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Board-Requested Recharge Project Analysis

July 20, 2023

Agenda

- Introduction & Background
- Overview of Recharge Projects & Status
- Next Steps

Introduction & Background

Direction from the Board to develop a Work Plan that:

- Describes the Recharge Projects (2018 RMPU and 2020 OBMPU projects)
- Describes the next planning and/or construction tasks to implement Recharge Projects
- Describes cost estimates to perform the next planning and/or construction tasks

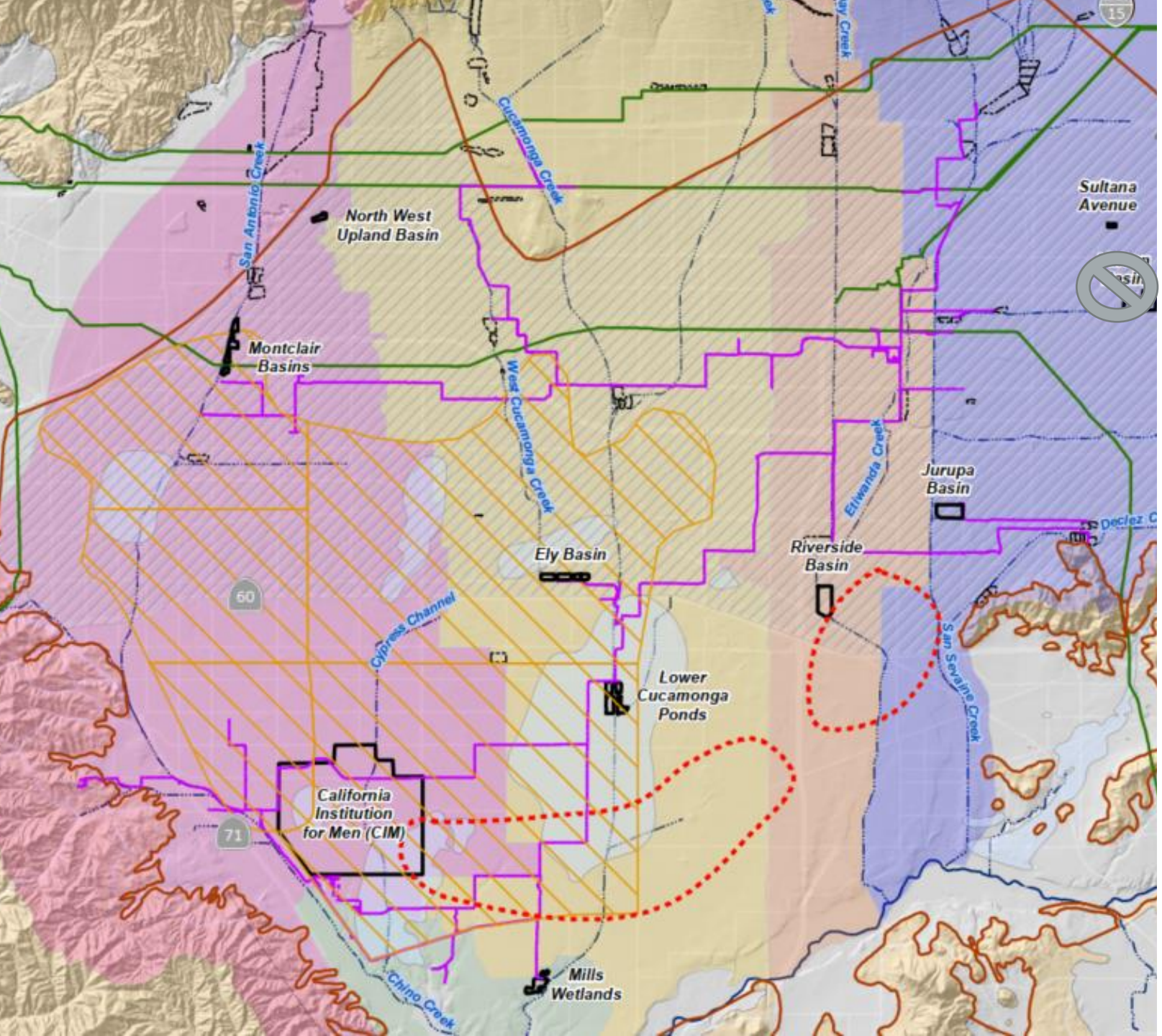
Project Name	Land Owner	Has the information and documentation necessary to apply for planning grant (year of most recent evaluation)	Capital Cost[a] ($)	New Stormwater Recharge[a] (afy)	Unit Stormwater Recharge Cost[a] ($/af)
North West Upland Basin	City of Upland	Yes (2013) [a]	$6,574,000	93	$4,620
Montclair Basins	CBWCD	Yes (2022)	$5,600,000	68	$5,400
California Institution for Men (CIM) [b]	State of California	No	NE	NE	NE
Ely Basin	CBWCD, SBCFCD	Yes (2013) [a]	$3,017,000	101	$1,990
Lower Cucamonga Ponds[b]	SBCFCD	No	NE	NE	NE
Riverside Basin[b]	RCFCD	No	NE	NE	NE
Sultana Avenue	City of Fontana	Yes (2013) [a]	$601,000	7	$5,620
~~Vulcan Basin~~	~~CalMat Co.~~	~~Yes (2013) [a]~~	~~$33,168,000~~	~~857~~	~~$2,560~~
Jurupa Basin[b]	SBCFCD	No	NE	NE	NE
Agricultural Managed Aquifer Recharge (AgMAR)	n/a	No	NE	NE	NE
Mills Wetlands[b]	USACE	No	NE	NE	NE
ASR Wells	n/a	No	NE	NE	NE
MS4 Compliance Projects	n/a	No	NE	NE	NE
Regional Recharge Distribution System	n/a	No [c]	$184,000,000	5,000	$2,810

(a) Projects considered to have the information and documentation necessary to apply for grant funding were evaluated in 2013. The project costs were re-evaluated in 2018 as part of the 2018 RMPU. However, it should be noted that the project cost and benefit should be re-evaluated based on most current conditions.

(b) These projects are considered elements of the Regional Recharge Distribution System project listed under "Basin-Wide."

(c) The Regional Recharge Distribution system was evaluated at a conceptual level in 2017. The evaluation is considered insufficient for grant funding applications.

af – acre-feet; NE - Not Estimated; CBWCD – Chino Basin Water Conservation District; SBCFCD – San Bernardino County Flood Control District; RCFCD– Riverside County Flood Control District



Recharge Project

Areas of Pumping Sustainability Concern

Areas of Subsidence Concern

Recycled Water Pipeline

Imported Water Pipeline

Other Existing Recharge Basins

Groundwater Plumes

Subwatershed

San Antonio/Chino Creek

Cucamonga Creek

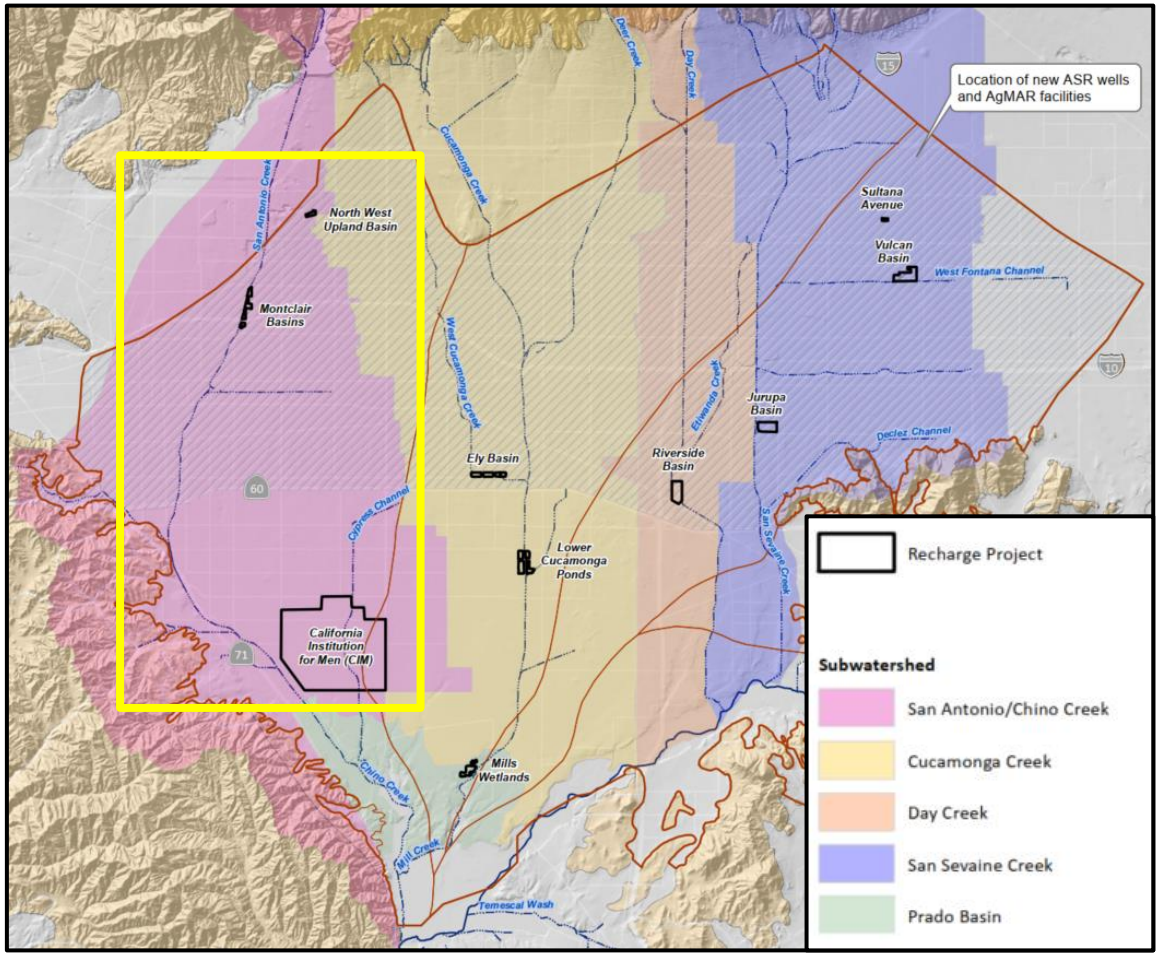
Day Creek

San Sevaine Creek

Prado Basin

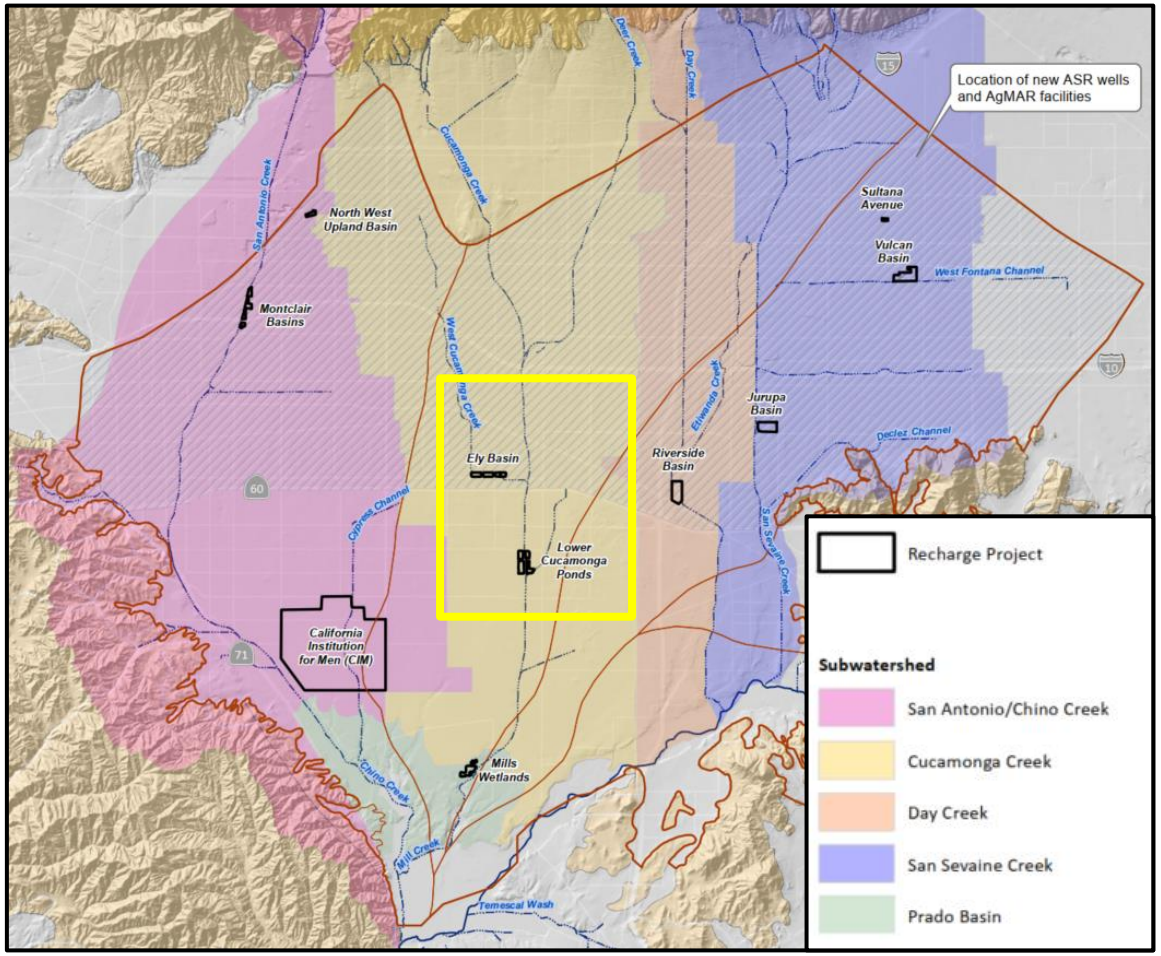
San Antonio/Chino Creek

- North West Upland Basin
  - Increase drainage area and basin enlargement.
- Montclair Basins
  - Transfer water between Montclair Basins and deepen MC4.
- California Institution for Men (CIM)
  - Construct and operate a new surface water storage basin for stormwater and supplemental waters.



Cucamonga Creek

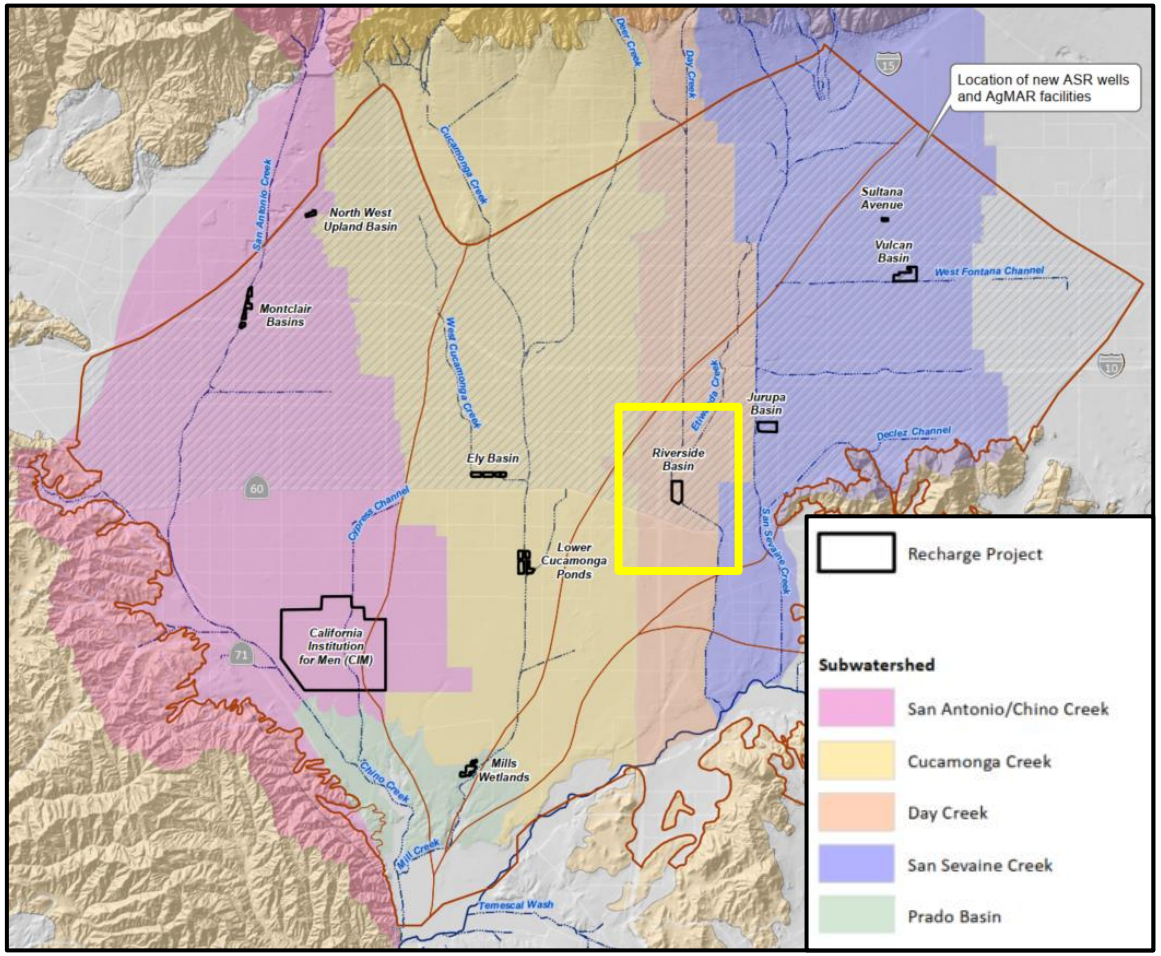
- Ely Basin*
  - Basin enlargement and increased drainage area.
- Lower Cucamonga Ponds
  - Construct and operate a new surface water storage basin, including facilities to convey stormwater from the new storage basin to recharge facilities in the northern part of the basin



*Known institutional considerations

Day Creek

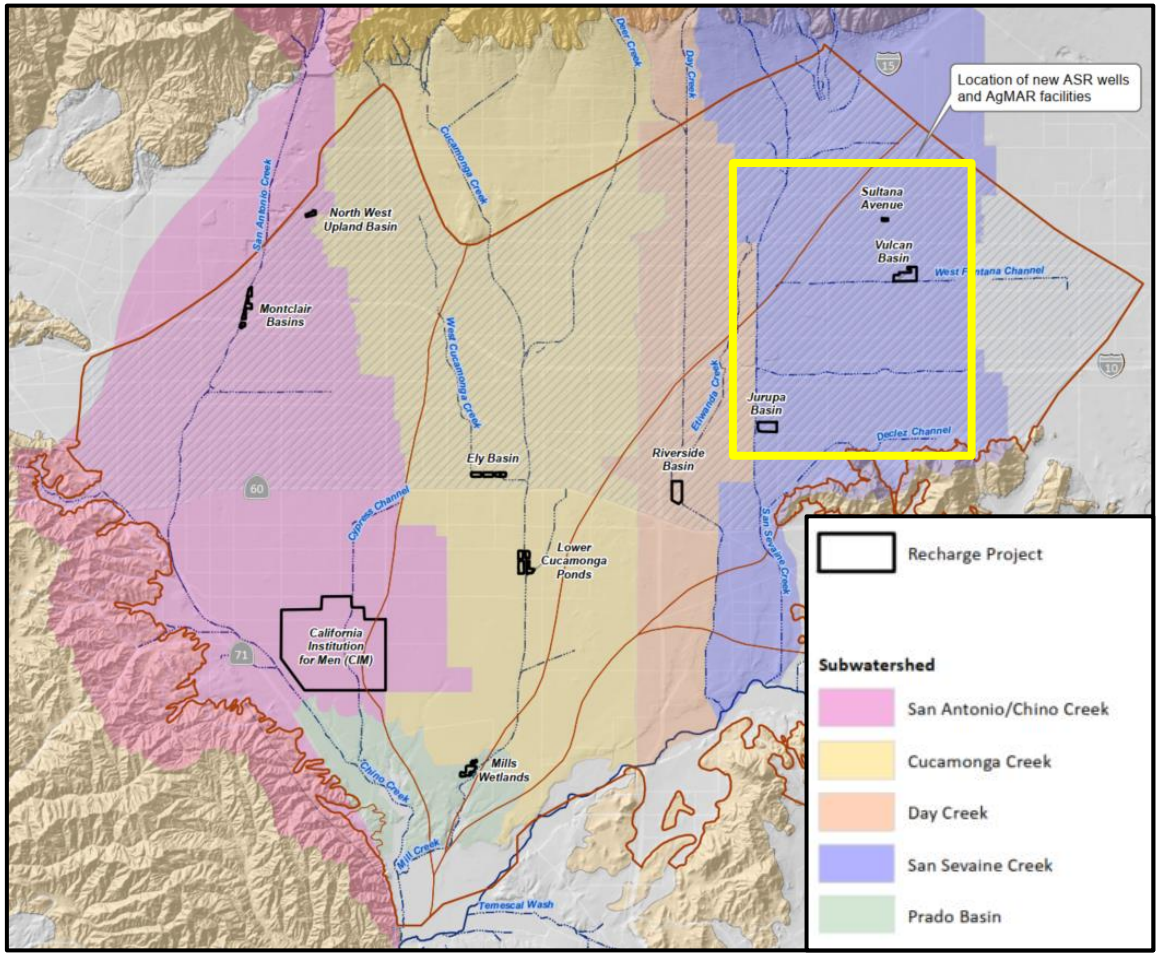
- Riverside Basin*
  - Construct and operate a new surface water storage, including convey stormwater from the new storage basin to recharge facilities in the northern part of the basin.



*Known environmental considerations

San Sevaine Creek

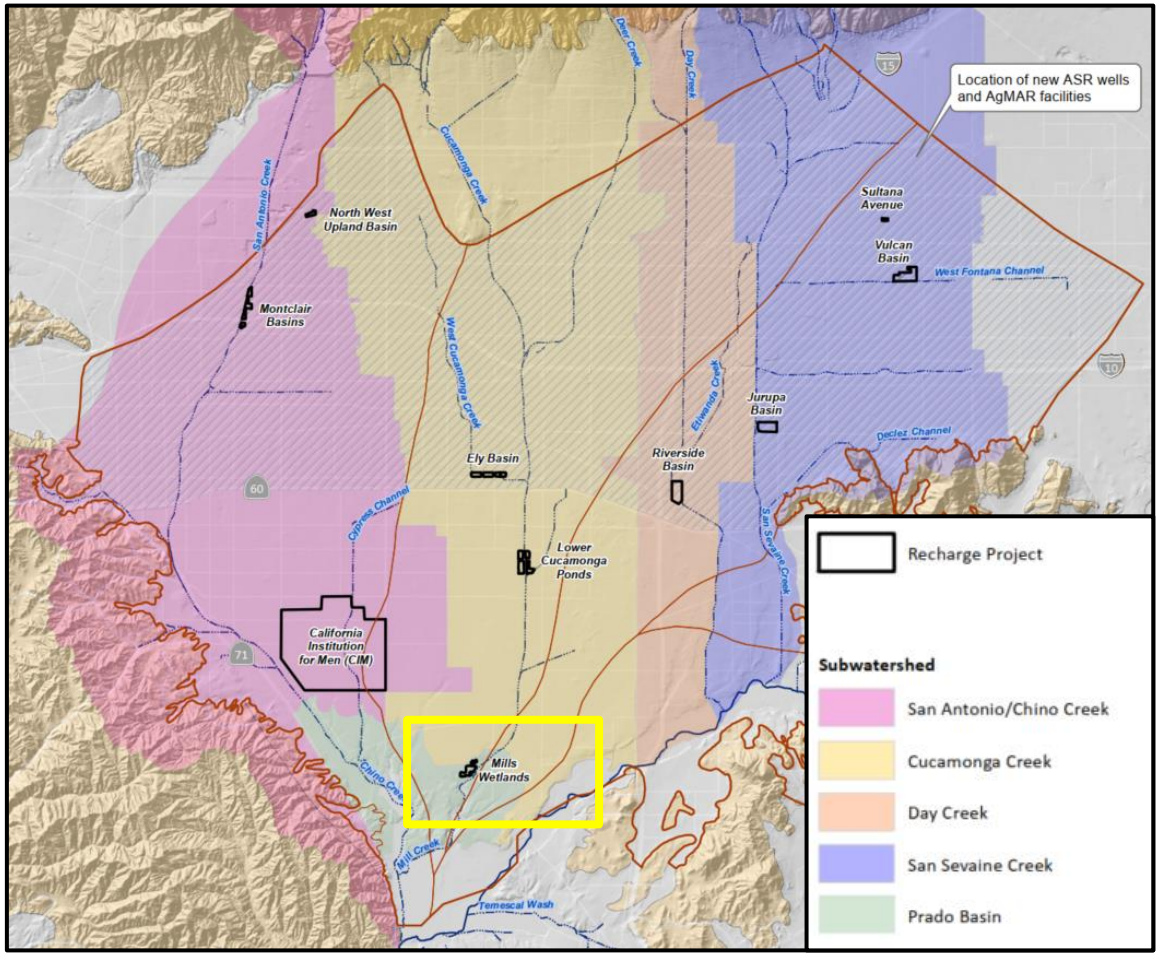
- Sultana Avenue
  - Deepen basin by 10 feet.
- Jurupa Basin
  - Grading improvements and improvements at the pump station to increase the time the pump station can operate at full capacity
- AgMAR
- ~~Vulcan Basin*~~
  - ~~Construct and operate a new surface water storage basin for stormwater and supplemental waters~~



*Known environmental considerations

Prado Basin

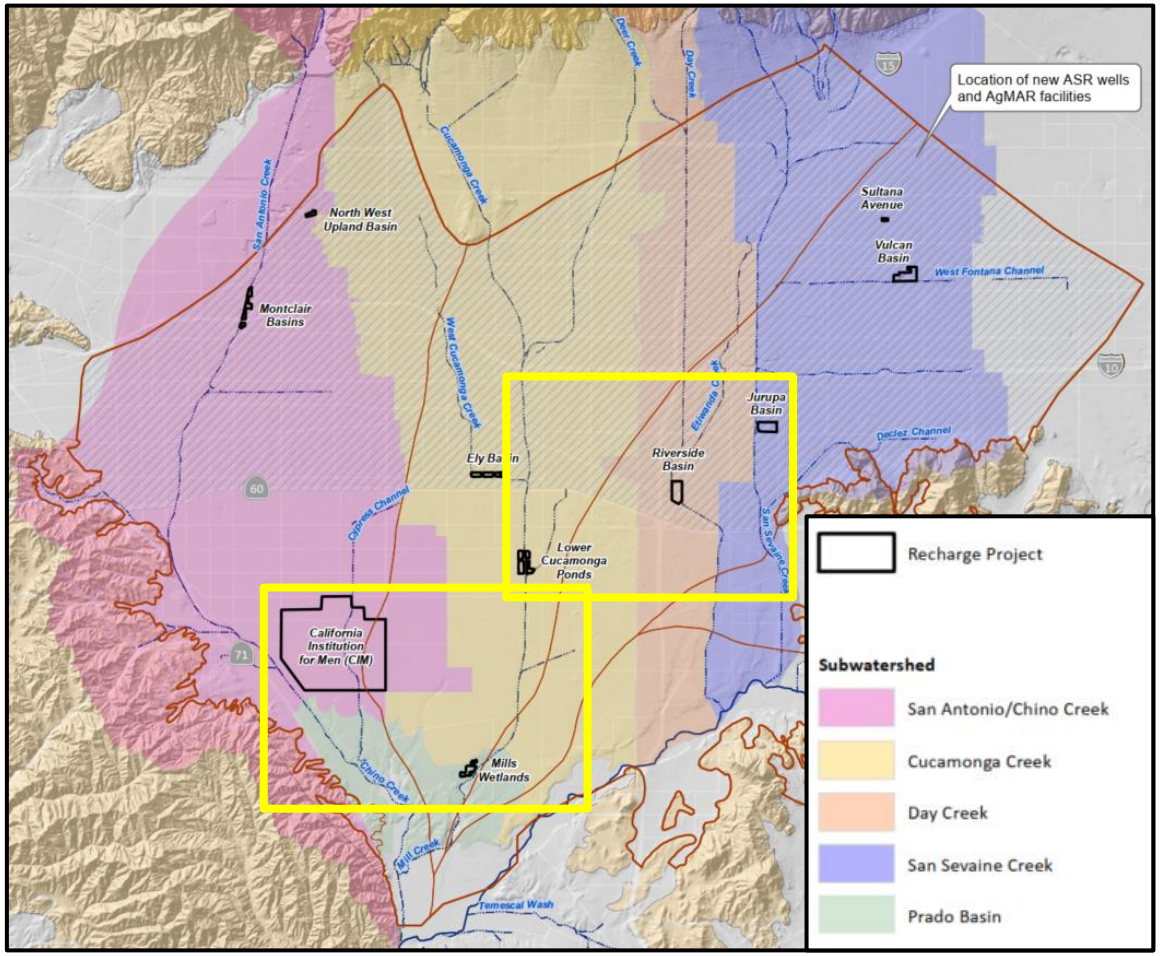
- Mills Wetlands*
  - Construct and operate a new surface water storage basin at the existing Mills Wetlands, including facilities to convey stormwater from the new storage basin to recharge facilities in the northern part of the basin



*Known environmental considerations

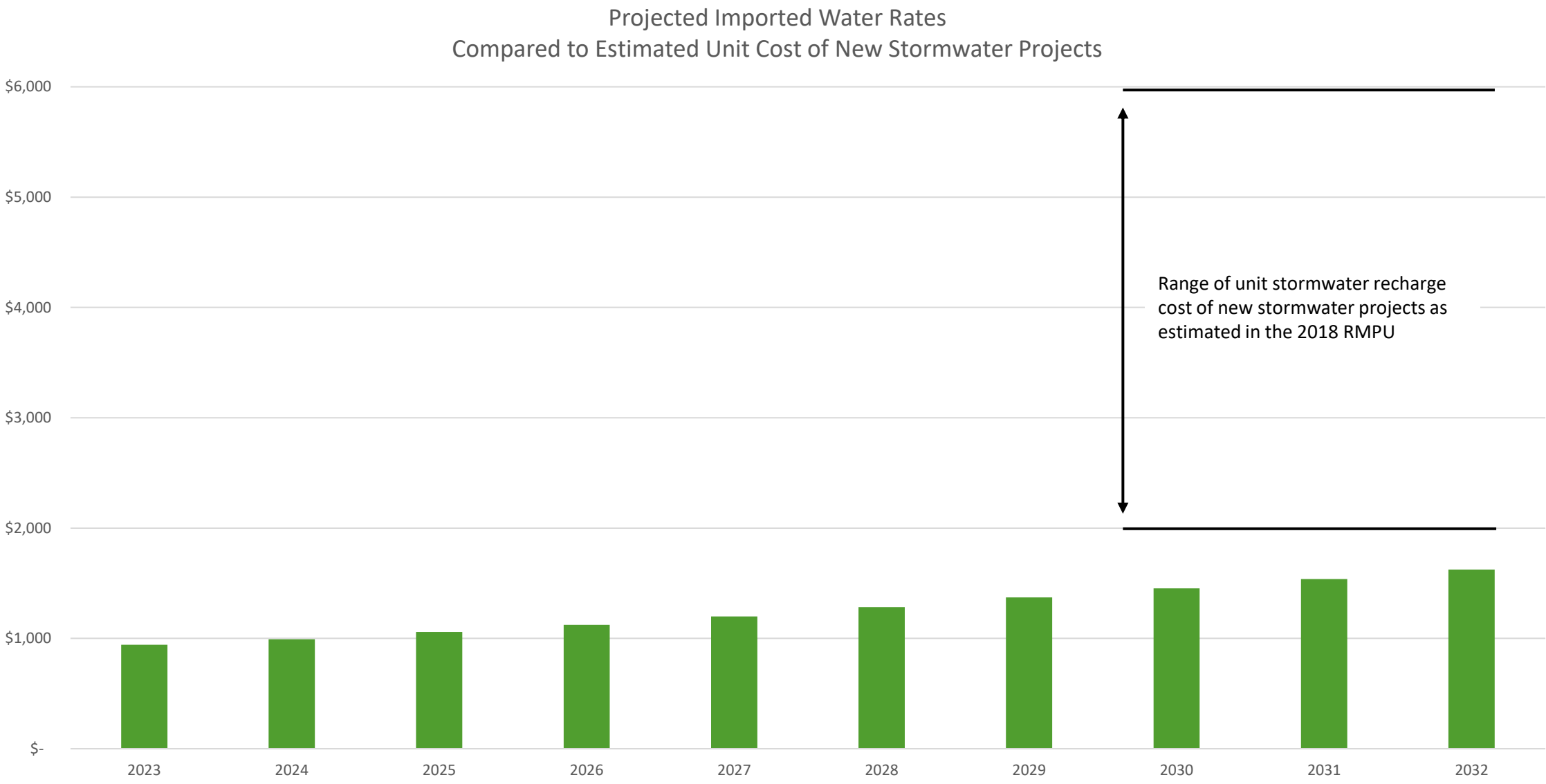
Basin-Wide

- Regional Recharge Distribution System
  - CIM
  - Lower Cucamonga Ponds
  - Riverside Basin*
  - Jurupa
  - Mills Wetlands*
- ASR Well Construction
- MS4 Compliance Projects

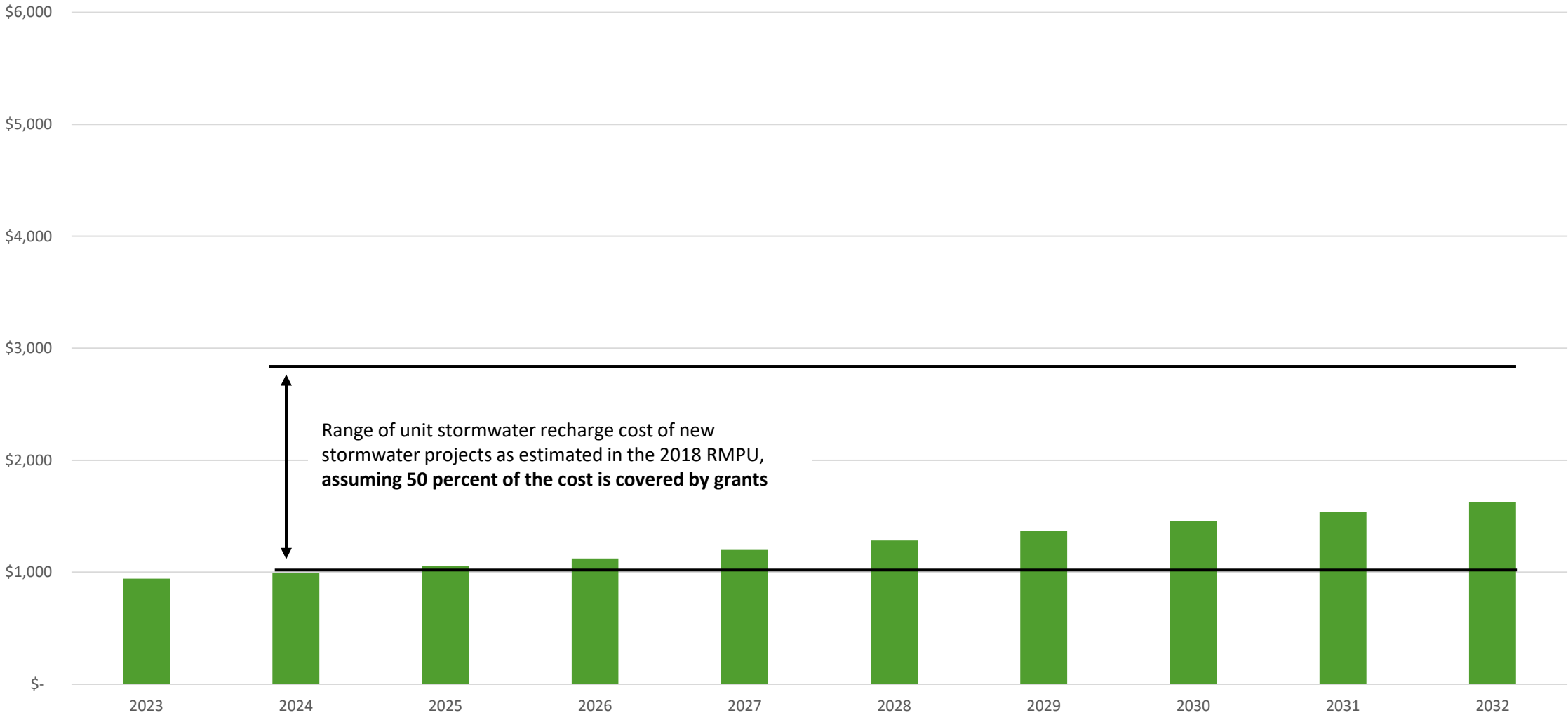


*Known environmental considerations

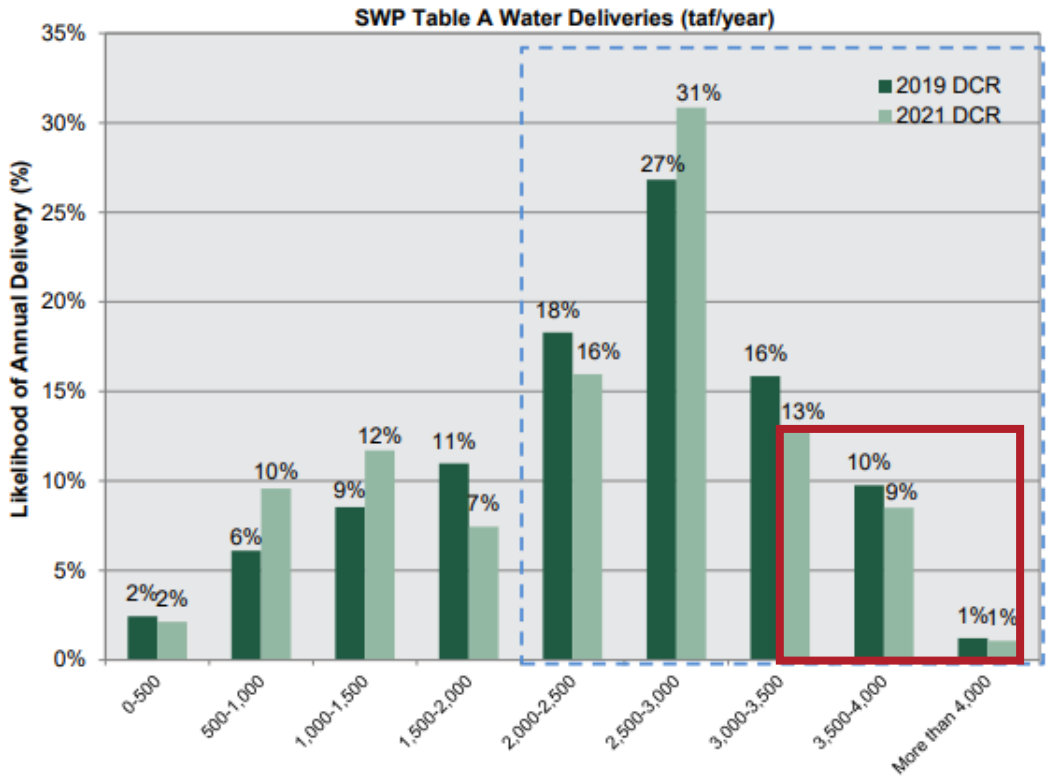
Q&A


Projected Imported Water Rates
Compared to Estimated Unit Cost of New Stormwater Projects
$6,000
$5,000
$4,000
$3,000
$2,000
$1,000
$-
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
Range of unit stormwater recharge cost of new stormwater projects as estimated in the 2018 RMPU

Projected Imported Water Rates
Compared to Estimated Unit Cost of New Stormwater Projects



SWP Water Availability Projections



Source: https://water.ca.gov/Library/Modeling-and-Analysis/Central-Valley-models-and-tools/CalSim-3/DCR2021

- Historical demands ~3,000 TAF/year
- **DDW:** 23% likelihood that more than 3,000 TAF/year of Table A water will be delivered
- **RMPU assumption:** One out of five years (20%) likelihood Watermaster will be able to purchase water from Metropolitan

Q&A

For discussion

- Refine the list of Recharge Projects by:
  - removing projects that the Parties are not interested in pursuing
  - adding new projects identified by the Parties
- Summary of input received so far:
  - Vulcan property is no longer available for recharge
  - There is an approval process to be able to use land within the CIM for recharge (can cost $50K or more and can take up to 18 months)
  - Are there any other excavated basins (similar to Vulcan or agricultural ponds) that can be leveraged?

Next Steps

- Identify additional analyses that need to be conducted for each project to be considered “grant ready”
- Prepare the Work Plan
  - Describe the Recharge Projects (2018 RMPU and 2020 OBMPU projects);
  - Describe the next planning and/or construction tasks to implement Recharge Projects; and
  - Describe cost estimates to perform the next planning and/or construction tasks

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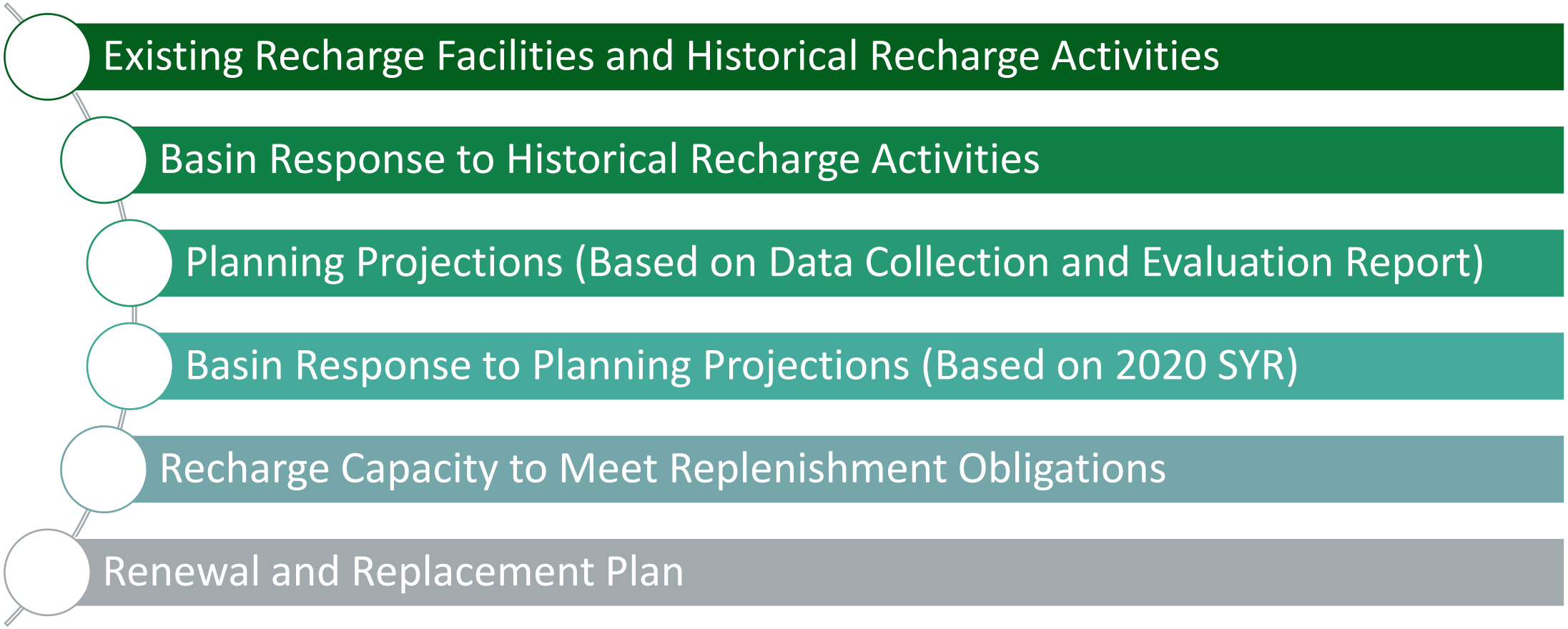
2023 Recharge Master Plan

July 20, 2023

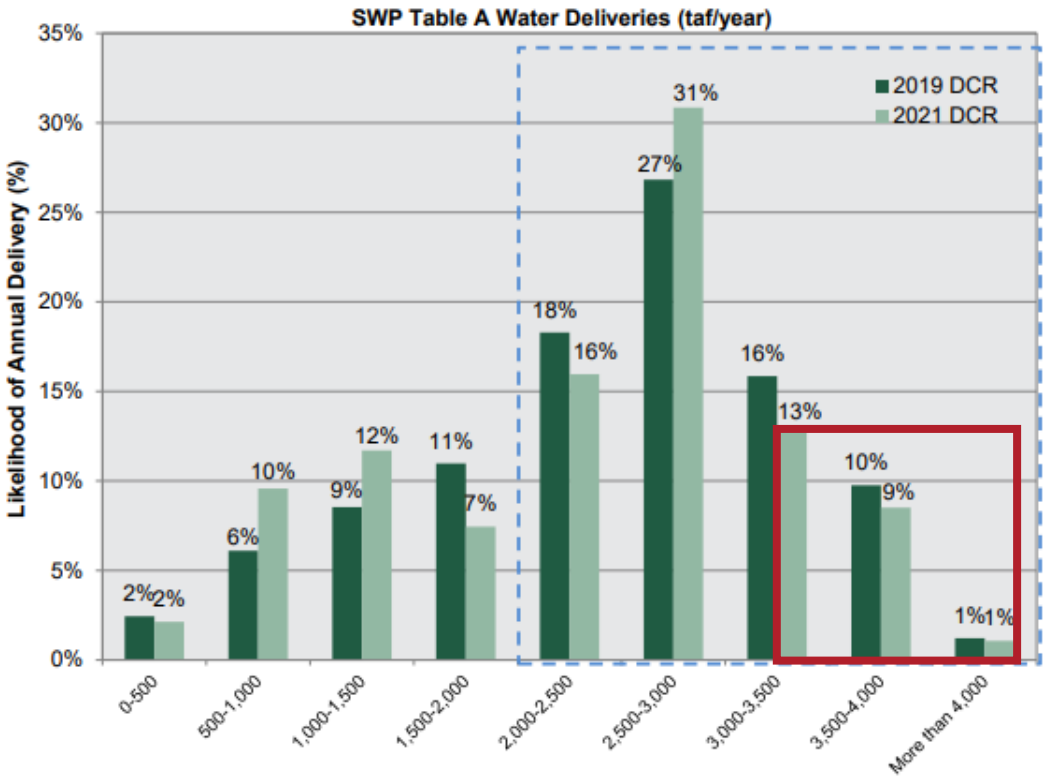
Agenda

- 2023 RMPU Overview
- Review of previous workshop – Imported water availability
- MS4 Facilities
- Next Steps

2023 Recharge Master Plan (RMPU) Overview



Review of Previous 2023 RMPU Workshop



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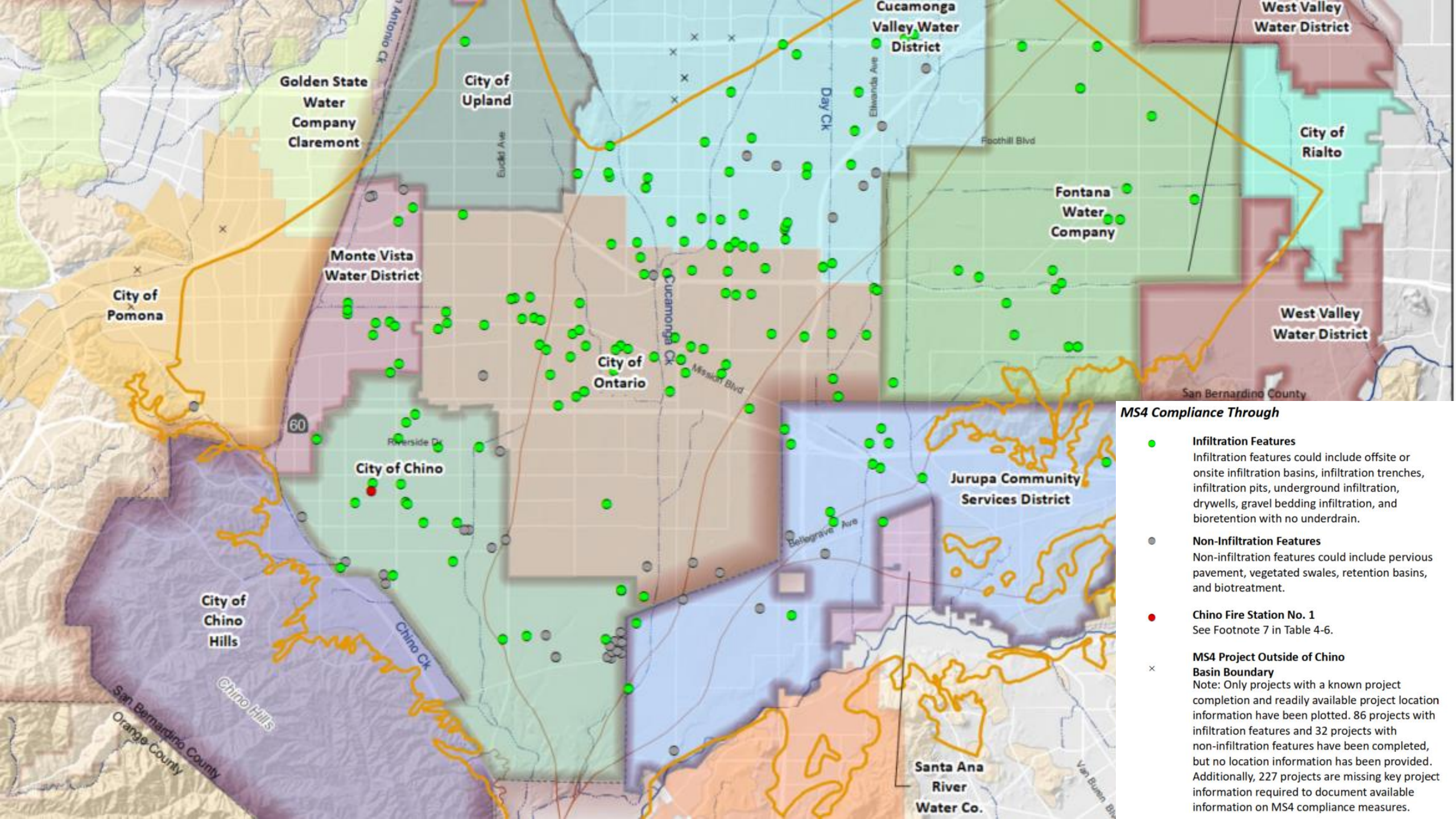

MS4 Compliance Through

Infiltration Features
Infiltration features could include offsite or onsite infiltration basins, infiltration trenches, infiltration pits, underground infiltration, drywells, gravel bedding infiltration, and bioretention with no underdrain.

Non-Infiltration Features
Non-infiltration features could include pervious pavement, vegetated swales, retention basins, and biotreatment.

Chino Fire Station No. 1
See Footnote 7 in Table 4-6.

MS4 Project Outside of Chino Basin Boundary
Note: Only projects with a known project completion and readily available project location information have been plotted. 86 projects with infiltration features and 32 projects with non-infiltration features have been completed, but no location information has been provided. Additionally, 227 projects are missing key project information required to document available information on MS4 compliance measures.

MS4 Facilities

Number of MS4 projects		Drainage area of MS4 projects (acres)		Reconnaissance estimate of stormwater recharge (acre-ft per year)
Total	338	Total	4,659	
That comply through infiltration	266	That comply through infiltration	3,836	840

Less than 25% of the MS4 projects meet the documentation requirements of: confirmed approval and construction date, and ongoing maintenance

MS4 Facilities Discussion

- The appropriative pool parties have not provided a comprehensive dataset of the projects within their service area.
- Watermaster does not have all of the data required to compute the net new recharge created by these projects.
- There is potential for about 840 afy of net new recharge if these projects are maintained to perform as originally designed.
- ***Question: Should Watermaster continue to collect MS4 data from the Parties?***

2023 RMPU Next Steps

August 2023

- Release draft 2023 RMPU report
- Hold an RMPU Workshop

September 2023

- Address stakeholder comments
- Release final 2023 RMPU report

October 2023

- Submit to the Court