



SOUTH COUNTY REGIONAL
WASTEWATER AUTHORITY

May 30, 2018

NOTICE OF MEETING – REQUEST FOR RSVPS

Members of the Joint Water Resources Committee (City of Gilroy, City of Morgan Hill, and SCVWD)

Santa Clara Valley Water District (SCVWD):

Hon. Richard P. Santos, District 3, 2018 Board Chair, and Committee Chair
Hon. John L. Varela, District 1

City of Gilroy:

Hon. Marie Blankley, Council Member
Hon. Dion Bracco, Mayor Pro Tempore and SCRWA Board Vice Chairman

City of Morgan Hill:

Hon. Larry Carr, Mayor Pro Tem, SCRWA Board Chairman and Committee Vice Chair
Hon. Rene Spring, Council Member and SCRWA Board Member

SCRWA = South County Regional Wastewater Authority

A meeting of the Joint Water Resources Committee (City of Gilroy, City of Morgan Hill, and SCVWD) will take place at 8:50 a.m. on Wednesday, June 6, 2018, at the South County Regional Wastewater Authority Conference Room, 1500 Southside Drive, Gilroy, CA 95020.

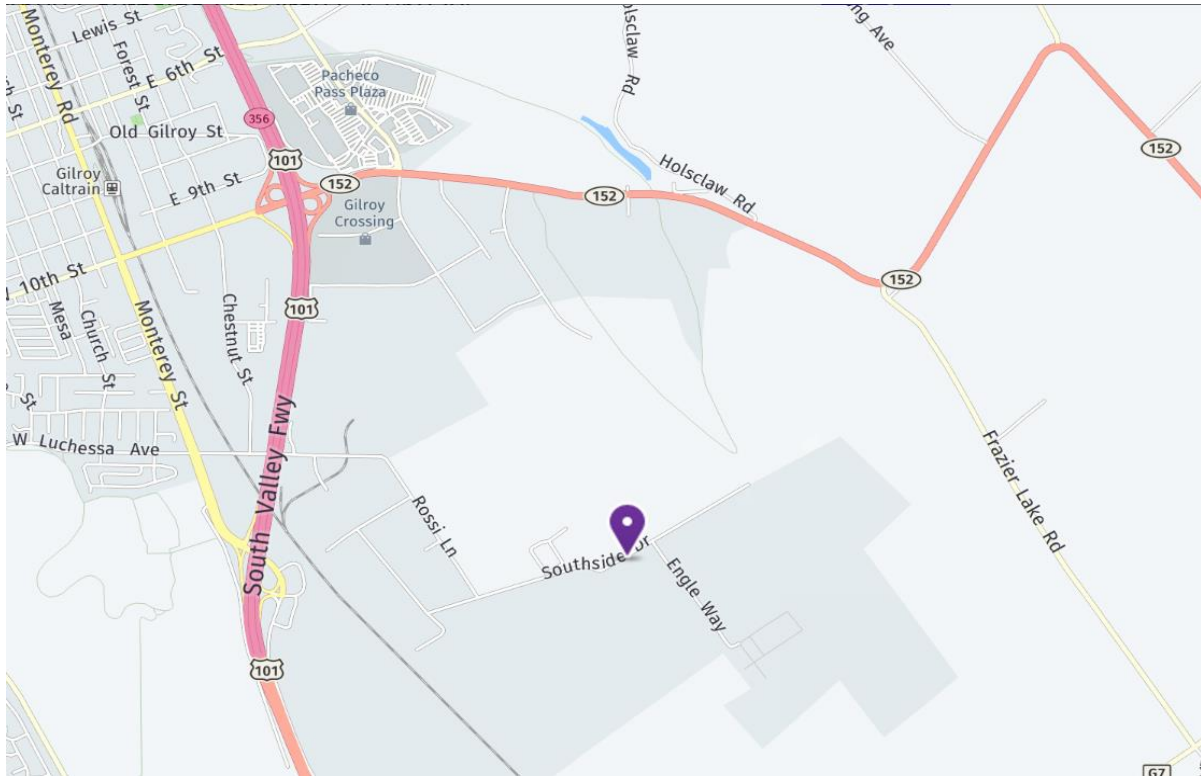
Enclosed for your convenience is a copy of the agenda and corresponding materials. Please bring these materials to the meeting with you.

Please RSVP at your earliest convenience by calling Glenna Brambill at 1-408-630-2408, or by email to gbrambill@valleywater.org

Santa Clara Valley Water District
Office of the Clerk of the Board

Enclosures

**SOUTH COUNTY REGIONAL WASTEWATER AUTHORITY MAP
1500 SOUTHSIDE DRIVE
GILROY CA 95020
(408) 848-0480**



From District:

Go North on Almaden Expressway
Turn right onto Hwy 85 South
To Hwy 101 South to Gilroy
Take exit 356 toward CA 152 East/10th St.
Turn right onto East 10th St.
Turn left onto Automall Parkway
Turn left onto East Luchessa Ave
Continue on --name changes to Rossi Ln
Turn left onto Southside Dr.
SCRWA is on the right side (1500)
{cross street Engle Way}



SOUTH COUNTY REGIONAL
WASTEWATER AUTHORITY

JOINT WATER RESOURCES COMMITTEE

Hon. Marie Blankley, Council Member, City of Gilroy

Hon. Dion Bracco, Mayor Pro Tempore, City of Gilroy and SCRWA Board Vice Chairman

Hon. Larry Carr, Council Member, City of Morgan Hill, SCRWA Chairman and Committee Vice Chair

Hon. Rene Spring, Council Member, City of Morgan Hill and SCRWA Board Member

Hon. Richard P. Santos, Director-District 3, 2018 Board Chair, Santa Clara Valley Water District (SCVWD) and Committee Chair

Hon. John L. Varela, Director-District 1, Santa Clara Valley Water District (SCVWD)

SCRWA = South County Regional Wastewater Authority

AGENDA

WEDNESDAY, JUNE 6, 2018

8:50 AM

**JOINT WATER RESOURCES COMMITTEE
(CITY OF GILROY, CITY OF MORGAN HILL, AND SCVWD)**

South County Regional Wastewater Authority

Conference Room

1500 Southside Drive

Gilroy CA 95020

Time Certain:

8:50 a.m.

- 1. Call to Order/Roll Call.**
- 2. Time Open for Public Comment on Any Item Not on the Agenda.**
Comments should be limited to two minutes. If the Committee wishes to discuss a subject raised by the speaker, it can request placement on a future agenda.
- 3. Approval of Minutes**
 - 3.1 Approval of Minutes – February 7, 2018, meeting.
- 4. Action Items:**
 - 4.1 Update on Llagas Subbasin Groundwater Management and Use (Vanessa De La Piedra)
Recommendation: This is an information only item and no action is required. However, the Committee may provide comments for Board consideration.
 - 4.2 Update on Perchlorate (George Cook)
Recommendation: This is a discussion item and no action is required. However, the Committee may provide comments for Board consideration.
 - 4.3 Update on District’s Water Supply Master Plan (Tracy Hemmeter)
Recommendation: This is a discussion item and no action is required. However, the Committee may provide comments for Board consideration.
 - 4.4 Update on Dam Projects (Hemang Desai)
Recommendation: This is a discussion item and no action is required. However, the Committee may provide comments for Board consideration.
 - 4.5 History of District Collaboration with the Cities of Gilroy and Morgan Hill on Recycled Water (Garth Hall)
Recommendation: This is a discussion item and no action is required. However, the Committee may provide comments for Board consideration.

4.6. Review of 2018 Joint Water Resources Work Plan and any Outcomes of Board Action or Committee Requests and the Committee's next meeting agenda (Committee Chair)

Recommendation: Review the Committee work plan to guide the Committee's discussions regarding policy alternatives and implications for Board deliberation.

5. Clerk Review and Clarification of Committee Actions

This is a review of the Committee's Actions (from Item 4).

6. Adjourn: Adjourn to next regularly scheduled meeting at 8:35 a.m. (immediately following SCRWA meeting), **August 1, 2018**, South County Regional Wastewater Authority Conference Room, 1500 Southside Drive, Gilroy CA 95020.

REASONABLE EFFORTS TO ACCOMMODATE PERSONS WITH DISABILITIES WISHING TO ATTEND COMMITTEE MEETINGS WILL BE MADE. PLEASE ADVISE THE CLERK OF THE BOARD'S OFFICE OF ANY SPECIAL NEEDS BY CALLING (408) 630-2277.

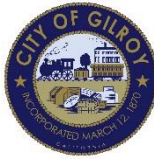
Meetings of this committee will be conducted in compliance with all Brown Act requirements. All public records relating to an open session item on this agenda, which are not exempt from disclosure pursuant to the California Public Records Act, that are distributed to a majority of the legislative body will be available for public inspection at the same time that the public records are distributed or made available to the legislative body, at the following locations:

Santa Clara Valley Water District
Clerk of the Board Unit
5700 Almaden Expressway
San Jose, CA 95118

City of Gilroy
City Clerk
735 Rosanna Street
Gilroy, CA 95020

City of Morgan Hill
City Clerk
17575 Peak Avenue
Morgan Hill, CA 95037

Joint Water Resources Committee Purpose: Advance common South County water interests and receive input from stakeholders and interested parties when undertaking the following: 1. Reviewing current practices and future needs for groundwater management in the Llagas groundwater sub-basin, 2. Facilitating policy discussion and sharing of technical information on water supply planning for South County, 3. Identifying the current and future demand for recycled water as well as jointly identifying funding sources for implementation of the South County Recycled Water Master Plan, 4. Facilitating policy discussion and sharing of technical information on furthering development and use of recycled water in South County, 5. Facilitating policy discussion and sharing of socio-economic homelessness in South County



JOINT WATER RESOURCES COMMITTEE (CITY OF GILROY, CITY OF MORGAN HILL AND SCVWD)

DRAFT MINUTES

**WEDNESDAY, FEBRUARY 7, 2018
8:35 AM**

(Paragraph numbers coincide with agenda item numbers)

A meeting of the Joint Water Resources Committee (City of Gilroy, City of Morgan Hill and SCVWD) (Committee) was held on February 7, 2018, at the South County Regional Wastewater Authority Conference Room, 1500 Southside Dr., Gilroy, California.

1. CALL TO ORDER/ROLL CALL

A meeting of the Joint Recycled Water Committee (City of Gilroy, City of Morgan Hill and SCVWD) was called to order by Committee Chair Hon. Richard P. Santos at 8:40 a.m.

Committee Members in attendance were: City of Gilroy Council Member: Hon. Dion Bracco, City of Morgan Hill Council Members: Hon. Larry Carr and Hon. Rene Spring; SCVWD Directors: Hon. Richard P. Santos, District 3, and Hon. John L. Varela, District 1.

SCVWD Staff members in attendance were: Hossein Ashktorab, Glenna Brambill, Norma J. Camacho, Anthony Fulcher, Rachael Gibson, Garth Hall, Katrina Jessop and Brian Mendenhall.

City of Gilroy Staff Members in attendance were: Gabriel Gonzalez and Saeid Vaziry,

City of Morgan Hill Staff Members in attendance were: Anthony Eulo, Chris Ghione and Christina Turner.

Public Attendees: Doug Muirhead of Morgan Hill.

2. TIME OPEN FOR PUBLIC COMMENT ON ANY ITEM NOT ON THE AGENDA.

There was no one present who wished to speak.

3. APPROVAL OF MINUTES

3.1 Approval of Minutes

It was moved by Hon. Rene Spring, seconded by Hon. Larry Carr, and unanimously carried, to approve the minutes of the November 1, 2017, Joint Water Resources Committee (City of Gilroy, City of Morgan Hill and SCVWD) meeting, as presented.

4. ELECT CHAIR AND VICE CHAIR

it was moved by Hon. Dion Bracco, seconded by Hon. John L. Varela, and unanimously carried, to retain the current Chair, Hon. Richard P. Santos and Vice Chair, Hon. Larry Carr.

5. ACTION ITEMS

5.1 POLICY DISCUSSION AND SHARING OF TECHNICAL INFORMATION ON FURTHERING DEVELOPMENT, USE OF RECYCLED WATER AND WATER SUPPLY PLANNING IN CITY OF MORGAN HILL AND SOUTH COUNTY

Mr. Garth Hall reviewed the materials as outlined in the agenda item.

Hon. John L. Varela, Mr. Gabriel Gonzalez, Hon. Rene Spring, Hon. Larry Carr, Hon. Richard P. Santos, Hon. Fred Tovar and Mr. Doug Muirhead a City of Morgan Hill resident spoke on sharing of technical information on furthering developments, recycled water use and water supply planning in South County.

No action was taken.

5.2 UPDATE ON THE APPLICATION BY THE DISTRICT FOR PROPOSITION 1 FUNDING FOR THE PACHECO RESERVOIR EXPANSION PROJECT

Mr. Garth Hall reviewed the materials as outlined in the agenda item.

Ms. Norma Camacho was available to answer questions.

Hon. Richard P. Santos, Hon. John L. Varela, Hon. Larry Carr and Hon. Rene Spring spoke about issues with the expansion project and the funding aspects.

No action was taken.

Hon. Larry Carr left at 9:20 a.m.

5.3 ONE WATER PLAN

Mr. Brian Mendenhall reviewed the materials as outlined in the agenda item

No action was taken.

5.4 RECOMMENDED POSITION ON STATE LEGISLATION TO ADDRESS EXPEDITED PERMITTING AND TRANSPARENCY

Ms. Rachael Gibson reviewed the materials as outlined in the agenda item

Hon. Fred Tovar, Hon. Dion Bracco, Hon. Richard P. Santos, Hon. Rene Spring, Mr. Doug Muirhead a City of Morgan Hill resident and Hon. John L. Varela spoke about state legislation, permitting concerns and transparency amongst partnering agencies.

No action was taken, however, there was a consensus to support on potential state legislation that would establish permit processing transparency requirements and would expedite permit approvals for projects that maintain or improve human life safety through flood risk reduction or dam safety enhancement.

5.5 REVIEW OF 2018 JOINT WATER RESOURCES WORK PLAN AND ANY OUTCOMES OF BOARD ACTION OR COMMITTEE REQUESTS AND THE COMMITTEE’S NEXT MEETING AGENDA

Ms. Glenna Brambill reviewed the materials as outlined in the agenda item.

No action was taken.

6. CLERK REVIEW AND CLARIFICATION OF COMMITTEE ACTIONS

Ms. Glenna Brambill reported there were no action items for consideration.

7. ADJOURN

Hon. John L. Varela shared his fond memory of Hon. Paul Kloecker.

Chair Hon. Richard P. Santos adjourned at 9:49 a.m. to the next quarterly meeting in honor of the late City of Gilroy Councilmember and Committee member Hon. Paul Kloecker.

Glenna Brambill
Board Committee Liaison
Office of the Clerk of the Board

Approved:



Committee: Joint Water Resources
Meeting Date: 06/06/18
Agenda Item No.: 4.1
Unclassified Manager: Garth Hall
Email: ghall@valleywater.org
Est. Staff Time: 5 minutes

COMMITTEE AGENDA MEMO

SUBJECT: Llagas Subbasin Groundwater Management Update

RECOMMENDED ACTION:

This is an information only item and no action is required.

SUMMARY:

The Cities of Morgan Hill and Gilroy rely on the Llagas Subbasin to meet nearly all water demands, as do many thousands of private well owners in San Martin and other unincorporated areas. Groundwater levels are maintained by natural groundwater recharge and the District's managed groundwater recharge activities, as well as through in-lieu recharge with recycled water and water conservation programs. These activities, along with proactive future planning and investments, ensure long-term sustainability within the subbasin.

This item provides information on the current groundwater conditions in the Llagas Subbasin and highlights the factors that helped the Llagas Subbasin recover from the recent drought.

BACKGROUND:

The Llagas Subbasin covers a surface area of about 74 square miles, extending from Cochrane Road in Morgan Hill to the Pajaro River, with east and west boundaries generally along the edge of the valley floor. Groundwater movement generally follows surface water patterns, draining south toward the Pajaro River. Locally, groundwater also moves toward areas of heavy pumping.

Groundwater serves over 90% of all beneficial uses in the Llagas Subbasin and is the sole source for drinking water. A small, but growing, portion of water use is served by recycled water, and some raw surface water is also used. Groundwater pumping averages about 44,000 acre-feet per year (AFY), or about 39 million gallons per day (MGD). Groundwater use is nearly evenly split between agricultural uses (50%) and municipal and industrial uses (45%), with about 5% used for domestic purposes. Pumping by the Cities of Morgan Hill and Gilroy typically accounts for about 35% of Llagas Subbasin pumping.

Recharge sources include District managed recharge and natural recharge from rainfall, return flows, and natural seepage through creeks. Because natural recharge is insufficient to balance pumping, the District replenishes the Llagas Subbasin with about 24,000 AF of water per year (21 MGD). District managed recharge facilities in the Llagas Subbasin include the Main Avenue Ponds, San Pedro Ponds, Church Avenue Ponds, Madrone Channel, Llagas Creek, and Uvas Creek. This direct replenishment, along with programs to recycle and conserve water, help maintain long-term sustainable groundwater levels and storage in the Llagas Subbasin.

During the recent drought, groundwater levels declined by 50 to 60 feet in many areas of the Llagas Subbasin due to reduced managed and natural recharge. However, groundwater levels and storage have recovered to pre-drought conditions due to the following:

- Taking advantage of improved water supplies, the District conducted an above-normal managed recharge program in 2016, recharging 26,000 AF (23 MGD) in the Llagas Subbasin.
- Significant winter precipitation and District managed recharge in 2017 replenished groundwater and increased water levels.
- Impressive water use reduction by the community decreased pumping. In 2015 and 2016, the Cities of Morgan Hill and Gilroy each reduced water use by 25% or more compared to 2013. Total pumping in the Llagas Subbasin was reduced by about 15% during that period.

ATTACHMENT(S):

Attachment 1: PowerPoint Presentation

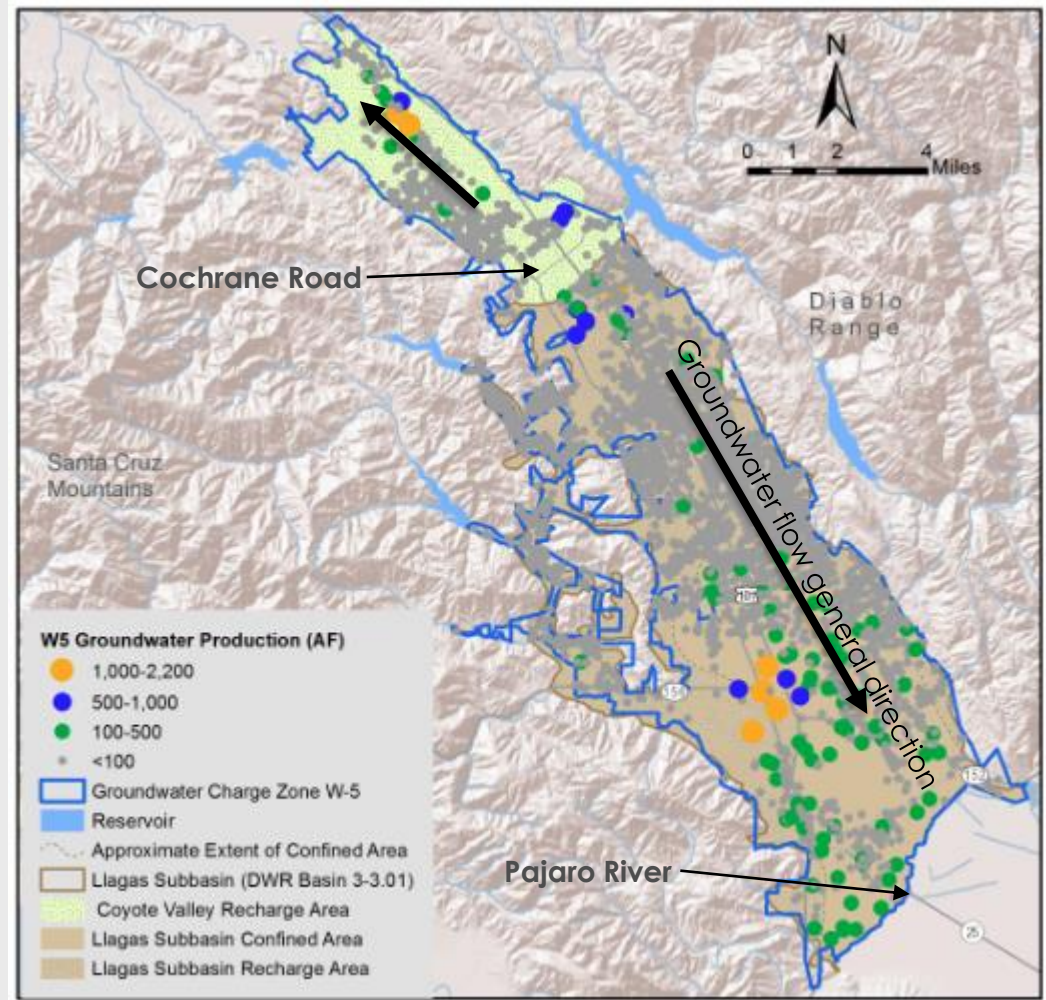
Llagas Subbasin Groundwater Management Update

June 6, 2018

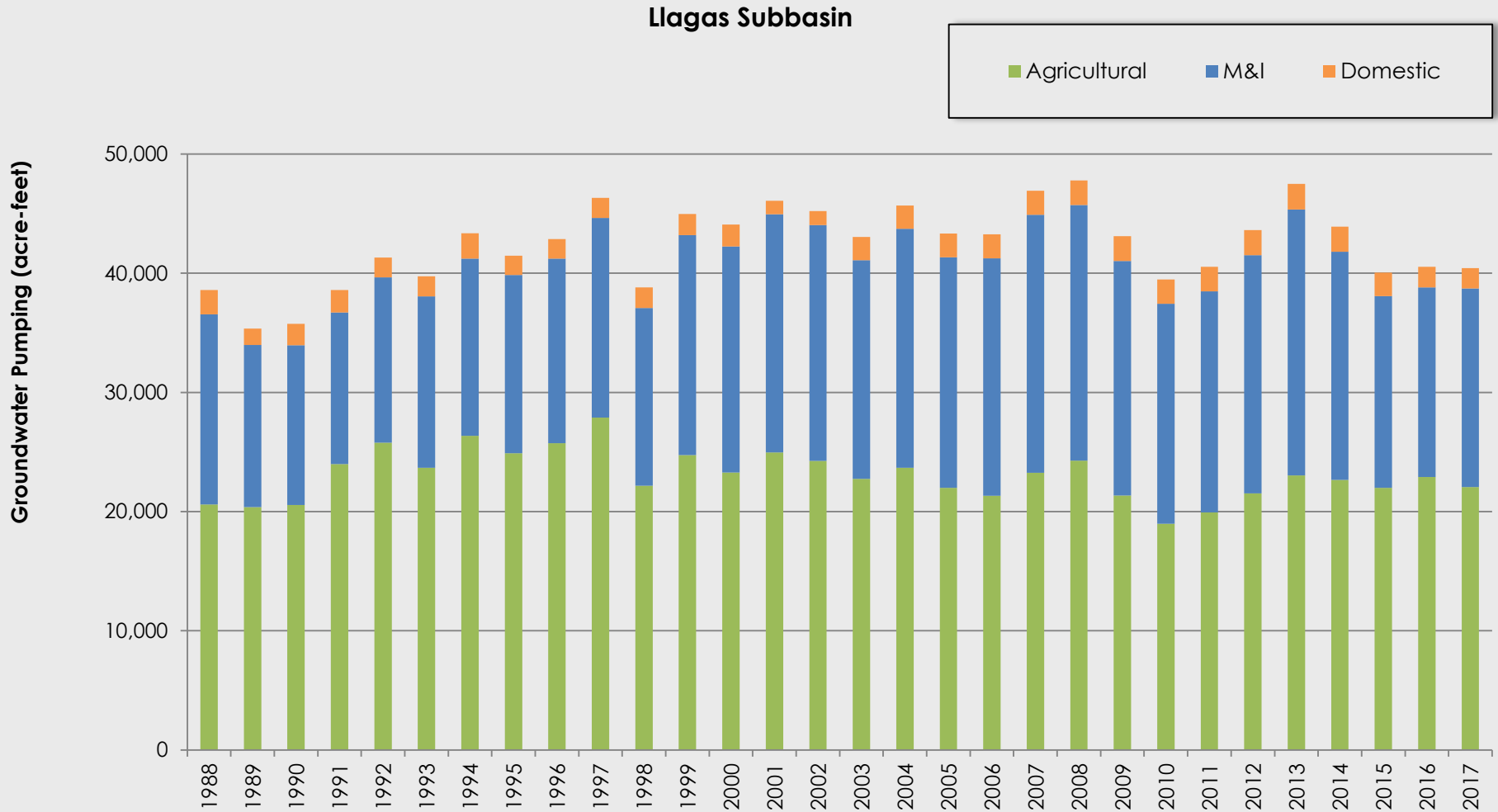


Llagas Subbasin Groundwater Use

- ▶ Average pumping is 44,000 AFY (~39 MGD):
 - ▶ 50% Ag
 - ▶ 45% M&I
 - ▶ 5% Domestic
- ▶ Morgan Hill: 7,800 AFY (6.9 MGD)
- ▶ Gilroy: 8,300 AFY (7.4 MGD)

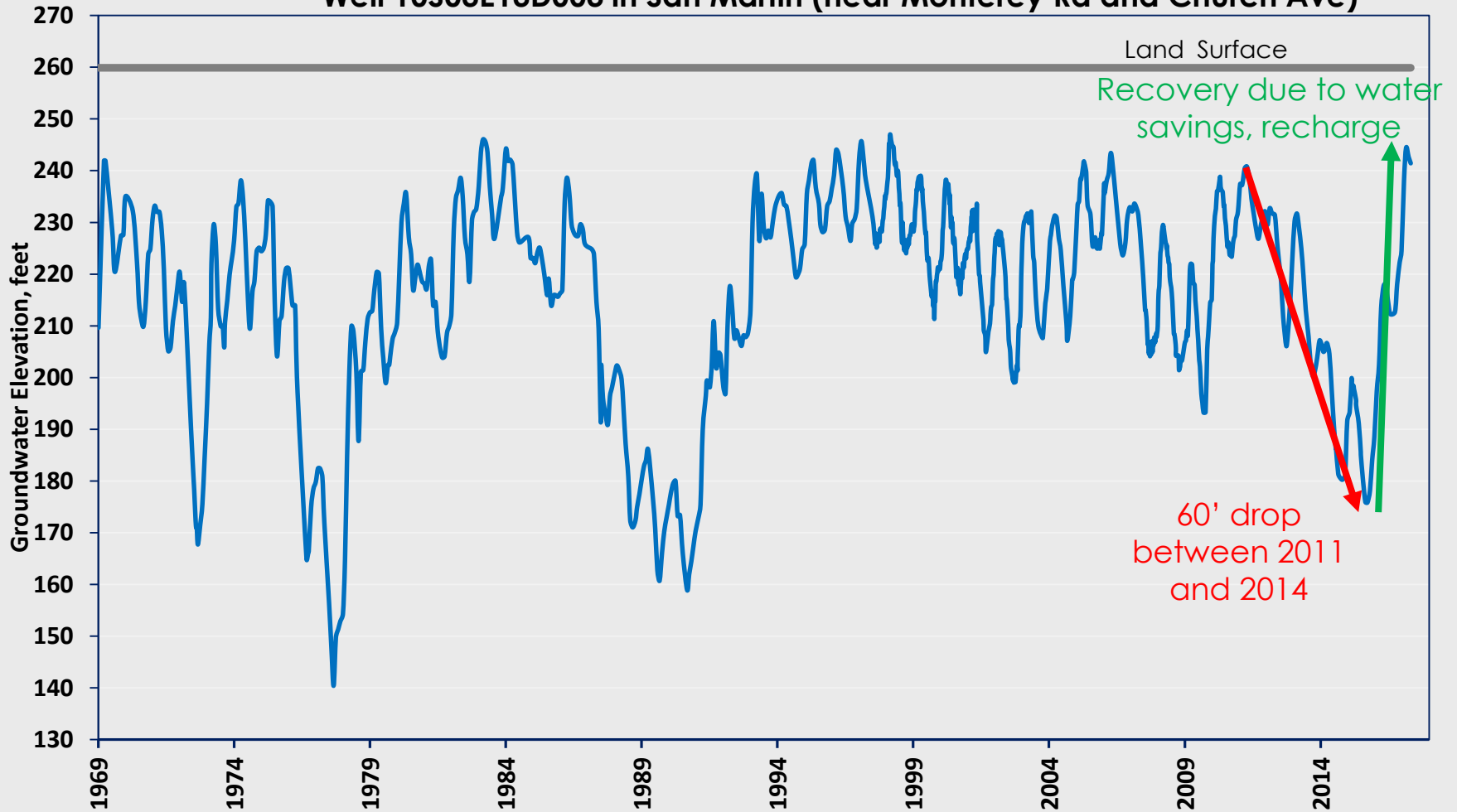


Pumping by Sector

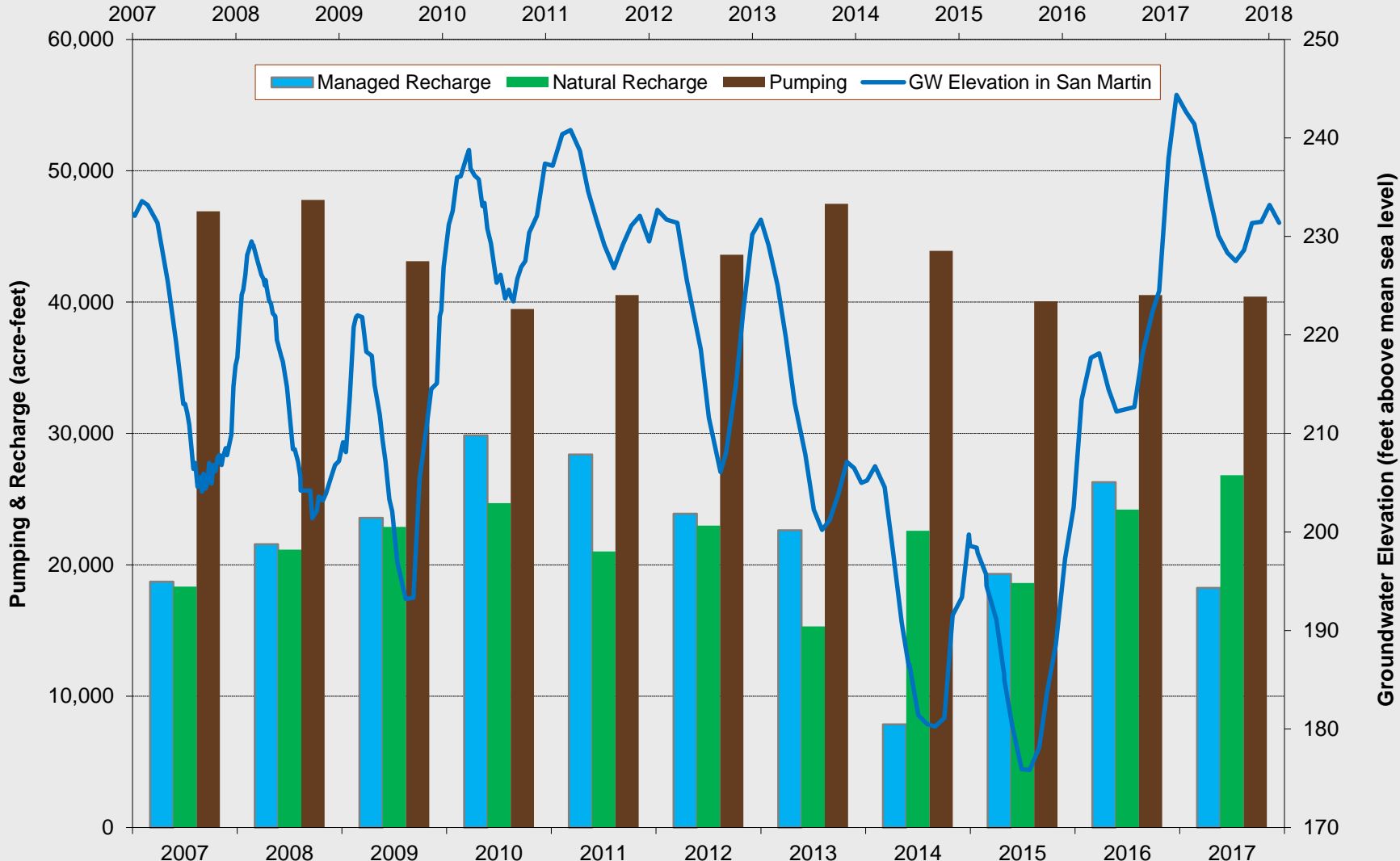


Groundwater Level Recovery from Drought

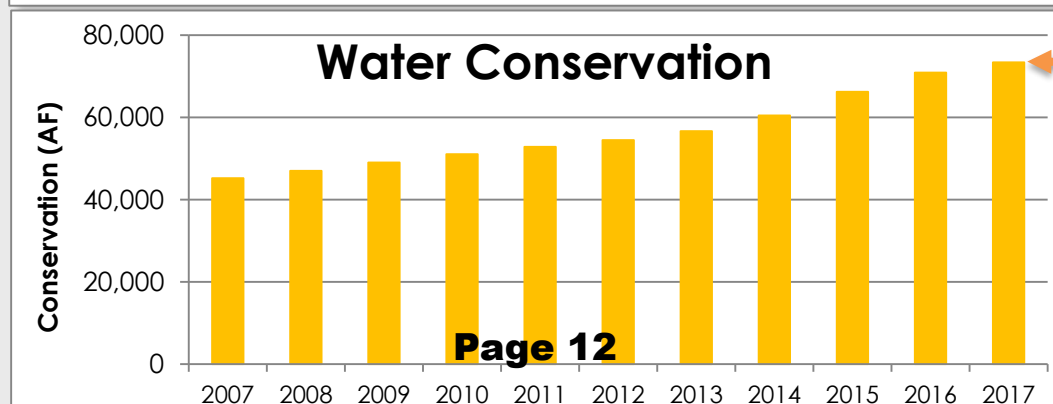
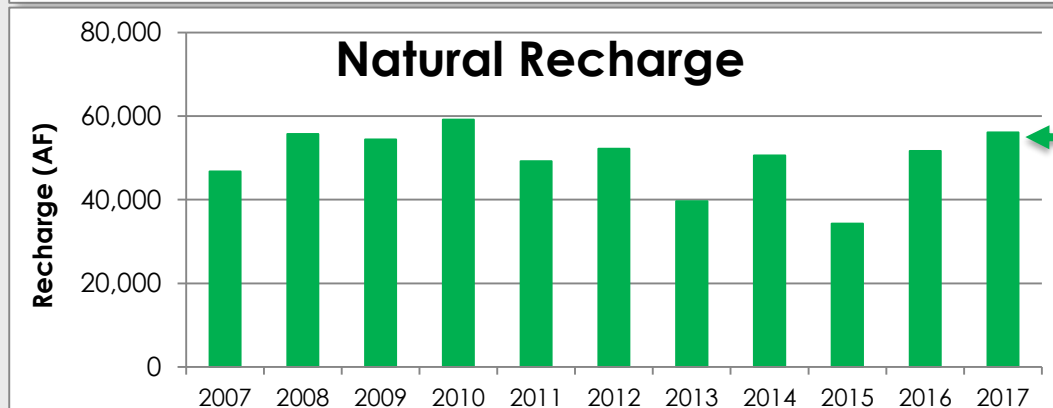
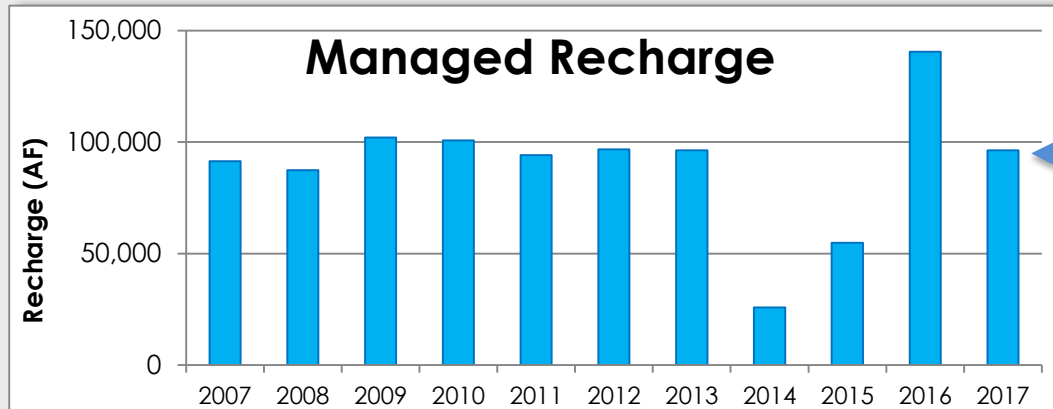
Well 10S03E13D003 in San Martin (near Monterey Rd and Church Ave)



Influences on Subbasin Recovery



Countywide Recharge and Water Conservation





Committee:	Joint Water Resources
Meeting Date:	06/06/18
Agenda Item No.:	4.2
Unclassified Manager:	Garth Hall
Email:	ghall@valleywater.org
Est. Staff Time:	10 minutes

COMMITTEE AGENDA MEMO

SUBJECT: Update on Perchlorate Contamination in the Llagas Subbasin

RECOMMENDED ACTION:

This is an information only item and no action is required.

SUMMARY:

Since perchlorate was first discovered at the Olin site on Tennant Avenue in Morgan Hill in 2000, groundwater concentrations have declined and the contaminant plume has shrunk significantly due to ongoing cleanup activities and the District's managed aquifer recharge. Since 2003, Olin has been providing replacement water for water supply wells exceeding the perchlorate drinking water standard. As of December 2017, only 6 domestic wells require replacement water, each of which are within one mile of the Olin site. The District continues to track cleanup progress and engage with the Central Coast Regional Water Quality Control Board (Water Board), Olin, and the Perchlorate Community Advisory Group to ensure timely and thorough cleanup.

BACKGROUND:

The Olin Corporation and Standard Fusee manufactured road signal flares at 425 Tennant Avenue in Morgan Hill from 1956 to 1995, which resulted in the discharge of perchlorate to soil and groundwater. Initial soil and groundwater investigations occurred in 2000. By May 2004, perchlorate was detected in over 500 water supply wells and the plume extended over 10 miles south to Highway 152.

At the direction of the Water Board, Olin constructed and began operating an onsite groundwater extraction and treatment system in 2004 to control migration of perchlorate from the site. Olin also conducted onsite soil remediation, which was completed in 2006. In 2012, Olin expanded the groundwater remediation system to include groundwater extracted from offsite wells within the plume. Olin completed a pilot study on Gradient Driven Remediation (GDR) in November 2017. GDR used a well screened in multiple aquifer zones to allow uncontaminated groundwater to flow downward into the impacted deep aquifer. The goal was to prevent groundwater flow to the north toward Morgan Hill's water supply wells and reduce perchlorate concentrations in the deep zone. The pilot study concluded that the GDR process did not provide sufficient hydraulic control and benefit to reducing perchlorate concentrations and recommended discontinuing this effort. The Water Board is currently reviewing the pilot study and related recommendations.

Olin is currently designing an expansion to the groundwater remediation system to provide continued containment of elevated perchlorate. Based on a feasibility study completed in 2016, Olin plans to install up to five additional extraction wells south of the site in the area bounded by Tennant Avenue, Railroad Avenue and Butterfield Boulevard. Seven new performance monitoring wells are also proposed.

Since groundwater remediation began in 2004, Olin has extracted over 1.25 billion gallons of groundwater and 230 pounds of perchlorate. Although Olin has made significant progress and the size of the perchlorate plume has shrunk to less than half its original length, it is expected that it will take decades or longer to complete the cleanup.

Since 2003, the Water Board has required Olin to provide replacement water program for wells impacted by perchlorate. At the peak of this program, Olin was providing replacement water to 188 domestic well owners. As of December 2017, only 6 domestic wells require replacement water, each of which are within one mile of the Olin site. Four of these wells have a drinking water treatment system installed and the remaining well owners are receiving bottled water.

The District continues to track cleanup progress and engage with the Water Board, Olin, and the Perchlorate Community Advisory Group to ensure timely and thorough cleanup.

ATTACHMENT(S):

Attachment 1: PowerPoint Presentation

Update on Perchlorate Contamination in the Llagas Subbasin

June 6, 2018



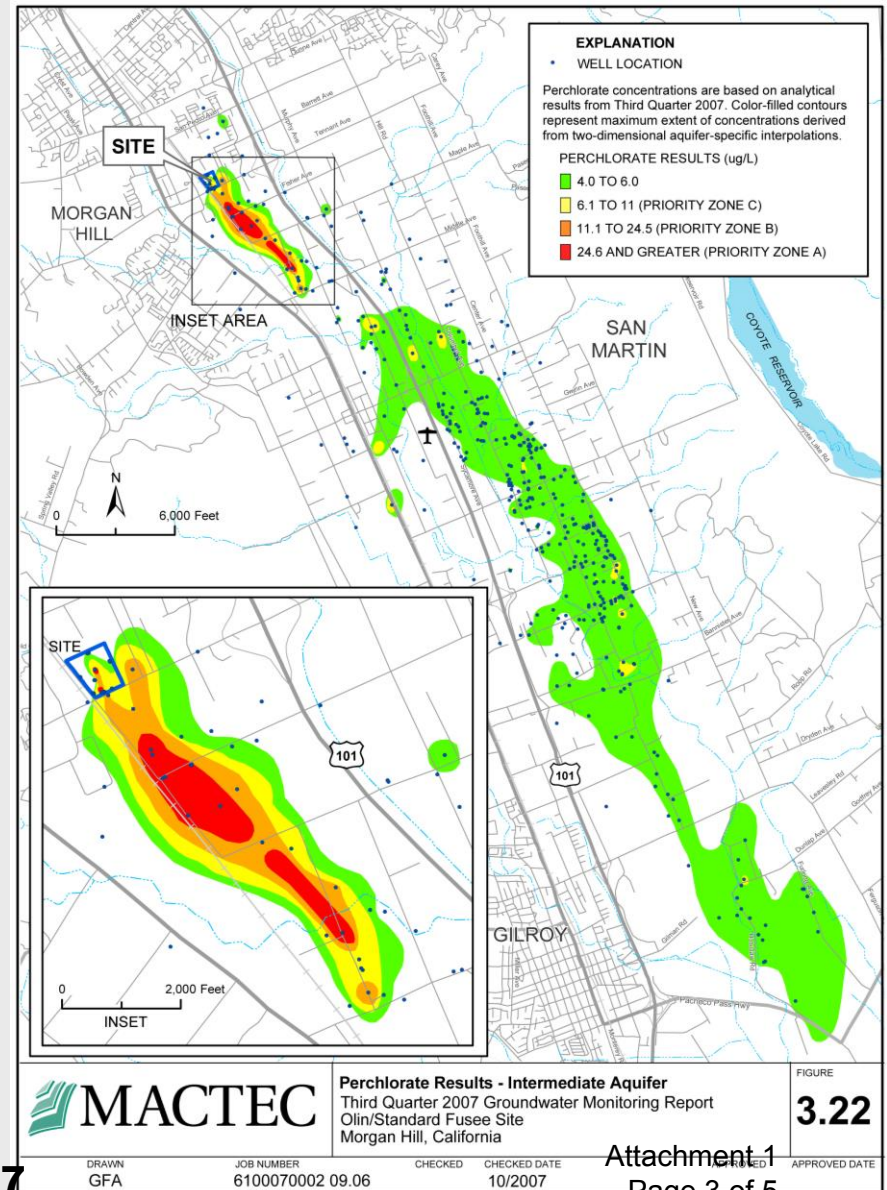
Background

- ▶ 1956 to 1995: Road flares manufactured at Tennant Avenue in Morgan Hill
- ▶ 2000: Perchlorate discovered in groundwater
- ▶ 2004: Remediation begins, overseen by Central Coast Regional Water Board
- ▶ 2007: State adopts drinking water standard of 6 parts per billion



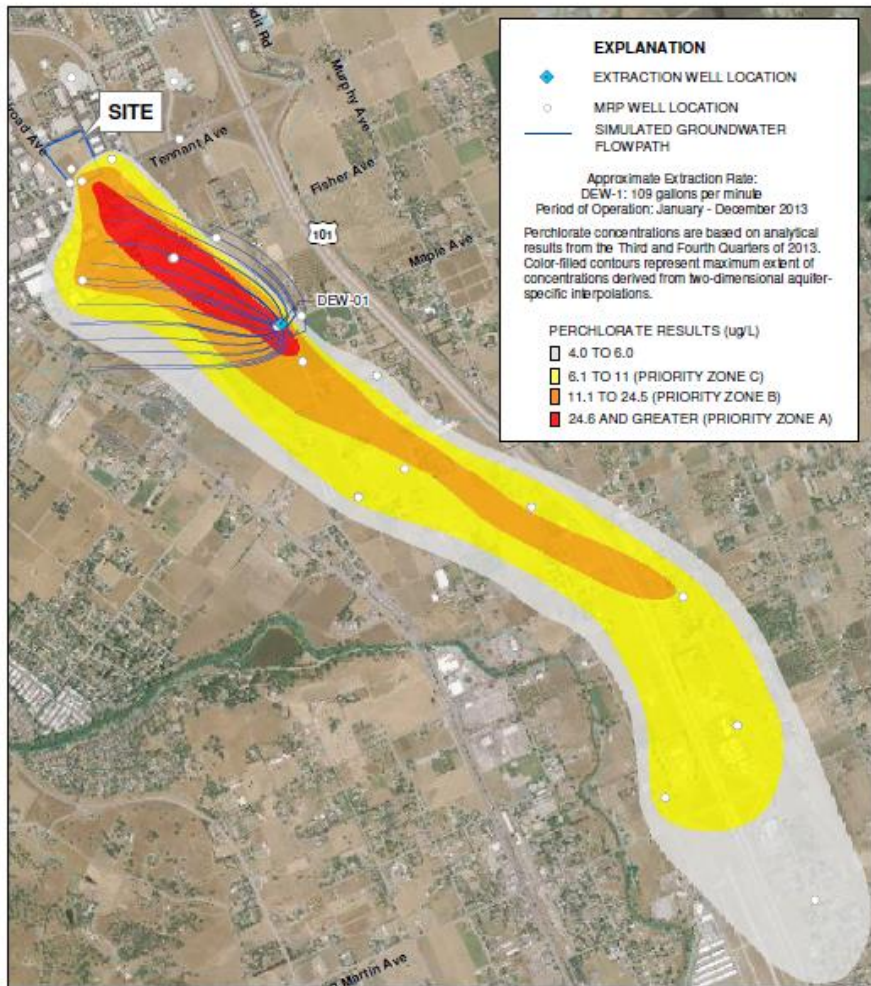
Perchlorate Distribution (2007)

- ▶ Maximum plume extent from Morgan Hill to Highway 152
- ▶ Generally follows groundwater flow to southeast

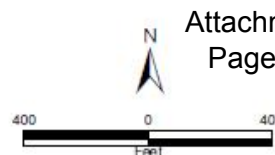
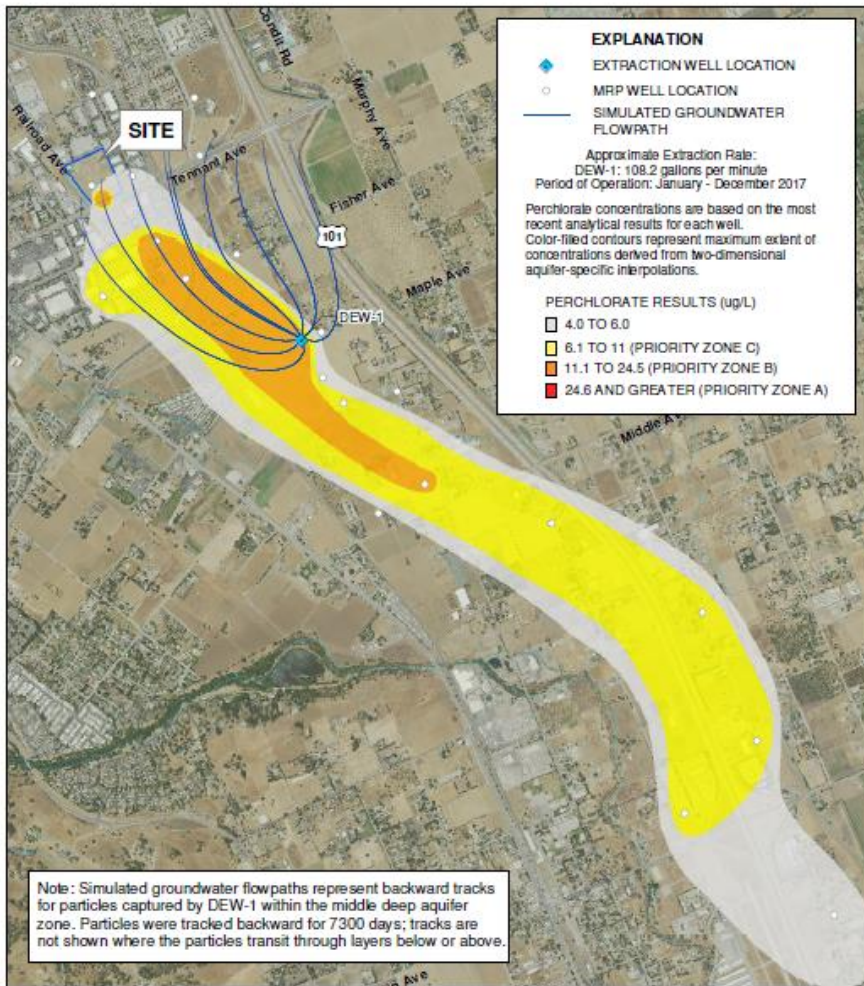


Perchlorate Distribution (2013 – 2017)

2013

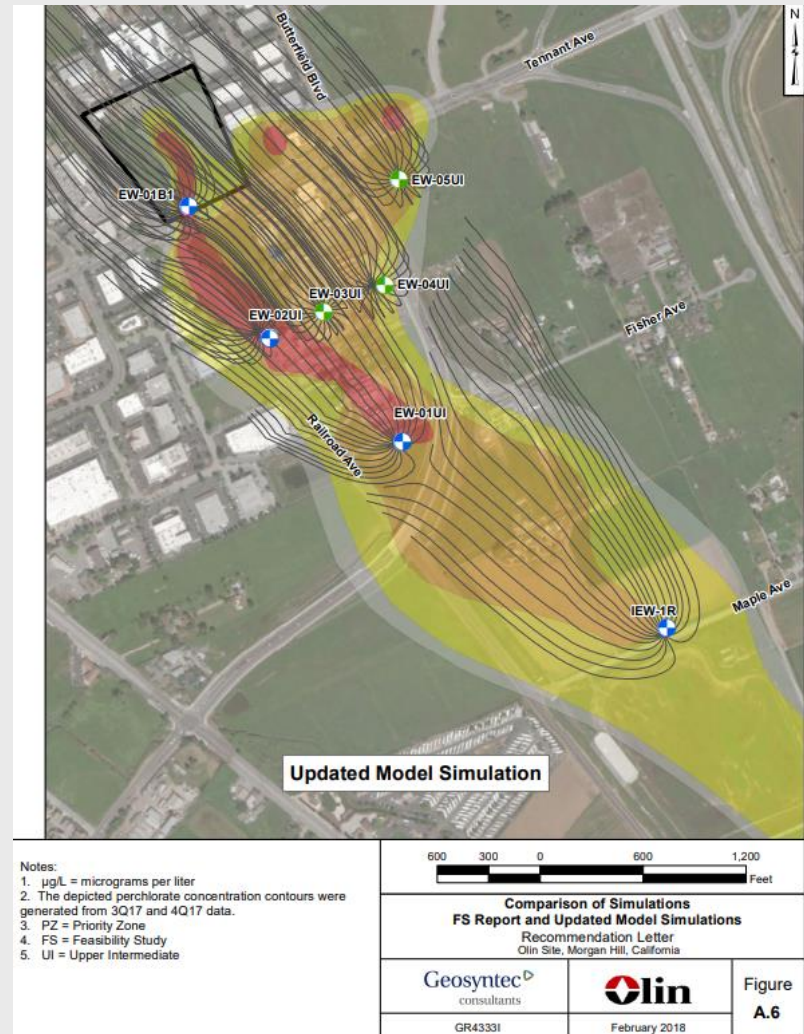


2017



Current Activities

- ▶ Ongoing remediation and investigation by Olin
 - ▶ Expanded offsite remediation
 - ▶ Feasibility Study to address deep aquifer contamination
 - ▶ Replacement water to impacted wells (6 as of December 2017)
- ▶ Continued District engagement to ensure timely cleanup



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Committee: Joint Water Resources
Meeting Date: 06/06/18
Agenda Item No.: 4.3
Unclassified Manager: Garth Hall
Email: ghall@valleywater.org
Est. Staff Time: 15 minutes

COMMITTEE AGENDA MEMO

SUBJECT: Update on District's Water Supply Master Plan

RECOMMENDED ACTION:

This is an information only item and no action is required. However, the Committee may provide comments for Board consideration.

SUMMARY:

The Water Supply Master Plan, which is currently being updated, is the District's strategy for providing a reliable and sustainable water supply in a cost-effective manner. It describes the new water supply investments the District is planning to make, the anticipated schedule of those investments, and the associated costs and benefits of the investments. This memorandum describes how staff incorporated recent Board actions into its Water Supply Master Plan analysis and summarizes alternative water supply strategies. A key finding of staff's analysis is that the projects the Board recently approved to proceed to the planning stage (i.e., Water Supply Master Plan No Regrets Package, California Water Fix, and up to 24,000 acre-feet per year of potable reuse at Los Gatos Ponds) appear to be sufficient to meet the interim water supply reliability level of service goal. Staff used an interim level of service goal of meeting 85 percent of demands during droughts for the analysis presented in this memorandum.

BACKGROUND:

The Board approved beginning to plan for implementing the "No Regrets" package of water conservation and stormwater projects on September 19, 2017. These projects are designed to reduce water demands by approximately 10,000 acre-feet per year (AFY) and increase natural groundwater recharge by approximately 1,000 AFY. The Board also agreed to consider a lower level of service goal than the current one of meeting 90 percent of demands during a drought and directed staff to provide more information on different levels of service. The goal of meeting 90 percent of demands during droughts is equivalent to requiring no greater than a 10 percent demand reduction.

On October 17, 2017, the Board conditionally approved participation in California WaterFix, with the goal of offsetting a reduction of about 41,000 AFY of Delta-conveyed imported water supplies. The Board also approved pursuing a public-private partnership to develop up to 24,000 AFY of potable reuse capacity using the Los Gatos Ponds on December 12, 2017. While the Main-Madrone pipeline project from the 2012 WSMP is under construction, groundwater modeling indicates an additional recharge project in the Llagas Groundwater Subbasin is needed to meet future demands. Staff analyzed these Board-approved projects and additional Llagas Subbasin recharge and found they are sufficient to achieve the interim water supply reliability

level of service goal (meeting 100 percent of demands in normal years and 85 percent of demands during drought years).

Staff also evaluated alternative water supply strategy scenarios that meet the interim level of service goal for inclusion in the WSMP monitoring and contingency plan. The costs, risks, and benefits of the alternative scenarios, along with the Board-Approved Projects scenario, are summarized in Table 1. Projects are described in Attachment 2. The costs include, where applicable, capital costs, operations and maintenance costs over the lifecycle of the projects (typically 100 years), and rehabilitation and replacement costs of the lifecycle of the projects. It is important to note that the cost estimates are based on current information and could change over time.

Staff analyzed the sensitivity of the different scenarios to different imported water supply and demand combinations. All the scenarios performed well under a variety of supply and demand combinations. Staff observed that implementing Water Shortage Contingency Plan water use reduction actions in smaller, earlier increments helped minimize the severity of shortages in later years of drought. This is because a 10 percent water use reduction equates to almost 40,000 AFY, which is more than most of the scenarios could yield in multiple years of drought. Staff also observed that potable reuse could be better optimized, so staff is currently evaluating alternatives for maximizing potable reuse while maintaining local surface water rights.

Staff also analyzed how different water supply scenarios would be expected to perform in a late century (2070-2100) climate, since most of the potential investments have assumed life spans of 100 years. There is scientific consensus that temperatures and sea levels are increasing and will continue to increase. For precipitation, most models indicate a shift toward extremes, with increased risk of future severe droughts and floods. Moreover, there is consensus that Sierra Nevada snowpack will decrease as increasing temperatures result in a shift from snow to rain. Both Sierra Nevada snowpack losses and sea level rise can negatively impact the availability of imported water supplies. Staff used downscaled climate model data and published reports to model the efficacy of different water supply scenarios given expected climate change. Based on the analysis, staff concluded that:

- recycled and purified water/potable reuse are the most reliable supplies because they are significantly less affected by hydrologic conditions than other sources of supply;
- the variability of local surface water supplies will likely increase, though long-term averages may stay about the same; and
- Delta-conveyed imported water supplies appear to be the most vulnerable to climate-related reductions, even when only sea level rise is considered.

NEXT STEPS

The next steps in the Water Supply Master Plan update process are to work with the Board Water Conservation and Demand Management Committee to develop a recommended level of service goal, refine alternative water supply strategies, and develop a recommended strategy and associated monitoring and contingency plan. Stakeholder engagement will be ongoing.

Table 1. Water Supply Strategy Scenarios Summary

Scenario and Included Projects (all include “No Regrets” Package and Llagas Subbasin Recharge)	District Lifecycle Cost (Present Value, 2017)	Risk	Key Benefits
Board-Approved Projects (California WaterFix, Potable Reuse-Los Gatos Ponds)	\$2.0 billion	Medium-High	<ul style="list-style-type: none"> • Secure existing supplies • Protect groundwater quality • Adapt to climate change
Local Flexibility (Potable Reuse-Los Gatos Ponds, Potable Reuse-Injection Wells, Potable Reuse-Ford Pond; Lexington Pipeline, Saratoga Recharge)	\$2.9 billion	Medium	<ul style="list-style-type: none"> • Secure existing supplies • Reduce reliance on the Delta • Protect groundwater quality • Maximize District influence • Allow for phased implementation • Adapt to climate change
Regional Flexibility (Potable Reuse-Los Gatos Ponds, Lexington Pipeline, Saratoga Recharge, Los Vaqueros Reservoir, Dry Year Options)	\$1.7 billion with Prop 1 funding	Medium	<ul style="list-style-type: none"> • Secure existing supplies • Reduce reliance on the Delta • Protect groundwater quality • Meet drinking water regulations • Allow for phased implementation • Adapt to climate change
Local Storage (California WaterFix, Pacheco Reservoir, Groundwater Banking)	\$1.3 billion with Prop 1 funding	High	<ul style="list-style-type: none"> • Secure existing supplies • Meet drinking water regulations • Adapt to climate change • Provide ecosystem benefits • Provide flood protection benefits
Regional Storage (California WaterFix, Los Vaqueros Reservoir, Groundwater Banking)	\$840 million with Prop 1 funding	Medium-High	<ul style="list-style-type: none"> • Secure existing supplies • Meet drinking water regulations • Minimize costs • Allow for phased implementation • Adapt to climate change • Provide ecosystem benefits
Statewide Storage (California WaterFix, Sites Reservoir)	\$910 million with Prop 1 funding	High	<ul style="list-style-type: none"> • Secure existing supplies • Minimize costs • Adapt to climate change • Provide ecosystem benefits

ATTACHMENT(S):

- Attachment 1: PowerPoint Presentation
- Attachment 2: Project List

Water Supply Master Plan Update

June 6, 2018



Recent Board actions incorporated into outlook

- ▶ **September 19, 2017:** No Regrets Package of conservation and stormwater projects approved for planning
- ▶ **October 17, 2017:** California WaterFix conditionally approved
- ▶ **December 12, 2017:** Up to 24,000 AFY of potable reuse at Los Gatos Ponds approved

Board-approved projects meet interim reliability goal

Scenario	2040 Demands	2040 Maximum Drought Shortage (in AF with percent of normal year demands)	District Lifecycle Cost (present value, 2017)
Base Case – No Action	402,000	187,000 (50%)	\$0
Board-Approved Projects – No Regrets Package, California WaterFix, Los Gatos Potable Reuse, and Llagas Groundwater Subbasin Recharge ¹	392,000	56,000 (15%)	\$2.0 billion

1. Llagas Groundwater Subbasin Recharge not yet approved by Board, but needed based on groundwater modeling

Alternative Water Supply Strategies



Local Flexibility

Potable Reuse at Los Gatos Ponds, Potable Reuse with Injection Wells, Potable Reuse at Ford Pond, Lexington Pipeline, Saratoga Recharge



Regional Flexibility

Los Gatos Potable Reuse, Lexington Pipeline, Saratoga Recharge, Los Vaqueros Reservoir, Dry Year Options



Local Storage

California WaterFix, Pacheco Reservoir, Groundwater Banking



Regional Storage

California WaterFix, Los Vaqueros Reservoir, Groundwater Banking



Statewide Storage

California WaterFix, Sites Reservoir

Alternative Water Supply Strategies Scenarios

Strategy Scenario*	District Lifecycle Cost (Present Value, 2017)	Relative Risk
Board-Approved Projects	\$2.0 billion	Medium-High
Local Flexibility	\$2.9 billion	Medium
Regional Flexibility	\$1.7 billion**	Medium
Local Storage	\$1.3 billion**	High
Regional Storage	\$840 million**	Medium-High
Statewide Storage	\$910 million**	High

*All strategies have annual demands of 392,000 AF and include No Regrets and Llagas Subbasin Recharge

**Assumes Prop 1 Water Storage Investment Program funding

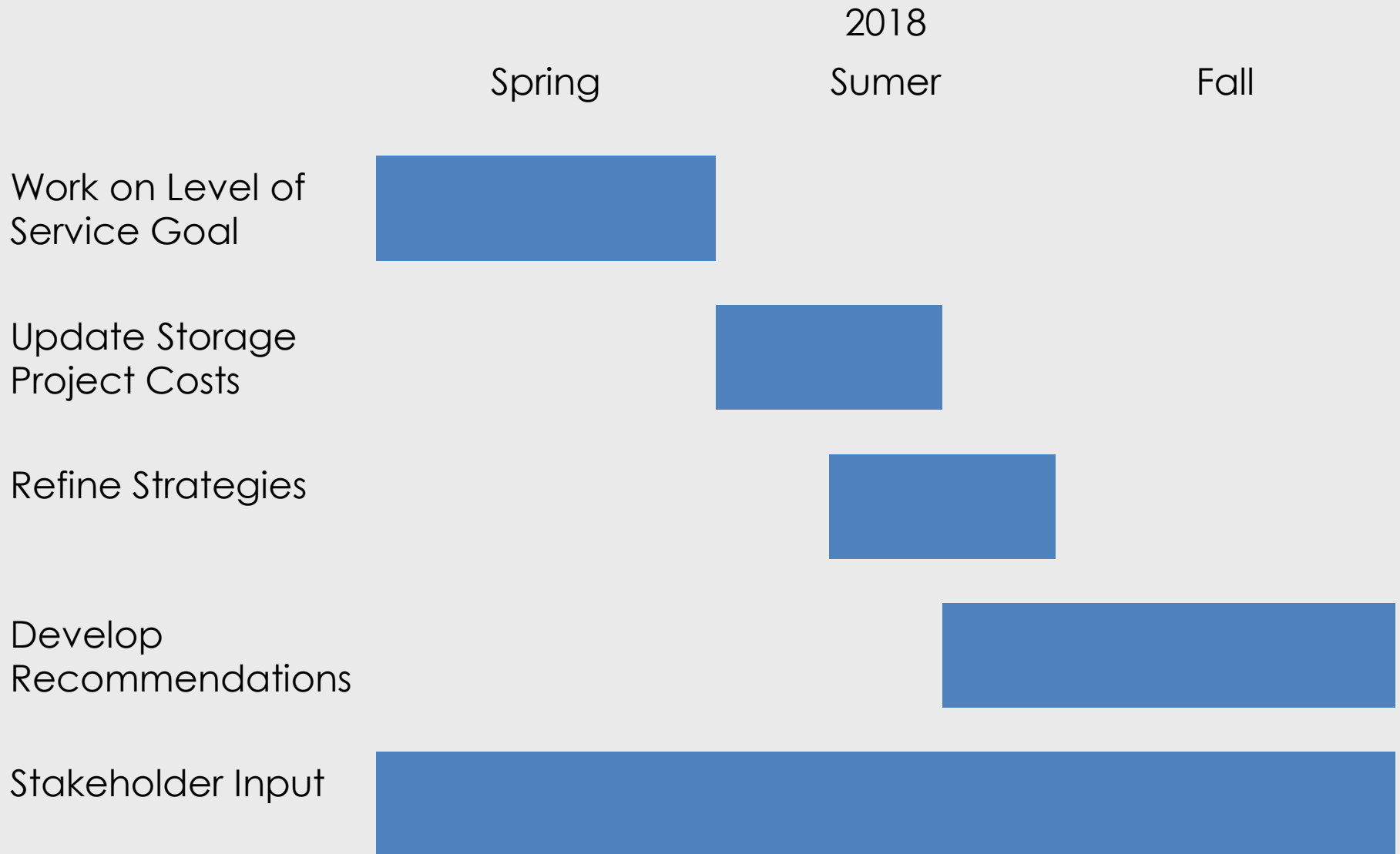
Different strategies achieve different objectives

Board-Approved	Local Flexibility	Regional Flexibility	Local Storage	Regional Storage	Statewide Storage
<ul style="list-style-type: none">• Secure existing supplies• Protect groundwater quality• Adapt to climate change	<ul style="list-style-type: none">• Secure existing supplies• Reduce reliance on Delta• Protect groundwater quality• Maximize District influence• Allow for phased implementation• Adapt to climate change	<ul style="list-style-type: none">• Secure existing supplies• Reduce reliance on Delta• Protect groundwater quality• Meet drinking water regulations• Allow for phased implementation• Adapt to climate change	<ul style="list-style-type: none">• Secure existing supplies• Meet drinking water regulations• Maximize District influence• Adapt to climate change• Provide ecosystem benefits• Provide flood protection	<ul style="list-style-type: none">• Secure existing supplies• Meet drinking water regulations• Minimize costs• Allow for phased implementation• Adapt to climate change• Provide ecosystem benefits	<ul style="list-style-type: none">• Secure existing supplies• Minimize costs• Adapt to climate change• Provide ecosystem benefits

Late Century Climate Analysis

- ▶ Recycled and purified water most reliable supplies
- ▶ Variability of local surface water supplies will likely increase
- ▶ Delta-conveyed supplies most vulnerable

Next steps for Water Supply Master Plan



Water Supply Master Plan Update 2018 - Project Descriptions (as of January 2018)

Projects Already Approved by the District Board of Directors

Project	Average Annual Yield (AFY)	District Lifecycle Cost (Present Value, 2017) ¹	Cost/AF
No Regrets Package: All the water supply strategies under consideration include the following water conservation and stormwater projects.	Total: 11,000	Total: \$100 million	\$400
<u>Advanced Metering Infrastructure (AMI)</u> : Implements a cost share program with water retailers to install AMI throughout their service area. AMI would alert customers of leaks and provide real-time water use data that allows users to adjust water use.	4,000	\$26 million	\$200
<u>Graywater Rebate Program Expansion</u> : Expand the District’s existing rebate program for laundry-to-landscape graywater systems. Potentially could include a direct installation program and/or rebates for graywater systems that reuse shower and sink water. .	< 1,000	\$1 million	\$2,200
<u>Leak Repair Incentive</u> : Provides financial incentivizes homeowners to repair leaks.	< 1,000	\$2 million	\$7,800
<u>New Development Model Ordinance</u> : Encourages municipalities to adopt an ordinance for enhancing water efficiency standards in new developments. Potential components include submetering multi-family residences, onsite water reuse (rainwater, graywater, black water), and point-of use hot water heaters.	5,000	\$1 million	\$100
<u>Stormwater - Agricultural Land Recharge</u> : Flooding or recharge on South County agricultural parcels during the winter months.	1,000	\$14 million	\$1,000
<u>Stormwater - Rain Barrels</u> : Provides rebates for the purchase of a rain barrels.	< 1,000	\$36 million	\$15,100
<u>Stormwater - Rain Gardens</u> : Initiates a District rebate program to incentivize the construction of rain gardens in residential and commercial landscapes.	< 1,000	\$14 million	\$2,800
<u>Stormwater - San Jose</u> : Constructs a stormwater infiltration system in San Jose. Assumes 5 acres of ponds. Potential partnership with the City of San Jose.	1,000	\$4 million	\$100
<u>Stormwater - Saratoga</u> : Constructs a stormwater infiltration system in Saratoga. Assumes 5 acres of ponds. Assumes easement rather than land purchase. Close to Stevens Creek Pipeline, so could also potentially be used as a percolation pond.	< 1,000	\$4 million	\$1,100

¹ The Present Value District Cost (2017) includes capital, operations, maintenance, rehabilitation, and replacement costs, as applicable, for the life-cycle of the project (typically 100 years), discounted back to 2017 dollars.

Water Supply Master Plan Update 2018 - Project Descriptions (as of January 2018)

Projects Already Approved by the District Board of Directors

Project	Average Annual Yield (AFY) ²	District Lifecycle Cost (Present Value, 2017)	Cost/AF	Relative Risk
<p>California WaterFix: Constructs alternative conveyance (one or two tunnels) capable of diverting up to 9,000 cubic feet-per-second from the Sacramento River and delivering it to the federal and state pumps. This would result in less impactful diversions, help maintain existing deliveries, improve the ability to do transfers, and protect water quality from sea level rise. The project has implementation complexity, uncertainty, and stakeholder opposition.</p>	41,000	\$620 million	\$600	High
<p>Potable Reuse -Los Gatos Ponds: Constructs a facility to purify water treated at wastewater treatment plants for groundwater recharge. Potable reuse water is a high-quality, local drought-proof supply that is resistant to climate change impacts. Assumes up to 24,000 AFY of advanced treated recycled water would be available for groundwater recharge at existing recharge ponds in the Los Gatos Recharge System. Some of the outstanding issues with the project are reverse osmosis concentrate management and agreements with the City of San Jose.</p>	19,000	\$1.2 billion	\$2,000	Medium

² The average annual yield of many projects depends on which projects they are combined and the scenario being analyzed. For example, groundwater banking yields are higher in portfolios that include wet year supplies. Similarly, they would be lower in scenarios where demands exceed supplies and excess water is unavailable for banking.

Water Supply Master Plan Update 2018 - Project Descriptions (as of January 2018)

Additional Projects Being Considered for the Water Supply Master Plan Update 2018

Project	Average Annual Yield (AFY) ³	District Lifecycle Cost (Present Value, 2017)	Cost/AF	Relative Risk
Dry Year Options / Transfers: Provides 12,000 AF of State Water Project transfer water during critical dry years. Amount can be increased or decreased. Can also include long-term option agreements. There are uncertainties with long-term costs and ability to make transfers in critical dry years.	2,000	\$100 million	\$1,400	Low
Groundwater Banking: Provides 120,000 AF of banking capacity for Central Valley Project and State Water Project contract water. Sends excess water to a groundwater bank south of the Delta during wet years and times of surplus for use during dry years and times of need. Amount could be increased or decreased. There are uncertainties with the ability to make transfers in critical dry years and Sustainable Groundwater Management Act implementation.	2,000	\$60 million	\$1,300	Low
Groundwater Recharge – Morgan Hill Recharge: Extends the Madrone Pipeline from Madrone Channel to Morgan Hill’s Butterfield Channel and Pond near Main Street. Would help optimize the use of existing supplies. Would need to be operated in conjunction with the City’s stormwater operations.	2,000	\$20 million	\$400	Low
Groundwater Recharge – Saratoga: Constructs a new groundwater recharge facility in the West Valley, near the Stevens Creek pipeline. Would help optimize the use of existing supplies. Land availability and existing land uses limit potential project locations.	1,000	\$50 million	\$1,300	Low

³ The average annual yield of many projects depends on which projects they are combined and the scenario being analyzed. For example, groundwater banking yields are higher in portfolios that include wet year supplies. Similarly, they would be lower in scenarios where demands exceed supplies and excess water is unavailable for banking.

Water Supply Master Plan Update 2018 - Project Descriptions (as of January 2018)

Additional Projects Being Considered for the Water Supply Master Plan Update 2018

Project	Average Annual Yield (AFY) ³	District Lifecycle Cost (Present Value, 2017)	Cost/AF	Relative Risk
<p>Lexington Pipeline: Constructs a pipeline between Lexington Reservoir and the raw water system to provide greater flexibility in using local water supplies. The pipeline would allow surface water from Lexington Reservoir to be put to beneficial use elsewhere in the county and increase utilization of existing water rights, especially in combination with the Los Gatos Ponds Potable Reuse project. In addition, the pipeline will enable the District to capture some wet-weather flows that would otherwise flow to the Bay. Water quality issues would require pre-treatment/management.</p>	3,000	\$90 million	\$1,000	Low
<p>Los Vaqueros Reservoir: Secures an agreement with Contra Costa Water District and other partners to expand the off-stream reservoir by 115 TAF (from 160 TAF to 275 TAF) and construct a new pipeline (Transfer-Bethany) connecting the reservoir to the South Bay Aqueduct. Assumes District's share is 35 TAF of storage, which includes an emergency storage pool of 20 TAF for use during droughts. District would also receive Delta surplus supplies when there is capacity to take. The flexibility provided by the Transfer-Bethany Pipeline provides a majority of the project benefits. Would require funding and operating agreements with multiple parties.</p>	3,000	\$40 million ⁴	\$400	Medium
<p>Pacheco Reservoir: Enlarges Pacheco Reservoir to about 140,000 AF. Assumes local inflows and ability to store Central Valley Project supplies in the reservoir. Construction would be in collaboration with Pacheco Pass Water District and San Benito County Water District. Would help manage San Luis Reservoir low-point problems. The project would be operated to provide water for fisheries downstream of the reservoir. Potentially significant environmental and cultural impacts are associated with the project.</p>	6,000	\$450 million ⁵	\$2,700	High

⁴ Assumes Proposition 1 Water Storage Investment Program funding. Costs would be about double without the funding.

⁵ Assumes Proposition 1 Water Storage Investment Program funding. Costs would be about double without the funding.

Water Supply Master Plan Update 2018 - Project Descriptions (as of January 2018)

Additional Projects Being Considered for the Water Supply Master Plan Update 2018

Project	Average Annual Yield (AFY) ³	District Lifecycle Cost (Present Value, 2017)	Cost/AF	Relative Risk
Potable Reuse – Ford Pond: Constructs potable reuse facilities for 4,000 AFY of groundwater recharge capacity at/near Ford Ponds. Potable reuse water is a high-quality, local drought-proof supply that is resistant to climate change impacts. The project would require agreements with the City of San Jose and may require moving existing water supply wells.	3,000	\$300 million	\$2,800	Medium
Potable Reuse – Injection Wells: Constructs potable reuse facilities for 15,000 AFY of groundwater injection capacity. Potable reuse water is a high-quality, local drought-proof supply that is resistant to climate change impacts. The injection wells could be constructed in phases and be connected to the pipeline carrying purified water to the Los Gatos Ponds. The project would require agreements with the City of San Jose and reverse osmosis concentrate management. Injection well operations are more complex than recharge pond operations.	12,000	\$1.2 billion	\$3,100	High
Sites Reservoir: Establishes an agreement with the Sites JPA to build an off-stream reservoir (up to 1,800 TAF) north of the Delta that would collect flood flows from the Sacramento River and release them to meet water supply and environmental objectives. Assumes District’s share is 24 TAF of storage, which is used to prorate yields from the project. The project would be operated in conjunction with the SWP and CVP, which improve flexibility of the statewide water system but be subject to operational complexity. The project would increase reliance on the Delta.	8,000	\$170 million ⁶	\$800	High
Water Contract Purchase: Purchase 20,000 AF of SWP Table A contract supply from other SWP agencies. Would increase reliance on the Delta and be subject to willing sellers’ availability.	12,000	\$360 million	\$800	Medium

⁶ Assumes Proposition 1 Water Storage Investment Program funding. Costs would be about double without the funding.

Water Supply Master Plan Update 2018 - Project Descriptions (as of January 2018)

Other Potential Future Water Supply Projects

Project	Average Annual Yield (AFY)	District Lifecycle Cost (Present Value, 2017)	Cost/AF
<p>Anderson Reservoir Expansion: Would increase reservoir storage by 100,00 AF to about 190,000 AF, increasing the District’s ability to capture and store local runoff. Planning for reconstruction of Anderson Reservoir to meet seismic standards is currently underway. Consideration of also expanding the reservoir would likely delay the required work.</p>	10,000	\$1.2 billion	\$4,800
<p>Calero Reservoir Expansion: Would expand Calero Reservoir storage by about 14,000 AF to 24,000 AF. Other water storage options under consideration provide better yield for the cost.</p>	3,000	\$300 million	\$3,800
<p>Church Avenue Pipeline: Diverts water from the Santa Clara Conduit to the Church Avenue Ponds. The Morgan Hill Recharge project provides better yield for less cost and is enough to meet projected Llagas Subbasin demands.</p>	1,000	\$30 million	\$800
<p>Conservation Rate Structures: Many retailers implement conservation rate structures. Given recent court rulings on rate structure, retailers are reluctant to add new conservation rate structures at this time.</p>	TBD	TBD	TBD
<p>Countywide Water Reuse Master Plan: The District is working with local recycled water producers, retailers, and other stakeholders to develop a Countywide Water Reuse Master Plan that will address key challenges in potable water reuse, including: (1) identification of how much water will be available for potable reuse and recycled water expansion, (2) evaluation of system integration options, (3) identification of specific potable reuse and recycled water projects, and (4) development of proposals for governance model alternatives including roles and responsibilities. The Countywide Water Reuse Master Plan will also incorporate proposed infrastructure upgrades that would improve capacity; analyze seasonal, daily, and hourly demand trends to determine the opportunities to optimize flows during peak periods; update the existing and projected future demands of users and retailers; identify land requirements; and prioritize actions and improvements needed to meet the projected demands, including cost estimates of recommended improvements.</p>	TBD	TBD	TBD

Water Supply Master Plan Update 2018 - Project Descriptions (as of January 2018)

Other Potential Future Water Supply Projects

Project	Average Annual Yield (AFY)	District Lifecycle Cost (Present Value, 2017)	Cost/AF
<p>Del Valle Reoperations: This project, as currently envisioned, would allow for more storage in Lake Del Valle, a State Water Project facility in Del Valle Regional Park that is operated by East Bay Regional Park District. The benefits of the additional storage are primarily related to operational flexibility and water quality. The project may not increase long-term water supply yields or drought year yields. Staff is continuing to evaluate Del Valle reoperations in partnership with Alameda County Water District and Zone 7 Water Agency. If long-term water supply benefits are identified, staff will evaluate it as part of the Water Supply Master Plan.</p>	TBD	TBD	TBD
<p>Local Land Fallowing: Launches program to pay growers not to plant row crops in critical dry years. This would primarily save water in the South County. The Groundwater Recharge – Morgan Hill project provides better yield for less cost and is more consistent with County land use policy and grower interests.</p>	1,000	\$50 million	\$2,400
<p>Morgan Hill Recycled Water: Constructs a 2.25 MGD scalping plant in Morgan Hill. Would need to replace a lower cost recycled water project in Gilroy due to capacity constraints on the system.</p>	3,000	\$80 million	\$1,000
<p>Regional Desalination: Secures a partnership with other Bay Area agencies to build a Bay Delta desalination plant in Contra Costa County. District would receive up to 5 MGD of water in critical dry years. There are concerns about the complexity of permitting a desalination plant and the availability of water rights during dry periods when such a facility would be most needed. This project will require collaboration among multiple agencies and requires partners for moving forward. The District is a member of Bay Area Regional Reliability and will continue to work on regional solutions to water reliability.</p>	1,000	\$50 million	\$2,000
<p>Retailer System Leak Detection/Repair: Recent legislation requires retailers to complete annual water loss audits, which will then be used by the State to establish water loss standards. Staff will reconsider this alternative after the standards are developed.</p>	TBD	TBD	TBD

Water Supply Master Plan Update 2018 - Project Descriptions (as of January 2018)

Other Potential Future Water Supply Projects

Project	Average Annual Yield (AFY)	District Lifecycle Cost (Present Value, 2017)	Cost/AF
<p>San Francisco Public Utilities Commission (SFPUC) Purchases: Increasing San Francisco Public Utilities Commission water deliveries to Santa Clara County is an on-going potential opportunity that is being evaluated through SFPUC’s planning processes, the Bay Area Regional Reliability project, and potable reuse feasibility studies. The results of these efforts will be considered in future Water Supply Master Plan updates and/or subsequent annual reviews.</p>	TBD	TBD	TBD
<p>San Pedro Ponds: Retires the septic systems around the San Pedro Ponds and extends the City of Morgan Hill sewer system to these homes so the District can operate the groundwater recharge facility without high groundwater constraints. The Groundwater Recharge – Morgan Hill project provides better yield for less cost.</p>	1,000	\$20 million	\$1,000
<p>Shallow Groundwater Reuse: A feasibility study for the recovery and beneficial use of shallow groundwater was completed in 2009. Although potential sites for shallow groundwater reuse were identified, staff has identified several concerns. These concerns include water quality, sustainable yields, and lack of infrastructure for convey the water to reuse areas. In addition, several reuse sites are in areas where recycled water is already delivered for non-potable use.</p>	TBD	TBD	TBD
<p>Shasta Reservoir Expansion: A Feasibility Study and Environmental Impact Statement have been completed for a Shasta Reservoir Expansion. The United States Bureau of Reclamation concluded the project is technically feasible, but that non-federal partners would need to pay for project implementation. State law prohibits Prop 1 storage funding for the project and restricts funding for any studies. Staff will continue to monitor opportunities related to Shasta Reservoir Expansion.</p>	TBD	TBD	TBD
<p>Stormwater – Saratoga 2: Constructs a stormwater infiltration system on a parcel in Saratoga. Assumes 5 acres of ponds. Currently zoned as ag land; assumes land purchase. About 0.6 miles from the Stevens Creek Pipeline. The cost and cost-effectiveness are low due to the land purchase requirement. Other stormwater projects are included in the “No Regrets” package.</p>	<1,000	\$50 million	\$10,000

Water Supply Master Plan Update 2018 - Project Descriptions (as of January 2018)

Other Potential Future Water Supply Projects

Project	Average Annual Yield (AFY)	District Lifecycle Cost (Present Value, 2017)	Cost/AF
<p>Temperance Flat Reservoir: Temperance Flat Reservoir would be located upstream of Friant Dam on the San Joaquin River. Staff's current analysis is that any water supply benefits to the District from the project would be indirect, largely manifested by lowered requirements for Delta pumping for delivery to the San Joaquin Exchange contractors at the Delta-Mendota Pool. The project is being considered for Prop 1 Water Storage Investment Program funding.</p>	TBD	TBD	TBD
<p>Uvas Pipeline: Captures excess water (e.g., water that would spill) from Uvas Reservoir and diverts the water to Church Ponds and a 25 acre-foot pond near Highland Avenue. The new pond would be adjacent to and connected by a pipe to West Branch Llagas Creek. The Groundwater Recharge - Morgan Hill project provides better yield for less cost</p>	1,000	\$80,000	\$2,000
<p>Uvas Reservoir Expansion: Would expand Uvas Reservoir by about 5,100 AF to 15,000 AF, reducing reservoir spills. Project would be located on Uvas Creek, which currently provides good steelhead habitat. Other water storage options under consideration provide better yield for the cost.</p>	1,000	\$320,000	\$21,000

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Committee: Joint Water Resources
Meeting Date: 06/06/18
Agenda Item No.: 4.4
Unclassified Manager: Katherine Oven
Email: koven@valleywater.org
Est. Staff Time: 10 minutes

COMMITTEE AGENDA MEMO

SUBJECT: Update on District's Dam Projects

RECOMMENDED ACTION:

This is an information only item and no action is required. However, the Committee may provide comments for Board consideration.

SUMMARY:

The District owns and operates fourteen dams and ten reservoirs in Santa Clara County. The District dams and reservoirs were funded and constructed for water conservation, but also provide incidental flood management, recreation, and environmental benefits. Dam safety regulatory requirements, Board policies, and obligations due to dam ownership set direction for the Anderson, Calero, Guadalupe, and Almaden dam seismic retrofit projects.

Drivers for these capital projects include the following Boards Ends Policies, Strategies and CEO Directions:

- E-1 – The mission of the District is a healthy, safe, and enhanced quality of living in Santa Clara County.
- S-2.1.2.2 – Manage, operate and maintain dams and reservoir assets to maximize reliability, to minimize life cycle costs and to minimize impacts to the environment.
- S-2.1.2.3 – Aggressively implement dam remediation projects.

This memorandum updates the Board on status of Anderson, Almaden, Calero and Guadalupe seismic retrofit projects.

BACKGROUND:

As part of their seismic re-evaluation program in the early 2000's, the Division of Safety of Dams (DSOD) performed independent, preliminary seismic stability evaluations of Calero, Almaden, Guadalupe, Lenihan, Stevens Creek, Chesbro and Uvas Dams. Additionally, in 2003, with the concurrence of DSOD, the Federal Energy Regulatory Commission (FERC) required that a seismic stability evaluation of Anderson Dam be performed. Based on the preliminary stability evaluations, DSOD directed the District to update the seismic stability analyses for all the dams referenced above.

The District has completed the seismic stability evaluations of Anderson, Almaden, Calero, Guadalupe, Stevens Creek and Lenihan Dams, as directed by DSOD. The seismic evaluations of Chesbro and Uvas are on-going. The completed studies concluded that the embankments for the Anderson, Calero and Guadalupe

Dams require remediation. As a result, seismic retrofit projects were initiated for these dams in 2012. Stevens Creek and Lenihan dams do not require any retrofiting. Although, the seismic evaluation of Almaden embankment indicated that no seismic retrofit was required, the existing intake structure at Almaden reservoir will require to be replaced due to seismic deficiencies. Water level operating restrictions have been imposed on these reservoirs by DSOD, as interim risk reduction measures until the seismic retrofit projects can be completed. A summary of the status, conclusion of seismic stability evaluations, and the current reservoir restrictions for each dam are as follows:

Dam	Evaluation	Planning	Design	Construction	Reservoir Capacity (AF)	Restricted Capacity (AF)
Anderson	Completed in 2011	Completed in 2013	On-going, planned completion in 2020	Planned completion in 2025	90,373	52,553
Almaden	Completed in 2012- Only intake retrofit required	Completed in 2017	Planned completion in 2022	Planned completion in 2024	1,586	1,472
Calero	Completed in 2012	Completed in 2015	On-going, planned completion in 2020	Planned completion in 2023	9,934	7,945
Guadalupe	Completed in 2012	Completion in 2015	On-going, planned completion in 2020	Planned completion in 2023	3,415	2,218

AF = acre-feet

Capital projects are on-going to design and construct the required dam retrofit projects. The following costs have been included in the FY2019-2023 Capital Improvement Program for these projects:

Project	Project No.	FY 2019-23 CIP
Anderson Dam Seismic Retrofit Project	91864005	\$ 550,843,000
Calero-Guadalupe Seismic Retrofit Project (Planning & Environmental Phases)	91084020	\$ 9,707,000
Calero Seismic Retrofit Project (Design & Construction Phases)	91874004	\$ 78,149,000
Guadalupe Seismic Retrofit Project	91894002	\$ 63,156,000
Almaden Dam Improvements Project	91854001	\$ 60,615,000
Total		\$ 718,062,000

A detailed status of the Anderson, Calero, Guadalupe, and Almaden dam seismic retrofit projects is included as Attachment 1.

ATTACHMENT(S):

Attachment 1: Detailed Status of Seismic Retrofit Projects

DETAILED STATUS OF SEISMIC RETROFIT PROJECTS

As part of their seismic evaluation program in the early 2000's, the Division of Safety of Dams (DSOD) performed independent, preliminary seismic stability evaluations of Calero, Almaden, Guadalupe, Lenihan, Stevens Creek, Chesbro and Uvas Dams. Based on the results of their evaluations, DSOD directed the District to update the seismic stability analyses for these dams. Additionally, in 2003, based on a review of a required safety inspection report for Anderson Dam (GEI, 2001), the Federal Energy Regulatory Commission (FERC) also concluded that a seismic stability evaluation of Anderson dam was required. FERC's conclusion requiring a seismic evaluation of Anderson dam, was also supported by DSOD.

The District has completed the seismic stability evaluations of Anderson, Almaden, Calero, Guadalupe, Stevens Creek and Lenihan Dams. The evaluations conclude that the embankments for Anderson, Calero and Guadalupe Dams require remediation, and seismic retrofit projects have been initiated for these dams. Although, the seismic evaluation of Almaden embankment indicated that no seismic retrofit was required, the existing intake structure at Almaden reservoir will require to be replaced to address seismic deficiencies. The Almaden Dam Improvement Project (ADIP) was initiated to address the seismic deficiency of the existing intake structure at Almaden reservoir and deficiencies of aging infrastructure at the Almaden-Calero Canal in 2013.

During the planning phases of Anderson Dam Seismic Retrofit Project (ADSRP), Calero Dam Seismic Retrofit Project (CDSRP), Guadalupe Dam Seismic Retrofit Project (GDSRP) and Almaden Intake Project (ADIP), it was concluded that spillways at these reservoirs do not meet the current Probable Maximum Flood (PMF) standards. Additionally, in May 2017, DSOD directed the District to perform comprehensive evaluations of spillways at these reservoirs. Based on the findings of these evaluations, the spillways at Anderson, Calero, Guadalupe and Almaden reservoirs will need to be replaced or substantially modified to meet current safety standards. These required spillway modifications are being addressed in the design phases of the respective projects.

As part of the seismic retrofit projects, the existing outlets at Anderson, Calero, Guadalupe and Almaden dams were also evaluated. Based on these evaluations, the outlets and/or intake structures at these reservoirs will need to be replaced (the intake structures at the Almaden dam will be replaced, whereas the outlet works, including the outlet pipes will be replaced for Anderson, Calero and Guadalupe dams). The required outlet and intake modifications are included within the scope for the design phase of these projects.

As an interim risk reduction measure, DSOD has imposed water level operating restrictions on these reservoirs while the projects are designed and constructed. Detailed status of Anderson, Calero and Guadalupe dam seismic retrofit projects is provided as follows:

i. Anderson Dam Seismic Retrofit Project

Background: AMEC Geomatrix, Inc. performed the Anderson Dam Seismic Stability Evaluation. The results of the evaluation indicated that material at the base and foundation of the dam embankment would weaken due to liquefaction in a large earthquake. Such an event could significantly deform the dam embankment, increasing the risk of an uncontrolled release from Anderson

Reservoir. Geologic/geotechnical investigations during the design phase of the project in June 2017, indicated that movement of potentially active faults located under the dam could adversely impact the embankment. It was also concluded that the existing transition zones within the dam were inadequate to handle any fault offset, and the upstream shell of the dam embankment was also susceptible to liquefaction. The reservoir is being operated under a restricted reservoir level imposed by FERC and DSOD to ensure public safety (Table 1). In response to these findings, staff initiated the seismic stability retrofit project in Fiscal Year 2011-2012. The planning phase of the project was completed in 2013. The retrofit concept developed during the planning phase was revised in December 2017 to address the new findings in June 2017. The scope of this project includes seismic retrofit of the dam embankment and replacing the outlet works. The spillway structure will also be substantially modified or replaced based on the 2011 FERC Five Year Safety Inspection and Report, re-evaluation of the Anderson Dam Probable Maximum Flood, and the recent 2017 spillway evaluation directed by DSOD. The retrofit project has been incorporated in the Fiscal Year 2019-2023 Capital Improvement Plan. A budget of \$550,083,000 is allocated.

Current status: The project is currently in the design phase and the environmental documentation process has been initiated. The 90% design submittal is scheduled for completion by November 2019. The construction phase is scheduled to begin in 2022 and last 5-years.

ii. Calero Dam Seismic Retrofit Project

Background: In 2011, URS Corporation performed seismic stability evaluations for Calero dam. The evaluation concluded that Calero Main Dam had inadequate seismic stability and would require retrofitting. The Calero Auxiliary Dam was found to have adequate seismic stability and no retrofit is required. Calero reservoir is currently being operated at a restricted reservoir level as directed by DSOD (Table 1). Staff initiated a seismic retrofit project for Calero dam in July 2012. The goal of this project is to remediate seismic deficiencies identified in the seismic stability evaluation. The planning phase of the project was completed in 2015. Based on the evaluations of the existing outlet and spillway conducted during the planning phase, both the spillway and the outlet will need to be replaced to meet current safety standards. The retrofit project has been incorporated in the Fiscal Year 2019-2023 Capital Improvement Plan. A total of \$78,149,000 is allocated.

Current status: The project is in the design phase which is scheduled for completion by 2020. This will be followed by the construction phase which is scheduled for completion by 2022.

iii. Guadalupe Dam Seismic Retrofit Project

Background: In 2011, URS Corporation performed seismic stability evaluations for Guadalupe dam. The evaluation concluded that Guadalupe Dam had inadequate seismic stability and would require to be retrofitting. Guadalupe reservoir is currently being operated at a restricted reservoir level as directed by DSOD (Table 1). Staff initiated a seismic retrofit project for Guadalupe dam in July 2012. The goal of this project is to remediate seismic deficiencies identified in the seismic stability evaluation. The planning phase of the

project was completed in 2015. Based on the evaluations of the existing outlet and spillway conducted during the planning phase, the outlet will need to be replaced and the spillway will be substantially modified to meet current safety standards. The retrofit project has been incorporated in the Fiscal Year 2019-2023 Capital Improvement Plan. A total of \$63,156,000.

Current status: The project is in the design phase which is scheduled for completion by 2018. This will be followed by the construction phase which is scheduled for completion by 2021.

iv. Almaden Dam Improvements Project

In October 2000, a capital project was initiated to address seismic deficiencies related to the Almaden Dam outlet works and deficiencies of aging infrastructure at the Almaden-Calero Canal. The planning level work was suspended in September 2005, pending completion of the seismic stability evaluation of Almaden Dam. This seismic stability evaluation was completed in 2011 and it was determined that remediation of the dam embankment is not required; therefore, the Almaden Dam Improvements Project was reinitiated in 2012. The project will replacement of the existing outlet works, replacement of existing spillway to meet the latest safety standards, and improvements to the aging infrastructure at the Almaden-Calero Canal . The planning study for the project was completed in 2017. The project has been incorporated in the Fiscal Year 2019-2023 Capital Improvement Plan. A total of \$60,615,000 is allocated.

Current status: The design phase is on-going and is scheduled for completion in 2022. The construction phase is scheduled for completion in 2024.

Table 1 – Reservoir Sizes and Capacities

Reservoir	Year Built	Dam Height (feet)	Use	Surface Area (Acres)	Reservoir Capacity (Acre-ft.)	Restricted Capacity (Acre-ft.)	March 2015 Stored Volume (Acre-ft.)	Reason for Restriction
Almaden	1935	105	Recharge & treated water	59	1,586	1,472	1,704	Seismic stability concerns
Anderson	1950	240	Recharge & treated water	1,245	90,373	61,810	40,884	Seismic stability concerns
Calero	1935	98	Recharge & treated water	347	9,934	4,585	3,920	Seismic stability concerns
Guadalupe	1935	129	Recharge	79	3,415	2,218	2,005	Seismic stability concerns



Committee: Joint Water Resources
Meeting Date: 06/06/18
Agenda Item No.: 4.5
Unclassified Manager: Garth Hall
Email: ghall@valleywater.org
Est. Staff Time: 10 minutes

COMMITTEE AGENDA MEMO

SUBJECT: History of District Collaboration with the Cities of Gilroy and Morgan Hill on Recycled Water

RECOMMENDED ACTION:

This is a discussion item and no action is required. However, the Committee may provide comments for Board consideration.

SUMMARY:

Since 1978, the South County Recycled Water System (previously, Gilroy Reclamation and Irrigation Project) has been servicing the southern portion of Santa Clara County. This system was developed by the Santa Clara Valley Water District (District) in partnership with the City of Gilroy. In 1999, the District entered into producer-wholesaler-retailer partnership agreements with the South County Regional Wastewater Authority (SCRWA) and the cities of Gilroy and Morgan Hill to develop a marketable recycled water program, which included expansion of the SCRWA Wastewater Treatment and Reclamation Plant (WWTP) and the recycled water distribution system. Through these partnerships, the capacity of recycled water treatment has been increased to provide up to 8.5 million gallons per day. By 2017, approximately 30 percent of the total regional wastewater received by SCRWA was recycled and used for beneficial uses. These uses include agricultural irrigation, public parkland irrigation; industrial systems cooling; and commercial manufacturing.

For the District's May 22, 2018 Board meeting, under Item 5.3 of the agenda for that meeting, staff recommended that the Board authorize the Board Chairperson to review and discuss a proposed letter (to be developed by staff) to SCRWA regarding the District's participation in SCRWA's governance related to recycled water. Under today's item 4.5, the Water Resources Committee may wish to receive an update on the District Board's May 22 discussion on this topic.

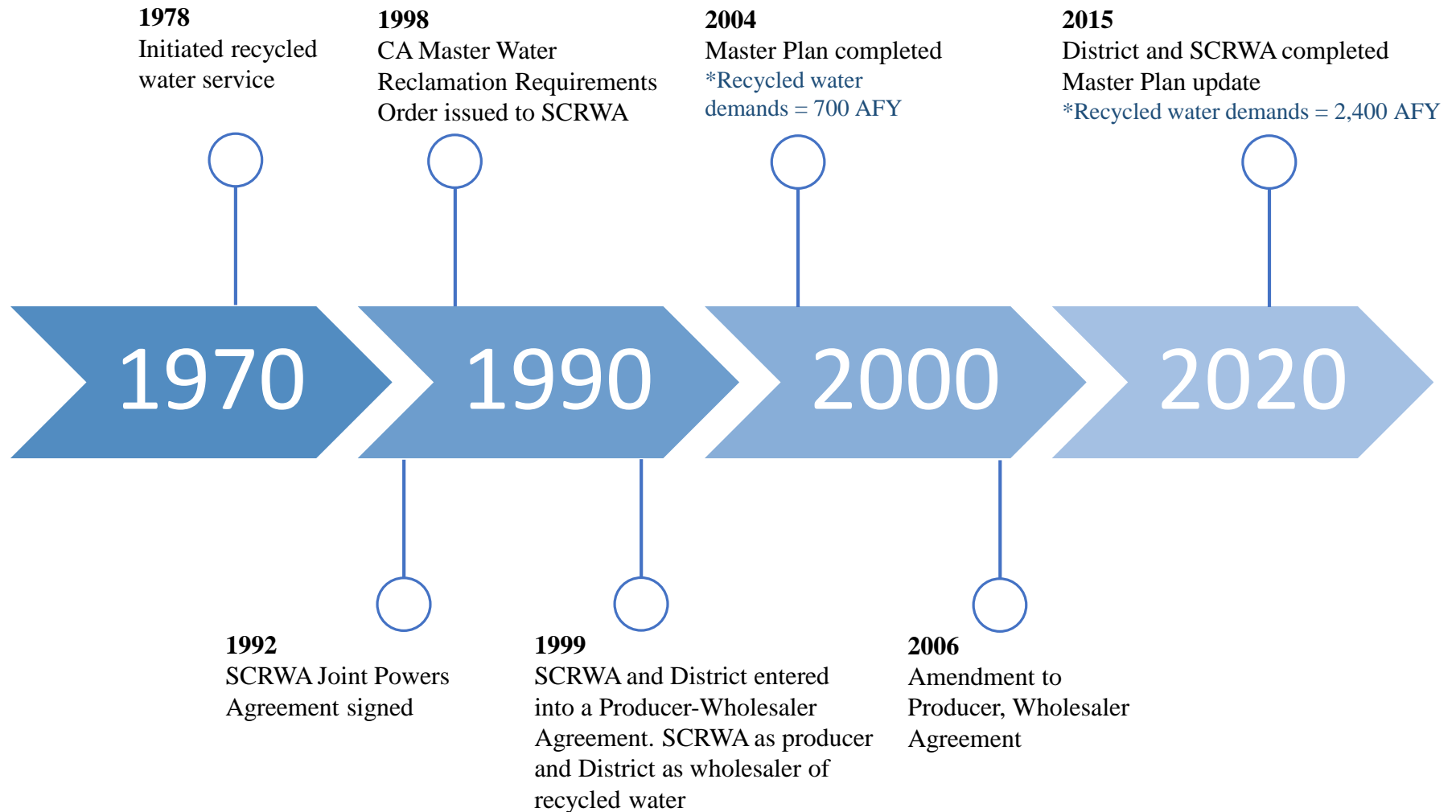
ATTACHMENT(S):

Attachment 1: PowerPoint

4.5 History of District Collaboration with the Cities of Gilroy and Morgan Hill on Recycled Water



History and Timeline



SCWRA = South County Regional Wastewater Authority
District = Santa Clara Valley Water District
Master Plan = South County Recycled Water Master Plan

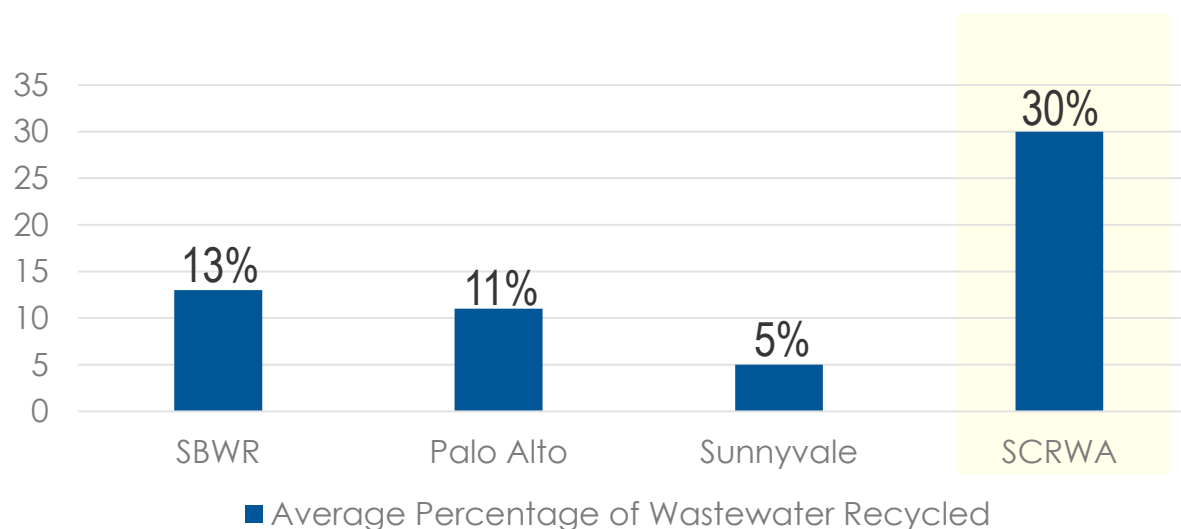
Accomplishments Since Partnership Agreements (1999)

Distribution System

- ✓ Recycled water pipeline system extended by 3.2 miles
- ✓ Retrofits made to 1.4 miles of existing recycled water pipelines
- ✓ Recycled water demands increased by 1,700 acre-feet per year

Wastewater Treatment Plant

- ✓ 6 million gallon per day increase in tertiary treatment capacity
- ✓ 3 million gallon reservoir and booster station
- ✓ 3 million gallon per day pump station
- ✓ 2.3 mile emergency discharge/recycled water pipeline extension

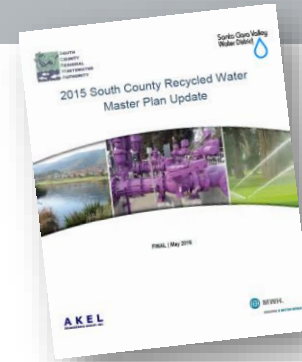


2015 Master Plan CIP Recommendation

Segments	Capital Improvement Projects (2015 Master Plan update)	Cost Estimate
Immediate -Term	<ul style="list-style-type: none"> • Distribution: 26,600 foot pipeline extension • Wastewater Treatment Plant (WWTP): UV Treatment, pump station upgrade 	<p>\$ 14.3 Million</p> <p><u>WWTP</u> \$ 4.5 Million</p>
Short- Term	<ul style="list-style-type: none"> • Distribution: 21,860 foot pipeline extension • WWTP: Chlorine contact basin upgrade, pump station upgrades, meter conversion (Gilroy/District), 6 mgd reservoir expansion (District) 	<p>\$ 10.0 Million</p> <p><u>WWTP</u> \$ 8.4 Million</p>
Long- Term	<ul style="list-style-type: none"> • Distribution: 7,010 foot pipeline extension, 1.5 mgd storage tank, and booster pump station • WWTP: 2.5 mgd secondary treatment expansion (SCRWA) and recycled water fill station (commercial / residential) (City of Gilroy/District) 	<p>\$ 10.0 Million</p> <p><u>WWTP</u> \$ 50.9 Million</p>
	Total Cost Estimate	\$ 98.1 Million

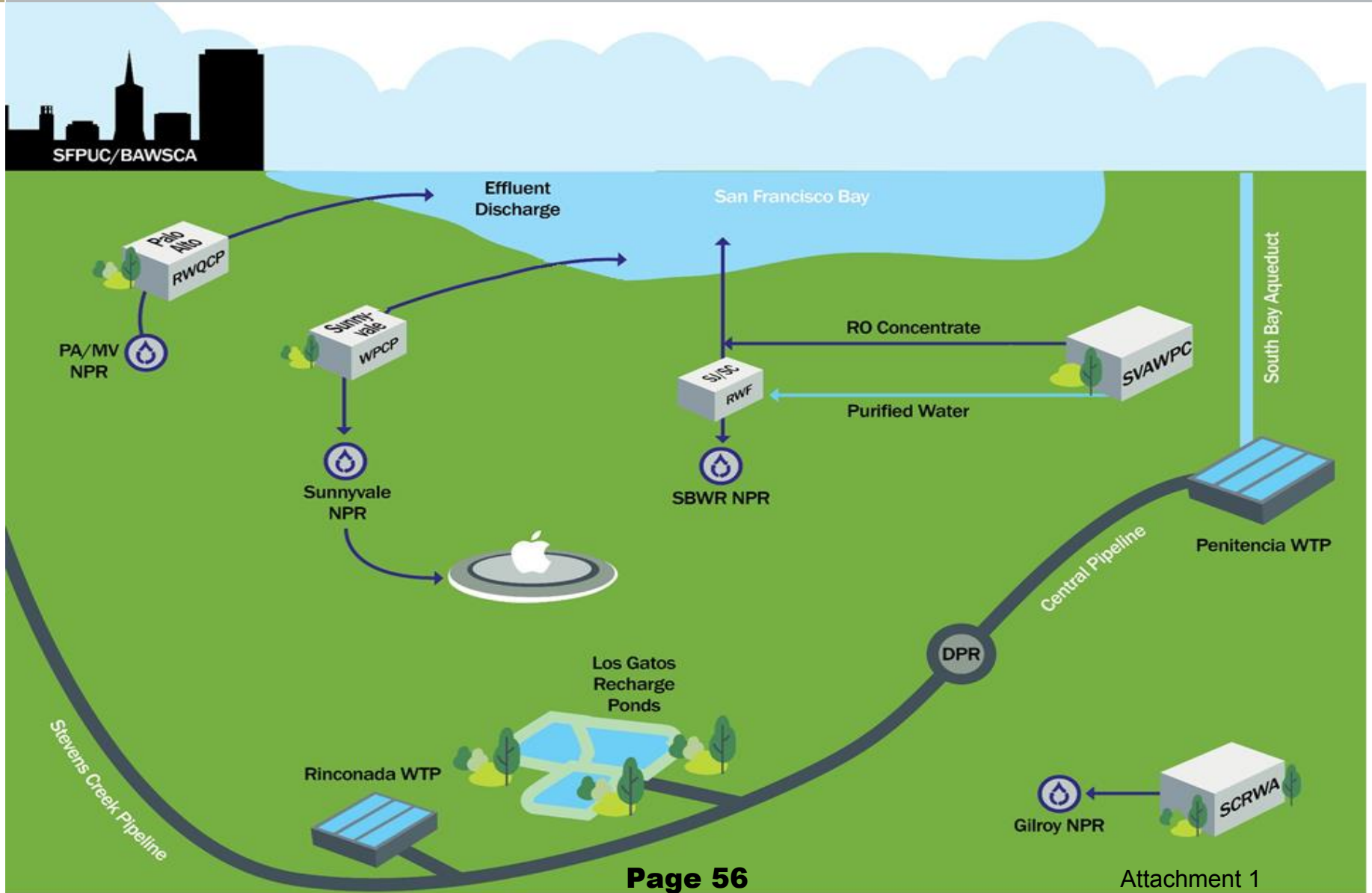
mgd = million gallons per day

Countywide Water Reuse Master Planning Efforts

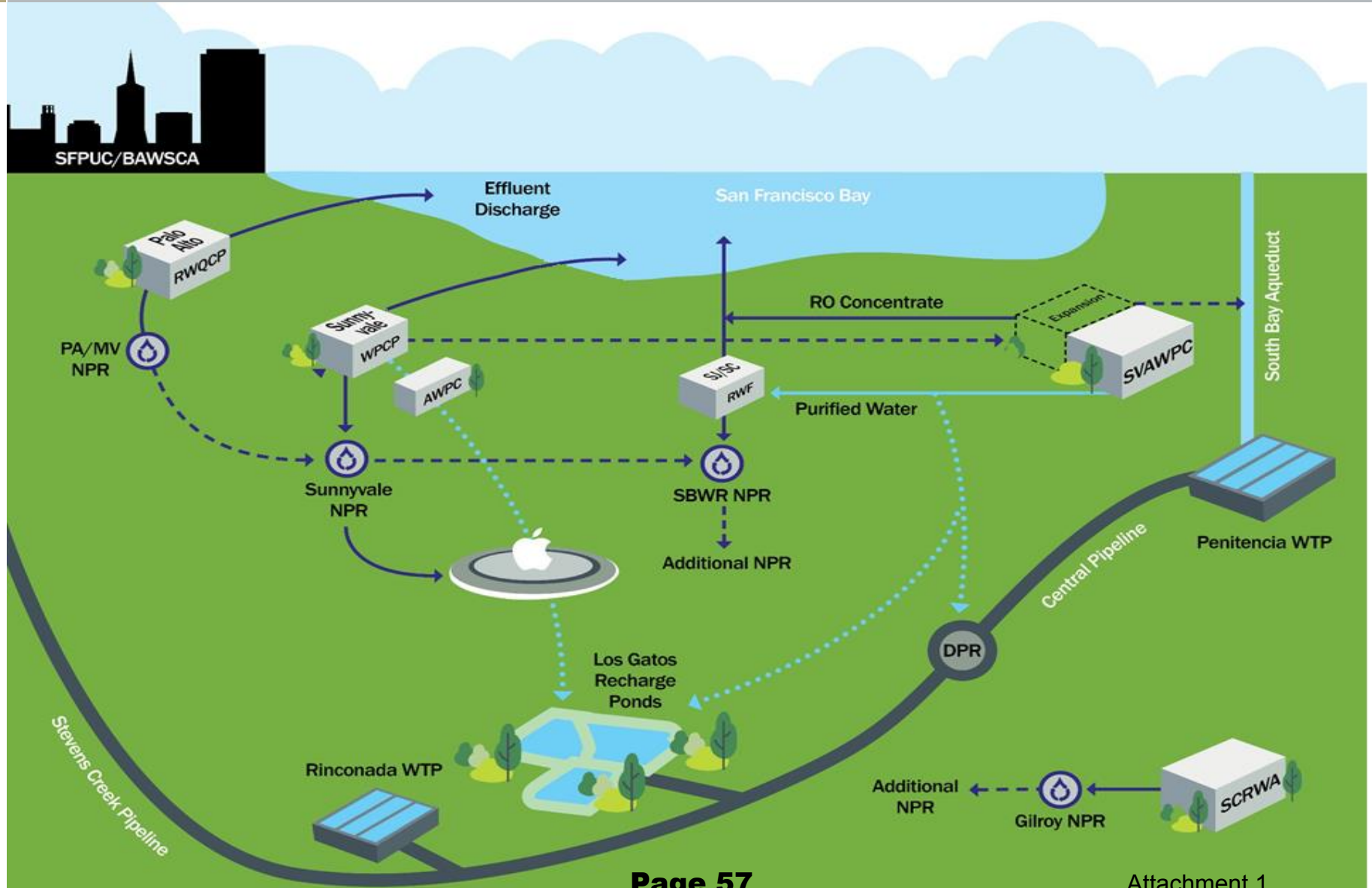


- ▶ South County Recycled Water Master Plan Update – 2016
- ▶ SBWR Strategic and Mastering Planning – 2014
- ▶ City of Sunnyvale Feasibility Study for Recycled Water Expansion – 2013
- ▶ Northwest County Recycled Water Strategic Plan (Est. 2019)
- ▶ Countywide Water Reuse Master Plan (Est. 2019)

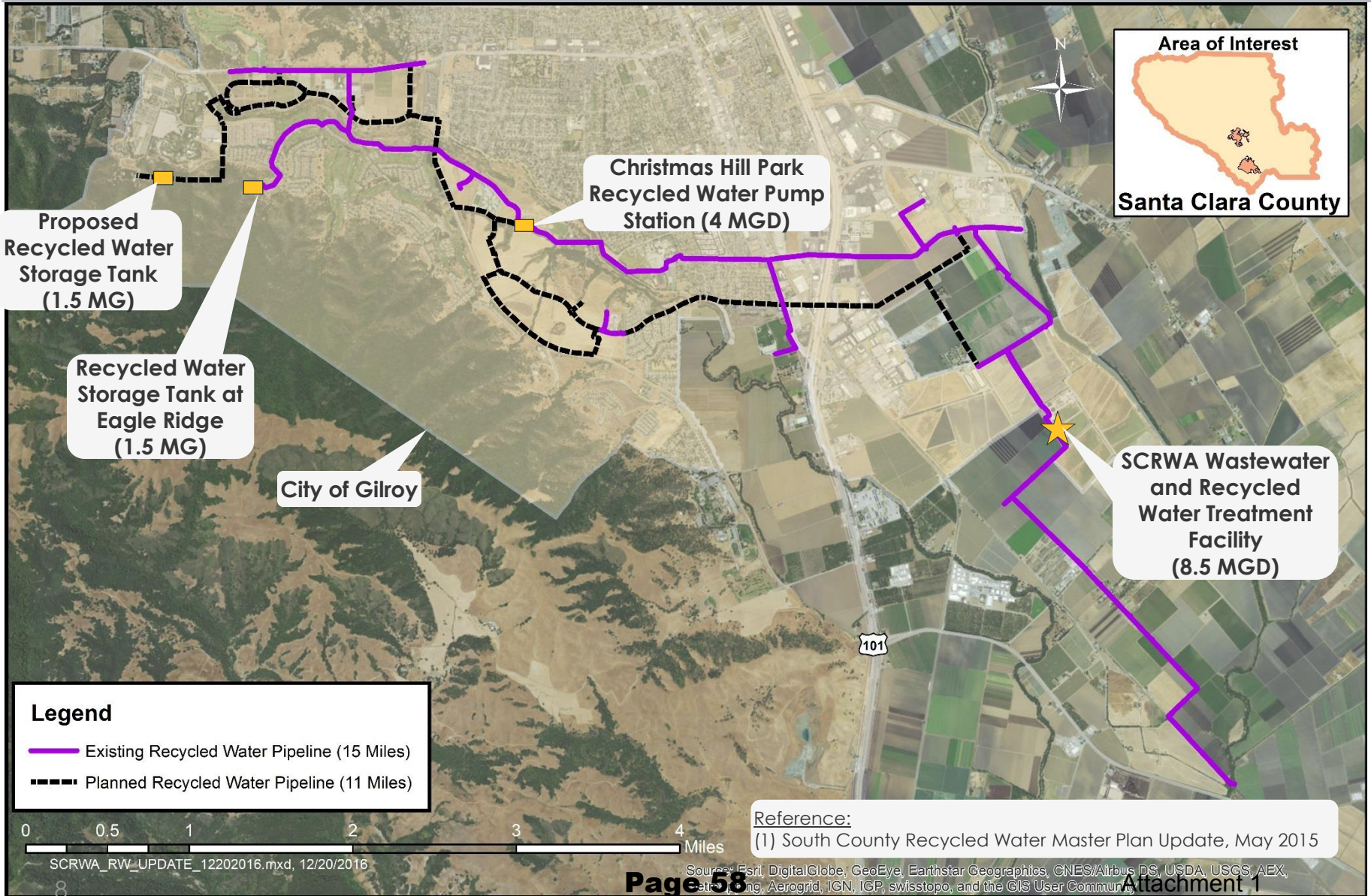
Integrating Existing Systems



Augmenting Reuse Through Alternative Strategies



Map – South County Recycled Water System



Governance Structure

Wholesaler-Producer Agreement
Wholesaler – Retailer Agreement

Now



*District Board
Discussion on May 22*

Alternative Governance
Structure Involving
SCRWA and the District?

Future

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Committee:	Joint Water Resources
Meeting Date:	06/06/18
Agenda Item No.:	4.6
Unclassified Manager:	Michele King
Email:	mking@valleywater.org
Est. Staff Time:	5 minutes

COMMITTEE AGENDA MEMO

SUBJECT: Review of 2018 Joint Water Resources Work Plan and any Outcomes of Board Action or Committee Requests and the Committee's next meeting agenda

RECOMMENDED ACTION:

Review the Committee work plan to guide the committee's discussions regarding policy alternatives and implications for Board deliberation.

SUMMARY:

The attached Work Plan outlines the topics for discussion to be able to prepare policy alternatives and implications for Board deliberation. The work plan is agendaized at each meeting as accomplishments are updated and to review additional work plan assignments by the Board.

BACKGROUND:

Governance Process Policy-8:

The District Act provides for the creation of advisory boards, committees, or commissions by resolution to serve at the pleasure of the Board.

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

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.

ATTACHMENT(S):

Attachment 1: Joint Water Resources Committee 2018 Work Plan
Attachment 2: Joint Water Resources Committee August 2018 Draft Agenda

2018 Work Plan: Joint Water Resources Committee (City of Gilroy, City of Morgan Hill, SCVWD)

Update: May 2018

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

ITEM	WORK PLAN ITEM	MEETING	ACTION/DISCUSSION OR INFORMATION ONLY	ACCOMPLISHMENT DATE AND OUTCOME
1	Election of Chair and Vice Chair for 2018	2-7-18	Action Item	Accomplished February 7, 2018: The Committee voted to retain the current Chair, Hon. Richard P. Santos and Vice Chair, Hon. Larry Carr for 2018.
2	Update on the Application by the District for Proposition 1 Funding for the Pacheco Reservoir Expansion Project	2-7-18	Discussion/Action Item	Accomplished February 7, 2018: The Committee received an update on the Application by the District for Proposition 1 Funding for the Pacheco Reservoir Expansion Project and took no action.
3	Recommended Position on State Legislation to Address Expedited Permitting and Transparency	2-7-18	Discussion/Action Item	Accomplished February 7, 2018: The Committee received information on the recommended position on state legislation to address expedited permitting and transparency and took no action.
4	One Water Plan	2-7-18	Discussion/Action Item	Accomplished February 7, 2018: The Committee received information on One Water Plan and took no action.
5	Policy Discussion and Sharing of Technical Information on Furthering Development, Use of Recycled Water and Water Supply Planning in City of Morgan Hill and South County	2-7-18 8-1-18	Discussion/Action Item	Accomplished February 7, 2018: The Committee had a policy discussion on sharing of technical information on furthering development, use of recycled water and water supply planning in City of Morgan Hill and South County, and took no action.

Yellow = Update Since Last Meeting

Blue = Action taken by the Board of Directors

Attachment 1
Page 1 of 3

**2018 Work Plan: Joint Water Resources Committee
(City of Gilroy, City of Morgan Hill, SCVWD)**

Update: May 2018

6	Review of 2018 Joint Water Resources Work Plan and the Outcomes of Board Action of Committee Requests	2-7-18 5-2-18 canceled 6-6-18 rescheduled 8-1-18 11-7-18	Discussion/Action Item	Accomplished February 7, 2018: The Committee reviewed the Committee work plan and took no action.
7	Update on Llagas Subbasin Groundwater Management and Use (Provide information by year on natural vs. managed recharge and short-term water use reductions next time, including showing the distinction between the two with curves, etc.)	5-2-18 canceled 6-6-18 rescheduled	Discussion/Action Item	
8	Update on Perchlorate (have maps showing the areas of perchlorate issues)	5-2-18 canceled 6-6-18 rescheduled	Discussion/Action Item	
9	History of District Collaboration with the Cities of Gilroy and Morgan Hill on Recycled Water	6-6-18 rescheduled		
10	Update on District's Water Supply Master Plan	5-2-18 canceled 6-6-18 rescheduled 11-7-18	Discussion/Action Item	
11	Update on Dam Projects	5-2-18 canceled 6-6-18 rescheduled 11-7-18	Discussion/Action Item	
12	Discussion about potential land for a south county water treatment plant – buy property? Use existing property?	8-1-18	Discussion/Action Item	
13	Policy Discussion and Sharing of Socio-Economic Information on Homelessness in South County and preserving the creeks	8-1-18	Discussion/Action Item	
14	Discussion on Preservation of Agricultural Land (Potential Partnerships on Conservation Easements)	8-1-18	Discussion/Action Item	

Yellow = Update Since Last Meeting

Blue = Action taken by the Board of Directors

Attachment 1
Page 2 of 3

**2018 Work Plan: Joint Water Resources Committee
(City of Gilroy, City of Morgan Hill, SCVWD)**

Update: May 2018

15	Recycled Water Usage, Costs, Benefits, Purple Piping, Current/New Development	11-7-18	Discussion/Action Item	
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Yellow = Update Since Last Meeting

Blue = Action taken by the Board of Directors

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SOUTH COUNTY REGIONAL
WASTEWATER AUTHORITY

JOINT WATER RESOURCES COMMITTEE

Hon. Marie Blankley, Council Member, City of Gilroy

Hon. Dion Bracco, Mayor Pro Tempore, City of Gilroy and SCRWA Board Vice Chairman

Hon. Larry Carr, Council Member, City of Morgan Hill, SCRWA Chairman and Committee Vice Chair

Hon. Rene Spring, Council Member, City of Morgan Hill and SCRWA Board Member

Hon. Richard P. Santos, Director-District 3, 2018 Board Chair, Santa Clara Valley Water District (SCVWD) and Committee Chair

Hon. John L. Varela, Director-District 1, Santa Clara Valley Water District (SCVWD)

SCRWA = South County Regional Wastewater Authority

AGENDA

WEDNESDAY, AUGUST 1, 2018

8:35 AM

**JOINT WATER RESOURCES COMMITTEE
(CITY OF GILROY, CITY OF MORGAN HILL, AND SCVWD)
South County Regional Wastewater Authority Conference Room
1500 Southside Drive, Gilroy CA 95020**

Time Certain:

8:35 a.m.

- 1. Call to Order/Roll Call.**
- 2. Time Open for Public Comment on Any Item Not on the Agenda.**
Comments should be limited to two minutes. If the Committee wishes to discuss a subject raised by the speaker, it can request placement on a future agenda.
- 3. Approval of Minutes**
 - 3.1 Approval of Minutes – May 2, 2018, meeting.
- 4. Action Items:**
 - 4.1 Discussion about potential land for a south county water treatment plant – buy property? Use existing property? (Garth Hall)
Recommendation: This is an information only item and no action is required. However, the Committee may provide comments for Board consideration.
 - 4.2 Policy Discussion and Sharing of Socio-Economic Information on Homelessness in South County and preserving the creeks (Melanie Richardson)
Recommendation: This is a discussion item and no action is required. However, the Committee may provide comments for Board consideration.
 - 4.3 Discussion on Preservation of Agricultural Land (Potential Partnerships on Conservation Easements (Sue Tippets)
Recommendation: This is a discussion item and no action is required. However, the Committee may provide comments for Board consideration.
 - 4.4 Policy Discussion and Sharing of Technical Information on Furthering Development, Use of Recycled Water and Water Supply Planning in City of Morgan Hill and South County (Garth Hall)
Recommendation: This is a discussion item and no action is required. However, the Committee may provide comments for Board consideration.

4.5. Review of 2018 Joint Water Resources Work Plan and any Outcomes of Board Action or Committee Requests and the Committee's next meeting agenda (Committee Chair)

Recommendation: Review the Committee work plan to guide the Committee's discussions regarding policy alternatives and implications for Board deliberation.

5. Clerk Review and Clarification of Committee Actions

This is a review of the Committee's Actions (from Item 4).

6. Adjourn: Adjourn to next regularly scheduled meeting at 8:35 a.m. (immediately following SCRWA meeting), **November 7, 2018**, South County Regional Wastewater Authority Conference Room, 1500 Southside Drive, Gilroy CA 95020.

REASONABLE EFFORTS TO ACCOMMODATE PERSONS WITH DISABILITIES WISHING TO ATTEND COMMITTEE MEETINGS WILL BE MADE. PLEASE ADVISE THE CLERK OF THE BOARD'S OFFICE OF ANY SPECIAL NEEDS BY CALLING (408) 630-2277.

Meetings of this committee will be conducted in compliance with all Brown Act requirements. 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 same time that the public records are distributed or made available to the legislative body, at the following locations:

Santa Clara Valley Water District
Clerk of the Board Unit
5700 Almaden Expressway
San Jose, CA 95118

City of Gilroy
City Clerk
735 Rosanna Street
Gilroy, CA 95020

City of Morgan Hill
City Clerk
17575 Peak Avenue
Morgan Hill, CA 95037

Joint Water Resources Committee Purpose: Advance common South County water interests and receive input from stakeholders and interested parties when undertaking the following: 1. Reviewing current practices and future needs for groundwater management in the Llagas groundwater sub-basin, 2. Facilitating policy discussion and sharing of technical information on water supply planning for South County, 3. Identifying the current and future demand for recycled water as well as jointly identifying funding sources for implementation of the South County Recycled Water Master Plan, 4. Facilitating policy discussion and sharing of technical information on furthering development and use of recycled water in South County, 5. Facilitating policy discussion and sharing of socio-economic homelessness in South County