SPADRA BASIN GROUNDWATER SUSTAINABILITY AGENCY

Groundwater Sustainability Plan
Advisory Committee Meeting

Agenda

Monday, June 7, 2021 at 3:00 p.m.

Pursuant to the provisions of Executive Order N-25-20 Issued by Governor Gavin Newsom on March 12, 2020, any Committee member and any member of the public who desires to participate in this meeting may do so by accessing the Webex link below without otherwise complying with the Brown Act's teleconference requirements:

https://wvwd.webex.com/meet/spadra2
(Computer and Telephone Audio Accessible)

Any member of the public wishing to make any comments to the Committee may do so by accessing the above-referenced link where they may select the option to join via webcam or teleconference. The meeting Chair will acknowledge such individual(s) at the appropriate time in the meeting prior to making his or her comment.

1. Call to Order

2. Roll Call

Agency/Stakeholder	Representatives	Alternate(s)
Cal Poly Pomona	___ Rick Hansen	___ George Lwin
Rowland Water District	___ Dave Warren	___ Tom Coleman
Three Valleys MWD	___ Timothy Kellett	___ Carlos Goytia
Forest Lawn	___ Bob Bowcock	___ Kevin Sage

3. Public Comment

4. Approval of Minutes for Meeting held on April 5, 2021

5. Review of Draft Technical Memorandum No. 5 – Basin Optimization Scenarios to Achieve Sustainability, Part 1.

6. Other

7. Adjournment to Next Meeting on Monday, August 2, 2021

SPADRA BASIN GROUNDWATER SUSTAINABILITY PLAN
ADVISORY COMMITTEE MEETING
Monday, April 5, 2021, 3:00 p.m.

WebEx Meeting

MINUTES

1. **Call to Order**
   Mr. Hansen called the meeting to order at 3:03 p.m.

2. **Roll Call**
   Listed below are meeting attendees.

Advisory Committee	Bob Bowcock – Forest Lawn
	Rick Hansen – Cal Poly Pomona
	Tim Kellett – Three Valleys Municipal Water District
	Dave Warren – Rowland Water District
GSA Staff	Brian Teuber - Walnut Valley Water District , Administrative Officer
	Sherry Shaw – Walnut Valley Water District, Engineer
	Joshua Byerrum – Walnut Valley Water District, Treasurer
Others Present	Lauren Augino – Main San Gabriel Basin Watermaster
	James Ciampa – Lagerlof, LLP, Legal Counsel
	Chris Diggs - City of Pomona
	Donna DiLaura – Walnut Valley Water District
	Erik Hitchman – Walnut Valley Water District
	Theresa Lee - Walnut Valley Water District
	Andy Malone – West Yost Associates
	Matt Litchfield – Three Valleys Municipal Water District
	Damian Martinez - City of Pomona
	John Mendoza – City of Pomona Resident
	Jody Roberto – Three Valleys Municipal Water District
	Jerry Tang – Walnut Valley Water District
	Veva Weamer – West Yost Associates

3. **Public Comment**
   There were no public comments.

4. **Approval of Minutes for Meeting held on February 25, 2021**
   The Advisory Committee was asked to approve the minutes for the Advisory Committee meeting held on February 25, 2021.

   Upon consideration thereof, it was moved by Mr. Bowcock, seconded by Mr. Warren, and unanimously carried, that the minutes of the February 21, 2021 Advisory Committee meeting were approved as presented.

5. **Review of Final Technical Memorandum No. 4 – *Sustainability of Future Baseline Conditions (TM 4)***
   Ms. Weamer provided a quick overview of the comments that were received on the Draft TM 4 that was published on December 22, 2020. Comments were received from the GSA legal counsel, Main San Gabriel Basin Watermaster, Walnut Valley Water District, Puente Basin Water Agency, and California Department of Fish and Wildlife. None of the comments received resulted in any significant changes to TM 4. Appendix A of the Final TM 4 includes all the comments and response to comments. A copy of the Final TM 4 is available on the Spadra Basin website.

6. **Review of Spadra Basin Monitoring Well Siting Study**
   Ms. Weamer presented the Well Siting Study that was recently prepared for a new monitoring well to fill a data gap in the Spadra Basin. The work plan in the Grant Application and Agreement for the Prop 1 Grant that was awarded to the GSA to fund in part the development of the GSP, included a task to collect additional hydrogeologic information by constructing a new monitoring well. A target area in the eastern portion of the Basin was identified for a new monitoring well to fill data gaps that were identified in TM 1 and TM 2. Ms. Weamer noted that a new monitoring

well in the target area will improve the vertical understanding of the aquifer system, improve the understanding of horizontal groundwater flow, and could reveal the existence of barriers to groundwater flow. Fifteen parcels were identified as potential locations within the target area suitable for the construction of a monitoring well. Criteria were developed to rank the parcels. The well siting study also includes a preliminary well site and cost estimate and recommended next steps.

7. **Review of Basin Optimization Scenarios for Spadra Basin**
   Mr. Malone presented three draft Basin Optimization Scenarios to achieve sustainability in the Spadra Basin and maximize the beneficial use of the Basin. The Basin Optimization Scenarios will be evaluated with the groundwater model to see how the Basin will respond to these planning scenarios. The three Basin Optimization Scenarios include: a sustainability through substitution scenario, and sustainability through recharge scenario, and a maximum beneficial use scenario. There was some feedback from stakeholders and meeting participants on the Basin Optimization Scenarios. The next step is to document the Basin Optimization Scenarios in draft TM 5 Part 1.

8. **Other**
   Mr. Hansen reported briefly on Cal Poly matters.

9. **Adjournment to Next Meeting on Monday, June 7, 2021.**
   Upon consideration thereof, by consensus, the meeting was adjourned at 4:04 p.m.

DRAFT | JUNE 2021

Technical Memorandum 5 – Part 1: Sustainability of Basin Optimization Scenarios

Groundwater Sustainability Plan for the Spadra Basin

PREPARED FOR

SPADRA BASIN
GROUNDWATER SUSTAINABILITY
AGENCY

PREPARED BY

WEST YOST
Water. Engineered.

Technical Memorandum 5 – Part 1: Sustainability of Basin Optimization Scenarios

Groundwater Sustainability Plan for the Spadra Basin

Prepared for

Spadra Basin Groundwater Sustainability Agency

Project No. 954-80-20-01

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LIST OF ACRONYMS AND ABBREVIATIONS

af	Acre-Feet
afy	Acre-Feet Per Year
CBWM	Chino Basin Watermaster
CPP	California State Polytechnic University of Pomona
DWR	California Department of Water Resources
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
LA Basin Plan	Water Quality Control Plan, Los Angeles Region
LA Regional Board	California Regional Water Quality Control Board Los Angeles Region
LA Sanitation Districts	Sanitation Districts of Los Angeles County

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Metropolitan	Metropolitan Water District of Southern California
mgd	Million Gallons per Day
Pomona	City of Pomona
RO	Reverse Osmosis
SNMP	Salt and Nutrient Management Plan
SGMA	Sustainable Groundwater Management Act
State Water Board	State Water Resources Control Board
SWP	State Water Project
TM	Technical Memorandum
WEI	Wildermuth Environmental Inc.
West Yost	West Yost Associates, Inc.
WRP	Water Reclamation Plant
WVWD	Walnut Valley Water District

Technical Memorandum 5 – Part 1: Sustainability of Basin Optimization Scenarios

1.0 INTRODUCTION

The Spadra Basin is a small, non-adjudicated subbasin of the San Gabriel Valley Basin (Basin 4-013 as defined by the California Department of Water Resources [DWR]). Pursuant to the Sustainable Groundwater Management Act of 2014 (SGMA), the DWR designated the San Gabriel Valley Basin as a "low-priority" basin. The San Gabriel Valley Basin is considered low-priority because groundwater rights in most of the basin have been adjudicated; and as such, the SGMA does not require that a Groundwater Sustainability Plan (GSP) be prepared for the basin.

Although it is not a requirement of the SGMA, the Walnut Valley Water District (WVWD) and the City of Pomona (Pomona) collectively formed a Groundwater Sustainability Agency (GSA) for the Spadra Basin (Spadra Basin GSA) and decided to prepare and adopt a GSP with the dual objectives of achieving long-term sustainability and maximizing the beneficial use of the Spadra Basin.

The Spadra Basin GSA contracted Wildermuth Environmental Inc. (WEI), since acquired by West Yost Associates (West Yost), to help prepare the GSP. The scope of work includes preparing five technical memoranda in sequence. Each technical memorandum (TM) constitutes an interim milestone in the development of the final GSP for the Spadra Basin. The five technical memoranda include:

- Technical Memorandum 1 (TM 1) – Conceptual Model of the Spadra Basin
- Technical Memorandum 2 (TM 2) – Construction and Calibration of the Spadra Basin Groundwater Model
- Technical Memorandum 3 (TM 3) – Sustainable Management Criteria for the Spadra Basin
- Technical Memorandum 4 (TM 4) – Sustainability of Future Baseline Conditions
- Technical Memorandum 5 (TM 5) – Basin Optimization Scenarios to Achieve Sustainability

TM 1 through TM 5 will ultimately become sections in the final GSP for the Spadra Basin and be used to help prepare the GSP implementation plan in the final GSP. The outline of the final GSP for the Spadra Basin and mapping to each TM is as follows:

- Executive Summary
- Section 1: Introduction
- Section 2: Plan Area and Basin Setting (TM 1, TM 2, and TM 4)
- Section 3: Sustainable Management Criteria (TM 3)
- Section 4: Monitoring Network
- Section 5: Projects and Management Actions to Achieve Sustainability (TM 5)
- Section 6: GSP Implementation
- Section 7: References

The evaluation of the Baseline Scenario in TM 4 indicated that groundwater levels are projected to decline by 20-25 feet in the Spadra Basin over the next 60 years. This decline in groundwater levels is predicted to exceed the Minimum Thresholds for groundwater levels, and by proxy groundwater storage and land subsidence, and therefore is expected to cause Undesirable Results. The primary cause of these projected declines in groundwater levels is an increase in groundwater pumping in the Baseline Scenario by 526 afy from the long-term average pumping in the Basin. The conclusion of TM 4 was that projects and programs are needed to support groundwater levels to avoid undesirable results, achieve long-term sustainability, and maximize the beneficial use of the Basin.

The objective of TM 5 is to describe the process and outcomes of identifying a preferred combination of projects and management plans to achieve long-term sustainability in the Spadra Basin and maximize its beneficial use.

The methods employed to achieve this objective are:

(i) With the Spadra Basin stakeholders, develop concepts for projects and management plans and describe them as a "Basin Optimization Scenarios."

(ii) Evaluate the hydrologic response of the Spadra Basin to the Basin Optimization Scenarios over a 60-year planning horizon using the Spadra Basin groundwater model. Groundwater modeling will be the method to quantitatively evaluate and determine sustainability for each Basin Optimization Scenario based for the Sustainability Indicators for groundwater levels, and by proxy groundwater storage and land subsidence.

(iii) Compare the hydrologic response of the Spadra Basin for the Basin Optimization Scenarios to each other, and to the Baseline Scenario.

(iv) Prepare a cost analyses for the Basin Optimization Scenarios and compare the costs to each other and to the Baseline Scenario.

(v) Recommend a preferred Basin Optimization Scenario.

The contents in TM 5 will be become the contents for Section 5 of the GSP – *Projects and Management Actions to Achieve Sustainability*.

This technical memorandum is TM 5 – Part 1 to describe the results of item (i) above. TM 5 – Part 2 will describe the results of items (ii) through (v).

2.0 DEVELOPMENT OF THE BASIN OPTIMIZATION SCENARIOS

This section describes the accumulation of data and information from Spadra Basin stakeholders on potential projects and management actions in the Spadra Basin, and the combination of some of these projects and management actions into Basin Optimization Scenarios that are intended to achieve long-term sustainability and maximize the beneficial use of the Spadra Basin.

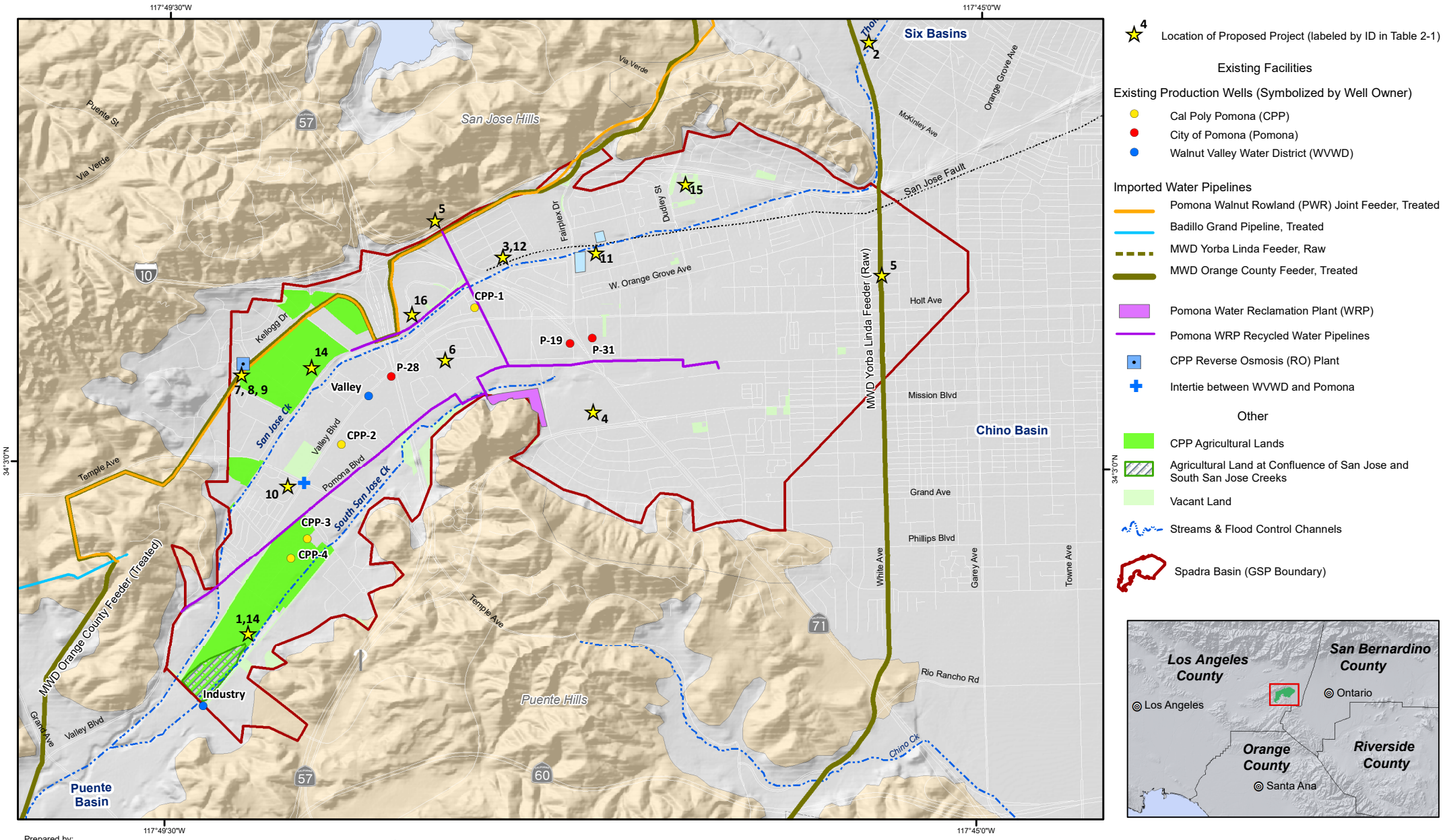
2.1 Potential Projects and Management Plan Concepts

The GSA conducted a call for projects from all Spadra Basin stakeholders via email in January 2021. Feedback on potential projects and management actions was received from California State Polytechnic University of Pomona (CPP), WVWD, City of Pomona (Pomona), and Forest Lawn Memorial Parks. This feedback was compiled and presented at a Spadra Basin Advisory Committee meeting on February 25, 2021 for discussion amongst the stakeholders and to solicit additional feedback. Table 2-1 lists the various projects and plans with stakeholder attribution. Figure 2-1 is a map that shows the locations of the projects in the Spadra Basin.

The primary project concepts of interest to the stakeholders were: artificial recharge projects that will support groundwater levels and augment the yield of the basin; the use of surplus recycled water from the Pomona WRP that otherwise is discharged to South San Jose Creek and exits the Spadra Basin; and groundwater treatment projects to increase the potable use of the Spadra Basin. These project concepts and other feedback were used to develop three Basin Optimization Scenarios, described below.

Table 2-1 . Proposed Projects and Management Actions for the Spadra Basin

Map ID	Project Description	Proposing Agency
Recharge Projects		
1	Convert CPP agricultural land at the confluence of San Jose Creek and South San Jose Creek into spreading grounds	CPP, Pomona
2	Develop a spreading connection off of the MWD Foothill Feeder - Rialto Pipeline at Thompson Creek Channel	CPP, WVWD
3	Redirect storm water flows in the area to new spreading grounds	CPP, Forest Lawn
4	Recharge surplus recycled water from the Pomona WRP after contractual obligations are met, via spreading or injection	CPP, Pomona, Forest Lawn, WVWD
5	Utilize three large diameter pipelines owned by MWD that run through the Spadra Basin as sources for artificial recharge; 1) Orange County Feeder treated water pipeline, 2) The Pomona Walnut Rowland Joint Water Line (JWL) treated water pipeline, and 3) Yorba Linda Feeder raw water pipeline.	WVWD
11	Selecting recharge locations where there is easy connection to different types of recharge waters (storm water, recycled water, and imported water) - Example shown in map for Map ID 11	Feb 2021 Advisory Committee Meeting
12	Construction of rubber dams in the San Jose Creek to divert storm water for recharge;	Feb 2021 Advisory Committee Meeting
13	Construction of underground infiltration galleries under sports fields at John Marshall Middle School or other schools/parks for recharge of recycled water and other waters	Feb 2021 Advisory Committee Meeting
14	Recharge storm water and recycled water through flood irrigation at Cal Poly Pomona agricultural lands when land is fallow	Feb 2021 Advisory Committee Meeting
15	Potential recharge location south east of the intersection of the 10 Freeway and Dudley Street.	Feb 2021 Advisory Committee Meeting
16	Potential recharge location at University Corporate Center Drive, however previous studies have indicated that the soil is potentially not conducive for recharge	Feb 2021 Advisory Committee Meeting
Pump and/or Treat Projects		
6	Construct a new production well	CPP
7	Connect all wells to the Reverse Osmosis Plant	CPP
8	Operate Reverse Osmosis Plant at maximum capacity 24/7 with surplus potable water going to Pomona, Walnut and Rowland	CPP, Pomona, WVWD
8	Expand treatment capacity at the CPP Reverse Osmosis Plant	CPP, Forest Lawn
10	Utilizing an existing intertie at the intersection of Temple and Valley between WVWD and the City of Pomona, to facilitate use of Spadra Basin water by WVWD by leveraging Pomona's existing pumping capacity in the basin.	WVWD
Management Strategies		
	Replace recycled water going to Forest Lawn with groundwater	CPP
	Conjunctive Water Management to maximize the use of all water resources available to the parties, including storm, recycled, imported, and groundwaters, and the storage capacity of the groundwater basin.	Forest Lawn
	Maximize recharge and pumping to assist in groundwater cleanup and characterize impacts to neighboring basins	Forest Lawn
	Increase reliability of irrigation water with an increase in the use of recycled water	Forest Lawn
	Inventory all existing and adjacent (public and private) water facilities to optimize the basin	Forest Lawn
	Leverage existing infrastructure to move surplus water around between parties	WVWD
	Increase and maximize groundwater pumping with increased artificial recharge	Forest Lawn, WVWD
	Implementing treatment and leveraging cleanup of point sources in the basin	Feb 2021 Advisory Committee Meeting
	Design a management plan to optimally manage and use the basin for local reliable sources without a storage a recovery program	Feb 2021 Advisory Committee Meeting
	Implement recharge programs with a steady and reliable source of water with matched increased pumping.	Feb 2021 Advisory Committee Meeting



4 Location of Proposed Project (labeled by ID in Table 2-1)

Existing Facilities

Existing Production Wells (Symbolized by Well Owner)

- Cal Poly Pomona (CPP)
- City of Pomona (Pomona)
- Walnut Valley Water District (WVWD)

Imported Water Pipelines

- Pomona Walnut Rowland (PWR) Joint Feeder, Treated
- Badillo Grand Pipeline, Treated
- MWD Yorba Linda Feeder, Raw
- MWD Orange County Feeder, Treated

- Pomona Water Reclamation Plant (WRP)
- Pomona WRP Recycled Water Pipelines
- CPP Reverse Osmosis (RO) Plant
- Intertie between WVWD and Pomona

Other

- CPP Agricultural Lands
- Agricultural Land at Confluence of San Jose and South San Jose Creeks
- Vacant Land
- Streams & Flood Control Channels
- Spadra Basin (GSP Boundary)

Prepared by:
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Author: VMW
Date: 5/26/2021
File: Figure 2-1 projects.mxd

0 0.5 1 1.5 Miles
0 0.5 1 1.5 2 Kilometers

Prepared for:
Spadra Basin Groundwater Sustainability Agency
Groundwater Sustainability Plan

SPADRA BASIN GROUNDWATER SUSTAINABILITY AGENCY

Location Map of Proposed New Projects for the Spadra Basin

Figure 2-1

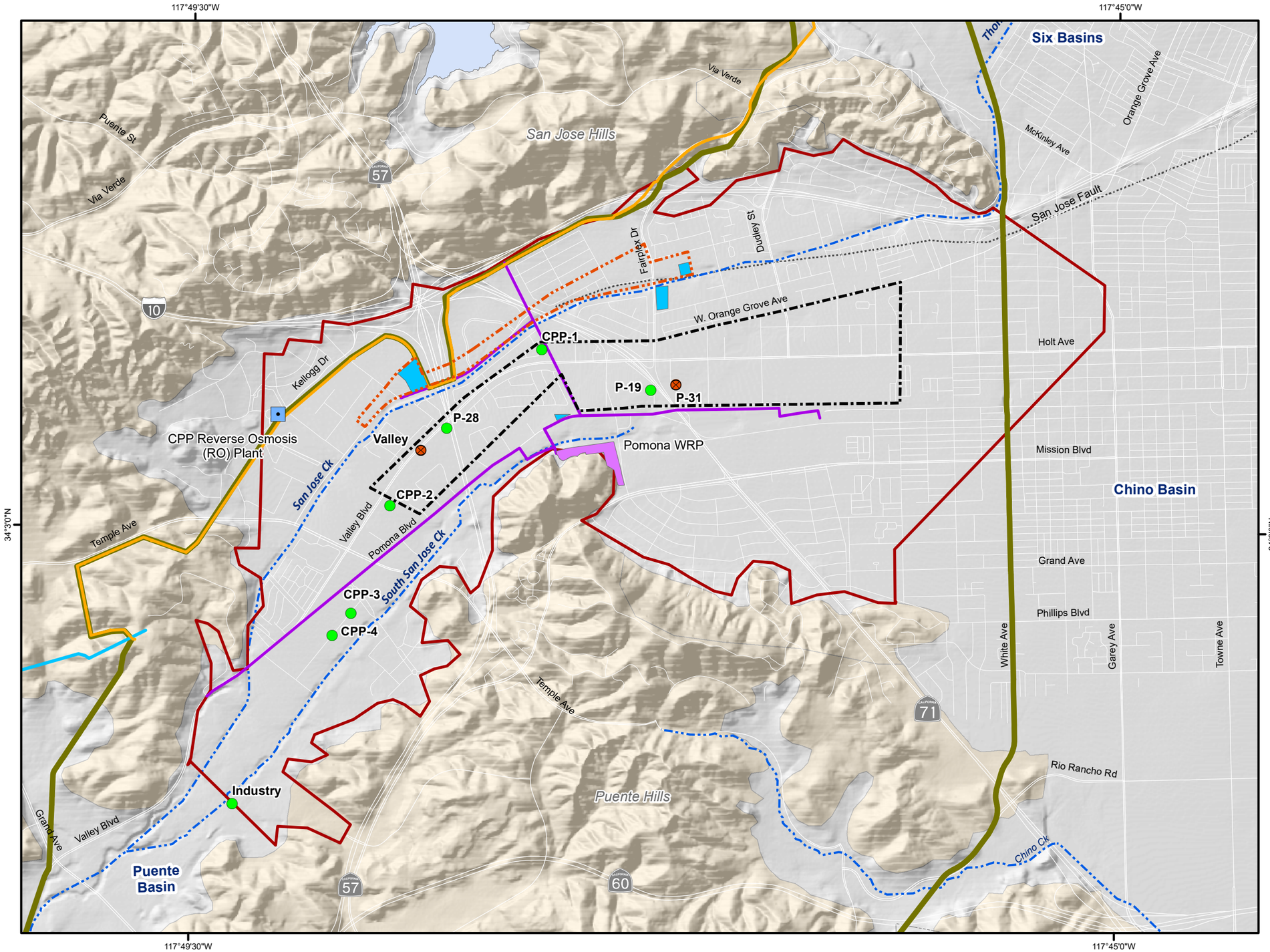
2.2 Basin Optimization Scenarios

Three Basin Optimization Scenarios have been developed over the 60-year planning period: *Basin Optimization Scenario 1 – Sustainability through Substitution; Basin Optimization Scenario 2 – Sustainability through Recharge;* and *Basin Optimization Scenario 3 – Maximum Beneficial Use.* All three scenarios are intended to achieve long-term sustainability in the Basin, and Basin Optimization Scenario 3 is intended to maximize its beneficial use. The scenarios will be evaluated using the Spadra Basin groundwater model for the same 60-year planning period of 2019-2079 that was used to evaluate the Baseline Scenario. The hydrologic response of the Spadra Basin to the Basin Optimization Scenarios will be compared to the Sustainable Management Criteria set in the Spadra Basin for groundwater levels, and by proxy groundwater storage and land subsidence. Additionally, cost estimates will be prepared for each Basin Optimization Scenario and compared to each other and the cost of the Baseline Scenario.

The primary cause of the projected decline in groundwater levels in the Baseline Scenario is an increase in groundwater pumping by 526 acre-feet per year (afy) from the long-term average pumping for the 1978 to 2018 historical period. This observation was used to set the assumption that about 500 afy of recharge or decreased pumping is needed to support groundwater levels and achieve long-term sustainability in the Spadra Basin for the Basin Optimization Scenarios.

All three Basin Optimization Scenarios include the use of surplus recycled water from the Pomona WRP to achieve the objectives of the scenarios. Surplus recycled water is tertiary-treated effluent from the Pomona WRP that is not delivered for direct reuse to existing customers in the Spadra Basin for irrigation or commercial purposes. Currently, this surplus recycled water is discharged to the South San Jose Creek where it exits the Spadra Basin and either evaporates, is recharged about 15 miles downstream at the Montebello Forebay, or is consumed by riparian vegetation at the Montebello Forebay. The surplus recycled water from the Pomona WRP is about 3.3 million gallons per day (mgd) or about 3,500 afy. The Sanitation Districts of Los Angeles County (LA Sanitation Districts) filed for a wastewater change petition with the State of California Water Resources Control Board (State Water Board) in October 2019 to reduce the discharge of treated recycled water to the South San Jose Creek from the Pomona WRP to zero for all months of the year (State Water Board, 2019) and be redirected for other uses. This change petition was approved in October 2020 allowing for the potential utilization of this surplus recycled water in the Spadra Basin (State Water Board and California Environmental Protection Agency [EPA] 2020).

Each Basin Optimization Scenario is summarized below. Figure 2-2 is a map of the Spadra Basin that shows the locations of all existing wells, potential new wells, and potential new recharge facilities included in the three Basin Optimization Scenarios.



Exsisting Wells

- Well Planned to be Active in Baseline Scenario
- Well Planned to be Inactive in Baseline Scenario

Exsisting Facilities

- Pomona WRP Recycled Water Pipelines
- Pomona Water Reclamation Plant (WRP)
- CPP Reverse Osmosis (RO) Plant

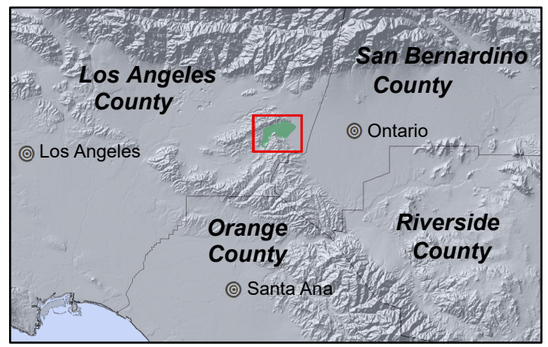
Imported Water Pipelines

- Pomona Walnut Rowland (PWR) Joint Feeder, Treated
- Badillo Grand Pipeline, Treated
- MWD Orange County Feeder, Treated

New Wells and Facilities

- Potential Location for Underground Recharge Gallery
- Target Area for New Injection Wells
- Target Area for New Production Wells

- Streams & Flood Control Channels
- Spadra Basin (GSP Boundary)



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Author: VMW
Date: 5/27/2021
File: Figure 2-2_BOS_Wells_Facilities.mxd

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0 0.5 1 1.5 2 Kilometers

Prepared for:

Spadra Basin Groundwater Sustainability Agency
Groundwater Sustainability Plan

SPADRA BASIN GROUNDWATER SUSTAINABILITY AGENCY

Location Map of Wells and Facilities for Basin Optimization Scenarios

Figure 2-2

2.2.1 Basin Optimization Scenario 1 – Sustainability through Substitution

Objective. Support groundwater levels and achieve sustainability in the Spadra Basin by decreasing groundwater pumping.

Description. Scenario 1 eliminates groundwater pumping at Cal Poly wells CPP-2, CPP-3, and CPP-4 (wells currently used for non-potable supply for irrigation) and replaces it with surplus tertiary-treated recycled water from the Pomona WRP. The combined planned pumping in the Baseline Scenario for CPP-2, CPP-3, and CPP-3 is 430 afy. Therefore, the 430 afy of groundwater supply will be replaced with 430 afy of recycled water from the Pomona WRP. This substitution is viable because the monthly surplus recycled water is greater than the monthly planned pumping at the CPP-2, CPP-3, and CPP-4 wells combined, even during the peak demand months in the summer. Additionally, the sites that are irrigated with groundwater pumped from these CPP wells are near the main recycled water pipelines where turnouts and extensions could be added for irrigation at these sites.

Groundwater Pumping. In Scenario 1, a total of 1,376 afy is pumped from wells CPP-1, P-28, P-19, and Industry. This is 430 afy less than groundwater pumping in the Baseline Scenario.

Managed Aquifer Recharge. There is no artificial recharge included in Scenario 1.

Treatment. There is no additional groundwater treatment included in Scenario 1.

New Wells/Facilities. Additional recycled water pipeline and connections will be necessary to enable irrigation with recycled water at the sites currently irrigated with groundwater.

2.2.2 Basin Optimization Scenario 2 – Sustainability through Recharge

Objective. Support groundwater levels and achieve sustainability in the Spadra Basin via managed aquifer recharge of recycled water from Pomona WRP.

Description. Scenario 2 increases artificial recharge to the Spadra Basin from 0 afy to 500 afy via the construction of new recharge facilities for the recharge of recycled water from the Pomona WRP. Two different types of recharge facilities will be constructed for the recharge of 500 afy: an underground recharge gallery with an estimated capacity of 200 - 890 afy (dependent on the selected site's surface area) and an injection well with an estimated recharge capacity of 450 afy. The two types of recharge facilities provide for operational flexibility and reliability, and the option to increase recharge above 500 afy. The two recharge facilities can also act as a pilot program to test the functionality and success of the two types of facilities. The recharge of recycled water will require permitting from the California Regional Water Quality Control Board Los Angeles Regional (LA Regional Board) with oversight from the State Water Resources Control Board (State Water Board), and potentially the development of a salt and nutrient management plan (SNMP) for the Spadra Basin, or inclusion of the Spadra Basin in the San Gabriel Valley Basin SNMP (Stetson Engineers Inc., 2016).

Groundwater Pumping. In Scenario 2, a total of 1,806 afy is pumped from wells CPP-1, CPP-2, CPP-3, CPP-4, P-28, P-19, and Industry. This is equal to the planned pumping in the Baseline Scenario.

Managed Aquifer Recharge. In Scenario 2, a total of 500 afy of recycled water is artificially recharged in the Spadra Basin, an increase of 500 afy compared to the Baseline Scenario.

Treatment. There is no additional groundwater treatment included in Scenario 2.

New Wells/Facilities.

- One underground recharge gallery and associated recycled water pipeline. Figure 2-2 shows potential locations for an underground recharge gallery. These locations were identified because they are along and/or near the main Pomona WRP recycled water pipeline in the northern central portion of the Basin and not near existing production wells. The potential locations to the east of Highway 71 will require the construction of new recycled water pipeline, but this new pipeline could be utilized to irrigate the schools and parks in this area and to supply recharge to any new injection wells in this area.
- One injection well and associated recycled water pipeline and connections. The location of the injection well will be within the target area shown in Figure 2-2. This target area was identified as an area along and/or near the main Pomona WRP recycled water pipeline and not nearby or upgradient from existing production wells.

2.2.3 Basin Optimization Scenario 3 – Maximum Beneficial Use

Objective. Support groundwater levels, achieve sustainability, and maximize the beneficial use of the Spadra Basin by utilizing all available surplus recycled water from the Pomona WRP for artificial recharge, increasing groundwater production, and increasing groundwater treatment capacity to produce a new potable water supply from the Spadra Basin.

Description. Scenario 3 increases artificial recharge to the Spadra Basin from 0 afy to 3,500 afy via the construction of new recharge facilities for the recharge of recycled water from the Pomona WRP. Two different types of recharge facilities will be constructed for the recharge of 3,500 afy: one underground recharge gallery with an estimated capacity of 200 - 890 afy (dependent on the selected site's surface area) and seven injection wells with a combined recharge capacity of 3,150 afy. The two types of recharge facilities provide for operational flexibility and reliability.

The increase in recharge will be accompanied by an increase in pumping of 3,000 afy to recapture recharge over the 500 afy needed to achieve sustainability. This increase in production will be achieved by increasing production at wells P-19, P-28, and CPP-1 to 90 percent of the design capacity, and the construction and operation of five new production wells with an average pumping capacity of 525 afy each. Two inactive wells (Walnut and P-31) could be rehabilitated to help achieve the increase in pumping instead of constructing some of the new production wells.

Scenario 3 also includes expanding the Reverse Osmosis (RO) Plant owned and operated by CPP to increase the potable use of Spadra Basin groundwater. Currently, the RO Plant treats groundwater pumped from well CPP-1 with a design influent capacity of 538 afy. Scenario 3 assumes 4,304 afy of groundwater pumped from wells CPP-1, P-28, P-19, and five new production

wells will be conveyed to an expanded RO Plant for treatment with an influent capacity of about 4,400 afy.

Like Scenario2, the recharge of recycled water in Scenario 3 will require permitting from the LA Regional Board with oversight from the State Water Board, and potentially the development of a SNMP for the Spadra Basin, or inclusion of the Spadra Basin in the San Gabriel Valley Basin SNMP (Stetson Engineers Inc., 2016).

Groundwater Pumping. In Scenario 3, a total of 4,864 afy is pumped from wells CPP-1, CPP-2, CPP-3, CPP-4, P-28, P-19, Industry, and five new production wells. This is an increase of about 3,000 afy from the planned pumping in the Baseline Scenario.

Managed Aquifer Recharge. In Scenario 3, a total of 3,500 afy of recycled water is artificially recharged in the Spadra Basin, an increase of 3,500 afy compared to the Baseline Scenario.

Treatment. In Scenario 3, the CPP RO Plant influent capacity is expanded from 538 afy to 4,800 afy for potable supply for the Spadra Basin water purveyors.

New Wells/Facilities.

- One underground recharge gallery and associated recycled water pipeline. Figure 2-2 shows potential locations for an underground recharge gallery. These locations were identified because they are along and/or near the main Pomona WRP recycled water pipeline and not near existing production wells. The potential locations to the east of Highway 71 will require the construction of new recycled water pipeline, but this new pipeline could be utilized to irrigate the schools and parks in this area and to supply recharge to any new injection wells in this area.
- Seven injection wells and associated recycled water pipeline**.** The location of the injection wells will be within the target area shown in Figure 2-2. This target area was identified as an area along and/or near the main Pomona WRP recycled water pipeline and not nearby or upgradient from existing production wells and the proposed target area for new production wells.
- Five new production wells and conveyance pipelines to the RO Plant. The location of the wells will be in the target area shown in Figure 2-2. This target area was identified because it is the along the central axis and deepest portion of the basin. The inactive wells (Walnut and P-31) could be put back into use and conveyed to CPP RO Plant in lieu of constructing two of the new production wells.
- Expansion of the treatment capacity at the CPP RO Plant and conveyance pipelines to and from the RO plant.

The table below summarizes the Baseline and Basin Optimization Scenarios.

Table 2-2. Summary of Basin Optimization Scenarios versus Baseline Scenario

	Pumping (afy)	Pumping (afy) Δ from Baseline	Recharge (afy)	Recharge (afy) Δ from Baseline	New Facilities
Baseline	1,806	--	0	--	--
Scenario 1	1,376	-430	0	0	● Additional recycled water pipeline and connections
Scenario 2	1,806	0	500	500	● Underground recharge gallery and pipeline ●Injection well and pipeline
Scenario 3	4,800	2,994	3,500	3,500	● Underground recharge gallery and pipeline ● Seven Injection wells and pipeline ● Five production wells and pipeline ● Expansion of CPP RO Plant and pipeline

3.0 EVALUATION OF THE BASIN OPTIMIZATION SCENARIOS

Section to be completed with TM 5 Part 2

4.0 COST ANALYSES OF THE BASIN OPTIMIZATION SCENARIOS

Section to be completed with TM 5 Part 2

5.0 CONCLUSIONS AND RECOMMENDATIONS

Section to be completed with TM 5 Part 2

6.0 REFERENCES

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