B. Hear public comments from groundwater producers and any interested persons regarding such report; and
- C. Continue the public hearing regarding such report to the April 11, 2019 special meeting, at 7:00 pm.

SUMMARY:

Section 26.6 of the District Act requires a public hearing regarding the Protection and Augmentation of Water Supplies report be held on or before the fourth Tuesday of April. This public hearing is conducted to inform the community of the activities performed by Valley Water to ensure reliable water supply and the recommended groundwater production and other water charges to pay for those activities. The hearing provides opportunity for any interested person to submit comments to the Board. This year's groundwater production charge setting process is being conducted consistent with the District Act, and Board Resolution 99-21. The raw surface water charge setting process includes a formal protest procedure consistent with Board Resolution 12-10 (See attachment 3). If written protests are filed by a majority of surface water operators, the surface water charge cannot be increased.

Staff proposes a 6.6% increase in the North County (Zone W-2) Municipal and Industrial groundwater production charge. Staff recommends maintaining the treated water surcharge at \$100 per acre-foot and the non-contract treated water surcharge at \$50 per acre-foot. The average household in Zone W-2 would experience an increase in their monthly bill of \$2.93 or about 10 cents a day.

In the South County (Zone W-5), staff recommends a 6.9% increase in the M&I groundwater production charge. The average household in Zone W-5 would experience an increase in their

monthly bill of \$1.07 or about 4 cents per day.

Customers in both areas of North and South County may also experience additional charge increases enacted by their retail water providers.

The staff proposed increase to the agricultural groundwater production charge is 19.3% for both zones. An agricultural water user who pumps 2 acre-feet per acre per year would experience an increase of \$0.87 per month per acre.

Staff recommends a 4.4% increase to the surface water master charge. This increase results in a 6.5% increase in the overall North County municipal and industrial surface water charge and 6.7% increase in the overall South County municipal and industrial surface water charge. The staff recommended overall agricultural surface water charge in either zone would increase by 10.8%. Due to the severity of the recent drought from 2012 to 2016, the water district suspended nearly all raw surface water deliveries in 2014. Now that the historic drought is over, the district has restored surface water for permitted users who requested it.

For recycled water, staff recommends increasing the M&I charge by 7.2%. For agricultural recycled water, staff recommends a 9.6% increase. The recommended increases would maximize cost recovery while concurrently providing an economic incentive to use recycled water as opposed to potable water. The pricing is consistent with the provisions of the "Wholesale-Retailer Agreement for Supply of Recycled Water Between Santa Clara Valley Water District and City of Gilroy."

The proposed increases in water charges are necessary to pay for critical investments in water supply infrastructure rehabilitation and upgrades, and the development of future drought-proof supplies. Those investments include the Pacheco Reservoir Expansion project, which would provide emergency water supply, the Rinconada Water Treatment Plant Upgrade, which will extend the plant's service life for the next 50 years, the Anderson Dam Seismic Retrofit, which will help ensure public safety and bolster future water supply reliability, and a \$650M investment for recycled and purified water expansion that would bring up to 24,000 AF of new water supply to the county each year.

Staff recommends maintaining the State Water Project Tax at \$18 million for FY 2019-20. This translates to a property tax bill for the average single family residence of roughly \$27.00 per year. The recommended SWP tax is consistent with past practice. If the recommended FY 2019-20 State Water Project Tax is not approved, the M&I groundwater production charge would need to be increased by an additional \$92/AF in North County and \$19/AF in South County. The open space credit would increase by roughly \$523,000.

The District's Annual Report on the Protection and Augmentation of Water Supplies, among other information, contains a financial analysis of the District's water utility system and additional details about the above recommendations. This report can be found at www.valleywater.org.

FINANCIAL IMPACT:

There is no financial impact associated with holding the hearing. If at a subsequent meeting, the

Board approves the recommended groundwater production and other water charges or obtains alternate funding mechanisms, the Water Utility should have sufficient funding for planned operations and capital improvement projects for fiscal year 2019-20.

CEQA:

The recommended action, the holding of a public hearing is not a project under CEQA. Further, establishment of groundwater production charges is not a project under CEQA. CEQA Guidelines Section 15273(a) reads as follows: CEQA does not apply to establishment or modification of charges by public agencies which the public agency finds are for the purpose of meeting operating expenses; purchasing or leasing supplies, equipment and materials; meeting financial reserve needs/requirements; and obtaining funds for capital projects needed to maintain service within existing service areas.

ATTACHMENTS:

Attachment 1: Staff Report
Attachment 2: PowerPoint
Attachment 3: SCVWD Resolution 12-10

UNCLASSIFIED MANAGER:

Nina Hawk, 408-630-2736

Staff Report

In accordance with the District Act, District staff has prepared an annual report on the Protection and Augmentation of Water Supplies, which was filed with the Clerk of the Board on February 22, 2019.

The Report is the 48th annual report on the Santa Clara Valley Water District's (Valley Water) activities in the protection and augmentation of the water supplies. This Report is prepared in accordance with the requirements of the District Act, section 26.5. The Report provides information on water requirements and water supply availability, and financial analysis of Valley Water's water utility system. The financial analysis includes future capital improvement and maintenance requirements, operating requirements, financing methods and staff's recommended groundwater production and other water charges by zone for fiscal year 2019–20.

The Rate Setting Process

According to Section 26.3 of the District Act, proceeds from groundwater production charges can be used for the following purposes:

1. Pay for construction, operation and maintenance of imported water facilities
2. Pay for imported water purchases
3. Pay for constructing, maintaining and operating facilities which will conserve or distribute water including facilities for groundwater recharge, surface distribution, and purification and treatment
4. Pay for debt incurred for purposes 1, 2 and 3.

This year, as in past years, staff has carefully evaluated the activities that can be paid for by groundwater production charges. The work of Valley Water is divided into projects. Every project has a detailed description including objectives, milestones, and an estimate of resources needed to deliver the project. To ensure compliance with the District Act, each project manager must justify whether or not groundwater production charges can be used to pay for the activities associated with their project. The financial analysis presented in the annual report is based on the financial forecasts for these vetted projects.

Resolution 99-21 guides staff in the development of the overall pricing structure based on principles established in 1971. The general approach is to charge the recipients of the various benefits for the benefits received. More specifically, pricing is structured to manage surface water, groundwater supplies and recycled water conjunctively to prevent the over use or under use of the groundwater basin. Consequently, staff is very careful to recommend pricing for groundwater production charges, treated water charges, surface water charges and recycled water charges that work in concert to achieve the effective use of available resources.

This year's rate setting process is being conducted consistent with Board Resolutions 99-21 and 12-10. In light of the Supreme Court finding that Proposition 218 is inapplicable to groundwater production charges, only the surface water charge setting process will mirror the process described in Proposition 218 for property-related fees for water services. The rate setting process for both groundwater and surface water is consistent with Proposition 26 requirements that the groundwater production and surface water charges are no more than necessary to cover reasonable costs and bear a fair or reasonable relationship to the rate payor's burdens on or benefits received from the groundwater and surface water programs.

As in the past, the Board will continue to hold public hearings and seek input from its advisory committees and the public before rendering a final decision on groundwater production and other water charges for FY 2019–20.

Staff Recommendations

Exhibit 1 shows the recommended groundwater production charges and other charges for FY 2019–20. The staff recommendation for the various types of agricultural water is significantly different than the proposed maximums shown in Valley Water's Annual Report on the Protection and Augmentation of Water Supplies (PAWS). The proposed maximum agricultural charges in the PAWS report reflect the maximum rate allowed by the District Act, and was a placeholder to allow flexibility for the Board in deliberating changes to its policy on agricultural water pricing.

Exhibit 1
Summary of Charges
(Dollars Per Acre Foot, \$/AF)

	Dollars Per Acre Foot		
	FY 2017–18	FY 2018–19	Staff Recommended FY 2019–20
Zone W-2 (North County)			
Basic User/ Groundwater Production Charge			
Municipal & Industrial	1,175.00	1,289.00	1,374.00
Agricultural	25.09	27.02	32.23
Surface Water Charge			
Surface Water Master Charge	33.36	35.93	37.50
Total Surface Water, Municipal & Industrial*	1,208.36	1,324.93	1,411.50
Total Surface Water, Agricultural*	58.45	62.94	69.73
Treated Water Charges			
Contract Surcharge	100.00	100.00	100.00
Total Treated Water Contract Charge**	1,275.00	1,389.00	1,474.00
Non-Contract Surcharge	50.00	50.00	50.00
Total Treated Water Non-Contract Charge***	1,225.00	1,339.00	1,424.00
Zone W-5 (South County)			
Basic User/ Groundwater Production Charge			
Municipal & Industrial	418.00	450.00	481.00
Agricultural	25.09	27.02	32.23
Surface Water Charge			
Surface Water Master Charge	33.36	35.93	37.50
Total Surface Water, Municipal & Industrial*	451.36	485.93	518.50
Total Surface Water, Agricultural*	58.45	62.94	69.73
Recycled Water Charges			
Municipal & Industrial	398.00	430.00	461.00
Agricultural	48.88	54.41	59.62
*Note: The total surface water charge is the sum of the basic user charge (which equals the groundwater production charge) plus the water master charge			
**Note: The total treated water contract charge is the sum of the basic user charge (which equals the groundwater production charge) plus the contract surcharge			
***Note: The total treated water non-contract charge is the sum of the basic user charge (which equals the groundwater production charge) plus the non-contract surcharge			

The recommended increases in water charges are necessary to pay for critical investments in water supply infrastructure rehabilitation and upgrades, and the development of future drought-proof supplies. The Anderson Dam Seismic Retrofit is a \$563 million project that will help ensure public safety and bolster future water supply reliability. Additionally, the \$295 million Rinconada Water Treatment Plant upgrade is more than halfway complete, and will extend the plant's service life for the next 50 years as well as increase production capacity up to 25%. Roughly \$121 million is planned to be spent over the next 10 years on the state's proposed plan for the California Water Fix, which is anticipated to improve the reliability of the infrastructure through which 40% of the county's water supply is delivered. Valley Water continues to move forward to forge its first public-private partnership (P3) on a \$650 million investment for recycled and purified water expansion that would bring up to 24,000 AF of new water supply to the county each year. Lastly, the Pacheco Reservoir Expansion project, estimated to cost a little more than \$1.3 billion, would provide 80,000 acre-feet of additional water storage capacity.

Given the financial needs summarized above, staff proposes a 6.6% increase in the North County (Zone W-2) Municipal and Industrial groundwater production charge from \$1,289/AF to \$1,374/AF. Staff recommends maintaining the treated water surcharge at \$100/AF, and maintaining the non-contract treated water surcharge at \$50/AF. The proposal equates to a monthly bill increase for the average household of \$2.93 or about 10 cents a day.

In the South County (Zone W-5), staff proposes a 6.9% increase in the M&I groundwater production charge from \$450/AF to \$481/AF. The proposal equates to a monthly bill increase for the average household of \$1.07 or about 4 cents per day.

Customers in both areas of North and South County may also experience additional charge increases enacted by their retail water providers.

Staff recommends a 19.3% increase in the agricultural groundwater production charge in both zones from \$27.02/AF to \$32.23/AF. The staff recommendation equates to a \$0.87 increase per month per acre for an agricultural water user who pumps 2 acre-feet per acre per year.

Staff recommends a 4.4% increase to the surface water master charge from \$35.93/AF to \$37.50/AF to align revenues with the costs related to managing, operating and billing for surface water diversions. This increase results in a 6.5% increase in the overall North County municipal and industrial surface water charge and 6.7% increase in the overall South County municipal and industrial surface water charge. The overall agricultural surface water charge in either zone would increase by 10.8% to \$69.73 per acre foot. Due to the severity of the recent drought from 2012 to 2016, the water district suspended nearly all raw surface water deliveries in 2014. Now that the historic drought is over, Valley Water has restored surface water for those permitted users who requested it.

For recycled water, staff recommends increasing the M&I charge by 7.2% to \$461/AF. For agricultural recycled water, staff recommends a 9.6% increase to \$59.62/AF. The increase maximizes cost recovery while concurrently providing an economic incentive to use recycled water. This pricing is consistent with the provisions of the "Wholesale-Retailer Agreement for Supply of Recycled Water Between Santa Clara Valley Water District and City of Gilroy."

Staff recommends keeping the State Water Project Tax at \$18 million for FY 2019–20. This translates to a property tax bill for the average single family residence of roughly \$27.00 per year. Valley Water incurs an annual indebtedness to the State of California pursuant to its Water Supply Contract dated November 20, 1961. Such indebtedness is proportional to Valley Water's allocation of water from the State Water Project and pays for construction, maintenance and

operation of state water project infrastructure and facilities. Staff anticipates that Valley Water's contractual indebtedness to the State under the State Water Supply Contract for FY 2019–20 will be at least \$25 million. The intent behind setting the State Water Project Tax below the anticipated contractual indebtedness is to reduce the State Water Project Fund reserve that has built up recently (totaling \$12.8M at the end of FY 2017-18). Staff's recommendation regarding the State Water Project tax is consistent with Valley Water's past practice and with the approach of other water districts and agencies that maintain State water supply contracts.

Projections

Exhibit 2 shows actual and projected District-managed water use. FY 2017–18 water usage came in at 231,000 AF, slightly higher than the projected usage. For the current year, FY 2018–19, staff estimates that water usage will be approximately 226,000 AF or higher, and roughly a 21% reduction versus calendar year 2013. For FY 2019–20, total District-managed water use is projected at 239,000 AF, which is about a 6% increase relative to the FY 2018-19 estimated actual. The FY 2019-20 water usage estimate represents a 16% reduction relative to calendar year 2013, and represents a roughly 23% reduction on a per capita basis. Water use is projected to ramp up to 254,000 AF by FY 2024-25.

Exhibit 2
District-managed Water Use Projection (1,000's AF)

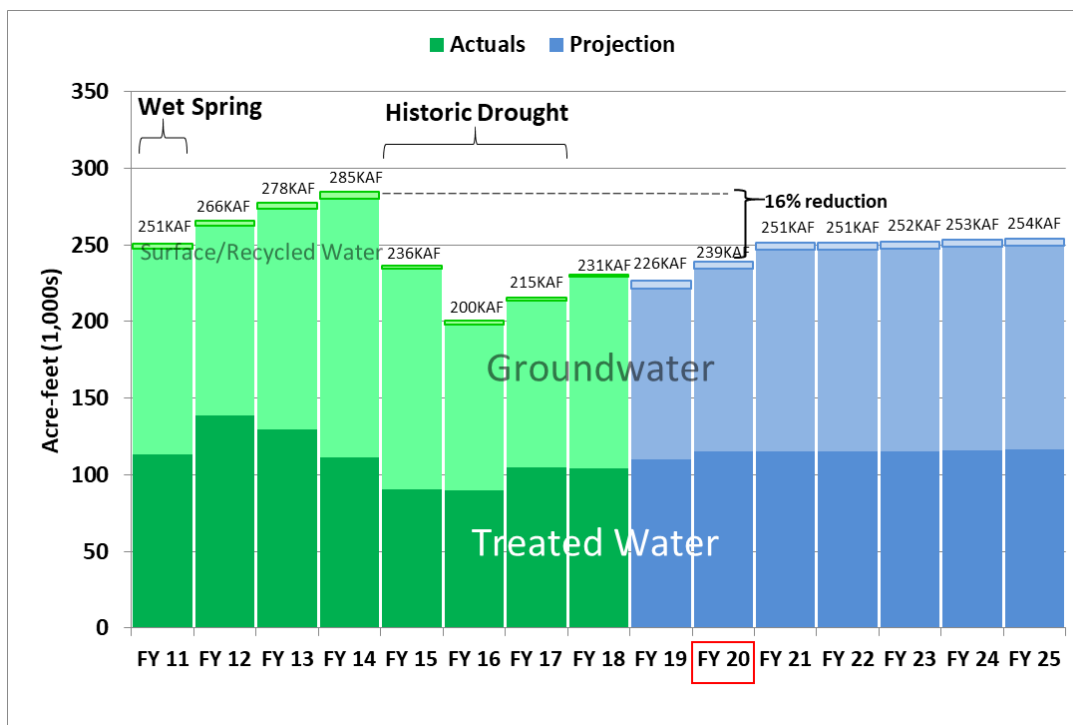


Exhibit 3 shows key financial indicators with staff's recommendation projected to FY 2025-26. The debt service coverage ratio, which is a ratio of revenue less operations expenses divided by annual debt service, is targeted at 2.0 or better which helps to ensure financial stability and continued high credit ratings keeping cost to borrow low.

Exhibit 3
5 Year Charge and Financial Indicator Projection

Base Case	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
No. County (W-2) M&I GWP charge (\$/AF)	\$1,289	\$1,374	\$1,465	\$1,561	\$1,664	\$1,774	\$1,891	\$2,016
Y-Y Growth %	9.7%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%
So. County (W-5) M&I GWP charge (\$/AF)	\$450	\$481	\$514	\$550	\$588	\$628	\$672	\$718
Y-Y Growth %	7.7%	6.9%	6.9%	6.9%	6.9%	6.9%	6.9%	6.9%
Operating & Capital Reserve	\$35,003	\$40,408	\$45,926	\$47,663	\$53,352	\$52,133	\$54,811	\$56,890
Supplemental Water Supply Reserve (\$K)	\$14,677	\$15,077	\$15,477	\$15,877	\$16,277	\$16,677	\$17,077	\$17,477
Drought Contingency Reserve (\$K)	\$7,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
P3 Reserve (\$K)	\$4,000	\$8,000	\$10,000	\$12,000	\$14,000	\$16,000	\$17,000	\$18,000
Sr. Lien Debt Svc Cov Ratio (1.25 min)	2.65	3.37	3.31	2.99	2.54	2.47	2.48	2.51
South County (Deficit)/Reserves (\$K)	\$12,242	\$11,306	\$12,774	\$14,373	\$17,578	\$14,504	\$13,537	\$14,062

A portion of the projected increases in the groundwater production charge are driven by the capital improvement program as shown in Exhibit 4. Over \$3.3 billion in capital investments, primarily to repair and rehabilitate aging infrastructure, are planned for the next 10 years. FY 2019–20 operations and operating project costs are projected to increase by 4.2% versus the FY 2018–19 adjusted budget. On a longer term basis, operating outlays are projected to increase an average of 7.2% per year for the next 10 years driven by: 1) the start of Water Service Agreements payments in FY 28 to Valley Water's P3 (Public-Private Partnership) partner upon completion of the Expedited Purified Water Facilities and commencement of the new water supply; 2) the ramp up of anticipated payments associated with the California WaterFix; and 3) inflation. Debt service is projected to rise from \$44 million in FY 2019–20 to \$127.9 million in FY 2028–29 as a result of periodic debt issuances to fund the capital program.

Exhibit 4
Cost Projection by Cost Center (\$M)

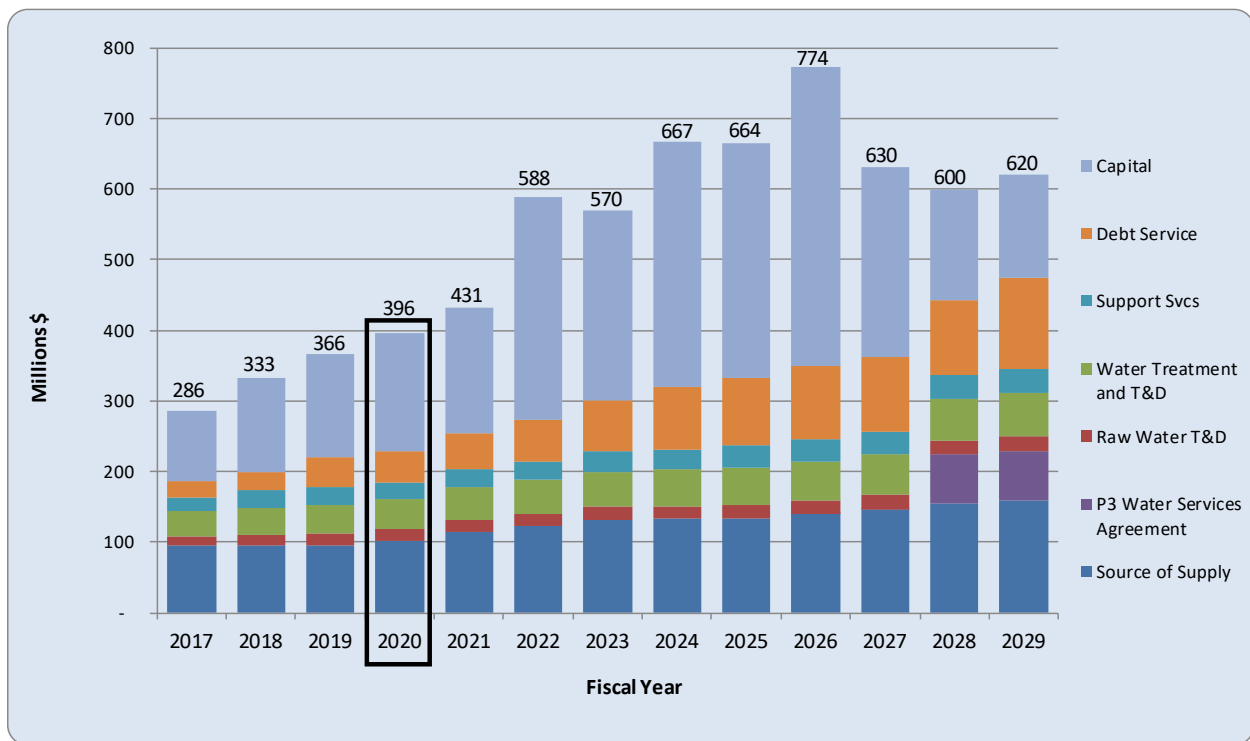


Exhibit 5 shows the groundwater production charge projection for the next 10 years and assumes a continuation of the level of service provided in FY 2018–19 and funding of the preliminary FY 2019-20 Capital Improvement Program (CIP). Note that there are initiatives and potential uncertainties that could result in the identification of additional capital or operations projects that are not reflected in projection.

Exhibit 5 10 Year Groundwater Charge Projection

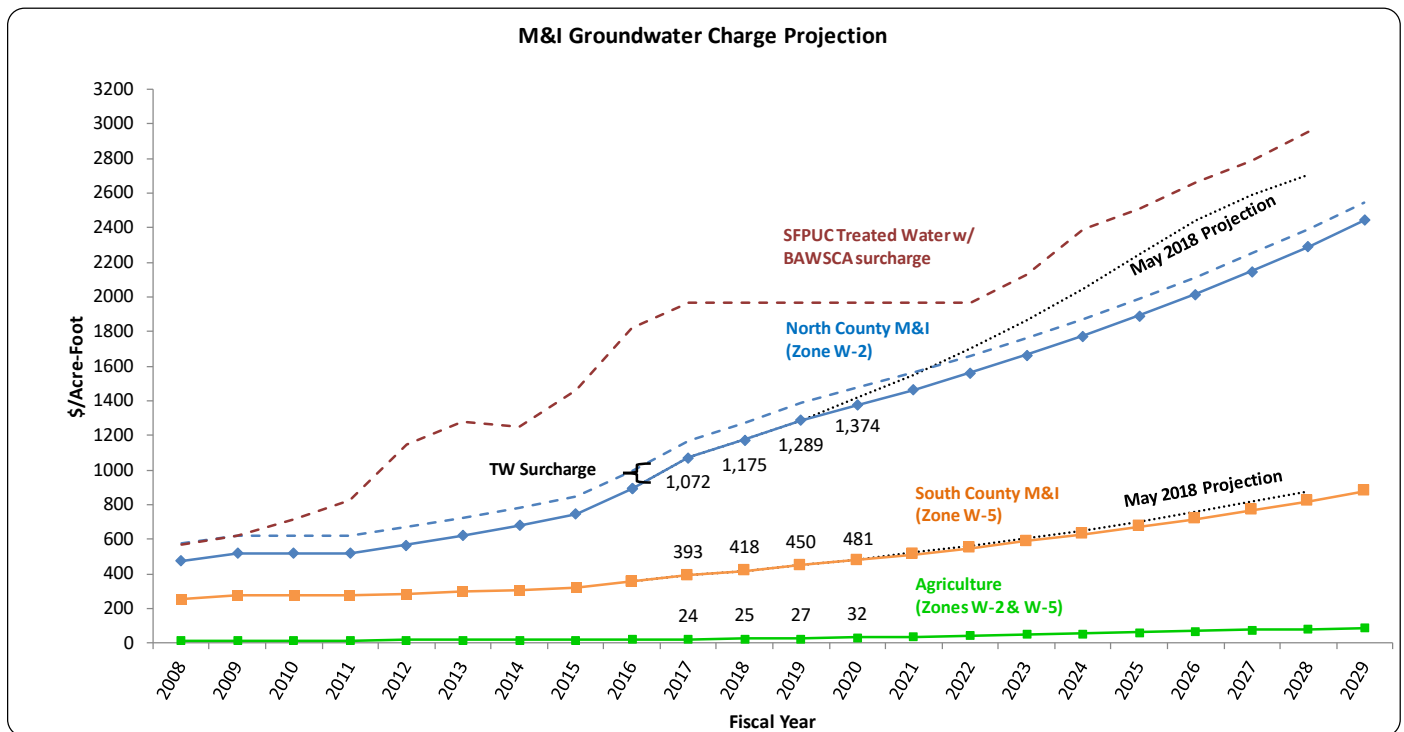


Exhibit 6 shows a comparison of the adjusted proposed groundwater production and treated water charges relative to the anticipated increases for the following similar agencies: Metropolitan Water District, Orange County Water District, San Diego County Water Authority, San Francisco PUC (Hetch Hetchy), and Zone 7.

Exhibit 6
Anticipated FY 2018–19 Water Charge Increases for Similar Agencies

	% inc.		% inc.		Projection	
	FY 17	'17 to '18	FY 18	'18 to '19	FY 19 ³	FY 20
SCVWD North W-2 (Groundwater prdctn per AF)	\$1,072	9.6%	\$1,175	9.7%	\$1,289	6.6%
SCVWD North W-2 (Treated Water per AF)	\$1,172	8.8%	\$1,275	8.9%	\$1,389	6.1%
SCVWD South W-5 (Groundwater prdctn per AF)	\$393	6.4%	\$418	7.7%	\$450	6.9%
Metropolitan WD (Untreated Water per AF) ¹	\$762	4.3%	\$795	4.0%	\$827	3.6%
Metropolitan WD (Treated Water per AF) ¹	\$1,075	3.7%	\$1,115	2.8%	\$1,146	2.6%
Orange County WD (Groundwater per AF)	\$402	10.7%	\$445	3.8%	\$462	8.0%
San Diego County WA (Treated Water per AF) ¹	\$1,531	3.4%	\$1,583	-0.4%	\$1,577	TBD
San Francisco PUC (Treated Water per AF) ²	\$1,969	0.0%	\$1,969	0.0%	\$1,969	0.0%
Zone 7 (Treated Water per AF) ¹	\$1,575	-13.2%	\$1,367	2.5%	\$1,401	8.9%

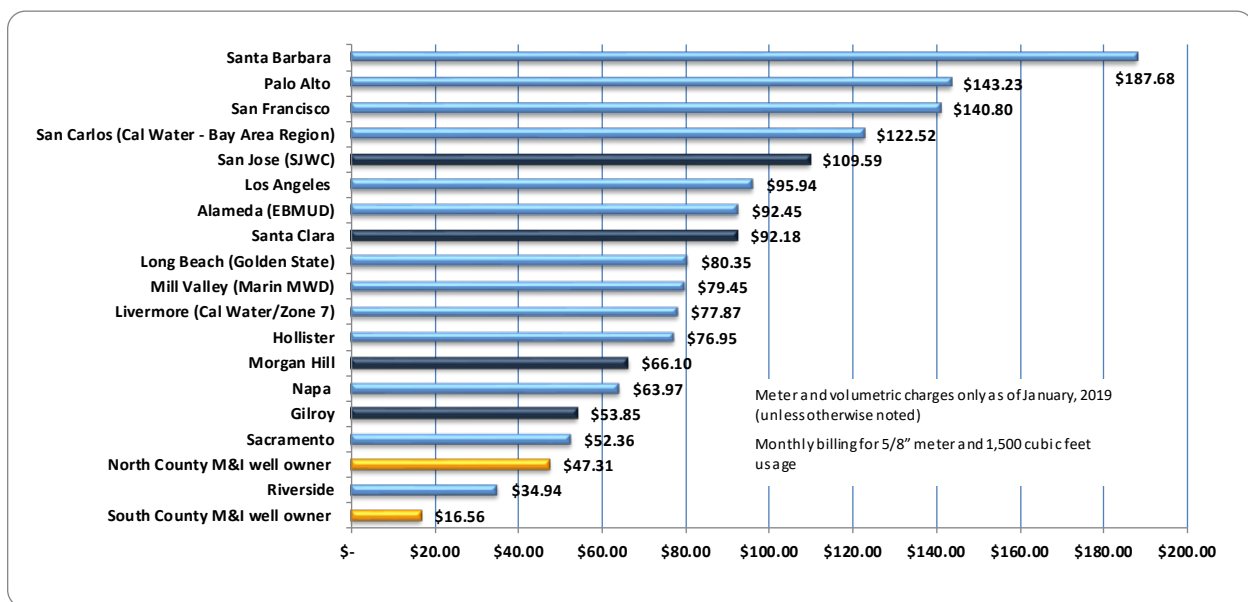
1) MWD, SDCWA and Zone 7 rates based on calendar year (i.e. 2018 rate would be effective on 1/1/2018)

2) SFPUC rate includes BAWSCA bond surcharge

3) SCVWD FY 20 projection includes staff recommendations

Exhibit 7 shows a comparison of the average monthly bill for several of Valley Water's retail customers (e.g. SJWC, City of Santa Clara, City of Morgan Hill, and City of Gilroy) relative to Valley Water's perennial list of retail agency comparators across the state. SCVWD retailer rates shown include the staff recommended increase for FY 2019-20. North County and South County well owner rates are also shown, which exclude pumping costs (e.g. electricity) and well maintenance costs.

Exhibit 7 Retail Agency Benchmarks



Cost of Service

The cost of service analyses for FY 2019–20 is shown in Exhibit 8 for North County and Exhibit 9 for South County. The exhibits are laid out in a format that follows six industry standard rate making steps.

1. Identify utility pricing objectives and constraints
2. Identify revenue requirements
3. Allocate costs to customer classes
4. Reduce costs by revenue offsets or non-rate related funding sources
5. Develop unit costs by customer class or net revenue requirements by customer class
6. Develop unit rates by customer class

Step 2 includes identifying and segregating Water Utility Fund costs from Watershed and Administrative Funds and allocating Water Utility costs between zones W-2 (North) and W-5 (South) according to benefit provided. Step 3 involves allocating costs by customer class either directly or based on water usage. Steps 4 and 5 result in unit costs by customer class after applying non-rate related offsets.

Step 6 includes two adjustments. The first adjustment is the application of fungible revenue, in this case 1% ad valorem property taxes, to offset the costs of agricultural water in accordance with Board Resolution 99-21. For FY 2019-20, staff is proposing a \$460K transfer of 1% ad valorem property taxes from the General Fund and \$460K from the Watershed Stream Stewardship Fund as sources for this adjustment also known as the “Open Space Credit.”

The second adjustment involves reallocating a portion of the cost of treated water (or recycled water in the case of South County) to groundwater and surface water users. Treated and recycled water offsets the need to pump groundwater and therefore increases the volume of stored groundwater and improves reliability. The reallocation of a portion of the treated water cost for example represents the value of treated water to groundwater and surface water users and facilitates a pricing structure that prevents the over use of the groundwater basin. Preventing over use not only preserves groundwater for use in times of drought, but also prevents land subsidence or sinking of the land, which can cause serious infrastructure issues.

Another aspect of the second adjustment is related to setting the basic user charge for surface water equal to the groundwater production charge. Surface water use is effectively in-lieu groundwater use permitted by Valley Water to help preserve the groundwater basin. As such, the costs related to preserving the groundwater basin provide value to surface water users because it makes available District surface water, which otherwise would only be used for groundwater recharge. Similarly, the costs related to providing surface water benefit groundwater users because surface water usage helps preserve the groundwater basin. The second adjustment reallocates costs between surface water and groundwater customers in order to set the basic user charge for surface water equal to the groundwater production charge in recognition of this conjunctive use relationship, and in accordance with board policy. A 2015 study was conducted by Raftelis Financial Consultants, Inc (RFC) that confirms the reasonableness of such an adjustment. The report titled “Report Documenting the Reasonableness of the Conjunctive Use Benefit of Surface Water and Recycled Water to Groundwater Customers” documents the support and justification for the water district’s cost of service methodology and can be found on Valley Water’s website.

Exhibit 8
Cost of Service North County Zone W-2 (\$K)

FY '20 Projection (\$K)		Zone W-2					Total W-2
		GW		TW	SW		
		M&I	AG	M&I	M&I	Ag	
1	Operating Outlays						
2	Operations/Operating Projects	36,308	350	102,206	1,034	27	139,924
3	SWP Imported Water Costs	6,078	60	18,621	301	8	25,068
4	Debt Service	10,318	101	33,313	138	4	43,874
5	Total Operating Outlays	52,703	511	154,140	1,473	39	208,866
6							
7	Capital & Transfers						
8	Operating Transfers Out	600	6	1,044	14	0	1,664
9	Capital Outlays excl. carryforward	34,753	342	120,057	758	20	155,931
10	Total Capital & Transfers	35,353	348	121,101	772	21	157,595
11	Total Annual Program Costs	88,057	859	275,241	2,245	60	366,461
12		Step 3 - Allocate costs to customer classes					
13	Revenue Requirement Offsets						
14	Capital Cost Recovery	(2,360)	(23)	(4,107)	(54)	(1)	(6,545)
15	Debt Proceeds	(13,274)	(131)	(45,857)	(290)	(8)	(59,559)
16	Inter-governmental Services	(390)	(4)	(678)	(9)	(0)	(1,081)
17	SWP Property Tax	(4,102)	(40)	(12,569)	(203)	(5)	(16,920)
18	South County Deficit/Reserve	(1,418)	(14)	(2,467)	(32)	(1)	(3,932)
19	Interest Earnings	(1,010)	(10)	(1,757)	(23)	(1)	(2,800)
20	Inter-zone Interest	73	1	127	2	0	202
21	Capital Contributions	(8,962)	(88)	(15,592)	(203)	(5)	(24,851)
22	Other	(953)	(9)	(903)	(14)	(0)	(1,880)
23	Reserve Requirements	(1,751)	17	(181)	(38)	1	(1,952)
24	Adjusted Revenue Requirement (FY 19)	53,908	557	191,259	1,381	39	247,144
25	Adjusted Revenue Requirement (FY 16 adj)	(22,017)	(235)	37,018	913	(15)	15,665
26	Total Adjusted Revenue Requirement	31,892	323	228,276	2,293	24	262,809
27	Volume (KAF)	66.1	0.7	115.0	1.5	0.0	183.3
28							
29	Revenue Requirement per AF	\$ 482	\$ 497	\$ 1,985	\$ 1,529	\$ 603	
30		Step 5 - Develop unit costs by customer class					
31	Adjustments for Agricultural Preservation						
32	Allocate WU 1% Ad Valorem Prop Tax	-	(302)	-	-	(21)	(323)
33	Transfer GF 1% Ad valorem Prop Tax	-	-	-	-	-	-
34	Transfer WS 1% Ad Valorem Prop Tax	-	-	-	-	-	-
35	Revenue Requirement per AF	\$ 482.5	\$ 32.2	\$ 1,985	\$ 1,529	\$ 69.7	
36							
37	Adjustments to Facilitate Conjunctive Use						
38	Reallocate TW/SW/RW costs	58,934	-	(58,758)	(176)	-	0
39	Charge per AF	\$ 1,374	\$ 32.2	\$ 1,474	\$ 1,412	\$ 69.7	
40	Total Revenue (\$K)	\$90,826	\$21	\$169,518	\$2,117	\$3	\$262,485

Exhibit 9
Cost of Service South County Zone W-5 (\$K)

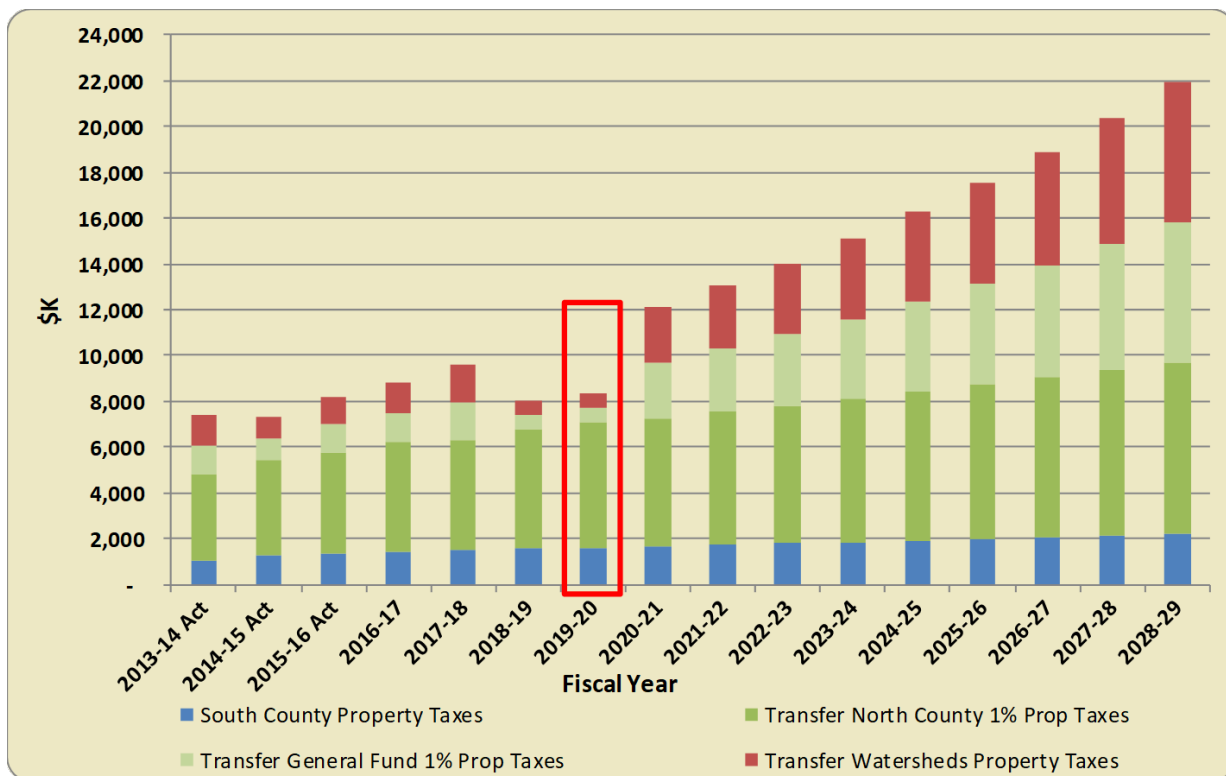
FY '20 Projection (\$K)		Zone W-5						
		GW		SW	RW			Total W-5
		M&I	AG	M&I	AG	M&I	AG	
1	Operating Outlays							
2	Operations/Operating Projects	10,076	8,692	254	650	221	189	20,083
3	SWP Imported Water Costs	-	-	-	-	-	-	-
4	Debt Service	-	-	-	-	-	-	-
5	Total Operating Outlays	10,076	8,692	254	650	221	189	20,083
6								
7	Capital & Transfers							
8	Operating Transfers Out	-	-	-	-	-	-	-
9	Capital Outlays excl. carryforward	-	-	-	-	-	-	-
10	Total Capital & Transfers	-	-	-	-	-	-	-
11	Total Annual Program Costs	10,076	8,692	254	650	221	189	20,083
12								
13	Revenue Requirement Offsets							
14	Capital Cost Recovery	2,779	2,481	50	129	595	510	6,545
15	Debt Proceeds	-	-	-	-	-	-	-
16	Inter-governmental Services	(80)	(71)	(1)	(4)	-	-	(156)
17	SWP Property Tax	(539)	(481)	(10)	(25)	(13)	(12)	(1,080)
18	South County Deficit/Reserve	3,370	768	(12)	40	(252)	18	3,932
19	Interest Earnings	-	-	-	-	-	-	-
20	Inter-zone Interest	(101)	(90)	(2)	(5)	(3)	(2)	(202)
21	Capital Contributions	-	-	-	-	-	-	-
22	Other	(71)	(64)	(1)	(2)	-	-	(138)
23	Reserve Requirements	-	-	-	-	-	-	-
24	Adjusted Revenue Requirement (FY 19)	15,434	11,235	278	783	548	705	28,984
25	Adjusted Revenue Requirement (FY 16 adj)	(2,510)	(3,052)	27	(208)	274	(400)	(5,869)
26	Total Adjusted Revenue Requirement	12,925	8,183	305	576	822	304	23,115
27	Volume (KAF)	28.0	25.0	0.5	1.3	0.7	0.6	56.1
28								
29	Revenue Requirement per AF	\$ 462	\$ 327	\$ 611	\$ 443	\$ 1,174	\$ 507	
30								
31	Adjustments for Agricultural Preservation							
32	Allocate WU 1% Ad Valorem Prop Tax	-	(7,213)	-	-	-	-	(7,213)
33	Transfer GF 1% Ad valorem Prop Tax	-	(460)	-	-	-	-	(460)
34	Transfer WS 1% Ad Valorem Prop Tax	-	296	-	(485)	-	(270)	(460)
35	Revenue Requirement per AF	\$ 462	\$ 32.2	\$ 611	\$ 69.7	\$ 1,174	\$ 56.2	
36								
37	Adjustments to Facilitate Conjunctive Use							
38	Reallocate TW/SW/RW costs	545	-	(46)	-	(499)	-	0
39	Charge per AF	\$ 481	\$ 32.2	\$ 519	\$ 70	\$ 461	\$ 56.2	
40	Total Revenue (\$K)	\$13,470	\$806	\$259	\$91	\$323	\$34	\$14,982

Open Space Credit

The District Act limits agricultural groundwater production charges to a maximum of 25 percent of the M&I groundwater production charges. Current board policy adds an “open space” credit to agricultural revenues. The purpose of the credit is to preserve the open space benefits provided by agricultural lands by keeping agricultural groundwater production charges low. While the Supreme Court found Proposition 218 inapplicable to groundwater production charges, the Court determined that Proposition 26 does apply, which means that in order for the groundwater production charge to qualify as a nontax fee, costs to end users must be proportional such that one class of users is not subsidizing another.

The recommended agricultural groundwater production charge for FY 2019–20 is \$32.23 per acre foot, which is 6.7 percent of the proposed M&I groundwater production charge in South County. To comply with the current agricultural groundwater production charge setting policy, staff recommends the open space credit received by South County be \$8.1 million in FY 2019-20 (funded by 1 percent ad valorem property taxes). This includes an adjustment that reconciles FY 2016–17 actuals against what was projected. The \$8.1 million is comprised of a \$5.6 million transfer from North County Water Utility 1% ad valorem property taxes, a \$1.6 million contribution from South County Water Utility 1% ad valorem property taxes, a \$460 thousand transfer of 1% ad valorem property taxes from the General Fund and \$460 thousand from the Watershed Stream Stewardship Fund. As shown in Exhibit 10, the Open Space Credit is projected to grow to \$22 million by FY 2028-29.

Exhibit 10
Open Space Credit Trend



Hearings and Meetings Schedule

Exhibit 11 presents the schedule for the annual groundwater production charge setting process.

Exhibit 11 Hearings and Meetings Schedule – 2019

Date	Hearing/Meeting
January 8	Board Meeting on Preliminary Groundwater Production Charge Analysis
February 22	Mail notice of public hearing and file PAWS report
March 20	Water Retailers Meeting
April 2	Landscape Committee Meeting
April 8	Agricultural Water Advisory Committee Meeting
April 9	Open Public Hearing
April 10	Water Commission Meeting
April 11	Continue Public Hearing in Morgan Hill (Informational Open House)
April 15	Environmental & Water Resources Committee
April 23	Conclude Public Hearing
May 14	Adopt Budget & Groundwater Production and Other Water Charges

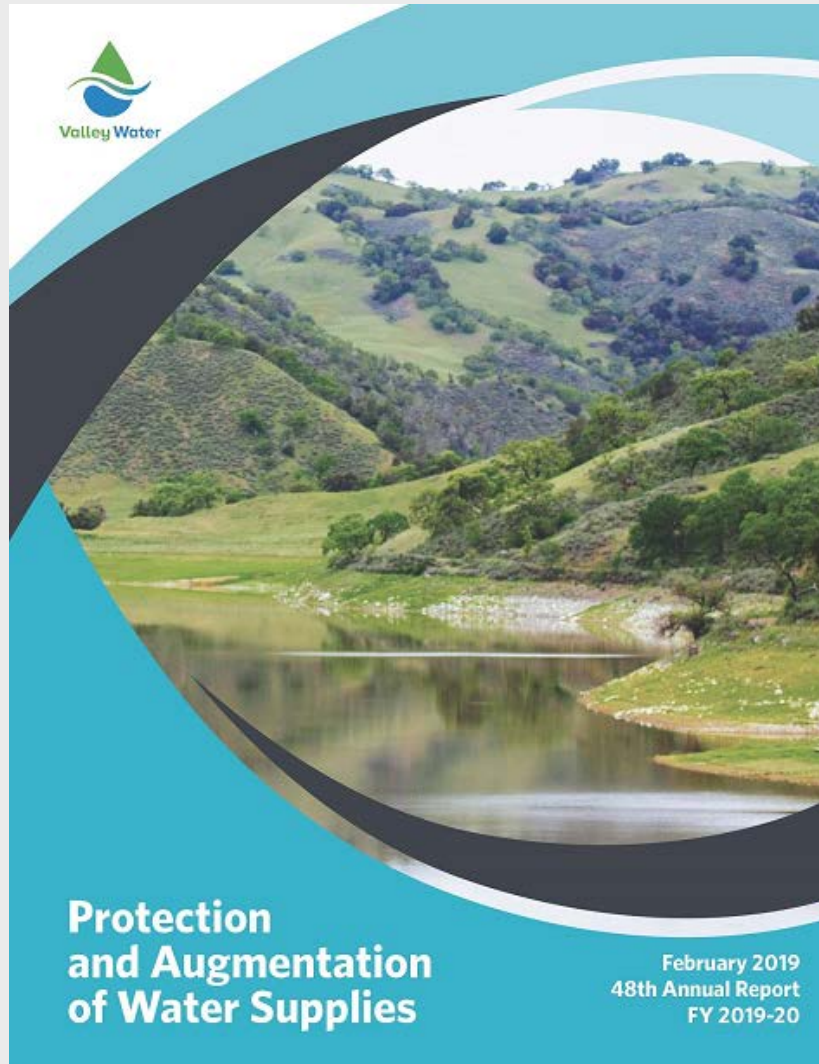
Public Hearing

Groundwater Production & Other Water Charges
April 9, 2019



Public Hearing has Three Specific Objectives

1. Present annual report on Valley Water's activities and recommended groundwater production charges
2. Provide opportunity for any interested person to "...appear and submit evidence concerning the subject of the written report" to the Board of Directors
3. Determine and affix Groundwater Production and Other Water Charges for FY 2019-20



2019 Protection and Augmentation of Water Supplies Report

A comprehensive, flexible water system serves 1.9 million people



10 Reservoirs

393 acres of recharge ponds

142 miles of pipelines

3 water treatment plants

1 water purification center

3 pump stations

\$7.1B system replacement value



- ▶ Rate Setting Process
- ▶ FY 20 Financial Analysis and Projections
 - ▶ Water Usage
 - ▶ Cost Projection
 - ▶ Recommended Groundwater Production Charges
 - ▶ State Water Project Tax
- ▶ Schedule/Wrap up

Rate Setting Process

District Act Defines Purposes for Groundwater Charges

1

Imported Water Facilities

2

Imported Water Purchases

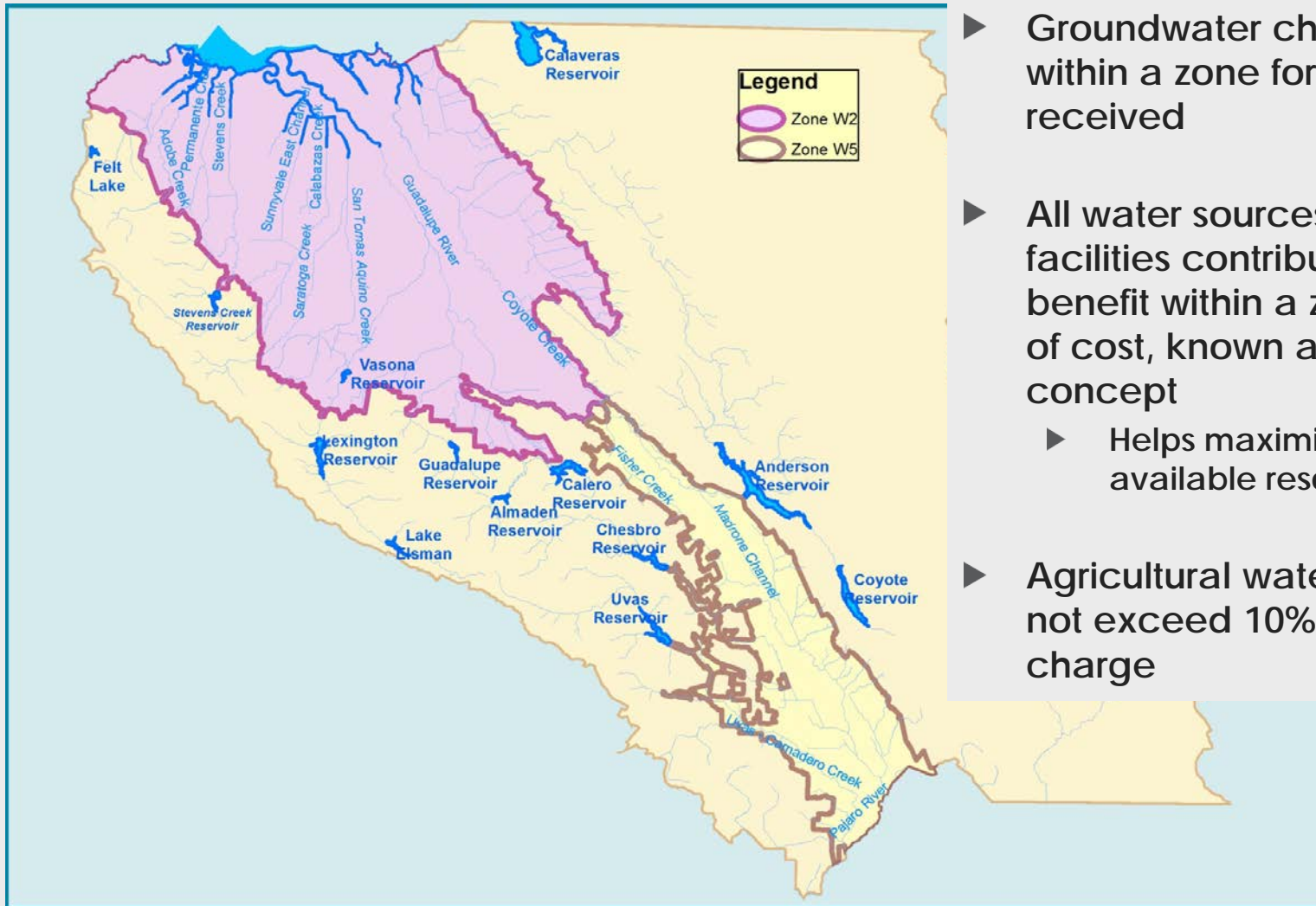
3

All Facilities which will “conserve or distribute water including facilities for groundwater recharge, surface distribution, and purification and treatment”

4

Debt

Resolution 99-21 is the Board's Pricing Policy



- ▶ Groundwater charges are levied within a zone for benefits received
- ▶ All water sources and water facilities contribute to common benefit within a zone regardless of cost, known as “pooling” concept
 - ▶ Helps maximize effective use of available resources
- ▶ Agricultural water charge shall not exceed 10% of M&I water charge

Zone of Benefit Study in progress

Prop 218 not applicable to Groundwater Charge-setting process

- ▶ Supreme Court found Prop 218 not applicable to groundwater charges
 - ▶ Certain Prop 218 requirements continue, like holding a public hearing, and noticing well owners, which are consistent with District Act
- ▶ Supreme Court found Prop 26 is applicable to groundwater charges
- ▶ To qualify as a nontax fee under Prop 26, GW charge must satisfy both:
 1. GW charge established at amount that is no more than necessary to cover reasonable costs of government activity
 2. Manner in which costs are allocated to payer bear a fair or reasonable relationship to payer's burdens on, or benefits received from government activity

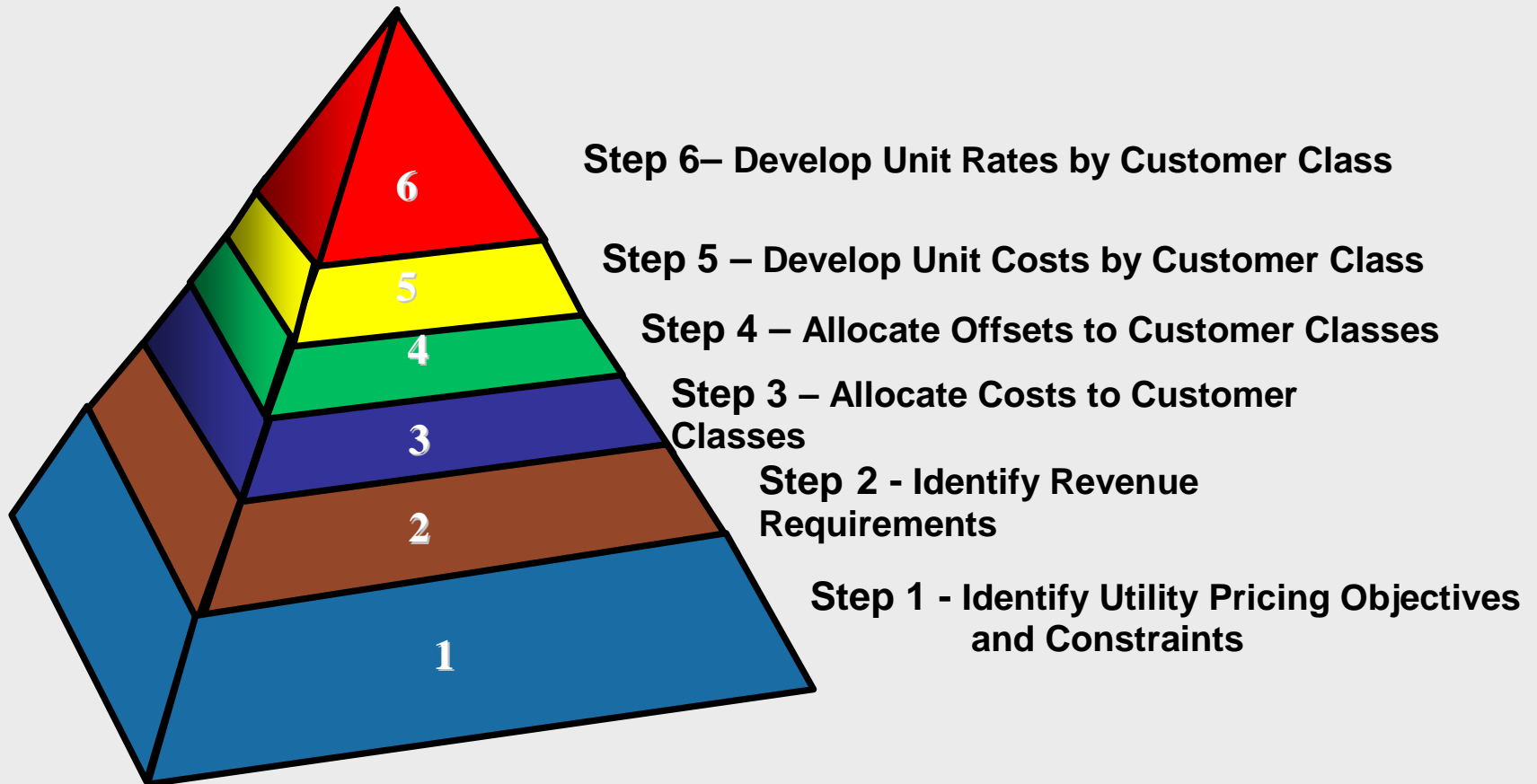
The Surface Water Charge-setting Process is Consistent with Prop 218 Process for Water Service Charges

- ▶ Includes cost of service analysis by customer class
- ▶ Includes protest procedure as defined in Board Resolution 12-10

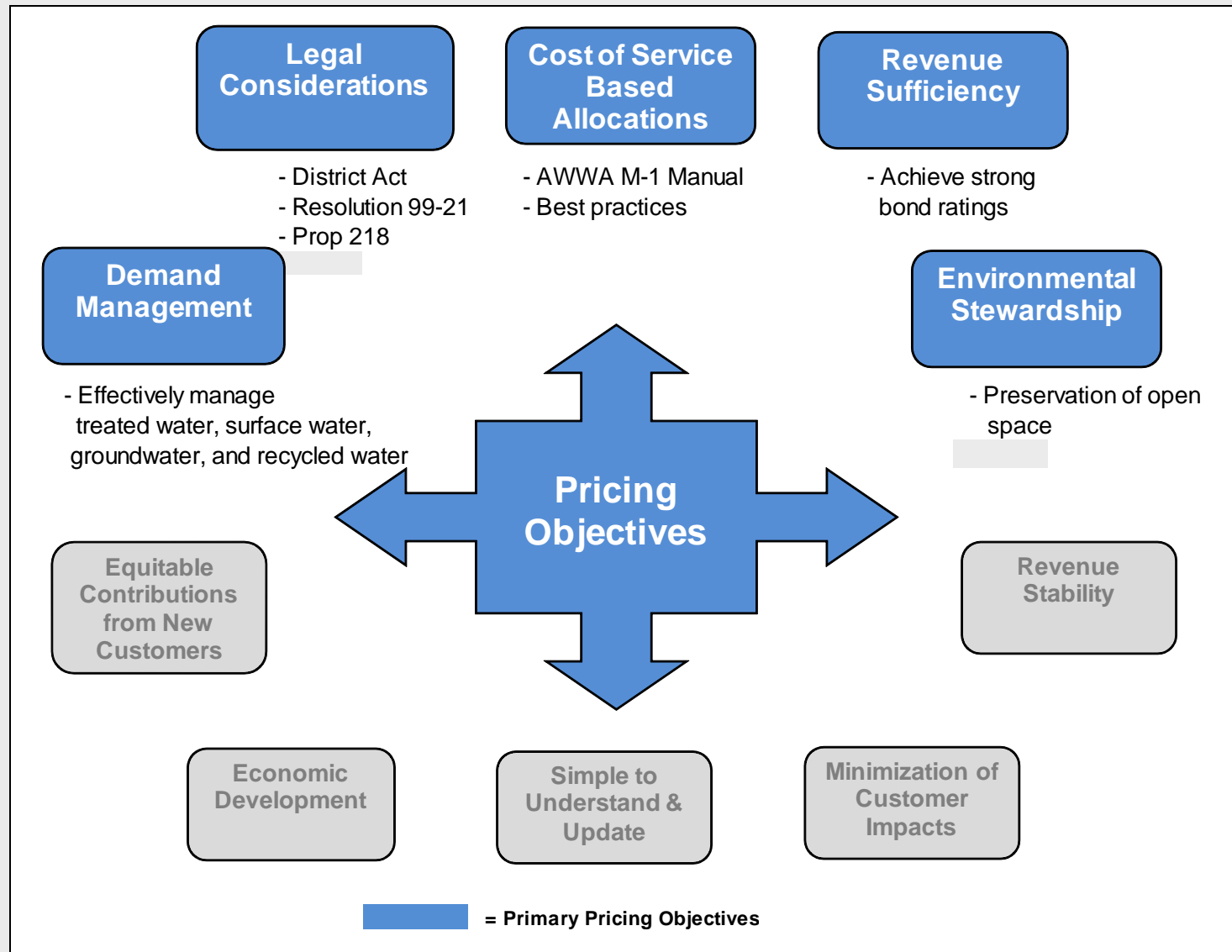
Historical Majority Protest Procedure Results

Fiscal Year	2013	2014	2015	2016	2017	2018
Surface Water						
North County	0%	0%	0%	0%	0%	0%
South County	0%	0%	0%	1.3%	0%	0%

The District follows best practice rate making steps



Pricing Objectives and Constraints



FY 20 Financial Analysis and Projections

FY 20 Key Assumptions

1) WSMP 90% Level Of Service (LOS)

- ▶ Baseline Projects
- ▶ CWF (State side)
 - ▶ Paid for by water charges, not SWP Tax
- ▶ CWF (CVP side)
- ▶ No Regrets Package
- ▶ Potable Reuse Phase 1 to produce 24KAF by FY 28
 - ▶ Based on \$690M capital project, District contributes 30% “pay as you go”
 - ▶ P3 reserve at \$8M in FY 20 growing to \$20M by FY 28
- ▶ Pacheco Reservoir
- ▶ Transfer-Bethany Pipeline
- ▶ South County Recharge
 - ▶ Timing = beyond FY 29

Also Includes:

- ▶ \$200M contingency placeholder for dams & WTP's
- ▶ Guiding Principle #5

North 8.1%, South 7.7% avg. annual incr.

9) WSMP 80%, Pacheco w/ \$250M WIIN, WIFIA loan & Partners Pay 20%

- ▶ Baseline Projects
- ▶ CWF (State side)
 - ▶ Paid for by water charges, not SWP Tax
- ~~▶ CWF (CVP side)~~
- ▶ No Regrets Package
- ▶ Potable Reuse Phase 1 to produce 24KAF by FY 28
 - ▶ Based on \$690M capital project, District contributes 30% “pay as you go”
 - ▶ P3 reserve at \$8M in FY 20 growing to \$20M by FY 28
- ▶ **Pacheco Reservoir**
 - ▶ **\$250M WIIN funding + WIFIA loan**
 - ▶ **Partner Agencies pay 20% of project**
- ▶ Transfer-Bethany Pipeline
- ▶ South County Recharge
 - ▶ Timing = beyond FY 29

Also Includes:

- ▶ \$200M contingency placeholder for dams & WTP's
- ▶ Guiding Principle #5

North 6.4%, South 6.6% avg. annual incr.

Scenario 9 Adjusted

Includes all Scenario 9 projects and assumptions plus the following adjustments:

- ▶ **PERS contribution contingency**
 - ▶ **\$3.9M per year beginning FY 22**
- ▶ **CIP projection refinements**
- ▶ **Updated OH and Benefits rates**
- ▶ **+\$3M for Drought Reserve in FY 20**
 - ▶ **FY 20 balance is \$10M**

North 6.6%, South 6.9% avg. annual incr.

Key Capital Project Funding for FY 20 through FY 29



Dam Seismic Retrofits/Improvements
\$708 Million
(\$875 Million Total Cost)



Expedited Purified Water Program
\$650 Million
(via P3 Delivery Method)

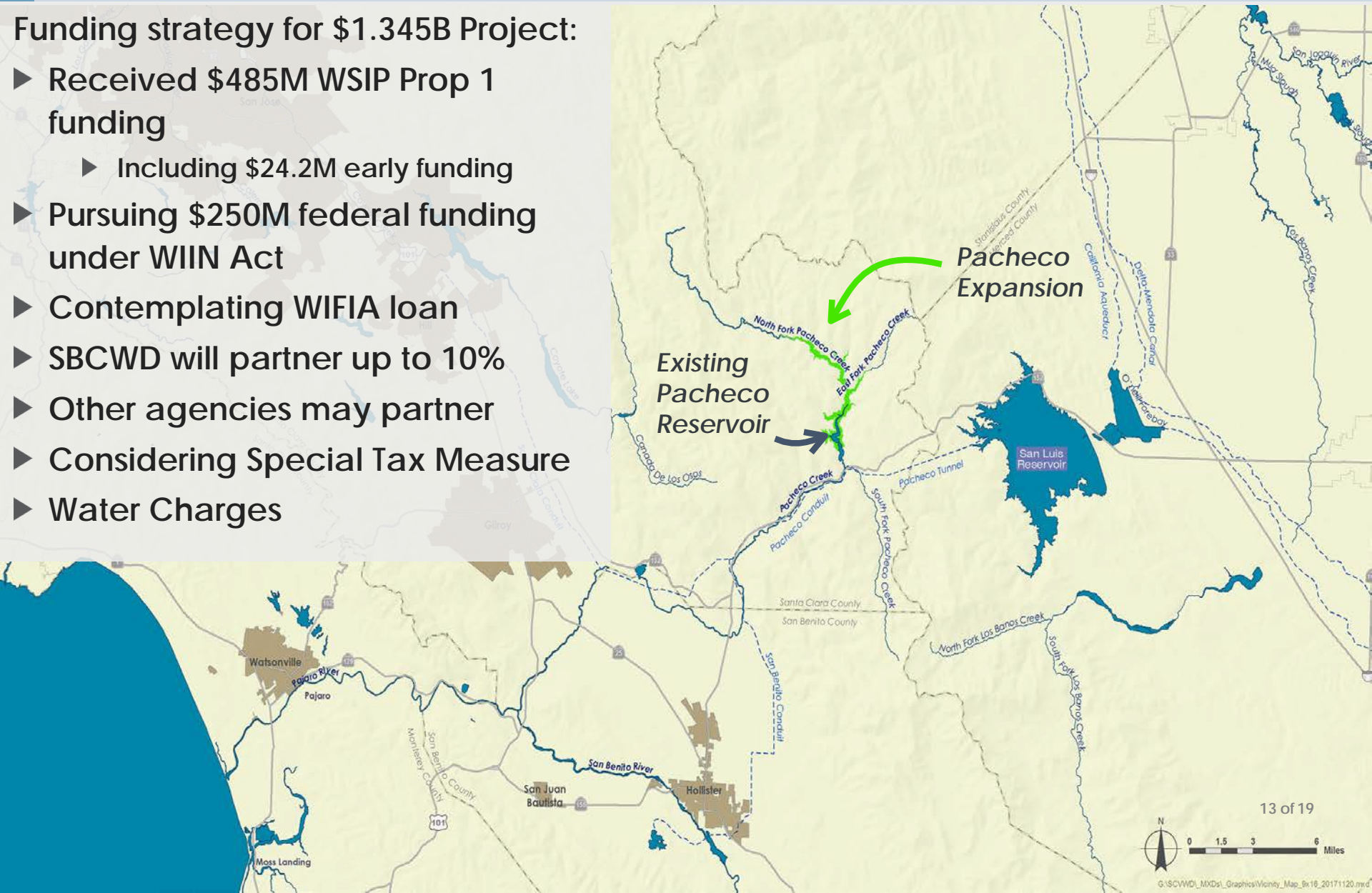


RWTP Reliability Improvements
\$98 Million
(\$295 Million Total Cost)

New Capital Investments for FY 20 through FY 29 – Pacheco Reservoir

Funding strategy for \$1.345B Project:

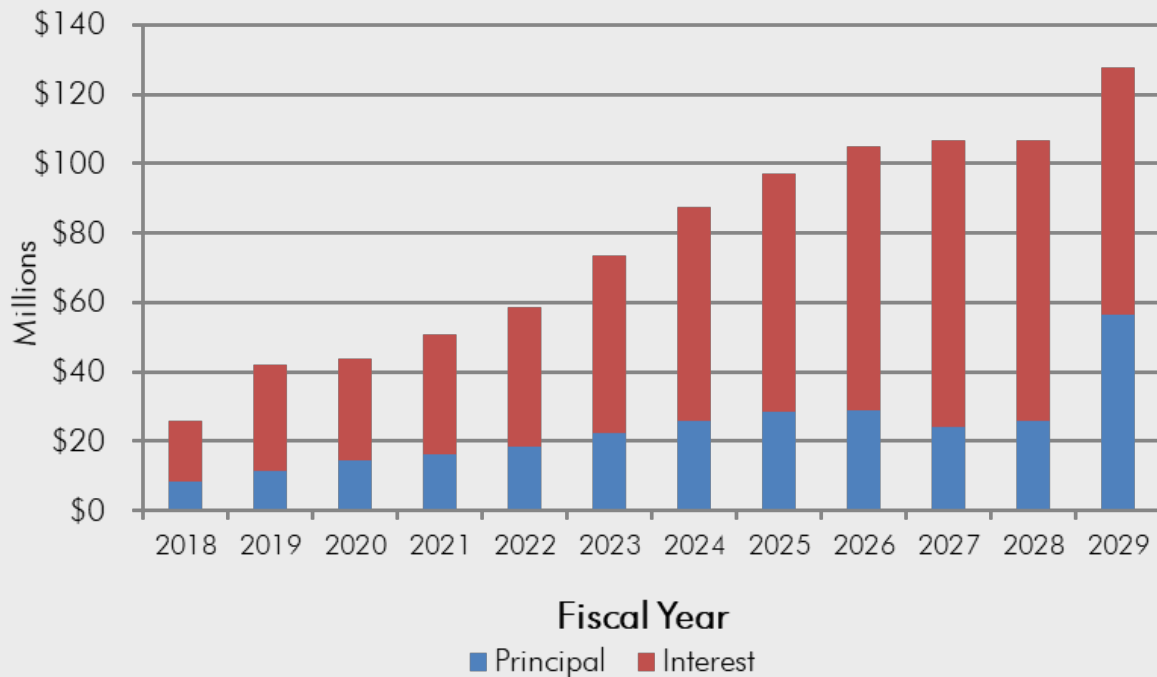
- ▶ Received \$485M WSIP Prop 1 funding
 - ▶ Including \$24.2M early funding
- ▶ Pursuing \$250M federal funding under WIIN Act
- ▶ Contemplating WIFIA loan
- ▶ SBCWD will partner up to 10%
- ▶ Other agencies may partner
- ▶ Considering Special Tax Measure
- ▶ Water Charges



Validated, Unfunded Water Supply Projects

Validated, Unfunded Water Supply Projects	Est. Cost (\$ Million)
Dam Seismic Retrofit at Chesbro & Uvas	\$90 M
Long-Term Purified Water Program Elements	\$104 M
Long-Term SCADA Improvements	\$20 M
So. County Recycled Water New Storage Tank	\$7 M
Alamitos Diversion Dam Improvements	\$3 M
Coyote Diversion Dam Improvements	\$2 M
Land Rights - South County Recycled Water Pipeline	\$6 M
TOTAL	\$232 M

Implementation of CIP results in debt service increases

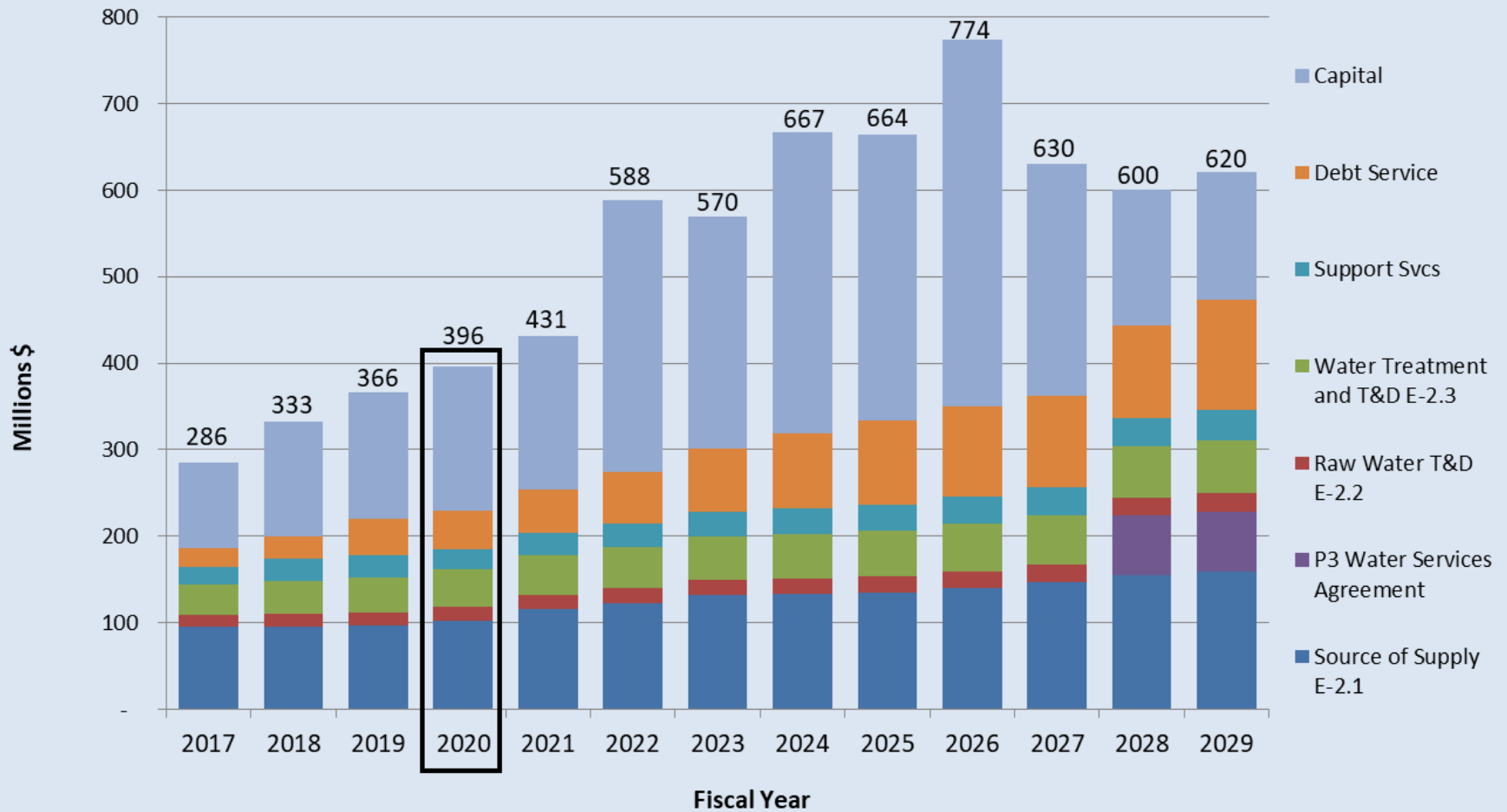


\$43.9M in FY 2019-20

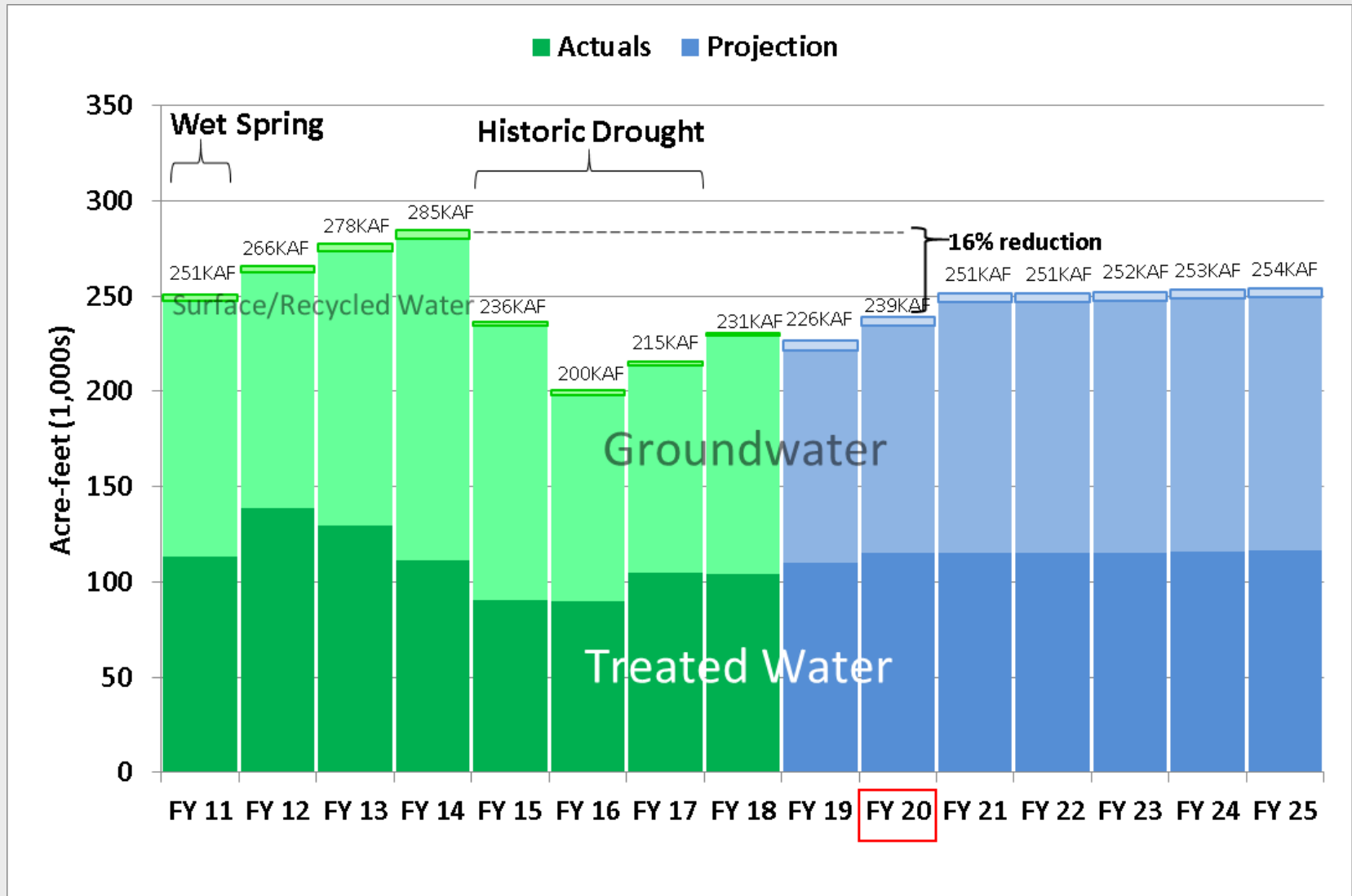
\$127.9M in FY 2028-29

- **Debt service coverage ratio targeted at 2.0 helps ensure financial stability and high credit ratings**

Cost Projection



District Managed Water Usage drives revenue projection



Note: FY 20 refers to fiscal year 2019-20

Staff Recommended Groundwater Production Charges

FY 2020: North County Proposed Maximum Charges

6.6% increase for M&I groundwater production

6.1% increase for contract treated water

6.5% increase for M&I surface water

Ag groundwater reflects max per District Act (25% of South County M&I while Board deliberates Open Space Credit Policy)

**Staff
recommendation
as of 4/8/19**

		Dollars Per Acre Foot		
		FY 2017-18	FY 2018-19	Proposed Maximum FY 2019-20
Zone W-2 (North County)				
Basic User/ Groundwater Production Charge				
	Municipal & Industrial	1,175.00	1,289.00	1,374.00
	Agricultural	25.09	27.02	120.25
Surface Water Charge				
	Surface Water Master Charge	33.36	35.93	37.50
	Total Surface Water, Municipal & Industrial*	1,208.36	1,324.93	1,411.50
	Total Surface Water, Agricultural*	58.45	62.94	157.75
Treated Water Charges				
	Contract Surcharge	100.00	100.00	100.00
	Total Treated Water Contract Charge**	1,275.00	1,389.00	1,474.00
	Non-Contract Surcharge	50.00	50.00	50.00
	Total Treated Water Non-Contract Charge***	1,225.00	1,339.00	1,424.00
* Note: The total surface water charge is the sum of the basic user charge (which equals the groundwater production charge) plus the water master charge				
** Note: The total treated water contract charge is the sum of the basic user charge (which equals the groundwater production charge) plus the contract surcharge				
*** Note: The total treated water non-contract charge is the sum of the basic user charge (which equals the groundwater production charge) plus the non-contract surcharge				

32.23

69.73

\$2.93 per month average household increase

FY 2020: South County Proposed Maximum Charges

6.9% increase for M&I groundwater production

6.7% increase for M&I surface water

7.2% increase for M&I recycled water

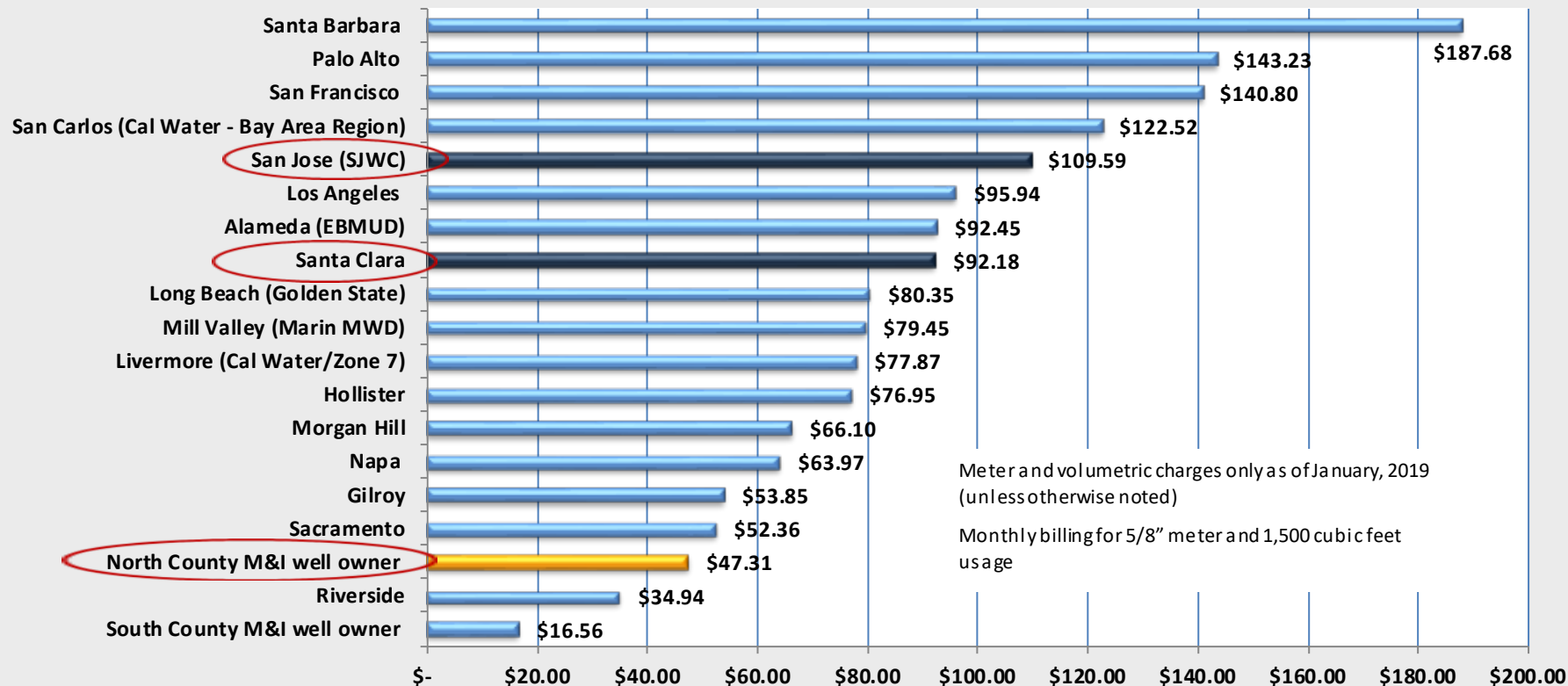
Ag groundwater reflects max per District Act (25% of South County M&I while Board deliberates Open Space Credit Policy)

**Staff
recommendation
as of 4/8/19**

		Dollars Per Acre Foot		
		FY 2017–18	FY 2018–19	Proposed Maximum FY 2019–20
Zone W-5 (South County)				
Basic User/ Groundwater Production Charge				
	Municipal & Industrial	418.00	450.00	481.00
	Agricultural	25.09	27.02	120.25
				32.23
Surface Water Charge				
	Surface Water Master Charge	33.36	35.93	37.50
	Total Surface Water, Municipal & Industrial*	451.36	485.93	518.50
	Total Surface Water, Agricultural*	58.45	62.94	157.75
				69.73
Recycled Water Charges				
	Municipal & Industrial	398.00	430.00	461.00
	Agricultural	48.88	54.41	147.64
				59.62
* Note: The total surface water charge is the sum of the basic user charge (which equals the groundwater production charge) plus the water master charge				
** Note: The total treated water contract charge is the sum of the basic user charge (which equals the groundwater production charge) plus the contract surcharge				
*** Note: The total treated water non-contract charge is the sum of the basic user charge (which equals the groundwater production charge) plus the non-contract surcharge				

\$1.07 per month average household increase

Retail Agency Benchmarks



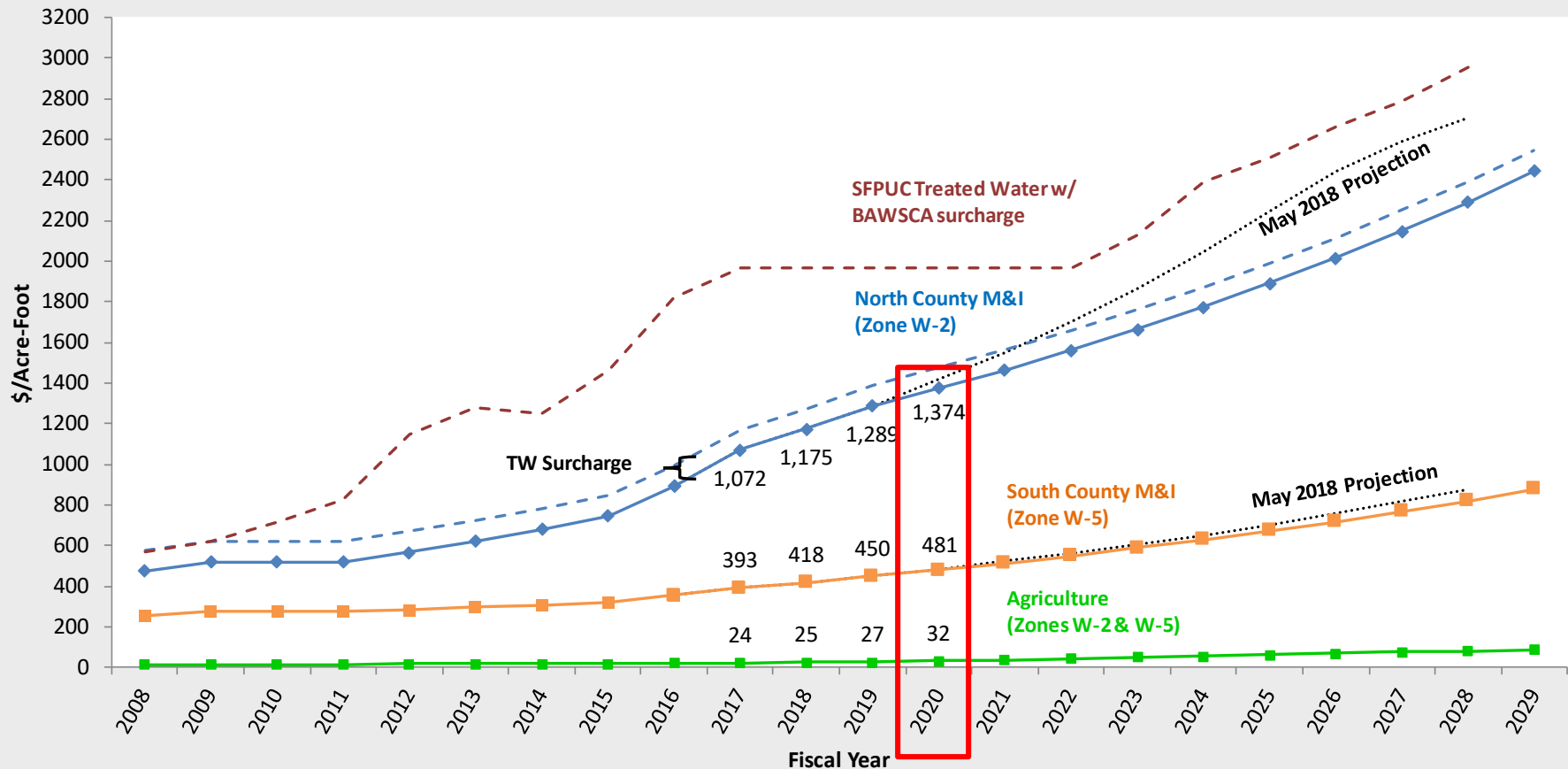
Notes:

- SCVWD retailer rates shown include staff recommended increase for FY 2019-20, but do not include increases that retailers may impose
- Well owner rates exclude pumping costs (e.g. electricity) and well maintenance costs

Groundwater Production Charge Projection

Water Utility Enterprise Fund

M&I Groundwater Charge Projection



Note: This projection does not account for impacts associated with the Bay Delta Water Quality Control Plan

Groundwater Production Charge Projection

North County M&I Groundwater Charge Y-Y Growth %

	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
May 2018	9.7%	9.7%	9.7%	9.7%	9.7%	9.7%	8.7%	5.9%	4.7%	
April 2019	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%	6.6%

South County M&I Groundwater Charge Y-Y Growth %

	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
May 2018	7.7%	7.7%	7.7%	7.7%	7.7%	7.7%	7.7%	7.7%	7.7%	
April 2019	6.9%	6.9%	6.9%	6.9%	6.9%	6.9%	6.9%	6.9%	6.9%	6.9%

Groundwater Production Charge Projection

North County Increase per Month per Avg Household*

	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
May 2018	\$4.31	\$4.72	\$5.18	\$5.68	\$6.24	\$6.84	\$6.73	\$4.96	\$4.19	
April 2019	\$2.93	\$3.12	\$3.33	\$3.55	\$3.78	\$4.03	\$4.30	\$4.58	\$4.89	\$5.21

South County Increase per Month per Avg Household*

	FY 20	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29
May 2018	\$1.19	\$1.29	\$1.38	\$1.49	\$1.61	\$1.73	\$1.86	\$2.01	\$2.16	
April 2019	\$1.07	\$1.14	\$1.22	\$1.31	\$1.40	\$1.49	\$1.60	\$1.71	\$1.82	\$1.95

* Calculated based on groundwater production charge (assumes 1,500 cubic feet of water usage per month)

State Water Project Tax Recommendation

- Staff recommends keeping the SWP tax flat at \$18M
- The SWP tax bill for the average single family residence would remain at \$27.00/year.

Impact if SWP tax not approved:

- \$92/AF in terms of North County M&I groundwater production charge
- \$19/AF in terms of South County M&I groundwater production charge
- \$523,000 in terms of Open space credit

LIMITED (PRIMARY) VALUES				PRIMARY	COMPARATIVE 2003 AMT	2004 DISTRIBUTION		OFFICE USE ONLY
TYPE	LIMITED	%	ASSESSED			RATE / 100	2004 AMT DUE	
LAND/BLDG PERSONAL EXEMPTION	76000	10.0	7600	COUNTY EDUC. EQUAL	86.57	12108	92.02	PRTKEY=MORTG
				CITY SCHOOL	33.73	04580	34.86	SEQ# 65
				CO. EDUC	339.44	44898	339.70	MTG#
				COMM. COL.	67.28	9211	70.00	LOAN#
				STATE AID	-117.58	CREDIT	-117.14	
PRIM. TOT.	76000			SUBTOTAL	408.44	70575	418.24	
FULL CASH (SECONDARY) VALUES				SECONDARY				
TYPE	FULL CASH	%	ASSESSED					
LAND/BLDG PERSONAL EXEMPTION	76000	10.0	7600	FLOOD CAWCO OVERROADS	16.10	2118	16.10	FIRST HALF TAX AMOUNT
				FIRE DIST. ASST.	9.12	1200	9.12	DUE OCT. 1, 2004
				LIBRARY	78.16	8571	72.74	DELINQUENT AFTER NOV. 1, 2004
				"BONDS"	84	0089	52	
				-COUNTY	3.96	0521	3.96	SECOND HALF TAX AMOUNT
				-CITY	5.32	12477	84.82	DUE MARCH 1, 2005
				-SCHOOLS	104.59	1181	8.82	DELINQUENT AFTER MAY 2, 2005
				-COMM COL.	10.45	27118	206.08	INTEREST ON LATE PAYMENT IS 18% PER YEAR INCREASING MONTHLY AS OF THE FIRST DAY OF THE MONTH. ARS § 42-18053
				SUBTOTAL	228.24		7.84	KEEP THIS PORTION FOR YOUR RECORDS
SEC. TOT.	76000			DIST #	7.42	1032		
SPECIAL DISTRICT (VALUE/ACRES/SQ FT) = ASSESSED				7600	10548			
HOSPITAL DISTRICT NO 1				7600	30001			
EAST VALLEY INSTITUTE TECH								
						845.10	TOTAL	\$633.16
IF NOT PAID BY DELINQUENT DATES, CALL OR WRITE FOR INTEREST AMOUNT.								

Schedule & Wrap Up

FY 2019-2020 Schedule

- ✓ Jan 8 Board Meeting: Preliminary Groundwater Charge Analysis
- ✓ Jan 16 Water Retailers Meeting: Preliminary Groundwater Charge Analysis
- ✓ Jan 23 Water Commission Meeting: Prelim Groundwater Charge Analysis

- ✓ Feb 12 Board Meeting: Review draft CIP & Budget development update
- ✓ Feb 22 Mail notice of public hearing and file PAWS report

- ✓ Mar 20 Water Retailers Meeting: FY 20 Groundwater Charge Recommendation
- Mar 26 Board Meeting: Budget development update

- ✓ Apr 2 Landscape Committee Meeting
- ✓ Apr 8 Ag Water Advisory Committee
- Apr 9 Open Public Hearing
- Apr 10 Water Commission Meeting
- Apr 11 Continue Public Hearing in South County
- Apr 15 Environmental and Water Resources Committee
- Apr 23 Conclude Public Hearing
- Apr 24-26 Board Meeting: Budget work study session

- May 14 Adopt budget & groundwater production and other water charges

- ▶ Water Retailers
- ▶ Ag Advisory
- ▶ Landscape Committee
- ▶ Public Phone Calls

Summary and Next Steps

Summary

- Groundwater Production Charge projection driven by water supply reliability investments, and infrastructure repair & replacement.
- Proposed FY 20 Groundwater Production Charge increase equates to an increase of \$2.93 per month in North County and \$1.07 per month in South County to average household

Next Steps

- Obtain Feedback from Water Commission and Environmental & Water Resources Committee
- Continue Hearing to April 11 in Morgan Hill

RESOLUTION NO. 12- 10

A RESOLUTION OF THE BOARD OF DIRECTORS OF
THE SANTA CLARA VALLEY WATER DISTRICT ADOPTING PROCEDURES
FOR THE IMPOSITION OF SURFACE WATER CHARGES

WHEREAS, pursuant to Section 4 of the District Act, the purposes of the District Act are to authorize the District to provide comprehensive water management for all beneficial uses within Santa Clara County; and

WHEREAS, Section 5(5) of the District Act authorizes District to do any and every lawful act necessary to be done that sufficient water may be available for beneficial uses within Santa Clara County; and

WHEREAS, Section 5(12) authorizes the District to make contracts and do all acts necessary for the full exercise of all powers vested in the District; and

WHEREAS, Proposition 218, adopted on November 6, 1996, added Articles XIIIC and XIID to the California Constitution which impose certain procedural and substantive requirements with respect to the imposition of certain new or increased fees and charges; and

WHEREAS, whether legally required or not, the District Board believes it to be in the best interest of the community to align its practices with respect to the imposition of surface water charges to mirror the majority protest requirements of Article XIII D, section 6 applicable to charges for water services to the extent possible; and

WHEREAS, the District Board believes it to be in the best interest of the community to record its decisions regarding implementation of the provisions relating to imposition of surface water charges and to provide the community with a guide to those decisions and how they have been made; and

NOW, THEREFORE, the Board of Directors of Santa Clara Valley Water District does hereby resolve as follows:

SECTION 1. Statement of Legislative Intent. It is the Board of Directors' intent in adopting this resolution, to adopt the notice, hearing, and majority protest procedure proceedings that are consistent, and in conformance with, Articles XIIIC and XIID of the California Constitution and with the Proposition 218 Omnibus Implementation Act and the provisions of other statutes authorizing imposition of surface water charges. To the extent that these requirements are legally required to supercede the requirements set forth in the District Act, these provisions are intended to prevail.

SECTION 2. Definitions.

- A. Record Owner.** The District will provide the required notice to the Record Owner. "Record Owner" means the record owner of the property on which the surface water use-facility is present, and the tenant(s) who are District surface water permittees liable for the payment of the surface water charge.

A Resolution of the Board of Directors of the Santa Clara Valley Water District Adopting
Procedures for the Imposition of Surface Water Charges

- B. Charge Zone.** "Charge Zone" means the District zone (i.e. Zone W-2 or Zone W-5) that a surface water user's turnout is located, which is applicable in identifying the proposed surface water charge. Surface water users that receive surface water outside of either Zone W-2 or Zone W-5 are deemed to be located in the zone to which the surface water user's turnout is most nearly located.

SECTION 3. Surface Water Charge Proceeding. The following procedures will be used:

- A. Those Subject to the charge.** The Record Owners of the existing surface use-facilities.
- B. Amount of Charge.** A formula or schedule of charges by which the customer can easily calculate the potential surface water charge will be included in the notice. The surface water charge is comprised of a basic user charge and a surface water master charge. The surface water charge must comply with the following substantive requirements:
1. Revenues derived from the surface water charge will not be used for any purpose other than that for which the charge is imposed.
 2. Revenues derived from the surface water charge will not exceed the direct and indirect costs required to provide the service.
 3. The amount of the surface water charge must not exceed the proportional cost of the service attributable to the property.
 4. No charge may be imposed for a service unless the service is actually used by, or immediately available to the property owner (or, if applicable, the tenant).
 5. No charge can be imposed for general governmental services where the service is available to the public at large in substantially the same manner as it is to property owners.
- C. Notice.** The following guidelines apply to giving notice of the surface water charge.
1. Record Owner(s) of each parcel subject to the surface water charge, meaning any parcel with a surface water use-facility, will be determined from the last equalized property tax roll. If the property tax roll indicates more than one owner, each owner will be sent the notice. District surface water permittees liable for the payment of the surface water charge will also be provided with the notice.
 2. The notice must be sent at least forty-five (45) days prior to the date set for the public hearing on the surface water charge.
 3. Failure of any person to receive the notice will not invalidate the proceedings.

A Resolution of the Board of Directors of the Santa Clara Valley Water District Adopting
Procedures for the Imposition of Surface Water Charges

D. Surface Water Charge Protest. The following guidelines apply to the surface water charge protest procedure:

1. The notice will be mailed to all affected Record Owners at least forty-five (45) days prior to the date of the public hearing on the proposed surface water charge.
2. Written protests must be forwarded to the Clerk of the Board by mail or in person, sealed in an envelope which conceals the contents, with the property address or APN written on the outside of the envelope. To be counted, protests must be received no later than the date for return of protests stated on the notice, or the close of the public hearing, whichever is later.
3. A protest must be signed under penalty of perjury. For properties with more than one Record Owner, a protest from any one surface water user-facility will count as a protest for the property. No more than one protest will be counted for any given property.
4. Only protests with original signatures will be accepted. Photocopied signatures will not be accepted. Protests will not be accepted via e-mail. Protests must be submitted in sealed envelopes identifying the property on which the surface water user-facility is located, and include the legibly printed name of the signator. Protests not submitted as required by this Resolution will not be counted.
5. This proceeding is not an election.
6. Written Protests must remain sealed until the tabulation of protests commences at the conclusion of the public hearing. A written protest may be submitted or changed by the person who submitted the protest prior to the conclusion of the public testimony on the proposed charge at the public hearing.
7. Prior to the public hearing, neither the protest nor the envelope in which it is submitted will be treated as a public record, pursuant to the Government Code section 6254(c) and any other applicable law, in order to prevent potential unwarranted invasions of the submitter's privacy and to protect the integrity of the protest process.

E. Tabulating Protests. The following guidelines apply to tabulating protests:

1. It will be the responsibility of the Clerk of the Board to determine the validity of all protests. The Clerk will accept as valid all protests except those in the following categories:
 - a. A photocopy which does not contain an original signature;
 - b. An unsigned protest;
 - c. A protest without a legible printed name;
 - d. A protest which appears to be tampered with or otherwise invalid based upon its appearance or method of delivery or other circumstances;

A Resolution of the Board of Directors of the Santa Clara Valley Water District Adopting
Procedures for the Imposition of Surface Water Charges

- e. A protest submitted to the District via e-mail;
- f. A protest submitted in an envelope that does not have the address or APN written on the outside of the envelope;
- g. A protest signed by someone other than the Record Owner for the APN.

The Clerk's decision, after consultation with the District Counsel, that a protest is invalid is final.

- 2. An impartial person, designated by the governing board, who does not have a vested interest in the outcome of the proposed charge will tabulate the written protests submitted, and not withdrawn. The impartial person may be a member of the Clerk of the Board Office.
- 3. A Record Owner who has submitted a protest may withdraw that protest at any time up until the conclusion of the final public hearing on the surface water charge.
- 4. A property owner's failure to receive notice of the surface water charge will not invalidate the proceedings conducted under this procedure.

F. Public Hearing.

- 1. At the public hearing, the District Board will hear and consider all public testimony regarding the proposed surface water charge and accept written protests until the close of the public hearing, which hearing may be continued from time to time.
- 2. The District Board may impose reasonable time limits on both the length of the entire hearing and the length of each speaker's testimony.
- 3. At the conclusion of the hearing, the Clerk of the Board, or other neutral person designated to do the tabulation will complete tabulation of the protests from Record Owners, including those received during public hearing.
- 4. If it is not possible to tabulate the protests on the same day as the public hearing, or if additional time is necessary for public testimony, the District Board may continue the public hearing to a later date to receive additional testimony, information or to finish tabulating the protests; or may close the public hearing and continue the item to a future meeting to finish tabulating the protests.
- 5. If according to the final tabulation of the protests from Record Owners, the number of protests submitted against the proposed surface water charge (or increase of the surface water charge) within a Charge Zone exceeds 50% plus one of either: (i) the identified number of parcels within that Charge Zone, or (ii) the identified number of owners and tenants who are subject to the surface water charge within that Charge Zone, then a "majority protest" exists and the District Board of Directors will not impose the surface water charge within that Charge Zone.

A Resolution of the Board of Directors of the Santa Clara Valley Water District Adopting
Procedures for the Imposition of Surface Water Charges

PASSED AND ADOPTED by the Board of Directors of Santa Clara Valley Water District by the
following vote on February 14, 2012.

AYES: Directors T. Estremera, D. Gage, J. Judge, P. Kwok, R. Santos, B. Schmidt,
L. LeZotte
NOES: Directors None
ABSENT: Directors None
ABSTAIN: Directors None

SANTA CLARA VALLEY WATER DISTRICT

By:


LINDA J. LEZOTTE
Chair/Board of Directors

ATTEST: MICHELE L. KING, CMC


Clerk/Board of Directors

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File No.: 19-0316

Agenda Date: 4/9/2019

Item No.: 3.1.

BOARD AGENDA MEMORANDUM

SUBJECT:

Notice of Completion of Contract and Acceptance of Work for the Almaden Valley Pipeline Inspection and Rehabilitation Project, Con-Quest Contractors, Inc., Contractor, Project No. 95084002, Contract No. C0631 (San Jose, Los Gatos, Unincorporated Santa Clara County) (Districts 4 and 7).

RECOMMENDATION:

- A. Accept the work as complete on the Almaden Valley Pipeline Inspection and Rehabilitation Project, Con-Quest Contractors, Inc., Contractor, Project No. 95084002, Contract No. C0631; and
- B. Direct the Clerk of the Board to sign the Notice of Completion of Contract and Acceptance of Work, and submit for recording to the County of Santa Clara Office of the Clerk-Recorder.

SUMMARY:

The construction contractor, Con-Quest Contractors, Inc., has completed the Almaden Valley Pipeline Inspection and Rehabilitation Project (Project). The construction contract was awarded in the amount of \$2,389,250 and the final contract amount is \$2,530,324.85. Subject to any withholds required by law or the contract, acceptance of the work by the Board will allow for the release of \$253,032.49 in retention to the contractor.

Project Background

The objective of the Project was to conduct inspections, maintenance and rehabilitative work on the Almaden Valley Pipeline (AVP) and Santa Teresa Force Main (STFM) as part of the District's Pipeline Maintenance Program (PMP). AVP is approximately a twelve-mile long, 72- to 78-inch diameter raw water transmission pipeline consisting of Pre-Stressed Concrete Cylinder Pipe (PCCP), Concrete Cylinder Pipe and Welded Steel Pipe. STFM is a 72-inch diameter raw water transmission pipeline made of PCCP that is approximately 1,500 feet in length.

The Project included the following elements:

1. Completely drain and remove water from the AVP and STFM.
2. Perform repairs in the raw water transmission pipeline and remove and replace appurtenances and piping at ninety-three (93) appurtenance vault sites.

3. Prepare and coat all in-vault and exposed pipeline appurtenances and associated piping assembly components on AVP.
4. Provide logistical support for and participate in the internal visual and electromagnetic inspection of the AVP and STFM by the District and its third-party consultant.
5. Provide logistical support for the installation of the Acoustic Fiber Optic monitoring system for the AVP and STFM by the District and its third-party consultant.
6. Replace existing or install new ladders, pipe markers, bollards, and hatches at appurtenance vaults.

Previous Board Actions

On August 8, 2017, the Board adopted the plans and specifications and authorized advertisement for bids for the Project.

On September 26, 2017, the Board awarded the subject contract to Con-Quest Contractors in the amount of \$2,389,250 and approved a contingency fund of \$358,000. The Board authorized the Chief Executive Officer (CEO) to approve individual change orders up to the total amount of the contingency, with the Engineering Unit Manager and Deputy Operating Officer to approve individual changes up to \$30,000 and \$50,000, respectively.

Contract Change Orders

A total of four (4) contract change orders totaling \$141,074.85 were executed for this contract to address unforeseen site conditions, District-requested changes, post-design clarifications, and credit for deleted items of work and adjustments based on final quantity measurements.

These changes included:

- A. \$25,998 for additional work required to address unforeseen site conditions. This includes work ranging from controlling and preventing groundwater intrusion at AVP Vault 59 for \$7,535 to repairing damaged mortar lining inside AVP discovered during internal inspections for \$18,463.
- B. \$56,810 for additional District-requested changes. This includes work ranging from installation of new flowmeter and piping modifications on AVP at Ross Creek Turnout for \$7,198 to electrical work to supply power to the data acquisition unit for \$37,800.
- C. \$91,757 for additional work required to address post-design clarifications. This includes work ranging from coating STFM appurtenances for \$13,114 to furnishing additional materials (ball valves, air release valves, and gaskets) to complete rehabilitation work on AVP and STFM for

\$49,938.

- D. \$33,490.15 credit for deleted items of work and adjustments based on final quantity measurements.

Table 1 presents a summary of the construction contract and contingency amounts.

**TABLE 1. SUMMARY OF CONSTRUCTION CONTRACT
AND CONTINGENCY AMOUNTS**

	Contract Amount	Contingency Amount
Original Contract	\$2,389,250.00	\$358,000.00
Change Order No. 1 (staff approved)	\$48,891.00	<\$48,891.00>
Change Order No. 2 (staff approved)	\$49,938.00	<\$49,938.00>
Change Order No. 3 (staff approved)	\$27,252.00	<\$27,252.00>
Change Order No. 4 (staff approved)	\$14,993.85	<\$14,993.85>
Final Contract Amount and Remaining Contingency	\$2,530,324.85	\$216,925.15

Acceptance of the Work and Recording Notice of Completion of Contract

The California Civil Code allows an owner or agent to execute a Notice of Completion of Contract after acceptance of the work by the Board. The Notice of Completion of Contract and Acceptance of Work is included in Attachment 1. The Designated Engineer has determined that the work has been completed, to the best of her knowledge, in accordance with the plans and specifications, and recommends acceptance. The Designated Engineer's recommendation of construction acceptance is included in Attachment 2. The Project Completion Letter is included as Attachment 3. Photos of the completed Project are included in Attachment 4. The Project Delivery Process Chart is included in Attachment 5.

Construction Contract Retention

California law requires the District to release contract retention in accordance with certain time frames, which will commence once the Notice of Completion is recorded. Interest payment on retention due to the contractor may be avoided by meeting the requisite deadlines.

The District is currently withholding retention funds totaling ten percent (10%) of the contract (\$253,032.49) in accordance with the Public Contract Code. Per the construction Contract Documents, the District is required to release retention funds associated with the contract 35 days after recording the Notice of Completion of Contract and Acceptance of Work, subject to any withholds required by law or the contract.

Project Expenditures

As indicated in the Summary of Construction Contract and Contingency Amounts (Table 1), the original contract amount of \$2,389,250.00 has been increased by \$141,074.85 to \$2,530,324.85, an increase of approximately 6 percent.

FINANCIAL IMPACT:

Total financial costs were detailed in previous sections of the agenda memorandum. The Project has been completed and no additional funding is recommended.

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: Notice of Completion and Acceptance of Work
- Attachment 2: Construction Contract Acceptance
- Attachment 3: Project Completion Letter
- Attachment 4: Construction Summary
- Attachment 5: Project Delivery Process Chart

UNCLASSIFIED MANAGER:

Katherine Oven, 408-630-3126



5750 Almaden Expressway
San Jose, CA 95118-3686
Phone: (408) 265-2600

NOTICE OF COMPLETION OF CONTRACT AND ACCEPTANCE OF WORK

NOTICE IS HEREBY GIVEN by order of the Board of Directors of Santa Clara Valley Water District, State of California, pursuant to law, that work to be performed under the contract heretofore made and executed by and between Santa Clara Valley Water District, as Owner therein, and **Con-Quest Contractors, Inc., 290 Toland Street, San Francisco, CA 94124** as Contractor therein, bearing the date **September 26, 2017** for the construction of **Almaden Valley Pipeline Inspection and Rehabilitation Project, Contract No. C0631, and Project No. 95084002** and appurtenant facilities upon lands of said District known as **Almaden Valley Pipeline** situated in the County of Santa Clara, State of California, was completed as called for and in the manner designated by the plans and specifications, by the said Contractor, and the said work was accepted by the said District Board of Directors on behalf of said District on **April 9, 2019**.

That upon said contract, **Hartford Fire Insurance Company, One Hartford Plaza, Hartford, CT 06115 (Bond No. 57BCSHP7357)** was surety on the bond given by said **Con-Quest Contractors, Inc.** the said Contractor, as required by law;

That the title of said District to the real property upon which said work and contract was performed is that of **Fee** and;

That the address of said District is 5750 Almaden Expressway, San Jose, California 95118.

IN WITNESS WHEREOF, pursuant to the order of the Board of Directors made and given on **April 9, 2019** authorizing and directing the execution of this instrument, the said District has caused these presents to be executed in its name, authenticated by the signature of the Clerk of the said Board of Directors on **April 9, 2019**.

Clerk/Board of Directors
Santa Clara Valley Water District

I, the undersigned, say that I am Clerk of the Board of Directors of the Santa Clara Valley Water District; that I make this declaration on its behalf; that said District is the owner of the real property interest described in the foregoing Notice; that declarant has read the foregoing Notice and knows the contents thereof, and the same is true of my own knowledge.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on **April 9, 2019**, at San Jose, California.

Clerk/Board of Directors
Santa Clara Valley Water District

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SANTA CLARA VALLEY WATER DISTRICT

RECOMMENDATION OF CONSTRUCTION CONTRACT ACCEPTANCE

In accordance with **Article 9.14, Final Inspection of Work**, of the contract specifications, a final inspection was conducted on November 6, 2018 for the Almaden Valley Pipeline Inspection and Rehabilitation Project, Contract No. C0631, Project No. 95084002. The Project Completion Letter dated March 14, 2019 indicates that the work was completed in accordance with the requirements of the contract.

It is recommended that the work under this contract be accepted by the District.

Recommended By:

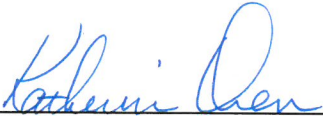


Tim Bramer, P.E.
Construction Manager
Designated Engineer's Representative

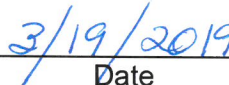


Date

Concurrence:



Katherine Owen, P.E.
Deputy Operating Officer
Water Utility Capital Division



Date

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March 14, 2019

CJ Zelnik
Con-Quest Contractors, Inc.
290 Toland Street
San Francisco, CA 94124

Subject: Almaden Valley Pipeline Inspection and Rehabilitation Project
Contract No. C0631, Project No. 95084002
Project Completion Letter

Dear Mr. Zelnik:

The District is in receipt of the Project Completion Certification, dated February 28, 2019, from Con-Quest Contractors, Inc.

In accordance with **Article 11.01.05 Project Completion**, this serves as the Project Completion Letter for the subject contract and establishes the completion of the project.

All work has been completed as attested to by the District staff and all documents required for contract closeout per **Article 11.03, Submission of Closeout Items**, have been received by the District from the Contractor.

Therefore, in accordance with **Article 11.01.06 Acceptance of Work**, I will recommend that the District Board of Directors formally accept the work of this contract.

If you have any questions, contact me at the District's Santa Teresa Office, (408) 630-3794, or by e-mail at tbramer@valleywater.org.

Sincerely,



Timothy M. Bramer, P.E.
Construction Manager
Construction Services Unit

cc: J. Crowley, B. Ching, J. Luna, N. Walker, A. Fonseca, A. Masic, T. Bramer, Contract File
am:tb
631:

Attachment 3
Page 1 of 1

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ALMADEN VALLEY PIPELINE INSPECTION AND REHABILITATION PROJECT

Notice of Completion of Construction Contract

April 9, 2019



Presentation Topics

- ▶ Project Objective and Location
- ▶ Project Construction Costs
- ▶ Construction Photos



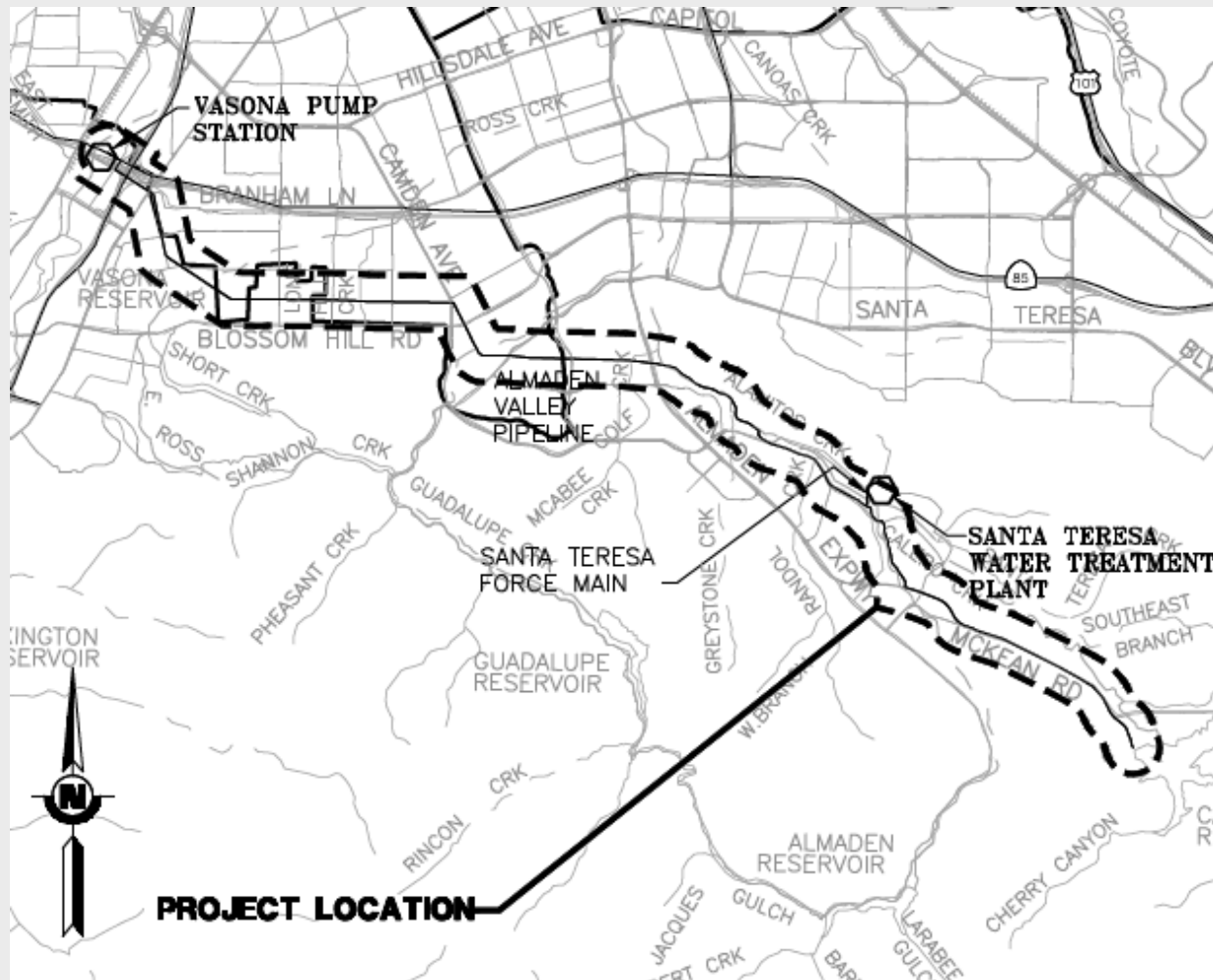
Project Objective

- ▶ The objective of the Project was to conduct inspections and rehabilitative work on the Almaden Valley Pipeline (AVP) and Santa Teresa Force Main (STFM), including:
 - ▶ Completely draining raw water from AVP and STFM.
 - ▶ Removing and replacing appurtenances and piping at 93 vault sites.
 - ▶ Coating in-vault and exposed pipeline appurtenances.
 - ▶ Providing logistical support for internal visual inspection, electromagnetic inspection, and installation of the Acoustic Fiber Optic monitoring system on AVP & STFM.



Project Location

Almaden Valley Pipeline & Santa Teresa Force Main



Santa Clara Valley
Water District



Presentation Topics

- ▶ Project Description, Objective, and Location
- ▶ Project Construction Costs
- ▶ Construction Photos



Project Costs

- ▶ Construction:
 - ▶ \$2,389,250.00 – Contract Award Amount
 - ▶ \$ 141,074.85 – Contract Change Orders
 - ▶ \$2,530,324.85 – Final Contract Amount
- (6.0% increase)

Presentation Topics

- ▶ Project Description, Objective, and Location
- ▶ Project Construction Costs
- ▶ Construction Photos



Construction Photos

Dewatering Activities



Santa Clara Valley
Water District



Construction Photos

Replacement of Air Relief Valve Assemblies



Santa Clara Valley
Water District



Construction Photos

Installation of Precast Vault Extension with Steel Hatch Lid



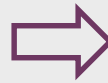
Santa Clara Valley
Water District



Attachment 4
Page 10 of 13

Construction Photos

Replacement of Concrete Vault and Piping at Turnout



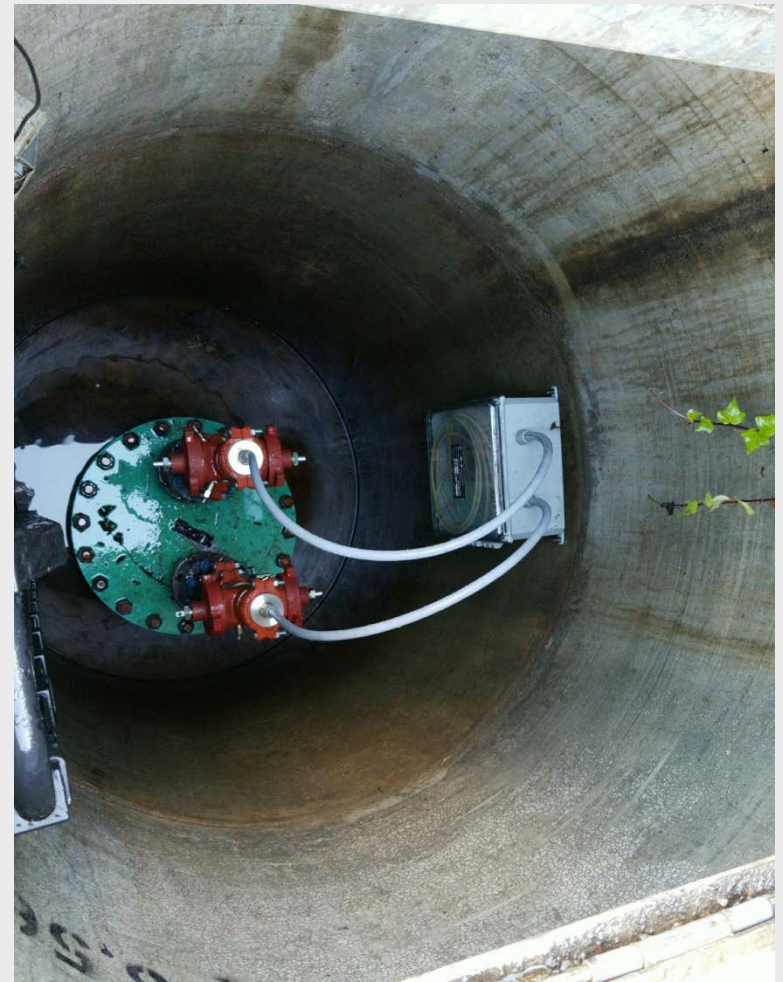
Santa Clara Valley
Water District

Attachment 4
Page 11 of 13



Construction Photos

Acoustic Fiber Optic Stack Assemblies at Splice Points



Santa Clara Valley
Water District



Attachment 4
Page 12 of 13

Construction Photos

Precast Vault Extension and New Steel Vault Cover



Santa Clara Valley
Water District

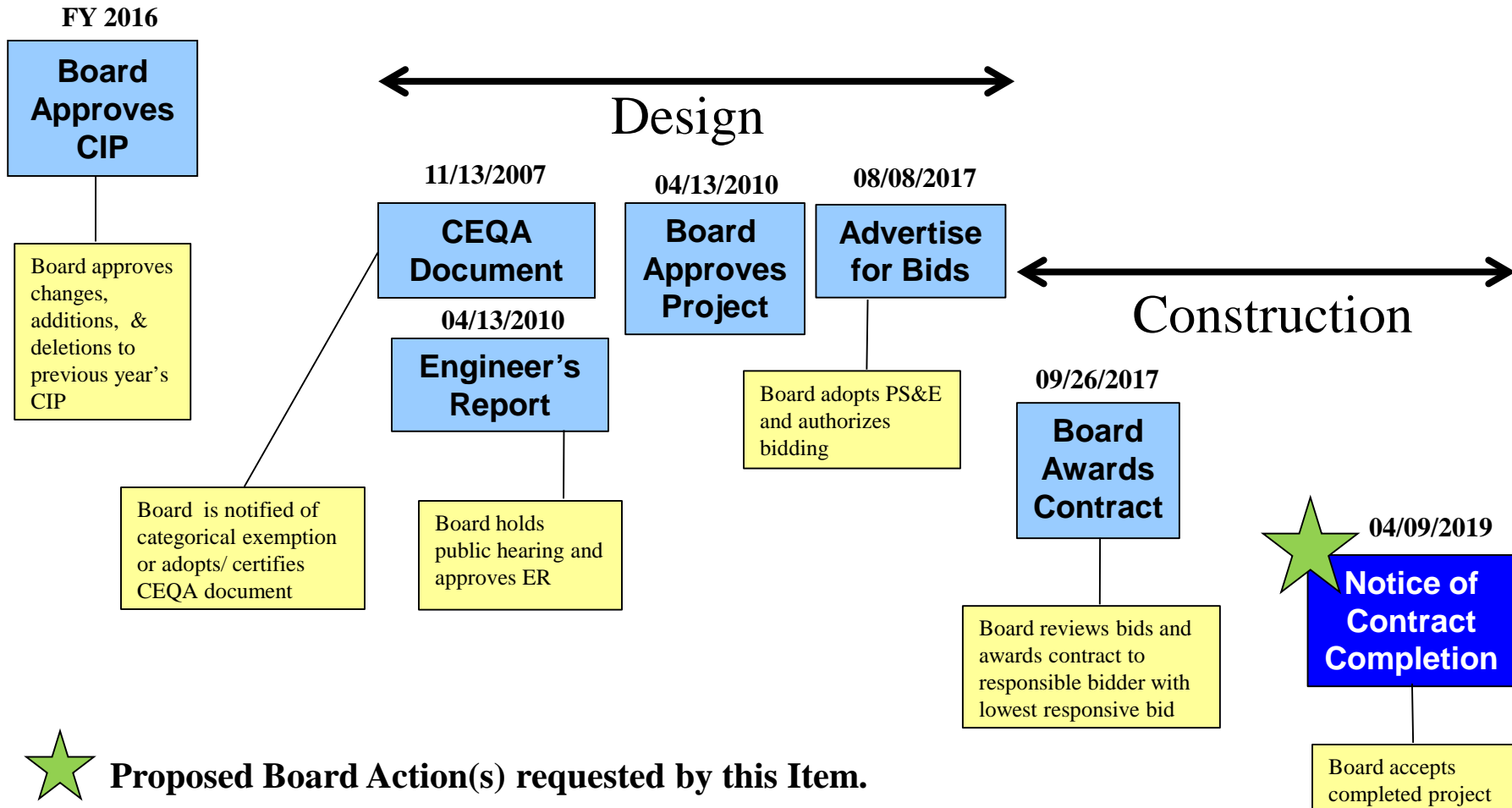


Attachment 4
Page 13 of 13

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Project Delivery Process

Almaden Valley Pipeline Inspection and Rehabilitation Project – Project No. 95084002, Contract No. C0631



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File No.: 19-0317

Agenda Date: 4/9/2019

Item No.: 3.2.

BOARD AGENDA MEMORANDUM

SUBJECT:

Notice of Completion of Contract and Acceptance of Work for the Almaden Valley Pipeline Emergency Response Support Project, Con-Quest Contractors, Inc., Contractor, Project No. 95084002, Contract No. C0640 (San Jose, Unincorporated Santa Clara County) (Districts 4 and 7).

RECOMMENDATION:

- A. Accept the work as complete on the Almaden Valley Pipeline Emergency Response Support Project, Con-Quest Contractors, Inc., Contractor, Project No. 95084002, Contract No. C0640; and
- B. Direct the Clerk of the Board to sign the Notice of Completion of Contract and Acceptance of Work, and submit for recording to the County of Santa Clara Office of the Clerk-Recorder.

SUMMARY:

The construction contractor, Con-Quest Contractors, Inc., has completed the Almaden Valley Pipeline Emergency Response Support Project (Project). The construction contract was awarded in the amount of \$1,000,000 and the final contract amount is \$689,379. Subject to any withholds required by law or the contract, acceptance of the work by the Board will allow for the release of \$34,468.95 in retention to the contractor.

Project Background

As part of the 10-Year Pipeline Inspection and Rehabilitation Program, Almaden Valley Pipeline (AVP) inspection activities were performed on November 21-22, 2017, when several significantly-distressed Prestressed Concrete Cylinder Pipe (PCCP) sections were identified on AVP between Santa Teresa Force Main and Calero Reservoir. The District could not return AVP to operation until the distressed pipe sections were repaired.

On December 5, 2017, the CEO declared that the condition of AVP constituted an emergency condition, pursuant to California Public Contract Code §22050, which enabled timely procurement of necessary construction contract services, and other public works and non-professional services, supplies and essential equipment, without a competitive procurement process, in order to attend to the emergency condition.

Pursuant to the Public Contracting Code §22050 and the emergency declaration by the CEO, District

staff awarded a sole source construction contract to support the emergency response to Con-Quest Contractors, Inc. The CEO executed Contract C0640, Almaden Valley Pipeline Emergency Response Support on April 27, 2018.

The objective of the Project was to provide various construction support activities necessary to promptly repair AVP to a safe and reliable service level to meet minimum water supply demands and the District's contractual obligation for water deliveries.

The Project included the following elements:

1. Exploratory excavation to expose buried pipe sections along AVP to support District's investigation to determine condition of existing pipes.
2. Site support for District's third-party Carbon Fiber Reinforced Polymer (CFRP) contractor by providing traffic control, groundwater and pipeline dewatering efforts, installation and removal of temporary sound panels for noise control, and miscellaneous support services as directed by the District.
3. Development, maintenance, and demobilization of staging area and repair areas at various locations to support District's third-party CFRP contractor, including installation and removal of temporary fencing, power, lighting, and sanitary facilities.
4. Environmental compliance measures including biological monitoring services and installation and maintenance of stormwater best management practices measures.

Previous Board Actions

On December 12, 2017, the Board voted to continue the emergency action declared by the CEO on December 5, 2017, pursuant to California Public Contract Code §22050, to repair the AVP.

Subsequently, the emergency action declaration was continued by the Board on the following Board meeting dates: January 9, 2018, January 23, 2018, February 13, 2018, February 27, 2018, March 13, 2018, March 27, 2018, April 10, 2018 and April 24, 2018.

On May 8, 2018, with the completion of emergency repair work, the Board received an update on the termination of the emergency action declared by the CEO on December 5, 2017.

Contract Change Orders

A total of one (1) contract change order was executed for this contract. This contract change order resulted in a credit and a decrease to the original contract amount by \$310,621. As a result, the original contract amount was decreased from \$1,000,000 to \$689,379 - a decrease of approximately 31 percent.

The change order included credits for bid item adjustments based on actual work performed.

Table 1 presents a summary of the construction contract amount.

TABLE 1. SUMMARY OF CONSTRUCTION CONTRACT

	Contract Amount
Original Contract	\$1,000,000.00
Change Order No. 1 (staff approved)	<\$310,621.00>
Final Contract Amount	\$689,379.00

Acceptance of the Work and Recording Notice of Completion of Contract

The California Civil Code allows an owner or agent to execute a Notice of Completion of Contract after acceptance of the work by the Board. The Notice of Completion of Contract and Acceptance of Work is included in Attachment 1. The Designated Engineer has determined that the work has been completed to the best of her knowledge, in accordance with the contract documents, and recommends acceptance. The Designated Engineer's recommendation of construction acceptance is included in Attachment 2. The Project Completion Letter is included as Attachment 3. Photos of the completed Project are included in Attachment 4. The Project Delivery Process Chart is included in Attachment 5.

Construction Contract Retention

California law requires the District to release contract retention in accordance with certain time frames, which will commence once the Notice of Completion is recorded. Interest payment on retention due to the contractor may be avoided by meeting the requisite deadlines.

The District is currently withholding retention funds totaling five percent (5%) of the contract (\$34,468.95) in accordance with the Public Contract Code. Per the construction Contract Documents, the District is required to release retention funds associated with the contract 35 days after recording the Notice of Completion of Contract and Acceptance of Work, subject to any withholds required by law or the contract.

Project Expenditures

As indicated in the Summary of Construction Contract and Contingency Amounts (Table 1), the original contract amount of \$1,000,000 has been decreased by \$310,621 to \$689,379, a decrease of approximately 31 percent.

FINANCIAL IMPACT:

Total financial costs were detailed in previous sections of the agenda memorandum. The Project has

been completed and no additional funding is recommended.

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: Notice of Completion and Acceptance of Work
- Attachment 2: Construction Contract Acceptance
- Attachment 3: Project Completion Letter
- Attachment 4: Construction Summary
- Attachment 5: Project Delivery Process Chart

UNCLASSIFIED MANAGER:

Katherine Oven, 408-630-3126



5750 Almaden Expressway
San Jose, CA 95118-3686
Phone: (408) 265-2600

NOTICE OF COMPLETION OF CONTRACT AND ACCEPTANCE OF WORK

NOTICE IS HEREBY GIVEN by order of the Board of Directors of Santa Clara Valley Water District, State of California, pursuant to law, that work to be performed under the contract heretofore made and executed by and between Santa Clara Valley Water District, as Owner therein, and **Con-Quest Contractors, Inc., 290 Toland Street, San Francisco, CA 94124** as Contractor therein, bearing the date **December 4, 2017** for the construction of **Almaden Valley Pipeline Emergency Response Support, Contract No. C0640, and Project No. 95084002** and appurtenant facilities upon lands of said District known as **Almaden Valley Pipeline** situated in the County of Santa Clara, State of California, was completed as called for and in the manner designated by the plans and specifications, by the said Contractor, and the said work was accepted by the said District Board of Directors on behalf of said District on **April 9, 2019**.

That upon said contract, **Hartford Fire Insurance Company, One Hartford Plaza, Hartford, CT 06115 (Bond No. 57BCSHQ8286)** was surety on the bond given by said **Con-Quest Contractors, Inc.** the said Contractor, as required by law;

That the title of said District to the real property upon which said work and contract was performed is that of **Fee** and;

That the address of said District is 5750 Almaden Expressway, San Jose, California 95118.

IN WITNESS WHEREOF, pursuant to the order of the Board of Directors made and given on **April 9, 2019** authorizing and directing the execution of this instrument, the said District has caused these presents to be executed in its name, authenticated by the signature of the Clerk of the said Board of Directors on **April 9, 2019**.

Clerk/Board of Directors
Santa Clara Valley Water District

I, the undersigned, say that I am Clerk of the Board of Directors of the Santa Clara Valley Water District; that I make this declaration on its behalf; that said District is the owner of the real property interest described in the foregoing Notice; that declarant has read the foregoing Notice and knows the contents thereof, and the same is true of my own knowledge.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on **April 9, 2019**, at San Jose, California.

Clerk/Board of Directors
Santa Clara Valley Water District

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SANTA CLARA VALLEY WATER DISTRICT

RECOMMENDATION OF CONSTRUCTION CONTRACT ACCEPTANCE

In accordance with **Article 9.14, Final Inspection of Work**, of the contract specifications, a final inspection was conducted on September 28, 2018 for the Almaden Valley Pipeline Emergency Response Support, Contract No. C0640, Project No. 95084002. The Project Completion Letter dated March 7, 2019 indicates that the work was completed in accordance with the requirements of the contract.

It is recommended that the work under this contract be accepted by the District.

Recommended By:

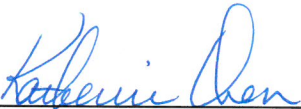


Tim Bramer, P.E.
Construction Manager
Designated Engineer's Representative



Date

Concurrence:



Katherine Owen, P.E.
Deputy Operating Officer
Water Utility Capital Division



Date

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March 7, 2019

CJ Zelnik
Con-Quest Contractors, Inc.
290 Toland Street
San Francisco, CA 94124

Subject: Almaden Valley Pipeline Emergency Response Support Project
Contract No. C0640, Project No. 95084002
Project Completion Letter

Dear Mr. Zelnik:

The District is in receipt of the Project Completion Certification, dated February 28, 2019, from Con-Quest Contractors, Inc.

In accordance with **Article 11.01.05 Project Completion**, this serves as the Project Completion Letter for the subject contract and establishes the completion of the project.

All work has been completed as attested to by the District staff and all documents required for contract closeout per **Article 11.03, Submission of Closeout Items**, have been received by the District from the Contractor.

Therefore, in accordance with **Article 11.01.06 Acceptance of Work**, I will recommend that the District Board of Directors formally accept the work of this contract.

If you have any questions, contact me at the District's Santa Teresa Office, (408) 630-3794, or by e-mail at tbramer@valleywater.org.

Sincerely,



Timothy M. Bramer, P.E.
Construction Manager
Construction Services Unit

cc: J. Crowley, B. Ching, J. Luna, N. Walker, A. Fonseca, A. Masic, T. Bramer, Contract File
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Attachment 3
Page 1 of 1



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ALMADEN VALLEY PIPELINE EMERGENCY RESPONSE SUPPORT PROJECT

Notice of Completion of Construction Contract

April 9, 2019



Presentation Topics

- ▶ Project Objective and Location
- ▶ Project Construction Costs
- ▶ Construction Photos



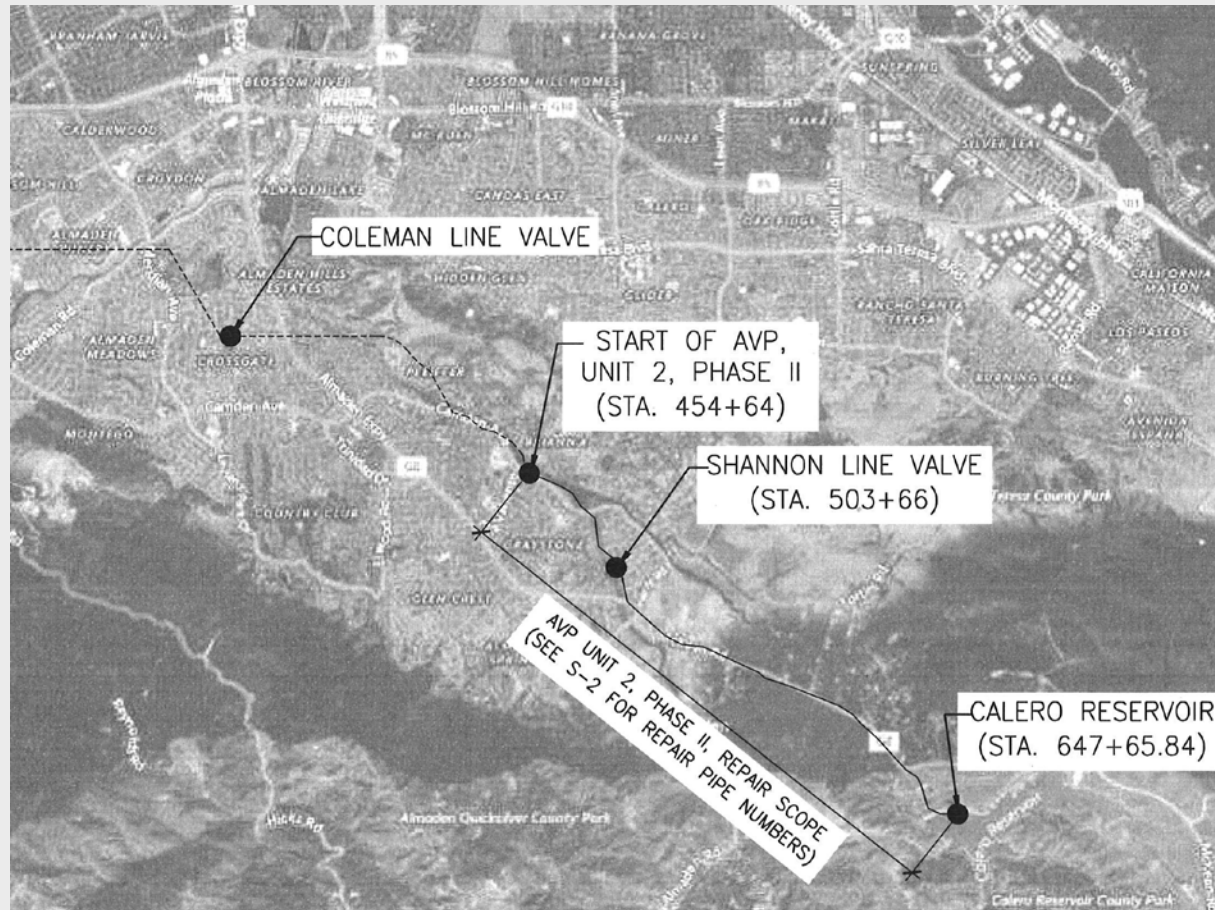
Project Objective

The objective of this Project was to provide necessary emergency construction support to promptly repair Almaden Valley Pipeline (AVP) to a safe and reliable service, including:

- ▶ Exploratory excavation to expose multiple buried pipe sections along AVP.
- ▶ Site support, including traffic control, groundwater and pipeline dewatering, installation of temporary sound panels for noise control, and miscellaneous services.
- ▶ Development and relocation of staging and work areas, including installation of temporary fencing, providing temporary power, lighting, and sanitary facilities.
- ▶ Environmental compliance measures including biological monitoring services and installation and maintenance of storm water best management practice.



Almaden Valley Pipeline – Santa Clara County



Presentation Topics

- ▶ Project Description, Objective, and Location
- ▶ Project Construction Costs
- ▶ Construction Photos



Project Costs

- ▶ Construction:
 - ▶ \$1,000,000 – Contract Award Amount
 - ▶ <\$310,621> – Contract Change Order
 - ▶ \$689,379 – Final Contract Amount
(31% decrease)



Presentation Topics

- ▶ Project Description, Objective, and Location
- ▶ Project Construction Costs
- ▶ Construction Photos



Construction Photos



Establishing staging area.



Installation of sound panels and temporary power.



Construction Photos



Exploratory excavation to expose buried pipe sections along AVP.



Construction Photos



Installation of shoring system for external pipe repair on AVP.



Construction Photos



Installation of water desilting tanks for dewatering operations.



Construction Photos

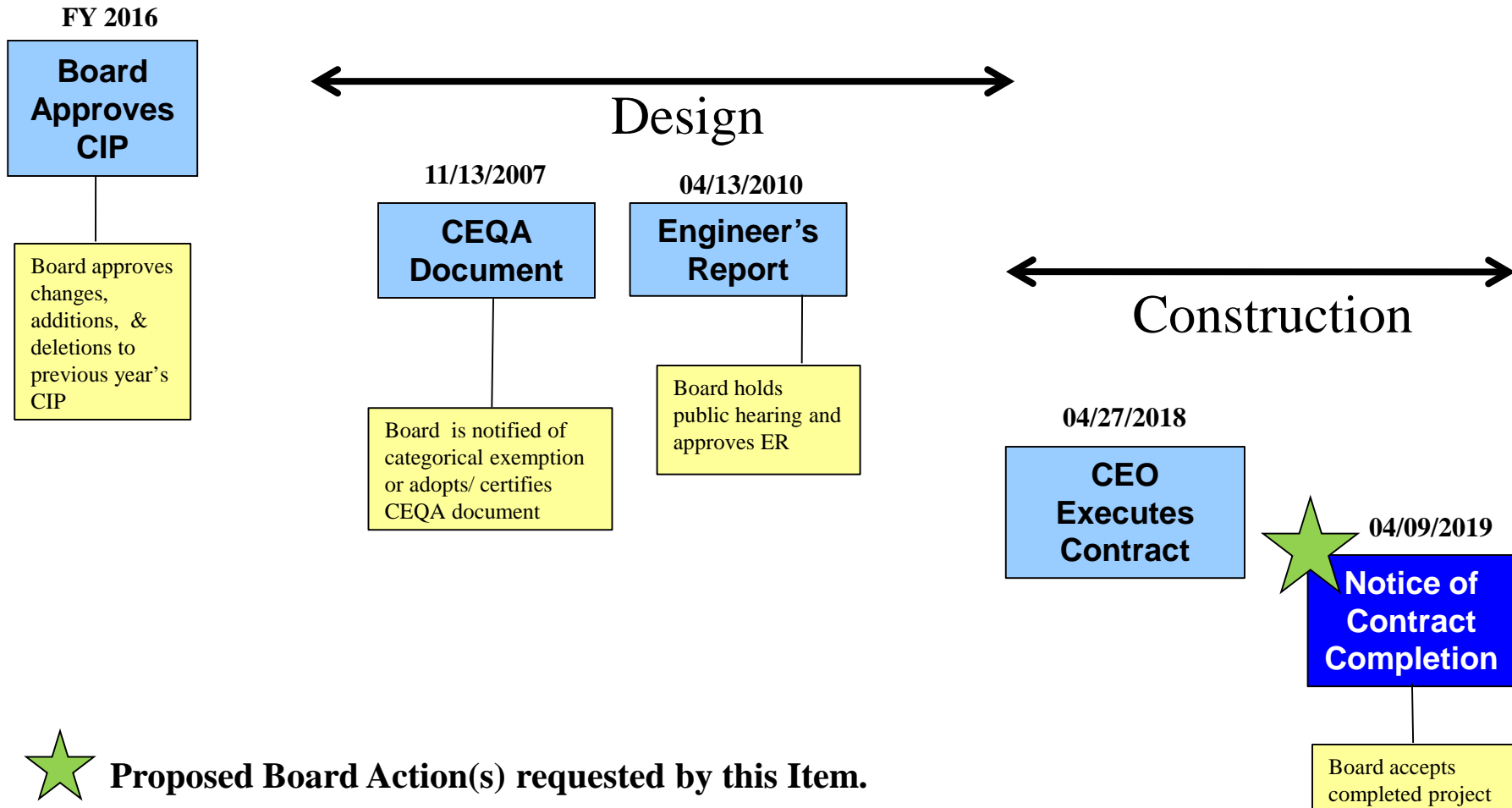


Additional exploratory excavation along different pipe segments of AVP.



Project Delivery Process

Almaden Valley Pipeline Emergency Response Support – Project No. 95084002



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File No.: 19-0319

Agenda Date: 4/9/2019
Item No.: 3.3.

BOARD AGENDA MEMORANDUM

SUBJECT:

Budget Adjustment, Increase to the Construction Contract Contingency Sum, and Notice of Completion of Contract and Acceptance of Work for the Permanente Creek Flood Protection Project - Permanente Creek Channel Improvements, Robert A. Bothman Construction, Inc., Contractor, Project No. 26244001, Contract No. C0625 (Mountain View, Los Altos) (District 7).

RECOMMENDATION:

- A. Approve a budget adjustment transferring an amount of \$708,223.83 from Fund 26 Operating and Capital Reserves to the Permanente Creek Flood Protection Project, Project No. 26244001, Fund 26;
- B. Approve an increase of \$108,223.83 to the construction contract contingency sum for the Permanente Creek Flood Protection Project - Permanente Creek Channel Improvements;
- C. Accept the work as complete for the Permanente Creek Flood Protection Project - Permanente Creek Channel Improvements, Robert A. Bothman Construction, Inc., Contractor, Project No. 26244001, Contract No. C0625; and
- D. Direct the Clerk of the Board to sign the Notice of Completion of Contract and Acceptance of Work and submit for recording to the County of Santa Clara Office of the Clerk-Recorder.

SUMMARY:

The construction contractor, Robert A. Bothman Construction, has completed the Permanente Creek Flood Protection Project - Permanente Creek Channel Improvements. The construction contract was awarded in the amount of \$7,027,917 and upon approval of the recommended actions, the final contract amount will be \$7,836,140.83. Subject to any withholds required by law or the contract, acceptance of the work by the Board will allow for the release of \$391,807.04 in retention to the contractor.

The objective of the Permanente Creek Flood Protection Project is to construct channel improvements in certain reaches of Permanente Creek and Hale Creek to contain the 100-year flow. This Channel Improvements Project (Project) is one of three sub-projects that are comprised of the Permanente Creek Flood Protection Project. Approximately 2,200 parcels in the surrounding area will be provided flood protection upon the completion of the three projects. The remaining two projects, Rancho San Antonio Detention Basin and McKelvey Park Detention Basin, are in progress.

The Permanente Creek Channel Improvements Project includes the following elements:

- Constructing 1,335 linear feet of floodwalls and raising 500 linear feet of levee.
- Constructing 1,815 linear feet of concrete U-shaped channels.
- Installation of a concrete double cell box culvert at Mountain View Avenue.
- Installation of an overflow weir wall into the McKelvey Park detention basin.

Previous Board Actions

On February 28, 2017, the Board adopted the plans and specifications and authorized advertisement for bids for the construction of the Project.

On May 23, 2017, the Board awarded the subject contract to Robert A. Bothman Construction in the amount of \$7,027,917 and approved a contingency fund of \$700,000. The Board authorized the Chief Executive Officer (CEO) or designee to approve individual change orders up to the total amount of the contingency, with the Engineering Unit Manager and Deputy Operating Officer to approve individual changes up to \$100,000 and \$250,000, respectively.

Contract Change Orders

A total of seven (7) contract change orders totaling \$689,884.08 were executed to date for this contract to address various issues, including unforeseen site conditions and utilities, District-requested changes, neighborhood concerns, post-design clarifications, and credits to the contract.

These changes included:

- A. \$184,263.05 for additional work required to address unforeseen site conditions and utilities. This includes work ranging from relocating an irrigation mainline for \$14,728 to demolishing a larger concrete channel slab thickness for \$44,927.
- B. \$405,241.09 for additional District-requested changes. This includes work ranging from providing additional reinforcement around fence post pockets for \$11,854.50 to raising the new levee height for \$92,331.
- C. \$74,884.84 for neighborhood concerns. This includes work ranging from installing noise blankets along adjacent properties for \$14,085 to relocating an access ramp for \$18,559.
- D. \$71,179.15 for additional work required to address post-design clarifications. This includes work ranging from revising the new headwall detail for \$7,358 to revising the Arroyo Road ramp wall design for \$24,455.
- E. \$45,684.05 credit for deleted items of work and adjustments based on final quantity

measurements.

A final contract change order in the amount of \$118,339.75 has been negotiated by staff. However, insufficient funds remain in the contingency sum to execute the change order. Staff is recommending the Board approve an increase to the contingency fund in the amount of \$108,223.83, which will enable staff to execute the final contract change order. If the Board approves the contingency increase, the total number of staff-approved change orders will increase to eight (8), resulting in an increase to the contract amount of \$808,223.83.

Table 1 presents a summary of the construction contract and contingency amounts as well as a breakdown of the recommended increase to the contingency sum and proposed final contract change order.

**TABLE 1. SUMMARY OF CONSTRUCTION CONTRACT
AND CONTINGENCY AMOUNTS**

	Contract Amount	Contingency Amount
Original Contract	\$7,027,917.00	\$700,000.00
Change Order No. 1 (staff approved)	\$93,231.55	<\$93,231.55>
Change Order No. 2 (staff approved)	\$105,803.58	<\$105,803.58>
Change Order No. 3 (staff approved)	\$160,840.14	<\$160,840.14>
Change Order No. 4 (staff approved)	\$44,926.80	<\$44,926.80>
Change Order No. 5 (staff approved)	\$100,408.83	<\$100,408.83>
Change Order No. 6 (staff approved)	\$104,673.18	<\$104,673.18>
Change Order No. 7 (staff approved)	\$80,000.00	<\$80,000.00>
Current Contract Amount and Remaining Contingency	\$7,717,801.08	\$10,115.92
Contingency Amount Increase (Pending Board approval)		\$108,223.83
Change Order No. 8 (Pending staff approval)	\$118,339.75	<\$118,339.75>
Proposed Final Contract Amount and Remaining Contingency	\$7,836,140.83	\$0.00

Increase in Construction Contingency

As part of the contract, the District received two Notice of Potential Claims from the Contractor in the amount of \$112,264, which were resolved in the negotiated change orders. Additionally, minor site work and resolution of several items were required at the end of the contract.

There are insufficient funds remaining in the contingency sum to execute the proposed final change order. Staff recommends the Board approve an increase to the contingency sum for the Project in the amount of \$108,223.83 to allow staff to execute the final contract change order. The additional contingency amount will result in a total contingency of \$808,223.83 or approximately 12 percent

(12%) of the original contract.

Acceptance of the Work and Recording Notice of Completion of Contract

The California Civil Code allows an owner or agent to execute a Notice of Completion of Contract after acceptance of the work by the Board. The Notice of Completion of Contract and Acceptance of Work is included in Attachment 1. The Designated Engineer has determined that the work has been completed, to the best of his knowledge, in accordance with the plans and specifications, and recommends acceptance. The Designated Engineer's recommendation of construction acceptance is included in Attachment 2. The Project Completion Letter is included as Attachment 3. Photos of the completed Project are included in Attachment 4.

Construction Contract Retention

California law requires the District to release contract retention in accordance with certain time frames, which will commence once the Notice of Completion is recorded. Interest payment on retention due to the contractor may be avoided by meeting the requisite deadlines.

The District is currently withholding retention funds totaling five percent (5%) of the contract amount in accordance with the Public Contract Code. Per the construction contract documents, the District is required to release retention funds associated with the contract 35 days after recording the Notice of Completion of Contract and Acceptance of Work, subject to any withholds required by law or the contract.

Total Project Expenditures

As indicated in the Summary of Construction Contract and Contingency Amounts (Table 1), upon Board approval of the recommended actions, the original contract amount of \$7,027,917 will be increased by \$808,223.83 to \$7,836,140.83, an increase of approximately 12 percent.

Additional Labor, Services and Supplies Costs

In addition to the \$108,223.83 increase to the contingency sum, staff recommends an additional \$600,000 to be added to the overall Permanente Creek Flood Protection Project budget for FY19. Due to the complexities and unforeseen challenges from all three elements of the Permanente Creek Project, there has been a large unanticipated increase to the labor, services and supplies cost. For example, extensive community coordination was required from design, construction, and communication staff during construction of the channel improvements and McKelvey Park Detention Basin which occurred within an urban neighborhood. Also, the projects required an unanticipated level of special inspection by independent outside firms for concrete structures and large soldier pile installations. Finally, the delay from the sensitive discovery at Rancho San Antonio Detention Basin has required the mitigation plants to be regrown multiple times in special nurseries.

FINANCIAL IMPACT:

As indicated in the Summary of Construction Contract and Contingency Amounts (Table 1), the original contract amount was \$7,027,917. The proposed final Contract Change Order No. 8 would increase the total contract amount to \$7,836,140.83 by utilizing the original Board-approved contingency sum of \$700,000 plus the recommended increase of \$108,223.83.

To fund the increase to the contingency sum, a budget adjustment in the amount of \$108,223.83 is required to execute the final Contract Change Order No. 8 for the Channel Improvements Project. An additional \$600,000 is recommended to be included in the budget adjustment to cover unanticipated labor, services and supplies costs for the overall Permanente Creek Project. This increase to the total project cost has been incorporated into the FY 2020-24 CIP that will be presented to the Board in May.

Approval of Recommendations A and B would require a FY19 Budget Adjustment transferring \$708,223.83 from Fund 26 Operating and Capital Reserves to the Permanente Creek Flood Protection Project, Project No. 26244001, Fund 26.

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: Notice of Completion and Acceptance of Work
- Attachment 2: Construction Contract Acceptance
- Attachment 3: Project Completion Letter
- Attachment 4: Construction Summary
- Attachment 5: Project Delivery Process Chart

UNCLASSIFIED MANAGER:

Ngoc Nguyen, 408-630-2632



5750 Almaden Expressway
San Jose, CA 95118-3686
Phone: (408) 265-2600

NOTICE OF COMPLETION OF CONTRACT AND ACCEPTANCE OF WORK

NOTICE IS HEREBY GIVEN by order of the Board of Directors of Santa Clara Valley Water District, State of California, pursuant to law, that work to be performed under the contract heretofore made and executed by and between Santa Clara Valley Water District, as Owner therein, and **Robert A. Bothman Construction, 2690 Scott Blvd, Santa Clara, CA, 95050** as Contractor therein, bearing the date **May 23, 2017** for the construction of **Permanente Creek Flood Protection Project (Permanente Creek Channel Improvements) Contract No. C0625, and Project No. 26244001** and appurtenant facilities upon lands of said District known as **Permanente Creek and Hale Creek along reaches from north of Amphitheater Parkway to Route US 101 and from Mountain View Avenue to Arroyo Road** situated in the County of Santa Clara, State of California, was completed as called for and in the manner designated by the plans and specifications, by the said Contractor, and the said work was accepted by the said District Board of Directors on behalf of said District on **April 9, 2019**.

That upon said contract, **Liberty Mutual Insurance Company, 175 Berkeley Street, Boston, MA 02117 (Bond No. 070024800)** was surety on the bond given by said **Robert A. Bothman Construction** the said Contractor, as required by law;

That the title of said District to the real property upon which said work and contract was performed is that of **Fee** and;

That the address of said District is 5750 Almaden Expressway, San Jose, California 95118.

IN WITNESS WHEREOF, pursuant to the order of the Board of Directors made and given on **April 9, 2019** authorizing and directing the execution of this instrument, the said District has caused these presents to be executed in its name, authenticated by the signature of the Clerk of the said Board of Directors on **April 9, 2019**.

Clerk/Board of Directors
Santa Clara Valley Water District

I, the undersigned, say that I am Clerk of the Board of Directors of the Santa Clara Valley Water District; that I make this declaration on its behalf; that said District is the owner of the real property interest described in the foregoing Notice; that declarant has read the foregoing Notice and knows the contents thereof, and the same is true of my own knowledge.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on **April 9, 2019**, at San Jose, California.

Clerk/Board of Directors
Santa Clara Valley Water District

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SANTA CLARA VALLEY WATER DISTRICT

RECOMMENDATION OF CONSTRUCTION CONTRACT ACCEPTANCE

In accordance with **Article 9.10, Final Inspection and Acceptance of Work**, of the contract specifications, a final inspection was conducted on December 4, 2018 for the Construction Phase (Milestone 1) of the Permanente Creek Flood Protection Project (Permanente Creek Channel Improvements) Contract No. C0625, Project No. 26244001. The Project Completion Letter dated March 18, 2019 indicates that the work was completed in accordance with the requirements of the contract.

It is recommended that the work under this contract be accepted by the District.

Recommended By:

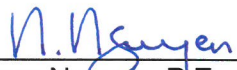


Brandon Ponce, P.E.
Senior Civil Engineer
Designated Engineer's Representative

3-18-19

Date

Concurrence:



Ngoc Nguyen, P.E.
Deputy Operating Officer
Watersheds Design and Construction Division

03/19/19

Date

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March 18, 2019

Mr. Sven Mayer,
Robert A. Bothman, Inc.
2690 Scott Blvd.
Santa Clara, CA 95050

Subject: Permanente Creek Flood Protection Project – Permanente Creek
Channel Improvements, Contract No. C0625, Project No. 26244001
Project Completion Letter

Dear Mr. Mayer:

In accordance with **Article 21.01.05 Project Completion**, this serves as the Project Completion Letter for the subject contract and established the completion of the project.

A Final Inspection for the subject project was performed on December 4, 2018. Completion of all Deficiency List items has been attested to by District staff.

The District is in receipt of the Project Completion Certification, dated March 18, 2019, from Robert A. Bothman Construction.

Therefore, in accordance with **Article 21.01.06 Acceptance of Work**, I will recommend that the District Board of Directors formally accept the work of this contract.

If you have any questions, contact me at the District's Santa Teresa Building (408) 630-2787 or by e-mail at bponce@valleywater.org.

Sincerely,



Brandon Ponce, P.E.
Senior Civil Engineer
Construction Services Unit

cc: S. Hosseini, L. Nishijima, M. Hussaini, T. Bramer, B. Ponce, N. Bullock, T. Crites, A. Shelopal,
Contract File

as:bp
625:L10872

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Permanente Creek Flood Protection Project (Permanente Creek Channel Improvements)

Notice of Completion of Construction Contract

April 9, 2019



Presentation Topics

- ▶ Project Description, Objective, and Location
- ▶ Project Construction Costs
- ▶ Construction Photos



Project Objective

The objective of the Permanente Creek Channel Improvements Project is to:

- Provide channel improvements in certain reaches of Permanente Creek and Hale Creek to contain the 100-year flow;



Project Description

The Project included the following major items of work:

- ▶ Raising 500 linear feet of levee;
- ▶ Constructing 1,335 linear feet of floodwalls;
- ▶ Deepening and enlarging 1,815 linear feet of existing concrete channel on Permanente and Hale Creek.
- ▶ Replacing the Hale Creek Mountain View concrete culvert with a larger double cell concrete culvert;
- ▶ Filling a dry swale area and replacing a pathway downstream of Amphitheater Parkway.

Project Location

Permanente and Hale Creek – Mountain View, Los Altos, CA



Santa Clara Valley
Water District



Presentation Topics

- ▶ Project Description, Objective, and Location
- ▶ Project Construction Costs
- ▶ Construction Photos



Project Costs

- ▶ Construction:

- ▶ \$7,027,917.00 – Contract Award Amount

- ▶ \$ 808,223.83 – Contract Change Orders

- ▶ \$7,836,140.83 – Final Contract Amount

(12% increase)

- ▶ Funding Source:

- ▶ Watershed Stream Stewardship Fund – Safe, Clean Water Fund



Presentation Topics

- ▶ Project Description, Objective, and Location
- ▶ Project Construction Costs
- ▶ Construction Photos



Construction Photos - Progression



BEFORE



Raised Levee North of Amphitheater Parkway



AFTER

Santa Clara Valley
Water District



Attachment 4
Page 9 of 15

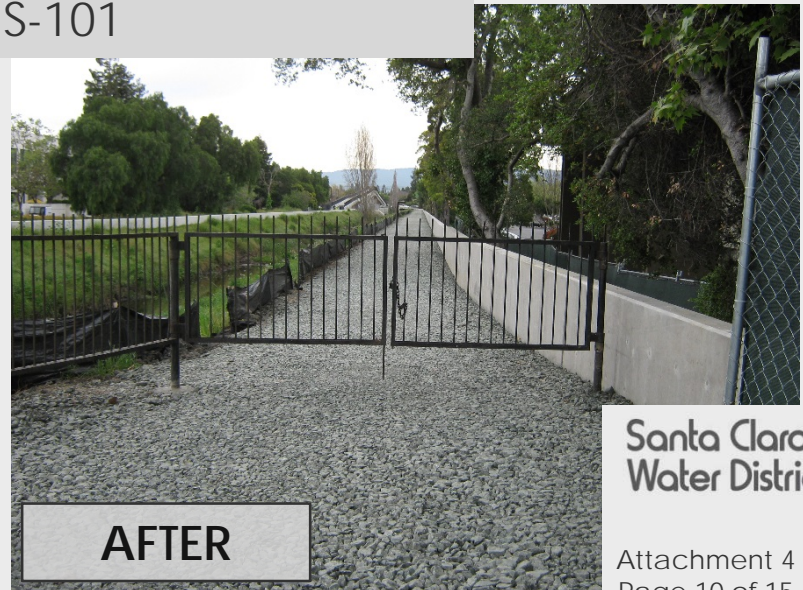
Construction Photos - Progression



BEFORE



Floodwall Between Charleston Road
and US-101



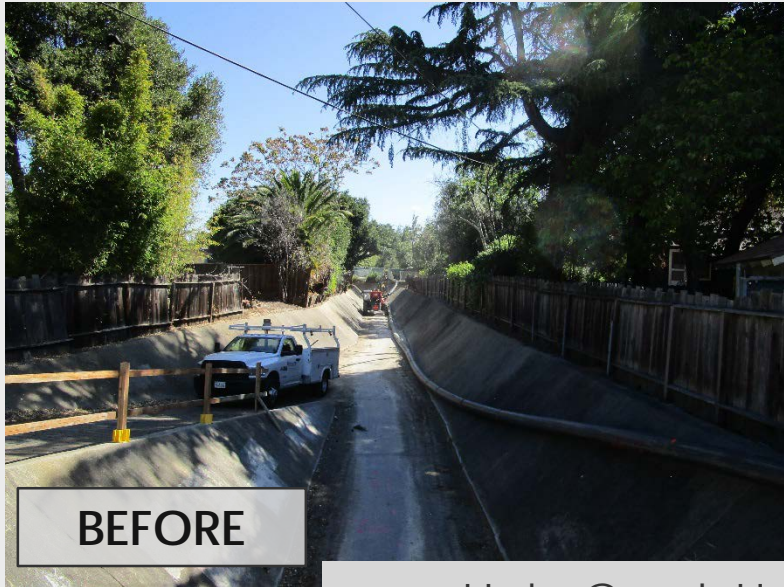
AFTER

Santa Clara Valley
Water District



Attachment 4
Page 10 of 15

Construction Photos - Progression



Hale Creek U-Frame Channel

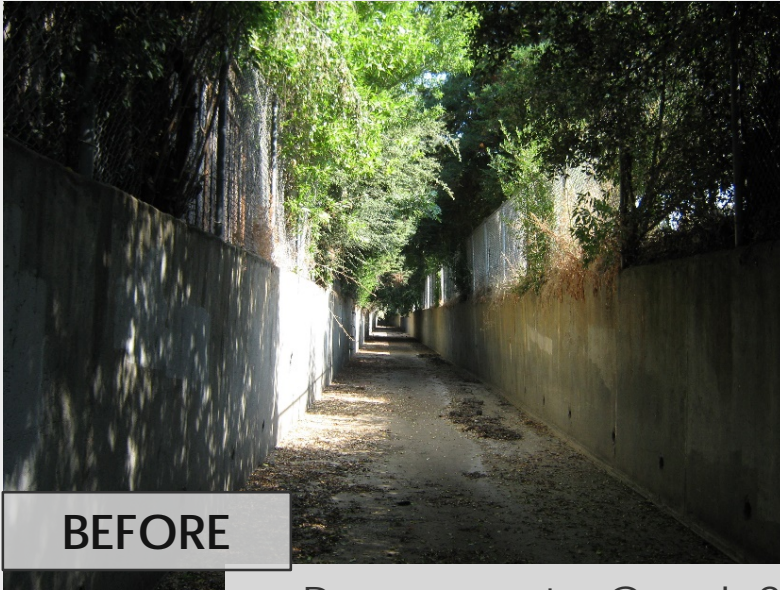


AFTER

Santa Clara Valley
Water District



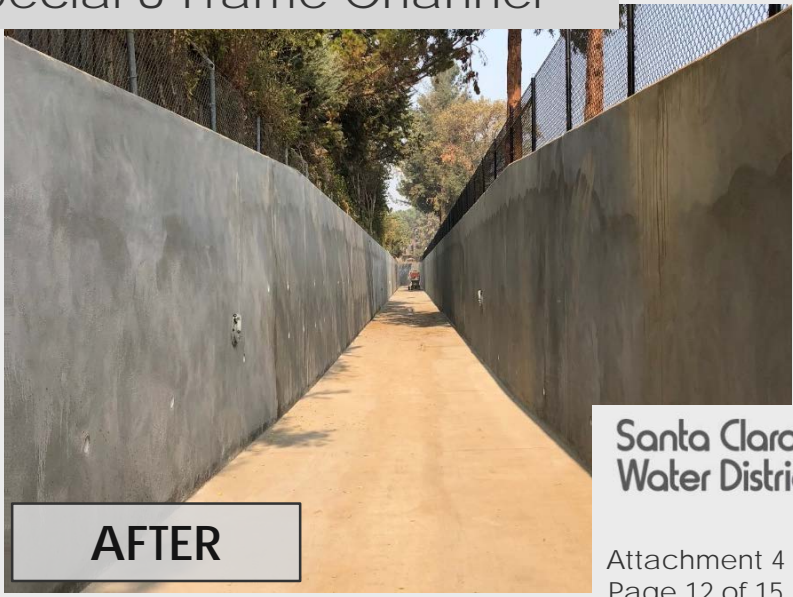
Construction Photos - Progression



BEFORE



Permanente Creek Special U-Frame Channel



AFTER

Santa Clara Valley
Water District

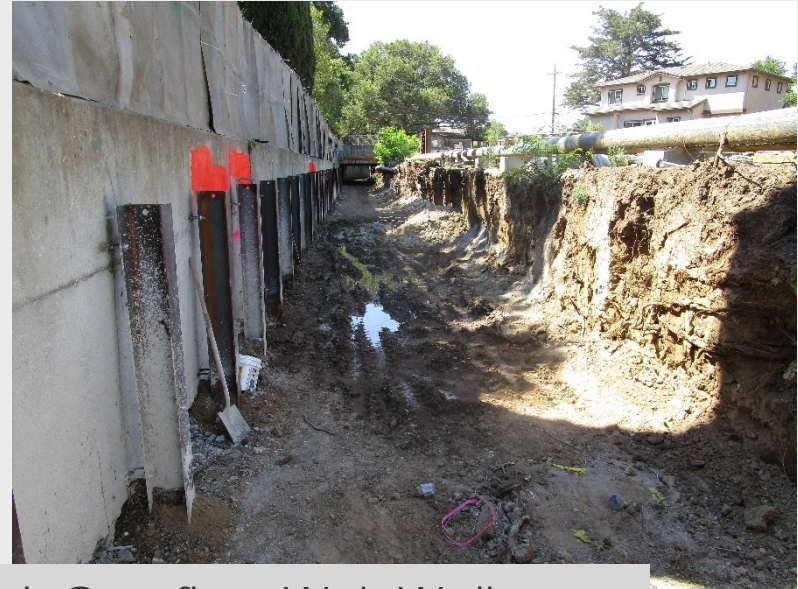


Attachment 4
Page 12 of 15

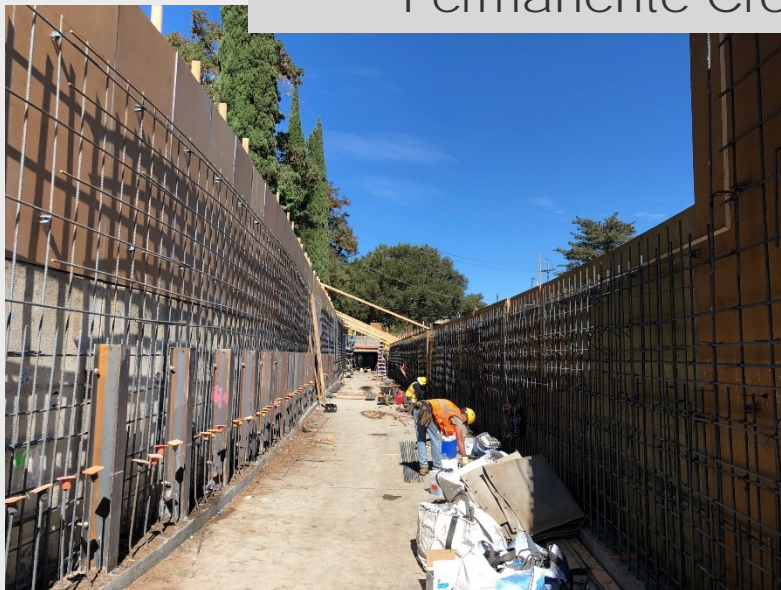
Construction Photos - Progression



BEFORE



Permanente Creek Overflow Weir Wall



AFTER

Santa Clara Valley
Water District



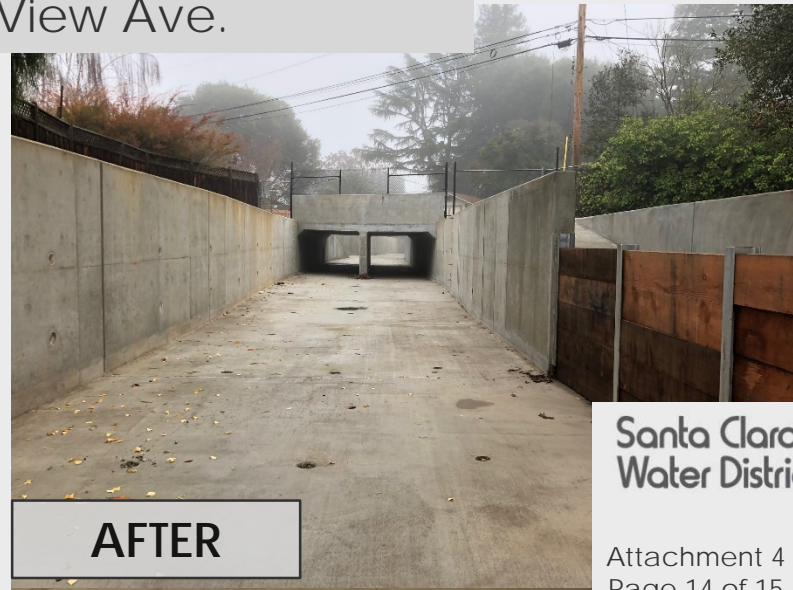
Attachment 4
Page 13 of 15

Construction Photos - Progression



BEFORE

Reinforced Double Cell Box Culvert at
Mountain View Ave.



AFTER

Santa Clara Valley
Water District



Attachment 4
Page 14 of 15

Construction Photos - Progression



Pathway Downstream of Charleston Rd.
(Adjacent to Googleplex)



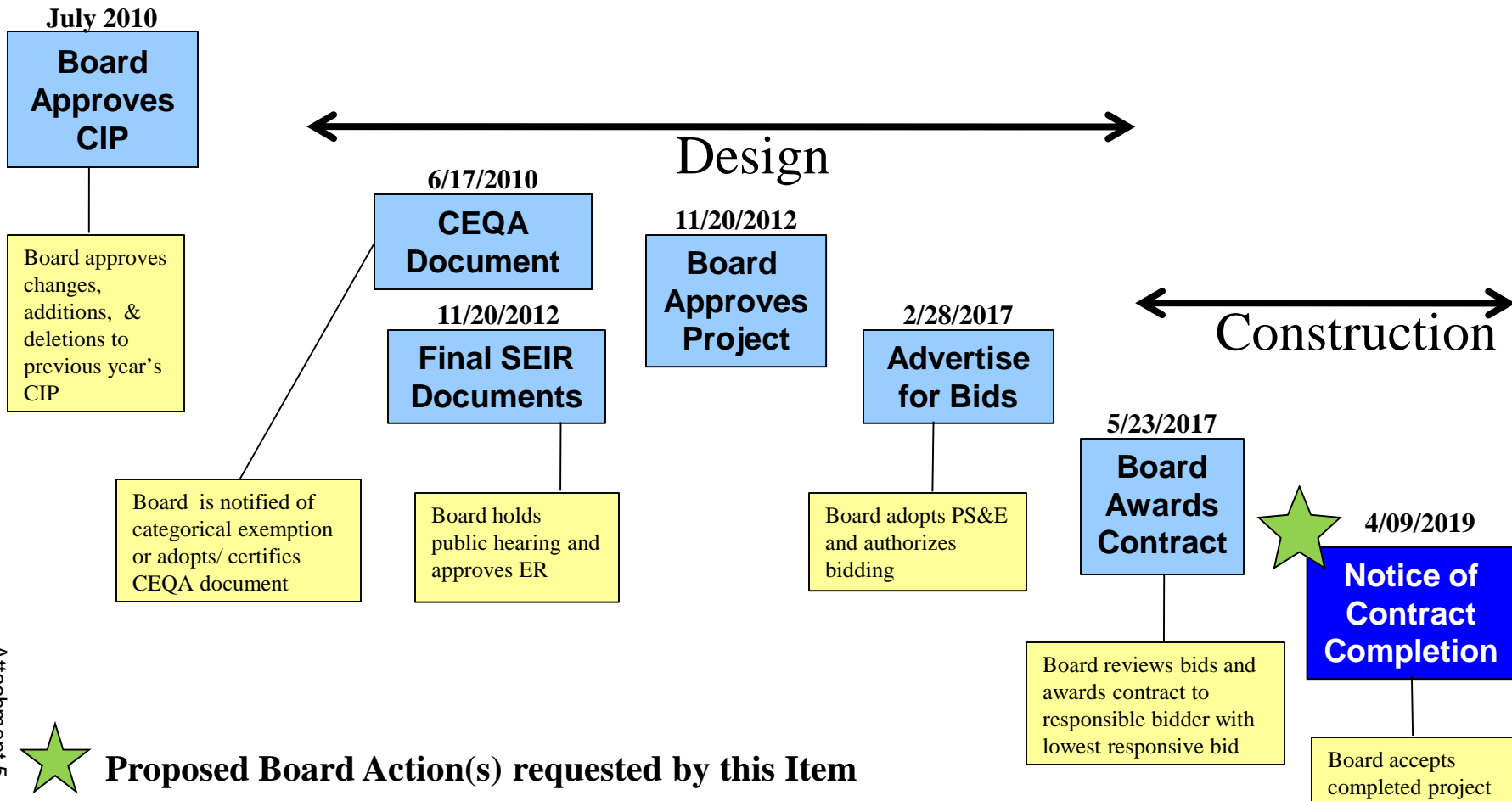
Santa Clara Valley
Water District



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Project Delivery Process

Permanente Creek Flood Protection Project (Permanente Creek Channel Improvements) – Project No. 26244001, Contract No. C0625



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File No.: 19-0293

Agenda Date: 4/9/2019

Item No.: 3.4.

BOARD AGENDA MEMORANDUM

SUBJECT:

Adopt Plans and Specifications and Authorize Advertisement for Bids for Construction of the Uvas Creek Levee Rehabilitation Project Phase 2, Project No. 62084001, Task No. 5175, Contract No. C0648, (Gilroy) (District 1).

RECOMMENDATION:

- A. Adopt Plans and Specifications and Authorize Advertisement for Bids for Construction of the Uvas Creek Levee Rehabilitation Project Phase 2 per the Notice to Bidders; and
- B. Authorize the Designated Engineer to issue addenda, as necessary, during the bidding process.

SUMMARY:

Background and Project Description

During FY2018, the Watersheds Operations and Maintenance Division requested Watersheds Design and Construction Division to address the levee erosion caused by squirrels which burrowed holes along the levee slopes at Uvas Creek. Despite implementation of a long-term burrowing animal abatement program, animal burrows continue to persist throughout the levee's landside and riverside slopes along the entire length of the creek. If left unabated, the current condition could cause levee failure by sloughing, slumping, and/or piping through the levee during high storm events. To maintain the U.S. Army Corps of Engineers' "Acceptable" ranking for a certified levee, construction for Phase 2 of this Project is proposed for this year. The Phase 1 construction, which started in September 2018, is scheduled to be completed by May 2019. Phase 1 addresses levee conditions for the outboard slope of the levee, while Phase 2 addresses the inboard slope of the levee (Attachment 1).

This levee restoration project is being performed separately for the inboard slope and outboard slope phases, since California Department of Fish and Wildlife (CDFW) is claiming jurisdictional rights to the inboard slope of the levee (Phase 2) and has required the District to obtain a Streambed Alteration Agreement (SAA). To remain in good faith with the project construction schedule and expectations originally conveyed to City of Gilroy and the public, District staff pursued implementing construction work for the outboard slope of the levee (Phase 1) in September 2018, while the inboard levee, Phase 2 is being coordinated with CDFW to obtain the SAA for Phase 2.

The scope of this Project will: A) repair damage to approximately 4,100 feet of the inboard face of the levee, downstream of Miller Avenue towards the end of the levee, which is downstream of West Luchessa Avenue, adjacent to the City of Gilroy Sports Park; B) reduce frequent maintenance costs associated with levee erosion repair; C) reduce the risk of levee/bank slope failure due to damage caused by burrowing animals; and D) rehabilitate approximately 6,700 feet of the access road/trail from Miller Avenue to the end of the levee.

The City of Gilroy and the District are entering into an agreement to improve the current condition of the access road/trail from Miller Avenue to the end of the levee, for which the City has allocated \$270,000 in fiscal year 2019-2020 for this agreement.

This Project, including Phase 1 and Phase 2, is a covered activity included in the Santa Clara Valley Habitat Plan (VHP). A VHP "Certificate of Compliance" was issued for the Project in August 2018, pursuant upon VHP fee payment for restoration of both inboard and outboard levee slopes. Based on the VHP certification, future levee maintenance and rehabilitation work within the same project limits can be performed for a period of 50 years without any additional fees. The District will utilize the VHP permits to comply with the federal and state endangered species laws, as prescribed by the VHP.

Upon Board approval of the recommendations, staff will proceed to advertise for bids for Project construction with the Notice to Bidders (Attachment 2).

Next Steps

If Board authorizes advertisement of bids for the Project, the upcoming Project milestones are:

- a) Board's award of construction contract for Phase 2 of the Project: May 28, 2019
- b) Begin construction: mid-June 2019
- c) Complete construction: mid-October 2019

FINANCIAL IMPACT:

The estimated construction cost for the Project is between \$4.2M and \$4.5M. There are sufficient funds available in the FY2019 Project budget to cover this cost. The funding source for the Project is the Watersheds Stream Stewardship Fund 12.

As part of the estimated construction cost, the City plans to contribute \$270,000 for the access road/trail rehabilitation portion of the Project.

CEQA:

Project activities are covered under the VHP, and the Board adopted the Final Initial Study/Negative Declaration for the Project on July 10, 2018.

During the time between the bidding process and bid opening, staff is expecting issuance of the SAA

from CDFW. CDFW has informed the District that it will issue a SAA, if required, by May 6, 2019, prior to the May 15, 2019 bid opening. If needed, any conditions required by the SAA will be incorporated into the bid documents through the pre-bid addendum process.

ATTACHMENTS:

Attachment 1: Project Location Map

Attachment 2: Notice to Bidders

Attachment 3: Project Delivery Process Chart

UNCLASSIFIED MANAGER:

Ngoc Nguyen, 408-630-2632

The map displays the project site boundary and the areas for levee reconstruction in Gilroy, CA. The project site boundary is outlined in blue, and the levee reconstruction areas are highlighted in orange. The map includes Uvas Creek, Uvas-Carnadero Creek, and various streets. Key locations marked include Gilroy High School, Gilroy Sports Park, and several elementary schools. The project site boundary is outlined in blue, and the levee reconstruction areas are highlighted in orange. A scale bar indicates 100m.

**Santa Clara Valley
Water District** 

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WATERSHED ASSET REHABILITATION PROGRAM (WARP)
UVAS CREEK LEVEE REHABILITATION PROJECT PHASE 2
PROJECT NO. 62084001 – TASK NO. 5175
CONTRACT NO. C0648

1. **Notice.** Notice is hereby given that sealed Bids will be accepted by the Construction Program of the Santa Clara Valley Water District, Room B108, of the District's Administration Building, 5750 Almaden Expressway, San Jose, California 95118 up to 2 p.m. on Wednesday, May 15, 2019, for furnishing all material and performing all work necessary for construction of the Watersheds Asset Rehabilitation Program (WARP) – Uvas Creek Levee Rehabilitation Project Phase 2, located in Gilroy, CA.

Additional information and Instructions to Bidders is posted on the District's Construction Administration webpage: <https://www.valleywater.org/construction>

2. **California State Department of Industrial Relations Contractor and SubContractor Registration Requirements.**

(See Instructions to Bidders paragraph #13, "C." for the full text.)

California Labor Code section 1771.1 requires:

A contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, subject to the requirements of Section 4104 of the Public Contract Code, or engage in the performance of any contract for public work, unless currently registered and qualified to perform public work pursuant to Section 1725.5 of the California Labor Code.

An inadvertent error in listing a subcontractor who is not registered pursuant to Section 1725.5 in a bid proposal shall not be grounds for filing a bid protest or grounds for considering the bid nonresponsive, provided that any of the following apply:

- (1) The subcontractor is registered prior to the bid opening.
- (2) Within 24 hours after the bid opening, the subcontractor is registered and has paid the penalty registration fee.
- (3) The subcontractor is replaced by another registered subcontractor pursuant to Section 4107 of the Public Contract Code.

3. **Summary of Work**

A. Project Description. The project scope includes the following:

1. Compliance with and implementation of Best Management Practices (BMPs) per the Santa Clara Valley Habitat Plan;
2. Compliance with NPDES Construction Permits, and installation of BMPs;
3. Compliance with BMPs described in the California Environmental Quality Act (CEQA) Final Uvas Creek Initial Study/Negative Declaration dated July 2018;
4. Compliance with the California Department of Fish and Wildlife Lake Streambed Alteration Agreement Permit Conditions and Requirements;

5. Control of water, including but not limited to proper handling and disposal of incidental water, including ground water and flows that are byproducts of the required construction;
6. Clearing and grubbing within the project limits, including the removal of vegetation, and other miscellaneous items;
7. Levee excavation, including testing and disposal of unsuitable materials;
8. Levee reconstruction including replacement of unsuitable materials with import materials, as required, to re-establish the channel as-built geometry;
9. Installation and anchoring of chain link fabric along the finished surface of the levee slopes;
10. Installation of erosion control mat and hydroseeding after completion of chain link fabric installation;
11. Traffic control;
12. Establishment of construction staging area(s);
13. Three (3)-year chain link fabric mesh maintenance and hydroseed establishment period;
14. Potential winterization of all levees and embankments for early termination of work;
15. Coordination of Trail closure activities with the City of Gilroy;
16. Cold planing asphalt concrete and installation of new asphalt concrete overlay at certain segments of the existing trail alignment as field-determined by the Engineer;
17. Remove existing asphalt pavement and replace with full depth asphalt pavement at certain locations;
18. Using asphalt emulsion to seal cracks in existing trail as field-determined by the Engineer;
19. Performing slurry seal and striping of the existing trail alignment as field-determined by the Engineer; and
20. Other miscellaneous construction activities and items necessary to satisfactorily complete the Work.

B. Sole Source Products. Not used.

- 4. Contract Time.** Time limit for the completion of the work is 1,250 calendar days from the first chargeable day of the Contract, which includes Milestone #4. Milestones #1, #2, and #3 shall be completed within a maximum duration of 80 full working days.

- A. **Milestone #1:** Completion of a minimum of fifty (50) percent of contract work items for the inboard side of the levee, measured longitudinally for a restored levee, except Milestone #3 activities, by August 23, 2019.
- B. **Milestone #2:** Completion of all contract work items, except Milestones #3 and #4 activities by October 15, 2019. This includes restoring any staging area(s) to pre-existing or better conditions by this date.

- C. **Milestone #3:** Completion and acceptance of the hydroseeding work, in full compliance with Article 23.04.
 - D. **Milestone #4:** Completion of the three-year planting establishment period, no later than 1,250 calendar days from the first chargeable day of the Contract.
5. **Liquidated Damages.** See Standard Provisions, Liquidated Damages, Article 5.07 and Special Provisions, Liquidated Damages, Article 12.05 of the Contract Documents for requirements regarding Liquidated Damages.
 6. **Estimated Cost.** The estimated cost of the Project is between **\$4.2 to \$4.5M**. This estimate is intended to serve merely as an indication of the magnitude of the work. Neither the Bidder(s) nor the Contractor will be entitled to pursue a claim or be compensated due to variance in the stated estimated cost range.
 - A. **Additive/Deductive Bid Items.** Not used.
 - B. **Supplemental Bid Items.** These Bid Items may or may not be required. They may be deleted entirely or in part, by deductive change order(s), at the sole discretion of the District. The sum of the Total Base Bid and the Total Supplemental Bid will be used to determine the lowest Bid price.
 7. **Contractor's License Requirement.** The Bidder must possess a Class A Contractor's license when the Bid is submitted.
 8. **Pre-Bid Conference and Site Showing.** A pre-bid conference/site visit will be conducted by the District on April 18, 2019. The conference will convene at 10:00 AM at the intersection of Miller Avenue and Uvas Parkway, City of Gilroy. The pre-bid conference will begin with a District presentation on the Small Business Outreach Program. A Bid submitted by any Bidder not represented at a mandatory pre-bid conference/site visit will be considered non-responsive. Attendance at the pre-bid by subcontractors is not required.
Attendance by the Bidder at the pre-bid conference/site visit is:

- ☒ Mandatory
- ☐ Optional

The objective of the site visit is to familiarize prospective Bidders with the site; no additional site visits will be allowed. Please confirm your intent to attend the pre-bid meeting and site visit 24 hours in advance by sending e-mail to scvwdplanroom@valleywater.org.

Reasonable efforts will be made to accommodate persons with disabilities wishing to attend the pre-bid meeting/site visit. Please request accommodations when confirming attendance.

9. **Availability of Bid Documents.** Contract Documents, including Drawings and Specifications, are available in both paper and electronic (pdf) formats. Paper copies may be purchased for the nonrefundable price of \$40. Provide FedEx account number or add \$10 per set for packaging and postage. Electronic version is free, transferred via file transfer appliance (FTA) site.

To order Contract documents:	Request Form and information available online. Website: https://www.valleywater.org/construction Email: scvwdplanroom@valleywater.org FAX: (408) 979-5631 Phone: (408) 630-3088
To pick up Contract documents in person:	Santa Clara Valley Water District 5700 Almaden Expressway San Jose, CA 95118 Business Hours: 8 a.m. – 5 p.m.

10. **Inquiries.** The Bidder must submit all requests for clarification, or interpretation of the Bid Documents in accordance with the requirements stated in Instructions to Bidders, Questions During Bidding, paragraph #7. Written questions must be directed to the project manager and submitted by May 6, 2019 before the deadline for receipt of Bids.

The District may issue written Addenda as appropriate for clarification or other purposes during the bidding period. Addendum notification(s) will be sent to each planholder at the email address provided by the contractor for the planholders list and addenda will be posted on the District's website at <https://www.valleywater.org/construction>.

- A. **Project Manager.** The District's project manager for this Project is Ted Ibarra and can be reached via e-mail at tibarra@valleywater.org or at (408) 630-2067.
- B. **Process Questions.** For questions regarding the advertisement process, contact the District Plan Room at (408) 630-3088, or scvwdplanroom@valleywater.org.

11. **Prevailing Wage Requirements.**

- A. Workers employed on this Project must be paid at rates at least equal to the prevailing wage rates as determined by the State of California Department of Industrial Relations pursuant to §1770 of the Labor Code. Said wage rates are incorporated herein by reference and may be inspected upon request. The rates are also available on the State of California Department of Industrial Relations website at <http://www.dir.ca.gov/>. See Standard Provisions, Prevailing Wages Article 4.04. through Appendices Article 4.06. for related requirements.
- B. This Project is subject to compliance monitoring and enforcement by the State of California Department of Industrial Relations. The Contractor and subcontractors must furnish the records specified in Section 1776 directly to the Labor Commissioner, in the following manner: monthly, in a format prescribed by the Labor Commissioner.

12. **Bid Proposal Submittal.** All Bids must be submitted in sealed envelopes addressed to Construction Program of the Santa Clara Valley Water District, and state the Project name and Project number on the outside of the sealed envelope. Each Bid must be submitted on the prescribed Bid Forms. All information on Bid Forms must be completed in ink.

A. **Alternate Delivery for Bid Submittal.** Bidders electing to submit a Proposal by FEDEX, UPS, DHL, CA Overnight, Golden State Overnight, etc., must address the submittal in accordance with instructions stated in Paragraph 12 above. Any Proposal received after 2 p.m. will be considered non-responsive.

Address the outside delivery envelope as follows:

Santa Clara Valley Water District
Attention: Construction Program — **BID**
5905 Winfield Boulevard
San Jose, CA 95123-2428

Note: USPS (US Mail) does not deliver to 5905 Winfield Boulevard.

13. **Bid Opening.** The Construction Program staff will open Proposals at the time and place stated in Notice, paragraph #1 above.
14. **Errors or Discrepancies in the Bids.** The District Board of Directors reserves the right to reject any and all Bid Proposals and to waive minor defects or irregularities in any submitted Bid Form(s).
15. **Bidder's Security.** Each Proposal must be accompanied by cash, a certified check, cashier's check, or an original Bidder's bond in the sum of not less than 10 percent of the total aggregate of the Proposal including all additive Bid items. Said checks or bond must be made payable to the Santa Clara Valley Water District.
16. **Contract Retention.**
- ☒ The Contract Retention for this Project is established at five (5) percent of the Contract Price.
- ☐ The Contract Retention for this Project is established at ten (10) percent of the Contract Price. The Board of Directors has made a finding that the Project is substantially complex and therefore requires retention higher than five percent.
17. **Substitution of Securities.** The Contractor may, at the Contractor's request and expense substitute securities equivalent to the amount withheld by District to ensure the performance of the contract in accordance with Public Contract Code Section 22300.
18. **Small Business Preference.** The District has elected to implement the small business preference provisions of Public Contract Code §2002(a)(1). For purposes of the District's program, a small or micro business is as defined in Government Code §14837. Please refer to the small business compliance requirements stated in the Small Business Instructions included with these Bid documents.

19. **Equal Opportunity.** The District is an equal opportunity employer and all contractors of District projects are to have and follow a policy of equal opportunity including adherence to all state and federal laws and regulations, including the Federal Equal Opportunity Clause.
20. This Project will be constructed under the Regulatory-approved Santa Clara Valley Habitat Plan (VHP) blanket permits referenced in Section 19 of the Special Provisions.
21. A separate Streambed Alteration Agreement (Agreement) shall be provided by California Department of Fish and Wildlife by May 6, 2019. Agreement and BMP conditions, if required, will be captured for the Project through the pre-bid addendum process.

By order of the Board of Directors of the Santa Clara Valley Water District, San Jose, California, on April 9, 2019.

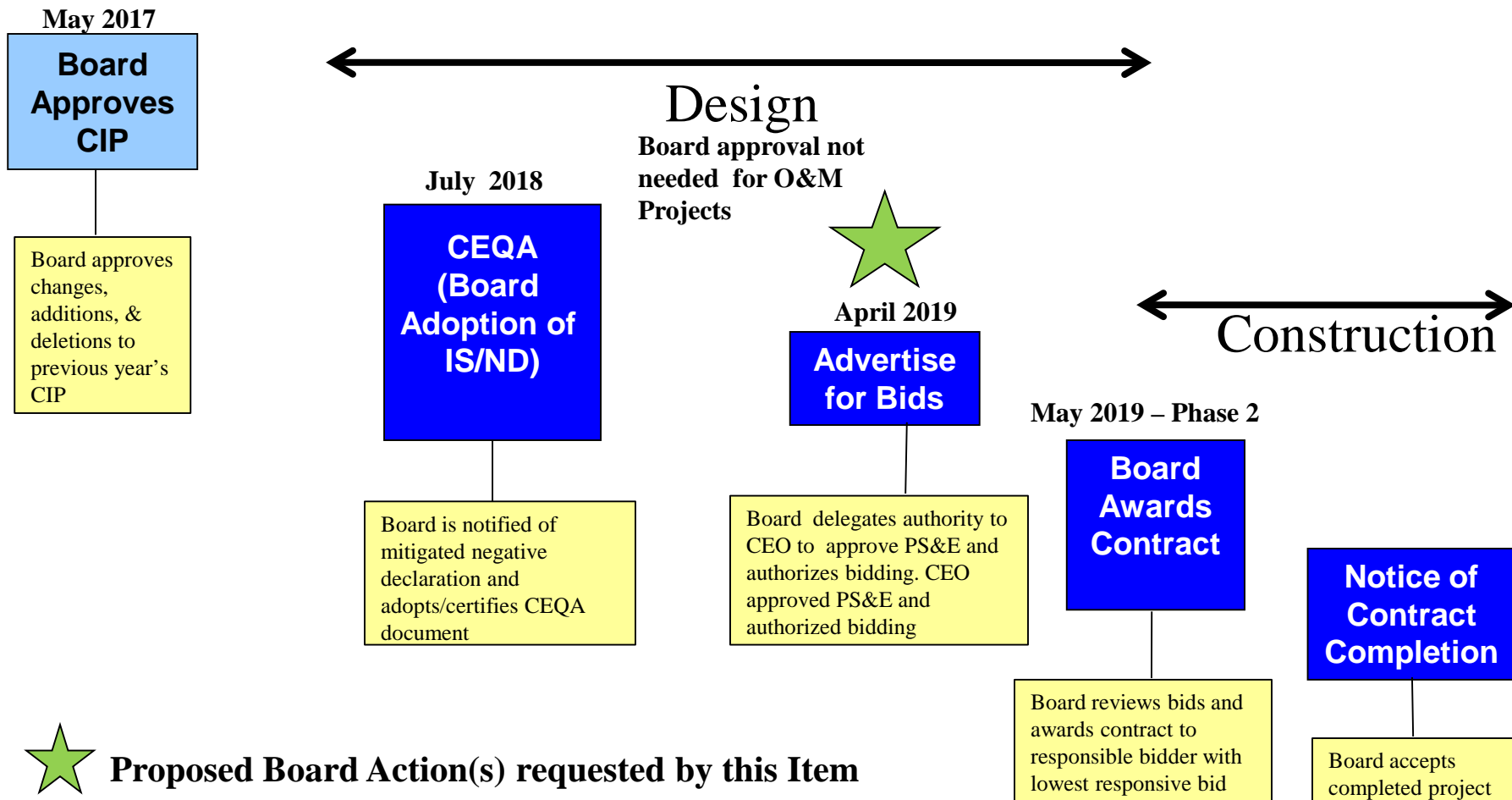
ATTEST: MICHELE L. KING, CMC

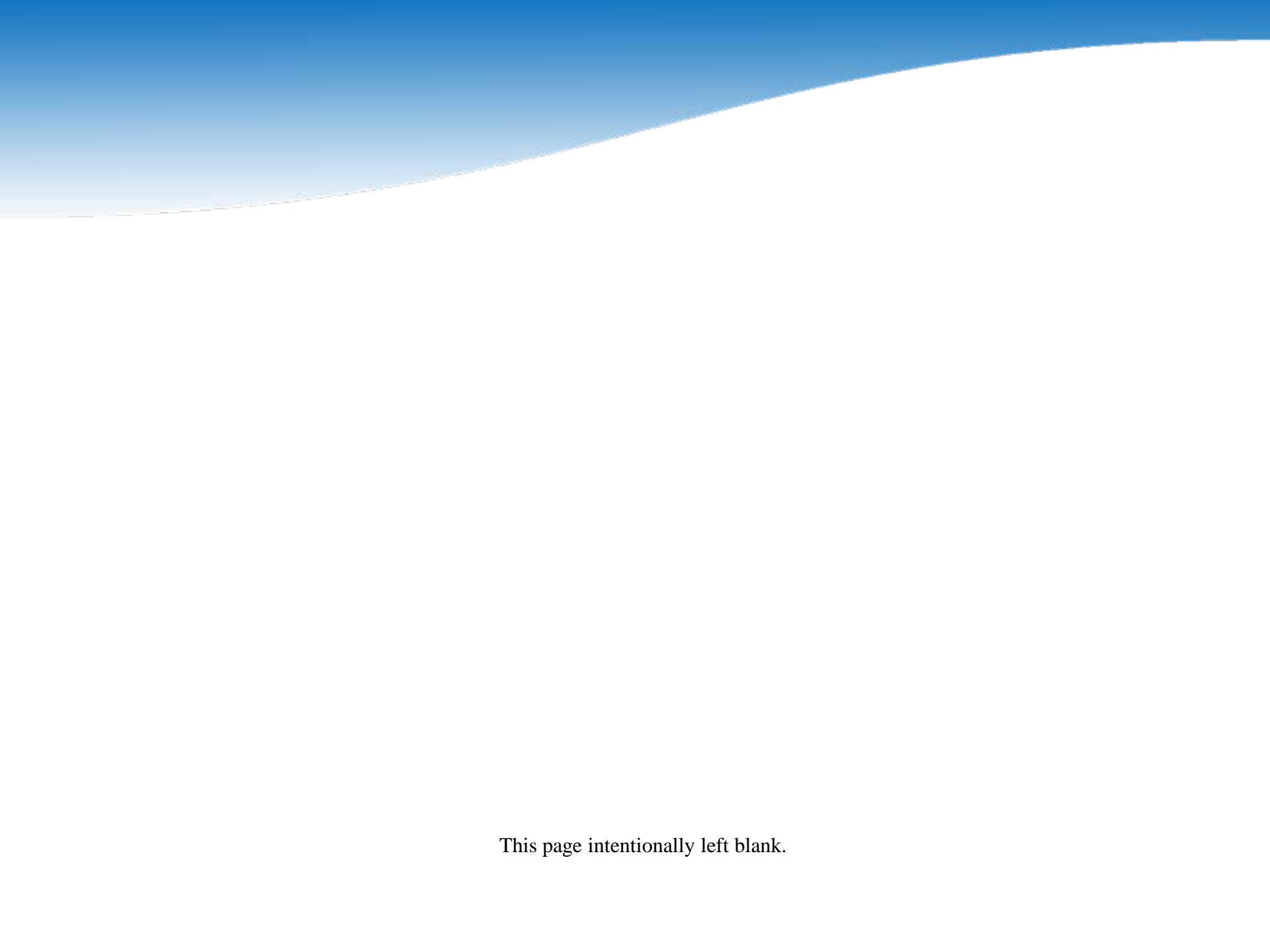
Clerk, Board of Directors

Project Delivery Process Chart

Uvas Creek Levee Rehabilitation Project - Phase 2

Miller Avenue to End of Levee – City of Gilroy





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File No.: 19-0335

Agenda Date: 4/9/2019

Item No.: 3.5.

BOARD AGENDA MEMORANDUM

SUBJECT:

Resolution Recognizing April 22, 2019 as Earth Day.

RECOMMENDATION:

Adopt the Resolution RECOGNIZING APRIL 22, 2019 AS EARTH DAY.

SUMMARY:

Every year on April 22nd, over a billion people worldwide celebrate Earth Day. Earth Day is intended to raise awareness and appreciation for the Earth's natural environment. At a 1969 UNESCO Conference in San Francisco, peace activist John McConnell proposed a day to honor Earth and the concept of peace, and then-U.S. Senator Nelson formally established Earth Day on April 22nd, 1970. On that day, 20 million people participated in rallies nationwide, which helped lead to the creation of the Environmental Protection Agency and the passing of the Clean Air, Clean Water, and Endangered Species Acts.

Earth Day continues to serve as a platform to promote responsible and caring acts for the environment, thus improving quality of life. It is celebrated in more than 192 countries each year and promoted by the non-profit Earth Day Network.

The global Earth Day theme this year is "Protect our Species." Human activities are causing the greatest rate of extinction of species since we lost the dinosaurs more than 60 million years ago. The Earth Day theme aims to join people around the world to protect species and their habitats, increase awareness of the current rate of extinction, and encourage individual actions.

With this Resolution, the Santa Clara Valley Water District (Valley Water) can further promote its mission for flood protection, stewardship, including pollution prevention, and providing Silicon Valley safe, clean water for a healthy life, environment, and economy. Valley Water currently has a broad array of services that align with Earth Day objectives. These services include stewardship programs, water conservation, the Green Business Program, habitat restoration/enhancement projects, and energy optimization or alternative energy programs.

Valley Water will recognize and celebrate Earth Day with a sustainability fair on Tuesday, April 30, 2019, that will be hosted by the Green Team Employee Resource Group (ERG). The Green Team ERG serves as a resource to all employees to promote sustainable best practices, to support Valley

Water's sustainability mission, and to help generate new sustainable ideas and solutions in the workplace. This year's sustainability fair will include a BioBlitz activity to help employees identify plant and animal species around our campus and beyond.

FINANCIAL IMPACT:

There is no financial impact associated with this item.

CEQA:

These recommended actions do not constitute a project under CEQA because they do not have a potential for resulting in direct or reasonably foreseeable indirect physical change in the environment.

ATTACHMENTS:

Attachment 1: Resolution

UNCLASSIFIED MANAGER:

Katherine Oven, 408-630-3126

**BOARD OF DIRECTORS
SANTA CLARA VALLEY WATER DISTRICT**

RESOLUTION NO. 19-

RECOGNIZING APRIL 22, 2019, AS EARTH DAY

WHEREAS, Earth Day began on April 22, 1970, in the United States and helped lead to the formation of the United States Environmental Protection Agency and the passage of the Clean Air, Clean Water and Endangered Species Acts; and

WHEREAS, every year on April 22 over one billion people worldwide take action, celebrate, and support Earth Day through various environmental stewardship activities; and

WHEREAS, the mission of the Santa Clara Valley Water District (Valley Water) is to provide Silicon Valley safe, clean water for a healthy life, environment, and economy; and

WHEREAS, Valley Water continues to support Earth Day goals through water conservation, community engagement, the Green Business Program, habitat restoration/enhancements and energy optimization efforts; and

WHEREAS, Valley Water further commits to environmental stewardship through policies, partnerships, projects, programs, actions, community services, and education; and

WHEREAS, Valley Water actively creates and restores tidal and riparian habitats; and

WHEREAS, Valley Water stewardship will encourage the community of Santa Clara County to take actions to help protect the environment on Earth Day and all year round; and

WHEREAS, the Green Team employee resource group serves as a resource to all employees for sustainable best practices, to support Valley Water's sustainability mission, and to help generate new ideas and solutions on sustainability in the workplace;

NOW, THEREFORE BE IT RESOLVED that the Board of Directors of the Santa Clara Valley Water District hereby recognizes April 22, 2019, as Earth Day, and will acknowledge Earth Day through a variety of educational and informational activities scheduled for April 30, 2019.

PASSED AND ADOPTED by the Board of Directors of the Santa Clara Valley Water District by the following vote on

AYES: Directors

NOES: Directors

ABSENT: Directors

ABSTAIN: Directors

SANTA CLARA VALLEY WATER DISTRICT

LINDA J. LEZOTTE
Chair, Board of Directors

ATTEST: MICHELE L. KING, CMC

Clerk, Board of Directors

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File No.: 19-0336

Agenda Date: 4/9/2019

Item No.: 3.6.

BOARD AGENDA MEMORANDUM

SUBJECT:

Designation of Impartial Third Party to Oversee Validation and Tabulation of Written Protests for Fiscal Year 2019-2020 Surface Water Charges.

RECOMMENDATION:

Designate the Clerk of the Board as the impartial third party to oversee the verification and tabulation of the written surface water protests for Fiscal Year 2019-2020.

SUMMARY:

In accordance with Board Resolution 12-10, adopting procedures for the imposition of Surface Water Charges (Attachment 1), the Board will designate an impartial third person who does not have a vested interest in the outcome of the proposed charges to tabulate the written protests submitted, and not withdrawn. The impartial person may be a member of the Clerk of the Board office.

Since the adoption of Resolution 12-10 in February 2012, commencing with Fiscal Year 2012-2013, the District has conducted a written protest process to allow surface water users to protest any proposed surface water rate increase for the coming fiscal year. To date, the District has only received one surface water protest in the last six fiscal years (2012-2013 through 2018-2019).

Based on only receiving one protest in six years, staff recommends that the Clerk of the Board be appointed to oversee the verification and calculation of any surface water protests received for Fiscal Year 2019-2020.

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

ATTACHMENTS:

File No.: 19-0336

Agenda Date: 4/9/2019
Item No.: 3.6.

Attachment 1: SCVWD Resolution No. 12-10

UNCLASSIFIED MANAGER:
Michele King, 408-630-2711

RESOLUTION NO. 12- 10

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE SANTA CLARA VALLEY WATER DISTRICT ADOPTING PROCEDURES FOR THE IMPOSITION OF SURFACE WATER CHARGES

WHEREAS, pursuant to Section 4 of the District Act, the purposes of the District Act are to authorize the District to provide comprehensive water management for all beneficial uses within Santa Clara County; and

WHEREAS, Section 5(5) of the District Act authorizes District to do any and every lawful act necessary to be done that sufficient water may be available for beneficial uses within Santa Clara County; and

WHEREAS, Section 5(12) authorizes the District to make contracts and do all acts necessary for the full exercise of all powers vested in the District; and

WHEREAS, Proposition 218, adopted on November 6, 1996, added Articles XIIIC and XIID to the California Constitution which impose certain procedural and substantive requirements with respect to the imposition of certain new or increased fees and charges; and

WHEREAS, whether legally required or not, the District Board believes it to be in the best interest of the community to align its practices with respect to the imposition of surface water charges to mirror the majority protest requirements of Article XIII D, section 6 applicable to charges for water services to the extent possible; and

WHEREAS, the District Board believes it to be in the best interest of the community to record its decisions regarding implementation of the provisions relating to imposition of surface water charges and to provide the community with a guide to those decisions and how they have been made; and

NOW, THEREFORE, the Board of Directors of Santa Clara Valley Water District does hereby resolve as follows:

SECTION 1. Statement of Legislative Intent. It is the Board of Directors' intent in adopting this resolution, to adopt the notice, hearing, and majority protest procedure proceedings that are consistent, and in conformance with, Articles XIIIC and XIID of the California Constitution and with the Proposition 218 Omnibus Implementation Act and the provisions of other statutes authorizing imposition of surface water charges. To the extent that these requirements are legally required to supercede the requirements set forth in the District Act, these provisions are intended to prevail.

SECTION 2. Definitions.

- A. Record Owner.** The District will provide the required notice to the Record Owner. "Record Owner" means the record owner of the property on which the surface water use-facility is present, and the tenant(s) who are District surface water permittees liable for the payment of the surface water charge.

A Resolution of the Board of Directors of the Santa Clara Valley Water District Adopting
Procedures for the Imposition of Surface Water Charges

- B. Charge Zone.** "Charge Zone" means the District zone (i.e. Zone W-2 or Zone W-5) that a surface water user's turnout is located, which is applicable in identifying the proposed surface water charge. Surface water users that receive surface water outside of either Zone W-2 or Zone W-5 are deemed to be located in the zone to which the surface water user's turnout is most nearly located.

SECTION 3. Surface Water Charge Proceeding. The following procedures will be used:

- A. Those Subject to the charge.** The Record Owners of the existing surface use-facilities.
- B. Amount of Charge.** A formula or schedule of charges by which the customer can easily calculate the potential surface water charge will be included in the notice. The surface water charge is comprised of a basic user charge and a surface water master charge. The surface water charge must comply with the following substantive requirements:
1. Revenues derived from the surface water charge will not be used for any purpose other than that for which the charge is imposed.
 2. Revenues derived from the surface water charge will not exceed the direct and indirect costs required to provide the service.
 3. The amount of the surface water charge must not exceed the proportional cost of the service attributable to the property.
 4. No charge may be imposed for a service unless the service is actually used by, or immediately available to the property owner (or, if applicable, the tenant).
 5. No charge can be imposed for general governmental services where the service is available to the public at large in substantially the same manner as it is to property owners.
- C. Notice.** The following guidelines apply to giving notice of the surface water charge.
1. Record Owner(s) of each parcel subject to the surface water charge, meaning any parcel with a surface water use-facility, will be determined from the last equalized property tax roll. If the property tax roll indicates more than one owner, each owner will be sent the notice. District surface water permittees liable for the payment of the surface water charge will also be provided with the notice.
 2. The notice must be sent at least forty-five (45) days prior to the date set for the public hearing on the surface water charge.
 3. Failure of any person to receive the notice will not invalidate the proceedings.

A Resolution of the Board of Directors of the Santa Clara Valley Water District Adopting
Procedures for the Imposition of Surface Water Charges

D. Surface Water Charge Protest. The following guidelines apply to the surface water charge protest procedure:

1. The notice will be mailed to all affected Record Owners at least forty-five (45) days prior to the date of the public hearing on the proposed surface water charge.
2. Written protests must be forwarded to the Clerk of the Board by mail or in person, sealed in an envelope which conceals the contents, with the property address or APN written on the outside of the envelope. To be counted, protests must be received no later than the date for return of protests stated on the notice, or the close of the public hearing, whichever is later.
3. A protest must be signed under penalty of perjury. For properties with more than one Record Owner, a protest from any one surface water user-facility will count as a protest for the property. No more than one protest will be counted for any given property.
4. Only protests with original signatures will be accepted. Photocopied signatures will not be accepted. Protests will not be accepted via e-mail. Protests must be submitted in sealed envelopes identifying the property on which the surface water user-facility is located, and include the legibly printed name of the signator. Protests not submitted as required by this Resolution will not be counted.
5. This proceeding is not an election.
6. Written Protests must remain sealed until the tabulation of protests commences at the conclusion of the public hearing. A written protest may be submitted or changed by the person who submitted the protest prior to the conclusion of the public testimony on the proposed charge at the public hearing.
7. Prior to the public hearing, neither the protest nor the envelope in which it is submitted will be treated as a public record, pursuant to the Government Code section 6254(c) and any other applicable law, in order to prevent potential unwarranted invasions of the submitter's privacy and to protect the integrity of the protest process.

E. Tabulating Protests. The following guidelines apply to tabulating protests:

1. It will be the responsibility of the Clerk of the Board to determine the validity of all protests. The Clerk will accept as valid all protests except those in the following categories:
 - a. A photocopy which does not contain an original signature;
 - b. An unsigned protest;
 - c. A protest without a legible printed name;
 - d. A protest which appears to be tampered with or otherwise invalid based upon its appearance or method of delivery or other circumstances;

A Resolution of the Board of Directors of the Santa Clara Valley Water District Adopting
Procedures for the Imposition of Surface Water Charges

- e. A protest submitted to the District via e-mail;
- f. A protest submitted in an envelope that does not have the address or APN written on the outside of the envelope;
- g. A protest signed by someone other than the Record Owner for the APN.

The Clerk's decision, after consultation with the District Counsel, that a protest is invalid is final.

- 2. An impartial person, designated by the governing board, who does not have a vested interest in the outcome of the proposed charge will tabulate the written protests submitted, and not withdrawn. The impartial person may be a member of the Clerk of the Board Office.
- 3. A Record Owner who has submitted a protest may withdraw that protest at any time up until the conclusion of the final public hearing on the surface water charge.
- 4. A property owner's failure to receive notice of the surface water charge will not invalidate the proceedings conducted under this procedure.

F. Public Hearing.

- 1. At the public hearing, the District Board will hear and consider all public testimony regarding the proposed surface water charge and accept written protests until the close of the public hearing, which hearing may be continued from time to time.
- 2. The District Board may impose reasonable time limits on both the length of the entire hearing and the length of each speaker's testimony.
- 3. At the conclusion of the hearing, the Clerk of the Board, or other neutral person designated to do the tabulation will complete tabulation of the protests from Record Owners, including those received during public hearing.
- 4. If it is not possible to tabulate the protests on the same day as the public hearing, or if additional time is necessary for public testimony, the District Board may continue the public hearing to a later date to receive additional testimony, information or to finish tabulating the protests; or may close the public hearing and continue the item to a future meeting to finish tabulating the protests.
- 5. If according to the final tabulation of the protests from Record Owners, the number of protests submitted against the proposed surface water charge (or increase of the surface water charge) within a Charge Zone exceeds 50% plus one of either: (i) the identified number of parcels within that Charge Zone, or (ii) the identified number of owners and tenants who are subject to the surface water charge within that Charge Zone, then a "majority protest" exists and the District Board of Directors will not impose the surface water charge within that Charge Zone.

A Resolution of the Board of Directors of the Santa Clara Valley Water District Adopting
Procedures for the Imposition of Surface Water Charges

PASSED AND ADOPTED by the Board of Directors of Santa Clara Valley Water District by the
following vote on February 14, 2012.

AYES: Directors T. Estremera, D. Gage, J. Judge, P. Kwok, R. Santos, B. Schmidt,
L. LeZotte

NOES: Directors None

ABSENT: Directors None

ABSTAIN: Directors None

SANTA CLARA VALLEY WATER DISTRICT

By:


LINDA J. LEZOTTE
Chair/Board of Directors

ATTEST: MICHELE L. KING, CMC


Clerk/Board of Directors

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File No.: 19-0342

Agenda Date: 4/9/2019

Item No.: 3.7.

BOARD AGENDA MEMORANDUM

SUBJECT:

Providing Notice of Time and Place of Public Hearing Regarding Flood Control Benefit Assessments for Fiscal Year 2019-2020 (FY 2019-20).

RECOMMENDATION:

Set a time and place for the public hearing on Flood Control Benefit Assessments for FY 2019-20 at 1:00 p.m. on May 14, 2019, at the Santa Clara Valley Water District, 5700 Almaden Expressway, San Jose, California.

SUMMARY:

The voter-approved benefit assessments program authorized use of flood control benefit assessments to meet qualified long-term debt obligations associated with outstanding Certificates of Participation until such obligations are retired. The proceeds of the Certificates have been or will be used to plan, design and build flood protection facilities to reduce flood damage. This agenda item presents the staff recommendation to set the time and place for the annual public hearing on benefit assessments to meet FY 2019-20 debt obligations.

The attached report entitled "Flood Control Benefit Assessments for Fiscal Years 2019-20 through 2029-30 (April 2019)" (Attachment 1) is required by law for Board use in considering and establishing flood control benefit assessments for FY 2019-20.

Attachment 1 shows the actual benefit assessment rates levied in fiscal year 2018-19 and the expected benefit assessment rates to be levied in fiscal year 2019-20. Actual rates will be determined once annual land use information is received from the County Assessor in July.

FINANCIAL IMPACT:

There is no direct financial impact from this action. The proposed public hearing is required in order to set benefit assessments that meet debt obligations/commitments.

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: Flood Control Benefit Assessment Report
Attachment 2: Notice of Public Hearing

UNCLASSIFIED MANAGER:

Melanie Richardson, 408-630-2035

FLOOD CONTROL BENEFIT ASSESSMENTS

FOR FISCAL YEARS

2019-2020

**Through
2029-2030**

April 2019



SANTA CLARA VALLEY WATER DISTRICT

FLOOD CONTROL BENEFIT ASSESSMENTS
FOR FISCAL YEARS
2019-2020
Through
2029-2030

prepared by

Jennifer Abadilla
Senior Management Analyst

And

Anthony Mendiola
Program Administrator

Under the Direction of

Melanie Richardson
Chief Operating Officer – Watershed Operations

April 2019

DISTRICT BOARD OF DIRECTORS

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

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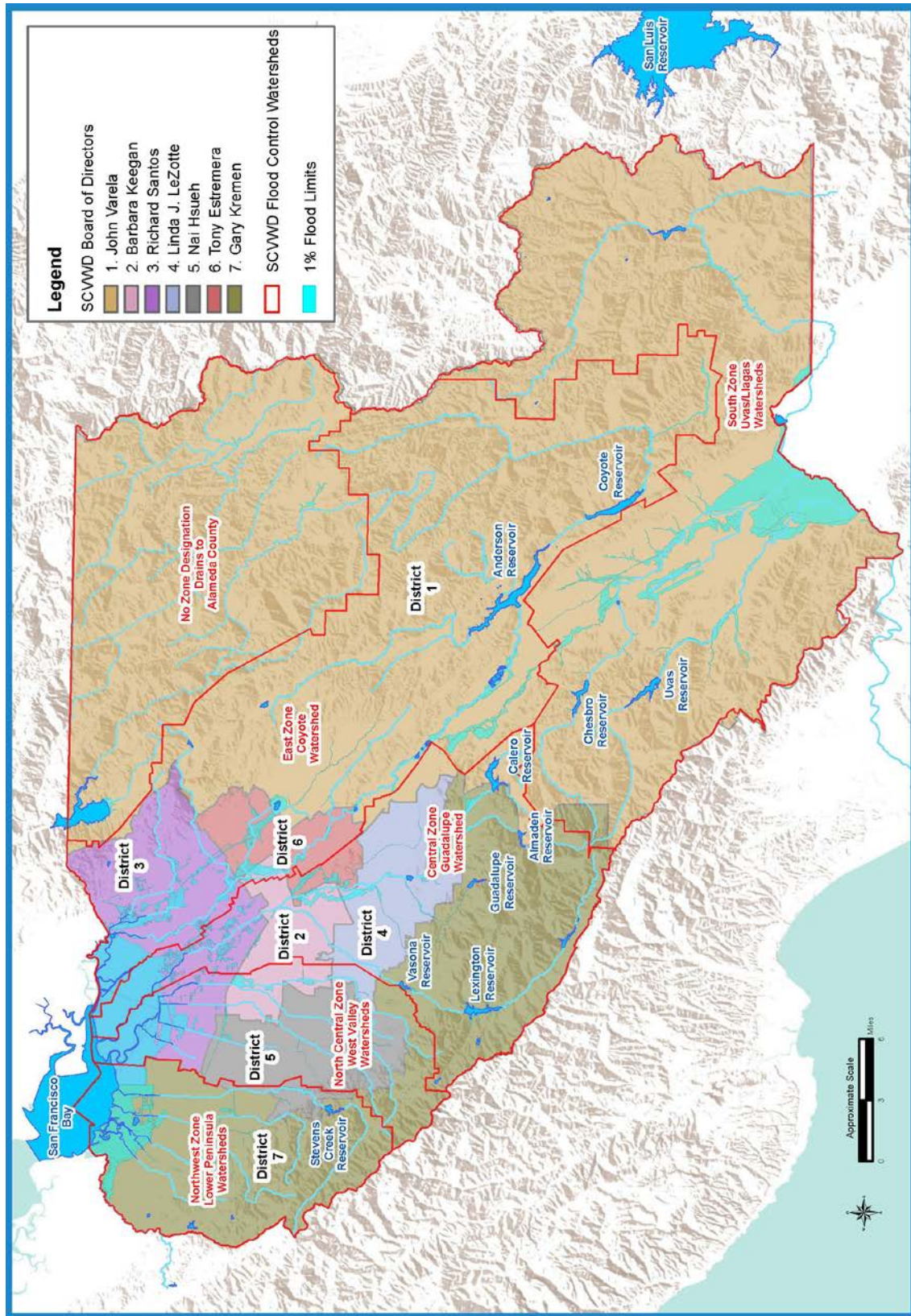
INTRODUCTION/SUMMARY

This Flood Control Benefit Assessment report is prepared in accordance with voter-approved Santa Clara Valley Water District (District) resolutions. It presents annual revenue requirements for fiscal years 2019-20 through 2029-30 for each of the five flood control zones throughout the District (see map on page 2 for zone locations). Commencing on July 1, 2000, the District benefit assessments are limited to pay qualified debt obligations and covenants only.

The qualified debt obligations in each of the zones are for debt service and associated covenants of outstanding Certificates of Participation (long-term financing instruments similar to bonds). The proceeds from these long-term debt obligations have been or will be used to plan, design and build flood protection facilities. Major projects partially financed with debt proceeds include Palo Alto Flood Basin Structure Improvements, Guadalupe from Tasman Drive to I-880, Lower Silver Creek from Cunningham Avenue to I-680, Lower Penitencia Creek from Berryessa Road to Coyote Creek, and the San Francisco Bay Shoreline projects.

This report serves as the base report for the public hearings on flood control benefit assessments for FY 2019-20 and subsequent fiscal years until 2029-30.

This report has been reviewed and approved by the District Counsel as meeting the requirements of benefit assessment law, District resolutions, Certificates of Participation covenants, and Proposition 218. Information on the flood control benefit assessment for an individual parcel as well as the initial detailed District reports describing the need for supplemental flood control revenue from benefit assessments are available for review through the Clerk of the Board at the District office located at 5700 Almaden Expressway, San Jose, California.



GIS themes are for illustration and general analysis purposes only and are not accurate to surveying or engineering standards. Information is not guaranteed to be accurate, current, or complete and use of this information is your responsibility.

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BACKGROUND

INITIATION OF BENEFIT ASSESSMENT PROGRAM

After passage of Proposition 13 in 1978, revenue for District flood control activities was significantly decreased. The State Legislature recognized the vital public safety service furnished by local flood control districts and passed Assembly Bill 549 (Frazee) in 1979. This legislation authorized flood control districts to levy benefit assessments to help fund flood control programs. The law permitted flood control benefit assessments to be spread according to the proportional storm water runoff from each parcel of property within the assessed area and required voter approval to continue such levy after the first year. On June 9, 1981, following a public hearing, the Board of Directors (Board) adopted a 10-year flood control benefit assessment program and levied assessments for one year beginning with 1981-82. They put the issue of continuing the benefit assessments for nine more years on the June 8, 1982, ballot for all zones. The measure was overwhelmingly approved by the voters.

REVISED BENEFIT ASSESSMENTS TO ACCELERATE CONSTRUCTION (1986 & 1990)

Following major floods and flood damage in 1982, 1983, and 1986, the Board reviewed the effectiveness of the benefit assessments and found that unless additional funding was made available, many of the needed flood protection projects would not be completed until well past the year 2010. The Board, with recommendations from the Flood Control Zone Advisory Committees, went to the electorate on November 4, 1986, in four zones, the Northwest, Central, East, and South to 1) increase benefit assessment rate limits so construction of flood protection projects could be accelerated, 2) extend the benefit assessment program to the year 2000, 3) use benefit assessments to meet duly authorized debt obligations beyond the year 2000 until retired, and 4) meet flood damage costs to District facilities from flood disasters. The voters approved the benefit assessment measures in each of these zones. On June 5, 1990, voters approved a similar measure in the North Central zone.

Pursuant to the 1986 and 1990 voter approved benefit assessment programs described above, as of July 1, 2000, benefit assessment rates are determined solely by each zone's long-term debt obligations. The District cannot increase annual debt obligations supported by benefit assessments in excess of amounts in place on July 1, 2000 unless a new measure is approved by voters.

DEBT OBLIGATION REFUNDING (2003)

In February, 2003, the District refinanced a portion of the outstanding 1994A Series Certificates of Participation to take advantage of a favorable interest rate market. The District realized cost savings in three of the 5 watershed zones; Central, East and North Central. In the Central and North Central zones, the Board determined that the best use of the savings was to increase the amount of debt while maintaining the yearly debt service at the current level. The additional debt was used to supplement voter approved projects in those zones. Savings achieved in the East zone were not eligible to fund projects, but instead were used to reduce debt service and the associated benefit assessments. Table 1 reflects the change to the benefit assessment debt obligation in the East zone, a reduction of roughly \$130,000 per year beginning in 2004. The refinancing resulted in slight insignificant changes to the debt obligation in all other zones.

DEBT OBLIGATION REFUNDING (2004)

The remaining portion of the 1994A Certificates of Participation (COP's) became eligible for refunding on November 3, 2003. Since the remaining portion was allocated to the advance refunding of the Series 1988 and Series 1990 COP's, tax law requires that a ten year period of time elapse prior to the second advance refunding, marked by November 3, 2003 in this case. In January, 2004, the District refinanced this remaining portion of the outstanding 1994A Series Certificates of Participation to again take advantage of the favorable interest rate market. The District realized cost savings in two of the 5 watershed zones; Northwest and South. In the Northwest zone, the Board determined that the best use of the savings was to increase the amount of debt while maintaining the yearly debt service at the current level. The additional debt was used to supplement voter approved projects in that zone.

Savings achieved in the South zone were not eligible to fund projects, but instead were used to shorten the term over which the debt service would be paid and associated benefit assessments would be collected. Table 1 on the following page reflects the change to the benefit assessment debt obligation in the South zone, in which the debt obligation is paid off by the year 2013 instead of 2024. The refinancing resulted in slight insignificant changes to the debt obligation in all other zones.

DEBT OBLIGATION REFUNDING (2007)

In February, 2007 the District refinanced the outstanding portion of the 2000 Series Certificates of Participation to take advantage of a favorable interest rate market. The District realized cost savings in four of the 5 watershed zones; Northwest, North Central, Central, and East. No debt was issued for the South zone under the 2000 Series debt issuance, therefore the South zone was not affected by the refunding. In the four affected zones, the Board determined that the best use of the savings was to increase the amount of debt while maintaining the yearly debt service at the current level. The additional debt was used for voter approved projects in each zone.

There was a one-time reduction in the benefit assessment debt obligation for each of the four affected zones in FY 08 as shown on Table 1. This one time reduction was a result of the issuance of the 2007A Refunding Certificates of Participation that refinanced the 2000 Series Certificates of Participation. Upon analyzing the results of the refunding, Bond Counsel determined that \$1.1M was available to pay down principal in the affected zones. In FY 09 and beyond, Table 1 reflects slight immaterial changes to the benefit assessment debt obligation in the four affected zones due to the refinancing. Table 1 also shows the End of Year Principal balance schedule in aggregate for all zones.

DEBT OBLIGATION REFUNDING (2012)

In November, 2012 the District refinanced the outstanding portion of the 2003A Series Certificates of Participation to take advantage of a favorable interest rate market. The District realized cost savings in three of the 5 watershed zones; North Central, Central, and East. In the three affected zones, the Board determined that the best use of the savings was to increase the amount of debt while maintaining the yearly debt service at the current level. The additional debt will be used for voter approved projects in each zone. The refinancing resulted in slight insignificant changes to the debt obligation in the three affected zones which are reflected in Table 1.

DEBT OBLIGATION REFUNDING (2017)

In March, 2017 the District refinanced the outstanding portion of the 2004A and 2007A Series Certificates of Participation to take advantage of a favorable interest rate market. The District realized cost savings in four of the 5 watershed zones; Northwest, North Central, Central, and East. In the four affected zones, the Board determined that the best use of the savings was to increase the amount of debt while maintaining the yearly debt service at the current level. The additional debt will be used for voter approved projects in each zone. The refinancing resulted in slight insignificant changes to the debt obligation in the four affected zones which are reflected in Table 1.

Table 1
Flood Control Benefit Assessment
Debt Obligation Schedule*
& End of Year Principal Balance

Fiscal Year	Northwest Zone	North Central Zone	Central Zone	East Zone	South Zone	End of Year Principal Balance
	(Lower Peninsula)	(West Valley)	(Guadalupe)	(Coyote)	(Uvas-Llagas)	
2005	\$4,683,279	\$2,961,469	\$6,266,733	\$4,685,927	\$762,874	\$185,260,000
2006	\$4,688,707	\$2,968,562	\$6,284,527	\$4,693,154	\$765,050	\$177,940,000
2007	\$4,693,280	\$2,972,291	\$6,293,598	\$4,698,526	\$766,599	\$170,310,000
2008	\$4,149,940	\$2,811,030	\$6,118,061	\$4,209,282	\$767,821	\$170,200,000
2009	\$4,694,211	\$2,977,909	\$6,309,876	\$4,701,353	\$769,058	\$161,485,000
2010	\$4,688,957	\$2,973,939	\$6,300,769	\$4,697,090	\$767,773	\$152,440,000
2011	\$4,667,239	\$2,948,775	\$6,237,262	\$4,669,012	\$758,733	\$143,160,000
2012	\$4,676,487	\$2,958,686	\$6,261,490	\$4,682,321	\$761,825	\$133,440,000
2013	\$4,680,768	\$2,964,455	\$6,276,483	\$4,686,768	\$764,034	\$123,100,000
2014	\$4,322,174	\$2,502,568	\$5,277,998	\$4,206,085	\$0	\$115,045,000
2015	\$4,305,891	\$2,500,054	\$5,227,748	\$4,203,840	\$0	\$106,690,000
2016	\$4,078,738	\$2,277,005	\$4,594,928	\$3,970,919	\$0	\$99,060,000
2017	\$4,082,042	\$2,278,317	\$4,598,392	\$3,973,371	\$0	\$91,040,000
2018	\$4,078,867	\$2,277,292	\$4,597,191	\$3,970,971	\$0	\$82,655,000
2019	\$4,079,626	\$2,277,340	\$4,598,072	\$3,971,383	\$0	\$73,850,000
2020	\$2,731,842	\$2,277,595	\$4,598,761	\$3,972,284	\$0	\$65,705,000
2021	\$2,735,024	\$2,279,788	\$4,600,517	\$3,976,434	\$0	\$57,170,000
2022	\$2,734,901	\$2,279,421	\$4,599,256	\$3,975,980	\$0	\$48,260,000
2023	\$2,730,584	\$2,278,566	\$4,598,439	\$3,972,551	\$0	\$38,955,000
2024	\$2,731,941	\$2,277,322	\$4,597,060	\$3,972,057	\$0	\$29,235,000
2025	\$2,731,077	\$819,254	\$910,590	\$2,458,454	\$0	\$24,940,000
2026	\$2,732,804	\$819,772	\$911,166	\$2,460,008	\$0	\$20,425,000
2027	\$2,731,817	\$819,476	\$910,837	\$2,459,120	\$0	\$15,685,000
2028	\$2,732,927	\$819,809	\$911,207	\$2,460,119	\$0	\$10,710,000
2029	\$2,733,298	\$819,920	\$911,330	\$2,460,453	\$0	\$5,485,000
2030	\$2,732,681	\$819,735	\$911,124	\$2,459,897	\$0	\$0

*Based on debt service and requirements associated with debt covenants for the 2012A, and 2017A Series Certificates of Participation.

FLOOD CONTROL BENEFIT ASSESSMENTS

GENERAL PROVISIONS

State law allows the benefit assessments to be based on the proportionate amount of storm water runoff from each privately-owned parcel of property.

Consistent with this provision, the District Board has, with voter approval, established five benefit assessment land use categories, A through E, for parcels assessed within the District's five flood control zones. These benefit assessment land use categories are as follows:

Land Use Category	Land Use
A	Commercial and industrial
B	Apartments, schools, and churches
C	Single family residential and small multiples (2-4 units), condominiums, and townhouses
D	Vacant land presently utilized for farming, vineyards, and crops
E	Urban: Nonutilized agricultural land, grazing land, salt ponds, undisturbed vacant land, and parcels used exclusively as well sites located in urban areas Rural: Non-utilized agricultural land, grazing land, undisturbed vacant land and parcels used exclusively as well sites located in rural areas

The assessment for an individual parcel in a given land use category is computed by multiplying the area of the parcel in acres by the appropriate assessment rate. If the computed assessment is less than the minimum assessment amount, the minimum assessment is used.

BENEFIT ASSESSMENT RATES FOR EACH ZONE

Each of the five flood control zones has an individual set of benefit assessment rates to meet respective debt obligations. These debt obligations, consisting of debt service payments and requirements associated with debt covenants are shown for all zones for each fiscal year in Table 1. Actual rates will be determined once annual land use information is received from the County Assessor in July. Historical rates for fiscal year 2018-19 are shown in Table 2. Expected rates for FY 2019-20 are shown in Table 3. South Zone's debt obligation has been paid off and therefore the expected rates are zero.

FY 2018-19 BENEFIT ASSESSMENT RATES

Table 2 below shows the benefit assessment rates levied in fiscal year 2018-19.

Table 2
FY 2018–19 Assessments by Category and Zone

Land Use Categories	Flood Control Zones				
	Northwest (Lower Peninsula)	North Central (West Valley)	Central (Guadalupe)	East (Coyote)	South (Uvas-Llagas)
A - Commercial, Industrial					
Rate (\$/Acre)	\$326.46	\$105.04	\$168.28	\$166.57	\$0.00
Minimum Assessment ⁽¹⁾	\$81.61	\$26.26	\$41.82	\$41.64	\$0.00
B - Apartment, Schools, Churches					
Rate (\$/Acre)	\$244.84	\$78.78	\$125.46	\$124.92	\$0.00
Minimum Assessment ⁽¹⁾	\$61.21	\$19.69	\$31.36	\$31.23	\$0.00
C - Single Family Residential, Small Multiples (2-4 units), Condominiums, and Townhouses					
Rate (\$/Acre)	(2)	(2)	(2)	(2)	(2)
Minimum Assessment ⁽¹⁾	\$40.81	\$13.13	\$20.91	\$20.82	\$0.00
D - Utilized Agriculture					
Rate (\$/Acre)	\$2.04	\$0.66	\$1.05	\$1.04	\$0.00
Minimum Assessment ⁽¹⁾	\$20.40	\$6.56	\$10.45	\$10.41	\$0.00
E Urban - Non-utilized Agricultural, grazing Land, Salt Ponds, Well Site in Urban Areas					
Rate (\$/Acre)	\$0.61	\$0.20	\$0.31	\$0.31	\$0.00
Minimum Assessment ⁽¹⁾	\$6.12	\$1.97	\$3.14	\$3.12	\$0.00
R Rural - Non-utilized Agricultural, Grazing Land, Well Sites in Rural Areas					
Rate (\$/Acre)	\$0.02	\$0.02	\$0.04	\$0.04	\$0.00
Minimum Assessment ⁽¹⁾	\$6.12	\$1.97	\$3.14	\$3.12	\$0.00
<p>(1) The minimum assessments shown for Categories A, B, and C apply to parcels 1/4 acre or less in size. Category C parcels larger than 1/4 acre pay the minimum assessment for the first 1/4 acre and the remaining acreage is assessed at the Category D rate. For Category D, the minimum assessment applies to parcels less than 10 acres. The minimum assessment for Group E urban parcels is the amount charged for 10 acres of urban undeveloped land; the minimum assessment for Group E rural parcels is the same as E urban but applies to parcels of 80 acres or less.</p> <p>(2) Residential land in excess of 1/4 acre is assessed at the D rate.</p>					

EXPECTED FY 2019-20 BENEFIT ASSESSMENT RATES

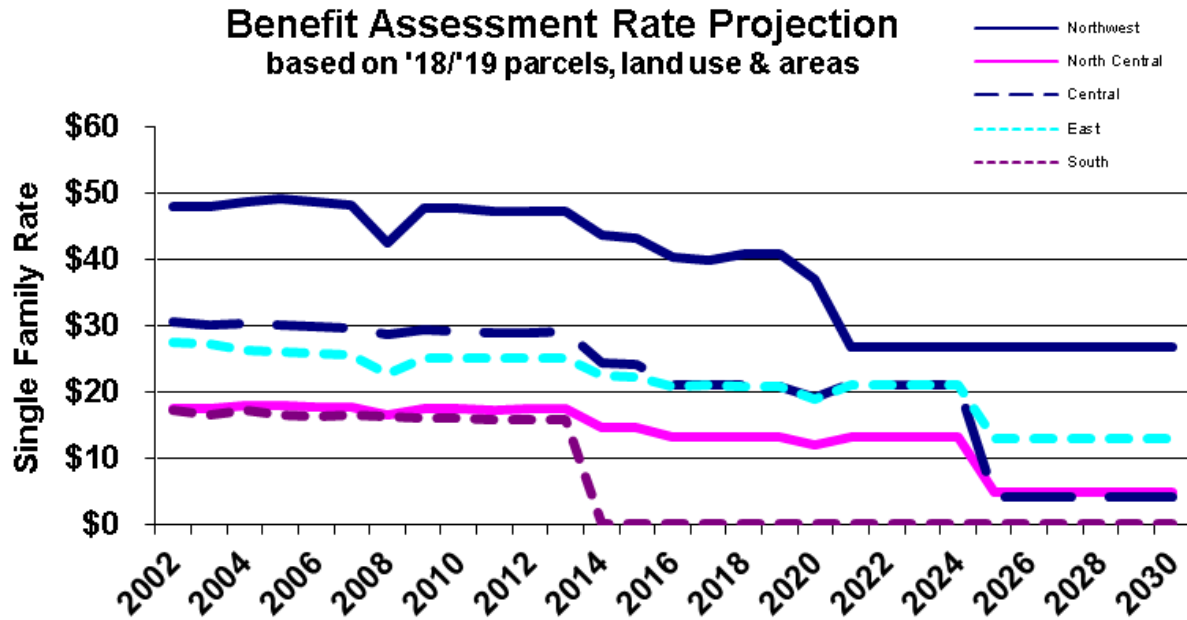
Table 3 shows the expected benefit assessment rates to be levied in fiscal year 2019-20.

Table 3
Expected FY 2019–20 Assessments by Category and Zone

Land Use Categories	Flood Control Zones				
	Northwest (Lower Peninsula)	North Central (West Valley)	Central (Guadalupe)	East (Coyote)	South (Uvas-Llagas)
A - Commercial, Industrial					
Rate (\$/Acre)	\$218.61	\$105.04	\$168.28	\$166.57	\$0.00
Minimum Assessment ⁽¹⁾	\$54.65	\$26.26	\$41.82	\$41.64	\$0.00
B - Apartment, Schools, Churches					
Rate (\$/Acre)	\$163.95	\$78.78	\$125.46	\$124.92	\$0.00
Minimum Assessment ⁽¹⁾	\$40.99	\$19.69	\$31.36	\$31.23	\$0.00
C - Single Family Residential, Small Multiples (2-4 units), Condominiums, and Townhouses					
Rate (\$/Acre)	(2)	(2)	(2)	(2)	(2)
Minimum Assessment ⁽¹⁾	\$27.33	\$13.13	\$20.91	\$20.82	\$0.00
D - Utilized Agriculture					
Rate (\$/Acre)	\$1.37	\$0.66	\$1.05	\$1.04	\$0.00
Minimum Assessment ⁽¹⁾	\$13.66	\$6.56	\$10.45	\$10.41	\$0.00
E Urban - Non-utilized Agricultural, grazing Land, Salt Ponds, Well Site in Urban Areas					
Rate (\$/Acre)	\$0.41	\$0.20	\$0.31	\$0.31	\$0.00
Minimum Assessment ⁽¹⁾	\$4.10	\$1.97	\$3.14	\$3.12	\$0.00
E Rural - Non-utilized Agricultural, Grazing Land, Well Sites in Rural Areas					
Rate (\$/Acre)	\$0.05	\$0.02	\$0.04	\$0.04	\$0.00
Minimum Assessment ⁽¹⁾	\$4.10	\$1.97	\$3.14	\$3.12	\$0.00
<p>(1) The minimum assessments shown for Categories A, B, and C apply to parcels 1/4 acre or less in size. Category C parcels larger than 1/4 acre pay the minimum assessment for the first 1/4 acre and the remaining acreage is assessed at the Category D rate. For Category D, the minimum assessment applies to parcels less than 10 acres. The minimum assessment for Group E urban parcels is the amount charged for 10 acres of urban undeveloped land; the minimum assessment for Group E rural parcels is the same as E urban but applies to parcels of 80 acres or less.</p> <p>(2) Residential land in excess of 1/4 acre is assessed at the D rate.</p>					

PROJECTED BENEFIT ASSESSMENT RATES

A graph of projected benefit assessment rates assuming the same parcels with the same land use and areas as existed in FY 2018-2019 is shown below. This graph indicates how the rates will decrease over time as various series of Certificates of Participation are retired.



Note: Actual rates will likely be lower as parcels are developed in the future

ASSESSMENT ROLLS AND COLLECTION

The Benefit Assessment Act of 1982 provides that benefit assessments may be levied and collected by the County Tax Collector at the same time and in the same manner as the general tax levy.

Following adoption of the benefit assessment resolution for 2018-19 and subsequent years, the District will prepare a separate assessment roll identifying each parcel of land subject to flood control benefit assessment for each flood control zone. For each parcel, the roll will list the assessor parcel number, owner's name, County land use code, District land use category, flood control zone, acreage and flood control benefit assessment based on the annual revenue requirement. This information will be available for review at the District through the Clerk of the Board. Extractions from the benefit assessment roll showing parcel number and assessment amount will be forwarded to the County Tax Collector in early August to facilitate County collection of the flood control benefit assessments on the annual property tax bills.

NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that the Board of Directors of Santa Clara Valley Water District (District) will hold a public hearing on a report recommending:

FLOOD CONTROL BENEFIT ASSESSMENT RATES FOR FISCAL YEAR 2019–2020 in flood control zones of said District.

The public hearing will be held on Tuesday, May 14, 2019, at 1 p.m., in the District's Headquarters Board Room, 5700 Almaden Expressway, San Jose, California.

Said report is in writing and incorporates by reference a description of each parcel and the expected amount of assessment under the approved assessment formula for each parcel within the flood control zones of the District.

A copy of the report may be inspected at the Office of the Clerk of the Board at the above address at any time during business hours. Copies of the report will also be made available for inspection at the following locations:

Campbell City Hall
70 North First Street
Campbell, California

Los Altos Hills Town Hall
26379 Fremont Road
Los Altos Hills, California

Mountain View City Hall
500 Castro Street
Mountain View, California

Campbell Library
77 Harrison Avenue
Campbell, California

Los Gatos Civic Center
110 East Main Street
Los Gatos, California

Mountain View Public Library
585 Franklin Street
Mountain View, California

Cupertino City Hall
10300 Torre Avenue
Cupertino, California

Los Gatos Library
100 Villa Avenue
Los Gatos, California

Palo Alto City Hall
250 Hamilton Avenue
Palo Alto, California

Cupertino Library
10800 Torre Avenue
Cupertino, California

Milpitas City Hall
455 East Calaveras Boulevard
Milpitas, California

Mitchell Park Library
3700 Middlefield Road
Palo Alto, California 94303

Gilroy City Hall
7351 Rosanna Street
Gilroy, California

Milpitas Library
160 North Main Street
Milpitas, California

San Jose City Hall
200 East Santa Clara Street
San Jose, California

Gilroy Library
350 West Sixth Street
Gilroy, California

Monte Sereno City Hall
18041 Saratoga-Los Gatos Road
Monte Sereno, California

Dr. Martin Luther King, Jr. Library
150 East San Fernando Street
San Jose, California

Los Altos City Hall
1 North San Antonio Road
Los Altos, California

Morgan Hill City Hall
17575 Peak Avenue
Morgan Hill, California

Hillview Branch Library
1600 Hopkins Drive
San Jose, California

Los Altos Library
13 South San Antonio Road
Los Altos, California

Morgan Hill Library
660 West Main Avenue
Morgan Hill, California

Pearl Avenue Library
4270 Pearl Avenue
San Jose, California

Santa Clara City Hall
1500 Warburton Avenue
Santa Clara, California

Saratoga City Hall
13777 Fruitvale Avenue
Saratoga, California

Sunnyvale Library
665 West Olive Avenue
Sunnyvale, California

Santa Clara Central Park Library
2635 Homestead Road
Santa Clara, California

Saratoga Library
13650 Saratoga Avenue
Saratoga, California

Sunnyvale City Hall
456 W. Olive Avenue
Sunnyvale, California

NOTE: To secure information on an individual parcel assessment, you will need your Assessor Parcel Number. If you do not know your parcel number, please contact the County Assessor's Office at (408) 299-5000 and ask for it, giving your name and street address. Using that parcel number, you can learn your proposed assessment by calling (408) 630-3137.

At the hearing, the Board of Directors will hear any and all protests. At the conclusion of the hearing, the Board may adopt, revise, change, reduce, or modify any assessment and will make its determination upon each assessment referred to in the report and thereafter, by resolution, will confirm the assessments.

SANTA CLARA VALLEY WATER DISTRICT

Date: _____, _____

By: _____
Michele L. King, CMC
Clerk/Board of Directors

File No.: 19-0366

Agenda Date: 4/9/2019

Item No.: 3.8.

BOARD AGENDA MEMORANDUM

SUBJECT:

Membership Nomination for Committee Appointment to the Environmental and Water Resources Committee (EWRC).

RECOMMENDATION:

Consider nomination for a two-year membership appointment of Ms. Susan Blake to the Environmental and Water Resources Committee.

SUMMARY:

In accordance with Board Governance Process Policy - 8, Board Committees are established to assist the Board with policy advice, District Mission implementation, respective expertise, and, very importantly, to help produce the link between the District and the community.

The following committee member nomination for the Environmental and Water Advisory Committee is submitted for Board appointment consideration in accordance with Board Resolution 15-28, Providing for and Defining the Structure and Function of Board Committees (Attachment 2). The respective committee application for a new nominee is included as (Attachment 1).

Applicant Name	Nominating Director	Nomination (2-year term)	Membership Category	Board Action: Appointment
Susan Blake	Director LeZotte	EWRC	District 4	Appointment

FINANCIAL IMPACT:

The Office of the Clerk of the Board has budgeted funds to support the business meetings of the Board's Advisory Committees for Fiscal Year 2018-2019.

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.

File No.: 19-0366

Agenda Date: 4/9/2019
Item No.: 3.8.

ATTACHMENTS:

Attachment 1: Blake Application

Attachment 2: SCVWD Resolution No. 15-28

UNCLASSIFIED MANAGER:

Michele King, 408-630-2711



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**APPLICATION
FOR A SANTA CLARA VALLEY WATER DISTRICT
COMMITTEE**
F720D01 (B) (1-19-12)

Please complete this application in its entirety and submit an original signed copy to the Office of the Clerk of the Board at 5750 Almaden Expressway, San Jose, California 95118. If more space is needed, please attach additional pages. Applications are valid for one year from the date of receipt and are public record. This application is available on-line at www.valleywater.org under "Board of Directors." For assistance, please contact the Office of the Clerk of the Board at (408) 265-2607, extension 2277.

A. CONTACT INFORMATION

Name of Committee: EWRC			
Name (First, Middle, Last): Susan E. Blake			
Home Phone:	Work Phone:	Cell Phone:	Fax:
Mailing Address: (Street Address, City, State, ZIP)			
E-mail:			
If Applicable, Present Employer (Name and Address): self		Job Title: Speech-Language Pathologist	
Do you have a current contractual relationship with the Santa Clara Valley Water District? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, please describe (if more space is needed, please attach additional pages):			

B. VOLUNTEER EXPERIENCE

List current and previous volunteer experience. Include experience with charitable organizations, committees and commissions, or public offices you may have held and relevant dates. If more space is needed, please attach additional pages.		
DATE(S):	NAME:	RESPONSIBILITIES/EXPERIENCE:
1999 to current	City of Campbell	Historic Preservation Board member (appointed)
(2007 to current	Downtown Campbell Neighborhood Association	member
current	South Bay Clean Creeks Coalition	supporter
current	Smith River Alliance	supporter

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C. INTEREST AND AVAILABILITY

How did you hear about this committee opening?	
<input type="checkbox"/> District Website	<input checked="" type="checkbox"/> Director (please specify): Linda LeZotte
<input type="checkbox"/> Committee Member (please specify):	<input type="checkbox"/> Other (please specify):
Please describe your interest in serving on this committee: Would like to serve as an out-reach for our community, providing news, education and helpful suggestions for water conservation and stewardship	
Please describe your relevant qualifications, such as specific skills, training, or knowledge that should be considered in applying for this committee: see above	
How would the community benefit by your participation on this committee? see above	
Are you available to attend committee meetings when scheduled? (please go to www.valleywater.org for committee meeting schedule details) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If No, please describe: Except for last Wednesday of each month	
If you have a disability, what accommodations would you need to serve on this committee?	

D. EMERGENCY CONTACT INFORMATION

In case of emergency, contact:	
1. Name:	Phone:
2. Name:	Phone:

I, HEREBY, ATTEST THAT THE ABOVE INFORMATION IS TRUE TO THE BEST OF MY KNOWLEDGE AND MAY BE VERIFIED BY THE SANTA CLARA VALLEY WATER DISTRICT. I UNDERSTAND THAT MISREPRESENTATION OR OMISSIONS MAY BE CAUSE FOR MY IMMEDIATE REJECTION AS AN APPLICANT OR TERMINATION FROM APPOINTMENT TO A COMMITTEE.

Applicant Signature

Feb. 4, 2019

Date Signed

**BOARD OF DIRECTORS
SANTA CLARA VALLEY WATER DISTRICT**

RESOLUTION 15-28

**PROVIDING FOR AND DEFINING THE STRUCTURE AND FUNCTION OF
ADVISORY COMMITTEES TO THE SANTA CLARA VALLEY WATER DISTRICT
BOARD OF DIRECTORS AND REPEALING RESOLUTION 14-102**

BE IT RESOLVED by the Board of Directors of the Santa Clara Valley Water District as follows:

There have been established as advisory to the Santa Clara Valley Water District (District) Board of Directors (Board), in accordance with the District Act, the following committees (hereafter "Committees"), which shall continue in accordance with the provisions of this resolution:

1. Agricultural Water Advisory Committee (established by the District Act, which states "... The Board shall create an advisory committee consisting of farmers to represent users of agricultural water.");
2. Environmental and Water Resources Committee; and
3. Santa Clara Valley Water Commission.

1.0 PURPOSE

- 1.1 This resolution sets forth the purpose, activities, and membership guidelines of the Committees.
- 1.2 The Committees are established to assist the Board with policy review and development, provide comment on activities in the implementation of the District's mission for Board consideration, and to identify Board-related issues pertaining to the following:
 - 1.2.1 **Agricultural Water Advisory Committee:** agricultural water supply and use and groundwater production charges.
 - 1.2.2 **Environmental and Water Resources Committee:** water supply, flood protection, and environmental stewardship.
 - 1.2.3 **Santa Clara Valley Water Commission (Commission):** water supply, flood protection, and environmental stewardship.
- 1.3 In accordance with Governance Process Policy-8, the specific duties of the Committees are to:
 - 1.3.1 Provide input on policy alternatives for Board deliberation.
 - 1.3.2 Provide comment on the activities in the implementation of the District's mission for Board consideration.
 - 1.3.3 Produce and present to the Board an Annual Accomplishments Report summarizing the outcomes of the Committee's annual Board-approved work plan.

1.3.4 Further, in accordance with Governance Process Policy-3, when requested by the Board, the Advisory Committees may help the Board produce the link between the District and the public through information sharing to the communities they represent.

1.4 In carrying out these duties, the Committee members bring to the District their respective expertise and the interests of the communities they represent.

2.0 MEMBERSHIP

2.1 Committee membership shall consist of the following:

Agricultural Water Advisory Committee

2.1.1 The Agricultural Water Advisory Committee shall be comprised of 16 members who are farmers and reside or do business, as determined by the Board, within Santa Clara County.

2.1.2 The Agricultural Water Advisory Committee shall also be comprised of one member who owns a private well (non-retail) within Santa Clara County.

2.1.3 Each Director may nominate up to two farmers who reside and/or farm within the nominating Director's district. In the event that a Director is unable to nominate a farmer from his/her district, the Director may nominate a farmer from anywhere within Santa Clara County.

2.1.4 The Loma Prieta Resource Conservation District and the Santa Clara County Farm Bureau may each nominate one representative for appointment as long as the nominee is a farmer who resides or does business, as determined by the Board, within Santa Clara County.

2.1.5 The Agricultural Water Advisory Committee does not have alternate members.

Environmental and Water Resources Committee

2.1.6 Effective July 1, 2015, the Environmental and Water Resources Committee shall be comprised of 21 At-Large members, who reside or do business, as determined by the Board, within Santa Clara County.

2.1.7 Effective July 1, 2015, each Director may nominate up to three at-large members.

Santa Clara Valley Water Commission

2.1.8 The Santa Clara Valley Water Commission shall be comprised of 18 elected representatives: one from each City and Town in Santa Clara County, the County of Santa Clara, the Santa Clara County Open Space Authority, and the Midpeninsula Regional Open Space District.

Each elected representative may have at least one alternate who may be another elected official or staff person from the same jurisdiction.

- 2.1.9 All municipal representatives and alternates to the Santa Clara Valley Water Commission shall be appointed by their perspective agency.
- 2.2 Committee members and alternates (where applicable) serve a two-year renewable term that begins upon appointment, or January 1 if a renewed appointment, and expires on December 31 of the year following appointment. Term of office for Committee members and alternates who are appointed mid-year shall begin upon appointment and run through December 31 of the year following appointment.
- 2.3 Board appointed Committee members shall be held over until they are reappointed or successors are appointed by the Board.
- 2.4 Municipal appointed Committee members shall be held over until they are reappointed or successors are appointed by the County of Santa Clara and each City and Town therein.
- 2.5 Board member nominee appointments to Committees shall be subject to a majority vote of a quorum of the Board.
- 2.6 Following two or more consecutive unexcused absences, the Board may choose to remove a Board appointee. An unexcused absence is defined as failure to notify the District at least 48 hours in advance that the member will not attend the meeting.
- 2.7 Nothing in this resolution affects the eligibility of any current member of any Committee to serve out his or her current term, as long as the member continues to meet the eligibility criteria in effect when he or she was appointed to the Committee.

3.0 OFFICERS AND DUTIES

- 3.1 The officers of each Committee shall be a Chairperson and Vice-Chairperson, both of whom shall be members of that Committee. The Chairperson and Vice-Chairperson shall be elected by the Committee, each for a term of one year commencing on January 1 and ending on December 31 and for no more than two consecutive terms. The Committee shall elect its officers at the first meeting of the calendar year. All officers shall hold over in their respective offices after their term of office has expired until their successors have been elected and have assumed office.
- 3.2 The Chairperson shall have the following authority and duties:
 - (a) Preside at all meetings of the Committee;
 - (b) Facilitate productive meetings in accordance with posted Agenda and the Ralph M. Brown Act (open meeting law);

- (c) Add items to the committee agenda;
 - (d) Invite speakers for any agenda item;
 - (e) Manage speaker time limits;
 - (f) Facilitate communication of committee comments, requests, and recommendations to the Board of Directors;
 - (g) Report to the committee on decisions of the Board of Directors which impact the committee's activities; and
 - (h) Perform other such duties as the Committee may prescribe consistent with the purpose of the Committee.
- 3.3 The Vice-Chairperson shall perform the duties of the Chairperson in the absence or incapacity of the Chairperson. In case of the unexpected vacancy of the Chairperson, the Vice-Chairperson shall perform such duties as are imposed upon the Chairperson until such time as a new Chairperson is elected by the Committee.
- 3.4 Should the office of Chairperson or Vice-Chairperson become vacant during the term of such office, the Committee shall elect a successor from its membership at the earliest meeting at which such election would be practicable and such election shall be for the unexpired term of such office.
- 3.5 Should the Chairperson and Vice-Chairperson know in advance that they will both be absent from a meeting, the Chair may appoint a Chairperson Pro-tempore to preside over that meeting. In the event of an unanticipated absence of both the Chairperson and Vice-Chairperson, the Committee may elect a Chairperson Pro-tempore to preside over the meeting in their absence.

4.0 MEETINGS

- 4.1 Meetings of the Committees shall be open and public and called in accordance with the Ralph M. Brown Act, Government Code Sections 54950 and following. Such meetings shall be held at the District Headquarters or such other place and time within Santa Clara County as the Board may designate.
- 4.2 Special meetings may be called by the Board and conducted in accordance with Section 54956 of the Government Code.
- 4.3 Committees shall convene four times per year or more often, as authorized by the Board, except for the Agricultural Water Advisory Committee, which shall convene at least once a year, or more often, as authorized by the Board.
- 4.4 The Board approves and sets all Committee annual work plans and meeting agendas. Committee meeting agendas will be considered pre-approved by the Board once it has approved each of the annual Advisory Committee work plans. Modifications to meeting agendas will be considered by the Board, or Board

Chair, as needed, through a review of the pre-approved work plans when it receives and considers Committee policy recommendations, comments, and requests, staff recommended modifications, and requests by members of the public. The Board may also initiate modifications to pre-approved work plans at any time.

- 4.5 Notices of each meeting, together with an agenda, the draft minutes of the preceding meeting, and supporting meeting materials, shall be provided to the Committee members no less than ten business days in advance.
- 4.6 Any Committee meeting in which all items on the Agenda are informational, excluding the approval of meeting minutes, will be cancelled and notification sent from the Clerk of the Board at least ten days prior to the scheduled meeting date.
- 4.7 A majority of the appointed members of the Committee or their alternates is required to constitute a quorum for the purposes of conducting its business and exercising its powers and for all other purposes. If the Clerk of the Board, or his/her designated representative (Clerk), has been notified at least two business days in advance of a scheduled meeting that a quorum will not be present, the Clerk will cancel the meeting and notice the membership of the cancellation.
- 4.8 In the event that a Committee meeting is cancelled due to the lack of a quorum, upon concurrence of the Committee Chair and the Board Representative, the Committee meeting may be re-scheduled or re-convened to a specified date, time, and place.
- 4.9 In the event a quorum of the Committee is not present at the scheduled start time of the meeting, or is lost during the meeting, at the discretion of the Chair of each Advisory Committee, individual Committee members present in the room may proceed to hear informational agenda items, including any staff reports. No action shall be taken on any agenda item when a quorum does not exist. No official record of statements made by individual Committee members, staff, or members of the public will be created. However, if a quorum is achieved at any time, action items may be heard, discussed, and voted upon.
- 4.10 Except for such actions to adjourn, action of the Committee may be taken only upon the affirmative vote of not less than a majority of the appointed members or their alternates present. The voting on all matters shall be by voice vote unless a roll call vote is called for by any member of the Committee. Only appointed Committee members or appointed alternates (who are sitting in an appointed member's stead) may vote on a matter.
- 4.11 Discussion on any agenda item by either Committee members or by any member of the general public may be limited, at the discretion of the Chairperson, to such length of time as the Chairperson may deem reasonable under the circumstances.
- 4.12 The Committee may adjourn any regular or special meeting to a time and place specified in the order of adjournment.

5.0 SUB-COMMITTEES

- 5.1 Subcommittees of Board Advisory Committees will not be recognized. However, less than a quorum of Committee members may meet informally outside of meetings in accordance with Ralph M. Brown Act requirements.

BE IT FURTHER RESOLVED that Resolution No. 14-102 is hereby repealed.

PASSED AND ADOPTED by the Board of Directors of Santa Clara Valley Water District by the following vote on April 14, 2015

AYES: Directors T. Estremera, N. Hsueh, B. Keegan, D. Kennedy, L. LeZotte, R. Santos, G. Kremen

NOES: Directors None

ABSENT: Directors None

ABSTAIN: Directors None

SANTA CLARA VALLEY WATER DISTRICT

By: 

GARY KREMEN
Chair/Board of Directors

ATTEST: MICHELE L. KING, CMC


Clerk/Board of Directors

File No.: 19-0399

Agenda Date: 4/9/2019

Item No.: *3.9.

BOARD AGENDA MEMORANDUM

SUBJECT:

CEO Bulletin for the Week of March 22-28, and March 29-April 4, 2019.

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; and 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: 032819 CEO Bulletin

*Attachment 2: 040419 CEO Bulletin

UNCLASSIFIED MANAGER:

File No.: 19-0399

Agenda Date: 4/9/2019
Item No.: *3.9.

Norma Camacho, 408-630-2084

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

Chief Executive Officer Bulletin Week of March 22 - 28, 2019

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.

Item	IN THIS ISSUE
<u>1</u>	3M™ Inspection & Asset Management Software for Safety Equipment Management
<u>2</u>	Faster Internet for Silicon Valley Advanced Purification Center
<u>3</u>	Water 101 Academy Ambassador Program Recap
<u>4</u>	Tax Defaulted Property Acquisitions Completed in Alviso
<u>5</u>	Update on Public Sale of Excess Valley Water Property Located at 110 Sunset Avenue in San Jose

3M™ Inspection & Asset Management Software for Safety Equipment Management

Valley Water recently began utilizing new software, 3M-Inspect. The software is a safety equipment management and inspection system that allows Valley Water to track the issuance of safety gear and the ability to quickly document inspections for a variety of assets, e.g., automatic external defibrillators, fire extinguishers, ladders, and personal fall protection gear.

The program allows Valley Water to use a Radio Frequency Identification (RFID) reader device, along with a cell phone application, to scan, record and track issued gear/equipment, record which employees were issued the gear/equipment, record dates and times of inspections, document completed required inspections, and the software notifies staff of upcoming required inspections.

This program will assist Valley Water in their compliance efforts associated with gear/equipment regulatory inspection requirements by maintaining easily retrievable digital records of each inspection. The software is cloud-based for simplified deployment and can be accessed anywhere there is a network connection. To improve flexibility for areas with limited Wi-Fi or cellular data coverage, inspectors can use the mobile application while disconnected and then upload the inspection information once a network connection is established. This software also gives Valley Water the capability to quickly report on data across multiple locations, giving new levels of insight for safety equipment management in multi-site operations.

For further information, please contact Tina Yoke at (408) 630-2385.

Faster Internet for Silicon Valley Advanced Purification Center

Ensuring that Valley Water has the technology to efficiently complete its work is a top priority of the Information Technology Division. The Internet connection at the Silicon Valley Advanced Purification Center is now 10x faster, addressing previous reports of jittery telephone communications, slow video streaming during educational tours, and poor connection to the main campus.

For further information, please contact Tina Yoke at (408) 630-2385.

Water 101 Academy Ambassador Program Recap

The Water 101 Academy Ambassador Program culminated on Tuesday, March 26, 2019, and ambassadors were presented with a Resolution of Appreciation at the Board meeting.

The academy held its final educational session on Saturday, March 23, 2019, which was composed of an all-day bus field trip to various Valley Water facilities and projects. The ambassadors visited San Luis Reservoir to learn about role of imported water as both a State Water Project and Central Valley Water Project Contractor and need to engage with WaterFix and expand nearby Pacheco Reservoir for additional storage and improved reliability of our imported water supplies. The group then headed to Anderson Dam to learn about the Seismic Retrofit Project and Dam Safety program, as well as discussed flood protection work in South County on Upper Llagas Creek. Afterwards, the group was welcomed by Director Santos at the Silicon Valley Advanced Water Purification Center where they stopped for a tour and lunchtime presentation of watersheds and fisheries. The rest of the afternoon focused on several key flood protection projects such as San Francisquito Creek, Coyote Creek and downtown Guadalupe River Park flood protection projects.

The intent of the program is to educate and train community leaders on local water issues who would then serve as neighborhood liaisons/leaders in engaging their communities on water issues and sharing information. Ambassadors were encouraged to get involved as volunteers, by attending Valley Water Board meetings, writing letters of support, and/or by serving on a Board committee or commission. Post-event and program survey results are being gathered and compiled to evaluate program effectiveness and to seek input on ways to further engage with the cohort moving forward.

The next application period for the next cohort will open up later this fall for next year's Water 2-2 Academy Ambassador Program.

For further information, please contact Rick Callender at (408) 630-2017.

Tax Defaulted Property Acquisitions Completed in Alviso

Valley Water has been coordinating with the County of Santa Clara and other agencies for final permission (City and State) to acquire two (2) parcels of land along the Guadalupe River area in Alviso through the tax-default process. This land was formerly owned by Blue Whale Sailing School and this additional ownership will provide the necessary right of way for Valley Water's maintenance access road, levee and the public trail. The land transactions are complete and recorded deeds have now been received by Valley Water.

For further information, please contact Ngoc Nguyen at (408) 630-2632.

Update on Public Sale of Excess Valley Water Property Located at 110 Sunset Avenue in San Jose

On February 26, 2019, the Board approved the sale of an excess land parcel with a house at 110 Sunset Avenue in San Jose, California, to the second highest bidder after the first bidder had terminated his contract.

As provided in the Purchase and Sale Agreement, the new potential buyer conducted structural and electrical inspections and determined there would be a significant cost to bring the property up to a desired level. On March 26, 2019, the buyer withdrew and terminated the contract as per the due diligence provision of the contract. The return of the deposit to the potential buyer is being processed.

Valley Water is exploring possible next steps for an upcoming public auction, including the potential costs of demolition first, and then selling it as a bare land piece.

For further information, please contact Ngoc Nguyen at (408) 630-2632.

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

Chief Executive Officer Bulletin Week of March 29 – April 4, 2019

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.

Item	IN THIS ISSUE
<u>1</u>	Open House at the Surface Water Charge Setting Process Public Hearing
<u>2</u>	<u>Kremen</u> Detailed Request Below I-19-0004
<u>3</u>	<u>Santos</u> District's Local Investments R-19-0002

Open House at the Surface Water Charge Setting Process Public Hearing

On Thursday, April 11, 2019, Valley Water will hold an open house as a precursor to the public hearing regarding 2019-2020 groundwater and surface water charges. The annual public hearing is a component of the rate-setting process that includes a series of opportunities for the public to provide input.

The open house takes place at 6 p.m. in the foyer of the Morgan Hill City Council Chambers, 17555 Peak Avenue in Morgan Hill, Ca. The public hearing begins at 7 p.m. in the chamber.

Attendees at the open house will receive a variety of information on services provided to groundwater rate payers, including details on wells, groundwater management and water production. Information will also be made available on South County work such as the Madrone and Main Avenue Pipeline and the Anderson Dam Seismic Retrofit projects.

For further information, please contact Rick Callender at (408) 630-2017.

Kremen

Detailed Request Below

I-19-0004

Full Inquiry:

Recalling that in 2014 / 2015 as the drought caused us to enter into more water transfer/purchase agreements than usual, I asked staff for reference information on market reference prices at the time. Now in 2019, I would like to expand the question as follows: What are current reference prices for water South of Delta distinguished by term, point of delivery, limits on delivery period (e.g., subject or not subject to the transfer window July-Sept) and degree of reliability (for example available vs. not available in critically dry years)? How much more does non interruptible supplies cost? Are their charges tacked on for transportation? How are losses handled? Where is the measurement? Do we assume the water will be delivered to San Luis Reservoir? How do we assure we are getting the best prices? Do we use any third parties to check for best prices? Do other water districts go through contacting and purchasing for purchases of water?

Response: Nina Hawk, COO, Water Utility Enterprise, responded to this informal board correspondence in a memo to the Board of Directors, dated March 14, 2019. This memo is included in the March 22, 2019, Non Agenda packet.

For further information, please contact Garth Hall at (408) 630-2750.

Santos

District's Local Investments

R-19-0002

At the March 26, 2019, Board meeting Director Santos requested staff to furnish a list of local investments in Valley Water's investment portfolio. As of March 29, 2019, Valley Water has \$29.3 million in local investments in the following Bay area entities: Santa Clara County, City and County of San Francisco, City of San Jose, Alameda County, San Jose Evergreen Community College, San Francisco Bay Area Rapid Transit District, Marin Community College, University of California, Avidbank, Union Bank, First Technology Federal Credit Union, First Republic Bank, Community Bank of the Bay, Bank of San Francisco, Technology Credit Union, Mechanics Bank, Alliance Credit Union, and Apple.

Additionally, Valley Water has invested in \$12.7 million in the following California entities: California State Department of Water Resources, City of Los Angeles, City of Pasadena, Bank of Hope, Pacific City Bank, Hanmi Bank, First General Bank, and Community West Bank.

Valley Water is actively monitoring investment opportunities in local Bay area entities and makes investments in local entities in accordance to Valley Water's Investment Policy and the California Government Code.

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

File No.: 19-0393

Agenda Date: 4/9/2019

Item No.: *3.10.

BOARD AGENDA MEMORANDUM

SUBJECT:

Report of Bids Received, Award of Construction Contract to Silicon Valley Paving, Inc. for the Construction of Gold Street Median Removal Project, Project No. 00761023, Contract No. C0646 (San Jose), (District 3).

RECOMMENDATION:

- A. Ratify Addendum Nos.1 and 2 to the Contract documents for the Gold Street Median Removal Project;
- B. Waive minor irregularities in Silicon Valley Paving, Inc.'s Bid;
- C. Award the Contract to Silicon Valley Paving, Inc, in the sum of \$74,993; and
- D. Approve a contingency sum of \$7,500 and authorize the Operations & Maintenance Engineering Support Unit Manager to approve individual change orders up to the designated amount.

SUMMARY:

A 200-linear-foot median on Gold Street, a high-density roadway in San Jose, is proposed to be removed to provide improved access to Pond A8. Pond A8, a U.S. Fish and Wildlife Service facility, is one of the sites used by the District to transport and place excavated sediment from creek sites. Removing the median will improve District operations by allowing trucks to make a left turn directly into the existing access point.

During the District's Stream Maintenance Program construction season, current practice is for a significant number of trucks to make a U-turn near the existing access point, disrupting traffic flow along Gold Street. An estimated 80 trucks per day can use this access point when sediment is being transported to Pond A8. This number can more than double when multiple and/or large-scale sediment removal projects are underway. Removal of the median is expected to make the District's sediment transport trucking operations more efficient and improve traffic flow along Gold Street and the surrounding community.

Addendum Ratification

Two addenda were issued during the bid period (Attachment 1), to respond to potential bidders' requests for Bid Document clarifications. To formally incorporate these addenda into the Contract

documents, staff recommends that the Board ratify Addendum No. 1 and Addendum No. 2 for this Project.

Waiver of Minor Irregularities

Per the Notice to Bidders, paragraph 14, the District reserves its right to reject any and all bid proposals and to waive minor defects or irregularities in any submitted Bid Form(s). Silicon Valley Paving's Bid contained minor irregularities on Bid Form No. 4, Small Business Outreach Program: Instructions and Compliance Document. The contractor did not list any Small Business (SBE) subcontractors. They also indicated that they would be self-performing the Work without subcontractors, and therefore were exempt from providing a Good Faith Effort as established by the District's SBE program. On Bid Form No. 2, Designation of Subcontractors, the contractor listed a SBE subcontractor for 6.6% of the Work which triggers compliance with SBE requirements. Silicon Valley Paving complied with the SBE requirements by submitting timely documentation of their Good Faith Effort.

These two bid errors are not material; they do not affect Bid price, Silicon Valley Paving's ability to fulfill the Contract, nor give the firm an unfair advantage in the competitive bidding process for the Project. Staff recommends the Board waive these minor irregularities.

Contract Award

The results of the seven (7) bid proposals received and opened on March 27 2019, are summarized in Table 1. The lowest responsive bid was submitted by Silicon Valley Paving.

The Engineer's estimate is \$154,000. The average of the responsive bid proposals is \$78,070 which is 49.3% below the Engineer's estimate. The lowest responsive bid is 51.3% below the Engineer's estimate. The discrepancy in cost between the Engineer's estimate and bids received can be attributed to favorable market conditions and by the support of a competitive bid environment.

Staff has reviewed the bid proposals and, for the reasons stated below, recommends the Board award the contract to Silicon Valley Paving as the responsible bidder submitting the lowest responsive bid:

1. All bid entries and requirements in the proposal submitted by Silicon Valley Paving are in order;
2. Silicon Valley Paving's license is current, active and in good standing;
3. Silicon Valley Paving complied with the District's SBE program by providing timely documentation of a Good Faith Effort; and
4. Silicon Valley Paving is in compliance with the requirements of the California Labor Code §1771.1. Silicon Valley Paving and its subcontractors are registered with the California Department of Industrial Relations and qualified to perform public works pursuant to section 1725.5 of the Labor Code.

Table 1 - Bid Opening Results

Company / Location	Bid Amount	Award Amount
George Bianchi Construction, San Jose, CA	Non-Responsive	
Silicon Valley Paving, Inc., San Jose, CA	\$74,993	\$74,993
Granite Rock Company, San Jose, CA	\$88,000	
Forticon, Inc., Oakland, CA	\$116,700	
GradeTech, Inc., San Ramon, CA	\$118,000	
Innovate Concrete, Inc., Santa Clara, CA	Non-Responsive	
Galeb Paving, Inc., Saratoga, CA	\$148,000	
Engineer's Estimate: \$154,000		

Contingency Funds

To allow staff to quickly address unforeseen or changed site conditions and other unanticipated occurrences, without causing unnecessary delays or consequential costs to the Project, staff is requesting a total contingency amount of \$7,500 which amounts to 10% of the bid price.

The contingency amount is estimated due to known and unknown risks, such as concealed conditions and/or field conditions that may be different from the baseline or as-built information used in preparation of Project Contract Documents.

Approval of individual change orders for the Project will be made up to the designated amounts as follows:

Operations & Maintenance Engineering Support Unit Manager: \$7,500

Public Outreach

During construction, measures will be taken to minimize impacts associated with the Project, such as noise and parking. Construction contract documents include requirements and measures to minimize impacts during the construction. Neighbors and businesses will be informed of potential impacts, as appropriate.

Outreach to Bidders

As part of the District's customary small and local business outreach, the following routine steps were taken: The Notice to Bidders was sent to 20 Minority business Chambers of Commerce and small business groups. In addition, the Notice was sent to certified small business contractors and local and regional firms that have the appropriate license for this type of work. The Notice was provided to the Santa Clara and San Benito Counties Building and Construction Trades Council, which maintains contacts with at least 500 contractors and 70 union representatives, for distribution to their members.

Next Steps

If the Board approves staff's recommendations, staff will proceed with administering construction of the Project. The construction work is anticipated to be completed by June 2019.

FINANCIAL IMPACT:

There are adequate funds in the Adopted FY 2018-19 Project No. 00761023 budget to encumber the construction cost of \$74,993 and the contingency sum of \$7,500.

CEQA:

As the lead agency under the California Environmental Quality Act (CEQA), District staff filed a notice of exemption with the County of Santa Clara, Office of the Clerk Recorder on March 4, 2019. The Project is categorically exempt under Sections 15301 and 15304 of the CEQA Guidelines.

ATTACHMENTS:

Attachment 1: Addenda

Attachment 2: Project Delivery Process Chart

UNCLASSIFIED MANAGER:

Sue Tippetts, 408-630-2253



CAPITAL PROGRAM SERVICES
5750 ALMADEN EXPRESSWAY
SAN JOSE, CA 95118-3686
TELEPHONE (408) 630-3004
FACSIMILE (408) 979-5631
www.valleywater.org
scvwdplanroom@valleywater.org

*Notification of this Addendum is transmitted via email to all current plan holders.
This Addendum is posted on the District website at
www.valleywater.org/Programs/Construction.aspx.*

March 19, 2019

**ADDENDUM NO. 1
TO CONTRACT DOCUMENTS FOR THE
GOLD STREET MEDIAN REMOVAL PROJECT
Project No. 000761023**

Contract No. C0646

Notice is hereby given to Prospective Bidders that the Contract Documents are modified as hereinafter set forth.

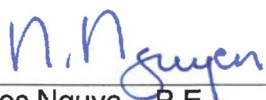
BID DOCUMENTS

NOTICE TO BIDDERS

REPLACE Paragraph 20. Permits. in its entirety with:

- "20. Permits.** It shall be the Contractor's responsibility to obtain any and all permits that may be required from the City, County, or State for construction, moving materials and equipment to and from the jobsites, and for traffic control to and from the jobsites."

THIS ADDENDUM NO 1, WHICH CONTAINS 1 PAGE, IS ATTACHED TO AND IS A PART OF THE SPECIFICATIONS AND CONTRACT DOCUMENTS FOR THIS PROJECT.



Ngoc Nguyen, P.E.
Deputy Operating Officer
Watershed Capital Division

Date: 03/19/2019

Enclosure: None



CAPITAL PROGRAM SERVICES
5750 ALMADEN EXPRESSWAY
SAN JOSE, CA 95118-3686
TELEPHONE (408) 630-3004
FACSIMILE (408) 979-5631
www.valleywater.org
scvwdplanroom@valleywater.org

*Notification of this Addendum is transmitted via email to all current plan holders.
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March 21, 2019

ADDENDUM NO. 2
TO CONTRACT DOCUMENTS FOR THE
GOLD STREET MEDIAN REMOVAL PROJECT
Project No. 00761023


Contract No. C0646

Notice is hereby given to Prospective Bidders that the Contract Documents are modified as hereinafter set forth.

GENERAL QUESTIONS AND RESPONSES

<u>NO.</u>	<u>QUESTION</u>
Question 1.	It is stated that the contractor will be responsible for the cost of permits from various agencies for " construction "; as these permit costs can vary with each agency and tied to the nature and/or value of the project, are there estimates available for these costs? If not, please provide contact information with each agency so that estimates can be obtained and included in the bid.
Answer 1.	An inter-agency encroachment permit is required from the City of San Jose (CSJ). It shall be the Contractor's responsibility to obtain said inter-agency encroachment permit from CSJ. CSJ will invoice the Santa Clara Valley Water District (District) directly for all costs associated with review and processing of said inter-agency encroachment permit.

THIS ADDENDUM NO. 2, WHICH CONTAINS 1 PAGE, IS ATTACHED TO AND IS A PART OF THE SPECIFICATIONS AND CONTRACT DOCUMENTS FOR THIS PROJECT.



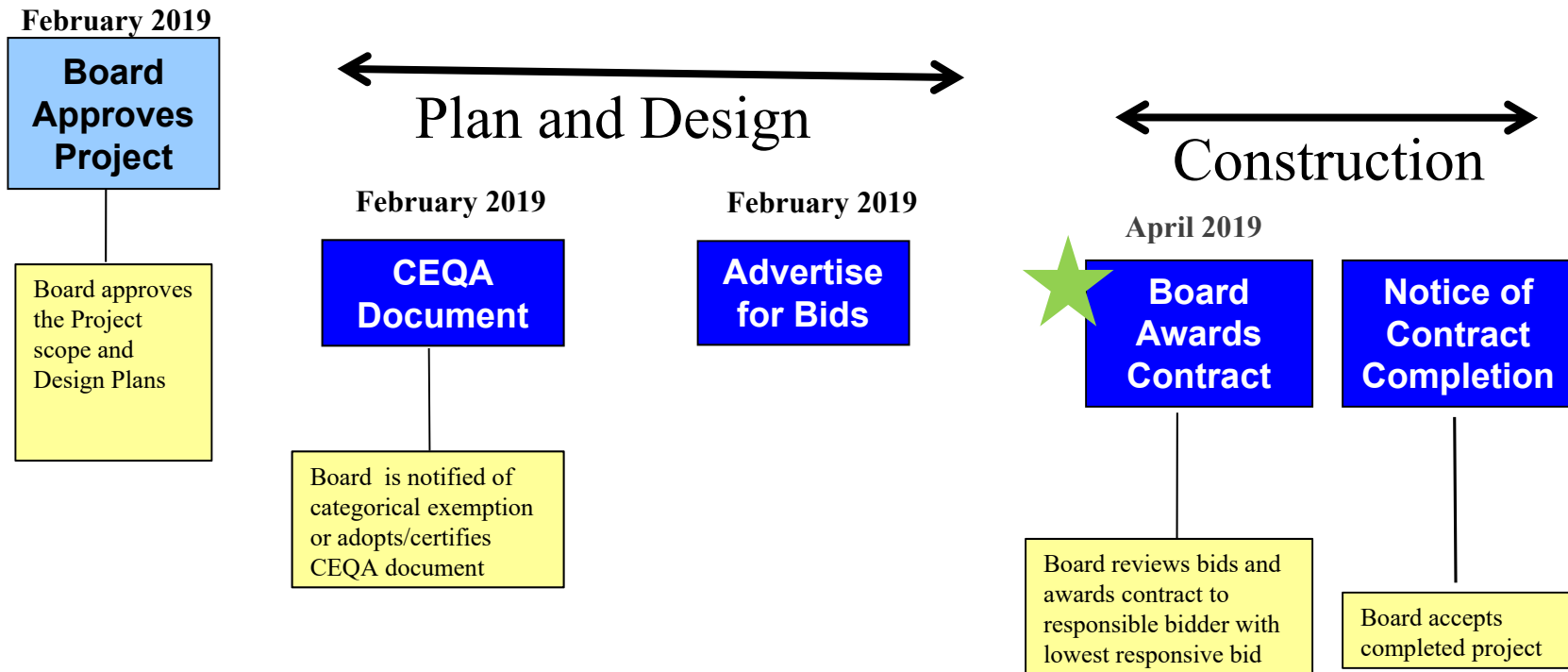
Ngoc Nguyen, P.E.
Deputy Operating Officer
Watershed Capital Division
Santa Clara Valley Water District

Date: 03/21/19

Enclosure: None

Project Delivery Process

Gold Street Median Removal Project



 **Proposed Board Action(s) requested by this Item**

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File No.: 19-0329

Agenda Date: 4/9/2019

Item No.: 4.1.

BOARD AGENDA MEMORANDUM

SUBJECT:

District Living Wage Policy.

RECOMMENDATION:

- A. Receive information on the District's current Living Wage Policy; and
- B. Direct District staff to return with proposed updates to the Living Wage Policy, for future discussion and approval by the Board.

SUMMARY:

In response to a request from Director Estremera, we are providing background on the history of The District's Living Wage Policy. In 2003, the Board adopted a Living Wage Policy that provided: *Persons doing work for or on behalf of the District, to not be paid less than a living wage, not able to afford health insurance, have reasonable time off, and not be subject to lay-off merely because the District changes contracts, and to work in an environment where there is labor peace.* This policy was confirmed by the Board in 2008 as part of a Governance Policies Review process by the Board.

In 2011, the Board in reviewing the policy amended it to provide: *Subject to the District's Living Wage Policy, provide persons doing work for or on behalf of the District at least a living wage and reasonable time off.* Eliminated from the policy was the language regarding affording health insurance, not being subject to lay-off merely because the District changes contracts, and working in an environment where there is labor peace.

Subject to certain exemptions, the current policy applies to awarded contracts of \$50,000 or more for specified services. The current policy requires that persons doing work for or on behalf of the District be paid at least a living wage and receive reasonable time off. Embedded in the policy is language on Employee Retention Requirements, but there is no specific language regarding being able to afford health insurance or defining the meaning of reasonable time off.

It is recommended that the Board consider updates to the policy that address health insurance and paid time off. Since District employees receive health insurance and paid time off, these changes to the policy would make it more comparable to what District employees receive. Information regarding potential financial impacts arising from these changes can be presented at the same time. If the Board approves the recommendation, staff will report back at the Board's May 14, 2019 meeting, the details of a possible revised policy, including any additional costs to implement such policy.

FINANCIAL IMPACT:

Any financial impact, if any, will be determined under the Board's future decision regarding the Living Wage Policy.

CEQA:

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

ATTACHMENTS:

None.

UNCLASSIFIED MANAGER:

Michael Baratz, 408-630-2361



Santa Clara Valley Water District

File No.: 19-0367

Agenda Date: 4/9/2019
Item No.: 4.2.



MEMORANDUM

FC 14 (01-02-07)

TO: Board of Directors

FROM: Water Conservation and
Demand Management
Committee

SUBJECT: Water Conservation and Demand
Management Committee Meeting Summary
for March 25, 2019

DATE: April 9, 2019

This memorandum summarizes agenda items from the meeting of the Water Conservation and Demand Management Committee held on March 25, 2019.

ACTION ITEMS

4.1 FIXED/VARIABLE CHARGES:

Mr. Darin Taylor reviewed the following:

Agenda Memo Summary:

The District currently charges customers solely on the volume of water used, most California water providers—and all the District's retailers—have rate structures that incorporate a fixed charge with a volumetric charge. Like most utilities in California, the District required mandatory conservation during the drought and continues to ask its customers to use water efficiently. The District's current rate structure is challenging during drought because revenues plummet with reduced water sales, and the resulting volatility required the District to raise rates significantly higher than planned.

California's Sustainable Groundwater Management Act (SGMA) gave the District additional authority to regulate groundwater pumping and new authority to assess different types of groundwater charges. In 2016, the District agreed to evaluate these new authorities in cooperation with water retailers and stakeholders to determine if implementation would help the District more sustainably manage groundwater into the future.

The District engaged Raftelis to develop a fixed charge proposal and assist with implementation. Although progress was made in developing a model that could be used to analyze the impacts of a fixed charge, it became very clear after a couple of meetings that the majority of retailers strongly opposed the implementation of a fixed charge. Staff recommended suspending the effort to the Water Conservation and Demand Management Committee on October 31, 2018 and to the full Board on November 27, 2018. The Water Conservation and Demand Management Committee requested an update on the effort at a future meeting, which is the purpose of this agenda item. Below is a summary of the key reasons cited by retailers for their opposition:

1. **Take or pay contracts** for treated water are perceived as redundant to a fixed charge. Several retailers expressed interest in opening the treated water contracts and removing the take or pay provision to gain support for the fixed charge.
2. **Mid-year increase capability** already exists to address impacts of drought, which is a tool that negates the need for a fixed charge.
3. **Revenue neutrality skepticism** was a concern in that the District may not be able to achieve it, or may not be able to achieve it equitably amongst all the retailers.
4. **SGMA authority** for a fixed charge for treated water was a concern. Retailers could see the SGMA authority connection to groundwater charges but struggled with the connection to treated water even though the groundwater and treated water systems are intrinsically linked.
5. **Applying a fixed charge to major customers only** was a big concern. Many well owners are small unmetered water users, and attempting to apply a fixed charge to unmetered customers who pay annually or semiannually does not make practical sense and would be administratively burdensome. But this was seen as an equity issue for the retailers. If the District implemented a fixed charge, then every customer should pay it.
6. **Impact to CPUC regulated retailers.** Both San Jose Water Company and Great Oaks Water Company have what is called "incremental cost balancing accounts" (this is not applicable to California Water Service Company that has a full cost balancing account), which only allows recovery of incremental per unit cost changes of purchased treated water and groundwater extraction on an actual usage basis.

Thus, a fixed charge would not allow cost recovery under the current arrangement with the CPUC. CPUC regulated retailers have to file a rate case, which allows for future recovery at the time the District implements the price change (July of each year) at which time the actual unit price, for recovery purposes, would be uncertain with the implementation of a fixed charge. For a publicly traded company like SJW, this would complicate financial reporting since balancing accounts are booked. The obvious solution to this would be for the CPUC to allow conversion to a full cost balancing account, however that has been denied for both companies several times over the last decade.

Staff had hoped that this effort would result in a “win-win” for both the District and the retailers (revenue stability for the District and cost stability for the retailers). If it is not possible to achieve a “win-win”, then staff would not recommend further pursuit of a fixed charge.

Chief Taylor’s added summary:

- SGMA (the Sustainable Groundwater Management Act) allows Valley Water to implement a fixed charge that would complement its volumetric groundwater charge.
- A fixed charge would allow Valley Water to receive a portion of water revenue from groundwater pumpers on a more stable basis, which would minimize the revenue impact when water use decreases such as in a drought.
- Staff analyzed this opportunity and discussed it with the Retailers at a Water Retailers Finance Subcommittee meeting in September 2018, and the Quarterly Retailer meeting in October 2018.
- The Retailers generally strongly opposed a fixed charge for various reasons.
- The Committee reviewed the reasons for Retailer opposition at its March 25 meeting, and agreed with staff’s intent to not proceed with further development of a fixed charge at this time.

The Committee took no action.

5.2 STORMWATER RESOURCES PLAN (SWRP) GREEN STORMWATER INFRASTRUCTURE – UPPER PENITENCIA CONCEPT

Mr. Gabriel Vallin reviewed the following:

Agenda Memo Summary:

On Monday, February 25th, 2019, the Santa Clara Valley Water District (Valley Water) Water Supply and Conservation Unit staff updated the Committee on the suite of conservation and stormwater capture projects that are in the Water Supply Master Plan. The project suite update included a discussion of the Stormwater Resources Plan, which includes the Upper Penitencia Creek Green Stormwater Infrastructure Project (SIP). The Committee requested a review and status update for the Upper Penitencia Flood Risk Reduction Project, which includes the SIP. This memo provides a general description of the Upper Penitencia Flood Risk Reduction Project, status, next steps, and the coordination between water utility and watersheds.

The Upper Penitencia Flood Risk Reduction Project is a multi-objective capital project which will provide flood risk reduction along with the additional benefits of supporting and improving ecological processes and functions, maintaining and enhancing water supply, and improving recreational opportunities. The project reach is Upper Penitencia Creek from its Coyote Creek confluence up to Dorel Drive just downstream of Alum Rock Park. The capital project is currently in the planning phase with the project team working on alternatives development, and a draft Planning Study Report is scheduled to be completed by the end of June 2019. The alternatives being developed include elements such as floodplain bench widening, setback floodwalls and berms, and flood detention basins. A multi-discipline Valley Water project team has met regularly to discuss project concepts and alternatives.

The SIP is a stormwater component of the overall Upper Penitencia Flood Risk Reduction Project. Stormwater capture projects must be included in a Stormwater Resources Plan to be eligible for grant funds from any voter-approved State bonds. Valley Water submitted the SIP to the Bay Area Stormwater Resources Plan. Project concepts submitted to the Stormwater Resources Plan were prioritized using metrics to assess their benefits including: water quality improvements, water supply (capture and use), flood management benefits, and environmental and community benefits. The SIP concept scored highly and was chosen for conceptual design. The concept design for the SIP included coordination, which will continue, between Water Utility, Watersheds, the Santa Clara County, and the City of San Jose.

The SIP project location is at the Penitencia Creek City Park, adjacent to the creek near the intersection of Penitencia Creek Road and Piedmont Avenue. The preliminary design includes a subsurface cistern to capture runoff from city drainage to irrigate the proposed sports fields (includes pretreatment of water). An approximately 5-acre lawn area will serve as detention storage for overflow during floods. There is a tri-party agreement between Valley Water, the City of San Jose, and the Santa Clara County for the joint-use of public land along Upper Penitencia Creek. This agreement helps us coordinate with the City and County to design stormwater and flood protection concepts that meet all the tri-party partners' needs.

Mr. Vallin handed out the Resilient Landscape Vision for Upper Penitencia Creek by San Francisco Estuary Institute (SFEI) and the Aquatic Science Center which can be found on line at https://www.valleywater.org/sites/default/files/UpperPenVision_FINAL_121418-website.pdf

The Committee took no action.

If you have any questions or concerns, you may contact me at, gbrambill@valleywater.org or 1.408.630.2408.

Thank you!

Glenna Brambill, Management Analyst II,
Board Committee Liaison
Office of the Clerk of the Board

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File No.: 18-1121

Agenda Date: 4/9/2019

Item No.: 5.1.

BOARD AGENDA MEMORANDUM

SUBJECT:

Agreement with GEI Consultants, Inc., for Engineering Services for the Lenihan and Stevens Creek Dams Safety Evaluations and Budget Adjustment for Supplemental Tasks for the Dam Seismic Stability Evaluations Project, Project No. 91084019 (Los Gatos, Cupertino) (District 7).

RECOMMENDATION:

- A. Approve a budget adjustment transferring an amount not-to-exceed \$1,700,000 from the Almaden Dam Improvements Project (Project No. 91854001) to the Dam Seismic Stability Evaluations Project (Project No. 91084019) to fund the Lenihan and Stevens Creek Dams Safety Evaluations; and
- B. Approve the Agreement with GEI Consultants, Inc., for engineering services for the Lenihan and Stevens Creek Dams Safety Evaluations for a not-to-exceed fee of \$2,453,283.

SUMMARY:

In April 2017, the Governor of California ordered detailed evaluations of large spillway structures at all high-hazard dams, including at Lenihan and Stevens Creek dams. The District's consultant will be performing comprehensive spillway and dam safety evaluations of these two dams to provide engineering studies that support District decisions to resolve potential spillway risks.

The Lenihan and Stevens Creek Dams Safety Evaluations (Project) will include preliminary data collection, comprehensive spillway condition assessments in accordance with Division of Safety of Dams (DSOD) requirements, updated Probable Maximum Flood studies to address adequacy of the spillway and freeboard capacity, spillway hydraulics computer fluid dynamics, Potential Failure Mode Analysis, dam outlet inspections, and Supporting Technical Information Document for the two dams included in this Project. An Independent Dam Safety Review (IDSR) will help identify other critical needs and deficiencies relevant to the two dams. Supplemental engineering services as a follow-up to the recommendations in the IDSR report may also be performed.

Comprehensive spillway condition assessments of four other District dams have been performed by consultants, and all four assessments concluded that those spillways need to be replaced. Based on lessons learned from previous spillway studies, the recommended Agreement for this Project includes scope described as supplemental engineering services for the Consultant to prepare a planning study and conceptual alternatives report in the event a comprehensive spillway evaluation and possibly a resulting capital project is required for each dam. The supplemental engineering

services, if required, include:

1. Geotechnical/geologic field investigation to develop feasible spillway improvement alternatives;
2. Spillway hydraulics computer fluid dynamics;
3. Phase 2 Spillway Assessment;
4. Phase 3 Spillway Assessment;
5. Dam outlet inspections; and
6. Permitting Coordination and Surveying.

Project Background

Lenihan Dam

Lenihan Dam (formerly called Lexington Dam) was constructed as a rolled earthfill structure in 1952. It is located on the east side of State Highway 17 in Santa Clara County, about 0.5 miles south of the Town of Los Gatos. Because of its proximity to highly developed areas, economic loss or loss of life could be excessive in the event of catastrophic failure. As a result, the dam is classified by the state of California as a “large” dam with a “high” hazard potential.

The 195-foot-tall dam, impounds water in Lexington Reservoir for the purpose of groundwater recharge. The dam has a maximum capacity of 19,044 acre-feet at the nominal spillway elevation of 653 feet. The water released from the dam is generally conveyed through the District’s Vasona Dam and Reservoir, located about 2 miles north of Los Gatos Creek, to recharge ponds located on the west side of the Santa Clara Valley.

In December 2012, the District’s consultant, Terra/GeoPentech, completed an updated seismic stability evaluation of Lenihan Dam. The engineering analyses indicated that Lenihan Dam would perform well when subjected to the evaluation ground motions that represent the Maximum Credible Earthquake (MCE).

The Lenihan Dam spillway consists of an ungated concrete ogee weir located in the left abutment. The spillway crest has a length of about 150 feet, and a spill length of about 925 feet. In 1996, the Lexington Dam Freeboard Restoration project was completed. This project raised the crest of the dam, raised spillway chute walls, and repaired damaged spillway panels.

Stevens Creek Dam

Stevens Creek Dam was constructed as a rolled earthfill structure in 1935 above the cities of

Mountain View, Sunnyvale, and Cupertino. Because of its proximity to highly developed areas, economic loss or loss of life could be excessive in the event of catastrophic failure. As a result, the dam is classified by the state of California as a “large” dam with a “high” hazard potential.

The 120-foot tall dam impounds Stevens Creek Reservoir and has a maximum capacity of 3,138 acre-feet at the nominal spillway elevation of 538 feet. In 1986, there were major modifications made to the dam to address seismic stability and spillway inadequacy issues.

In January 2013, the District's consultant, Terra/GeoPentech, completed an updated seismic stability evaluation of Stevens Creek Dam. The engineering analyses indicated that Stevens Creek Dam would perform adequately when subjected to the evaluation ground motions that represent the MCE.

The Stevens Creek Dam spillway consists of a concrete side channel weir located in the right abutment. The spillway crest has a length of about 172 feet.

Consultant Selection Process

On April 19, 2018, staff published a Request for Proposals (RFP) for Lenihan and Stevens Creek Dams Safety Evaluations support services on the District's Contract Administration System internet portal. The RFP was distributed to 122 firms on the District's self-registered list for GE11 - Geotechnical Engineering.

During the five-week advertisement period, staff issued two addenda to clarify details in the RFP and to respond to questions received from interested consultants. Six proposals were received by the proposal submittal deadline of May 24, 2018.

A Consultant Review Board (CRB), consisting of three subject matter experts from the District and one external subject matter expert, evaluated the written proposals and conducted oral interviews on June 22, 2018. Based on the combined (written and oral) rating scores, the CRB recommended that staff undertake contract negotiations with GEI Consultants, Inc., the highest ranked firm.

On June 28, 2018, agreement negotiations were initiated with GEI Consultants, Inc.

Consultant Agreement and Scope of Services

The recommended Agreement with GEI Consultants, Inc. includes the required tasks and budget to perform Lenihan and Stevens Creek Dams Safety Evaluations. Table 1 provides a list of the tasks included in the scope of services and the associated not-to-exceed fees.

TABLE 1 - COST BREAKDOWN		
Task	Description	Not-to-Exceed Fees
1	Project Management	\$288,042

2	Planning Services	\$878,252
3	Supplemental Services	\$1,286,989
Total Not-to-Exceed Fees		\$2,453,283

If the conclusions reached by the Consultant, as documented in their deliverables, indicate the conditions at one or both of the dams will require a comprehensive spillway evaluation, a Planning Study and Feasible Alternatives report will be prepared to develop the Staff Recommended Alternative. Table 2 provides a list of the sub-tasks included in the supplemental services and the associated not-to-exceed fees.

TABLE 2 - SUPPLEMENTAL SERVICES BREAKDOWN

Subtask	Description	Not-to-Exceed Fees
1	Problem Definition & Project	\$105,436
2	Feasible Alternatives	\$256,297
3	Staff-Recommended Altern	\$181,757
4	Planning Study Report	\$ 87,280
5	Planning-to-Design Phase	\$ 40,616
6	Other TMs, Alternatives, and	\$ 600,549
7	Additional Services	\$ 15,054
Total Not-to-Exceed Fees		\$1,286,989

Based on the Planning Study Report Phase findings, some other services that are budgeted for in subtask 6 include, Additional Geotechnical Investigations, 2D Advanced Spillway Modeling, Phase 2 Spillway Assessment, Phase 3 Spillway Assessment, Additional Recommended Studies, UAV and Bathymetric Survey, Permitting Coordination, Other TMs, and Lenihan Outlet Analysis.

FINANCIAL IMPACT:

A budget adjustment is recommended in order to fund these and other supplemental services. The budget adjustment will increase the total cost of the Dam Seismic Stability Evaluations Project by \$1,700,000, and has been incorporated into the Draft Five-Year 2020-24 Capital Improvement Program. The budget adjustment is required to encumber this agreement in Fiscal Year 2019. The not-to-exceed fee for this agreement is \$2,453,283 for a term of three years.

Funds are being moved from the Almaden Dam Improvements Project (ADIP) reserves this fiscal year. There are adequate funds within the Board-approved FY2019 ADIP project reserves and there will be no impact to the FY2019 or FY2020 project funding. Construction for ADIP is currently scheduled to begin in FY2030. Funds will be budgeted as needed for ADIP in alignment with the

FY2020-24 CIP.

CEQA:

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

ATTACHMENTS:

Attachment 1: Agreement

UNCLASSIFIED MANAGER:

Christopher Hakes, 408-630-3796



STANDARD CONSULTANT AGREEMENT

(For Capital Consultant Contracts)
Terms and Conditions Template
Rev. B [7/1/2018-06/30/2019]

This agreement (Agreement) is effective once fully executed (Effective Date), by and between SANTA CLARA VALLEY WATER DISTRICT (District), and GEI CONSULTANTS, INC., a Delaware Corporation (Consultant), individually the Party or collectively the Parties.

WHEREAS, the District desires certain services hereinafter described and Consultant affirms it has the requisite experience and expertise, and desires to provide such services.

NOW, THEREFORE, the District and Consultant, for the consideration and upon the Terms and Conditions specified, agree as follows:

SECTION ONE

SCOPE OF SERVICES

The Scope of Services (Services) to be performed pursuant to this Agreement is described in the Schedule(s), Scope of Services, attached hereto and incorporated herein by this reference (Schedule(s)). Services described in each Schedule are considered a Scope of Services that is separate and apart from the Scope of Services described in another Schedule.

SECTION TWO

DUTIES OF CONSULTANT

1. Performance

- A. Each Scope of Service described in an attached Schedule(s) must be performed by Consultant, or at its direction, to meet the purposes specified in this Agreement. References to "Consultant" herein include those performing any portion of the Services at its direction such as Subconsultants, vendors, suppliers, subcontractors, and other business entities and individuals. Consultant will collaborate with District staff in engineering, asset management, operations, and maintenance units to be made aware of District operational constraints, procedures, or preferences relevant to Consultant's performance of the Services described in the attached Schedule(s).
- B. Unless the requirements for the Services described in the attached Schedule(s) are specifically modified in writing, Consultant must perform Services and provide all deliverables as required.
- C. Consultant shall not undertake any Services not described in the attached Schedule(s) unless authorized in writing by the District prior to the performance of such Services by issuance of a Task Order or pursuant to an amendment to this Agreement signed by both Parties.

2. Consultant Controlled Areas

Consultant is responsible for the security and safety of the area(s) it controls wherein it is required to perform field operations pursuant to the Scope of Services.

3. Licensing

Services performed by Consultant will be undertaken only by persons appropriately licensed, certified, or registered in California, as applicable to the Services described herein, when required by statutes or regulations, as well as pursuant to the relevant standard of care as described in subsection 11 Standard of Care. Examples of such Services include those performed by: California State Licensed Contractors, Professional Engineers and Architects, Inspectors, and Surveyors. Consultant shall make available upon District's request documentation of qualifications and licensing of personnel performing Services described herein. Consultant must be registered with the California Department of Labor Standards Enforcement if the Services or a portion thereof is determined to be "Public Works" pursuant to California Labor Code section 1720(a)(1).

4. District's Approval of Deliverables

Deliverables prepared by Consultant, notwithstanding acceptance and approval by District, which District determines must subsequently be modified due to errors or omissions, will be corrected at no additional cost to District.

5. Errors and Omissions

The Services may include preparation of deliverables by Consultant to be implemented in a public works construction project. Consultant is responsible for any direct or actual damages incurred by District which District determines result from Consultant's errors or omissions in Consultant's deliverables, including, but not limited to, any increase in the District's payment(s) due to its construction contractor, which increase is directly attributable to required revisions to the construction contract documents to the extent caused by Consultant's negligent acts, errors, or omissions.

6. District Standardization Requirements

- A. Consultant shall perform the Services utilizing District nomenclature, standardized forms, software requirements, documented procedures, and best management practices. Consultant shall use Microsoft Office software and AutoCAD software that is compatible with the District Microsoft Office software and AutoCAD software used at the time(s) the District issues a Notice to Proceed pursuant to this Agreement.
- B. Engineering drawings prepared by Consultant must be in compliance with the District's CADD and drafting standards including line types, line weights, text sizes, text orientation, dimensioning, labeling/numbering system for detailed plan views and detailed section views. Drawings prepared using different CADD software and versions must be converted to be compatible with the District's CADD software at no additional cost to the District. Prior to acceptance, the District reserves the right to test the submitted CADD files to verify that the files are not corrupted or missing linkages (for

blocks, etc., used in the drawing) and that the standards are retained during the conversion process used by the Consultant.

7. Consultant's Key Staff and Subconsultants

- A. Consultant's Key Staff and firms subcontracted by the consultant (Subconsultants) assigned to perform the Services are identified in Attachment Three to the Scope of Services, Consultant's Key Staff and Subconsultants.
- B. The Project team organization chart and delegated responsibilities of each team member will be submitted to the District for concurrence.
- C. Consultant may utilize Subconsultants, subcontractors, suppliers, or vendors it deems appropriate to the complexity and nature of the required Services.
 - 1) Consultant must obtain the District's approval of all Subconsultants. Upon the District's request, Consultant must provide copies of all Subconsultant agreements.
 - 2) Consultant must require its delegates or Subconsultants to agree, in writing, to adhere to Terms and Conditions of this Agreement.
- D. Any delegation or use of Subconsultants by Consultant will not operate to relieve Consultant of its responsibilities as described in this Agreement.
- E. If any of Consultant's designated key staff persons or Subconsultants fail to perform to the satisfaction of the District, on written notice from the District, Consultant will have 15 calendar days to remove that person from the Project and provide a replacement acceptable to the District.
- F. Consultant will not charge the District for the time it takes Consultant's replacement personnel to obtain the District-specific Project knowledge in the possession of the person(s) being replaced.
- G. Consultant's Key Staff: The District Project Manager may approve any revisions to Consultant's list of key staff assigned to the Project as an administrative modification to this Agreement, and such approval will be confirmed in writing.
- H. Consultant's Subconsultants
 - 1) The District Project Manager may approve any revisions to Consultant's list of authorized Subconsultants when the Subconsultant is deleted from the list and the Scope of Services is deleted from the Agreement or such services are assumed by the Consultant; such approval will be confirmed in writing.
 - 2) The District's authorized representative may approve any revisions to Consultant's list of authorized Subconsultants when a listed Subconsultant is replaced (to perform the same Scope) or a new Subconsultant is added (to perform new Scope), provided the firm complies with all insurance requirements established by the District for such work; such approval will be confirmed in writing.

8. Compliance with All Laws

- A. Consultant's performance must be in compliance with the most current versions of any and all laws relevant to the Services it performs pursuant to this Agreement, including, but not limited to adherence to: all applicable governmental laws, statutes, ordinances, rules, codes, regulations, orders, and other requirements; governmental requirements applicable to state and federal compliance with the Professional Land Surveyors Act; state and federal Endangered Species Act; state and federal water quality laws; and all other state and federal laws or regulations regarding environmental protection and compliance, health, safety, wages, hours, equal employment opportunity, nondiscrimination, working conditions, and transportation. In the event that the District's assistance is necessary to achieve such compliance, Consultant shall promptly notify the District.
- B. Consultant shall provide, at District's request, documentation demonstrating Consultant's compliance with all laws as described herein. After reasonable notice and according to reasonable conditions, the District has the right to inspect and copy any records of Consultant regarding such compliance.
- C. Consultant represents and warrants that neither Consultant nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal government department or agency.

9. Occupational Safety and Health

- A. Consultant will perform the Services in compliance with the most current versions of all laws, standards, rules, and regulations of the Occupational Safety and Health Act, and all state and federal laws and regulations relating to safety and health standards. Consultant shall perform the Services in compliance with, will furnish only supplies, articles, and equipment that comply with such laws, standards, and regulations.
- B. Consultant shall immediately notify the District in the event of any personal injury accident or occurrence occurring during the performance of the Services. Upon the District's request, Consultant shall provide the District with documentation fully describing the accident and injury and the actions implemented to prevent similar occurrences.

10. Consultant as Independent Contractor

Consultant will perform all Services as an independent contractor and not an agent or employee of District. Consultant represents and warrants that it and its contractors who are performing any of the Services as Subconsultants will perform such Services as an independent contractor, and neither Consultant nor Subconsultants nor their employees are the servants, agents or employees of the District. Except as expressly provided in this Agreement, the District exercises no direction, supervision or control over Consultant, its employees, agents, or Subconsultants.

11. Standard of Care

- A. Consultant must possess and maintain during the term of this Agreement all certifications, licenses, permits, and qualifications to perform the Services and prepare all deliverables. Consultant must perform all Services and prepare all deliverables in accordance with those standards and practices of care, skill, and diligence that are generally recognized and customarily observed by competent persons in Consultant's area of specialty in the State of California at the time such Services are rendered.
- B. Consultant shall perform the Services and prepare all deliverables without any errors or omissions, and in accordance with Section Two Duties of Consultant, subsection 8. Compliance with All Laws.
- C. Consultant and its Subconsultants must perform the Services in compliance with all applicable written federal, state and local codes, statutes, laws, regulations, and ordinances, including, but not limited to, environmental, energy conservation, and disabled access requirements as per the provisions of Section Two Duties of Consultant, subsection 8. Compliance with All Laws.

SECTION THREE

DUTIES OF DISTRICT

1. Available Data

The District will make available to Consultant all data and information in its possession and control and which it deems necessary to the preparation of the deliverables specified in the Schedule(s). The District will actively aid and assist Consultant in obtaining such information from other agencies and individuals as it deems necessary. The District is not responsible for providing data and information that it does not possess.

2. Review of Deliverables

- A. The District will designate a Project Manager (District Project Manager) for purposes of administering and managing this Agreement.
- B. Consultant's progress in completing the Services will be reviewed by the District Project Manager at each milestone identified in the Schedule(s) and at such other time(s) at the discretion of the District.
- C. Consultant must notify the District in writing when it completes each deliverable described in the Schedule(s) and provide the District with said deliverable. Deliverables deemed satisfactory and in compliance with this Agreement are subject to approval by District. Within 30 calendar days of receipt of each deliverable, the District will either (1) notify Consultant that the District accepts the deliverable, or (2) notify the Consultant that the deliverable is not acceptable and must be revised.

- D. If the District advises Consultant that a deliverable must be revised due to errors or omissions by the Consultant, Consultant must correct, at no cost to the District, those deficiencies as soon as possible and shall notify the District upon completion of the revised deliverable and submit to the District.
- E. The District will then review the revised deliverable and within 30 calendar days of receipt, advise the Consultant if the revised deliverable is acceptable. All deficient deliverables will be revised at no cost to the District and this process will continue until Consultant has corrected all deficiencies identified by the District.
- F. None of the proposed changes or revisions or anything else in this Agreement will be construed to relieve the Consultant of professional or legal responsibility for the performance of the Services as otherwise required by the Terms and Conditions of this Agreement. Corrections to any deliverable as a result of Consultant's errors or omissions, as determined by the District, will not result in additional costs or expenses to the District.

3. Access to District Facilities

The District will facilitate access to District facilities as required for the Consultant to perform the Services.

SECTION FOUR

FEES AND PAYMENTS

1. Total Fixed Not-to-Exceed Fees

- A. Payment for all Services performed by Consultant to the satisfaction of the District, as described in the Schedule(s) will be based on the Total Fixed Not-to-Exceed (NTE) Fees stated in Attachment One to the Schedule(s), Fees and Payments, for completion of the associated tasks. The District will make payments to the Consultant according to the terms provided for herein and in Attachment One to the Schedule(s), Fees and Payments. Payments made by the District to the Consultant for Services rendered will be considered full compensation for all personnel, materials, supplies, Subconsultant(s), equipment, reimbursable travel and per diem expenses incurred by the Consultant to perform the Services.
- B. Upon the written approval of the District Deputy Operating Officer referenced herein, unused fees from a completed or cancelled task may be re-allocated to a task that has not yet been completed, provided the Agreement Total Not-to-Exceed Fees is not exceeded. Transferring fees from a task not yet completed to a different task is not permitted.
- C. Upon the written approval of the District Deputy Operating Officer referenced herein, the Scope of Services described in a task may be reduced or eliminated. If the Scope of Services of a task is reduced or eliminated, the portion of the fees attributable to that

reduced or eliminated task may be allocated to revised existing tasks, or transferred to a Supplemental Services task, if provided for herein.

- D. Any reduction or elimination of tasks and any inter-task transfers will be clearly noted and described in the subsequent monthly progress report to the District.
- E. Services to be performed pursuant to the Supplemental Services task, if provided for herein, will commence only after issuance of a fully executed Task Order.
- F. Automobile travel mileage expenses will be paid at the current IRS rate. District will not reimburse Consultant nor its Subconsultants for mileage nor travel time to and from District Headquarters and surrounding campus located at 5700 Almaden Expressway, San Jose, California. However, District will reimburse Consultant and its Subconsultants for mileage incurred from District Headquarters or Consultant's and Subconsultants' firm address, whichever is closer to the destination, to Project site(s) and, if directed or authorized by the District, to meeting locations with regulatory agencies, for community outreach activities and meetings, for partnering meetings, and Dispute Review Board meetings.

2. Consultant Monthly Invoices

- A. Consultant's monthly invoices will be prepared in accordance with the terms of this Agreement, Section Four Fees and Payments, and represent Services performed and reimbursable costs incurred during the identified billing period. Invoices must be consistent with Scope of Services described in the Schedule(s) attached hereto; and include the following:
 - 1) Employee classification and name itemized with all labor charges by Service task;
 - 2) Summary of the amount Consultant has been billed by their Subconsultants and further detailed by Service task;
 - 3) Other direct charges and expenses by Service task;
 - 4) Other direct charges and expenses must reflect actual fees versus the Agreement Not-to-Exceed Fees as stated in Attachment One to Schedule(s), Fees and Payments; and
 - 5) To the extent that the Consultant is adding an administrative, processing, overhead or mark-up fee, the District will not pay for such duplication of costs for both the Consultant and its Subconsultants.
- B. Before submitting monthly invoices, a progress report and draft invoice (in Adobe PDF format) will be provided by the Consultant for preliminary review by the District Project Manager. Upon preliminary approval by the District, the Consultant will mail the complete signed and dated hardcopy invoice, including all supporting documentation. District's preliminary review of the draft invoice does not represent final approval of the hardcopy

invoice, but is intended to reduce potential for re-submittals of hardcopy invoice by Consultant.

- C. Each monthly invoice must include a monthly progress report that documents whether or not the Services are on schedule to be completed in accordance with the Project Schedule in Attachment Two to the Schedule(s), Schedule of Completion, which applies to the specific Scope of Services, and within the Agreement NTE Fees in accordance with Attachment One to the Schedule(s), Fees and Payments. The progress report shall document Services completed, the execution of the tasks described in this Services, and enable the District to evaluate the Consultant's progress and performance towards completion of the Services.

1) The monthly progress report shall include:

- a. An assessment of actual versus planned progress in completing the Services, including a description of the tasks and deliverables completed to date;
- b. A look-ahead schedule listing deliverables and activities planned for the next two months;
- c. A statement that progress towards completion of the Services is on schedule and will be completed within the timeline set forth in the Schedule of Completion; or, if completion of the Services is not on schedule, then a statement of the anticipated length of the delay, the cause of the delay, measures proposed or taken to prevent or minimize the delay, and the schedule for implementation of such measures;
- d. A summary of performed tasks to date, an updated Project work plan including estimate of work required to complete this Agreement, explanation of any major variances in percentage of services to be completed compared to percentage of this Agreement NTE fees remaining, and any anticipated changes to this Agreement that may be necessary to complete the Services;
- e. For any proposed change to the Scope of Services, provide a summary of the proposed changes, including supporting rationale for such change;
- f. For each task, the percentage of the fees incurred for the task compared to dollar amount allocated to the task, the percentage of services performed versus the percentage of Agreement NTE fees incurred for such task, and explanation of any significant variances in percentage of services performed compared to percentage of fees incurred;
- g. A statement that all tasks, as specified in this Agreement, shall be completed within the NTE amount of the Agreement;

- h. Level of Small Business Enterprise (SBE) participation, if applicable, documenting the level of SBE participation throughout the Project; and
 - i. Any changes in Consultant's key staff or Subconsultants.
- D. Invoices will include a summary of labor expenditures, direct costs, and billed Subconsultant charges. Invoices, transmitted separately from the monthly progress reports, will be organized such that the billing categories correspond with the Services tasks.
- E. Consultant shall send all invoices to:

Santa Clara Valley Water District
Attention: Accounts Payable
P.O. Box 20670
San Jose, CA 95160-0670
- F. In addition to ensuring that each invoice is accompanied with a monthly progress report, Consultant must also ensure that each invoice contains the following information:
 - 1) Agreement Number;
 - 2) Full Legal Name of Consultant/Firm;
 - 3) Payment Remit-to Address;
 - 4) Invoice Number;
 - 5) Invoice Date (the date invoice is mailed); and
 - 6) Beginning and end date for billing period that services were provided.
- G. Consultant shall invoice for its performance of the Services on a monthly basis consistent with the task fee breakdown stated in Attachment One to the Schedule(s), Fees and Payments, to the Schedule(s), which applies to the specific Scope of Services.
- H. District Project Manager will review Consultant's written invoice within five District business days of receipt, address any questions with Consultant's Contact/Principal Officer and approve the undisputed amount of the invoice within ten working days of receipt of the invoice. District will pay undisputed invoice amounts within 30 calendar days from date invoice is received by District Project Manager.
- I. Consultant's services will be performed by its staff members and Subconsultants' staff members at the lowest hourly and unit rates commensurate with the complexity of the required Services.

3. Prevailing Wages

- A. A portion of the Services to be performed pursuant to this Agreement may be considered "Public Works" subject to California Labor Code §1771, et. seq. and the applicable implementing regulations.

- B. Labor Code §1720 includes “Inspection and Land Surveying” in its definition of “Public Works.” If Consultant’s Services includes such work, Consultant and its Subconsultants must comply with all Labor Codes applicable to prevailing wages.
- C. The Consultant and its Subconsultants shall not engage in the performance of public work, as defined in California Labor Code §1771.1, unless currently registered and qualified to perform public work pursuant to California Labor Code §1725.5.
- D. The General Prevailing Wage Rates issued by the California Department of Industrial Relations may be adjusted by the State throughout the term of this Agreement. Notwithstanding any other provision of this Agreement, Consultant will not be entitled to any adjustment in compensation rates in the event there are adjustments to the General Prevailing Wage Rates.
- E. This Agreement is subject to compliance monitoring and enforcement by the State of California Department of Industrial Relations. Upon request, the Consultant and Subconsultants must furnish the records specified in Labor Code §1776 directly to the Labor Commissioner, in a format prescribed by the Labor Commissioner.
- F. All records or documents required to be kept to verify statutory compliance with the prevailing wage requirement, such as certified payroll records, must be made available for audit at no cost to the District, at any time during regular business hours, upon written request by the District.
- G. **California State Department of Industrial Relations Contractor and Sub-Contractor Registration Requirements**

Prior to the District executing a Task Order for Services involving public works, as defined herein, the Consultant, and its Subconsultant(s) performing public works, must provide evidence, in the form required by the District, that Consultant and its Subconsultant(s) are in compliance with the California State Department of Industrial Relations Contractor and Sub-Contractor Registration Requirements.

4. Retention

Unless otherwise specified in Attachment One to the Schedule(s), Fees and Payments, when the total compensation payable pursuant to this Agreement exceeds \$20,000, ten percent of each invoice will be withheld by the District and not paid to Consultant until 30 calendar days after the assigned District representative signs the final approval for all Services/deliverables as stated in the applicable Schedule, Attachment Two to the Schedule(s), Schedule of Completion, and Section Three Duties of District, subsection 2. Review of Deliverables. Provided that at any time after 50% of the work has been completed, the District may, at its sole discretion, determine that satisfactory progress is being made in the completion of the Agreement, and prospectively make the remaining progress payments in full. The retention previously withheld on the first 50% of the work will continue to be withheld until final contract close out.

SECTION FIVE

SCHEDULE OF COMPLETION

1. Performance of Tasks

Consultant will commence performing the tasks described in the Scope of Services of the attached Schedule(s) to this Agreement upon receipt of the Notice to Proceed issued by the District.

2. Project Schedule Table

Consultant will perform and complete the services described in the Scope of Services in accordance with the Project Schedule table (Project Schedule) as stated in Attachment Two to the Schedule(s), Schedule of Completion. Consultant will coordinate services with the District to provide the timeline of all tasks and subtasks, including the site visits, document review, meetings, and deliverables.

3. Monitoring of Project Schedule

The approved Project Schedule will be monitored monthly. Changes to the schedule for performance of tasks and deliverables are subject to advance written approval by the District.

4. Project Delays

The Consultant will make all reasonable efforts to comply with the Project Schedule as stated in the Attachment Two to the Schedule(s), Schedule of Completion. In the event the Project Schedule will be delayed, Consultant will notify the District Project Manager as soon as possible, providing the reason why, the length of the delay, and a description of the actions being taken to address the delay. In the event Consultant is delayed in performance of its services by circumstances beyond its control, District may, at its discretion, grant a reasonable adjustment in the Project Schedule.

5. Changes to the Project Schedule

District Project Manager and Consultant may agree to modify the Project Schedule specified for Consultant's performance as an administrative modification to the Agreement and will confirm such modifications in writing.

SECTION SIX

AGREEMENT MODIFICATIONS

The Parties may agree to modify the Terms and Conditions of this Agreement by executing a written amendment hereto.

SECTION SEVEN

TERM AND TERMINATION

1. Term & Automatic Termination

This Agreement encompasses all Services that Consultant is responsible to perform within the time limits and Not-to-Exceed Fees set forth herein. Consultant will not undertake to provide Services where it reasonably appears that the Services cannot be provided and expenses cannot be incurred within said total compensation limit and the applicable Not-to-Exceed Fees of any Task Order.

2. District Rights

- A. Suspension: District may, by written notice to Consultant, suspend any or all Services pursuant to this Agreement or to any individual Task Order. District may subsequently terminate this Agreement or any Task Order for convenience, or determine to proceed. If a decision to proceed is not made within 90 days from the date of the notice of suspension, any decision to proceed must be conditioned upon execution of a new Notice to Proceed or Task Order.
- B. Termination for Convenience: District may, by written notice to Consultant, terminate all or part of this Agreement or any Task Order at any time for District's convenience. Upon receipt of such notice, Consultant will immediately cease all work as specified in the notice. If this Agreement or any Task Order is so terminated, Consultant will be compensated as set forth in subsection 3. Consultant's Compensation upon Termination or Suspension.
- C. Termination for Breach: If Consultant violates any of the covenants, agreements or stipulations of this Agreement or a Task Order, or if Consultant fails to fulfill in a timely and proper manner its obligations pursuant to this Agreement or any Task Order, and does not cure such failure or violation within 30 days (or a reasonable extension thereof, if requested, which extension will not be unreasonably withheld) after receipt of written notice from District specifying such failure or violation, District will thereupon have the right to terminate this Agreement and any or all uncompleted Task Orders by giving written notice to Consultant of such termination. Such notice will specify the effective date thereof, and Consultant will not be entitled to compensation for services or expenses beyond the specified termination date.
- D. If, after notice of termination for breach of this Agreement or any Task Order, it is determined that Consultant did not breach the Agreement or Task Order, the termination will be deemed to have been effected for District's convenience, and Consultant will receive payment that is allowed by this Agreement for a termination for convenience.
- E. The rights and remedies provided herein to District are in addition to any other rights and remedies provided by law, this Agreement, or a Task Order.

3. Consultant's Compensation upon Termination or Suspension

In the event of termination of this Agreement or any Task Order, or suspension of Services by District, Consultant shall receive compensation based on satisfactory performance, accepted by the District, as follows:

- A. Direct Labor: Consultant shall be entitled to receive compensation for all authorized direct labor performed prior to termination pursuant to the provisions of this Agreement or Task Order and all authorized labor expenses incurred to demobilize from the Project after the date of termination;
- B. Other Direct Costs and Expenses: Consultant shall be entitled to receive compensation for all authorized other direct costs and expenses incurred prior to termination and all authorized expenses incurred to demobilize from the Project after the date of termination;
- C. In no event shall the total compensation paid for any item of Service exceed the payment specified in the Agreement or applicable Task Order for that item of Service.

4. Survival

The Terms and Conditions of this Agreement, that by their context and a standard of reasonableness, are intended to survive termination, suspension, completion, and expiration of this Agreement, shall survive, including but not limited to, the following Sections and subsections: Independent Contractor Status, Confidentiality, Indemnification, Insurance Requirements, and Dispute Resolution, as well as any Consultant representations and warranties.

SECTION EIGHT

INDEMNIFICATION

Notwithstanding any other provision of this Agreement, Consultant agrees to indemnify, defend and hold harmless the District, its agents, officers, directors, and employees from and against any and all demands, claims, damages, losses and reasonable expenses, including but not limited to liabilities, obligations, claims, costs, 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 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 forth above in this Section Eight, Indemnification, survive termination, expiration, completion, and suspension of this Agreement.

SECTION NINE

INSURANCE REQUIREMENTS

Insurance requirements applicable to this Agreement are set forth in the Standard Consultant Agreement, Appendix Four Insurance Requirements. Consultant must provide and maintain at its own expense, during the term of this Agreement, or as may be further required herein, all insurance coverages as detailed in the Standard Consultant Agreement, Appendix Four Insurance Requirements, and comply with all provisions stated therein.

SECTION TEN

OWNERSHIP AND REUSE OF DELIVERABLES

1. District Ownership

All deliverables and other materials prepared by Consultant, including computer programs and media developed by the Consultant, to perform the Services, during the term of this Agreement, will be and remain the property of the District following payment in full to Consultant for each task or portion of a completed task, or in accordance with Section Seven Term and Termination. In the event the work is not completed, the completed portions thereof will become the property of the District. Consultant will provide the District with such deliverables and material at appropriate times during this Agreement. Consultant may retain a copy for its records. Consultant does not convey, assign, or transfer the intellectual property rights it has so as to limit its ability or right to develop, design, or provide services on other projects of or for its other clients.

2. Reuse of Instruments of Service

If the District desires to reuse the completed plans, specifications, or other deliverables, in total or in part, on project sites associated with this Agreement, or any other site, or to complete any incomplete portion of construction documentation which the District has already paid Consultant, the District will release the Consultant from any liability incurred by the District from reusing said deliverables.

3. Copies of Data

Copies of data exchanged by, through, and between the District and Consultant that may be relied upon are limited to printed copies. Computer-generated files, disks, or tapes of text, data or graphics that are furnished are only for the mutual convenience of the Parties.

4. Computer-Generated Material

Any risk of translation or reliance on information obtained or derived from computer-generated material is at the user's sole risk, and no representations are made, either express or implied, as to the long-term performance of data thus transferred.

5. Work for Hire

Any and all original correspondence, memoranda, reports, designs, plans, specifications, data compilations, computer programs, or drawings delivered to the District by Consultant according to the Terms of this Agreement, in or by any medium is deemed to be "work for

hire” according to the copyright laws of the United States and the copyright belongs to the District.

6. Copyright Claims

Co-venturers, subcontractors, Subconsultants, suppliers, and vendors to Consultant are likewise bound by these copyright terms. The District makes no copyright claim and requires no release for copyrighted material or trademarked names used incidentally by Consultant.

SECTION ELEVEN

EQUAL OPPORTUNITY

1. Equal Opportunity Employer

The Santa Clara Valley Water District is an equal opportunity employer and requires its consultants to have and adhere to a policy of equal opportunity and non-discrimination. In the performance of the Agreement, the 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, hiring, employment, utilization, promotion, classification or reclassification, transfer, recruitment advertising, evaluation, treatment, demotion, layoff, termination, rates of pay or other forms of compensation, and selection for professional development training (including apprenticeship), or against any other person, on the basis of sex (which includes pregnancy, childbirth, breastfeeding and medical conditions related to pregnancy, childbirth or breastfeeding), race, religion, color, national origin (including language use restrictions), ancestry, religious creed (including religious dress and grooming practices), political affiliation, disability (mental and physical, including HIV or AIDS), medical condition (cancer and genetic characteristics), genetic information, marital status, parental status, gender, age (40 and over), pregnancy, military and veteran status, sexual orientation, gender identity and gender expression, the exercise of family and medical care leave, the exercise of pregnancy disability leave, or the request, exercise, or need for reasonable accommodation.

2. Compliance with Applicable Equal Opportunity Laws

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 Americans with Disabilities Act of 1990; the Rehabilitation Act of 1973 (Sections §503 and 504); the Age Discrimination Act of 1975 (42 U.S.C. sec. 6101 et seq.); the California Fair Employment and Housing Act (Government Code Section 12900 et. seq.); and California Labor Code §1101 and 1102.

3. Investigation of Claims

Consultant must designate a specific position within its organization to be responsible for assuring nondiscrimination and non-harassment as provided in this Agreement. Consultant must investigate all complaints directed to it by District. District will refer complaints in writing and Consultant will advise District in writing when such investigations are concluded. The

scope of such investigations must include all appropriate officers, employees, and agents of the Consultant, as well as all subcontractors, Subconsultants, and material suppliers of the Consultant. In cases where such investigation results in a finding of discrimination, harassment, or hostile work environment, Consultant must take prompt, effective disciplinary action against the offender.

SECTION TWELVE

MISCELLANEOUS PROVISIONS

1. Entire Agreement

This Agreement, which includes the Terms and Conditions, Appendices, the Schedule(s), Attachments to the Schedule(s), and all Task Orders executed the attached Appendices, represents the entire understanding between the Parties hereto relating to the Services described in this Agreement and supersedes any and all prior proposals or agreements, whether written or oral, that may exist between the Parties. This Agreement may not be modified or amended except in writing as stated herein. To the extent that any Schedule conflicts with this Agreement, this Agreement shall control.

2. Formation of Agreement

- A. No agreement between the Parties is formed until all applicable actions have been completed to the satisfaction of District. The District Project Manager will not issue a Notice to Proceed until all required documents have been submitted and accepted by the District.
- B. Formation of this Agreement between the Parties requires accomplishment of the following, as applicable:
 - 1) Execution of the Agreement by Consultant;
 - 2) Submission by the Consultant, and acceptance by the District, of evidence of all required insurance coverages and documents;
 - 3) Submission by the Consultant, and acceptance by the District, of evidence of all required Form 700 documents, if applicable;
 - 4) Submission by the Consultant, and acceptance by the District, of all required Non-Disclosure Agreements (NDA) documents as provided in Attachment Four to the Schedule(s), Reference Materials, if applicable;
 - 5) Submission by the Consultant, and acceptance by the District, of a Health and Safety Plan, if applicable;
 - 6) Any other requirements that are deemed necessary by the District; and
 - 7) Execution of the Agreement by the District.

3. No Assignment

- A. The expertise and experience of Consultant are material considerations for District's award and execution of this Agreement. Consultant will not assign or transfer any interest in this Agreement nor the performance of any of Consultant obligations hereunder, without prior written consent of District in the form of an amendment executed by the Parties, and any attempt to so assign this Agreement, or any rights, duties or obligations arising hereunder, will be void and of no effect. Any assignment of monies due or to become due in accordance with this Agreement, will be to the extent permitted by law, and will be subject to all proper set-offs, deductions, and withholdings in favor of the District.
- B. In no event shall an assignment of any interest in this Agreement release the Consultant from its duties and responsibilities as described in this Agreement nor shall the Consultant be released from liability created by the provision of Services as described in this Agreement until such assignment takes effect. Any attempted or purported assignment without the District's written consent in the form of an amendment executed by the Parties is null and void.

4. Reasonableness

Discretionary actions or approvals to be performed by the Parties will be exercised in a reasonable manner.

5. Gifts

Consultant hereby acknowledges that District policy prohibits the acceptance by District personnel of gifts of any kind from its contractors, consultants, suppliers or vendors. Consultant shall honor this policy by not sending or bringing gifts to the District.

6. Audits

Consultant agrees that the District and its agent(s) have the right to review, obtain, and copy all records pertaining to performance of this Agreement. Consultant agrees to provide the District and its agent(s) with any relevant information requested and will permit the District and its agent(s) access to its premises, upon reasonable notice, during normal business hours for the purpose of interviewing employees and inspecting or copying books, records, accounts, computerized records, and other materials that may be relevant to the matter under investigation or subject to audit, such as by a government agency, providing the District with grant funds to pay for Consultant's services for the purpose of determining compliance with this Agreement. Consultant further agrees to maintain such records for a period of three years after final payment as provided for in this Agreement.

7. Force Majeure

Neither Party will be held responsible for delays caused by acts beyond its control, such as acts of God or public enemies, utility or communication delays, or failures not caused by such Party's negligence or fault, accidents not caused by such Party's negligence or fault,

labor disputes, war, or failure of the other Party to provide data as required pursuant to this Agreement.

8. Binding Effect

This Agreement is binding on the heirs, executors, administrators, successors and assigns of the Parties.

9. Choice of Law and Venue

The Parties agree that this Agreement is to be governed, construed and enforced in accordance with the laws of the State of California. The Parties also agree that the venue of any litigation arising out of or connected with this Agreement will lie exclusively in the state trial court or Federal District Court located in Santa Clara County in the State of California, and the Parties consent to jurisdiction over their persons and over the subject matter of any such litigation in such courts, and consent to service of process issued by such courts.

10. Confidentiality

- A. Due to the nature of the services Consultant will provide pursuant to this Agreement, there may be disclosures made to Consultant of detailed information about the District's operations, including on a need-to-know basis information which may be protected from public disclosure by confidentiality laws, the attorney-client privilege, and/or other provisions of law which govern the nature and timing of disclosure of public information.
- B. Consultant understands and acknowledges that District staff members providing information to the Consultant do so with the understanding that such information will be handled appropriately.
- C. In the event Consultant receives such restricted or confidential information, Consultant will limit access to the information to only those of Consultant's employees, its subcontractors and its Subconsultants authorized by the District to have the information.
- D. Consultant will notify the District immediately of any request by any third party to have access to confidential information and will not disclose the requested information without first receiving express written authorization from the District.
- E. The requirements stated herein will survive completion, expiration, suspension, and termination of this Agreement.

11. Release of Information Prohibited

The Consultant is not permitted to provide any information concerning the Project to the media nor anyone other than authorized District personnel. The Consultant will not release any information pertinent to the Project for publication, public disclosure, or in any other manner without first obtaining clearance and a release in writing from the District. Any media inquiry at any time to Consultant relating to any matter concerning Services provided or requested to be provided pursuant to this Agreement will be referred immediately to the District. Consultant will not communicate with the media regarding any such matter.

12. Conflict of Interest

- A. Consultant represents that there exists no actual or potential conflict of interest concerning the services to be performed pursuant to this Agreement.
- B. Consultant represents that Consultant's performance required as stated in this Agreement does not require the breach of any agreement or obligation to keep in confidence the proprietary information of another party. Consultant will not bring to the District, or use in the performance of Consultant's duties as described in this Agreement, any materials or documents of another party considered confidential or proprietary unless Consultant has obtained written authorization from such party, and the informed consent of the District, for the possession and use of such materials.
- C. Consultant represents and warrants that during the term of the Agreement, Consultant, Consultant's parent company, Consultant's subsidiaries, or any affiliated entity sharing substantially similar ownership of or control with Consultant shall not act as a Consultant or expert for any party in support of any potential or active claim or legal action against the District by such party.
- D. CALIFORNIA FAIR POLITICAL PRACTICES COMMISSION STATEMENT OF ECONOMIC INTEREST FORM 700 ("FORM 700"): Upon District's request, Consultant employees, officers, agents, Subconsultants, and subcontractors shall complete, execute, and submit a Form 700 as follows:
 - 1) Consultant employees, officers, agents, Subconsultants, and subcontractors assigned to perform services pursuant to this Agreement, shall file in a manner prescribed by the District, an Assuming Office Statement. The Assuming Office Statement shall be filed:
 - a. Within 30 calendar days of the effective date of this Agreement; and
 - b. Within 30 calendar days of Consultant hiring, adding or promoting to a designated filer position employees, officers, agents, Subconsultants, and subcontractors to perform services pursuant to this Agreement.
 - 2) Consultant employees, officers, agents, Subconsultants, and subcontractors assigned to perform services pursuant to this Agreement, that filed an Assuming Office Statement, shall file in a manner prescribed by the District, an amendment to their Form 700 any time there is a change to their disclosure information.
 - 3) Consultant employees, officers, agents, Subconsultants, and subcontractors assigned to perform services pursuant to this Agreement, that filed an Assuming Office Statement, shall file an Annual Statement in a manner prescribed by the District, during the District's annual filing season as determined by the District;
 - 4) Consultant employees, officers, agents, Subconsultants, and subcontractors assigned to perform services pursuant to this Agreement, that filed an Assuming

Office Statement, shall file in a manner prescribed by the District, a Leaving Office Statement with the District when one of the following occurs:

- a. Upon termination of this Agreement; and
 - b. Within 30 calendar days of Consultant employees, officers, agents, Subconsultants, and subcontractors vacating a designated filing position (i.e., removed from the Project, promotion, demotion, transfer to non-designated position, end of employment, or as a result of changes in designated filer positions in the District's Conflict of Interest Code).
- 5) Consultant understands and agrees that its employees, officers, agents, Subconsultants, and subcontractors may be disqualified from providing services to the District pursuant to the California Political Reform Act, Gov. Code §81000 et. seq. and Government Code §1090. If any of Consultant's employees, officers, agents, Subconsultants, and subcontractors are disqualified from providing services, on written notice from District Project Manager, Consultant will have 15 calendar days to remove said employee(s), officer(s), agent(s), Subconsultant(s)' and subcontractor(s)' employee(s) from the Project and provide a replacement acceptable to the District.
 - 6) Further, the failure of Consultant's employees, officers, agents, Subconsultants, and subcontractors to file an Assuming Office, Annual, Amended, or Leaving Office Statement within the time prescribed by the District is deemed a material breach and may result in termination of the Agreement for cause.

13. Task Orders

- A. Some tasks and Services will be assigned to the Consultant through issuance of Task Orders. After the tasks and Services are identified and communicated to the Consultant by the District Project Manager, the Consultant will prepare a proposed Task Order (See the Standard Consultant Agreement, Appendix Three Task Order Template). The proposed Task must identify the following:
 - 1) Description of the services, including deliverables;
 - 2) The total Not-to-Exceed Fees for Consultant to complete the services, including estimated number of hours per assigned staff to complete the services;
 - 3) Proposed staff that will be assigned to complete the services, including resumes if not previously provided to the District's Project Manager;
 - 4) Estimated cost of each other direct cost and reimbursable expense, including any applicable fees;
 - 5) Schedule for completing the services; and

- 6) Copies of applicable state and federal permits required to complete the services, unless previously provided to the District.
- B. The Consultant agrees that the Not-to-Exceed Fees specified in a proposed Task Order will be the product of a good faith effort in exercising its professional judgment. After an agreement has been reached on the negotiable items, the finalized Task Order will be signed by both the District's authorized representative referenced in the Standard Consultant Agreement, Appendix One Additional Legal Terms (Appendix One) and the Consultant's authorized representative.
- C. The Consultant must not commence performance of work or services on a Task Order until it has been approved by the District's authorized representative and Notice to Proceed has been issued by the District Project Manager. No payment will be made for any services performed prior to approval or after the period of performance of the Task Order. The period of performance for Task Orders will be in accordance with dates specified in the Task Order. No Task Order will be written which extends beyond the expiration date of this Agreement. The total amount payable by the District for an individual Task Order will not exceed the amount agreed to in the Task Order.
- D. Prevailing Wage Requirements: The Scope of Services may be considered by the District to be "Public Works" requiring the payment of prevailing wages. See the Standard Consultant Agreement Section Four Fees and Payments, subsection 3. Prevailing Wages, and Appendix Three Task Order Template.

14. Good Neighbor

The District always strives to be a good neighbor to the community adjacent to its facilities. The Consultant will ensure that disturbance to neighbors is minimized. The Consultant, its staff, and Subconsultants will always interact with the members of the public in a polite and professional manner.

15. Governmental Permits and Notifications

Unless otherwise expressly stated herein or in an executed Task Order, Consultant represents and warrants that it has investigated the need for, and has or will procure, at its cost, and in its own name to the extent allowed by law, all governmental permits, notifications, approvals and inspections required for the performance of the Services. Consultant shall promptly notify the District if any such permit or approval lapses or is modified or revoked. If, pursuant to applicable law, any such permits or approvals must be procured in the District's name, Consultant shall promptly so inform the District and assist the District in obtaining such permits or approvals.

16. Taxes and Benefits

Consultant has full and exclusive liability for the payment of, and Consultant will pay, any and all taxes and contributions for unemployment insurance, retirement benefits, workers' compensation insurance or benefits, life insurance, pensions, annuities and similar benefits and any other employment-related costs, obligations, and duties that may now or hereafter

be imposed by law, collective bargaining agreements or otherwise with respect to persons employed by Consultant for the performance of Services pursuant to this Agreement.

17. Nonwaiver of Rights

The failure of either Party to this Agreement to object to or to take affirmative action with respect to any conduct of the other Party that is in violation of the terms of this Agreement will not be construed as a waiver thereof, or as waiver of any future breach or subsequent wrongful conduct.

18. Notices

Unless otherwise specified in this Agreement, all requests for written approval or legal notices must be sent to the representatives below. All notices are deemed to have been given when made in writing and when delivered or mailed to the representatives of the District and the Consultant at their respective addresses as follows:

DISTRICT:

Deputy Officer, as listed in Section 1. Representatives, of the attached Schedule(s), Scope of Services.

CONSULTANT:

Consultant Principal Officer, as listed in Section 1. Representatives, of the attached Schedule(s), Scope of Services.

19. Appendices

The following listed Appendices are incorporated herein by this reference as though set forth in full:

Appendix One – Additional Legal Terms
Appendix Two – Dispute Resolution
Appendix Three – Task Order Template
Appendix Four – Insurance Requirements

20. Schedule(s) and Attachments

Schedule P, Scope of Services, and the following listed Attachments are incorporated herein by this reference as though set forth in full:

Attachment One to Schedule P – Fees and Payments
Attachment Two to Schedule P – Schedule of Completion
Attachment Three to Schedule P – Consultant's Key Staff and Subconsultants
Attachment Four to Schedule P – Reference Materials

(SIGNATURES FOLLOW ON NEXT PAGE)

IN WITNESS WHEREOF, THE PARTIES HAVE SET FORTH BELOW THEIR CONSENT TO THE TERMS AND CONDITIONS OF THIS AGREEMENT THROUGH THE SIGNATURES OF THEIR DULY AUTHORIZED REPRESENTATIVES.

SANTA CLARA VALLEY WATER DISTRICT
District

GEI CONSULTANTS, INC.
Consultant

By: _____
Linda J. LeZotte
Chair, Board of Directors

By: _____
Mark Freitas, P.E., G.E.
Principal Engineer

Date: _____

Date: _____

ATTEST:

Consultant's Address:

180 Grand Avenue, Suite 1410
Oakland, CA 94612

Michele L. King, CMC
Clerk, Board of Directors

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**STANDARD CONSULTANT AGREEMENT
APPENDIX ONE
ADDITIONAL LEGAL TERMS**

1. Conflict of Interest for Future Services

Consultant, Consultant's parent company, Consultant's subsidiaries, or any affiliated entity sharing substantially similar ownership of or control with Consultant shall not submit a proposal:

- A. For any agreement to be awarded for design, construction management, or the construction of any project that is related to the Services provided pursuant to this Agreement; however, subcontractors, vendors, and suppliers providing non-professional services for this Project, such as but not limited to, lab testing, soil borings, or other technical services, may propose and/or contract with future phase prime consultants or the District for services relating to this Project;
- B. In response to any request for proposal or District solicitation developed or prepared by or with the assistance of Consultant, Consultant's parent company, Consultant's subsidiaries, or any affiliated entity sharing substantially similar ownership of or control with Consultant; or
- C. For any single or sole source products/services related to the Services pursuant to this Agreement, or have a financial stake in any single or sole source products/services resulting from this Agreement.

2. Dispute Resolution

If a dispute occurs between the Parties as a result of this Agreement, then the Parties agree to use the Dispute Resolution process outlined in the Standard Consultant Agreement, Appendix Two Dispute Resolution.

3. Small Business Enterprise (SBE) Participation

This Agreement provides for the Consultant to include California Department of General Services certified Small/Micro Businesses in the performance of the Services, estimated to be **14%** or more of the Total Not-to-Exceed Fees stated in the Standard Consultant Agreement, Attachment One Fees and Payments, to the Schedule(s), and Consultant agrees to use its best efforts to meet this goal.

4. Task Order Approvals

- A. Services to be performed pursuant to a Task Order may only commence once a specific Notice to Proceed for that Task Order has been issued by the District.
- B. Task Orders are subject to approval by the District Deputy Officer unless delegated to the Unit Manager.
- C. District Unit Manager(s) is authorized to approve individual Task Orders in an amount not-to-exceed \$ 50,000.

**STANDARD CONSULTANT AGREEMENT
APPENDIX ONE
ADDITIONAL LEGAL TERMS**

- D. The total not-to-exceed amount for any one Task Order shall not exceed \$ [NOT-TO-EXCEED AMOUNT]. [NOT USED]

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**STANDARD CONSULTANT AGREEMENT
APPENDIX TWO
DISPUTE RESOLUTION**

1. Consultant's Questions and Concerns

Questions regarding the Terms, Conditions, and Services relating to this Agreement will be decided by the District who will furnish the decisions to Consultant in writing within 30 days after receiving a written request from Consultant.

2. Dispute Resolution

A. Alternate Dispute Resolution

District intends to use Alternate Dispute Resolution (ADR) techniques including partnering and mediation to resolve disputes relating to the Project.

B. Consultant and its Subconsultants are expected to participate in all ADR efforts.

C. The cost of partnering training facilities and facilitator will be borne by District.

3. Negotiations Before and During Mediation

Negotiations to resolve disputes before and during mediation are initiated for settlement purposes only and are not binding unless otherwise agreed by District and Consultant.

4. Voluntary Mediation

A. Initiation of Mediation

Any Party to a dispute or claim may initiate mediation by notifying the other Party or Parties in writing.

B. Request for Mediation

A request for mediation must contain a brief written statement of the nature of the dispute or claim, and the names, addresses, and phone numbers of all parties to the dispute or claim, and those who will represent them, if any, in the mediation.

C. Selection of Mediator

- 1) Upon receipt of a written request for mediation, unless otherwise agreed by the Parties, within 14 days, the Parties will confer to select an appropriate mediator agreeable to all Parties.
- 2) If the Parties cannot agree on a mediator, they hereby agree to accept a mediator appointed by a recognized association such as the American Arbitration Association.

D. Qualifications of a Mediator

- 1) Any mediator selected must have expertise in the area of the dispute and be

**STANDARD CONSULTANT AGREEMENT
APPENDIX TWO
DISPUTE RESOLUTION**

knowledgeable in the mediation process.

- 2) No person shall serve as a mediator in any dispute in which that person has any financial or personal interest in the result of the mediation.
- 3) Before accepting an appointment, the prospective mediator must disclose any circumstances likely to create a presumption of bias or prevent a prompt meeting with the Parties. Upon receipt of such information, the Parties will confer and decide whether to select another mediator.

E. Vacancies

If any mediator becomes unwilling or unable to serve, another mediator will be selected unless the Parties agree otherwise.

F. Representation

- 1) Any Party may be represented by person(s) of their choice who must have full authority to negotiate.
- 2) The names and addresses of such person(s) must be communicated in writing to both Parties and to the mediator.

G. Time and Place of Mediation

- 1) The mediator will set the time of each mediation session.
- 2) The mediation will be held at a convenient location agreeable to the mediator and the Parties, as determined by the mediator.
- 3) All reasonable efforts will be made by the Parties and the mediator to schedule the first session within 60 days after selection of the mediator.

H. Identification of Matters in Dispute

- 1) Parties shall comply with the process as required by the mediator with regard to providing the mediator with a memorandum setting forth its position with regard to the issues that need to be resolved. At the discretion of the mediator, or otherwise agreed by the Parties, the Parties may mutually exchange such memoranda.
- 2) At the first session, the Parties will be expected to produce all information reasonably required for the Mediator to understand the issue(s) presented. The mediator may require each Party to supplement such information.

**STANDARD CONSULTANT AGREEMENT
APPENDIX TWO
DISPUTE RESOLUTION**

I. Authority of Mediator

- 1) The mediator does not have authority to impose a settlement on the Parties but will attempt to assist the Parties in reaching a satisfactory resolution of their dispute.
- 2) The mediator is authorized to conduct joint and separate meetings with the Parties and to make oral and written recommendations for settlement.
- 3) Whenever necessary, the mediator may also obtain expert advice concerning technical aspects of the dispute, provided the Parties agree and assume the expenses of obtaining such advice. Arrangements for obtaining such advice will be made by the mediator or the Parties, as determined by the mediator.
- 4) The mediator is authorized to end the mediation whenever, in the mediator's judgment, further efforts at mediation would not contribute to a resolution of the dispute between the Parties.

J. Privacy

- 1) Mediation sessions are private.
- 2) The Parties and their representatives may attend mediation sessions.
- 3) Other persons may attend only with the permission of the Parties and with the consent of the mediator.

K. Confidentiality

Except as provided by California or federal law or regulation:

- 1) The mediator will not divulge confidential information disclosed to a mediator by the Parties or by witnesses in the course of the mediation.
- 2) All records, reports, or other documents received by a mediator while serving as mediator, are confidential.
- 3) The mediator must not be compelled to divulge such records or to testify in regard to the mediation in any adversary proceeding or judicial forum.
- 4) The Parties must maintain the confidentiality of the mediation and must not rely on, or introduce as evidence in any arbitration, judicial or other proceedings:
 - a. Views expressed, or suggestions made by the other Party with respect to a possible settlement of the dispute;
 - b. Statements made by the other Party in the course of the mediation proceedings;

**STANDARD CONSULTANT AGREEMENT
APPENDIX TWO
DISPUTE RESOLUTION**

- c. Proposals made or views expressed by the mediator; and
- d. Whether the other Party had or had not indicated willingness to accept a proposal for settlement made by the mediator.

L. No Stenographic Record

There shall be no stenographic record of the mediation.

M. Termination of Mediation

The mediation shall be terminated:

- 1) By the execution of a Settlement Agreement by the Parties;
- 2) By a written declaration of the mediator to the effect that further efforts at mediation are no longer worthwhile; or
- 3) By a written declaration of a Party or Parties to the effect that the mediation proceedings are terminated.

N. Exclusion of Liability

No mediator shall be a necessary Party in judicial proceedings related to the mediation.

O. Interpretation and Application of These Mediation Provisions

The mediator will interpret and apply these mediation provisions insofar as they relate to the mediator's duties and responsibility.

P. Expenses

- 1) The expenses of witnesses for each Party must be paid by the Party producing the witnesses.
- 2) All other expenses of the mediation, including required travel and other expenses of the mediator, and the expenses of any witness called by the mediator, or the cost of any proofs or expert advice produced at the direct request of the mediator, will be apportioned as the mediator finds appropriate or as otherwise agreed to by the Parties.

5. Compensation for Participation in Mediation

Neither Consultant nor the District is entitled to compensation for time spent in or for negotiations or mediation to resolve questions or disputes between Consultant and District arising out of this Agreement.

**STANDARD CONSULTANT AGREEMENT
APPENDIX THREE
TASK ORDER TEMPLATE**

Task Order No. _____

Title: _____

Agreement: Standard Consultant Agreement _____ ("Agreement") Between the Santa Clara Valley Water District ("District") and _____ ("Consultant"), dated _____.

District: _____

Consultant: _____

Dollar Amount of Task Order: Not-to-Exceed \$_____

1. Upon full execution of this Task Order No. _____, as set forth in the Standard Consultant Agreement, Section Twelve Miscellaneous Provisions, subsection 13. Task Orders, and the issuance of a Notice to Proceed by the District Project Manager, the Consultant is hereby authorized to perform the Services described in Attachment A to this Task Order. Any costs incurred, Services performed or expenditures by the Consultant before this Task Order is executed or before the issuance of the Notice to Proceed will be considered outside the contracted Scope of Services and will not be eligible for payment.
2. Both the Scope of Services to be performed and the deliverables to be provided in accordance with this Task Order are described in Attachment A which is attached hereto and incorporated by this reference. Attachment A shall include at a minimum the following:
 - A. The Consultant personnel to be assigned to perform the Services, including resumes if not previously provided to the District;
 - B. The total not-to-exceed fees amount for Consultant to complete the Services, including estimated number of hours required to perform the Services assigned to each Consultant classification;
 - C. Estimated cost of each other direct cost and reimbursable expense, including any applicable fees; and
 - D. Project schedule for completing the Scope of Services.
3. The Consultant shall be compensated at fixed fees or at the hourly rates established in Attachment One to the Schedule(s), Fees and Payments, of the Agreement. The Consultant agrees that it will provide all equipment, furnish all materials, except as may be otherwise noted in the Attachment A.
4. This Task Order becomes effective on the date of full execution by authorized representatives of the Parties and remains in effect until the earlier of: completion of the tasks set forth in Attachment A; or [expected completion date].

**STANDARD CONSULTANT AGREEMENT
APPENDIX THREE
TASK ORDER TEMPLATE**

5. Copies of applicable local, state and federal permits required to perform the Services described in Attachment A are attached to this Task Order, unless the Consultant previously provided the appropriate permits to the District.
6. The Consultant shall perform all Services described in Attachment A to this Task Order in accordance with the Terms and Conditions of the Agreement.
7. Prevailing Wage Requirements [NOT USED]
 - A. The Scope of Services described in this Task Order is considered by the District to be "Public Works" requiring the payment of prevailing wages. See the Standard Consultant Agreement, Section Four Fees and Payments, subsection 3. Prevailing Wages.
 - B. In accordance with prevailing wage laws, the Director of the California Department of Industrial Relations (Director) has ascertained the general prevailing rate of wages and employer payments for health and welfare, pension, vacation, and similar purposes available to the particular craft, classification, or type of workers employed on the Project. These rates are set forth in the latest determination obtained from the Director, which is on file in the District's Office of the Clerk of the Board of Directors and incorporated herein by reference the same as though set forth in full. The rates are also available on the State of California Department of Industrial Relations website at <http://www.dir.ca.gov>.

8. Signatures:

Signature:

NAME OF CONSULTANT FIRM
[PRINT NAME]
[PRINT TITLE]

DATE

Signature:

SANTA CLARA VALLEY WATER DISTRICT
[PRINT NAME]
[PRINT TITLE]

DATE

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**STANDARD CONSULTANT AGREEMENT
APPENDIX FOUR
INSURANCE REQUIREMENTS**

Please Note: Failure to comply with the instructions below could result in a delay in receiving the Notice to Proceed. The District will not be responsible for time lost or costs incurred due to failure to comply with these requirements. Please note the check-list of documents needed at the end of this Appendix IV insurance requirement.

Without limiting the Consultant's indemnification of, or liability to, the Santa Clara Valley Water District ("District"), the Consultant must provide and maintain at its own expense, during the term of this Agreement, or as may be further required herein, the following insurance coverages and provisions as listed below.

Consultant must provide its insurance broker(s)/agent(s) with a copy of these requirements and warrants that these requirements have been reviewed by Consultant's insurance agent(s) and/or broker(s), who have been instructed by Consultant to procure the insurance coverage required herein.

In addition to certificates, Consultant must furnish District with copies of all original endorsements affecting coverage required by this Appendix. The certificates and endorsements are to be signed by a person authorized by that insurer to bind coverage on its behalf. **All endorsements and certificates are to be received and approved by District before the Agreement is executed.** In the event of a claim or dispute, District has the right to require Consultant's insurer to provide complete, certified copies of all required pertinent insurance policies, including endorsements affecting the coverage required by this Appendix insurance document.

If your insurance broker has any questions about the above requirements, please advise him/her to call Mr. David Cahen, District Risk Manager at (408) 630-2213.

Certificates of Insurance

Consultant shall furnish the District with a Certificate of Insurance. The certificates will be issued on a standard ACORD Form.

Consultant shall instruct their insurance broker/agent to submit all insurance certificates and required notices electronically in PDF format to the designated District Contract Administrator and email a copy to **Insurance.Certificates@valleywater.org**.

The certificates will:

1. Identify the underwriters, the types of insurance, the insurance limits, the deductibles and the policy term;
2. Include copies of all the actual policy endorsements required herein; and
3. In the "Certificate Holder" box include:

**STANDARD CONSULTANT AGREEMENT
APPENDIX FOUR
INSURANCE REQUIREMENTS**

**Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118
Agreement/CAS No. 4883**

IMPORTANT: The agreement or CAS number must be included.

In the Description of Operations/Locations/Vehicles/Special Items Box:

1. Certificate Holder shall be named as Additional Insured;
2. District agreement or project number shall appear;
3. The list of policies scheduled as underlying on the Umbrella policy shall be listed; and
4. Waiver of Subrogation must be indicated as endorsed to all policies.

If Consultant receives any notice that any of the insurance policies required by this Appendix IV Insurance may be cancelled or coverage reduced for any reason whatsoever, Consultant or insurer shall immediately provide written notice to the designated District Contract Administrator that such insurance policy required by this Appendix IV Insurance is canceled or coverage is reduced.

Maintenance of Insurance

If Consultant fails to maintain such insurance as is called for herein, District, at its option, may suspend payment for work performed and/or may order Consultant to suspend all Consultant's work at Consultant's expense until a new policy of insurance is in effect.

Renewal of Insurance

Consultant will provide the District with a current Certificate of Insurance and endorsements within thirty (30) business days from the expiration of insurance.

Consultant shall instruct its insurance broker/agent to:

1. Submit all renewals of insurance certificates and required notices electronically in PDF format to:

Insurance.Certificates@valleywater.org

2. Provide the following information in the "Certificate Holder" box:

**Santa Clara Valley Water District
5750 Almaden Expressway
San Jose, CA 95118
Agreement/CAS No. 4883**

IMPORTANT: The agreement or CAS number must be included.

**STANDARD CONSULTANT AGREEMENT
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INSURANCE REQUIREMENTS**

Consultant must, at its sole cost and expense, procure and maintain during the entire period of this Agreement the following insurance coverage(s).

Required Coverages

1. Commercial General/Business Liability Insurance with coverage as indicated:

\$2,000,000 per occurrence / **\$2,000,000** aggregate limits for bodily injury and property damage

General Liability insurance must include:

- a. Coverage at least as broad as found in standard ISO form CG 00 01.
- b. Contractual Liability expressly including liability assumed under this contract.
- c. If Consultant must be working within fifty (50) feet of a railroad or light rail operation, any exclusion as to performance of operations within the vicinity of any railroad bridge, trestle, track, roadbed, tunnel, overpass, underpass, or crossway must be deleted, or a railroad protective policy in the above amounts provided.
- d. Severability of Interest.
- e. Broad Form Property Damage liability.

2. Business Auto Liability Insurance with coverage as indicated:

\$2,000,000 combined single limit for bodily injury and property damage per occurrence, covering all owned, non-owned and hired vehicles.

3. Professional/Errors and Omissions Liability with coverage as indicated:

\$10,000,000 per claim/ **\$10,000,000** aggregate

Professional/Errors and Omission Liability appropriate to the Consultant's profession, and must include:

- a. If coverage contains a deductible, or self-insured retention, it shall not be greater than one hundred thousand dollars (\$100,000) per occurrence/event.
- b. Coverage shall include contractual liability.
- c. If coverage is claims-made:
 - 1) Certificate of Insurance shall clearly state that the coverage is claims-made.

**STANDARD CONSULTANT AGREEMENT
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- 2) Policy retroactive date must coincide with or precede the Consultant's start of work (including subsequent policies purchased as renewals or replacements).
- 3) Policy must allow for reporting of circumstances or incidents that might give rise to future claims.
- 4) Insurance must be maintained and evidence of insurance must be provided for at least three (3) years after completion of the contract of work.

4. Workers' Compensation and Employer's Liability Insurance

Statutory California Workers' Compensation coverage covering all work to be performed for the District.

Employer Liability coverage for not less than \$1,000,000 per occurrence.

General Requirements

With respect to all coverages noted above, the following additional requirements apply:

1. **Additional Insured Endorsement(s):** Consultant must provide an additional insured endorsement for Commercial General/Business Liability (for both on-going and completed operations) and Business Automobile liability coverage naming the **Santa Clara Valley Water District, its Directors, officers, employees, and agents, individually and collectively**, as additional insureds, and must provide coverage for acts, omissions, etc. arising out of the named insureds' activities and work. Other public entities may also be added to the additional insured endorsement as applicable and the Consultant will be notified of such requirement(s) by the District. **NOTE:** This section does not apply to the Workers' Compensation and Professional Liability policies.

(**NOTE:** Additional insured language on the Certificate of Insurance is **NOT** acceptable without a separate endorsement such as Form CG 20 10, CG 2033, CG 2037, or CG 2038. Editions dated 07/04 are not acceptable.)
2. **Primacy Clause:** Consultant will provide evidence (either through the Certificate of Insurance, endorsement or language in the insurance contract) that consultant's insurance is primary with respect to any other insurance which may be carried by the District, its Directors, its officers, agents and employees, and the District's coverage must not be called upon to contribute or share in the loss. **NOTE:** This section does not apply to the Workers' Compensation policies.
3. **Cancellation Clause:** Consultant will provide endorsements for all policies stating that the policy will not be cancelled without 30 days prior notification to the District.
4. **Acceptability of Insurers:** All coverages must be issued by companies admitted to conduct business in the State of California, which hold a current policy holder's alphabetic and

**STANDARD CONSULTANT AGREEMENT
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INSURANCE REQUIREMENTS**

financial size category rating of not less than A- V, according to the current Best's Key Rating Guide or a company of equal financial stability that is approved by the District's Risk Manager. Non-Admitted companies may be substituted on a very limited basis at the Risk Manager's sole discretion.

5. **Self-Insured Retentions or Deductibles:** Any deductibles or self-insured retentions must be declared to and approved by the District. At the option of the District, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the District, its officers, officials, employees and volunteers; or the Consultant shall provide a financial guarantee satisfactory to the Entity guaranteeing payment of losses and related investigations, claim administration, and defense expenses. Consultant agrees that in the event of a claim they will pay down any agreed upon SIR in a prompt manner as soon as bills are incurred in order to trigger the insurance related to the SIR.
6. **Subconsultants:** The Consultant shall secure and maintain or shall be responsible for ensuring that all subconsultants performing the Contract Services secure and maintain all insurance coverages appropriate to their tier and scope of work in a form and from insurance companies reasonably acceptable to the District.
7. **Amount of Liability not Limited to Amount of Insurance:** The insurance procured by Consultant for the benefit of the District must not be deemed to release or limit any liability of Consultant. Damages recoverable by the District for any liability of Consultant must, in any event, not be limited by the amount of the required insurance coverage.
8. **Coverage to be Occurrence Based:** Except for Professional Liability, all coverage must be occurrence-based coverage. Claims-made coverage is not allowed.
9. **Waiver of Subrogation:** Consultant agrees to waive subrogation against the District to the extent any loss suffered by Consultant is covered by any Commercial General Liability policy, Automobile policy, Workers' Compensation policy described in **Required Coverages** above. Consultant agrees to advise its broker/agent/insurer and agrees to provide evidence (either through the Certificate of Insurance, endorsement or language in the insurance contract) that subrogation has been waived by its insurer.
10. **Non-compliance:** The District reserves the right to withhold payments to the Consultant in the event of material noncompliance with the insurance requirements outlined above.

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**STANDARD CONSULTANT AGREEMENT
APPENDIX FOUR
INSURANCE REQUIREMENTS**

CHECK LIST OF DOCUMENTS NEEDED

General Liability:	A.	Limits (\$2,000,000)	
	B.	Additional Insured (Endorsement)	
	C.	Waiver of Subrogation (COI, Endorsement or policy language)	
	D.	Primacy (COI, Endorsement or policy language)	
	E.	Cancellation Endorsement	
Auto Liability:	A.	Limits (\$2,000,000)	
	B.	Additional Insured (Endorsement)	
	C.	Waiver of Subrogation (COI, Endorsement or policy language)	
	D.	Primacy (COI, Endorsement or policy language)	
	E.	Cancellation Endorsement	
Umbrella:	A.	Limits (\$)	
	B.	Primacy (Endorsement or policy language)	
Workers Comp:	A.	Limits (\$1,000,000)	
	B.	Waiver of Subrogation (Endorsement or policy language)	
	C.	Cancellation Endorsement	
Professional Liability:	A.	Limits (\$10,000,000)	
	B.	Cancellation Endorsement	

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SCHEDULE P SCOPE OF SERVICES

1. REPRESENTATIVES

- A. The District's representatives are as listed below. Unless otherwise provided in this Agreement, all correspondence to the District must be addressed to the District Project Manager.

Hossein Morshedian, P.E. (District Project Manager (DPM))
Associate Engineer
Water Utility Capital Division
Santa Clara Valley Water District
5750 Almaden Expressway,
San Jose, CA 95118-3638

Phone: (408) 630-2667
E-mail: hmorshedian@valleywater.org

Hemang Desai, P.E. (District Unit Manager)
Dam Safety Program Manager
Water Utility Capital Division
Santa Clara Valley Water District
5750 Almaden Expressway,
San Jose, CA 95118-3638

Phone: (408) 630-3017
E-mail: hdesai@valleywater.org

Christopher Hakes, P.E. (Division Deputy Operating Officer)
Dam Safety and Capital Delivery Division
Santa Clara Valley Water District
5750 Almaden Expressway,
San Jose, CA 95118-3638

Phone: (408) 630-3796
E-mail: chakes@valleywater.org

- B. The Consultant's Project Manager is as listed below. All District questions pertaining to this Agreement shall be referred to the Consultant's Project Manager.

Matthew Powers, P.E. (Consultant Project Manager)
Senior Engineer
GEI Consultants, Inc.
180 Grand Avenue, Suite 1410
Oakland, CA 94612

Phone: (510) 350-2902
E-mail: mpowers@geiconsultants.com

SCHEDULE P SCOPE OF SERVICES

- C. The Consultant's Principal Officer for this Agreement is as listed below. As per the Agreement, Section Twelve, Miscellaneous Provisions, subsection 18. Notices, the District will submit all notices pertaining to this Agreement to the Consultant's Principal Officer.

Mark Freitas, P.E., G.E. (Consultant Principal Officer)
Principal Engineer
GEI Consultants, Inc.
180 Grand Avenue, Suite 1410
Oakland, CA 94612

Phone: (510) 350-2906
E-mail: mfreitas@geiconsultants.com

2. SCOPE OF SERVICES

- A. This Schedule P, Scope of Services describes the professional engineering services to be performed by Consultant for the District's Lenihan and Stevens Creek Dams Safety Evaluations (Project).
- B. The purpose of the professional engineering services is to prepare engineering studies that support District decisions to resolve potential flood and spillway risks at Lenihan and Stevens Creek Dams. Consultant will prepare the Independent Dam Safety Review (IDSR) and provide project management services associated with Consultant's services.
- C. The District may, at its discretion, choose to negotiate an amendment to this Agreement with Consultant for additional professional engineering services.

3. PROJECT OBJECTIVES

The District's objective for the Project is to obtain comprehensive spillway condition assessments and Independent Dam Safety Reviews of each dam.

4. PROJECT APPROACH

Consultant will assess each dam and provide findings in a report. Consultant will also provide specified follow-up services.

This effort will include Consultant performing the following:

- A. Preliminary data collection;
- B. Comprehensive spillway condition assessments in accordance with the California Department of Water Resources, Division of Safety of Dams (DSOD) requirements;

SCHEDULE P SCOPE OF SERVICES

- C. Probable Maximum Flood (PMF) studies per Hydrometeorological Reports (HMR) 58 and 59 to address adequacy of the spillway and freeboard capacity;
- D. Spillway hydraulics computer fluid dynamics;
- E. Geotechnical/geologic field investigation to develop feasible spillway improvement alternatives (if necessary);
- F. Independent Dam Safety Review (IDSR), which includes the Potential Failure Mode Analysis (PFMA) Workshop, and IDSR reports with recommendations to address identified deficiencies;
- G. Preparation of a Supporting Technical Information Document (STID);
- H. Dam outlet inspections; and
- I. Perform supplemental engineering services as follow-up to recommendations in the IDSR report.

5. PROJECT BACKGROUND

- A. The District manages an integrated water resources system that includes the supply of clean safe water, flood protection, and stewardship of streams on behalf of Santa Clara County's 1.8 million residents and businesses. The District effectively manages ten dams and surface water reservoirs, three water treatments plants, nearly 400 (four hundred) acres of groundwater recharge ponds and more than 275 (two hundred seventy-five) miles of streams.
- B. In April 2017, the Governor of California ordered detailed evaluations of large spillway structures be conducted at all high-hazard dams, including Lenihan and Stevens Creek dams. This Project will include the following:
 - 1) Detailed spillway condition assessments;
 - 2) Updated PMF studies;
 - 3) PFMA; and
 - 4) STID.
- C. An Independent Dam Safety Review (IDSR) will help identify other critical needs and deficiencies relevant to the two dams. The IDSR will include the PFMA workshop and inspection report, and updates to the STID.

D. Lenihan Dam

1) Dam and Reservoir

- a. Lenihan Dam (formerly called Lexington Dam) was constructed as a rolled earthfill structure in 1952. It is located on the east side of State Highway 17 in

SCHEDULE P SCOPE OF SERVICES

Santa Clara County, about ½ miles south of the Town of Los Gatos. Because of its proximity to highly developed areas, economic loss or loss of life could be excessive in the event of catastrophic failure. As a result, the dam is classified by the State of California as a “large” dam with a “high” hazard potential.

- b. The 195-foot-tall dam, impounds water in Lexington Reservoir for the purpose of groundwater recharge. The dam has a maximum capacity of 19,044 acre-feet at the nominal spillway elevation of 653 feet, NAVD88 vertical datum. The water released from the dam is generally conveyed through the District’s Vasona Dam and Reservoir, located about 2 miles north of Los Gatos Creek, to recharge ponds located on the west side of the Santa Clara Valley.
- c. An assessment of the dam, following the 1989 Loma Prieta earthquake, indicated that the dam’s crest had settled about 2-1/2 feet since the construction of the dam in 1952. The settlement appears to be a combination of long-term consolidation of the dam embankment and earthquake-induced displacements. The loss in the dam’s freeboard resulting from the settlement of the dam’s crest was restored in 1996.
- d. In December 2012, the District’s consultant, Terra/GeoPentech, completed an updated seismic stability evaluation of Lenihan Dam. The engineering analyses indicated that Lenihan Dam would perform well when subjected to the evaluation ground motions that represent the Maximum Credible Earthquake (MCE).

2) Outlet Works and Spillway

- a. The Lenihan Dam outlet tunnel and inclined inlet structure were completed in 2009 and replaced the original outlet pipe. The outlet extends from an intake structure upstream of the dam, through bedrock along the right abutment, to a discharge structure near the downstream toe of the dam. The outlet pipe is composed of approximately 2,000 feet of 54-inch diameter welded steel pipe inside of a cast-in-place concrete-lined maintenance tunnel.
- b. The Lenihan Dam spillway consists of an ungated concrete ogee weir located in the left abutment. The spillway crest has a length of about 150 feet, and a spill length of about 925 feet. In 1996, the Lexington Dam Freeboard Restoration project was completed. This project raised the crest of the dam, raised spillway chute walls, and repaired damaged spillway panels.

E. Stevens Creek Dam

1) Dam and Reservoir

- a. Stevens Creek Dam was constructed as a rolled earthfill structure in 1935 above the cities of Mountain View, Sunnyvale, and Cupertino. Because of its proximity to highly developed areas, economic loss or loss of life could be excessive in the

SCHEDULE P SCOPE OF SERVICES

event of catastrophic failure. As a result, the dam is classified by the State of California as a “large” dam with a “high” hazard potential.

- b. The 120-foot tall dam impounds Stevens Creek Reservoir and has a maximum capacity of 3,138 acre-feet at the nominal spillway elevation of 538 feet, NAVD88 vertical datum. In 1986, there were major modifications made to the dam to address seismic stability and spillway inadequacy issues. Prior to the modification, the dam was a two-zoned rolled earthfill dam.
- c. Since completion of the modifications in 1986, the dam has only had minor maintenance issues. The dam withstood the Loma Prieta Earthquake in 1989 with no visible damage. Some minor cracking in the dirt adjacent to the spillway was noted during an inspection following the earthquake.
- d. In January 2013, the District's consultant, Terra/GeoPentech, completed an updated seismic stability evaluation of Stevens Creek Dam. The engineering analyses indicated that Stevens Creek Dam would perform adequately when subjected to the evaluation ground motions that represent the MCE.

2) Outlet Works and Spillway

- a. The Stevens Creek Dam outlet consists of a 50-inch diameter steel pipe encased in 9-inch-thick reinforced concrete, an upstream intake structure and a downstream outlet structure. The original outlet pipe is approximately 680 feet long. The outlet was extended 70 feet downstream and 140 feet upstream as part of the dam modifications in 1986.
- b. The Stevens Creek Dam spillway consists of a concrete side channel weir located in the right abutment. The spillway crest has a length of about 172 feet.

6. ASSUMPTIONS AND REQUIREMENTS

A. General Assumptions and Requirements

- 1) **Manage Scope of Services.** Consultant shall manage the Scope of Services such that the work is completed within the Not-to-Exceed Fees limit and in accordance with the Project schedule and ensure that all services and deliverables meet the District and Project objectives and requirements.
- 2) **Deliverable Format.** Consultant shall submit deliverables in both electronic and hardcopy format, if requested. Deliverables shall be submitted in PDF and native (editable) format, including Word documents, Excel spreadsheets, PowerPoint files, AutoCAD files, etc. The hard copy deliverables shall be printed in professional quality presentation and submitted in 5 (five) copies, if requested. District may require original copies of signed documents and/or scanned (Adobe PDF) versions.

SCHEDULE P SCOPE OF SERVICES

- 3) **Review of Deliverables.** The District will review and comment on all Project deliverables and forward to Consultant for revision and preparation of final versions as determined by the District, some of the deliverables may also be subject to review and comment from regulatory agencies and stakeholders following the District review process.
 - 4) **District Quality Environmental Management System.** The District maintains a Quality Environmental Management System (QEMS) which has procedures, guidelines and work instructions for the performance of various District work. Consultant will perform the Agreement tasks and/or sub-tasks in accordance with the QEMS framework.
 - 5) **Consultant Responsibility.** Consultant, with its expertise in the performing the Services described herein, is responsible for making the appropriate assumptions in each task to complete each task's deliverables and to achieve the Project objectives of this Agreement as described in Section 3, Project Objectives.
 - 6) **Document Control.** Consultant is responsible for establishing and maintaining its own document control system to execute this Scope of Services. An internal document control system for this Project is maintained by the District.
 - 7) **File Exchange Service.** Consultant will provide a file exchange service accessible to all parties as designated by the District to facilitate communications; particularly of large files over three megabytes. Difficulties in using and transmitting information with this exchange service shall be resolved by Consultant. In the event that transmitting or receiving information does not occur in a timely manner, the District will not be responsible for delays in completing Project work. Consultant may need to coordinate with District's Information Technology Division to address any firewall issues and/or permissions required to allow for these communications.
- B. Project-Specific Assumptions and Requirements.** Professional Services: The District intends to retain a geotechnical consulting firm to deliver the Project. Attachment Four – Reference Materials provides a list of technical reference material applicable to this Project. The District's requirement is that Consultant provide all engineering services necessary to complete the Project and meet the objectives identified in Section 3. Project Objectives, above, including:
- 1) Prepare all reports, meeting notes, presentations, and correspondence with DSOD to facilitate DSOD review of the Project;
 - 2) Prepare as-needed technical memoranda and provide follow-up engineering services to transition to a Capital Improvement Project, if appropriate;
 - 3) Meet requirements of the resource and regulatory agencies (permitting agencies) including DSOD; and

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- 4) Develop sufficient information and analysis to enable District's Board of Directors to make Project decisions.

7. PLANNING PHASE TASKS

Task 1 – Project Management

The purpose of this task is for Consultant to manage this Scope of Services such that the work is completed within the not-to-exceed fees limit stated in Attachment One to Schedule P, Fees and Payments, and in accordance with the Project Schedule stated in Attachment Two to Schedule P, Schedule of Completion, while ensuring that all services and deliverables by the Consultant meet the District and Project requirements.

1.1 Project Work Plan. Consultant will prepare a Project Work Plan in accordance with this Scope of Services.

The Project Work Plan shall include Project objectives, requirements, constraints, a detailed Project Schedule (showing major tasks and deliverables), a breakdown of Consultant's costs for the major tasks, a list of the Consultant's team members and their roles and responsibilities, communication protocols (internal and external), document control procedures, and other administrative procedures.

The Project Work Plan shall include a Project Quality Assurance and Quality Control (QA/QC) Plan documenting the Consultant's procedures to ensure the Consultant's services and deliverables meet District requirements and accepted practices and standards of Consultant's profession. The District reserves the right to request and review the Consultant's Project documentation demonstrating its adherence to its own quality assurance procedures.

1.2 Progress Meeting and Workshops. District and Consultant key staff and subconsultants, as determined necessary and appropriate by Consultant, subject to DPM approval, or at District's direction, will coordinate and attend periodic progress meetings and workshops with District staff, regulatory and resource agencies, and review boards, as needed, to review, discuss and progress of the work. For each meeting or workshop, the Consultant will prepare the meeting agenda and notes, and submit them for review by the District.

1.3 One-on-One Meetings with District. The Consultant Project Manager must provide a brief update of the team's work activities completed within the week, the look-ahead activities, and the issues and actions that require the District's attention, in a monthly meeting/conference call with the DPM; frequency of these meetings and calls, as well as whether in person or by phone, will be as directed by the District.

1.4 Coordination and Communication with External Agencies. Consultant will assist the DPM with coordination and communication with appropriate regulatory or other agencies, as necessary, to execute this Scope of Services. This task includes support in drafting correspondence related to the Consultant's Project Planning activities as requested by the District.

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1.5 Public Outreach. If requested, Consultant will provide support and assistance to the District's public outreach activities such as coordination, preparation, and participation including, preparing presentation materials, attendance at meetings, preparation of newsletters, graphics, updates to the Project website, developing responses to questions, and other tasks as directed by the DPM.

1.6 Additional Review Meetings. Consultant shall recommend convening and attending meetings, workshops, and consultations with the District as needed to complete the Planning tasks.

Task 1 – Deliverables

1. Project Work Plan including QA/QC Plan (2 Drafts and 1 Final).
2. Meeting agendas, minutes, and presentations.
3. Monthly meetings/conference calls attendance and notes; frequency of meetings and calls, as well as whether in person or by phone, will be at District's discretion.
4. Draft correspondence with agencies or public outreach collateral as agreed upon with the District.

Task 1 – Assumptions

1. Budgeted Level of Effort (LOE) for PM services is based on a Project duration of 24 months.
2. Ongoing coordination/management of the engineering planning team, and preparation of status reports and other documentation to accompany monthly invoices to District is included in Task 1.3 One-on-One Meetings with District.
3. Regular in-person coordination meetings will be held at the District office in San Jose on a monthly basis, with interim coordination handled by conference calls, typically on a weekly basis.
4. Budgeted LOE includes an allowance of 40 hours to assist the District in coordination and communication with regulatory agencies.
5. Budgeted LOE includes an allowance of 32 hours for public outreach support activities.
6. In addition to monthly coordination meetings and weekly calls, Task 1.2 Progress Meetings and Workshops includes the following meetings:
 - A. Combined Kickoff meeting
 - B. Combined Project Requirements meeting
 - C. One meeting per dam to address Probable Maximum Precipitation (PMP) and Probable Maximum Flood (PMF)

SCHEDULE P SCOPE OF SERVICES

- D. One workshop per dam to address Alternatives Evaluation
- E. One workshop per dam for the Staff Recommended Alternative with the District
- 7. Additional meetings budgeted under Task 1.6 Additional Review Meetings include three supplemental coordination meetings with the District.
- 8. Development of the QA/QC program is included in the scope of this task; QA/QC reviews of work deliverables are included in the respective technical work tasks.

Task 2 – Planning Services

The purpose of this task is to prepare a planning study to be used to select a staff recommended project. The planning study will be a compilation of technical memoranda addressing planning requirements, development and evaluation of alternatives that meet the Project Objectives and include a recommendation that maximizes the benefit to life-cycle cost ratio for the Project. In support of the planning study, Consultant will prepare planning level engineering studies and evaluations to support this task.

Task 2.1 – Problem Definition

The purpose of this task is to review existing information and perform studies and analysis to establish existing conditions and define and confirm the problems and deficiencies. The scope of this task includes but is not limited to:

Task 2.1.1 – Review Existing Information and Prepare Supporting Technical Information

- 2.1.1.1 The Consultant will collect and review relevant available reference documents from District files, DSOD files, and other sources such as USGS reports and other published documents. DSOD files will be reviewed at the DSOD office and relevant documents will be copied. Relevant information will be collected into a database to form the basis of the Supporting Technical Information Document (STID) and safety evaluations of the dam.
- 2.1.1.2 The Consultant will prepare and submit a Project Base Map and data as necessary to complete required studies and prepare planning-level drawings for the Project. Base Map preparation shall include, but not be limited to, collecting existing survey, topographical, GIS, property, easements, rights of way, utility and infrastructure data as applicable to generation of the Project Base Map. The District has topographical, bathymetric, and GIS data available for the area around the dam; however, available information is suitable for reference only and surveying may be required to create planning-level drawings.
- 2.1.1.3 The Consultant shall review all existing information including studies, reports, memoranda, etc., and perform background research, data collection, and field investigation to establish existing conditions. The Consultant shall recommend further studies, and assessments, if required, for District approval.

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Task 2.1.2 – Spillway Conditions Assessment, Phase 1

Phase 1 of the assessment will focus on spillway design review and visual inspection. Based on results of Phase 1, should preparation of Phase 2 and Phase 3 be necessary, it may be performed as Task 3, Supplemental Services. Phase 2 would focus on field and laboratory testing, as well as structural concrete analysis, evaluating erodible material at the chute for potential undermining, and uplift pressure analysis from spillway flows. Based on Phase 2 results, Phase 3 would focus on evaluating potential measures and recommendations for the spillway, including repairs, replacements, maintenance, inspection procedures, and interim measures.

2.1.2.1 The Consultant will review available information including design drawings, District maintenance and monitoring records, and other available documents to evaluate potential vulnerabilities in the spillway structure.

2.1.2.2 The Consultant will perform an initial assessment comparing the existing design to current, modern spillway design practices to identify potential deficiencies of the existing design, if any, identify potential additional investigations, if any, and recommend potential corrective mitigations, if any.

2.1.2.3 The Consultant will interview District's maintenance staff and consider their input and observation into subsequent phases of the work.

2.1.2.4 The Consultant will conduct a comprehensive inspection of the spillway. Consultant will prepare a detailed inspection plan including a Health and Safety Plan. This plan will detail the items to be covered in the inspection and safe procedures for carrying out the inspection. A draft plan will be provided for District and DSOD review. Consultant will consider comments from the review when preparing a final version of the plan. The inspection will include the following:

Structural Aspects

- 1) Visual inspection and assessment of entire concrete surface including approach (sediment and water surface elevation permitting), crest, chute slab and side walls, and terminal structure.
- 2) Mapping of cracks, joints, offsets, damage, repairs, spalling, erosion, exposed aggregate, distressed concrete, etc. on the spillway floor and walls.
- 3) Visual inspection of spillway drainage system, including weep holes.
- 4) Striking the concrete surface with a rock hammer to checking for "drummy" or hollow-sounding concrete indicating possible voids beneath or behind concrete.

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Geologic/Geotechnical Aspects

- 1) Inspection of ground conditions immediately downstream of the spillway to assess potential for head-cutting type failure.
- 2) Inspect and record foundation conditions (including tree growth) and general topography (runoff drainage) surrounding the entire spillway structure for potential erosions or undermining type failure.
- 3) Perform a thorough background review of: existing available reports and maps, construction photographs, review publicly available historical air photographs and LiDAR data provided by the District.
- 4) Perform geologic mapping of the site vicinity to identify geohazards that may impact the spillway, and to characterize the foundation conditions for key elements of the spillway including: ogee, slab, walls, terminal structure, and erodibility of the discharge channel.
- 5) Identify improvements to the site that would deter future erosion impacting the spillway, such as: improved surface runoff control measures, grading, and vegetation abatement.

2.1.2.5 The results of the Data Review and the Phase 1 Spillway Inspection will be documented in a Technical Memorandum. The memorandum will also include recommendations for future phases of the Spillway Condition Assessment including field investigations, testing and analyses, and interim risk reduction measures, as appropriate, based on the outcome of the Phase 1 Inspection. A draft version of the memorandum will be provided to the District and DSOD for review and comment and a final version considering the input will be produced.

Task 2.1.3 – Studies and Analyses

The Consultant shall conduct studies and assessment, if approved, and shall use the information from these studies and analyses together with the existing information, to define and confirm the problems and deficiencies. The Consultant shall prepare Technical Memoranda to document these studies and analyses. The studies and analyses will include, but not be limited to, the following:

2.1.3.1 **PMP and PMF.** The Consultant will calculate the PMP and PMF. The Consultant will develop the PMP storm using HMR 58/59 and submit it to DSOD for review and approval. After the PMP results have been reviewed and accepted by DSOD, the Consultant will determine the PMF and evaluate the adequacy of the hydraulic capacity of the existing spillway. The Consultant will compute the PMF by applying the PMP to a U.S. Army Corps of Engineers Hydrologic Engineering Center Hydrologic Modeling System (HEC-HMS) watershed model. The HEC-HMS model will incorporate rainfall hydrograph distribution, rainfall losses and channel routing (if applicable). If historical data permit, the HEC-HMS model will be calibrated and verified to historical events. The

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PMF reservoir inflow hydrograph will be computed using the HEC-HMS model and used by the U.S. Army Corps of Engineers Hydrologic Engineering Center River Analysis System (HEC-RAS) one-dimensional (1D) hydraulic model to evaluate the capacity of the spillway. The HEC-RAS model will include the reservoir (as a 1D storage area), the spillway weir (as a rating curve), and the spillway chute (as a 1D channel reach).

2.1.3.2 Outlet Inspections (Stevens Creek Only). The Consultant will conduct both a general and detailed underwater investigation of the submerged Inlet Structures and Outlet Pipes at Stevens Creek Dam using methods approved by the District. The reservoir has good access to mobilize both floating and deep air diving equipment that will be launched using the concrete boat ramp and adjacent parking lot.

2.1.3.2.1 The inspections and surveys will be conducted using the following combination of equipment:

- a) Commercial diving utilizing a surface-supplied compressed air diving mode of equipment; and
- b) Remotely Operated Vehicles (ROVs) to provide both video and sonar profiling documentation of the various valves, outlet pipe and other appurtenances.

2.1.3.2.2 The OSHA compliant deep-air diving spread will include a double-lock 54" PVHO (Pressure Vessel for Human Occupancy) certified Deck Decompression Chamber (DDC) that will be staged on a floating work platform (barge). Utility and push boats will also be used to stage the barges, transit crew members, used as a mobile dive station and for emergency evacuation of personnel, if required.

2.1.3.2.3 Prior to beginning work, Consultant will prepare and submit a detailed outlet pipe inspection work plan for Stevens Creek Dam for District review and approval. The work plan will include task descriptions and work sequence that meets the objectives of the District.

2.1.3.2.4 Consultant will evaluate the capacity of the Stevens Creek outlet pipes and compare it to the DSOD drawdown criteria for Stevens Creek Dam.

2.1.3.2.5 Under "wet" scenarios, diver inspections may include visual, hand-held video/still photographic (onscreen time/date only display and audio narration), tactile and both nondestructive testing (NDT) (UT, ultrasonic testing and CP, corrosion potential monitoring) and "destructive testing" (chipping/removal of concrete for testing, cutting of coupons, etc.) may be accomplished. Remotely operated vehicle (ROV) inspections would be limited to conducting real-time video inspections with onscreen display of time/date and audio narration (from which "frame capture" still photos could also be recorded), scanning sonar profiling to measure/document/record sedimentation or debris

SCHEDULE P SCOPE OF SERVICES

accumulation (1 second/revolution “fast scan.” digital display) and/or CP monitoring.

- 2.1.3.2.6 For “dry” scenarios, entrant inspections may include close-up video/still photography documentation, tactile with chipping/scrapping and materials sample collections, NDT (UT), and destructive testing. Crawler ROV inspections would be limited to conducting “real-time” video inspections, but with high quality recording due to a stable inspection platform with even lighting, on-screen display of time/date and total feet of penetration, etc.

Phase 1 WET

- 1) Diver to locate intake/remove trash rack and determine if any sedimentation present near access requires relocation or the slide gate, guides and/or hydraulic cylinder will need HP water blasting and cleaning to facilitate video inspection; as required, conduct hand-held video inspection to record gate open/close cycle from exterior portion of gate which may be difficult for ROV, if required to fit into confined areas/crevices within structure.
- 2) Diver to assist ROV and insert into intake pipe; may be required to line-tend ROV tether/umbilical from exterior of Intake Structure and to note cable lengths on ROV tether as it penetrates outlet pipe downstream.
- 3) ROV to record video and, if required, sonar profiling of sedimentation,” out of roundness within pipeline and measure/record profiles of sediment around exterior of Intake Structure outside of pipeline,
- 4) Diver to assist ROV while pulling tether as it returns upstream to the POE (point of entry) and to recover ROV from within structure.
- 5) Diver to perform any NDT (i.e., UT thickness gauging) upon trash rack, support brackets for hydraulic operator, perform “sounding” of concrete condition using 5# hammer; perform probing of sedimentation build-up around perimeter of structure.

Phase 2 DRY

- 1) Internal crawler ROV will require 2 entrants to transport and line-tend ROV into downstream POE; permit-required confined-space entry, with 3 Attendants or technicians will be required outside of intake (total 5-person crew); ROV should be able to inspect 500LF of pipe from POE; Video only inspection, but with rotating camera, zoom capabilities, with onscreen display of time/date and feet of penetration from POE.
- 2) Internal manned entry will also require 2 entrants, with one to crawl beneath horizontal axis BF (butterfly valve) and the other near BF and 3 Attendants at POE. The entrant should be able to crawl within and inspect up to 200LF of pipe from POE; conduct NDT (UT), scrape/collect materials samples, destructive testing, close-

SCHEDULE P SCOPE OF SERVICES

up still photography using pit-gauge/contour gauge to document missing liner materials; Total 5-person crew.

- 2.1.3.3 Outlet Analyses Review (Lenihan Only).** The Consultant will review existing hydraulic analyses for the Lenihan Dam outlet pipes, compare to DSOD drawdown criteria for Lenihan Dam, and provide comment on the adequacy of the analyses. The Consultant will recommend updates to analyses, if needed, that will be performed as Task 3 Supplemental Services.

Task 2.1.4 – Independent Dam Safety Review

- 2.1.4.1** The Consultant will prepare an Independent Dam Safety Review (IDSR) of the dams. The IDSR will include a review of past performance to become familiar with any identified or potential dam safety deficiencies and then assess through inspection, document review, and initial independent evaluations whether the deficiencies and potential deficiencies have been appropriately identified.

The Consultant will assist the District in organizing dam safety inspections at each dam attended by a group of participants generally composed of the District's staff from management, engineering, operations and maintenance, and appropriate engineering and dam safety experts.

- 2.1.4.2** Following the evaluations, a report will be prepared with findings and recommendations to identify, evaluate, and/or remediate dam safety deficiencies. The IDSR will focus on the major dam safety categories of foundation integrity, structural dam stability, spillway adequacy, low-level outlet adequacy and leakage and seepage, with additional attention given to instrumentation readings and indications, past performance and visibly observable defects.

Task 2.1.5 – Potential Failure Mode Analysis and Workshop

- 2.1.5.1** The Consultant will perform Potential Failure Mode Analysis (PFMA) following the FERC dam safety process to identify and highlight the most vulnerable components of the dam and the appurtenant structures.

- 2.1.5.2** The Consultant will perform the PFMA in following two major steps:

- a) Conduct PFMA workshop review of existing documents and development of Potential Failure Modes; and
- b) PFMA Report preparation.

- 2.1.5.3** The workshop will be conducted by a facilitator or co-facilitators provided by the Consultant and attended by a group of participants generally composed of the District's representatives from management, engineering, and operations, and maintenance, regulators such as DSOD, and a group of engineering and dam safety experts, which may consist of consultants or experts from other agencies.

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2.1.5.4 At the end of the workshop, the Consultant will categorize the potential failure modes using the classifications developed by FERC and then prepare a comprehensive report to identify and document the discussions, findings and recommendations from the workshop.

2.1.5.5 The PFMA report will identify specific issues of concern or non-concern and summarize the overall safety of the dam. The Consultant will also prepare a separate memorandum of recommendations to improve dam safety that will include additional studies and analyses, if any, based on the outcome of the PFMA. With the new information, the Consultant will update the STID prepared pursuant to subtask 2.1.6 Supporting Technical Information Document of this scope.

Task 2.1.6 – Supporting Technical Information Document

2.1.6.1 The Consultant will prepare a Supporting Technical Information Document (STID). The STID will summarize the dam elements and details and include sufficient information to understand the design and current engineering analyses for the dams. The STID will be assembled in loose-leaf fashion so that it can be updated on an on-going basis to provide historical and current information for the dams with an emphasis on dam safety.

2.1.6.2 The STID will include such information as a Project description, basic data for the dams, design and construction history, past performance and analytical evaluations such as spillway and outlet adequacy and stability including seismic stability. The document will also contain a section on instrumentation, surveillance and monitoring, and a compilation of historical and current drawings for the dams. The document layout would be as follows:

- 1) Potential Failure Mode Analysis;
- 2) Project Description and Drawings;
- 3) Construction History;
- 4) Standard Operating Procedures;
- 5) Geology and Seismicity including fault rupture hazard;
- 6) Hydrology and Hydraulics;
- 7) Surveillance and Monitoring Plan;
- 8) Structural Adequacy;
- 9) Spillway Gates;
- 10) Pertinent Correspondence; and
- 11) References.

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Task 2 – Deliverables

1. Project Base Map for Lenihan Dam (Draft, Final).
2. Project Base Map for Stevens Creek Dam (Draft, Final).
3. Health and Safety Plan for field work (Draft, Final).
4. Comprehensive Spillway Evaluations Technical Memoranda for Lenihan Dam (Draft, Final).
5. Comprehensive Spillway Evaluations Technical Memoranda for Stevens Creek Dam (Draft, Final).
6. PMP and PMF Technical Memoranda for Lenihan Dam (Draft, Final).
7. PMP and PMF Technical Memoranda for Stevens Creek Dam (Draft, Final).
8. Outlet Inspection Work Plan for Stevens Creek Dam (Draft, Final).
9. Outlet Inspection Reports for Stevens Creek Dams (Draft, Final) including diver/entrant/ROV video of inspection.
10. Independent Dam Safety Review Reports for Lenihan Dam (Draft, Final).
11. Independent Dam Safety Review Reports for Stevens Creek Dam (Draft, Final).
12. Potential Failure Mode Analysis Workshop Reports for Lenihan Dam (Draft, Final).
13. Potential Failure Mode Analysis Workshop Reports for Stevens Creek Dam (Draft, Final).
14. Dam Safety Recommendations Technical Memorandum for Lenihan Dam, including interim risk reduction measures, as appropriate (Draft, Final).
15. Dam Safety Recommendations Technical Memorandum for Stevens Creek Dam, including interim risk reduction measures, as appropriate (Draft, Final).
16. Supporting Technical Information Documents for Lenihan Dam (Draft, Final).
17. Supporting Technical Information Documents for Stevens Creek Dam (Draft, Final).

Task 2 – Assumptions

1. Subtask 2.1.1 Review Existing Information and Prepare Supporting Technical Information includes:
 - A. One-day site reconnaissance visits for both dams (i.e. half-day each, same day) with the design team and District staff to review existing site conditions and constraints.

SCHEDULE P SCOPE OF SERVICES

- B. District will provide Consultant digital versions of all available background information and data including PDF and editable files (i.e., Excel), where appropriate. Additional files will be collected by the Consultant at DSOD offices.
 - C. District staff arranges with County/private property owners for mapping and geotechnical exploration access to areas outside District property.
 - D. District will provide existing topographical, bathymetric, and GIS data available for the area around the dam.
 - E. Site terrestrial topographic surveys include 2 survey crew days at each dam.
 - F. Survey will be based on existing District benchmarks.
 - G. Consultant-recommended further studies and assessment will be considered for Task 3 Supplemental Services, based on the outcome of Subtask 2.1.1 Review Existing Information and Prepare Supporting Technical Information, pending District approval.
2. Subtask 2.1.2 Spillway Conditions Assessment includes:
- A. Preparation of Inspection Workplans, and a combined Health and Safety Plan (HASP) for both dams (draft and final).
 - B. Base map and filed sheet preparation.
 - C. Geological Mapping.
 - D. Two ten-hour days per dam for two engineers/geologist and 1 ten-hour day per dam for support staff.
 - E. Rope access and setup of safety lines required for safe inspections at both dams.
3. Subtask 2.1.3.1 PMP & PMF Studies and Analyses includes:
- A. One dimensional modeling of the spillway chutes. Advanced 2D and/or 3D CFD modelling may be performed under Task 3 Supplemental Services, based on the outcome of the Phase 1 Spillway Conditions Assessments. Wind-wave run-up analyses may also be performed pursuant to Task 3 Supplemental Services.
 - B. This analysis includes any effect from Austrian Dam (Lake Elsman). The District will provide the consultant all available Austrian Dam hydrologic and hydraulic information including, but not limited to: 1) reservoir storage-elevation curve, and 2) spillway rating curve.

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4. Subtask 2.1.3.2 Outlet Inspection.
 - A. District will provide a point of contact to assist in coordination of the Outlet Inspection Work Plan.
 - B. Level of effort for dive inspections are estimated using the normal maximum water surface.
 - C. Prior to manned/ROV wet inspection from upstream end, the District will shut off the downstream valves (Lock Out Tag Out).
 - D. Prior to the manned/ROV dry inspection from the downstream end, the District will dewater and shut off the upstream gates (Lock Out Tag Out).
5. Subtask 2.1.4 Independent Dam Safety Review
 - A. Dam safety inspection for both dams which include one 10-hour day for two engineers/geologists and one support staff.
 - B. District staff including O&M personnel will participate in inspection.
6. Subtask 2.1.5 Potential Failure Mode Analysis (PFMA) and workshop includes:
 - A. Combined one-week workshop for both dams with two senior consultants, two specialty consultants, and one recorder.
 - B. Additional recommended studies and analyses will be performed as Task 3 Supplemental Services, based on the outcome of the PFMA and/or IDSR.
7. The District will pay all application fees associated with the environmental permitting of Task 2 investigations.
8. The District will coordinate and complete all work required for pump-over as necessary for outlet inspections.

Task 3 – Supplemental Services

The District may require, and the Consultant shall perform, Supplemental Services on an as-needed basis. Prior to performing such Supplemental Services, the Consultant must obtain written authorization in the form of a Task Order approved by the District's authorized representative. The form of this Task Order will be as per the Standard Consultant Agreement, Section Twelve, Miscellaneous Provisions, Subsection 13, Task Orders, and Appendix Three of the Standard Consultant Agreement, Task Order Template.

Specific examples of possible Supplemental Services include:

SCHEDULE P SCOPE OF SERVICES

3.1 Problem Definition Report and Project Requirements

- 3.1.1 Problem Definition Report.** Prepare a Problem Definition Report, which will include detailed information on the Project background and existing conditions, detailed descriptions of the problems and deficiencies, a listing of the project requirements, identification of opportunities and constraints, and any refinements to the project objectives.
- 3.1.2 Project Requirements.** Consultant shall assist the District with the identification and establishment of the Project requirements. The Consultant shall prepare a Project Requirement Memorandum which shall be updated periodically.

3.2 Feasible Alternatives

The purpose of this task is to develop and evaluate the feasible alternatives so as to prepare the Feasible Alternatives Matrix. This will establish the basis for identifying a staff-recommended alternative. The scope of this task includes but is not limited to:

- 3.2.1 Develop Alternatives.** The Consultant shall collect in-depth information to further develop each feasible alternative. The Consultant shall prepare preliminary designs 5% for each feasible alternative to a level that allows objective assessment of the pros and cons of the alternatives;
- 3.2.2 Assessment Methodology.** The Consultant shall develop an assessment methodology, including the selection of relevant criteria and assignment of weights or weighting factors, shall be used to evaluate and score the developed alternatives; and
- 3.2.3 Feasible Alternative Matrix.** The Consultant shall analyze and evaluate the alternatives using the methodology developed, and shall screen and score the alternatives and rank each alternative. The Consultant shall prepare a feasible alternatives matrix from the scoring and ranking of the alternatives, showing results of the relative score of each alternative. These scores will be used to identify or select the staff-recommended alternative.

3.3 Staff-Recommended Alternative

The purpose of this task is to develop the staff-recommended alternative in more detail with preliminary design plans 10%, estimate of costs, and a preliminary construction schedule. The scope of this task includes but is not limited to:

- 3.3.1 Preliminary Design.** The Consultant shall develop the recommended alternative to a 10% level of design, **and** prepare an estimate of the construction cost, and a construction schedule;
- 3.3.2 Staff-Recommended Alternative Report.** The Consultant shall prepare the Staff-Recommended Alternative Report, which will summarize each of the feasible alternatives investigated, the alternative assessment methodology and results of the assessment, the

SCHEDULE P SCOPE OF SERVICES

feasible alternatives matrix, and a description of the recommended alternative, including the preliminary design plans, cost, and schedule.

3.4 Planning Study Report

The purpose of this Task is to summarize the activities of the planning phase process in the Planning Study Report, including the problem definition, the development and evaluation of the conceptual and feasible alternatives, selection of the recommended alternative, and the development of the preliminary design. The Report will include the life-cycle operation and maintenance costs, real estate needs, estimated construction costs, schedule, and funding. The Planning Study Report will be reviewed and is subject to approval by District.

3.5 Planning-to-Design Phase Transition Report

The purpose of this Task is to prepare a Planning-to-Design Phase Transition Report to properly transfer Project information from the Planning Phase project team to the Design Phase project team. This will assure that design deliverables meet Planning Phase objectives, and assure that Planning Phase activities are not duplicated during design. The Report should document all the relevant information developed during the Planning Phase including identified Project requirements, major findings and assumptions, Project decisions, and refinements to the Project objectives, if any.

3.6 Other Technical Memoranda, Alternatives, and Investigation

- 3.6.1 Prepare technical memoranda to address potential deficiencies as identified through the evaluation process.
- 3.6.2 Provide assistance on refining the scope of work for capital improvement projects, if necessary.
- 3.6.3 Provide conceptual remedial alternatives with cost estimates, if necessary.
- 3.6.4 Provide technical support for planning purposes (e.g., regarding seepage, instrumentation, hydraulic lines, etc.).
- 3.6.5 Preparing the list of project requirements and other transition memoranda;
- 3.6.6 Perform other follow-up recommended studies (i.e. geotechnical investigations) as directed by the District:
 - 3.6.6.1 Additional geotechnical investigations.
 - 3.6.6.2 Advanced 2D modeling of the spillway chutes dependent on the spillway condition assessment (Subtask 2.1.2.1).
 - 3.6.6.3 Phase 2 Spillway Assessment: Non-destructive evaluation of the spillway chutes dependent on the spillway condition assessment (Subtask 2.1.2.1):

SCHEDULE P SCOPE OF SERVICES

- 1) Phase 2 additional investigations and/or evaluations as recommended or required based on the results of Phase 1. For example, should Phase 1 discover areas of drummy concrete, evidence of accelerated rebar corrosion, or potential foundation issues, Phase 2 more extensive and sophisticated non-destructive testing in the area such as ground penetrating radar, impulse-response, or impact-echo methods.
- 2) Phase 2 concrete and/or soil/rock coring/drilling for void investigation, development of concrete strengths, or subsurface geotechnical investigation.
- 3) Phase 2 structural analysis of concrete structures and/or evaluation of adequacy of previous repairs or modifications. Phase 2 is not included in the current scope of work as any action will be evaluated as applicable following completion of Phase 1.

3.6.6.4 Phase 3 Spillway Assessment: Phase 3 may consist of evaluating remediation and/or improvements based on the results of Phases 1 and 2. This phase of the assessment may develop into evaluating interim and/or long-term planning-level alternatives. The evaluation and recommendation of interim planning-level alternatives will be developed under this task based on the outcome of the Phase 1 and 2 Assessments. The evaluation of long-term planning-level design alternatives will be developed under Task 3.4 Planning Study Report.

3.6.6.5 Updates or modifications to the Lenihan outlet hydraulic analyses dependent on Consultant review (Subtask 2.1.3 Studies and Analysis).

3.6.6.6 Additional studies as recommended by Consultant as a result of conclusions reached in performing Subtask 2.1.1 Review Existing Information and Prepare Supporting Technical Documentation; 2.1.2 Spillway Conditions Assessment, Phase 1; 2.1.4 Independent Dam Safety Review and/or 2.1.5 Potential Failure Mode Analysis and Workshop.

3.6.7 Perform environmental support services for follow-up geotechnical investigations as directed by the District (including regulatory agency coordination, applications for Santa Clara Valley Habitat Conservation Plan (SCVHCP), cultural resources review, sensitive plant and species surveys, California Environmental Quality Act (CEQA) documentation, etc.).

3.6.8 Unmanned Aerial Vehicle (UAV) (drone) Survey of Site. The UAV survey captures numerous low-elevation photographs of the site to generate an orthorectified composite image, as well as an xyz point cloud data set that is comparable to the resolution of a LiDAR data set. This service is performed prior to the inspection, to provide a detailed base map to record observations efficiently, and accurately.

3.6.9 Updated bathymetric survey of reservoir in the vicinity of the dams.

SCHEDULE P SCOPE OF SERVICES

3.7 Additional Services. The Consultant will provide additional quantities of previously identified services as requested by District. Consultant will provide additional services for any quantity of tasks and deliverables beyond those stated in Task 1 through 2 as Task 3 Supplemental Services, to include but not be limited to:

3.7.1 Additional meetings.

3.7.2 Additional time allotted for meetings.

3.7.3 Additional status/progress reports.

3.7.4 Additional phone conference calls.

3.7.5 Additional pages or copies of technical memorandums, plans, reports, drawings, and specifications.

3.7.6 Additional public outreach visual materials.

Task 3 – Deliverables

Deliverables may include, but are not limited to:

1. Problem Definition Reports and Project Requirements (Draft and Final).
2. Feasible Alternatives Matrix (Draft and Final).
3. Staff-Recommended Alternative Report (Draft and Final).
4. Planning Study Report (Draft and Final).
5. Planning-to-Design Transition Report (Draft and Final).
6. Potential Deficiencies Report (Draft and Final).
7. Conceptual Remedial Alternatives with Cost Estimate (Draft and Final).
8. Geotechnical Investigation Report (Draft and Final).
9. Advanced 2D Modeling of Spillway Chute (Draft and Final).
10. Phase 2 Spillway Assessment (NDT) Report (Draft and Final).
11. Phase 3 Spillway Assessment Report (Draft and Final).
12. UAV Survey Images and Maps.
13. Bathymetric Survey Maps.

SCHEDULE P SCOPE OF SERVICES

Task 3 – Assumptions

1. Subtask 3.2 Feasible Alternatives
 - A. Consultant will coordinate with the District for input on relevant criteria and assigned weights/weighing factors prior to preparation of final alternatives matrix preparation.
2. Subtask 3.3 Staff Recommended Alternative
 - A. One Staff Recommended Alternative workshop for each dam, preparation and follow-up.
3. Subtask 3.4 Planning Study Report
 - A. One Planning Study Report workshop for each dam, preparation and follow-up.
4. Subtask 3.5 Planning-to-Design Phase Transition Report
 - A. Planning phase design is sufficient for development of full 30% preliminary design by others.
7. **Attachments.** The following listed Attachments are incorporated herein by this reference as though set forth in full:

Attachment One to Schedule P – Fees and Payments
Attachment Two to Schedule P – Schedule of Completion
Attachment Three to Schedule P – Consultant's Key Staff and Subconsultants
Attachment Four to Schedule P – Reference Materials

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**ATTACHMENT ONE
TO SCHEDULE P
FEES AND PAYMENTS**

1. Total Authorized Funding.

Total payment for Services performed, to the satisfaction of District, as described in the Schedule(s) will not exceed a total amount of **\$2,453,283** (Not-to-Exceed Fees or NTE). Under no conditions will the total compensation to the Consultant exceed this NTE payment amount without prior written approval in the form of an amendment to this Agreement executed by the District's Board of Directors (Board), or Chief Executive Officer, or designee, as authorized by the Board.

2. Cost Breakdown.

The NTE total compensation of this Agreement consists of the following task fee breakdown. No services will be performed or fees paid by the District to the Consultant for Supplemental Services without prior written authorization by the District as stated in this Agreement.

COST BREAKDOWN

Task	Description	Not-to-Exceed Fees
1	Project Management	\$288,042
2	Planning Services	\$878,252
3	Supplemental Services	\$1,286,989
Total Not-to-Exceed Fees		\$2,453,283

3. Terms and Conditions.

Payments for Services performed, as described in this Schedule, which applies to the specific Services, will be based on the following terms:

- A. The District will pay for Services provided by the Consultant according to the schedule of rates for professional, technical, and administrative personnel as well as materials and supplies as listed below in the Hourly/Unit Rate Schedule.
- B. The stated hourly rates are effective for the term of this Agreement unless otherwise revised as indicated. After 12 months from the date this Agreement is entered into by parties ("anniversary date"), and each 12 months thereafter, these hourly rates may be negotiated by the Consultant and the District, provided Consultant submits written notice to District of Consultant's request to revise the hourly rates 90 calendar days prior to the anniversary date of this Agreement. Both parties will use as a benchmark for negotiations the percent change for the previous 12 months of the "Employment Cost Index (ECI), for total compensation for private industry workers, for the San Francisco-Oakland-San Jose, CA CSA Census region and metropolitan area (not seasonally adjusted)" as published by the U.S. Department of Labor, Bureau of Labor Statistics, or 2.5%, whichever is less. A negative index will result in rates remaining the same. Such rate revisions are subject to written approval by the District's Deputy Officer or his/her designee.

**ATTACHMENT ONE
TO SCHEDULE P
FEES AND PAYMENTS**

C. Reimbursable Expenses.

- 1) All reimbursable expenses not already covered in overhead may include, but are not limited to, mapping, rendering, printouts, leased equipment, mailing and delivery services, printing services, film and processing, plotting, and supplies. These other direct expenses will be billed on a monthly basis at actual cost plus 5% linked to each Agreement Task, as approved by the District Project Manager, provided that the Agreement total NTE amount is not exceeded. Consultant shall provide receipts for each other direct expense item(s) with monthly invoices submitted. The 5% markup will be applied only once, either by the Consultant or by its subconsultants, subcontractors, or vendors.
- 2) Equipment purchased on behalf of the District that costs \$50 or more must receive the prior written approval of the District Project Manager. All equipment purchased on behalf of the District and paid for the District shall become the property of the District and be delivered to District prior to expiration of this Agreement.
- 3) Travel expenses are reimbursed at actual costs. Travel and overnight accommodations, including per diem, required for performance of this Agreement will be paid at reasonable cost not to exceed the U.S. General Services Agency Per Diem Rates for Sunnyvale/Palo Alto/San Jose, California area, provided prior approval has been obtained from the District Project Manager. For air travel, District will pay the cost of a coach class or equivalent ticket. Where air travel is required, District will pay the total cost of rideshare expenses or a rental car, which may include insurance, gas, car fee, and taxes and will be paid at the actual costs incurred. Vehicle rental is limited to a compact or economy model.

D. Expenses incurred by the Consultant for Subconsultants, subcontractors and vendors, including lab services, will be reimbursed at actual cost plus 5%. Consultant shall provide invoices for all such services regardless of cost.

E. For staff with rates exceeding the rate of \$[RATE LIMIT]/hr, the Consultant must obtain written approval from the District Project Manager as to the numbers of hours per task prior to that individual working on the Project. [NOT USED]

F. Prevailing Wage Requirements.

- 1) The Scope of Services described in Task 2 Planning Services and Task 3 Supplemental Services is considered by the District to be "Public Works" requiring the payment of prevailing wages. See the Standard Consultant Agreement Section Four, Fees and Payments, subsection 3. Prevailing Wages.
- 2) In accordance with the prevailing wage law, the Director of the California Department of Industrial Relations (Director) has ascertained the general prevailing rate of wages and employer payments for health and welfare, pension, vacation, and similar purposes available to the particular craft, classification, or type of workers employed

**ATTACHMENT ONE
TO SCHEDULE P
FEES AND PAYMENTS**

on the Project. These rates are set forth in the latest determination obtained from the Director, which is on file in the District's Office of the Clerk of the Board of Directors and incorporated herein by reference the same as though set forth in full. The rates are also available on the State of California Department of Industrial Relations website at <http://www.dir.ca.gov>.

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**ATTACHMENT ONE
TO SCHEDULE P
FEES AND PAYMENTS**

HOURLY/UNIT RATE TABLE

CLASSIFICATION	HOURLY/ UNIT RATE
Consultant: GEI Consultants, Inc.	
Senior Consultant - Grade 8	\$280
Senior Professional - Grade 7	\$251
QA/QC, Technical Review	\$283
Env Senior Consultant - Grade 8	\$245
Env Senior Professional - Grade 7	\$225
Senior Professional - Grade 6	\$207
Env Senior Professional - Grade 6	\$173
Senior Professional - Grade 5	\$170
Project Professional - Grade 4	\$143
Senior CADD	\$141
CADD Drafter	\$129
Project Professional - Grade 3	\$125
Senior Professional - Grade 2	\$111
Senior Professional - Grade 1	\$101
Word Processor, Administrative Support	\$105

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**ATTACHMENT ONE
TO SCHEDULE P
FEES AND PAYMENTS**

Subconsultant(s): HDR Engineering, Incorporated	
Principal Engineer VIII	\$313
Principal Engineer VII	\$223
Senior Engineer V	\$167
Junior Engineer II	\$85
Technical Specialist	\$159
Subconsultant: Underwater Resources, Incorporated	
Principal	\$161
Project Manager	\$113
Dive Superintendent/Field Supervisor/DPCI (Grant Cooper)	\$171
Crane Operator	\$375
Divers/Entrants	\$251
ROV Operator/Technician/Attendant/Boat Operator	\$162
Pile Driver	\$150
Shop Superintendent	\$125
Shop Labor	\$69

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**ATTACHMENT ONE
TO SCHEDULE P
FEES AND PAYMENTS**

Subconsultant: LCC Engineering and Surveying, Incorporated	
Principal Surveyor	\$215
Two-Man Survey Crew	\$253
Land Surveyor	\$188
CAD Designer	\$130
Subconsultant: JDH Corrosion Consultants, Incorporated	
Principal Corrosion Engineer	\$239
Subconsultant: cbec eco engineering, Incorporated	
President/Managing Director	\$252
Director	\$236
Senior Scientific Advisor	\$297
Senior Ecoengineer II / Ecohydrologist II	\$215
Senior Ecoengineer I / Ecohydrologist I	\$173
Ecoengineer II / Ecohydrologist II	\$158
Ecoengineer I / Ecohydrologist I	\$142
Technician II	\$126
Technician I	\$95
Desktop Publishing	\$89
Clerical / Admin	\$89

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**ATTACHMENT TWO
TO SCHEDULE P
SCHEDULE OF COMPLETION**

1. This Agreement commences on the Effective Date, subject to accomplishment of all conditions to formation of an agreement listed in the Agreement at Section Twelve, Miscellaneous Provisions, subsection 2. Formation of Agreement.
2. This Agreement expires on **July 31, 2022**, unless, prior to its expiration, its term is modified by a written amendment hereto, signed by both Parties.
3. District's Project Manager and Consultant may agree to modify the schedule specified for Consultant's performance as an administrative modification to the Agreement and will confirm such modification in writing.

PROJECT SCHEDULE

Task	Description	Completion Date
1	Project Management	Term of Agreement
2	Planning Services	December 31, 2019
3	Supplemental Services	Term of Agreement

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**ATTACHMENT THREE
TO SCHEDULE P
CONSULTANT'S KEY STAFF AND SUBCONSULTANTS**

1. Consultant's key staff assigned to the Project are as follows:

Team Member	Classification	Project Role	Contact Information
Mark Freitas	Senior Consultant – Grade 8	Principal-In-Charge	180 Grand Ave, Suite 1410 Oakland, CA 94612 (510) 350-2609 mfreitas@geiconsultants.com
Matthew Powers	Senior Professional – Grade 7	Project Manager	180 Grand Ave, Suite 1410 Oakland, CA 94612 (510) 350-2902 mpowers@geiconsultants.com
David Gutierrez	Senior Consultant – Grade 8	Independent Dam Safety Review	2868 Prospect Park Drive, Suite 400 Rancho Cordova, CA 95670 (916) 596-1799 dgutierrez@geiconsultants.com
William Rettberg	Senior Consultant – Grade 8	Independent Dam Safety Review	180 Grand Ave, Suite 1410 Oakland, CA 94612 (510) 350-2910 wrettberg@geiconsultants.com
Isabelle Rawlings	Project Professional – Grade 4	Project Engineer	180 Grand Ave, Suite 1410 Oakland, CA 94612 (510) 350-2920 irawlings@geiconsultants.com
Chris Slack	Senior Professional – Grade 6	Engineering Geologist	180 Grand Ave, Suite 1410 Oakland, CA 94612 (510) 350-2936 cslack@geiconsultants.com
Cory Miyamoto	Senior Professional – Grade 5	Senior Engineer	180 Grand Ave, Suite 1410 Oakland, CA 94612 (510) 350-2907 cmiyamoto@geiconsultants.com
Mike Monaghan	Senior Professional – Grade 7	Structural Engineer	180 Grand Ave, Suite 1410 Oakland, CA 94612 (510) 350-2923 mmonaghan@geiconsultants.com
Craig Hall	Senior Consultant – Grade 8	QA/QC Lead	180 Grand Ave, Suite 1410 Oakland, CA 94612 (510) 350-2913 chall@geiconsultants.com

**ATTACHMENT THREE
TO SCHEDULE P
CONSULTANT'S KEY STAFF AND SUBCONSULTANTS**

2. The following Subconsultants are authorized to perform Services on the Project:

Firm	Project Role	Contact Information
HDR Engineering, Inc. (aka David Ford Consulting)	Hydraulic and Hydrology, PMF/PMP Analyses	Tom Molls tmolls@ford-consulting.com 2015 J Street, Suite 200 Sacramento, CA 95811 (916) 840-5202
LCC Engineering and Surveying, Inc.	Land Surveyor and Civil Engineering	Christine Parks cmp@lcc-inc.com 930 Estudillo Street Martinez, CA 94553 (925) 228-4218
JDH Corrosion Consultants, Inc.	Corrosion Lead	Darby Howard dhoward@jdhcorrosion.com 1100 Willow Pass Court Concord, CA 94520 (925) 927-6630
Underwater Resources, Inc.	Outlet Works Dive and Inspection Lead	Tom Belcher tom@urdiving.com 866 Estabrook Street San Leandro, Ca 94577 (510) 957-5097
cbec eco engineering, Inc.	Survey and Hydraulics	Sam Diaz s.diaz@cbecoeng.com 2544 Industrial Blvd. West Sacramento, CA 95691 (916) 231-6052

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**ATTACHMENT FOUR
TO SCHEDULE P
REFERENCE MATERIALS**

Ref No.	Description
1	Santa Clara Valley Water District Non-Disclosure Agreement (NDA)
2	Personal NDA (PNDA)
3	GIS Product Standards July 2017 version
Lenihan Dam	
4	Terra/GeoPentech, 2012, Lenihan Dam Compilation Report: SCVWD report dated December 2012
5	R.L. Volpe & Associates, Inc., 1998, Instrumentation Design and Review – Lenihan Dam: unpublished consultant report on-file at the SCVWD, San Jose, CA, January 1998
6	R.L. Volpe & Associates, Inc., 1999b, Volume 2 – Basic data report, Lenihan Dam outlet investigation, Lenihan Dam outlet investigation: unpublished consultant report on-file at the SCVWD, San Jose, CA, October 1999
7	R. L. Volpe & Associates, Inc., 1999c, Lenihan Dam Pseudo-static Stability Analysis: unpublished consultant's report on file at the SCVWD, San Jose, CA
8	SCVWD, 1956, Lexington Dam, As-Constructed Plans: SCVWD record drawings dated December 24, 1956, 9 sheets
9	SCVWD, 1996, Map and Construction Plan for the Lexington Dam Freeboard Restoration Project: SCVWD record drawings dated June 3, 1996, 39 + 4 sheets
10	SCVWD, 1998, Map and Construction Plan for the Lenihan Dam Outlet Repairs Project: SCVWD record drawings dated April 24, 1998, 9 sheets
Stevens Creek Dam	
11	Terra/GeoPentech, 2013, Stevens Creek Dam Compilation Report: SCVWD report dated January 2013
12	Tolman, C.F., 1934, Geology of the Murphy Damsite on Stevens Creek, Santa Clara County, California: unpublished consultant report on-file at the SCVWD, San Jose, CA, 32 p
13	W.A. Wahler & Associates, 1978, Seismic Safety Evaluation, Stevens Creek Dam: unpublished consulting report on file at SCVWD, San Jose, CA
14	Wahler Associates, 1982, Report on Preliminary Remedial Design Investigation of Stevens Creek Dam for Clara Valley Water District: unpublished consultant report on-file at the SCVWD, San Jose, CA
15	Wahler Associates, 1984, Remedial Design Report, Stevens Creek Dam, Clara Valley Water District: unpublished consultant report on-file at the SCVWD, San Jose, CA
16	SCVWD, 1938, Stevens Creek Dam, As-Constructed Plans: SCVWD record drawings dated February 3, 1938, 3 sheets
17	SCVWD, 1986, Map and Construction Plan for the Stevens Creek Dam Modifications Project: SCVWD record drawings dated March 12, 1986, 33 sheets

File No.: 19-0303

Agenda Date: 4/9/2019

Item No.: 5.2.

BOARD AGENDA MEMORANDUM

SUBJECT:

Calero Reservoir Operations and System Reliability.

RECOMMENDATION:

- A. Receive an update on the operation and use of Calero Reservoir; and
- B. Direct staff to proceed with the Calero Seismic Retrofit Project.

SUMMARY:

In 2012, a seismic evaluation of the Calero Dam determined the need to modify the facility to provide seismic stability from earthquake events. Accordingly, the California Department of Water Resources Division of Safety of Dams (DSOD) mandated operational restrictions, limiting reservoir storage to 46 percent of its normal capacity. A retrofit of the 80-year-old dam and associated facilities is necessary to address seismic safety concerns, satisfy Santa Clara Valley Water District (Valley Water) operational requirements, remove the interim storage restriction, and restore normal water supply capacity.

Staff recommends that Valley Water proceed with the Calero Seismic Retrofit Project, as outlined in the proposed FY 2020-2024 Capital Improvement Program, based on the Operations and System Reliability Analysis presented below. This information has also been presented for discussion to the Board's Capital Improvement Program Committee on March 11, 2019.

Background

Over the past 90 years, Valley Water has built an integrated and flexible water supply and conveyance system to provide a reliable water supply to the residents of Santa Clara County (County). The network of ten surface water reservoirs, 19 major water rights, two imported water supplies, groundwater recharge facilities, treatment plants and conveyance pipelines work together to meet the water supply needs of the County.

Valley Water's ability to supply water depends on the ongoing use and function of these past investments and, as they age, ongoing investment is required. In recognition of the value of, and Valley Water's dependence on, these assets, the Valley Water Board has adopted policies to protect and maintain these critical facilities for the long-term benefit of the community. Specifically, Board Ends Policy E-2.1 requires maintenance of local surface water supplies and Executive Limitation EL-6 directs that the Valley Water Board Appointed Officers (BAOs) protect the Valley Water's water

rights. In addition, Valley Water facilities, including reservoirs, must be operated and maintained consistent with regulatory requirements and mandates. Together, these policies and regulatory requirements require that Valley Water's surface water reservoirs be maintained and restored to their full operational capacity.

Calero Reservoir is among the oldest of Valley Water's reservoirs. Built in 1935, it has been a key element of Valley Water's raw water supply and transmission network. Calero Reservoir contributes to both annual water supply and operational flexibility and reliability. On an annual basis, Calero Reservoir is capable of providing up to 9,500 acre-feet (AF) of water supply through exercising Valley Water's local appropriative water rights.

Calero Reservoir has a storage capacity of 9,738 AF. However, due to structural deficiencies found in the dam, the reservoir is under a seismic restriction limiting normal storage to 4,414 AF. A capital project, currently at approximately 60% design, will address the structural deficiencies, restoring the reservoir's full storage capacity as well as expanding the reservoir outlet capacity to provide additional operational flexibility.

Because Calero Reservoir is centrally located, it provides a local water supply source which is used to recharge the groundwater basin and can also supply raw water directly to Valley Water's surface water treatment plants. This helps in responding to imported water outages and is critical to Valley Water's disaster recovery plan.

Water Supply

Surface water diversions from Calero Creek into Calero Reservoir is authorized by an appropriative water right of 3,500 AF per year. In addition, Calero Reservoir is the terminus for the Almaden-Calero Canal which has a separate water right that allows up to 6,000 AF to be transferred from Almaden Reservoir each year into Calero Reservoir. Combined, these two water rights can provide up to 9,500 AF each year towards meeting the County's overall water supply needs. Since 2004, these two water rights have provided an average of about 4,400 AF of water supply each year.

Calero Reservoir also provides local storage for imported water supplies, typically Central Valley Project (CVP) supplies conveyed from San Luis Reservoir. From a turnout on the Cross Valley Pipeline, CVP supplies (as well as water from Anderson Reservoir) can be released directly into Calero Reservoir for storage and later use. This adds flexibility to Valley Water's raw water system, providing an in-County storage option allowing Valley Water to take delivery of imported water supplies which might otherwise be lost in high CVP allocation years (due to full-capacity storage, or "spill" conditions, in San Luis Reservoir). Local or imported water stored in Calero Reservoir can then be put to beneficial use by releasing into Calero Creek for groundwater recharge or into the Almaden Valley Pipeline for delivery to Valley Water's surface water treatment plants.

Calero Reservoir's interconnection with the raw water distribution system, as shown in Attachment 1, positions it as one of only two reservoirs, the other being Anderson Reservoir, that can be used to both store imported water and deliver local surface water directly into the raw water system to supply Valley Water's treatment plants, making it a key facility in Valley Water's raw water system.

Operational Reliability

Calero Reservoir's ability to supply raw water to Valley Water's surface water treatment plants is important during a CVP outage. When Valley Water is not able to deliver CVP supplies from San Luis Reservoir, due to a low point event, Pacheco Pumping Plant outage or other condition, the Valley Water utilizes locally-stored supplies at Calero and Anderson Reservoirs to supply the treatment plants with raw water until CVP deliveries can be restored. Without these local supplies, SWP deliveries alone will not be enough to meet treated water demands and Valley Water's water retailers may, in a long outage, be required to rely on their own groundwater wells to serve their customers until CVP deliveries can be restored to the treatment plants.

Calero-stored surface water is also used to blend with imported water to address poor imported water quality and to improve the treatability of imported water when the quality of imported water degrades.

The flexibility and redundancy provided by Calero Reservoir greatly improves the reliability of Valley Water's raw water system and overall water supply reliability. The reliability provided by the reservoir will be especially critical during the construction of the Anderson Dam Seismic Retrofit Project. Anderson Reservoir is expected to be drained for a 3-year period during the seismic retrofit construction; Calero Reservoir will be the only in-County supply of water available when there is an interruption in Valley Water's imported CVP supplies from San Luis Reservoir.

Infrastructure Reliability Study

Calero Reservoir is also critical to Valley Water's recovery plan after a major earthquake. In a very strong seismic event, it is assumed that the South Bay Aqueduct would sustain significant damage (the pipeline passes through areas prone to landslides) and would require extensive time (longer than 60 days) for the State to make repairs and restore deliveries. In such an event, Valley Water's strategy would be to prioritize restoring supplies from the South.

Calero Reservoir is the closest source of water to Valley Water's water treatment plants with the ability to deliver water via the Almaden Valley Pipeline (AVP). The top priority for restoring the raw water distribution system after a major earthquake would be to repair the AVP. The 2005 Infrastructure Reliability Study estimated it would take less than 30 days to repair the AVP following a significant seismic event. After such repair, Calero Reservoir could provide source water to the treatment plants. This would restore treated water production and delivery of minimum winter demands to retailers within 30 days, which is an acceptable service level for Valley Water's water retailer customers following a seismic event. As the closest supply source, approximately four miles from the Santa Teresa Water Treatment Plant, deliveries from Calero Reservoir would be the first priority. Repairs on other pipelines would then progress southwards, restoring deliveries from Anderson Reservoir, about 15 miles away, and finally, from San Luis Reservoir just over 50 miles away. Without Calero Reservoir, service outages would likely be extended as additional miles of pipeline would have to be repaired and returned to service.

Other Calero Reservoir Benefits

In addition to annual water supply and operational reliability benefits, Calero Reservoir provides other benefits to the Community. As a watershed reservoir, it provides incidental flood protection to downstream residents. Although the reservoir will not be operated specifically for flood protection, in

most years, it does provide some level of flood protection. The reservoir does not drain a large watershed, during high rainfall events, peak runoff flows are attenuated in the reservoir before being discharged downstream.

Calero Reservoir is also one of only three in-County reservoirs that allow power boating and other recreational uses. It is heavily used by the public, and during the past season when Anderson Reservoir was not open to boating, Calero Reservoir was one of the only boating locations available to the entire County. This boating opportunity will be particularly important during construction of the Anderson Dam Seismic Retrofit Project, when both Anderson and Coyote Reservoirs will be unavailable for recreational use by the public.

Future Operations with Pacheco Reservoir

Construction of the Pacheco Reservoir Expansion Project (Pacheco Project) will provide additional emergency water supply during dry and critically dry years. In the future, once the Pacheco Reservoir is complete, Calero Reservoir will complement the operation of Pacheco Reservoir by allowing emergency supplies stored in Pacheco to be coordinated with Calero Reservoir for in-County supplies. This will increase the likelihood, particularly in times of drought, that there are ample local supplies near Valley Water's water treatment plants to respond to emergency conditions, and maximize both the efficiency and storage capacity of Pacheco Reservoir. Additionally, because of Pacheco Reservoir's location at the South end of the County, it is anticipated that during a major seismic event Calero Reservoir would remain the primary water supply source while pipeline repairs are completed as outlined above in the Infrastructure Reliability discussion. In an extended outage, Pacheco Reservoir's ability to sustain recharge in the Coyote and Llagas subbasins will also help avoid worrisome drawdown of the water table in the Coyote Valley and Morgan Hill areas.

Alternative to a Seismic Retrofit

Two recent efforts have looked at the alternative to retrofitting a Calero Dam. As a high-level evaluation, both efforts acknowledged that it would not be acceptable to the resource agencies to leave a Calero Dam as-is, and some significant level of effort would be required in lieu of retrofitting.

As part of the Calero Dam Seismic Retrofit Project, a white paper was prepared looking at the "No Project" alternative. Two "no-project" alternatives were identified, notching the spillway and decommissioning the Calero Dam, and ranged in cost from \$60 million to \$120 million respectively. The notched spillway alternative was proposed, but may not be feasible or permissible, and this concept has not been presented to Division of Safety of Dams - California Department of Water Resources (DSOD). In addition, one element that was not addressed in the white paper analysis of the notched spillway alternative is post construction operation of Calero reservoir. Although Valley Water staff has been attempting to constrain the scope of the regulatory action on all dam seismic retrofits to only the construction impacts associated with the retrofit of the facility, the regulatory agencies with jurisdictional authority have given strong indication that post construction operational impacts will also need to be considered and addressed. As a result, the potential for additional mitigation requirements for operational impacts will likely be imposed on the project and must be coordinated with Valley Water's Calero Reservoir operations under the Fisheries and Aquatic Habitat Collaboration Effort (FAHCE). Under this scenario, the project cost for the notched spillway alternative is likely to increase significantly. Consequently, the two "no-project" alternatives have a

total cost comparable with, or exceeding, the estimated total retrofit project cost of \$100 million.

To reference a separate example, in the Guadalupe Dam Planning Study the project consultant prepared an analysis of various project alternatives. This included partial dam removal and full dam removal options. The Study estimated that the cost of partial dam removal would be about the same as the dam retrofit option. The cost of full dam removal is estimated at 1.6 times the cost of a dam retrofit. The high costs of partial or full dam removal are due to the large amount of material that would have to be moved, as well as issues related to the mercury-laden sediments in the reservoir from historic upstream mining operations. The decommissioning of a dam would likely require significant mitigation and restoration efforts to meet resource agencies' permit conditions.

These two independent evaluations confirm that if the decision was made to not retrofit Calero Dam, a significant investment would still be required in addition to the impacts of losing use of the asset.

Impacts without Calero Reservoir

To consider the option of not repairing Calero Dam, several factors would have to be evaluated. In addition to the capital costs of a dam removal alternative, the 9,500 AF of annual water rights would also need to be replaced or modified to accommodate other means of diversions from Calero Creek and the Almaden-Calero Canal. The value of 4,400 AF of annual water supply provided by these water rights can range from \$600 to \$2,000 per acre-foot depending on possible options. This cost is equivalent to \$2.6 to \$8.8 million per year of additional water supply investment.

In terms of reliability, if Calero Reservoir was removed from Valley Water's water system, Valley Water would be fully reliant on Anderson Reservoir as its only local water supply for deliveries to Valley Water water treatment plants during imported water interruptions. This would reduce the Valley Water water system reliability and reduce the total amount of backup and emergency supplies available to Valley Water. The absence of Calero Reservoir would also reduce Valley Water's ability to store imported water, potentially resulting in more carryover supply in San Luis Reservoir and the associated risk of losing that supply.

In addition, the recovery of Valley Water's water supply system from a major earthquake would likely be delayed by several weeks, extending the period of time water retailers in the County would be required to rely on groundwater to meet community demands.

FINANCIAL IMPACT:

There is no financial impact associated with this item.

CEQA:

Providing the Board an update on the operation and use of Calero Reservoir 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

UNCLASSIFIED MANAGER:

Kurt Arends, 408-630-2284

Calero Reservoir Water Supply and Reliability

Kurt Arends
DOO Raw Water O&M
April 9, 2019 Board Meeting

Calero Reservoir

- Dam built in 1935
- Key water supply element
- Ties into raw water system
- 9,738 Acre-Feet unrestricted storage
- Emergency water source
- Fisheries and recreation
- Incidental flood protection benefits



Calero Reservoir

Two primary roles within the Raw Water System:



1. Water Supply:

1. Water Right of 3,500 AF/year.
2. Almaden-Calero Canal Water Right of 6,000 AF/year.

1. Operational Reliability – Calero storage is used as an emergency/backup supply to CVP imported water and to address water quality issues with imported CVP supplies.

Summary - Calero

Calero reservoir is critical to the reliability of the raw water system.

During Anderson construction, Calero will be the only local supply to the water treatment plants.

Currently, Calero reservoir is restricted to 4,414 AF and an outlet capacity of 50 cfs.

A fixed Calero could provide 9,738 AF of storage and an outlet capacity of up to 100 cfs.

Disaster Recovery

Calero Reservoir is the closest local water supply, located approximately 4 miles from the Santa Teresa Water Treatment Plant.



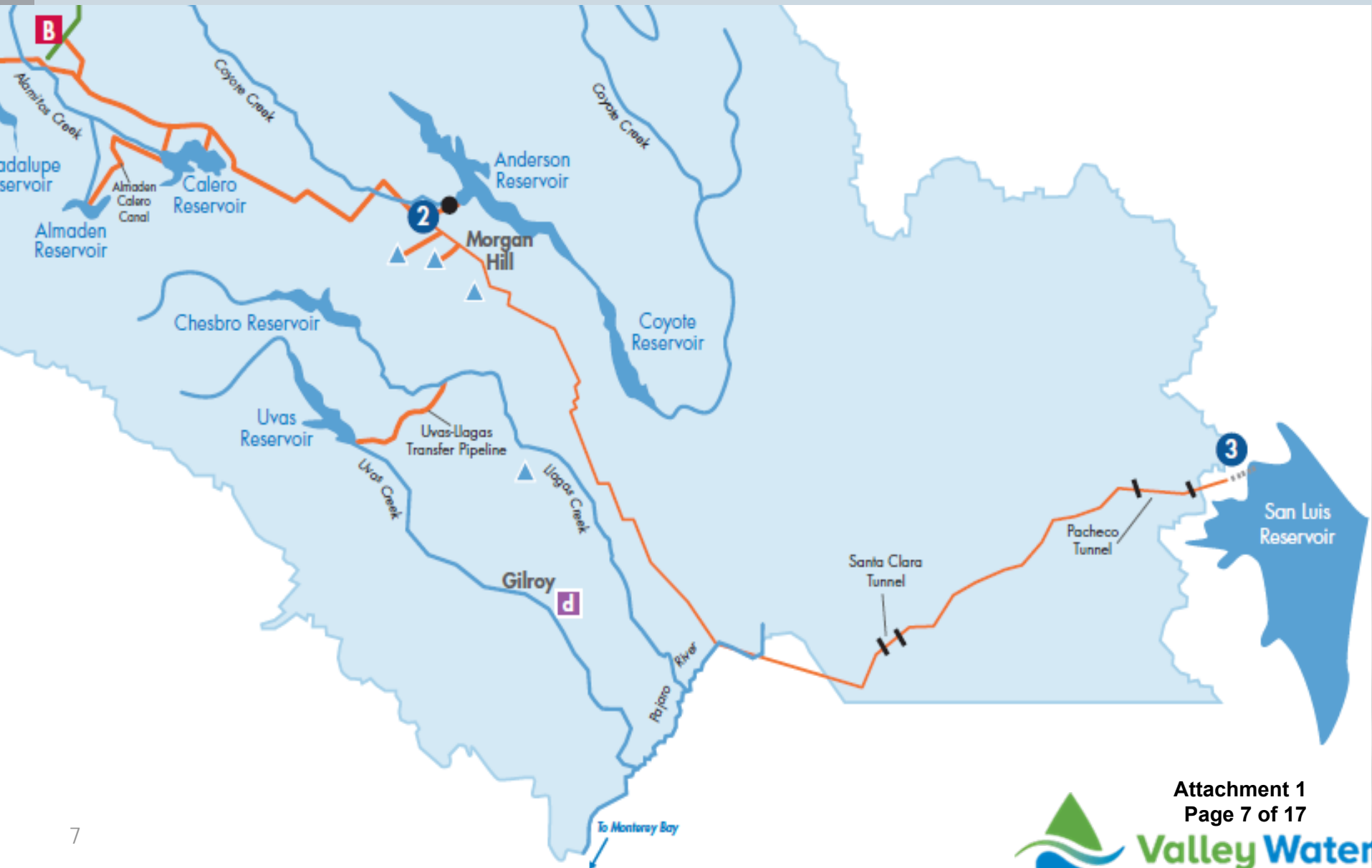
This would be the first source of supply available to the treatment plants after a major seismic event.

Water Supply Distribution



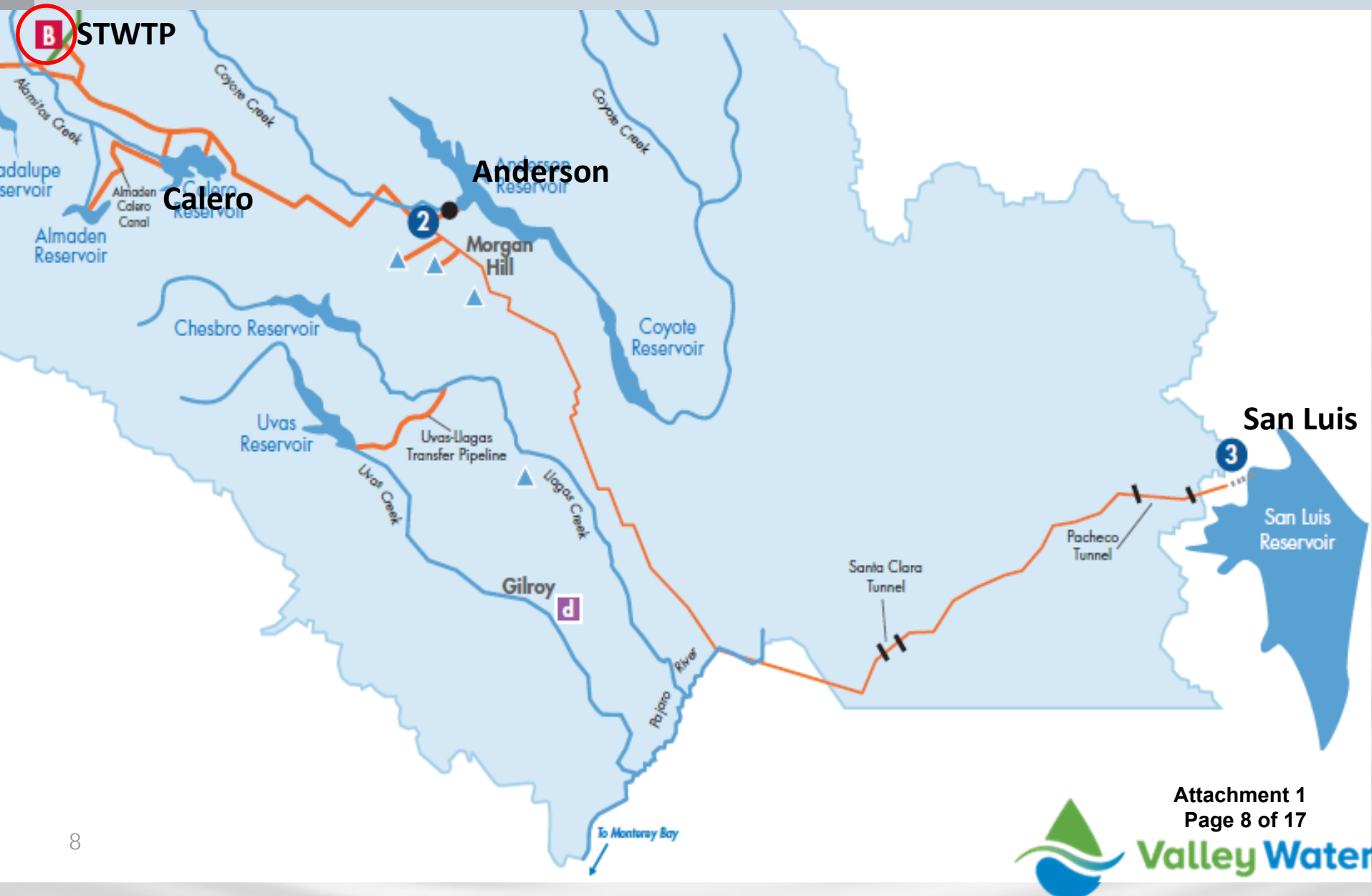
Water Supply Map

DISASTER RECOVERY



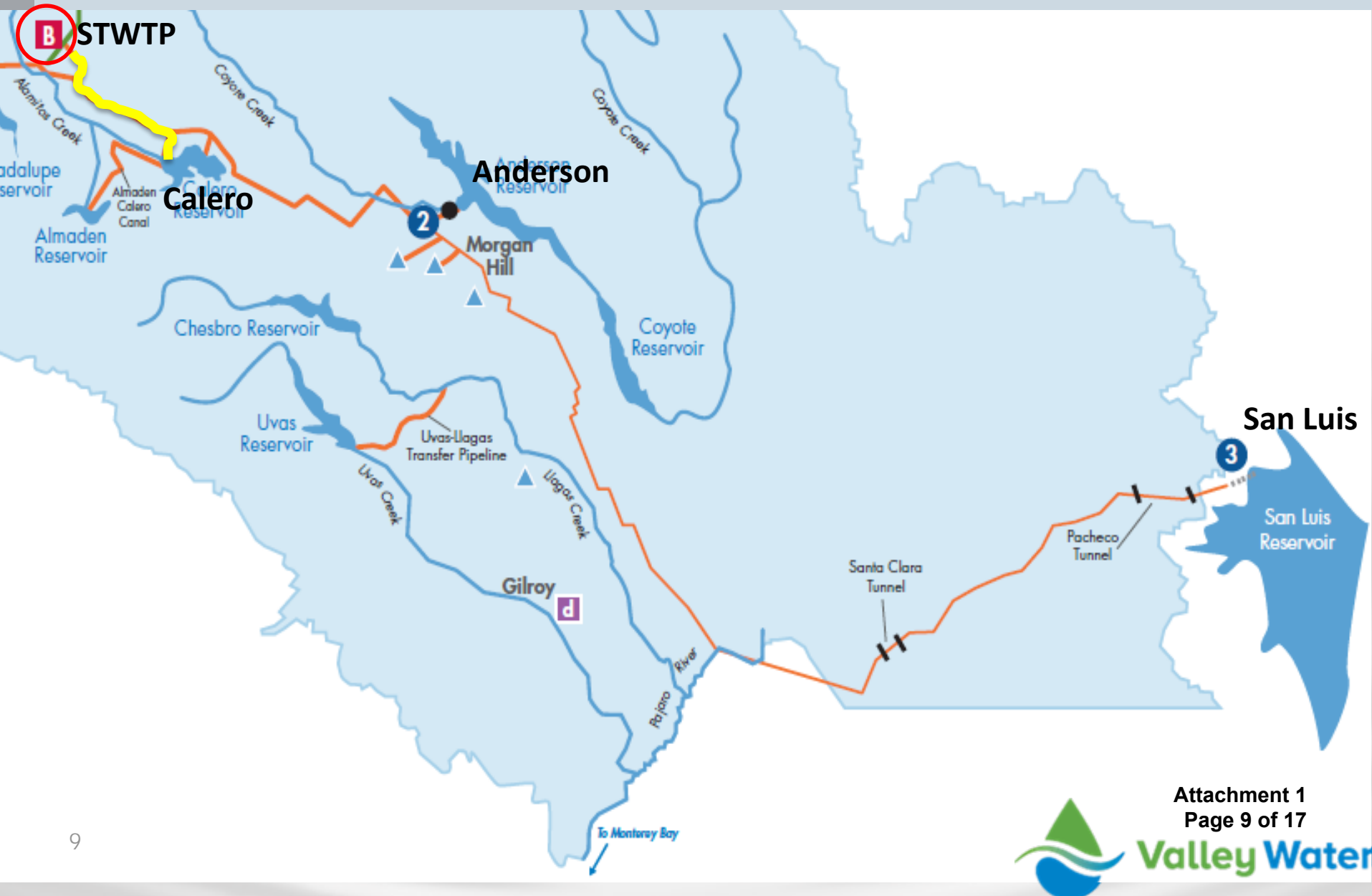
Water Supply Map

DISASTER RECOVERY



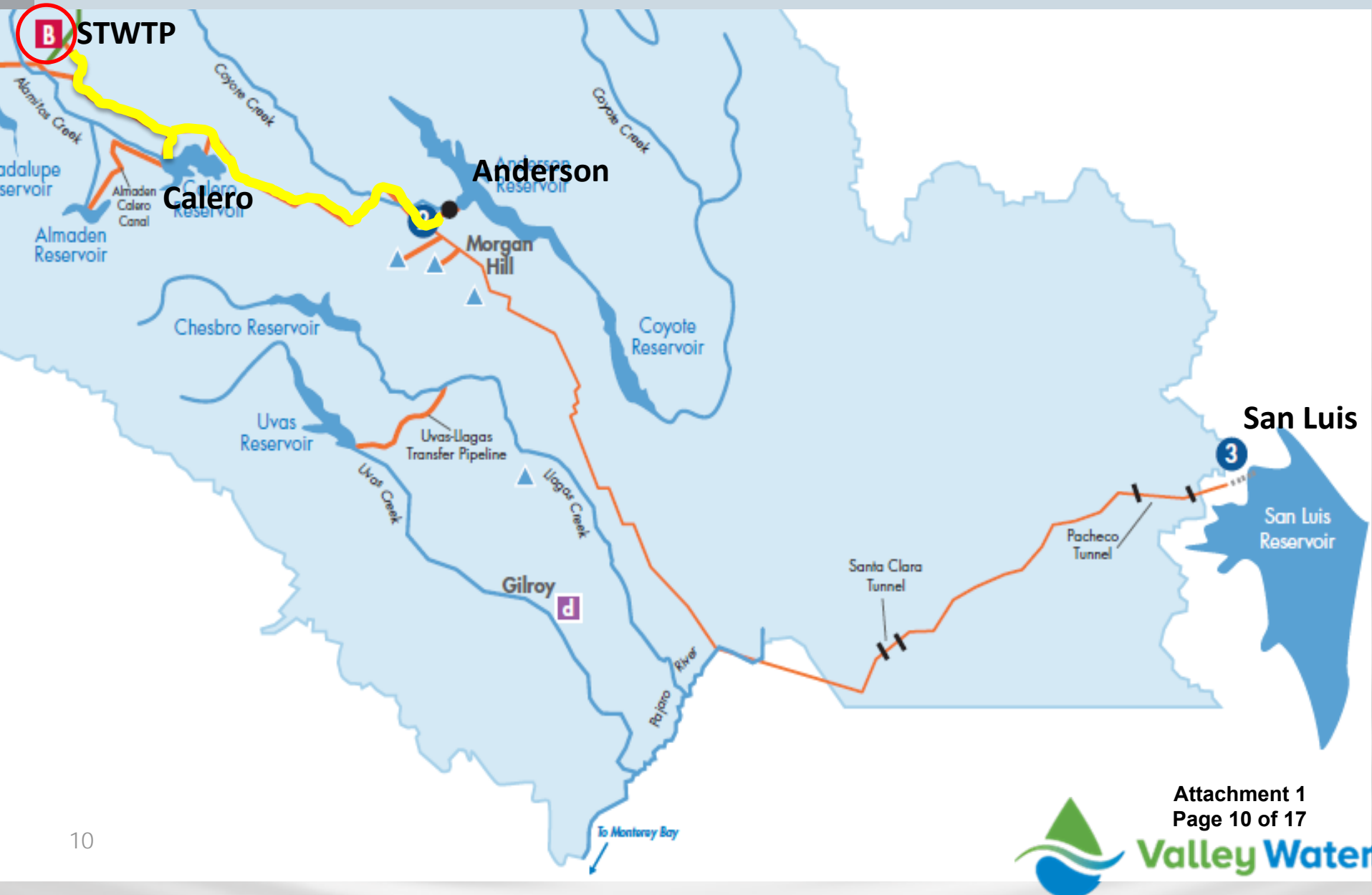
Water Supply Map

DISASTER RECOVERY



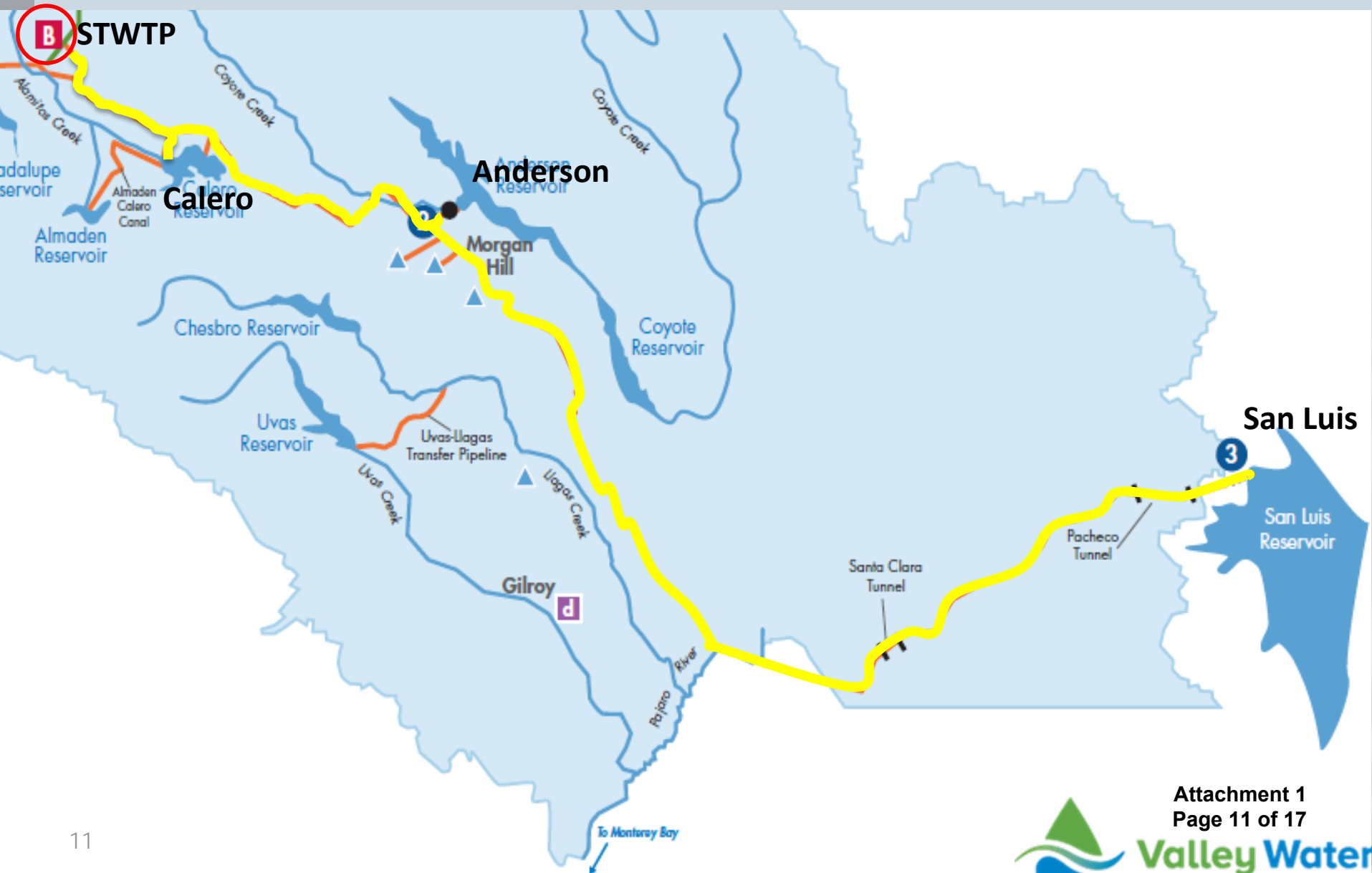
Water Supply Map

DISASTER RECOVERY



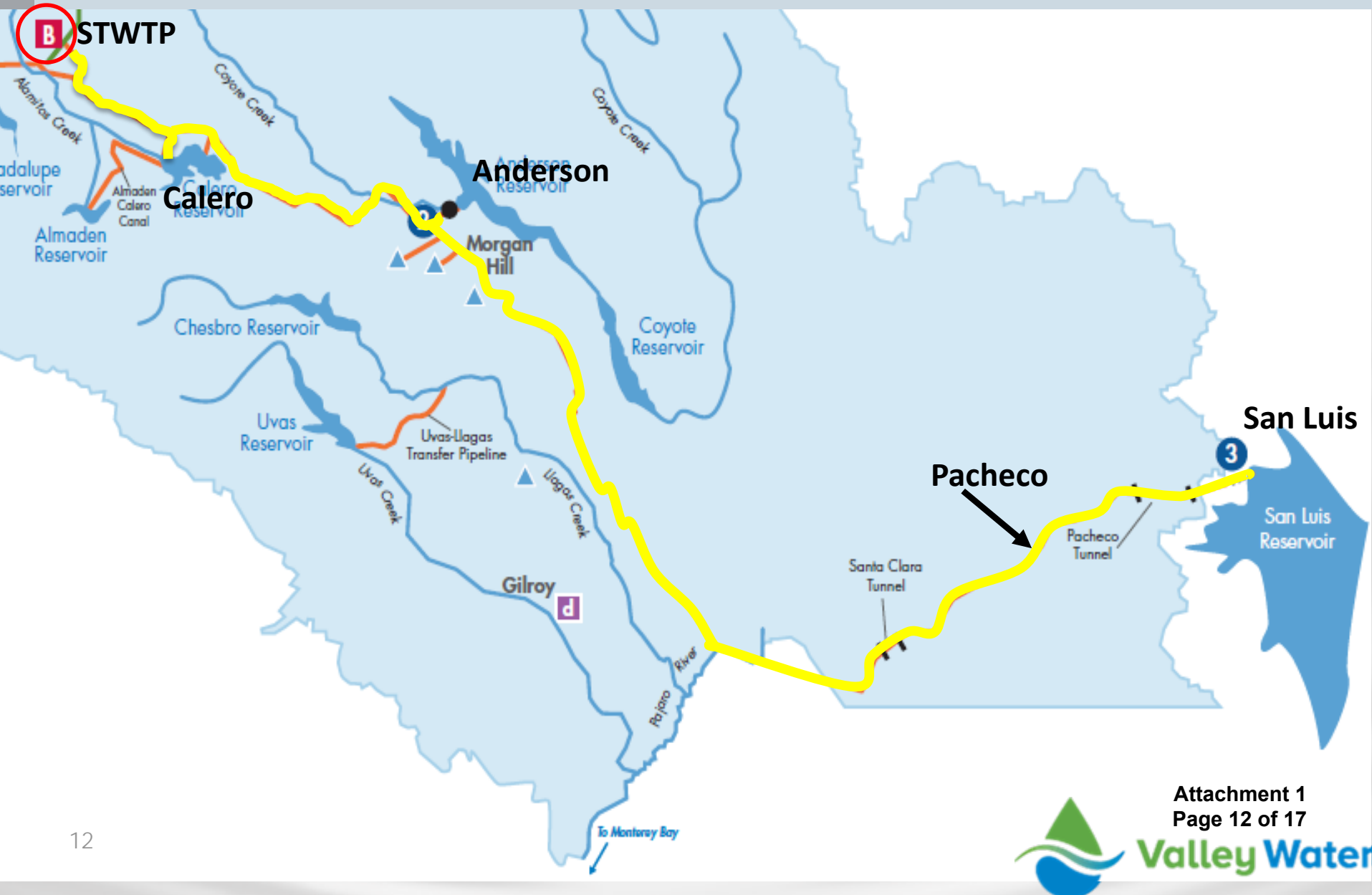
Water Supply Map

DISASTER RECOVERY



Water Supply Map

DISASTER RECOVERY



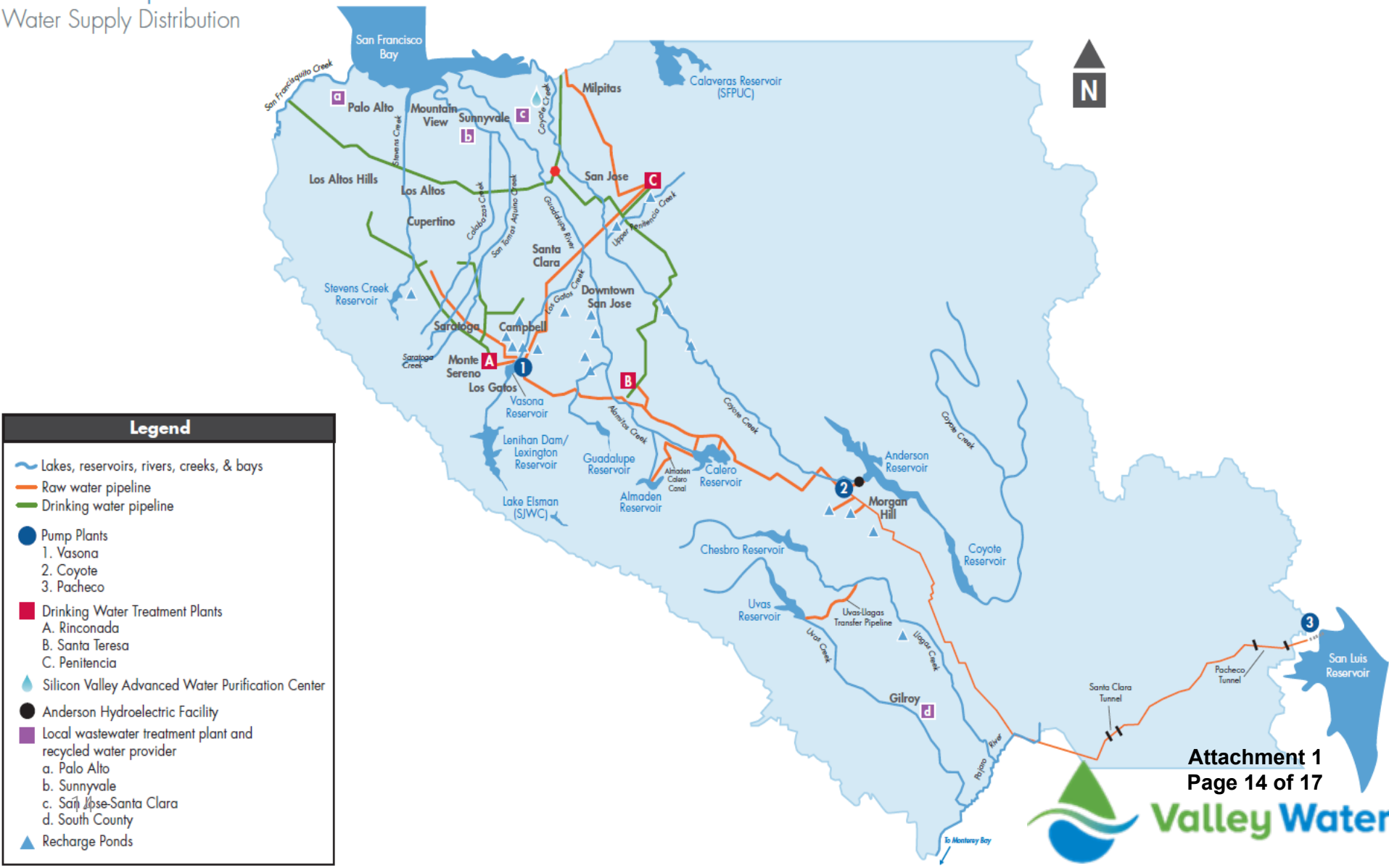


How the system operates on a day-to-day basis and how the raw water system delivers supplies to the water treatment plants.

Water Supply Map

District map

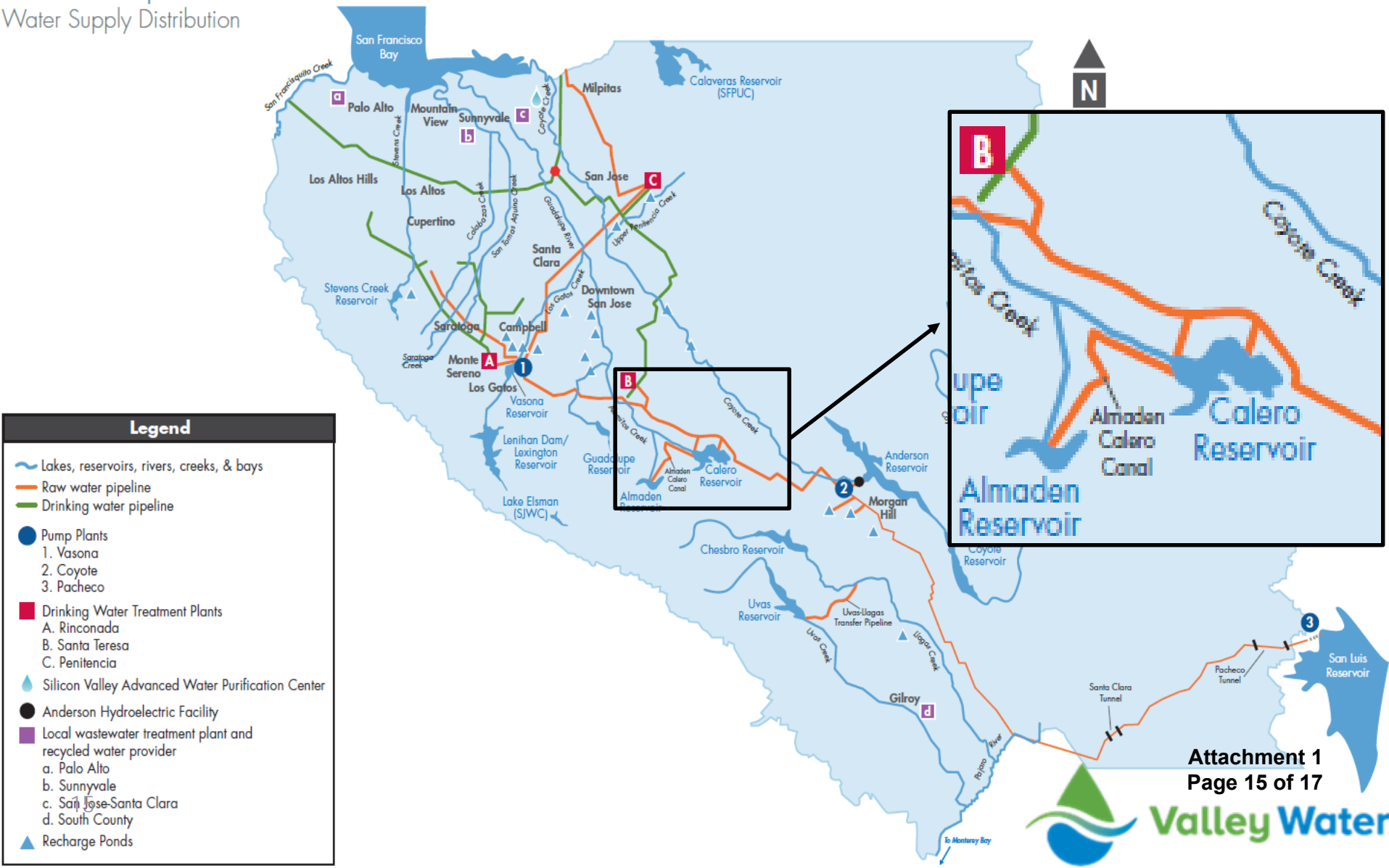
Water Supply Distribution



Water Supply Map

District map

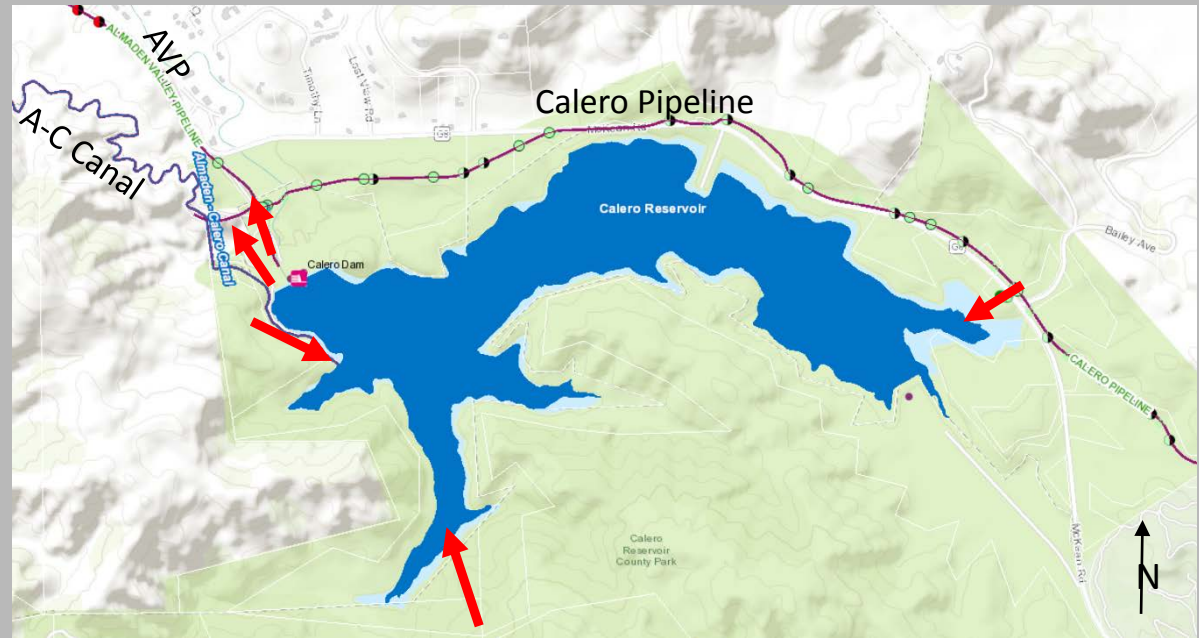
Water Supply Distribution



Calero Reservoir

Calero Reservoir

Provides critical water supply and operational benefits:



Water Supply:

- Calero Reservoir up to 3,500 AF
- Almaden-Calero Canal up to 6,000 AF
- Provides downstream groundwater recharge

Operational Reliability:

- Storage of imported water
- Backup supply in CVP Outage
- Blending supply for Water Quality issues
- Closest local supply in seismic recovery

Questions?

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File No.: 19-0058

Agenda Date: 4/9/2019

Item No.: 6.1.

BOARD AGENDA MEMORANDUM

SUBJECT:

Proposed Pilot Project for Using Unmanned Aerial Vehicles (UAV) in Land Surveying and Mapping Activities.

RECOMMENDATION:

- A. Receive information and discuss issues identified for using UAV in land surveying and mapping activities; and
- B. Provide direction to staff.

SUMMARY:

At the Board meeting on November 27, 2018, the Board discussed the proposed pilot project using UAV in land surveying and mapping for the District. The Board discussed the following concerns regarding use of UAV:

1. Types of land surveying and mapping activities that can be conducted by UAV;
2. Concerns with potential invasion of privacy;
3. Contents of the Draft Unmanned Aerial System (UAS) Operations Manual; and
4. Estimated cost of using UAV.

1. Types of land surveying and mapping activities that can be conducted by UAV

The technology of UAV has advanced to the point that they can provide cost effective survey grade data. UAVs can provide high resolution photographic and video documentation for various District needs. Staff is planning to use UAV as an additional tool to obtain land surveying and mapping information for the following work:

- Planning, design and construction of operations or capital improvement projects.
- Documentation for operations and maintenance inspections.
- Information for vegetation management.
- Information for property appraisal or management.

- Information for evaluation of property encroachment and protection of water resources.

Additionally, UAV can also provide photographic information for the following work:

- Support District emergency services and security.
- Remote aerial condition assessment for employee and public safety.
- Spillway and embankment assessment.
- Evaluation and documentation of District building repairs.
- Documentation to support asset management.
- Information to support External Affairs functions.

2. Concerns with potential invasion of privacy

The Board discussed some concerns with the photographic and video activities. The methods used by the UAV for land surveying and mapping activities all begin with photographic techniques. For example, a project that is to be mapped for design and topographic mapping will start with aerial photography captured by either a UAV or conventional aircraft. These photographs will then be compiled into one large mosaic that is corrected for all horizontal and vertical error. This completed collage is called an orthomosaic. It is one large picture that is a true vertical photograph. This means that no matter where you view the image, you will always be looking straight down on the area in question. This type of image allows for various types of measurements and surface modeling to be created from the mosaic. Therefore, topographical surfaces, planimetric and design maps can be created.

All land surveying and mapping activities involving aerial imaging must begin with photos and then converted to the requested formats for delivery. LSMU will take the same precautions in gathering non-surveying photos and videos that it will for surveying and mapping photos. Photos and videos will only be taken of District property and facilities. Precautions will be taken under the supervision of the LSMU Manager to only include the necessary area of concern. The use of UAVs for documenting asset management, inspection of hard to access facilities, public outreach and events, will provide a unique, efficient, and desired perspective for all units at the District.

3. Contents of the Draft Unmanned Aerial System (UAS) Operations Manual

The Draft UAS Operations Manual is included in Attachment 1. This comprehensive manual addresses all aspects of the proposed pilot program. The focus of the manual is to ensure the District and the public are protected while providing a method to efficiently track all field/office aspects of the pilot program.

During UAV operations, District personnel will adhere to all rules and regulations set forth in the document FAA Part 107 Commercial Act (Attachment 2). Part 107 states that small unmanned aircraft may not operate over any persons not directly participating in the operation, not under a

covered structure, and not inside a covered stationary vehicle.

District personnel will only fly over District-owned facilities and will only be flown over private property with prior notice of the homeowner/resident. In the event of an emergency or giving way to manned aircraft, the UAV must land or return to the starting point, any data collected while passing over private property will be discarded. For example, if a situation occurred where the UAV must land or return to base, it will do so in the shortest possible route, which may take it over a private property. In this circumstance, the data collected during this portion of the flight would be discarded. Further steps to ensure the privacy and protection of the public and civil liberties are addressed in Section 3 of the LSMU UAS Flight Operations Manual (Attachment 1).

Public privacy is protected by adhering to requirements in the following documents:

1. FAA Part 107 Commercial Act
2. FAA Voluntary Best Practices for UAS Privacy, Transparency and Accountability prepared by the National Telecommunications and Information Administration (NTIA)
3. Presidential Memorandum, February 15, 2015
4. American Civil Liberties (ACLU) Protecting Privacy from Aerial Surveillance, December 2011
5. University of California: UAS Operations Manual, November 2015
6. Oak Ridge National Laboratory, Best Practices for Use of Unmanned Aerial Systems, February 2017

By following all regulations and guidelines, as well as the self-imposed practices listed in the LSMU UAS Operations Manual, Section 3, LSMU will ensure the privacy and safety of the public.

The data collected by UAVs, photographs and video, will require digital storage. To minimize the impact of this data on Information Technology servers, LSMU will only store competed/final footage and data. LSMU is required by the California Public Records act to archive all data and make it available to the public upon request. Storage of data will be treated like all other survey data and made available upon request.

LSMU will be in complete control of the UAV Pilot Program for all District activities. This will ensure all FAA rules are complied with, all aircraft are properly registered, maintained, all records regarding flights, locations, incidents and data storage are current and all pilots are certified and qualified on the aircraft.

4. Estimated cost of using UAV

The estimated cost for implementing the proposed pilot project is included below.

<u>Item</u>	<u>Units/Hours</u>	<u>Unit Cost</u>	<u>Total Cost</u>	<u>Comments</u>
Unmanned Aerial System	2 2	\$5,000	\$10,000	Purchase of two UAVs, batteries, chargers, cases
Training	16	\$160	\$2,560	Review of Manual for 4 pilots
Research & Preparation of Manual	200	\$160	\$32,000	<i>Spent FY 15-18</i>
Program Oversight & Evaluation	80	\$160	\$12,800	6 Month Evaluation Report to the Board
Software	1	\$2,500	\$2,500	<i>Purchased FY 18</i>
Pilot FAA Training Hours	54	\$160	\$8,640	<i>Trained on personal time or with previous employer</i>
Pilot FAA Training	4	\$150	\$600	<i>Trained on personal time or with previous employer</i>
Pilot FAA Certification Exam	4	\$150	\$600	<i>Certified on personal time or with previous employer</i>
Insurance	0.5	\$14,000	\$7,000	Insurance premium for 6 months
		Subtotal:	\$76,700	
Total Estimated Pilot Program Cost:				\$32,360 FY 19 funds

Operating costs will be charged to the budget of individual projects as regular survey time. Use of this technology is expected to reduce hours needed for certain tasks.

FINANCIAL IMPACT:

Initial Startup Cost is estimated to be less than \$10,000 with an estimated cost of \$35,000 for the Pilot Program. There is adequate funding in Project No. 00074036 Survey Management and Technical Support for the development of the pilot project.

CEQA:

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

ATTACHMENTS:

- Attachment 1: Flight Operations Manual, UAV
- Attachment 2: FAA Part 107 Commercial Act
- Attachment 3: PowerPoint
- Attachment 4: List of possible uses for UAVs

File No.: 19-0058

Agenda Date: 4/9/2019
Item No.: 6.1.

UNCLASSIFIED MANAGER:
Ngoc Nguyen, 408-630-2632



Santa Clara Valley Water District
Watershed Design and Construction
Land Surveying and Mapping Unit

Unmanned Aerial System (UAS) Flight Operations Manual

December 2018



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1. Preface

The following procedures are intended to promote safe, efficient and lawful operation of the Santa Clara Valley Water District, Land Surveying and Mapping Unit (LSMU), unmanned aerial systems (UAS). Safety, above all else, is the primary concern in all operations, regardless of the nature of the mission. This manual has been prepared primarily following the manual of the City of Los Angeles, Bureau of Engineering, with many procedures adopted from Oak Ridge National Laboratory "Best Practices for Unmanned Aerial Systems" February 2017, American Civil Liberties Union (ACLU) "Protecting Privacy from Aerial Surveillance (recommendations for Government Use of Drone Aircraft) December 2011", National Telecommunications and Information Administration (NTIA) "Voluntary Best Practices for UAS Privacy, Transparency and Accountability" and the Oak Ridge National Laboratory "Best Practices for the Use of Unmanned Aerial Systems February 2015", FAA Remote Pilot – Small Unmanned Aircraft Systems Study Guide" August 2016, Ruppert Law P.A. "Part 107 Study Guide" December 2016 as well as many other sources. (See reference index Section 12).

2. Philosophy & Mission Statement

It shall be the mission of those personnel of LSMU who are trained in the use of unmanned aircraft systems (UAS), to use this resource to perform aerial data collection for engineering purposes safely and effectively while also respecting private property and privacy of the citizens of Santa Clara County.

It shall be the intent of every UAS operator to make reasonable effort to not invade a person's reasonable expectation of privacy when operating the UAS. When operating the UAS, LSMU operators shall abide by all Federal Aviation Administration (FAA) Regulations for flight and receive the proper authorization for flight.

3. Protection of Rights and Privacy

3.1 Privacy

UAS operators and observers ensure the protection of private individuals' Fourth Amendment Rights, civil rights and reasonable expectations of privacy before deploying the UAS. UAS operators and observers ensure and are held accountable for ensuring that operations of the UAS intrude to a minimal extent upon the private property, persons and businesses. To accomplish this primary goal, LSMU observes the following:

1. UAS will only be operated by pilots holding a current FAA Part 107 Certification.
2. Pilots must adhere to FAA Guidelines, State laws and local ordinances pertaining to the protection of privacy & civil liberties of the public.
3. Flight plans shall be prepared prior to all operations to ensure UAVs shall only be flown over District or Public property. If deemed necessary to fly over non-District owned property, written authorization from the property owner must be obtained prior to flight operations.
4. If a UAV must be flown over private property for emergency purposes, any imagery collected shall be discarded.
5. Upon field completion of each mission, data shall be reviewed by the remote pilot and the supervisor. If any images are found that could be considered an intrusion of privacy or civil liberties, those images shall be destroyed prior to upload of data to District servers.
6. LSMU UAS will record video and still pictures (no audio) of features on the ground relating to District property and assets. Any data captured outside the focus of flight operations is unintentional or only as necessary due to the proximity to District property or assets.
7. When the UAS is flown, the onboard cameras are turned to be facing away from occupied structures, etc. as much as practicable to minimize inadvertent video or still images of uninvolved persons or property.
8. When asked by a member of the public, to delete personal data about him or her that has been gathered by video or picture, do so, if possible.
9. All LSMU UAS flights shall be conducted with video recording (low resolution) or still frame photos from take-off to landing to verify the positioning of the camera if any concerns are raised by the public. This data shall be retained for a minimum of one year.
10. LSMU does not and will not conduct random surveillance activities. The use of the UAS is tightly controlled and regulated and not in any way intended to document the activity of private citizens.
11. Hovering over private property shall be kept to a minimum or only as necessary to accomplish the goal of an individual flight operation.
12. Flight over private property shall be conducted a minimum of 30 feet away in any direction from any structures or people, and wherever practical well above the roofline of any privately-owned structures.
13. Whenever possible, the UAS crew should divert sensors/cameras from occupied structures and uninvolved persons to minimize inadvertent, unapproved data collection.
14. If a location is planned to be flown frequently for monitoring purposes (e.g. construction

or hazard monitoring), owners of adjacent private property shall be notified in writing of the stated purpose of the flights, frequency, altitude, hours of operation, start/stop dates, where/how to address complaints/concerns, and LSMU privacy policy for UAS operations.

15. All authorized missions for LSMU UAS are limited to:
 - a. Engineering purposes relating to construction monitoring and mapping.
 - b. Presentation purposes
 - c. Asset inspections, asset/facility documentation.
 - d. Hazard assessment/mapping.
 - e. LSMU emergency operations.
16. A committee shall be formed to meet semi-annually for reviewing the existing UAS procedures as well as new technologies, laws, and regulations on UAS usage. The committee shall consist of personnel from LSMU.
17. Ad hoc unplanned operations should never be conducted except for emergency response to emergency events/natural disasters as authorized by the LSMU Manager; if used, the application of the UAS emergency response work shall be tightly controlled and regulated.
18. LSMU UAS operate strictly within the Federal, State, County, and City laws and regulations. If in doubt, prior to operating the UAS we ensure that the proper forms and applications are applied for and obtained. We balance all operations with the need to accomplish the mission while maintaining public privacy and freedom from intrusion.
19. Public Relations. Any UAS flight open to misinterpretation by the public should be avoided. The following are examples of flights that would be considered controversial.
 - Flights of routine nature for which commercial or other public transportation or ground based data gathering could be more economically substituted.
 - Flights coinciding with major sports events or civic celebrations within the operating area.
20. Any pilot found in violation of this policy shall be subject to consequences up to and including termination.

3.2 Protection/Annoyance

It is essential that the Santa Clara Valley Water District's LSMU build a reputation for well-managed, minimally intrusive UAS use. A reputation of professionalism will support future, more complex applications of this new industrial tool. Any adverse incidents such as unprofessional and unsafe use have the potential to jeopardize the public trust, thus hindering future expansion of the far-reaching UAS capabilities. The following list of privacy and UAS etiquette best practices should be considered when operating UAS.

- Aircraft Noise Abatement. UAS noise could create a public relations problem. Operators should review their operating practices on a continuing basis with a view toward minimizing this nuisance to the public.
- Prohibited Operation Over Persons. Part 107 prohibits a person from flying a UAS directly over a person who is not under a safe cover such as a protective structure or a stationary vehicle that would protect the person from harm from the UAS.

Protecting the public from harm if the UAS were to crash into a person, structure or vehicle is the primary concern of the UAS flight crew. However, a UAS may be flown over a person who is directly participating in the operation of the UAS, such as the remote PIC (Pilot In Charge), other persons manipulating the controls, a VO (Visual Observer), a MPO (Mission Payload Operator), or crew members necessary for the safety of the UAS operation, as assigned and briefed by the remote PIC. There are several ways that the UAS remote PIC can comply with these requirements, including the following:

- If possible, selecting an operational area (site) that is clearly unpopulated/uninhabited. If selecting a site that is populated/inhabited, the PIC should have a plan of action that ensures persons remain clear of the operating area, remain indoors, or remain under safe cover that would protect them from harm until the UAS flight has ended.
- Established an operational area that the remote PIC has taken reasonable precautions to keep free of persons not directly participating in the operation of the UAS.
- Choosing an operating area that is sparsely populated or, ideally, clear of persons if operating sUAS from a moving vehicle.
- Having a plan of action that ensures the UAS remains clear of persons who may enter the operating area.
- Adopting an appropriate operating distance from persons not directly participating in the operation of the sUAS.
- Prohibited Maneuvers.
 - Maneuvers solely for “thrill” purposes or in an unsafe nature.
 - Flying directly over a power substation
 - Flying within 30 ft. of energized power lines

In Summary, all UAS operators and assigned crew members should make every reasonable effort not to invade the public’s privacy in the execution of UAS work. All federal, state, and local regulations should be adhered to, and as required, the public should be notified before UAS operations.

3.3 Public Notification

Landowners and associated parties are provided reasonable accommodations when necessitated by the specifics of the ongoing and repeated UAS flight operations through adequate prior notification, which may include the following;

1. For all UAS operations being conducted in an area, provide a written notice addressing specifics, including intended takeoff and landing zones, at least 20 working days before the flight(s).
2. For all UAS flights being conducted near airports or other airborne operating area: Never fly within 5 miles of an airport without contacting airport authorities and the airport’s traffic control facility. The airport Advisory Area is an area of 5 miles encircling an airport. If this area is to be entered for UAS flight operations; the airport Tower Authority must be contacted before flight operations.

4. Acronyms

AP	Autopilot
AGL	Above Ground Level
ATC	Air Traffic Control
BVLOS	Beyond Visual Line of Sight Command and Control
C2	Command and Control
CICA	Convention on International Civil Aviation
COA	Certificate of Authorization
CFR	Code of Federal Regulations
COW	Certificate of Waiver
CS	Control Station
CTAF	Common Traffic Advisory Frequency
DoD	US Department of Defense
DROTAM	Drone Notice to Airmen
EM	Electromagnetic
EMI	Electromagnetic Interference
EPRI	Electric Power Research Institute
FAA	Federal Aviation Administration (US Department of Transportation)
FPV	First-Person View
GPS	Global Positioning System
HD	High Definition
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rule
IoT	Internet of Things
lidar	Light Detection and Ranging
LSMU	Land Surveying and Mapping Unit
MAD	Minimum Approach Distance
MOA	Military Operations Area
mph	Miles per Hour
MPO	Mission Payload Operator Mean Sea Level
MSL	National Airspace System
NAS	Nautical Mile Notice to Airmen
NM	National Security Area
NOTAM	Notice to Airmen
NSA	National Safety Advisory
NTIA	National Telecommunications and Information Administration
NUASCP	National Unmanned Aircraft Systems Credentialing Program
NWS	National Weather Service

ORM	Operational Risk Management
ORNL	Oak Ridge National Laboratory
PIC	Pilot in Command, Remote Pilot in Command
RPAS	Remotely Piloted Aircraft System
RTB	Return to Base
RTF	Ready-to-Fly
SA	Situational Awareness
SAR	Synthetic Aperture Radar
SCVWD	Santa Clara Valley Water District
SD	Secure Digital
SOSC	Systems Operations Support Center (FAA)
SUA	Special Use Airspace
sUAS	Small Unmanned Aerial System
TFR	Temporary Flight Restriction
TIR	Thermal Infrared
TSA	Transportation Security Administration (US Department of Homeland Security)
UA	Unmanned Aircraft
UAS	Unmanned Aerial System; Unmanned Aircraft System
UASRC	Unmanned Aerial Systems Research Center
UAV	Unmanned Aerial Vehicle
VFR	Visual Flight Rule
VHF	Very High Frequency
VLOS	Visual Line of Sight
VMC	Visual Meteorological Condition
VO	Visual Observer

5. Administration

5.1 Operations Manual

1. The policies and procedures contained in this manual are issued by LSMU. As such it is an official policy document of LSMU.
2. This manual is not intended to be all-inclusive, but as a supplement to other SCVWD guidelines, Federal Aviation Administration regulations, pre-flight safety checklists, aircraft manufacturers' approved flight manual, etc.
3. This manual is being written to address UAS operations as they existed when it was drafted. Equipment, personnel, certifications, environment (internal and external), etc., change over time. The management of change involves a systematic approach to monitoring organizational change and is a critical part of the risk management process. Given this, it is essential that this manual be continually updated as necessary. The entire manual must be reviewed, at a minimum, annually or any time the FAA issues a new advisory or new regulations to assure it is up to date. Any changes to the manual will be communicated as currently dictated by LSMU policy.
4. A copy of the manual (electronic and/or paper) is issued to every person having UAS responsibilities.

5.2 Organization

The organizational structure of the UAS Operation is;

LSMU Manager:

UAS Coordinator

Flight Crew (Field):

UAS Operator, Pilot in command (PIC) - FAA 14 CFR Part 107 certificate holder

Visual Observer (VO)

Mission Payload Operator or Video Operator (MPO)

The Mission Payload Operator, Visual Observer and Pilot can change positions if a Part 107 Certificate Holder is present on the Flight Crew

1. The UAS Flight crew is comprised of those personnel approved by LSMU and includes a FAA Part 107 Certified Remote Pilots (PIC), Payload operators (MPO) both camera operators and UAS pilots), Visual Observers (VO) and others as deemed necessary to be assigned as part of the UAS Flight crew.
2. Assignment to the UAS crew is by careful selection and by the appropriate LSMU staff from specially trained LSMU employees with knowledge of the airspace within which the UAS operation will take place and how that airspace fits into the National Airspace System (NAS).
3. There will always be a minimum of two flight crew members (PIC and at least one VO) required for any mission to be flown. This is a mandatory requirement.

5.3 Personnel

1. The UAS Coordinator is responsible for the overall direction and performance of the UAS unit and exercises command and control over it.
2. UAS Coordinator Responsibilities:
 - a. maintaining all training, flight and maintenance records for each operator and observer as well as individual airframes;
 - b. maintain contact with the FAA and regulations as they change
 - c. evaluate airframes based on mission needs;
3. The UAS Coordinator is not required to be a FAA Part 107 Certified Remote Pilot. However, if the UAS Coordinator is not so certified, duties and responsibilities that require such certification MUST be delegated to or overseen by the most qualified LSMU staff that is so certified, usually the senior remote pilot in command (PIC).
4. The senior PIC would be required to be the point of contact between the FAA and the LSMU. The senior PIC should also be required to stay up to date on FAA regulations as they change, evaluate airframes based on present and future mission needs, stay current on UAS technology, assist with training, etc.
5. UAS Operators:
 - a. To be considered for selection as an operator, applicants must meet the requirements for and successfully pass a LSMU administered UAS Flight Check to be accepted into the UAS crew.
 - b. At least one onsite operator must hold a current FAA Part 107 Remote Pilot Certificate during any flight operations.
 - c. Operators interacting with Air Traffic Control (ATC) or Terminal Radar Approach Control Facilities (TRACON) shall have sufficient expertise to perform that task readily. Operators must understand, and comply with FAA Regulations applicable to the airspace where the UAS operates.
 - d. An operator's primary duty is the safe and effective operation of the UAS in accordance with the manufacturers' approved flight manual, FAA regulations and LSMU policy and procedures. Operators must remain knowledgeable of all FAA regulations; UAS manufacturer's flight manual and bulletins and LSMU policy and procedures and exhibit situational awareness at all times.
 - e. Operators may be temporarily removed from flight status at any time by the UAS Coordinator, for reasons including performance, proficiency, physical condition, etc. Should this become necessary, the operator will be notified verbally and in writing of the reason, further action to be taken and expected duration of such removal.
 - f. The UAS Coordinator shall maintain a file for each operator which shall include copies of training records, flight incidents, etc. This file is reviewed in accordance with current LSMU policy and procedures.
6. Visual Observers (VO)
 - a. Visual Observers must have been provided with sufficient training to communicate clearly to the operator any turning instructions required to stay clear of conflicting traffic and obstacles. Observers receive training on rules and responsibilities described in 14 CFR 91.111, Operating Near Other Aircraft, 14 CFR 91.13, Right-of-Way Rules, cloud clearance, in-flight visibility, and the pilot

controller glossary including standard ATC phraseology and communication. 14 CFR 91.17, Alcohol or Drugs, applies to UAS observers.

- b. An observer's primary duty is communication with other crew members and property owners as well as be an observer for anything that may affect the operator's primary duty (see and avoid). Secondly they may be asked to operate the UAS's equipment including flight controls and cameras while another crew member takes on the task of observer.
 - c. The UAS Coordinator maintains a file for each observer, which includes copies of training records, UAS incidents, etc.
7. Mission Payload Operators (MPO)
- a. Mission Payload Operators include camera, video and sensor operators. The MPO will be the only person on the flight crew who will be allowed to wear the FPV goggles during any mission. The MPO will communicate directly with the pilot as needed to facilitate the flight mission and insure that the mission's task has been completed. When not operating such equipment the MPO will have the same duties as a VO.

5.4 Facilities

1. UAS operations are housed and maintained at the Land Surveying and Mapping Unit (#367) at 6850-10 Santa Teresa Blvd, San Jose, CA 95119.
2. Personnel must not leave the designated facility without making sure the LSMU UAS equipment is secured.
3. All personnel are equally responsible for maintaining the facility in a neat, clean and orderly fashion.

5.5 Scheduling (Training and Proficiency)

1. To facilitate the broad use of the UAS, it shall be made available to all UAS flight crew members.
2. To maintain a level of proficiency with the UAS, operators are required, as part of their acceptance into the UAS flight crew, to attend training every two months. Training is coordinated through the UAS Coordinator and announced in advance for scheduling purposes. At a minimum, training shall consist of a review of preflight checks, take-off and landing procedures, emergency procedures, UAS crew communication protocols, and 15 minutes of actual UAS flight time for every UAS crew member.

5.6 Miscellaneous

1. Inquiries from the news media must be forwarded to the SCVWD public relations officer. Operators/Observers shall follow currently established SCVWD policy regarding interactions and inquiries from the media.
2. Requests for support from third-parties will be responded to by the UAS Coordinator.
3. Complaints or inquiries regarding UAS operations must be referred to the UAS Coordinator.

6. Safety

6.1 Safety Policy

1. SCVWD is committed to having a safe and healthy workplace, including:
 - a. The ongoing pursuit of an accident free workplace, including no harm to people, no damage to equipment, the environment and property.
 - b. A culture of open reporting of all safety hazards in which management will not initiate disciplinary action against any personnel who, in good faith, disclose a hazard or safety occurrence due to unintentional conduct.
 - c. Support for safety training and awareness programs.
 - d. Conducting regular audits of safety policies, procedures and practices.
 - e. Monitoring the UAS community to ensure best safety practices are incorporated into the organization.
2. It is the duty of every member within the UAS flight crew to contribute to the goal of continued safe operations. This contribution comes in many forms and includes always operating in the safest manner practicable and never taking unnecessary risks. Any safety hazard, whether procedural, operational, or maintenance related must be identified as soon as possible after, if not before, an incident occurs. Any suggestions in the interest of safety should be made to the UAS Coordinator.
3. If any member observes, or has knowledge of an unsafe or dangerous act committed by another member, the UAS Coordinator is to be notified immediately so that corrective action may be taken.
4. The person manipulating the flight controls cannot operate a UAS and drive a moving vehicle in a safe manner and remain in compliance with FAA Part 107.

6.2 Operational Hazard and Occurrence Report (OHOR) and Investigations

1. Occurrences are unplanned safety related events, including accidents and incidents that could impact safety. A hazard is something that has the potential to cause harm. The systematic identification and control of all major hazards is foundational to safety.
2. The OHOR concept provides a mechanism to report hazards and occurrences, real and perceived, to those responsible for UAS operations.
3. There is no specific format for the OHOR as the information provided is what is important, not the format and should be used without hesitation to report any anticipated, current, or experienced safety hazard, or occurrence. Further, the OHOR can be submitted anonymously, and to whatever level in the chain of command, to get the matter proper attention, without fear of reprisal.
4. Written memorandums fully explaining the problem will be given to the UAS Coordinator for investigation.
5. Every hazard and/or occurrence is investigated, with the results and corrective action taken communicated to all members. The investigation will be conducted by the UAS Coordinator or designee. The services of an independent subject matter expert may be necessary in some cases to assure a thorough and complete investigation.
6. Hazards requiring immediate attention will be brought to the attention of the UAS Coordinator, verbally, without delay.
7. **ALL MEMBERS ARE AUTHORIZED TO TAKE ACTION TO CORRECT A HAZARD** if in that member's opinion delay will result in accident or injury. The UAS Coordinator will be notified immediately in such situations.

6.3 Safety Officer - Operator/Observer/Coordinator

1. In regards to safety, all members of the UAS flight crew are responsible for the following:
 - a. Ensuring all flight operations personnel understand applicable regulatory requirements, standards and organizational safety policies and procedures.
 - b. Observe and control safety systems by monitoring all operations.
 - c. Review standards and the practices of LSMU personnel as they impact operational safety.
 - d. Communicate all reported safety related problems and the corrective action taken. If there were any in-flight problems (or learned experiences), the proper procedures for handling that problem should be discussed.
 - e. Copy and circulate pertinent safety information.
 - f. Copy and circulate emergency safety bulletins.
 - g. Place any electronic copies of safety information or bulletins in a conspicuous location for all employees to access.
 - h. It is emphasized again that safety is the responsibility of ALL members of the UAS unit.

6.4 Safety Training

1. All members shall receive safety training in the following subjects prior to operating the UAS:
 - a. LSMU commitment to safety
 - b. LSMU policy
 - c. UAS member's role in safety
 - d. Emergency safety procedures
2. All members shall review the LSMU safety policy and procedures on an annual basis and that review shall be noted in their training history.

6.5 Medical Factors

1. Operator and Observers shall only deploy the UAS when rested and emotionally prepared for the tasks at hand.
2. Physical illness, exhaustion, emotional problems, etc., seriously impair judgment, memory and alertness. The safest rule is not to act as an operator or observer when suffering from any of the above. Members are expected to "stand down" when these problems could reasonably be expected to affect their ability to perform flight duties.
3. A self-assessment of physical condition shall be made by all members during pre-flight activities.
4. Performance can be seriously hampered by prescription and over-the-counter drugs. The UAS Coordinator must be advised anytime such drugs are being taken. If it is determined that the medication being taken could hamper an operator or observer, that member shall be prohibited from the deployment or exercise.
5. No member shall act as an operator or observer within eight hours after consumption of any alcoholic beverage, while under the influence of alcohol, or while having an alcohol concentration of 0.04

6.6 Safety Equipment

1. UAS flight crew personnel would be required to wear minimal Personal Protective Equipment during flight operations. This equipment should include class II safety vests and eye protection at a minimum. Certain missions will require the use of work/hiking boots, cut resistant gloves and hard hats.
2. Other safety equipment for the flight crews: two-way radios (required), First Aid kit (required), fire extinguisher (desired).

6.7 Airframe and Control Station Safety

Among the top hazards involving flight are inadequate pre-flight preparation and/or planning and improper operation of flight controls. Even if the UAS manufacturer has a written pre-flight inspection procedure, it is recommended that the remote PIC ensure that the following inspection items are incorporated into the pre-flight inspection procedure required by FAA Part 107 to help determine that the UAS is in a condition for safe operation overall airworthiness. The pre-flight inspection should include a visual or functional check of the following items.

- UAS components
- Airframe structure (including undercarriage), all flight control surfaces, and linkages
- Registration markings (for proper display and legibility)
- Servomotors, including attachment points
- Propulsion system, including power plants, propellers, rotors, ducted fans, etc. (For safety, rotors or fans may be shrouded to prevent entanglement.)
- Energy supply [confirm all systems (e.g., aircraft and control unit) have an adequate energy supply for the intended operation and are functioning properly]
- Avionics, including control link transceiver, communication/navigation equipment, and antennas
- Compass (calibrate UAS compass before any flight)
- Control link transceiver, communication/navigation data link transceiver, and antennas
- Display panel, if used (confirm functioning properly)
- Ground support equipment, including takeoff and landing systems (check for proper operation)
- Control link functionality established between the aircraft and the flight control surfaces
- Flight control surfaces using the CS
- Onboard navigation and communication data links
- Flight termination system operable, if installed
- Aircraft and CS battery levels
- Secure attachment of all equipment, including cameras and sensors
- Communications with the UAS, including that the UAS has acquired GPS location from at least four satellites
- UAS propellers; inspect for any imbalance or irregular operation
- Controller operation

If required by the flight path, walk through and verify any noted obstructions that may interfere with the UAS. At a controlled low altitude, fly within range of any interference and recheck all controls and stability. If available, whenever a UAS is started, personnel should be on hand with adequate fire extinguishing equipment. Note: These operating limitations are intended,

among other things, to support the remote PIC's ability to identify hazardous conditions relating to encroaching aircraft or persons on the ground and to take the appropriate actions to maintain safety.

Additional safety considerations include the following.

- No emergency parachute use [parachute use could be a hazard for some industries (e.g., electric)].
- The person manipulating the flight controls cannot operate a UAS and drive a moving vehicle in a safe manner and remain in compliance with FAA Part 107.

6.8 Battery Safety

1. Lithium-ion (Li-ion) batteries are common in UASs. "A lithium polymer battery, or more correctly lithium-ion polymer battery (abbreviated variously as LiPo, LIP, Li-poly, and others), is a rechargeable battery of lithium-ion technology in a pouch format. Unlike cylindrical and prismatic cells, LiPos come in a soft package or pouch, which makes them lighter but also less rigid. The difference between a lithium battery and a Li-ion battery is that most Li-ion batteries are rechargeable. Li-ion batteries can be dangerous under some conditions and can pose a safety hazard because they, unlike other rechargeable batteries, contain a flammable electrolyte and are kept pressurized. In 2013, at least four aircraft suffered electrical system problems stemming from Li-ion battery use, and in at least two instances the batteries started fires. Therefore, it is extremely important that all Li-ion batteries be handled in accordance with the manufacturer's recommendations. Even when fires have not resulted from Li-ion battery use, Li-ion batteries have been known to show signs of battery fatigue, including overheating and bloating of the battery cells. Misused or faulty batteries can lead to inconsistent power supply to the system. The aircraft may also experience erratic flight, loss of control authority, or premature landing due to improper amperage or low voltage spikes. A battery log will enable the operator to keep track of battery parameters like voltage before and after the mission. All batteries should be maintained by following guidelines in the UAS operator's manual.

6.9 Battery Charging Safety

1. Li-ion batteries offer good charging performance at cooler temperatures and may even allow fast charging within a temperature range of 41°F to 113 °F (5°C to 45°C). Consumer-grade lithium-ion batteries should not be charged at temperatures below 32°F (0°C). Current-generation cells typically can be fully charged in 45 min or less. If overheated or overcharged, Li-ion batteries may suffer what is known as "thermal runaway," and cell rupture, and as mentioned previously, in extreme cases combustion can occur. Therefore, batteries should not be left unattended when charging. After flight operations are complete, batteries should be allowed to cool for about 20 min before being connected to a charging station.
2. You must always charge the LiPo battery in a safe, well-ventilated area away from flammable materials.
3. Always inspect the battery, charger and power supply before charging.
4. If at any time the LiPo battery begins to balloon or swell, discontinue charging or discharging immediately. Quickly and safely disconnect the battery and then place it in a safe, open area away from flammable materials to observe it for at least 15 minutes. Continuing to charge or discharge a battery that has begun to balloon or swell can result

in a fire or explosion. A battery that has ballooned or swollen even a small amount must be removed from service completely.

6.10 Safe Battery Transportation

1. Most people are unaware that Li-ion batteries are dangerous goods that can pose a safety risk. Concerns are so great that there are in fact regulations for their safe transport, and the International Civil Aviation Organization (ICAO) Council Air Navigation Commission has even taken the extreme step of prohibiting Li-ion batteries as cargo on passenger aircraft. [International Air Transport Association. However, for the purposes of field use, Li-ion batteries can be transported in stainless steel or plastic battery boxes capable of containing any free liquid. The battery holder should be securely fastened and the battery protected in such a manner as to prevent damage and short circuits. If possible, tape over the battery terminals and cables before transport.

6.11 Safe Battery Use, Storage and Disposal

1. When dealing with any power storage device, safety is key. First, one needs to reduce the probability of an unsafe event, and second, take steps to reduce the severity of the event, should one occur. Keep new batteries in their original battery packaging until ready for use. Keep original battery packaging to use for expended batteries. Safety devices are incorporated into the battery cell modules and battery packs to protect against abnormal conditions. These safety devices are used to manage both heat and gas generation, which are consequences of battery use. The remote PIC should land as soon as possible if a low battery is detected during flight operations.
2. To reduce the risks associated with Li-ion batteries, battery packs should contain fail-safe circuitry that disconnects the battery when its voltage is outside the safe range of 3–4.2 V per cell. When stored for long periods of time, the small current draw of the protection circuitry may drain the battery below its shut-off voltage; normal chargers may then be useless.
3. Store the LiPo batteries at room temperature and in a dry area for best results
4. Lock the batteries and aircraft in a cabinet when not in use or being prepped for flight
5. Typically, the safety devices work well, and battery leaks and explosions are rare, but if you suspect that you have a malfunctioning battery, exercise caution. Do not connect it to a power source. If the battery is swollen, it should be assumed to be in a dangerous state resulting from built-up gasses. Handle the battery with care as it could catch fire or explode. Try to carefully remove it from the device housing. If you are able to do so, place it in a safe, cool container. Do not place it in a hot location such as a vehicle until the vehicle is cooled. Then dispose of the battery at an authorized commercial or government battery disposal facility. If you are unable to remove the battery, seek assistance from the manufacturer or an electronics store. At the end of the flight day, check the charge levels of the batteries. If the charge level of any battery is over approximately 50% charged, utilize the aircraft to discharge to that approximate level. If appreciably lower than 50%, charge the batteries to ~50%. Do not leave the batteries in an over discharged state.
6. Do not store the battery or aircraft in a hot garage, car or direct sunlight. If stored in a hot garage or car as the battery can be damaged or even catch fire.
7. Replace the battery if it becomes exhausted or damaged. At the end of serviceable life,

batteries should be disposed of at an authorized commercial or government collection facility. Additional safety considerations include the following:

To avoid malfunctioning batteries;

- Use the appropriate power charger.
- Do not leave the device plugged in to a power source all the time.
- Keep the device (or battery) stored in a cool, dry environment.

6.12 Operational Risk Management (ORM)

One of the top hazards to fight is improper in-flight decisions or planning. Operational Risk Management (ORM) is a systematic decision-making process used to identify hazards that endanger the public or assigned resources and make informed decisions to manage them. Its purpose is to increase operational readiness by anticipating hazards and reducing the potential for loss, thereby increasing the probability for success. Below is a brief description of the ORM process.

- ORM uses a five-step process.
 - Identify hazards
 - Assess hazards
 - Make risk decisions
 - Implement controls
 - Supervise

The ORM process is used on three levels based upon time and available assets.

- Time critical: A quick mental review of the five-step process when time does not allow for any more (i.e., in-flight mission/situation changes).
- Deliberate: Experience and brain-storming are used to identify hazards and are best done in groups (i.e., aircraft moves, fly on/off).
- In-depth: More substantial tools are used to thoroughly study the hazards.
- The associated risk in complex operations (i.e., payload detachment).

The ORM process is guided by the following four principles.

- Accept risk when benefits outweigh the costs.
- Accept no unnecessary risk.
- Anticipate and manage risk by planning.
- Make risk decisions at the right level.

6.13 Safety Risk Assessment

When conducting a risk assessment, identify the present risks and look for ways to mitigate the hazards they create. Pre-flight familiarizations, inspections, and actions can be accomplished as part of an overall safety risk assessment. FAA encourages the remote PIC to complete the overall safety risk assessment as a method of compliance with the prohibition on operations over certain persons and the requirements to remain clear of other aircraft. Flight operations should be conducted at least 30 ft. from all nonparticipating persons, structures, vehicles, and vessels unless

1. Barriers, structures or setbacks are present that sufficiently protect nonparticipating persons from the UAS and/or debris in the event of a mishap. If a situation arises where nonparticipating persons lose such protection and are within 30 ft. of the aircraft, flight operations must be terminated immediately in a manner ensuring the safety of nonparticipating persons.
2. The owner/controller of any structures, vehicles, and/or vessels has granted permission for operating closer to 30 ft. of those objects, and the operator has made a safety assessment of the risk of operating closer to those objects and determined that it does not present an undue hazard.

6.14 Risk Mitigation

1. Knowing the risk factors that can affect a successful operation is important. These risks range from the people involved to issues with the aircraft or the environment. Higher risk situations include taking off with a known problem, unstable approach when landing the aircraft, and deviating from standard operating procedures. Similar to manned-aircraft pilots, UAS pilots see an increased workload during critical phases of flight, notable during takeoff, approach, and landing. Understanding the risks of flight is the first step to mitigating mishaps associated with these risks.
2. These risks are inherent but can be mitigated by proper planning, communication, and situational awareness. If applicable, file a NOTAM and/or DROTAM to inform other pilots about any UAS activity that is conducted within the airspace. NOTAMs/DROTAMs provide information considered useful to pilots for hazards, military exercises, airport notifications, and other UAS activity. Check for current NOTAMs in the mission area by visiting the FAA NOTAM search website at <https://pilotweb.nas.faa.gov/PilotWeb/>.
3. Crews should also review the causal factors, results, and lessons learned from other aircraft mishaps. Knowing the recommended corrective actions and preventive measures from other mishaps assists with contingency and safety planning and the ultimate mitigation of risk of accidents. Crews should not hesitate to recommend and promulgate recommended risk reduction procedures to enhance overall safe operations.
4. Wind impacts and other data found in weather forecasts should be considered for proper flight planning. The aircraft operating manual should provide the wind limitation for safe flights. As part of the weather brief, checking the wind helps mitigate risks of the aircraft operating beyond the recommended condition. Do not hesitate to postpone operations until the winds are suitable, making the right decision helps prevent

unnecessary harm to people and property.

5. Risk mitigation is crucial for the well-being of the crew members. Be aware of potential health issues and ensure that crew members are physically equipped for the environment in which you are operating. Heat exhaustion can be prevented by drinking fluids and staying out of direct sunlight as much as possible. When a crew member is suffering from heat exhaustion, the individual in question may not be aware of his/her condition. The PIC and crew members should look for early signs of danger such as heavy sweating or breathing, noticeable fatigue, and/or far off gaze from fellow crew members should take steps to prevent hypothermia by wearing proper clothing and staying as dry as possible. Onset signs of hypothermia include fatigue, slower breathing, loss of coordination, and confusion. Again, the PIC and crew members should look for signs in distress in other team members.
6. If an emergency does occur, ensure that standard emergency procedures are followed. For immediate, severe emergencies where every second is critical, call 911 immediately and provide first aid, as applicable. Consider all possible emergency scenarios, and plan for each situation accordingly. All crew members should have a compact emergency card containing phone numbers of all authorities to contact during an emergency. Examples include local law enforcement, emergency services, and ATC authorities. Operations in rural areas may not have the same emergency procedures as an urban area due to variance in communication and emergency response times at different locations. Always plan for any situation, and contact FAA for incidents and accidents that involve major damage, injury, or loss of property and life (see Appendix O, "FAA Accident Reporting and Regional Operations Centers Telephone List").

7. Training

7.1 Objective

1. The key to continued safe operations is by maintaining a professional level of competency. The first step in this process is establishing minimum qualifications for selecting members, and the second step involves training those personnel.

7.2 Instructors

1. If any members are FAA certified remote pilots, they may be given instructor duties. Such duties can include developing training courses; provide training, and student evaluation and documentation.
2. Instructors are designated by those within the unit and approved by the UAS Coordinator.

7.3 Training Plans

1. All members have a training plan on file that outlines training objectives for the upcoming year. This training plan will be held in conjunction with the member's normal training file per LSMU policy. UAS training sessions should be conducted in a dedicated training area free from non-participants and hazards. Training scenarios should simulate real world scenarios that UAS crew members are likely to encounter or consist of scenarios the UAS crew isn't likely to encounter but which should elicit a predictable, trained response (e.g. emergencies, mishap drills etc.). Training scenarios should be briefed and debriefed as closely as possible to real world operations or events to include crew member roles, checklists, emergency procedures, etc.
2. The approved training plan is developed by the UAS Coordinator.
3. All deployments or exercises are documented and count toward a member's training.
4. It is the member's responsibility to verify their training file contains all pertinent information.

7.4 Initial Training

1. Remote Pilot (PIC) and Operators
The remote pilot in command should complete UAS operator training before operating a UAS in the National Airspace System (NAS). The UAS Operator training must include, but is not limited to, the following topics:

- Aircraft Components
- Aircraft Systems
- Airspace
- Aerodynamics
- FAA Regulations
- Flight Operations
- Flight Basics
- Emergency Procedures
- Mission Scenarios
- MPO Responsibilities
- Privacy
- Safety
- VO Responsibilities
- Weather

2. Visual Observers (VO)

Visual Observers must have completed sufficient training to communicate to the pilot any instructions required to remain clear of conflicting traffic. This training, at a minimum, shall include knowledge of the rules and responsibilities described (in 14 CFR)/Federal Aviation Regulations (FAR);

- FAR 91.3, Responsibility and authority of the Pilot In Command (PIC)
 - FAR 91.13, Careless or reckless operation
 - FAR 91.17, Alcohol and drugs
 - FAR 91.25, Aviation safety reporting program
 - FAR 91.103, Preflight actions
 - FAR 91.111, Operating Near Other Aircraft;
 - FAR 91.113, Right-of-Way Rules: Except Water Operations; and
 - FAR 91.155, Basic VFR Weather Minimums
 - Knowledge of air traffic and radio communications, including the use of approved ATC/pilot phraseology; and knowledge of appropriate sections of the Aeronautical Information Manual.
3. In conjunction with fulfilling all training requirements for operator/observer duties, the new member must also become familiar with UAS operations, the aircraft and its equipment.
 4. Any new member who fails to successfully complete the initial training may be denied as a member of the UAS flight crew.
 5. Before a member can fly as an operator, they must complete at least 5 hours of flight training with the UAS instructors to show proficiency of the flight training exercises and the airframe. This must be accomplished to show their ability and knowledge of the UAS.

7.5 Recurrent Training

1. All members within the unit shall maintain proficiency in their operator/observer abilities. Members who do not have any documented training or flight time within a span of 180 days must show proficiency before being an operator/observer during a deployment or exercise.
2. Recurrent training is not limited to actual operating/observer skills but includes knowledge of all pertinent UAS/aviation matters.
3. Failure to prove proficiency can result in removal from UAS responsibilities.

7.6 Miscellaneous

1. Depending on the nature of the training request, all efforts are made to accommodate the hours of training so as little impact is made to staffing levels.
2. All requests for training shall be approved through the member's chain of command and timekeeping during those training hours are marked by the UAS Coordinator in the training logs.
3. Members are encouraged to attend, and forward information on FAA sponsored safety seminars, industry conferences, UAS online training etc.
4. Training shall only be conducted at approved locations and follow the provisions within the approved FAA regulations.

8. General Operating Procedures

8.1 Request for UAS Support

1. Requests for UAS support shall be made through the UAS Coordinator who has the most current list of UAS operators and observers to contact.
2. Requests for UAS support can be made at any time during the day or night (Flight operations are to only be conducted during daylight hours.)
3. The UAS Coordinator will ensure that approval is granted before the proposed mission if such operations are intended to occur in a tower controlled airspace (e.g. within 5 miles of such an airport).

In order to properly direct workflow it is recommended that a 'UAS Service Request' webpage be created and linked through the aqua.gov intranet website. This webpage should provide the basic constraints for safe and legal flight. It should also note that most of the constraints may be waived (*), but will require time to gain approval from the FAA.

UAS OPERATION RULES

The UAS;

Shall not be operated outside of class G airspace without ATC permission

Shall not fly over people (See bullet point below),

Shall not fly with less than three-mile minimum visibility from the control station

Shall not be operated (flown) from a moving vehicle,

Shall not exceed 100 MPH ground speed,

Shall not be used for any surveillance activities,

Must be flown within sight of the Operator or the Visual Observers (VO),

Must always yield Right of Way to any manned aircraft,

Must fly during daylight hours (30 minutes before sunrise and 30 minutes after sunset)

Must fly no higher than 400' Above the Ground Level (AGL),

**** (The above rules may be stipulated by FAA waiver) ****

Must only be operated by authorized personnel,

Must follow all LSMU and FAA Rules and Guidelines for UAS

- Operations will not be conducted during rain events, gusting winds, lightning, or in any other weather that could impede safe flight.
- Prohibited Operation Over Persons. Part 107 prohibits a person from flying a sUAS directly over a person who is not under a safe cover such as a protective structure or a stationary vehicle that would protect the person from harm if the sUAS were to crash

The approved UAS Privacy Policy and mission priorities should also be included on the 'UAS Service Request' website to provide and understanding of the limitations and restrictions that LSMU is placing on the UAS program. The Privacy Policy is found in Section 3 of the LSMU UAS Flight Operations Manual. UAS support is prioritized as shown in Section 8.3 below.

The UAS support request should be on a fillable form on the 'UAS Service Request' webpage. It should be sent to the UAS Coordinator by email at least two weeks before the preferred data collection date unless it is an emergency request.

The UAS support request should include the following information:

- The contact information of the requesting party
- Mission Priority (standard or emergency)
- The Mission location: closest cross streets, street address, and GPS coordinates (latitude/longitude in decimal degrees) of the center of the flight area
- Radius of the proposed flight area (in feet) from the GPS coordinates
- Maximum proposed altitude of overflight (in feet, above ground level)
- Purpose of mission: assessment/inspection, documentation, mapping, etc.
- Number of flights requested and frequency
- Features of interest
- Type of data to be collected: photos or video
- For photos: specify altitude, direction and angle (if not down looking)
- Preferred time of day for data collection
- Preferred data product: videos, images, photomosaics, 3D models and topographic maps in AutoCAD format, etc.
- Name and contact information of any Technical Specialist that may be required to be onsite to oversee data collection (flight operations safety training must be scheduled for that person)

8.2 Call-out Procedure

1. The UAS Coordinator will screen all initial requests to use a UAS.
2. The UAS Coordinator will then contact the PIC to request the deployment of the UAS.
3. The UAS Coordinator will also contact the UAS flight crew who will screen the request using the following factors:
 - a. Is the proposed use of UAS within the capabilities of the UAS equipment and personnel to perform?
 - b. Does the proposed use of the UAS fall within the FAA and department policies and regulations for UAS usage?
 - c. Can the UAS be deployed safely given current weather conditions?
 - d. Are sufficient trained and qualified personnel available to safely operate the UAS?
4. The UAS Coordinator will either accept or decline the request for UAS support. If the request is denied the UAS Coordinator will provide a reason for declining the support request and will provide the requestor this information along with the reason for declining. If the UAS Coordinator accepts the support request they will contact a UAS operator who will be provided all available mission information.
5. The UAS Coordinator will contact a visual observer from the list of available trained observers. The UAS operator is responsible for transporting the UAS and all required equipment to the scene. The UAS operator will contact the UAS Coordinator to check in and receive a briefing on the mission requested. Upon arriving at the requested location, the UAS operator will make an on-scene determination of the ability of the UAS to perform the requested mission safely and within LSMU and FAA policies and procedures.
6. If the UAS operator determines that the use of the UAS would violate LSMU policy or directives, then the UAS operator will inform the UAS Coordinator of the potential conflict along with recommendations for modifying the requested mission to conform to

LSMU policies and procedures. As soon as possible after the completion of the mission, the UAS operator will make a full report of the circumstances and their concern through the UAS Coordinator.

7. UAS operators will have sole discretion for declaring safety or violation of FAA rules. If the UAS operator determines that a requested mission would violate FAA rules or endanger person or property, then the UAS operator will immediately inform the UAS Coordinator of the reasons for refusing to operate the UAS. The UAS will not be flown in this circumstance for any reason.
8. If the UAS operator determines that the requested mission will potentially damage the UAS or its associated equipment the UAS operator will inform the UAS Coordinator of their concerns. The UAS operator will fully document and send a report to the UAS Coordinator.

8.3 Deployment Priorities

1. The UAS shall not be used for random surveillance.
2. If several separate requests for UAS support are received simultaneously, they shall be prioritized.
3. In general terms, requests for UAS support are prioritized as:
 - a. Emergency response operations
 - b. Board requests
 - c. Damage/hazard assessment
 - d. Hazard monitoring/mapping
 - e. Construction monitoring/mapping
 - f. Pre-construction mapping
 - g. Marketing/Public Outreach
 - h. Asset/facility inspections
 - i. Asset/facility documentation

8.4 Flight Boundaries

1. Although there may be requests for UAS support in controlled airspace, FAA regulations for UAS restrict UAS deployment inside restricted airspace.
2. At no time, shall UAS support be granted inside controlled airspace without first obtaining permission from the FAA and approval by local authorities.
3. Maximum altitude shall not be set more than 400 feet per the FAA regulatory standards.
4. The operator will obtain the consent of all persons involved in the mission and ensure that only consenting persons will be allowed within 30 feet of the flight operation, and this radius may be increased based upon an equivalent level of safety determination.

8.5 Minimum Personnel Requirements

1. Due to the nature of the mission, the current minimum personnel required on ALL missions will be an operator and observer. Until further notice, under no circumstances will an operator attempt to complete a deployment alone.
2. Although training is not considered a mission, an observer shall be used.
3. Deviations from the above rules to allow a deployment with only a pilot may be considered in the future, but only with automated data capture to maintain flight control by VLOS of a Certified Remote Pilot.

8.6 Personnel Responsibilities for Deployments

OPEN COMMUNICATION ACHIEVES SAFE OPERATIONS

1. Operator (PIC)
 - a. The operator is directly responsible for, and is the final authority over the actual operation of the UAS.
 - b. Operators have absolute authority to reject a flight based on personnel safety or violation of FAA regulations. No member of LSMU, regardless of status, shall order an operator to make a flight when, in the opinion of the operator, it poses a risk to personnel or is in violation of FAA regulations.
 - c. Operators are responsible for compliance with this manual, LSMU policy and procedure and FAA regulations.
 - d. The operator's main duty during the deployment of the UAS is to operate the UAS safely while accomplishing the goals of the deployment.
 - e. Operators shall see-and-avoid any obstacle that will lessen safety during the mission and maintain situational awareness at all times..
 - f. Operators shall be responsive to the requests of the observer in order to accomplish the deployment.
 - g. Operators shall be responsible for documentation for mission training and updating of flight books.
2. Visual Observer
 - a. Observers shall see-and-avoid and communicate to the operator any obstacle that will lessen safety during the mission.
 - b. Observers are responsible for the operational aspect of the deployment.
 - c. MPO shall operate any attachments to the UAS, allowing the operator to maintain complete focus on the operation of the UAS.
 - d. Observers shall remain alert for suspicious persons or activities on the ground and coordinate response by other UAS flight crewmembers.
 - e. Observers shall assist the operator in the main objective of safe operations.
 - f. Observers shall be responsible for documentation for mission training and updating of flight books.

8.7 Personal Equipment

1. Operators/Observers shall wear eye protection at all times while the UAS is in flight.
2. Although there is no specific uniform required for proper operation of the UAS, the operator/observer should take necessary measures to deploy in a professional matter, wear Hi-Visible safety vests and hard hats during operations and take into consideration that all deployments are subject to media requests.
3. Operators/Observers will take into consideration the current weather conditions when planning to deploy, and wear appropriate clothing to deploy comfortably.
4. There are no documented issues with the use of the radio or cellular phones during the deployment of the UAS, but the operator/observer should always take into consideration safe operation of the UAS when using a radio or another device (use of the radio or other device is strictly prohibited by the operator during flight).
5. Operators/Observers shall wear clothing that easily identifies them as LSMU UAS Flight Crew members.

9. Pre-Flight/Post-Flight Actions

9.1 Aircraft Inspections

1. Operators/Observers are both responsible for a thorough preflight inspection of the UAS.
2. Before and after each deployment (whether a mission or training), the operator and observer shall conduct a thorough inspection of the UAS in accordance with the instructions contained in the manufactures user's manual.
3. Any issues found that will put in jeopardy the safe operation of the UAS shall be documented and resolved immediately prior to flight.
4. It has been recognized that the use of a checklist is a significant method to combat UAS accidents. A pre-flight checklist is contained with each UAS Base Station and is utilized prior to each flight.
5. Any physical equipment that cannot be resolved on-site, and which have an impact on safety or the mission, will override the deployment. All issues will be resolved before flight.

9.2 Weather

1. Before each deployment, the operator/observer will ensure that he/she gathers enough information to become familiar with the weather situation existing throughout the area of deployment. The operator shall utilize FAA approved weather resources to obtain the latest and most current weather conditions.
2. If deemed necessary, an anemometer should be utilized to better estimate the wind speed and determine if it is within the capabilities of the airframe being flown.
3. Operators/Observers should use the Beaufort Scale when making deployment decisions in regards to wind conditions. No flight is allowed when wind exceeds a level four (4) on this scale.
4. The weather conditions reported for the operation shall be recorded in the pre-flight checklist.
5. The operator shall ensure that the flight will occur within FAA VFR weather requirements.

9.3 Documentation

1. Inspection and weather will be documented prior to flight within the log book.
2. After each flight, the operator will complete a statement documenting the UAS operations.

All flight logs should include the following information:

- Operator/PIC Name (Pilot in Command)
- Camera Operator (if present)
- Visual Observer(s) (if present)
- Who was at the flight controls if not the PIC (noted by a 'P' after name)
- Flight number (of that month)
- Date (e.g. 12/03, dd/mm)
- Time of day (morning, afternoon, noon (midday)). Noted by AM, PM or N

- Mission (client name or Division/Group)
- Airframe (model, e.g. Typhoon H)
- Location (e.g. H. Hills, Palisades, etc., or specific address)
- Weather (cloudy, clear skies, scattered clouds, etc.)
- Wind speed (approximate, e.g. 4G7knts, 4 knots Gusting 7 Knots based on Beaufort scale)
- '#' number of batteries (e.g. 4 batteries flown)
- M/T Type (Mission or Training. written down as M or T)
- Flight duration (total flight duration in whole minutes with all batteries and battery levels)
- Altitude (specifically, Max altitude or standard work altitude in feet)
- Notes (Debrief moment! What could have gone better?)
- Concerns/Issues (Debrief moment! safety/Flight OPS changes.)
- Significant concerns regarding safety or maintenance issues should be noted in the log and also reported in detail to the UAS Coordinator

9.4 Planning

1. The operator/observer shall familiarize themselves with all available information concerning the deployment including, but not limited to, the weather conditions, hazards, description of the incident, deployment goals, etc.
2. Operators will ensure that the location for take-off and emergency landing is adequate for a safe deployment.
 - a. The take-off/landing area should be clearly marked and identifiable with short cones or similar marking system if necessary.
 - b. At least one emergency landing area should be identified per deployment.
3. Operators & Visual Observers will ensure that they are aware of their surroundings in the event that an emergency landing is necessary. This includes the ability to recover the UAS.

9.5 Checklists

1. Operators shall utilize pre-flight, flight and post-flight checklists to ensure the highest level of safety for deployment.
2. Prior to flight, the flight log shall be initiated.
3. Operational checklists are included in Appendix 1 of this document.

9.6 Maintenance

1. Although there are few parts on the UAS that need servicing, it is necessary that the manufacturer's maintenance schedule is followed and properly documented.
2. Any issues that arise during maintenance that cannot be resolved by routine methods shall be forwarded to the manufacturer for further technical support.

9.7 Other

1. Operators/Observers will ensure that no items are attached to the UAS prior to flight that are not required for safe operation and to complete the mission goal.

10. Definitions

The following terms are defined as they apply to unmanned aerial system flight operations.

Absolute Ceiling: Maximum height at which a particular airplane can operate.

Acrobatic Flight: Maneuvers a pilot intentionally performs, involving abrupt altitude change and abnormal attitude or acceleration.

Aerial Work: Means an aircraft operation in which an aircraft is used for specialized services such as agriculture, construction, photography, surveying, observation and patrol search and rescue, aerial advertisement, etc.

Aircraft: Any contrivance now known or hereafter invented, used, or designed for navigation of or flight in the air.

Airport: Defined area on land or water, including any buildings and installations, normally used for aircraft takeoff, parking, and landing.

Airport Advisory Area: Area within 5 statute miles of an uncontrolled airport where a flight service station is located.

Airspeed: The speed of an aircraft relative to the air

Airworthy: Aircraft status indicating that it is suitable for safe flight

Alert Area: Alert areas are depicted on aeronautical charts to inform nonparticipating pilots of areas that may contain a high volume of pilot training or an unusual type of aerial activity. Remote pilots in command should be particularly alert when flying in these areas. All activity within an alert area must be conducted in accordance with CFRs, without waiver, and pilots of participating aircraft as well as pilots transiting the area must be equally responsible for collision avoidance. Alert areas contain special hazards that remote PICs must take into consideration when entering the areas.

Altimeter: Instrument that measures altitude using air pressure change with height, using sealed thin-walled metallic bellows as its sensitive element

Altitude: Height expressed in units of distance above a reference plane, usually above mean sea level or ground.

Anemometer: Any instrument for measuring the speed of wind

Attitude: Airplane's position determined by the inclination of the axes in relation to the horizon.

Autopilot: Units and components used to automatically control the aircraft.

Avionics: Avionics are the electronic systems used on aircraft, artificial satellites, and spacecraft. Avionic systems include communications, navigation, the display and management of multiple systems, and the hundreds of systems that are fitted to aircraft to perform individual functions.

Axis: Theoretical line extending through the center of gravity of an airplane in each major plane: these are the longitudinal, lateral, and vertical axis.

Balance: Condition of the aircraft load relative to the aircraft's center-of-gravity.

Buddy-Box System: A two-tier system, with one transmitter operating as the master controller while a second transmitter is linked or slaved to it allowing dual control of an aircraft. A switch provides instantaneous transfer of control from one transmitter to the other. This system is a means of achieving a position transfer of control from one pilot to another.

Category: Describes the certification, ratings, privileges, and limitations of airmen. Examples include: airplane, rotorcraft, glider, and lighter-than-air. Also refers to aircraft based on intended use or operating limitations. Examples include: transport, normal, utility, acrobatic, limited, restricted, and provisional.

Catenary: This wire curve that approximates the natural path of a wire strung between two points. Thus, the use of "catenary" to describe electric power lines.

Caution: An operating procedure, practice, or condition that may result in damage to equipment if not carefully observed or followed.

Caution Area: An area of defined dimensions within which the military training activities conducted, though not hazardous, are of interest to nonparticipating pilots.

Certificate of Waiver (COW) or Certificate of Authorization (COA): A COA is an authorization issued by the Air Traffic Organization to a public operator for a specific UAS activity. After a complete application is submitted, FAA conducts a comprehensive operational and technical review. If necessary, provisions or limitations may be imposed as part of the approval to ensure the UAS can operate safely with other airspace users. In most cases, FAA will provide a formal response within 60 days from the time a completed application is submitted. To better support the needs of its customers, FAA deployed a web-based application system. The UAS COA Online System provides applicants with an electronic method of requesting a COA or COW. Applicants need to obtain an account to access the online system.

Chart: Graphic representation of a section of the earth's surface specifically designed for navigational purposes (also called a map).

Checklist: List of items requiring the airman's attention for various flight operations.

Checkpoint: Geographical reference point used for checking the position of an aircraft in flight. As generally used, it is a well-defined reference point easily seen. Its exact position is known or plotted on the navigational chart, and was selected in pre-flight planning for use in checking aircraft position in flight.

Civil aircraft: an aircraft except a public aircraft.

Class "G" Airspace: This class of airspace is uncontrolled airspace is mostly used for a small layer of airspace near the ground, but there are larger areas of Class G airspace in remote regions of US flight operations may be conducted under instrument flight rules or visual flight rules (VFRs). Air traffic control has no authority but VFR minimums are to be known by pilots. Traffic information may be given as far as is practical in respect of other flights. Note: The United States does not use the International Civil Aviation Organization Class F airspace designation.

Class of Aircraft: Classification of aircraft within a category, differentiating between single-engine and multi-engine and land and water configurations.

Clearance (instrument flight rules): Authorization to follow a specified flight outline. Clearances are issued by the control agency within which the flight will operate, and are used to prevent collisions between aircraft.

Cloud: A visible cluster of minute water and/or ice particles existing in the atmosphere.

Compass: An instrument which indicates direction, measured clockwise from magnetic north.

Command and Control Link: Means the data link between the UAS and the control station for the purposes of managing the flight. Note: These links are the wireless means of connecting one location to another for transmitting or receiving data.

Control Station: An interface used by the remote pilot in command or the person manipulating the controls to control the flight path of the sUAS.

Controlled Airspace: This airspace of defined dimensions within which air traffic control services are provided. The level of control varies with different classes of airspace. Controlled airspace usually imposes higher weather minimums than are applicable in uncontrolled airspace. It is the opposite of uncontrolled airspace.

Course: Direction toward the destination as charted. A true course is measured from true north; magnetic course is measured from magnetic north.

Crew Member: Means a person assigned to duties essential to the operation of the unmanned

air vehicle system during flight time.

Crosswind: A wind blowing across the line of flight of an aircraft.

Danger Area: A specified area within or over which there may exist activities constituting a potential danger to aircraft.

Danger Tree: Any tree on or off the right of way that could contact electric supply lines.

Daylight Operations: Part 107 prohibits operation of a sUAS at night, which is defined in part 1 as the time between the end of evening civil twilight and the beginning of morning civil twilight, as published in the Air Almanac, converted to local time. In the continental United States, evening civil twilight is the period of sunset until 30 min after sunset and morning civil twilight is the period of 30 min before sunrise until sunrise. In Alaska, the definition of civil twilight differs and is described in the Air Almanac. The Air Almanac provides tables which are used to determine sunrise and sunset at various latitudes.

Drag: The force opposing the movement of the airplane through the air. Induced drag—the part of the total drag on an airplane produced by the flow of air over lifting surfaces. Parasite drag—drag produced by attachments to the aircraft and no-lift devices such as landing gear and struts.

Drift: Deflection of an airplane from its intended course by action of the wind.

Drone NOTAM (DROTAM): Aviation charting website SkyVector has added a useful new feature—graphical depictions of drone NOTAMs, which it calls “DROTAMs”—that show dimensions of drone/UAS airspace and information about activity times and operating altitudes. DROTAMs are available as a graphical layer on any kind of chart available from SkyVector. (Aviation International News (AIN), 2016)

Final Approach: A flight path of a landing aircraft in the direction of landing.

First-Person View (FPV): Also known as remote-person view or simply video piloting, FPV is a method used to control a radio-controlled vehicle from the driver's or remote pilot in command's viewpoint. Most commonly it is used to pilot a radio-controlled aircraft or other type of UAS. The vehicle is either driven or piloted remotely from a first-person perspective via an onboard camera, fed wirelessly to video FPV goggles or a video monitor. More sophisticated setups include a pan-and-tilt gimbaled camera controlled by a gyroscope sensor in the pilot's goggles, and with dual onboard cameras enabling a true stereoscopic view.

Flare Out: To level off just above the landing area by decreasing the rate of descent and airspeed.

Flight Control Surface: Aircraft flight control surfaces allow a remote pilot in command to adjust and control the aircraft's flight attitude. The development of effective flight controls is what allowed stable flight.

Flight Envelope: In aerodynamics, the flight envelope, service envelope, or performance envelope of an aircraft refers to the capabilities of a design in terms of airspeed and load factor or altitude. The term is somewhat loosely applied, and can also refer to other measurements such as maneuverability. When a plane is pushed, for instance by diving it at high speeds, it is said to be flown “outside the envelope,” something considered rather dangerous.

Flight Plan: Specified information relating to the intended flight of an aircraft that is filed orally or in writing.

Flight Termination System: Means the system that, upon initiation, terminates the flight of a UAS in a manner so as not to cause significant damage to property or severe injury to persons on the ground.

Flight Time: The time from the moment the aircraft first moves under its own power for the purpose of flight until the moment it comes to rest at the next point of landing.

Fly-away: Means an interruption or loss of the Command and Control link where the pilot is

unable to affect control of the aircraft and the aircraft is longer following its preprogrammed procedures resulting in the UAS not operating in a predictable or planned manner.

Glide: Sustained forward flight in which speed is maintained only by the loss of altitude.

Gross Weight: The total weight of the UAS ready for flight. This weight consists of aircraft basic empty weight, fuel, cargo, and removable equipment.

Ground Speed: The speed of the aircraft relative to the ground.

Handover: Means the act of passing pilot-in-command responsibilities from one control station or pilot to another.

Hazard Tree: A structurally unsound tree that could strike electric supply lines when it fails.

Heading: The direction in which the nose of the airplane points during flight. Corrections made to compensate for wind will cause differences to arise between track and heading. If no change is made in heading to compensate for wind, differences will arise between track and course as the aircraft drifts.

In-Flight Emergency: An in-flight emergency is an unexpected and unforeseen serious occurrence or situation that requires urgent, prompt action. In case of an in-flight emergency, the remote pilot in command (PIC) is permitted to deviate from any rule of Part 107 to the extent necessary to respond to that emergency. A remote PIC who exercises this emergency power to deviate from the rules of Part 107 is required, upon FAA request, to send a written report to the FAA explaining the deviation. Emergency action should be taken in such a way as to minimize injury or damage to property.

IFR Conditions: Weather conditions below the minimum prescribed for flight under visual flight rules.

Inertial Measurement Unit: An electronic device that measures and reports a body's specific force, angular rate, and sometimes the magnetic field surrounding the body using a combination of accelerometers and gyroscopes and sometimes also magnetometers. Inertial measurement units are typically used to maneuver aircraft, including unmanned aerial systems (UASs).

Instrument Flight Rules: When weather conditions are below the minimums prescribed for visual meteorological conditions, pilots must fly in accordance with instrument flight rules (IFRs). Pilots may elect to fly an IFR flight plan during visual flight rule conditions.

International Civil Aviation Organization (ICAO): An international body in the field of aeronautics. ICAO standards and recommended practices are not binding: final decision rest with the sovereign state.

Knot: A unit of speed equal to 1 NM per hour.

Landing: The act of terminating flight and bringing an airplane to rest.

Landing area: a place on land or water, including an airport or intermediate landing field, used, or intended to be used, for the takeoff and landing of aircraft, even when facilities are not provided for sheltering, servicing, or repairing aircraft, or for receiving or discharging passengers or cargo

Landing Gear: The under structure which supports the weight of the stationary airplane.

Log: To make a flight-by-flight record of all operations of an airplane, engine, or remote PIC, listing flight time, area of operation, and other pertinent information. **Lost Link:** Means the loss of Command and Control link contact with the unmanned air vehicle such that the pilot can no longer manage the aircraft's flight. In this eventuality, many UASs will automatically initiate return-to-base profiles.

Low Frequency: A frequency in the 30–300 kHz band normally received by an automatic direction finder navigation radio.

Magnetic Course: The true course or track, corrected for magnetic variation between two

points on the surface of the earth.

Maneuvering Speed: Maximum speed at which the flight controls can be fully deflected without damage to the aircraft structure. It may be found in the airplane flight manual and is useful for guidance in performing flight maneuvers, or normal operations in severe turbulence.

Maximum Gross Weight: The maximum weight authorized by FAA for operation of the aircraft.

May: “May” and “need not” mean procedure is optional.

Mean Sea Level (MSL): The average level of the sea; used to compute barometric pressure to determine altitude.

Military Operations Area (MOA): According to FAA, a MOA is “airspace established outside Class A airspace to separate or segregate certain nonhazardous military activities from instrument flight rule traffic and to identify for visual flight rule traffic where these activities are conducted.” Similar structures exist under international flight standards. These are designed for routine training or testing maneuvers. Areas near actual combat or other military emergencies are generally designated as restricted airspace.

Mission Payload Operator (MPO): Supports UAS flight operations by performing duties as an MPO for a particular academic, industrial, or technical area. Controls high priority UAS mission intelligence collection sensors. Controls and manages data as required. The MPO is responsible for assisting the remote pilot in command in coordinating ground and flight operations including mission planning, execution, and debriefing; safe operation of the aircraft; aircrew resource management; and customer coordination and coordination with the public. An MPO may also be referred to as a sensor operator.

Model Aircraft: A UAS that is (1) capable of sustained flight in the atmosphere, (2) flown within visual line of sight of the person operating the aircraft, and (3) flown for hobby or recreational purposes.

National Airspace System (NAS): “The airspace, navigation facilities, and airports of the United States along with their associated information, services, rules, regulations, policies, procedures, personnel, and equipment. It includes components shared jointly with the military. It is one of the most complex aviation systems in the world and services air travel in the United States and over large portions of the world’s oceans. As of February 2015, NAS was transitioning to a new system known as NextGen, which applies nonradar surveillance of aircraft equipped with GPS satellite-based navigation systems continuously reporting their locations. Aircraft also receive the broadcast location of others nearby, which improves safety. The system also allows pilots to use more precise and efficient landing paths, saving time and fuel. NextGen is being phased in piece by piece. About 14,500 air traffic controllers, 4,500 aviation safety inspectors, and 5,800 technicians operate and maintain services for NAS. It has more than 19,000 airports and 600 ATC facilities. In all, there are 41,000 NAS operational facilities. In addition, there are over 71,000 pieces of equipment, ranging from radar systems to communication relay stations. On average, about 50,000 flights use NAS services each day.”

National Security Area (NSA): A designated airspace through which flight is discouraged for reasons of national security. Flight through NSAs is not prohibited, and no special advance clearance or authorization need be obtained to enter them. However, remote pilots in command are strongly encouraged to either stay clear of NSAs or obtain prior authorization to pass through them to reassure the controlling agency that no threat to national security exists. NSAs are a compromise between normal airspace and restricted or prohibited airspace. NSAs can be temporarily converted into restricted airspace by NOTAMs. On visual flight rule sectional charts, NSAs are delimited by a heavy dashed magenta border and a special notation.

Nautical Mile (NM): Unit of distance used in navigation, equaling 6,080 ft; the minimum length of one minute of longitude on the equator; about one minute of latitude; 1.15 statute miles.

Navigation Light: Any one of a group of lights mounted on an aircraft to make its dimensions, position, and direction of motion visible at night or during poor visibility.

Note: An operating procedure, practice, or condition that must be emphasized.

Notice to Airmen (NOTAM): A NOTAM is a notice filed with an aviation authority to alert aircraft pilots of potential hazards along a flight route or at a location that could affect the safety of the flight. NOTAMs are unclassified notices or advisories distributed by means of telecommunication that contain information concerning the establishment, conditions or change in any aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to personnel and systems concerned with flight operations. NOTAMs are created and transmitted by government agencies and airport operators under guidelines specified by Annex 15: Aeronautical Information Services of the Convention on International Civil Aviation (CICA). The term NOTAM came into common use rather than the more formal "Notice to Airmen" following the ratification of the CICA, which came into effect on 4 April 1947. Notices to Airmen were normally published in a regular publication by each country's air authorities (e.g., in *Flight Magazine* in the UK). Several developments and amendments to the CICA have resulted in the more automated system available today.

Obstruction Light: A light, or a group of lights, usually red, mounted on a surface structure or natural terrain to warn pilots of the presence of a flight hazard.

Operational Risk Management (ORM): ORM is defined as a continual cyclic process which includes risk assessment, risk decision making, and implementation of risk controls, which results in acceptance, mitigation, or avoidance of risk. ORM is the oversight of operational risk, including the risk of loss resulting from inadequate or failed internal processes and systems; human factors; or external events.

Operator: In respect of an aircraft, means the person that has possession of the aircraft or the UAS system, as owner, lessee or otherwise.

Owner: In respect of an aircraft, means the person who has legal custody and control of the aircraft.

Park Flyer: "The term 'park flyer' denotes a class of small, primarily electric-powered, radio-controlled aircraft, so named because their size enables some of them to be operated within the confines of a large public park. Some are slow and docile enough to fly within an enclosed area such as a gymnasium, or even a living room, while others require the open space needed for larger models due to size and/or speed. Because of their size and relative ease of setup, ready-to-fly park flyers are among the most popular class of remote control aircraft for beginners and advanced pilots alike."

Payload: Means all elements of the aircraft that are not necessary for flight but are carried for the purpose of fulfilling specific mission objectives. This may include subsystems such as intelligence and surveillance assets, communication relay equipment, sensors, cargo, and cameras.

Person Manipulating the Controls: A person other than the remote pilot in command (PIC) who is controlling the flight of a UAS under the supervision of the remote PIC.

Pilot: A person holding a valid pilot certificate issued by the FAA.

Pilotage: Navigation by visual reference to landmarks.

Pitch: The blade angle of a propeller. Also, the movement of an aircraft about its lateral axis.

Positive Control: Control of all air traffic, within designated airspace, by air traffic control.

Prohibited Airspace: "Refers to an area (volume) of airspace within which flight of aircraft is not allowed, usually due to security concerns. It is one of many types of special use airspace

designations and is depicted on aeronautical charts with the letter “P” followed by a serial number. It differs from restricted airspace in that entry is typically forbidden at all times from all aircraft and is not subject to clearance from air traffic control or the airspace’s controlling body. According to FAA, “Prohibited areas contain airspace of defined dimensions identified by an area on the surface of the earth within which the flight of aircraft is prohibited. Such areas are established for security or other reasons associated with the national welfare. These areas are published in the *Federal Register* and are depicted on aeronautical charts.” Some prohibited airspace may be supplemented via NOTAMs. Aircraft violating or about to violate prohibited airspace will often be warned beforehand on 121.5 MHz, the emergency frequency for aircraft.”

Propeller: Device for propelling an aircraft, with blades mounted on an engine-driven shaft that, when rotated, produces a thrust approximately perpendicular to its plane of rotation.

Radio Line of Sight: Means the limit of direct point-to-point contact between a transmitter and a receiver given the equipment being used and the prevailing conditions.

Range Maximum: Maximum distance a given aircraft can cover under given conditions by flying at the most economical speed and altitude at all states of the flight.

Ready to Fly: Ready-to-fly (RTF) model airplanes come preassembled and usually only require wing attachment or other basic assembly. Typically, everything that is needed is provided, including the transmitter, receiver, and battery. RTF airplanes can be up in the air in just a few minutes and have all but eliminated assembly time (at the expense of the aircraft model’s configuration options.)

Recovery: Means the phase of a UAS flight that involves the return of an aircraft to the ground or to base.

Remote Pilot in Command (Remote PIC or Remote Pilot): A person who holds a remote pilot certificate with a sUAS rating and has the final authority and responsibility for the operation and safety of a sUAS under Part 107. The remote PIC is responsible for coordinating ground and flight operations including mission planning, execution, and debriefing; safe operation of the aircraft; aircrew resource management; along with customer coordination and coordination with the public.

Restricted Airspace: Restricted airspace is an area (volume) of airspace typically used by the military in which the local controlling authorities have determined that air traffic must be restricted (if not continually prohibited) for safety or security concerns. It is one of many types of SUA designations and is depicted on aeronautical charts with the letter “R” followed by a serial number. According to the FAA: “Restricted areas denote the existence of unusual, often invisible, hazards to aircraft such as artillery firing, aerial gunnery, or guided missiles. Penetration of restricted areas without authorization from the using or controlling agency may be extremely hazardous to the aircraft and its occupants.” Restricted airspace zones may not be active (“hot”) at all times; in such cases, there are typically schedules of local dates and times available to aviators specifying when the zone is active, and at other times, the airspace is subject to normal visual flight rule/instrument flight rule operation for the applicable airspace class. A few zones are activated by NOTAM.

Rhumb Line: Line drawn on a chart between points for navigational purposes. In practice, it is the line on the map which the pilot attempts to follow.

Roll: Movement of an aircraft about its longitudinal axis.

Rotary Wing: A rotorcraft, or rotary-wing aircraft, is a heavier-than-air flying machine that uses lift generated by wings, called rotary wings or rotor blades, that revolve around a mast. Several rotor blades mounted on a single mast are referred to as a rotor. Rotorcraft generally include those aircraft where one or more rotors are required to provide lift throughout the entire flight.

Route: Defined path, consisting of one or more courses, which an aircraft traverses in a horizontal plane over the surface of the earth.

Runway: Strip, either paved or improved, on which takeoffs and landings are effected.

Separation: In air traffic control, the spacing of aircraft to achieve safe and orderly movement in flight and while landing and taking off.

Shall: Means a procedure that is mandatory.

Should: Means a procedure that is recommended.

Situational Awareness: Situational awareness is the perception of environmental elements with respect to time or space, the comprehension of their meaning, and the projection of their status after some variable such as time or a predetermined event has changed. It is also a field of study concerned with understanding the environment critical to decision makers in complex, dynamic areas from aviation, air traffic control, ship navigation, power plant operations, military command and control, and emergency services such as fire-fighting and policing to more ordinary but nevertheless complex tasks such as driving an automobile or riding a bicycle.

Slant Range: The line-of-sight distance between two points not at the same elevation.

Small Unmanned Aircraft: An aerial vehicle weighing less than 55 lb, including everything that is onboard or otherwise attached to the aircraft, that can be flown without the possibility of direct human intervention from within or on the aircraft.

Small Unmanned Aerial System: A small unmanned aircraft (sUAS) and the associated elements (including communication links and the components that control the sUA) that are required for the safe and efficient operation of the sUAS in the National Airspace System.

Special Use Airspace: "An area designated for operations of a nature such that limitations may be imposed on aircraft not participating in those operations. Often these operations are of a military nature. The designation of 'SUA' identifies for other users the areas where such activity occurs, provides for segregation of that activity from other users, and allows charting to keep airspace users informed of potential hazards. Most SUAs are depicted on aeronautical charts, and FAA maintains a page showing the current status of most SUAs. Flights within restricted areas are only allowed with specific FAA clearance and may be subject to restrictions, while in prohibited areas flights are forbidden except in emergency situations. Flying in military operations areas or 'Warning Areas' is allowed by nonmilitary aircraft without clearance but can be hazardous."

Special Visual Flight Rule (VFR) Conditions (special VFR minimum weather conditions): Weather conditions which are less than basic VFR weather conditions and which permit flight under VFRs in a control zone.

Spin: Prolonged stall in which an airplane rotates about its center of gravity while it descends, usually with its nose well down.

Spiral: Prolonged gliding or climbing turn during which at least 360° change of direction is affected.

Stability: Tendency of an airplane in flight to remain in straight, level, upright flight, or to return to this attitude if displaced, without attention of the pilot.

Stall: Flight maneuver or condition caused by an excessive angle of attack, which the air passing over and under the wings stops providing sufficient lift to hold the aircraft aloft.

Statute Mile: 5,280 ft or 0.867 NM.

Subject Matter Expert (SME): Supports UAS flight operations by performing duties as an SME for a particular academic, industrial, or technical area. The SME assists in the technical aspects of UAS mission operation and collection (e.g., sensor work). The SME is responsible for assisting the remote pilot in command in coordinating ground and flight operations including mission planning, execution, and debriefing; safe operation of the aircraft; aircrew resource

management; along with customer coordination and coordination with the public.

Temporary Flight Restriction (TFR): A TFR is a geographically limited, short-term, airspace restriction, typically in the United States. TFRs often encompass major sporting events, natural disaster areas, air shows, space launches, and presidential movements. Before the September 11, 2001, attacks, most TFRs were in the interest of safety to flying aircraft, with occasional small restrictions for presidential movements. Since the September 11 attacks, TFRs have been routinely used to restrict airspace for 30 NM around the president, with a 10 NM (20 km) radius no-fly zone for nonscheduled flights. They are also available to other important people such as presidential and vice-presidential candidates. The responsibility for screening requests for TFRs and for subsequently granting or denying them lies with the FAA Office of System Operations Security.

Thrust: Forward force on an airplane in the air provided by the engine.

Track: Flight path made good over the ground by an aircraft. A track may be called a course when in reference to the charted route and is described in terms of direction from north.

Transponder: Airborne radar beacon receiver-transmitter which receives radio signals from all interrogators on the ground and selectively replies with specific radio wave pulses to only those interrogations being received on the specific radio frequencies to which it is set to respond.

True Altitude: The altitude above mean sea level.

Turbulence: Irregular motion of the atmosphere produced when air flows over a comparatively uneven surface, such as the surface of the earth, or when two currents of air flow past or over each other in different directions or at different speeds.

Uncontrolled Airspace: Airspace where an air traffic control service is not deemed necessary or cannot be provided for practical reasons. According to the airspace classes set by the International Civil Aviation Organization, both class F and class G airspace are uncontrolled. It is the opposite of controlled airspace. Air traffic control does not exercise any executive authority in uncontrolled airspace, but may provide basic information services to aircraft in radio contact. Flight in uncontrolled airspace will typically be under visual flight rules. Aircraft operating under instrument flight rules should not expect separation from other traffic; however, in certain uncontrolled airspace, this might be provided on an 'as far as is practical' advisory basis.

Unmanned Aircraft: An aircraft operated without the possibility of direct human intervention from within or on the aircraft.

Useful Load: In airplanes, the difference, in pounds, between the empty weight and the maximum authorized gross weight.

Utility Forest: Consists of the land base supporting tree species that could now, or in the future, interfere with safe, reliable electric service.

Vegetation Management: A broad term that includes tree pruning; brush removal using power saws and mowers; the judicious use of herbicides and tree growth regulators; hazard tree identification and removal; the implementation of strategies to minimize the establishment of incompatible species under and near power lines; and the control of weeds.

Very High Frequency: Frequency band from 30 to 300 MHz.

Visibility: In weather observing practice, the greatest distance in a given direction at which it is possible to see and identify with the unaided eye (or the instrumentally determined equivalent) prominent unlighted objects by day and prominent lighted objects at night. For weather observing purposes, visibility is categorized as flight visibility, ground visibility, or runway visual range.

Visual Flight Rules for UASs: When weather conditions are above the minimums prescribed

for visual meteorological conditions, remote PICs may fly with visual reference to the UAS and other structures without continuous referral to other visual or locating aids.

Visual Meteorological Conditions (VMCs): VMCs refers to an aviation flight category in which visual flight rules flight is permitted—that is, conditions in which remote pilots in command have sufficient visibility to fly the aircraft maintaining visual separation from terrain and other aircraft. They are the opposite of instrument meteorological conditions (IMCs). The boundary criteria between IMCs and VMCs are known as the VMC minima and are defined by visibility, cloud ceilings (for takeoffs and landings), and cloud clearances.

Visual Observer (VO): A person acting as a flight crew member who assists the remote pilot in command (PIC) and the person manipulating the controls to see and avoid other air traffic or objects aloft or on the ground. The VO is responsible for supporting the remote PIC in coordinating ground and flight operations including mission planning, execution, and debriefing; safe operation of the aircraft; aircrew resource management; along with customer coordination and coordination with the public. A VO is sometimes referred to as a “Spotter.”

Warning: An operating procedure, practice, or condition that may result in injury or death if not carefully observed or followed.

Warning Areas: A warning area is airspace of defined dimensions, extending from 3 NM outward from the coast of the United States that contains activity that may be hazardous to nonparticipating aircraft. The purpose of such warning areas is to warn nonparticipating remote PICs of the potential danger. A warning area may be located over domestic or international waters or both.

Waypoint: An intermediate point on a route or line of travel. (Merriam-Webster, 2016)

Weather Depiction Chart: Weather analysis, portraying areas of precipitation and obstructions to vision, cloud cover, and cloud heights.

Wind Shear: The change of either wind speed or direction or both, in any direction, conventionally expressed as vertical wind shear or horizontal wind shear.

Wind Sock: Fabric sleeve, mounted aloft at an airport or operating area used to estimate wind direction and velocity.

Will: Indicates futurity and never indicates any degree of requirement for application of a procedure.

Yaw: To turn about the vertical axis. An airplane is said to yaw as the nose turns without the accompanying appropriate bank.

11. Checklists

11.1 GENERAL SAFETY REQUIREMENTS AND WARNINGS (APPLICABLE FOR UAS)

- Keep your hands, face and other parts of your body away from the spinning propellers/rotor blades and other moving parts at all times. Keep items that could impact or become entangled away from the propellers/rotor blades including debris, parts, tools, loose clothing, etc.
- Always operate your aircraft in open areas that are free from people, vehicles and other obstructions. Never fly near or above crowds, airports or buildings.
- To ensure proper operation and safe flight performance never attempt to operate your aircraft nearby buildings or other obstructions that do not offer a clear view of the sky and can restrict GPS reception.
- Do not attempt to operate your aircraft in areas with potential magnetic and/or radio interference including areas nearby broadcast towers, power transmission stations, high voltage power lines, electrical storms, etc.
- Always keep a safe distance in all directions around your aircraft to avoid collisions and/or injury. This aircraft is controlled by a radio signal subject to interference from many sources outside your control. Interference can cause momentary loss of control.
- To ensure proper and safe operation of the automatic landing function in Home Mode you must start the motors with the aircraft in a position that has at least 10 feet (approximately 3 meters) of clear and open space around it and achieve a proper GPS lock.
- Do not attempt to operate your aircraft with any worn and/or damaged components, parts, etc. (including, but not limited to, damaged propellers/rotor blades, old batteries, etc.).
- Never operate your aircraft in poor or severe weather conditions including heavy winds, precipitation, lightning, etc.
- Always operate your aircraft starting with a fully charged battery. Always land as soon as possible after the first level low voltage battery warning or land immediately after the second level low voltage battery warning (as indicated by the vibrations and audible alerts from the transmitter/personal ground station).
- Always operate your aircraft when the voltage of the battery in the transmitter/personal ground station is in a safe range (as indicated by the battery charge status icon on the screen of the transmitter/personal ground station).
- Always keep the aircraft in clear line of sight and under control, and keep the transmitter/personal ground station powered on while the aircraft is powered on.
- Always move the throttle control stick down fully and turn off the motors in the event the propellers/rotor blades come into contact with any objects.
- Always allow components and parts to cool after use before touching them and flying again.
- Always remove batteries after use and store/transport them per the corresponding

guidelines.

- Avoid water exposure to all electronic components, parts, etc. not specifically designed and protected for use in water. Moisture causes damage to electronic components and parts.

11.2 EQUIPMENT / UAV / DRONE MONTHLY INSPECTION (TO BE CONDUCTED IN A CONTROLLED ENVIRONMENT)

- Walk-around
- Crack in joints and structural members
- Loose or damaged screws, ties, fasteners, straps
- Loose or damaged wiring
- Loose or damaged connections (solder, plugs, etc.)
- Inspect prop mounts and screws and apply slight counter pressure on arms to check for loosened components
- inspect/clean camera lens and insure it is secured and contacts are firmly attached
- Camera settings are correct (still images, video, framerate)
- Inspect FPV goggles and verify functionality
- Batteries are fully charged, properly seated and secured
- Obstacle avoidance system and equipment functioning and free of damage/obstructions
- Test RTH (Return To Home)
- Check for updates to Firmware
- Verify that firmware Airport proximity detection is functioning
- Props are smooth and free of damage / defect (check blade, surface and hub)
- Prop adapters are tight / secure
- Ensure voltage or low battery alarms are connected and audible
- Ensure motor start and stop control settings are functioning and are properly configured
- Correct model is selected in transmitter (if applicable)
- Check RC transmitter shows the right range and centering for all sticks
- Perform compass/GPS calibration
- Perform IMU (Inertial Measurement Unit) calibration
- Perform range test
- Verify that altitude and range telemetry are accurate
- If any above the inspections indicate damage or a malfunction, any planned mission should be aborted and the damage/defect should be documented in writing and reported to the UAS Coordinator.

11.3 MISSION PLANNING

- Can this mission be conducted in compliance with FAA Part 107?
- Can this mission be successfully completed with the available UAS?
- All actions and contingencies for the mission planned.
- Contingency planning should include safe routes in the event of a system failure, degraded performance, or lost communication link, if such a failsafe exists.
- Prepare as much as possible in the office by reviewing Google Earth,

Navigate/Pictometry, and Aviation weather reporting websites.

- Review the flight location with B4UFly or AirMap applications to determine proximity to airports and heliports
- Prepare for automated mapping missions with a completed preliminary flight plan
- Determine if a camera operator is needed
- Determine how many VO's are needed for safe and efficient operations
- Verify that appropriate staffing can be allocated to the mission
- Mission plans and flight plans should be shared with the entire mission flight crew and other operators in the vicinity.
- If the mission will have the UAS flying within five miles of an airport, obtain a FAA airspace authorization from the FAA online portal
- If the mission will have the UAS flying over people or moving vehicles, obtain a FAA Waiver, or notify the UAS Coordinator the mission cannot be conducted
- Verify that any applicable FAA approved waiver/authorization is current and carried with the UAS

11.4 AREA & ENVIRONMENT (FOR SITE EVALUATIONS PRIOR TO MISSION)

- Hazards / Site selection
- Check for wires / cables
- Animals
- People / Bystanders
- Property in the vicinity
- Air traffic in the vicinity
- Site is away from nonessential participants
- Ability to maintain adequate buffer zones between aircraft and personnel
- Minimize departures and landings over populated areas
- Consider local topography, ensuring a visible line of sight towards the UAS at all times. Ensure the telemetry connection is not obstructed.
- Investigate potential alternative landing sites in case take-off site is obstructed.
- Psychological/physiological considerations (are you well rested, rushed, "get there-itis", are you being pressured by client, at least 8 hours 'bottle to throttle'?)
- Weather considerations: Temperature, Visibility, Precipitation, Wind Speed, Upper winds / at altitude
- Rotor obstacle clearance
- Notify any bystanders or nearby property owners of your intentions (permission)
- Discuss flight plan with your co-pilot, camera operator, and visual observers
- If flying in controlled airspace, do you have a proper airspace authorization or waiver?
- Can you reach authorities in the case of an emergency?
- Do you need to maintain communication? Ensure flight crew has the necessary number of radios.
- First Aid Kit stocked, readily accessible and visible to anyone in the area.

11.5 PUBLIC AWARENESS

- Be courteous and polite
- You are an ambassador and your actions will affect other pilots and the industry in general
- Be professional / appear professional
- If the flight plan will have the aircraft hovering over or adjacent to private property, attempt to notify and inform a resident mission intent, duration, and scope

11.6 PRE-FLIGHT / RUN-UP

- Verify that any applicable FAA approved waiver is current and a copy is onsite
- Verify FAA Remote Pilot Certification is current and onsite
- Verify all transmitter, on-board aircraft and camera batteries are fully charged; (confirm charges)
- Start Flight Log
- Ensure no frequency conflicts with both video and transmitter / receiver
- Check all control surfaces for signs of damage, loose hinges, and overall condition; Look over the rotors to ensure they are in good structural condition and properly secured;
- Check motor and mounting attachment points to the airframe;
- Study propellers / mounting hardware (tight) / rotor blades for chips and deformation;
- Check the landing gear for damage and function
- Check obstacle avoidance sensors for any damage or obstruction
- Test electrical connections, plugged in and secure
- Ensure photo / video equipment mounting system is secure and operational.
- Verify GPS signal strength and calibration, calibrate the GPS if necessary
- Verify IMU calibration, calibrate if necessary
- Check UAS markings for accuracy and legibility
- UAS is in a level location safe for takeoff
- For automated mapping missions: review preliminary flight plan with crew (modify if necessary based on field conditions),
- PPE (Personal Protective Equipment) check for all flight crew (hardhats and safety vests required at a minimum)
- Radio check of all flight crew
- Position VO's as necessary
- Power up ground station/transmitter
- FPV / Power up Video receiver / goggles
- Remove lens cap/cover and confirm that the appropriate lens filter is in place
- SD camera memory clear and inserted into the camera
- Turn on UAS and camera system
- Ensure led indicators and audible tones are correct
- Camera settings are correct (still images, video, framerate)

- Start recording video (at least low resolution, or highest if mission specified)
- All transmitter controls move freely in all directions
- All transmitter trims in neutral position
- All transmitter switches in correct position(typically away)
- Transmitter throttle to zero/neutral/hover
- Radio transmitter on
- Timer on (if applicable)
- FPV, confirm video is in monitor / goggles
- Scan for nearby cars/people/animals
- Clearly define a 30-foot setback distance from the take-off area and flight path for other City personnel and any bystanders
- Say "CLEAR!"
- Power on rotors and take-off
- Increase throttle slightly listening for any abnormalities
- Short 20-30 second hover at 3-5 feet (listen for vibrations / loose items)
- Confirm power levels are correct
- Test flight controls for ascent/decent, rotation, and four-way directional flight
- Verify obstacle avoidance system is on
- Test obstacle avoidance system to verify that the aircraft stops or alters flight path to avoid obstacles and the audible alarm sounds
- Proceed with mission

11.7 IN-FLIGHT

- Basics: If flying manually, always keep your fingers on the controller/transmitter.
- Never let the UAS out the sight of the flight crew even for a second.
- If handing off Visual Observation to another person, utilize a call/respond to verify that eyes are on the aircraft before looking anywhere else
- Fly the UAS in the direction that the obstacle avoidance system is facing
- Climb to a safe altitude away from potential hazards and to reduce noise pollution.
- Keep aircraft at a safe operating distance from people, electric utility lines and buildings.
- Only fly over people with a current FAA approved waiver that is valid for the mission
- If the UAS must be flown over buildings or people, use a lightweight UAV and maintain a safe altitude for recovery and make every effort to minimize exposure.
- Fly above the roof line of structures on private property whenever possible
- Spotter: Use a Visual Observer, or spotter whenever possible and appropriate, and ALWAYS when flying by First Person View (FPV).
- Do not fly UASs within distance defined by local laws of any private/commercial airport/helipad
- Do not fly around a pre-existing UAS flying site without a frequency-management agreement.

- Do not interfere with operations and traffic patterns at any airport
- Return to land with 20% or more battery charge
- Landing: Regardless of whether of a manual or automated UAS landing, scan landing area for potential obstruction hazards.
- Announce out loud “Preparing to Land”.
- Carefully land the aircraft away from obstructions and people.

11.8 POST-FLIGHT (ONSITE)

- Stop recording video after landing
- Shutting Down: Turn the power off to the aircraft and/or disconnect the batteries.
- Turn off the transmitter.
- Turn the power off to the photo equipment.
- Visually check aircraft for signs of damage and/or excessive wear.
- Secure the aircraft.
- Check pictures/video: Verify that the UAS camera actually took the pictures/video.
- LOG FLIGHT

11.9 FLIGHT LOGS

All flight logs should include the following information:

- PIC Name (Pilot in Command)
- Camera Operator (if present)
- Visual Observer(s) (if present)
- Who was at the flight controls if not the PIC (denoted by a ‘P’ after their name)
- Month
- Flight number (of that month)
- Date (e.g. 12/03, dd/mm)
- Time of day (morning, afternoon, noon (midday). Written down by AM, PM or N)
- Mission (client name or Division/Group)
- Airframe (model, e.g. Typhoon H)
- Location (e.g. H. Hills, Palisades, etc., or specific address)
- Weather (cloudy, clear skies, scattered clouds, etc.)
- Windspeed (approximate, e.g. 4G7knts, 4 knots Gusting 7 Knots)
- ‘#’ number of batteries (e.g. 4 batteries flown)
- MT Type (Mission or Training. written down as M or T)
- Flight duration (total flight duration in whole minutes with all batteries)
- Altitude (AGL) (specifically, Max AGL or standard work AGL in feet)
- Notes (Debrief moment! What could have gone better from a operators perspective)
- Concerns/Issues (Debrief moment! safety/Flight OPS changes.)
- Significant concerns regarding safety or maintenance issues should be noted in the log and also reported in detail to the UAS Coordinator in a written report

11.10 POST-FLIGHT (REPORTING REQUIREMENTS)

- Prepare a written report of any observed damage to forward to the UAS Coordinator
- Prepare a written report of any significant incident of note (e.g. UAS crash, public

concerns/complaints, safety concerns) etc., to forward to the UAS Coordinator

- If property damage occurs of \$500 or more (other than to the UAS), or a serious injury occurs, it MUST be reported to the FAA

11.11 EQUIPMENT STORAGE AND BATTERY HANDLING

- At the beginning of a day with a planned mission or training exercise, charge all the available batteries.
- At the end of the flight day, check the charge levels of the batteries. If the charge level of any battery is over approximately 50% charged, utilize the aircraft to discharge to that approximate level. Do not leave the batteries in an over discharged state.
- Do not store the battery or aircraft in a hot garage, car or direct sunlight. If stored in a hot garage or car as the battery can be damaged or even catch fire.
- Lock the batteries and aircraft in a cabinet when not in use or being prepped for flight.
- Store the LiPo batteries at room temperature and in a dry area for best results.
- You must always charge the LiPo battery in a safe, well-ventilated area away from flammable materials.
- Always inspect the battery, charger and power supply before charging.
 - If at any time the LiPo battery begins to balloon or swell, discontinue charging or discharging immediately. Quickly and safely disconnect the battery, then place it in a safe, open area away from flammable materials to observe it for at least 15 minutes. Continuing to charge or discharge a battery that has begun to balloon or swell can result in a fire. A battery that has ballooned or swollen even a small amount must be removed from service completely.
- Never charge the LiPo battery unattended at any time. When charging the battery you must always remain in constant observation to monitor the charging.
- When charging, transporting or temporarily storing the LiPo battery the temperature range should be from approximately 40–120° F (5–49° C).

11.12 DATA HANDLING

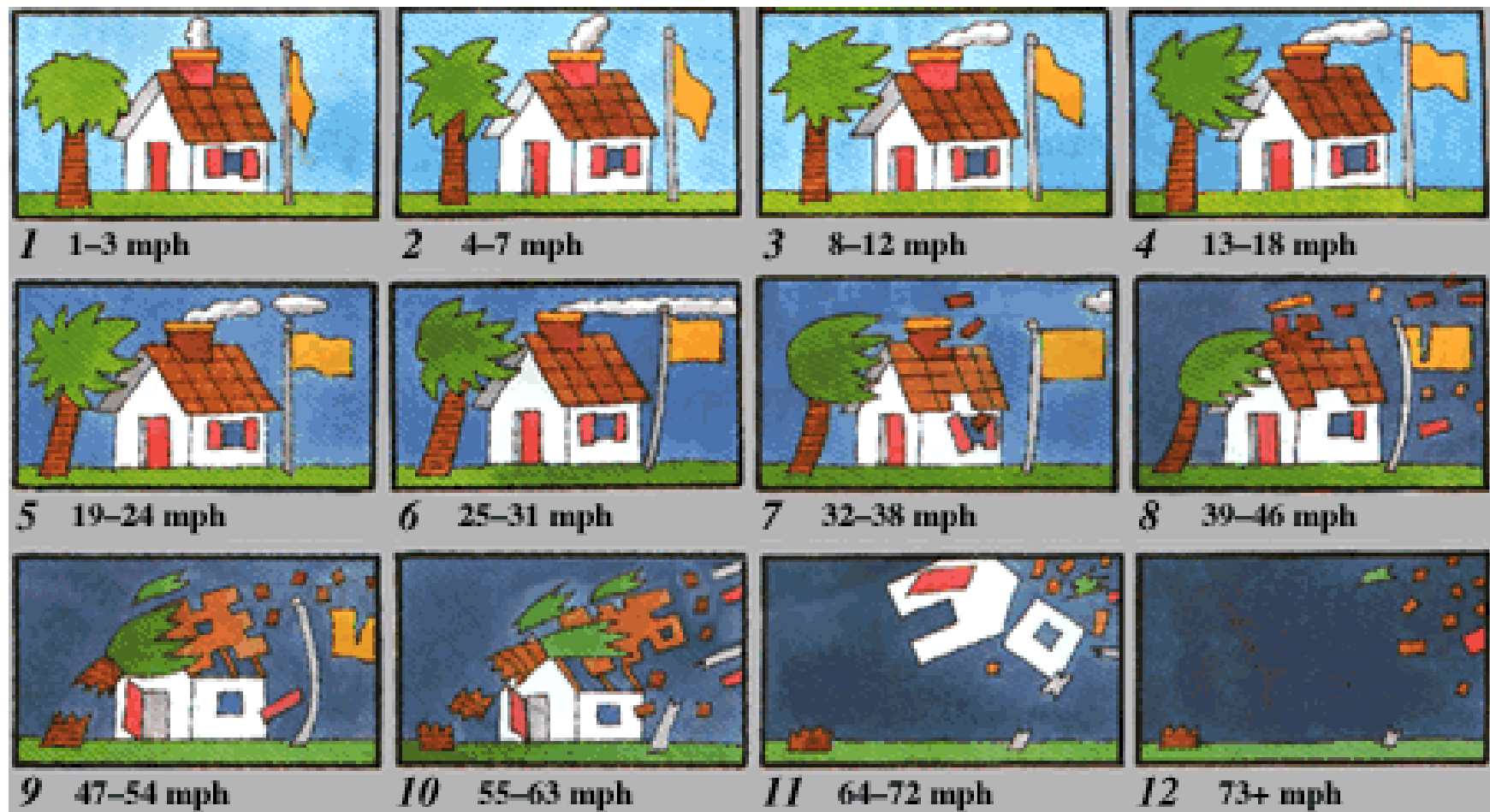
- Back at the office, download the data (still pictures and video) from the UAS to a local hard drive of the data processing computer
- DO NOT PUT RAW DATA ON THE SERVER
- DO NOT RELEASE ANY DATA (IMAGES, VIDEO, MOSAICS) UNTIL A PRIVACY REVIEW IS COMPLETE AND PRIVACY CONCERNS (IF NOTED) ARE ADDRESSED
- Review the data for any inadvertent/potential intrusions into the privacy of the public
- If the mission data product is a photomosaic and associated maps, process the raw images into the mosaic and then permanently obscure any inadvertent or potential privacy concerns that are noted before forwarding the mosaic internally or externally
- If the mission data product is still images, permanently obscure any inadvertent or potential privacy concerns that are noted or discard/delete such images before forwarding photos internally or externally
- If the mission data product is video, review the footage and edit out or obscure any inadvertent or potential privacy concerns prior to forwarding internally or externally

- Retain mission video (low resolution) on a local hard drive of the data processing computer to verify positioning of the camera if any privacy concerns are raised by the public

12. References

1. American Civil Liberties Union (ACLU) “Protecting Privacy from Aerial Surveillance (recommendations for Government Use of Drone Aircraft) December 2011”,
2. National Telecommunications and Information Administration (NTIA) “Voluntary Best Practices for UAS Privacy, Transparency and Accountability”
3. Oak Ridge National Laboratory “Best Practices for the Use of Unmanned Aerial Systems” dated February 2017”,
4. FAA; “Remote Pilot – Small Unmanned Aircraft Systems Study Guide” FAA-G-8082-22 dated August 2016.
5. FAA: “Pilots Handbook of Aeronautical Knowledge” FAA-H-8083-25B dated August 2016
6. FAA: “Airman Knowledge Testing Supplement for Sport Pilot, Recreational Pilot, and Private Pilot “ FAA-CT-8080-2G dated 2016
7. FAA: 14 CFR Parts 21, 43, 61, et al. Operation and Certification of Small Unmanned Aircraft Systems; Final Rule dated January 28, 2016
8. Ruppert Law P.A.: “Part 107 Study Guide” December 2016
9. Department of the Interior: DOI Operational Procedures Memorandum (OPM) – 11 dated December 31, 2015
10. University of California: UAS Operations Manual dated November 01, 2015
11. FAA website <http://knowbeforeyoufly.org>.
12. Caltrans Division of Research, Innovation and System Information: “The Use of Unmanned Aerial Systems for Steep Terrain Investigations” dated August 14, 2014
13. ResearchGate ; Handbook of Unmanned Aerial Vehicles, Clothier, Reece A. and Walker, Rodney A.: “The Safety Risk Management of Unmanned Aircraft Systems” dated January 2014
14. Drone Industry Insights, Safe Airspace Integration Project, Part One “Safety Risk Assessment for UAV Operations” dated November 2015

Appendix 1: Beaufort Scale



Appendix 2: Hand Signals

Move Forward



Move Rearward



Move Left



Move Right



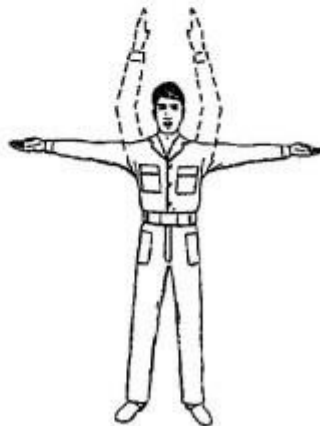
Stop



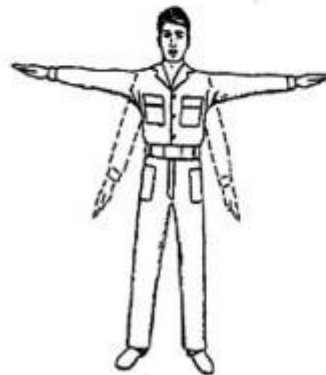
All Clear



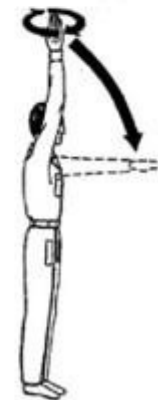
Move Upward



Move Downward



Clear to Take-off



(EdgeData, 2016)

Appendix 3: Contingency Plan Checklist

Event	Result	Procedure
Battery Depletes	Unmanned aerial system (UAS) incapable of continuing flight operations	UAS return to base (RTB) as soon as practical; cease data collection
Ditch Procedures	UAS incapable of continuing flight operations	Identify safe landing area; attempt a controlled landing; if able, land UAS in water (shallow preferred for ease of recovery) away from public
Fuel Depletes	UAS incapable of continuing flight operations	UAS RTB as soon as practical; cease data collection
Hazardous Weather	UAS incapable of continuing flight operations	UAS RTB as soon as practical; cease data collection
Hostile Environment	Mission impacted by hazard (e.g. air traffic, public activity)	See and avoid; take evasive action as required with safety taking precedence; UAS RTB as soon as practical
Loss of Communications	Mission impacted by lack of communications hazard	Maintain visual line of sight (VLOS); take evasive action as required with safety taking precedence; UAS RTB as soon as practical
Loss of Control Signal	UAS not controllable	Maintain VLOS; UAS RTB and land without harm to UAS or contacting surrounding objects
Loss of Direct Visual	UAS could become hazard if unable to regain visual control	Regain direct visual of UAS; contact mission payload operator and/or visual observer to determine status

Contingency Plan Checklist (Cont.)

Event	Result	Procedure
Loss of GPS Signal	Use extreme caution as the positional data for the UAS will not be accurate	Assume manual control of the UAS; Maneuver and climb UAS to reacquire GPS signal; if GPS signal cannot be acquired, determine whether safe UAS control can be maintained; if safe flight cannot be maintained, land as soon as possible
Loss of Situational Awareness (SA)	UAS could become hazard if unable to regain SA	Climb to safe altitude; reorient with use of sensors; RTB as required
Privacy Impact	Possible public complaint	Cease data collection; after RTB, complete an assessment
UAS Failure	UAS incapable of continuing flight operations	Maintain VLOS; UAS RTB as soon as practical

Appendix 4: Mission Planning Profile

Mission Profile	Location (Name & Latitude & Longitude)		Date:		ETD:		ETA:
			Crew Assigned:				
	Daylight Hours:						
			Waypoint	Transit (T) or Hover (H)	Altitude AGL (ft)	Estimated Leg Duration (mm : ss)	Activity
						Total Flight Time (TFT)	
			Statutory Reserve (SR) (TFT x 0.20) ^a				
			Mission Requirement (TFT + SR)				
			Max Load UAS Flight Time				

Notes:

^aWith respect to TFTs and SRs, a UAS flight should be able to be completed with 20% energy reserves (fuel or battery) remaining or a 5-minute reserve or the manufacturer recommendation, whichever is greater.

Acronyms: ETD = estimated time of departure, ETA = estimated time of arrival, and AGL = above ground level.

Appendix 5: Emergency Contact List

Organizational Point of Contact	Contact Numbers <i>(For training purposes only)</i>
National grid operations center	
Local electric utility distribution network office	
Service provider local field services office	
County road supervisor	
County sheriff dispatch office	
County fire department	
Closest medical facility	
Internet/phone providers	
Site manager	
Remote pilot in command	
Visual observer	
Mission payload operator	
Subject matter expert	

FAA News



Federal Aviation Administration, Washington, DC 20591

June 21, 2016

SUMMARY OF SMALL UNMANNED AIRCRAFT RULE (PART 107)

Operational Limitations	<ul style="list-style-type: none">• Unmanned aircraft must weigh less than 55 lbs. (25 kg).• Visual line-of-sight (VLOS) only; the unmanned aircraft must remain within VLOS of the remote pilot in command and the person manipulating the flight controls of the small UAS. Alternatively, the unmanned aircraft must remain within VLOS of the visual observer.• At all times the small unmanned aircraft must remain close enough to the remote pilot in command and the person manipulating the flight controls of the small UAS for those people to be capable of seeing the aircraft with vision unaided by any device other than corrective lenses.• Small unmanned aircraft may not operate over any persons not directly participating in the operation, not under a covered structure, and not inside a covered stationary vehicle.• Daylight-only operations, or civil twilight (30 minutes before official sunrise to 30 minutes after official sunset, local time) with appropriate anti-collision lighting.• Must yield right of way to other aircraft.• May use visual observer (VO) but not required.• First-person view camera cannot satisfy "see-and-avoid" requirement but can be used as long as requirement is satisfied in other ways.• Maximum groundspeed of 100 mph (87 knots).• Maximum altitude of 400 feet above ground level (AGL) or, if higher than 400 feet AGL, remain within 400 feet of a structure.• Minimum weather visibility of 3 miles from control station.• Operations in Class B, C, D and E airspace are allowed with the required ATC permission.• Operations in Class G airspace are allowed without ATC permission.• No person may act as a remote pilot in command or VO for more than one unmanned aircraft operation at one time.• No operations from a moving aircraft.• No operations from a moving vehicle unless the operation is over a sparsely populated area.• No careless or reckless operations.• No carriage of hazardous materials.
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	<ul style="list-style-type: none"> • Requires preflight inspection by the remote pilot in command. • A person may not operate a small unmanned aircraft if he or she knows or has reason to know of any physical or mental condition that would interfere with the safe operation of a small UAS. • Foreign-registered small unmanned aircraft are allowed to operate under part 107 if they satisfy the requirements of part 375. • External load operations are allowed if the object being carried by the unmanned aircraft is securely attached and does not adversely affect the flight characteristics or controllability of the aircraft. • Transportation of property for compensation or hire allowed provided that- <ul style="list-style-type: none"> ◦ The aircraft, including its attached systems, payload and cargo weigh less than 55 pounds total; ◦ The flight is conducted within visual line of sight and not from a moving vehicle or aircraft; and ◦ The flight occurs wholly within the bounds of a State and does not involve transport between (1) Hawaii and another place in Hawaii through airspace outside Hawaii; (2) the District of Columbia and another place in the District of Columbia; or (3) a territory or possession of the United States and another place in the same territory or possession. • Most of the restrictions discussed above are waivable if the applicant demonstrates that his or her operation can safely be conducted under the terms of a certificate of waiver.
Remote Pilot in Command Certification and Responsibilities	<ul style="list-style-type: none"> • Establishes a remote pilot in command position. • A person operating a small UAS must either hold a remote pilot airman certificate with a small UAS rating or be under the direct supervision of a person who does hold a remote pilot certificate (remote pilot in command). • To qualify for a remote pilot certificate, a person must: <ul style="list-style-type: none"> ◦ Demonstrate aeronautical knowledge by either: <ul style="list-style-type: none"> ▪ Passing an initial aeronautical knowledge test at an FAA-approved knowledge testing center; or ▪ Hold a part 61 pilot certificate other than student pilot, complete a flight review within the previous 24 months, and complete a small UAS online training course provided by the FAA. ◦ Be vetted by the Transportation Security Administration. ◦ Be at least 16 years old. • Part 61 pilot certificate holders may obtain a temporary remote pilot certificate immediately upon submission of their application for a permanent certificate. Other applicants will obtain a temporary remote pilot certificate upon successful completion of TSA security vetting. The FAA anticipates that it will be able to issue a temporary remote pilot certificate within 10 business days after receiving a completed remote pilot certificate application. • Until international standards are developed, foreign-

	<p>certificated UAS pilots will be required to obtain an FAA-issued remote pilot certificate with a small UAS rating.</p> <p>A remote pilot in command must:</p> <ul style="list-style-type: none"> • Make available to the FAA, upon request, the small UAS for inspection or testing, and any associated documents/records required to be kept under the rule. • Report to the FAA within 10 days of any operation that results in at least serious injury, loss of consciousness, or property damage of at least \$500. • Conduct a preflight inspection, to include specific aircraft and control station systems checks, to ensure the small UAS is in a condition for safe operation. • Ensure that the small unmanned aircraft complies with the existing registration requirements specified in § 91.203(a)(2). <p>A remote pilot in command may deviate from the requirements of this rule in response to an in-flight emergency.</p>
Aircraft Requirements	<ul style="list-style-type: none"> • FAA airworthiness certification is not required. However, the remote pilot in command must conduct a preflight check of the small UAS to ensure that it is in a condition for safe operation.
Model Aircraft	<ul style="list-style-type: none"> • Part 107 does not apply to model aircraft that satisfy all of the criteria specified in section 336 of Public Law 112-95. • The rule codifies the FAA's enforcement authority in part 101 by prohibiting model aircraft operators from endangering the safety of the NAS.

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SCVWD UAV Pilot Program



Managed by the
Land Surveying and Mapping Unit
(367)

Aerial drone pilot program

Timeline

- Initial Request to SCVWD Board
 - Research
 - Preparation of Draft Policies & Procedures
 - Public Comment Period
 - Request for Board Approval
 - **Board of Directors Discussion**
 - Purchasing & Training
 - Pilot Program Operations
 - Reporting of Results to SCVWD Board
- The Santa Clara Valley Water District is proposing to implement a pilot project to use drones in land surveying and mapping activities in locations within Santa Clara County. Also known as "Unmanned Aerial Vehicles," drone technology is more cost effective than the traditional use of piloted aircraft. Because drones fly at lower altitudes than airplanes, the images and data produced can be more precise.
- The Federal Aviation Administration regulates the operation of drones for non-hobbyists. These regulations ensure that commercial drone operators (or pilots) are trained and certified and that they follow strict safety requirements. The water district has certified drone pilots who will fly our drones during the pilot project.
- After the proposed pilot project is concluded, district staff will evaluate its effectiveness to determine if the program should continue.
- December 2017
- January – July 2018
- July – October 2018
- September – October 2018
- November 2018
- March 2019**
- April 2019
- May – November 2019
- December 2019



Rules and Regulations

- This 6-month program shall follow all Rules and Regulations of the Federal Aviation Administration (FAA) Part 107 Commercial including:
 - Remote Pilot Certification
 - LSMU currently has 5 Part 107 certified pilots on staff
 - Registration
 - All aircraft shall be registered with the FAA. The Tail Number shall be visible on the UAV
 - Insurance
 - Coverage shall be provided by the current District insurance carrier
 - Special Considerations per FAA
 - 400 foot maximum flight height above ground level
 - No operation within 5 miles of an airport without Waiver or Certificate of Authorization



Privacy, Protection of the Public & Civil Liberties

Section 3 of the SCVWD Unmanned Aerial System (UAS) Flight Operations Manual addresses Privacy and follows the laws, guidelines and recommendations of:

- FAA Part 107 Commercial Act
- FAA Voluntary Best Practices for UAS Privacy, Transparency and Accountability prepared by the National Telecommunications and Information Administration (NTIA)
- Presidential Memorandum, February 15, 2015
- American Civil Liberties (ACLU) Protecting Privacy from Aerial Surveillance, December 2011
- University of California: UAS Operations Manual, November 2015
- Oak Ridge National Laboratory, Best Practices for Use of Unmanned Aerial Systems, February 2017

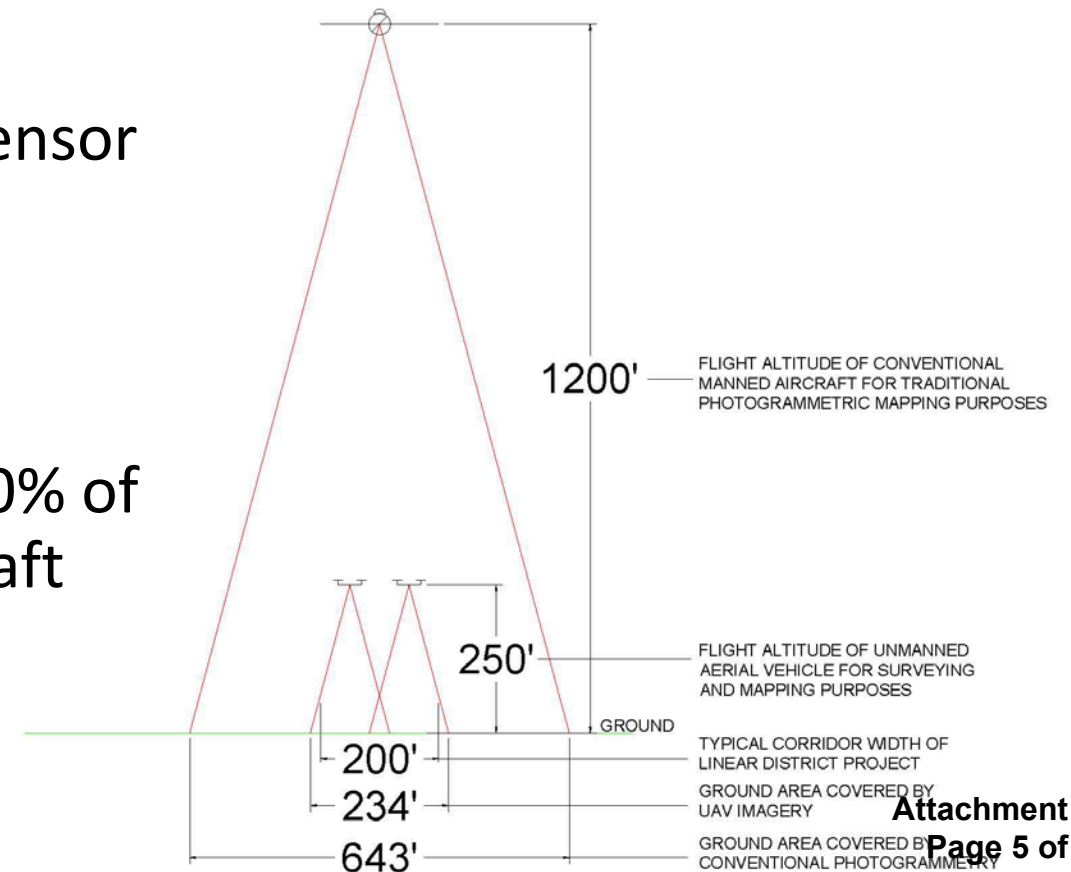
Privacy, Protection of the Public & Civil Liberties

By the numbers:

- Operating altitudes between 150'-400'* above ground level
- Facial Recognition with a 20-Megapixel sensor requires subject to be <80' away
- Flight operations only over District fee & easement lands* and Public right-of-way
- Ground area covered by UAV imagery <50% of area covered by traditional manned aircraft

*Per FAA Part 107

IMAGE CAPTURE COVERAGE COMPARISON OF
UNMANNED AERIAL VEHICLES (UAV) WITH
CONVENTIONAL MANNED AIRCRAFT



LSMU will offer Surveying and Mapping services using UAVs for:

- Land Surveying and Mapping
 - Topographic Surveys
 - 3D Surfaces
- Engineering and Design
 - Planning Level Topography
 - As-Builts
- Construction and O&M Inspection
 - Progress Documentation
 - Site Logistics & Safety Management
 - Asset Management
 - Bank Protection Monitoring
 - Inspections of erosion, trash, vegetation and homeless encampments
- Vegetation Management
 - Invasive Species Assessment
 - Canopy Coverage Areas
- Community Projects Review
 - Design Verification
 - Encroachment Documentation
 - Enforce Water Resources Protection
- Capital Program Planning
 - Construction Administration
- Real Estate Services
 - Appraisal
 - Property Management

LSMU will offer Photographic services using UAVs for:

- Environmental Health and Safety
 - Jobsite Health Hazard Evaluations
 - Pollution Assessment
- Emergency Services & Security
 - Incident Management
 - Logistics & Documentation
- Facilities Maintenance
 - Building Repairs & Maintenance
 - Roof Maintenance
- Utility Maintenance Pipelines
 - Pipeline Capital Improvement as-builts
- Dam Safety
 - Spillway & Embankment Inspection
- Public Safety
 - Remote Aerial Condition Assessment
- External Affairs
 - Media Relations
 - Public Information & Marketing
 - Website Content
- Environmental Mitigation
 - Periodic Site Monitoring
- Asset Management
 - Facilities & Warehouse Inventory

Pilot Program Costs

- Purchase of 2 UAVs \$10,000
- Preparation of Manual & Policies 200 hours*
- Program Oversight & Evaluation Report 80 hours
- Operation cost of UAVs shall be charged to individual project budgets under the requesting Unit
- No Initial Training costs, LSMU has 5 FAA Part 107 Licensed Pilots already on staff
- Projected annual cost savings with the implementation of UAV technology, based upon FY'17 & FY'18 Survey Requests >200 hours per Fiscal Year

*Time spent 2015-2018

Pilot Program Schedule

- Start within 2 weeks of Board approval with purchase of 2 UAVs
- 6 months for Program Evaluation
 - Cost benefit of UAVs
 - Time savings analysis
 - Policy and Procedure development
 - Site Assessment Document
 - Pre- and Post-Flight Checklist
 - Maintenance Log
 - Flight Log for District/Public responsibility questions
- A report of the program evaluation to be completed within 60 days of completion of Pilot Project and provided to the Board for review with staff recommendations on next steps.

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Possible Uses of UAVs in Land Surveying and Mapping

1. Surveying and Mapping Services

- a. Land Surveying and Mapping
 - 1. Topographic Surveys
 - 2. 3D Surfaces
- b. Engineering and Design
 - 1. Planning Level Topography
 - 2. As-Built
- c. Construction and O&M Inspection
 - 1. Progress Documentation
 - 2. Site Logistics and Safety Management
 - 3. Asset Management
 - 4. Bank Protection Monitoring
 - 5. Inspections of erosion, trash accumulation, vegetation and homeless encampments
- d. Vegetation Management
 - 1. Invasive Species Assessment
 - 2. Canopy Coverage Studies
- e. Community Projects Review
 - 1. Design Verification
 - 2. Encroachment Documentation
 - 3. Water Resources Protection
- f. Capitol Program Planning
 - 1. Construction Administration
- g. Real Estate Services
 - 1. Appraisals
 - 2. Property Management

2. Photographic and Video

- a. Environmental Health and Safety
 - 1. Jobsite Health Hazard Evaluations
 - 2. Pollution Assessment
- b. Emergency Services and Security
 - 1. Incident Management
 - 2. Logistics and Documentation
- c. Facilities Maintenance
 - 1. Building Repairs and Maintenance
 - 2. Roof Maintenance
- d. Utility Maintenance Pipelines
 - 1. Pipeline Capitol Improvement As-Built
- e. Dam Safety
 - 1. Spillway and Embankment Inspection
- f. Public Information Office
 - 1. Media Relations
 - 2. Public Information and Marketing
 - 3. Website Content
 - 4. District Events

- g. Public Safety
 - 1. Remote Aerial Condition Assessment
- h. Asset Management
 - 1. Facilities and Warehouse Inventory