

Thank you to our Patrons



We will begin our presentation in a few minutes...



Leadership and Excellence in Environmental Engineering and Science



**LOS ANGELES COUNTY
SANITATION DISTRICTS**
Converting Waste Into Resources

San Gabriel River Watershed Project to Reduce River Discharge in Support of Increased Recycled Water Reuse

A Plan to Balance Societal and Environmental Water Needs

Jodie Lanza

Jaime Sayre

Stephanie Olague



OUR SERVICE AREA



Presentation Outline

The Sanitation Districts Overview

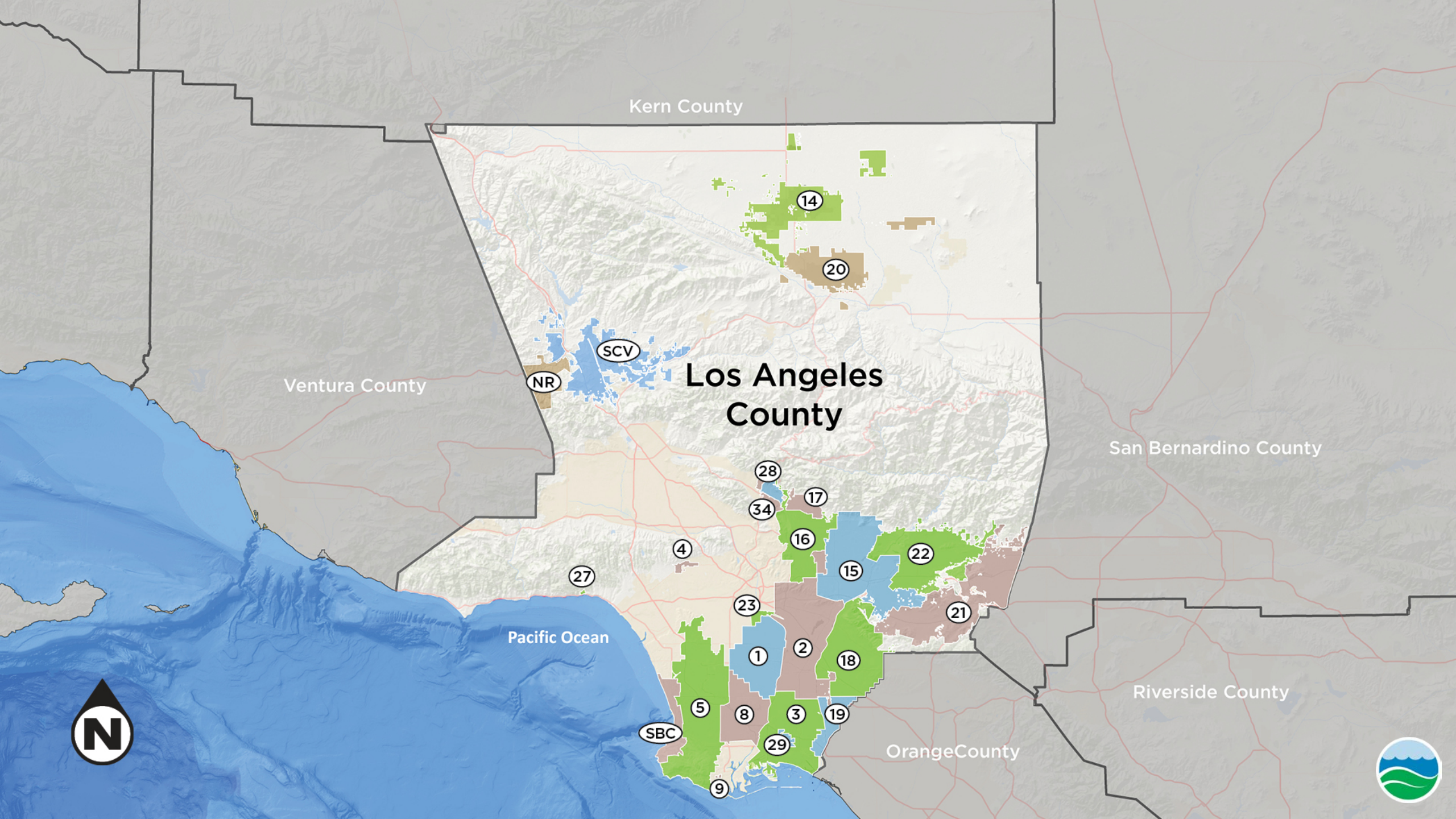
California Water Code §1211

San Gabriel River Watershed Project



The Sanitation Districts of Los Angeles County





Kern County

Ventura County

**Los Angeles
County**

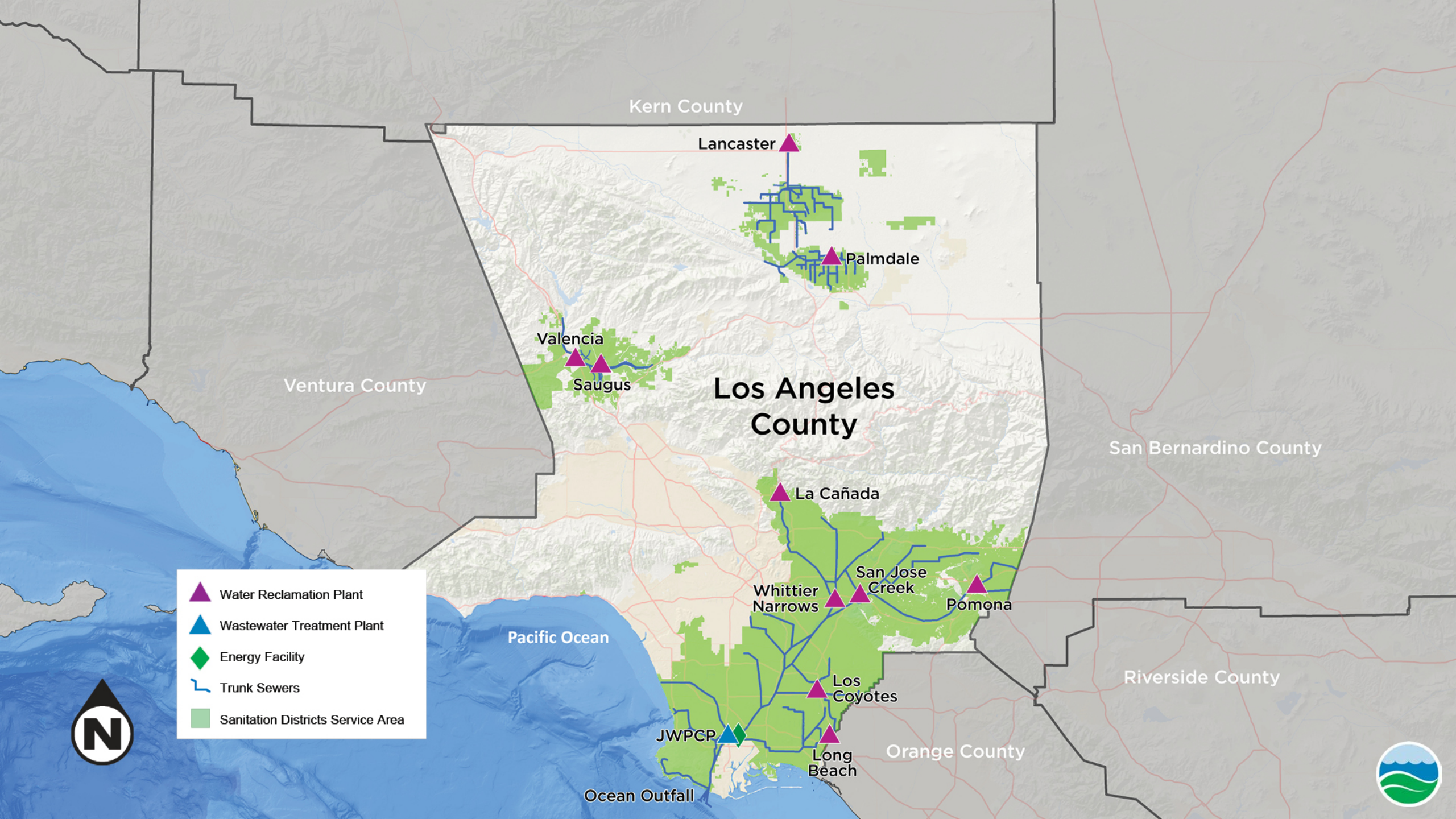
San Bernardino County

Pacific Ocean

Riverside County

Orange County





Kern County

Lancaster

Palmdale

Valencia

Saugus

Los Angeles County

Ventura County

San Bernardino County

La Cañada

Whittier Narrows

San Jose Creek

Pomona

Pacific Ocean

Riverside County

Los Coyotes

Orange County

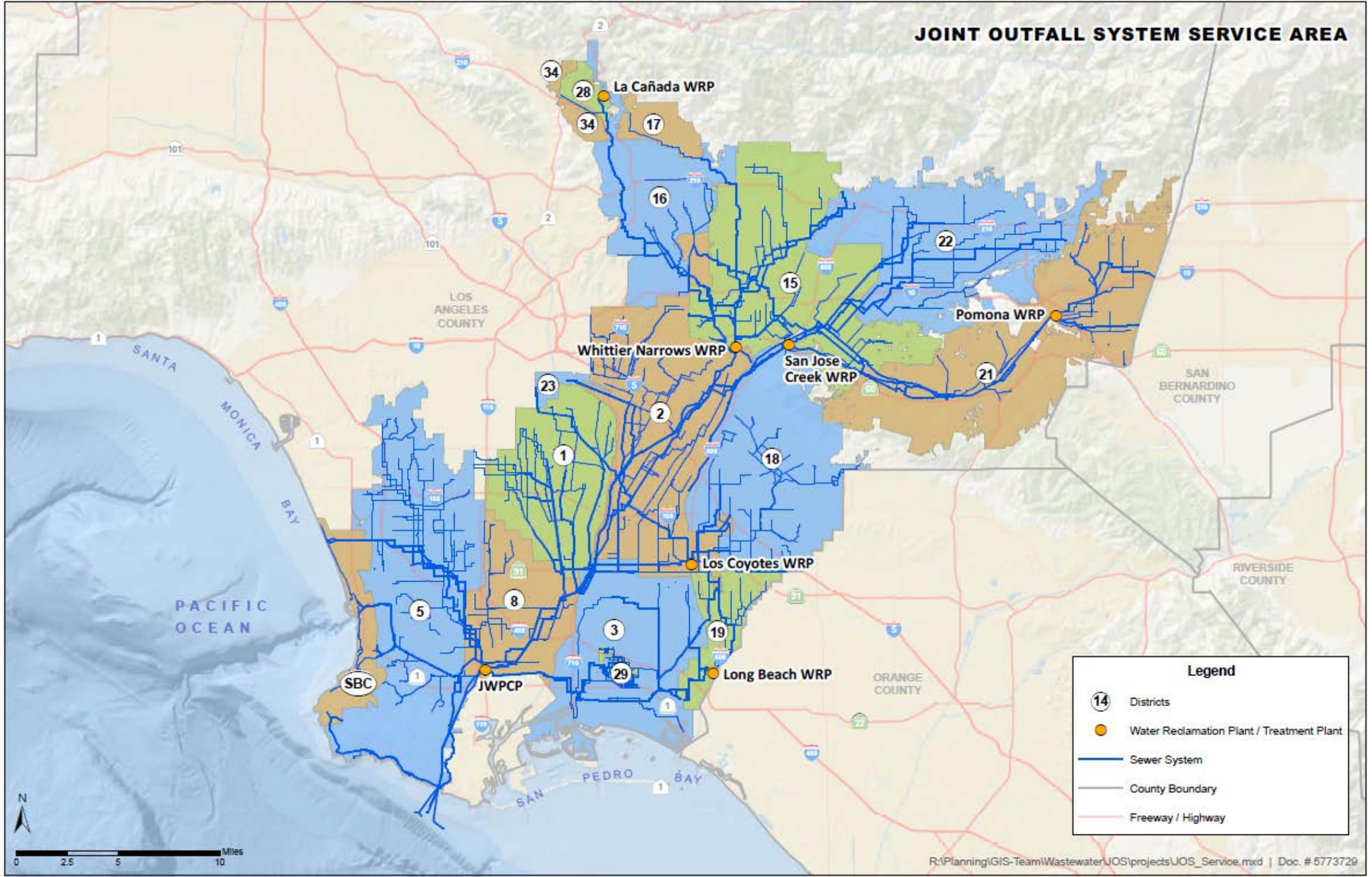
JWPCP

Long Beach

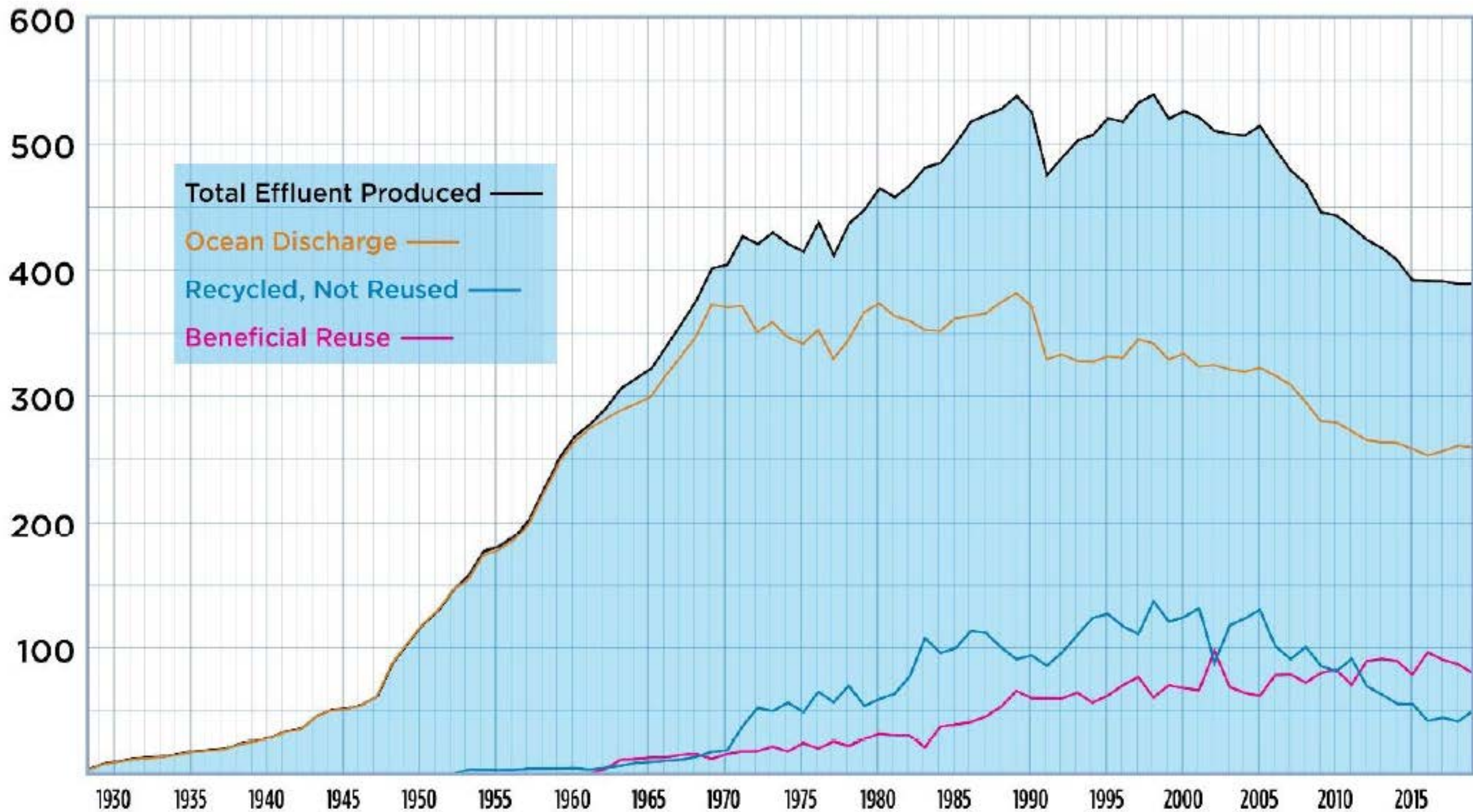
Ocean Outfall



JOINT OUTFALL SYSTEM SERVICE AREA



MILLIONS OF GALLONS PER DAY



Current Recycled Water Uses

San Jose Creek WRP: groundwater recharge at the Montebello Forebay Groundwater Recharge Project and for irrigation, industrial, and municipal purposes

Pomona WRP: irrigation, industrial, and municipal purposes

Los Coyotes WRP: irrigation, industrial, and municipal purposes

Long Beach WRP: irrigation, industrial, and municipal purposes

Whittier Narrows WRP: irrigation and municipal reuse applications



Total Recycled Water Used (Acre-feet)

120,000

100,000

80,000

60,000

40,000

20,000

Proportional Volume Used for Recharge
Proportional Volume Used for Direct Use

1980-81

1985-86

1990-91

1995-96

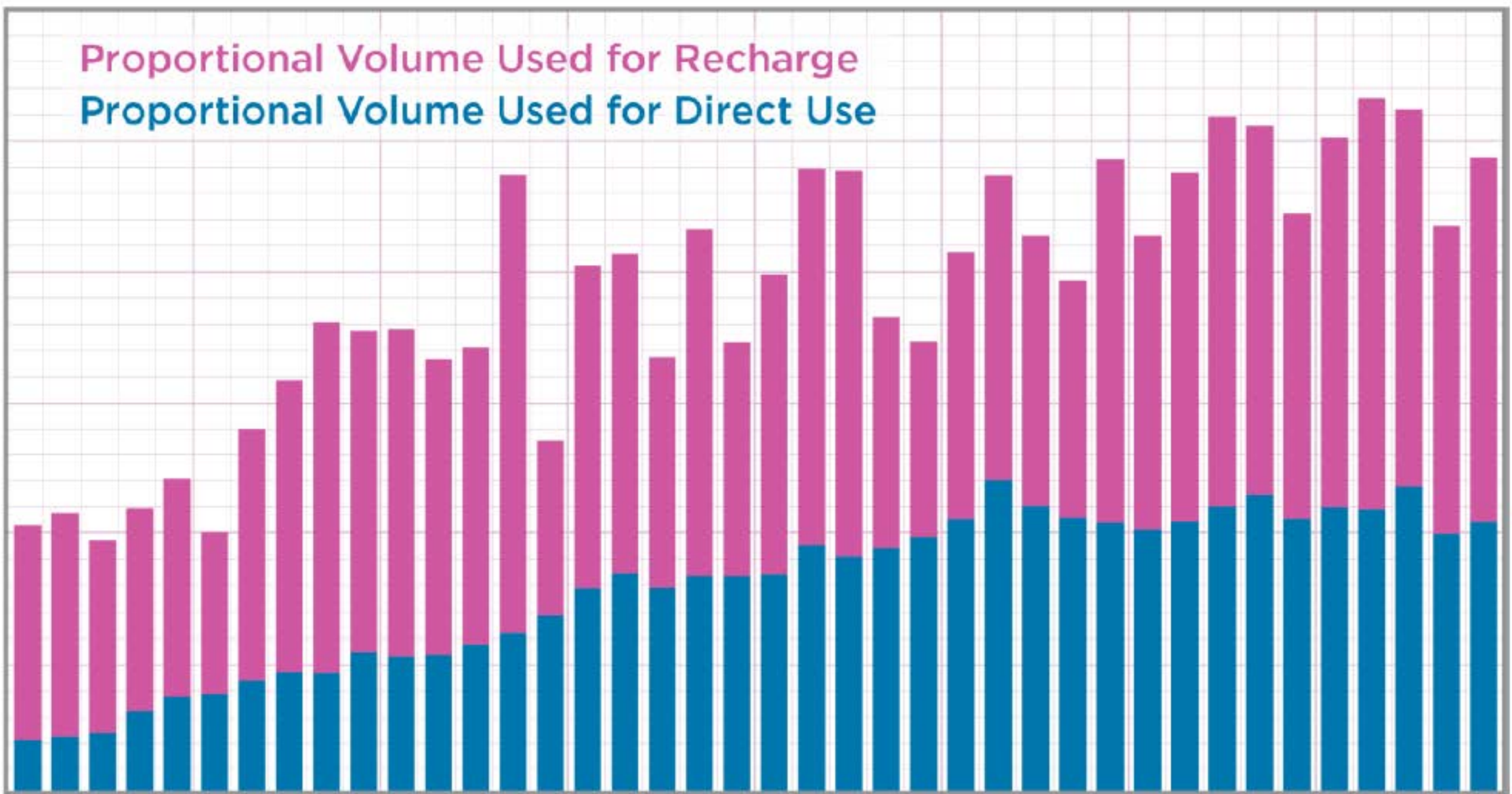
2000-01

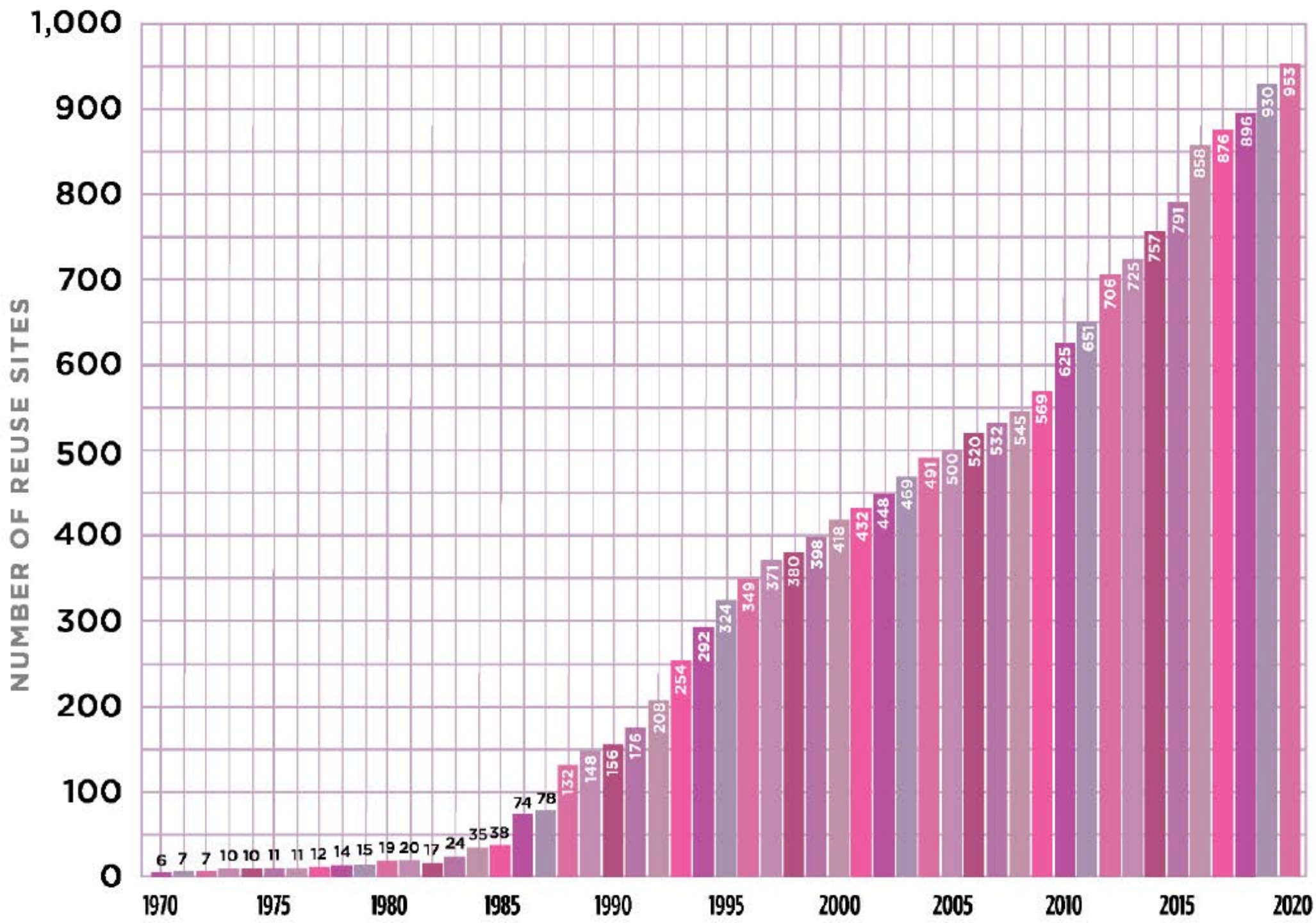
2005-06

2010-11

2015-16

2019-20





Nation's Leader in Water Recycling

Nation's largest supplier of recycled water over the last 50 years



1,000,000,000,000

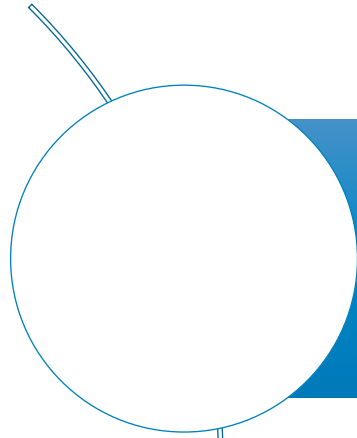
GALLONS RECYCLED OVER 50 YEARS



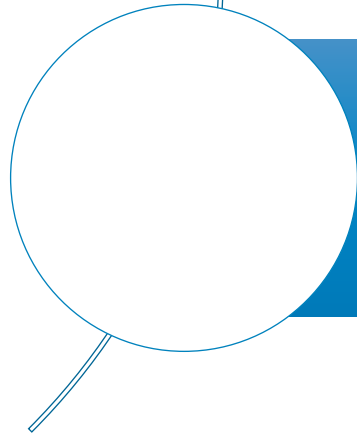
California Water Code Section 1211



The Recycle Water Policy promotes reuse.



Promotes the development of recycled water to serve areas in need



Encourages the SWRCB to expedite requests to change water permits to enable those deliveries



California law requires Board approval prior to changing discharges to a waterbody.

California law requires Board approval prior to changing discharges to a waterbody.

➤ Section 1211 (Wastewater Change Petition)

- “(a) Prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater, the owner of any wastewater treatment plant shall obtain approval of the board for that change. The board shall review the changes pursuant to the provisions of Chapter 10 (commencing with Section 1700) of Part 2 of Division 2.
- (b) Subdivision (a) does not apply to changes in the discharge or use of treated wastewater that do not result in decreasing the flow in any portion of a watercourse.”



A 1211 is not required for the following instances...



When the discharge or use of treated wastewater does not result in decreasing the flow in any portion of a watercourse

When the wastewater is discharged directly to an ocean or a bay

Reuse/Recycle of wastewater which has never been discharged to a water body



1211 has two components that must be addressed.

- Water Rights



- Habitat Impacts



Addressing the 1211 components requires many steps.



Association of Environmental Professionals

2021 CEQA

California Environmental Quality Act
Statute & Guidelines



The first step is a CEQA analysis

- California Environmental Quality Act
- Enacted in 1970
- Similar to National Environmental Policy Act (NEPA)
- Requires agencies to identify significant environmental impacts of projects and to eliminate or mitigate those impacts, if feasible
- Makes it easier for public to participate in the planning process



Project impacts are expected to be either none or less than significant.



Biological Resources

No impact or a less than significant impact after implementation of mitigation measures.



Hydrology and Water Quality

No impact or a less than significant impact.



Recreation

No impact or a less than significant impact.

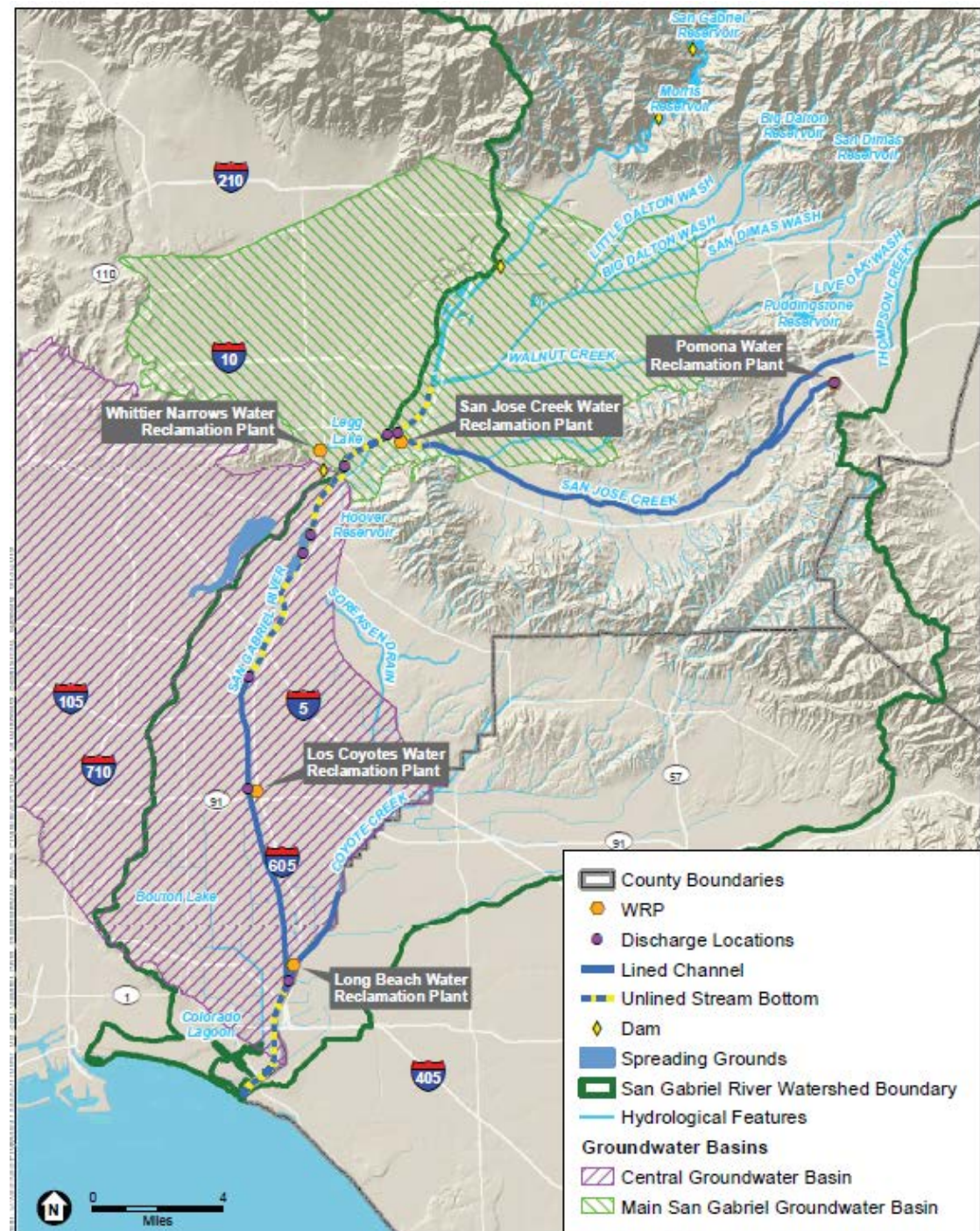


Field surveys were conducted at the recommendation of CDFW.

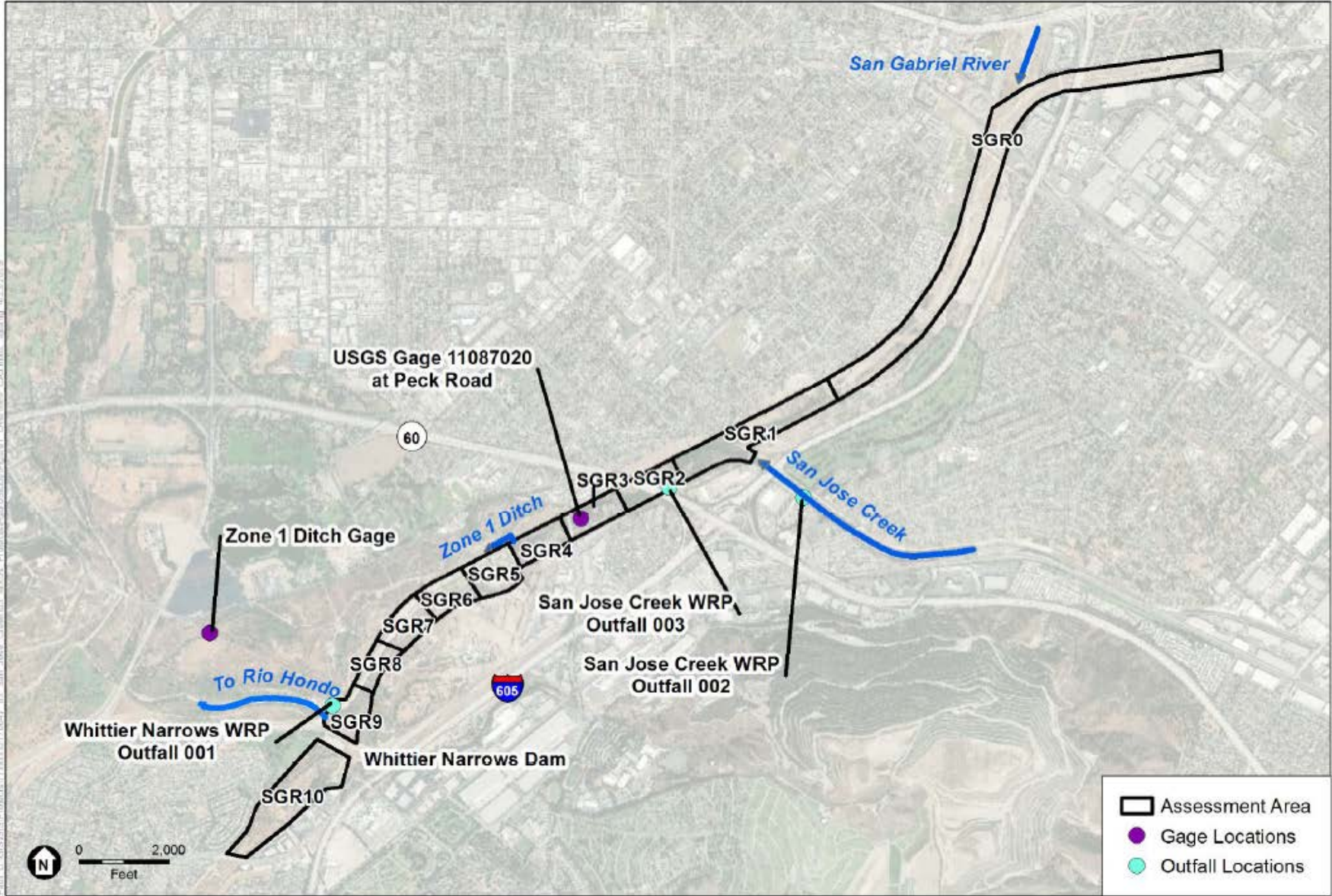
- Wildlife
 - Fish Survey
 - 30 non-native species observed
 - No native species observed
 - Tricolored Blackbird
 - None observed
 - Least Bell's Vireo
 - Multiple reports indicate living in project area
 - Bat Survey
 - Western Red, Hoaray, Yuma myotis, California myotis, and Mexican free-tailed
 - Western Pond Turtle
 - None observed
- General Habitat Assessment and Vegetation Mapping



Recycled water diversions would not reduce groundwater storage.



The hydrology study area was divided into 11 zones.



All the operational scenarios show a reduction in the duration of dry periods.

Duration of longest dry period in dry season (average of 5 years) - days											
Operational Scenario	SGR 1	SGR 2	SGR 3	SGR 4	SGR 5	SGR 6	SGR 7	SGR 8	SGR 9	SGR 10	Mean
Existing Conditions	4	13	25	35	49	58	64	65	35	37	39
OS1a	0	3	21	61	97	109	118	120	66	66	66
OS1b	1	6	8	20	59	105	112	112	66	66	56
OC1c	2	8	9	10	15	33	50	81	65	65	34
OS2a	2	3	6	73	109	122	129	132	66	66	71
OS2b	3	6	7	9	86	105	112	112	66	66	57
OS2c	4	9	9	10	11	12	70	88	65	65	34

>21	Longer than recommended watering interval for establishing plants
14-21	Within range of recommended watering interval
<14	More frequent than recommended watering interval



Operational scenario 1c was determined to be the best.

Change in longest dry period in dry season compared with existing conditions										
Operational Scenario	SGR1	SGR2	SGR3	SGR4	SGR5	SGR6	SGR7	SGR8	SGR9	SGR10
OS1a	-4	-11	-4	26	48	50	54	55	31	29
OS1b	-3	-7	-17	-15	10	47	49	47	31	29
OC1c	-2	-5	-16	-25	-34	-25	-14	16	30	28
OS2a	-2	-10	-19	38	60	64	66	67	31	29
OS2b	-1	-7	-17	-26	37	47	49	47	31	29
OS2c	0	-5	-16	-25	-38	-46	6	23	30	28

-46
0
67

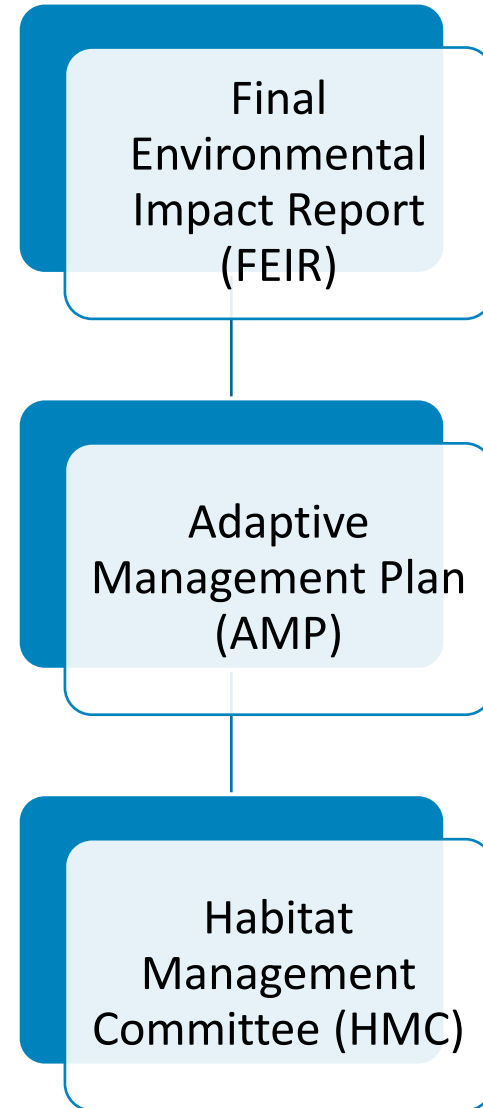
Reduction in length of dry periods

Little change in length of dry periods

Increase in length of dry periods



Next step was to develop an adaptive management plan (AMP).



To ensure habitat protection, we committed to an Adaptive Management Plan (AMP).

Designed to ensure continuation of the pre-Project conditions (overall quality and quantity) of the habitat influenced by treatment plant discharges. Developed in coordination with CDFW and USFWS.

Requires annual mapping and monitoring the riparian vegetation.

Established Habitat Management Committee (HMC) to evaluate data to determine whether there have been any impacts on habitat conditions caused by the Project and will also determine the adaptive management actions that should be taken in response to any such impacts.



The Habitat Management Committee (HMC) is a key component of the AMP.

The Sanitation
Districts

USFWS and CDFW

Los Angeles County
Department of
Public Works

Southern California
Coastal Water
Research Project

United States Army
Corps of Engineers

Other water
management and
supply agencies

LA Water Keeper

Heal the Bay

Other NGOs



The next step in the 1211 process is...



Please indicate County where your project is located here:

MAIL FORM AND ATTACHMENTS TO:
State Water Resources Control Board
DIVISION OF WATER RIGHTS
P.O. Box 2000, Sacramento, CA 95812-2000
Tel: (916) 341-5300 Fax: (916) 341-5400
<http://www.waterboards.ca.gov/waterrights>

PETITION FOR CHANGE

Separate petitions are required for each water right. Mark all areas that apply to your proposed change(s). Incomplete forms may not be accepted. Location and area information must be provided on maps in accordance with established requirements. (Cal. Code Regs., tit. 23, § 715 et seq.) Provide attachments if necessary.

- Point of Diversion** Wat. Code, § 1701
 - Point of Rediversion** Cal. Code Regs., tit. 23, § 791(e)
 - Place of Use** Wat. Code, § 1701
 - Purpose of Use** Wat. Code, § 1701
 - Distribution of Storage** Cal. Code Regs., tit. 23, § 791(e)
 - Temporary Urgency** Wat. Code, § 1435
 - Instream Flow Dedication** Wat. Code, § 1707
 - Waste Water** Wat. Code, § 1211
 - Split** Cal. Code Regs., tit. 23, § 836
 - Terms or Conditions** Cal. Code Regs., tit. 23, § 791(e)
 - Other**
- Application Permit License Statement

I (we) hereby petition for change(s) noted above and described as follows:

Point of Diversion or Rediversion – Provide source name and identify points using both Public Land Survey System descriptions to ¼-¼ level and California Coordinate System (NAD 83).

Present:
Proposed:

Place of Use – Identify area using Public Land Survey System descriptions to ¼-¼ level; for irrigation, list number of acres irrigated.

Present:
Proposed:

Purpose of Use

Present:
Proposed:

Split

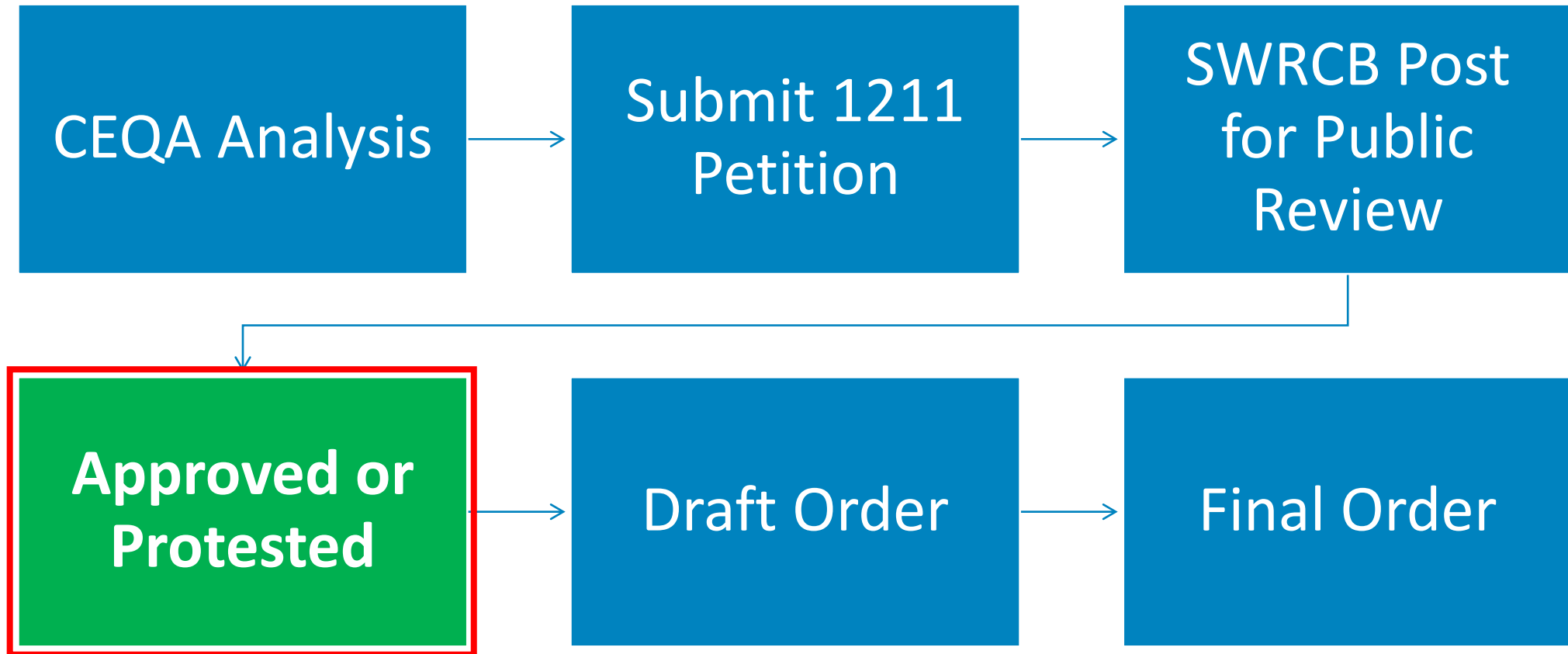
Provide the names, addresses, and phone numbers for all proposed water right holders.

In addition, provide a separate sheet with a table describing how the water right will be split between the water right holders: for each party list amount by direct diversion and/or storage, season of diversion, maximum annual amount, maximum diversion to offstream storage, point(s) of diversion, place(s) of use, and purpose(s) of use. Maps showing the point(s) of diversion and place of use for each party should be provided.

What is necessary to file a wastewater change petition?



The next step in the 1211 process is...



Wastewater change petition protests were resolved.

Cowbird Trapping



Recreational Usage Study



What is cowbird trapping?

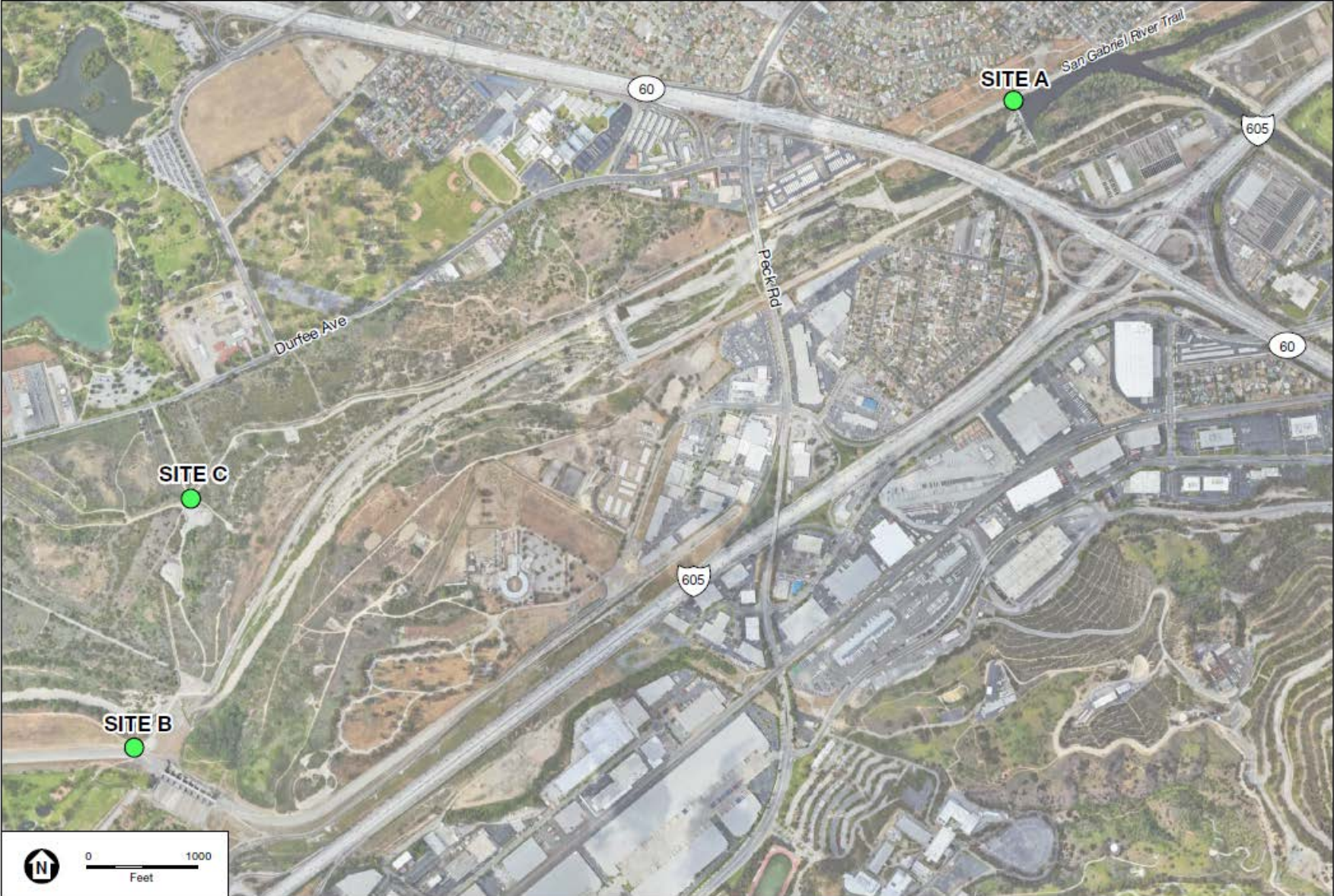
- March 15 to July 15 – 123 days, or 246 trap days (123 days times 2 traps)
- Cowbirds captured:

Year	Male	Female	Juvenile	Total	Per Trap	Per Trap Day	M:F Ratio
2021	56	24	11	91	45.5	0.39	2.3:1

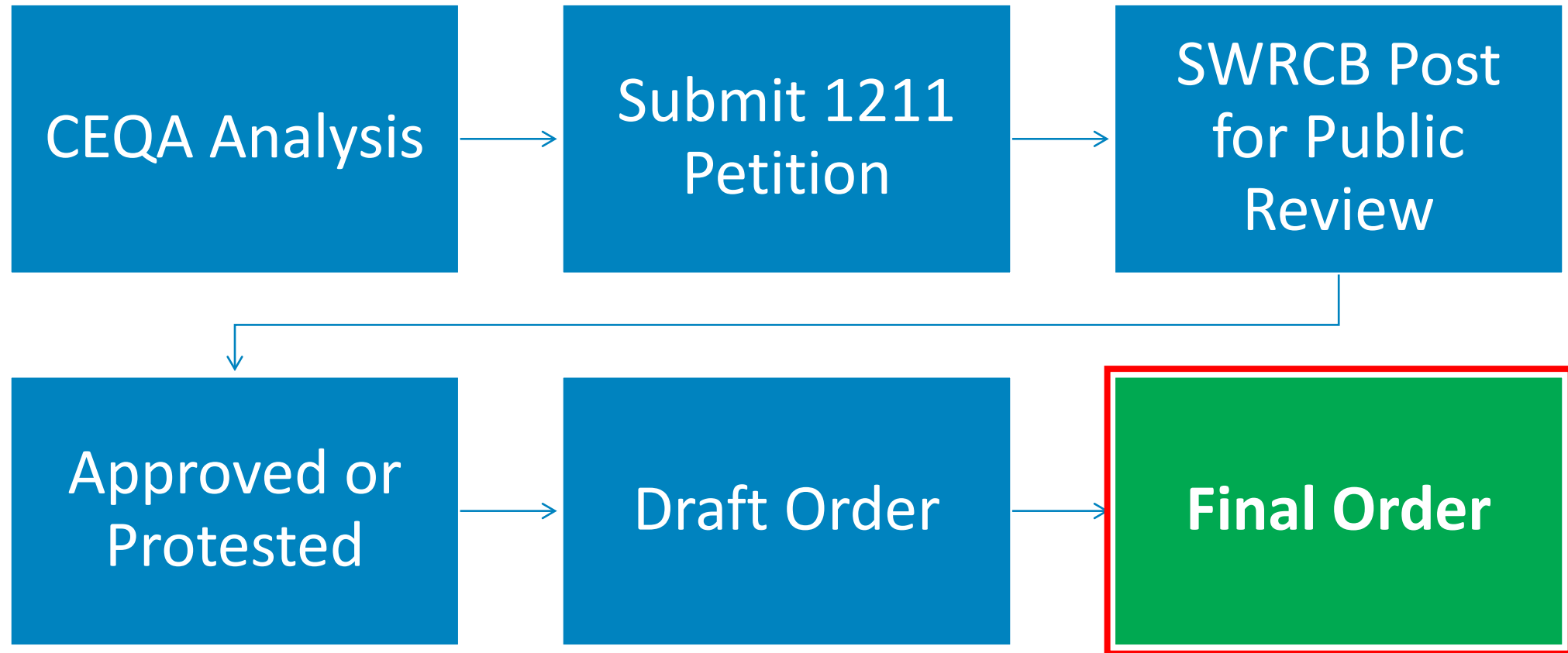
- The capture of the 24 females removed the threat of parasitism to as many as 960 native bird nests since they can lay as many as 40 eggs in the nests of other birds in a single season



Recreational Usage Study



The next step in the 1211 process is...



The State Water Board approved the Project petitions, meaning we can proceed.

STATE OF CALIFORNIA
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

In the Matter of Wastewater Petition WW0107

Los Angeles County Sanitation Districts

**ORDER APPROVING CHANGE IN PLACE OF USE,
PURPOSE OF USE, AND QUANTITY OF DISCHARGE**

SOURCE: San Jose Creek and San Gabriel River

COUNTY: Los Angeles

WHEREAS:

1. On August 12, 2019, the Los Angeles County Sanitation Districts (Sanitation Districts) filed Wastewater Change Petition WW0107 with the State Water Resources Control Board (State Water Board), Division of Water Rights (Division), pursuant to Water Code section 1211. The petition seeks to change the place of use, purpose of use, and quantity of treated wastewater currently discharged to the San Gabriel River.
2. Water Code section 1211 requires the owner of a wastewater treatment plant to obtain approval from the State Water Board prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater where changes in the discharge or use of treated wastewater result in decreasing the flow in any portion of a watercourse.

San Gabriel River Watershed Project



The project balances competing interests.

Water
Sustainability

Habitat
Management



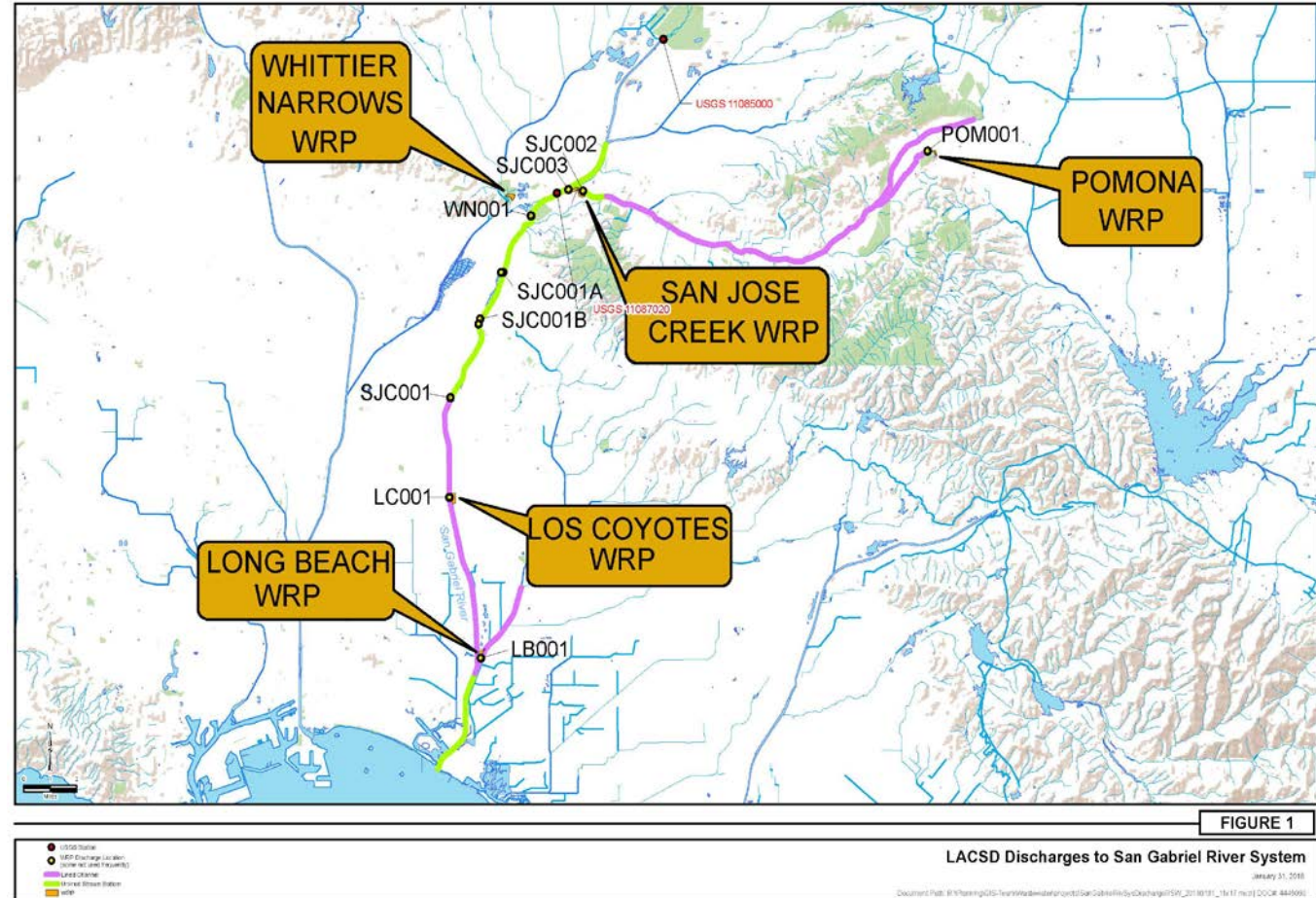
Consistent with State law and policy, support increased recycled water use through maximizing the availability of treated effluent that would otherwise be discharged to flood control channels within the San Gabriel River watershed.

Sustain or, if feasible, enhance sensitive habitats that have benefitted from historical treated effluent discharges to the San Gabriel River watershed through more efficient discharges from Sanitation Districts' WRPs.



The project covers a large part of the San Gabriel River watershed.

- Incrementally reduce discharges of recycled water from five water reclamation plants (WRPs)
 - San Jose Creek WRP
 - Pomona WRP
 - Whittier Narrows WRP*
 - Los Coyotes WRP
 - Long Beach WRP

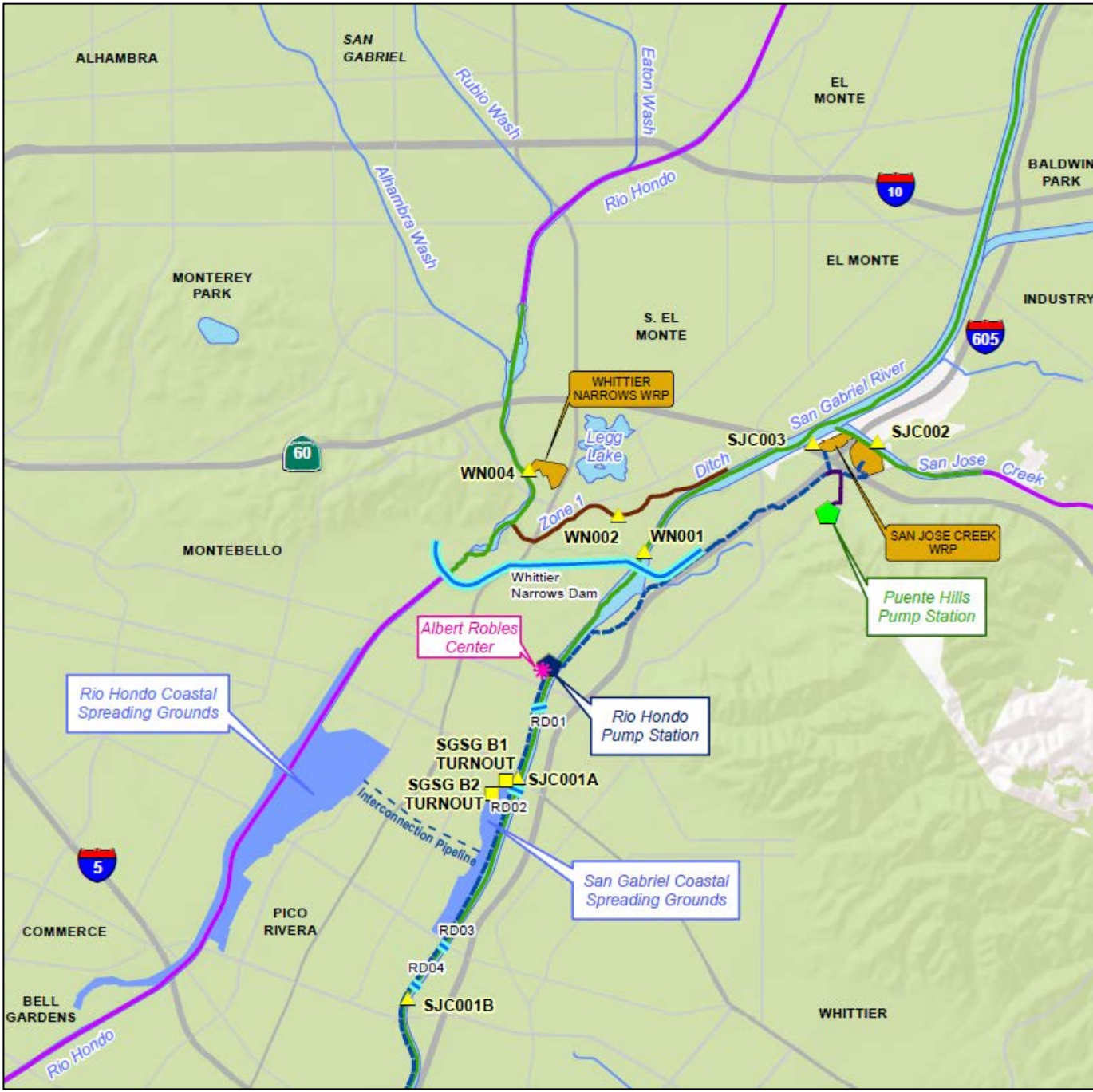


WRP discharge can provide up to 35 MGD recycled water for human use

Water Reclamation Plant (WRP)	Baseline Discharge (MGD)	Project Discharge (MGD)
San Jose Creek	14.9	5
Pomona	3.3	0
Whittier Narrows	6.06	6.06
Los Coyotes	17	2
Long Beach	6.7	0
Total	47.96	13.06

35 MGD available!
Enough for
350,000
people!





Project focuses on habitat most directly impacted.



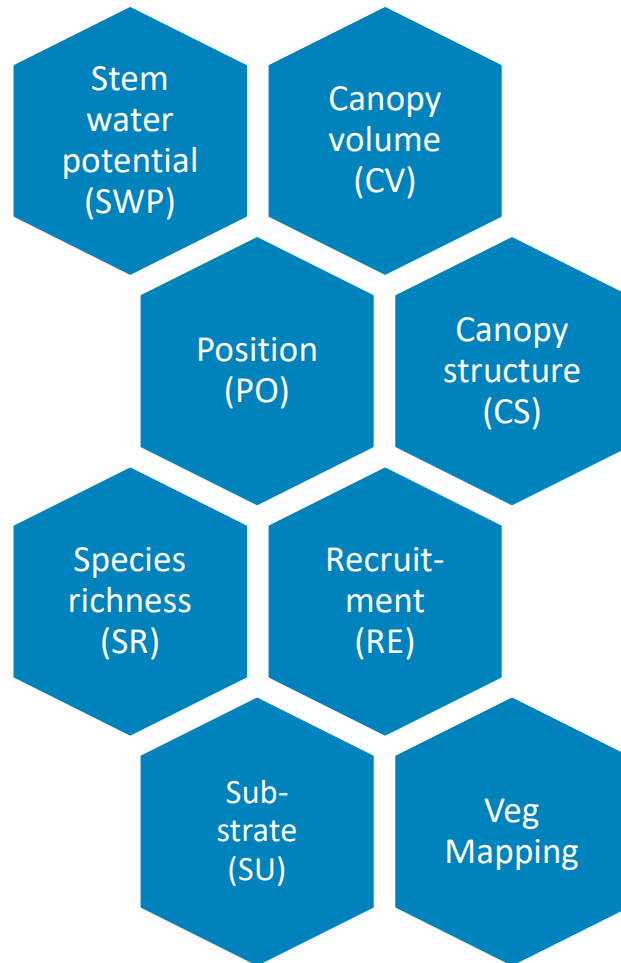
Habitat assessment areas



- Group 1
- Group 2
- Group 3
- Group 4
- Group 5



The AMP defined monitoring parameters



The AMP established monitoring objectives

Objective	Parameter (What?)	Methods (How?)	Location (Where?)	Monitoring (When?)	Basis of Comparison	Trigger
More efficiently manage effluent	Water Stress	Modify existing random effluent flow to an intentional discharge cycle of reduced flow	SJC002 and SJC003	Continuous logging	5-WY average baseline flow	NA
		Stem water potential	96 Selected Trees	Spring (single baseline) and fall (ongoing)	Pre-Project conditions per AMP Grouping	Significant Δ within group or species
Maintain quantity and quality of riparian habitat in areas Influenced by treatment plant discharge	Alliance – Acreage	Vegetation mapping	Aerial Photographs and Ground Truthing	Fall	Pre-Project conditions per overall Project area	+/- 10% Δ in any mapped alliance except the key alliances listed below
	Arroyo Willow and Black Willow	Vegetation mapping	Aerial Photographs and Ground Truthing	Fall	Pre-Project conditions per overall Project area	- 2% Δ
	Arundo	Vegetation mapping	Aerial Photographs and Ground Truthing	Fall	Pre-Project conditions per overall Project area	+5%*
	Structure – Canopy Cover	Transects with quadrats of "stacked cubes" generally spaced every 10 meters (Kus 1998), 20 quadrats per AMP Grouping	22 Transects (see map)	Fall	Pre-Project conditions per AMP Grouping	Mean for any stratum if Group falls outside baseline range
	Structure – Understory	Transects with quadrats of "stacked cubes" generally spaced every 10 meters (Kus 1998), minimum 20 quadrats per AMP Grouping	22 Transects (see map)	Fall	Pre-Project conditions per AMP Grouping	Mean for any stratum if Group falls outside baseline range
	Species Richness	2-meter-wide belt transects	22 Transects (see map)	Fall	Pre-Project conditions per AMP Grouping	20% Δ
	Recruitment	2-meter-wide belt transects	22 Transects (see map)	Fall	Pre-Project conditions per AMP Grouping	20% Δ

*Alternative plan for Arundo removal will be developed with CDFW; Δ = delta; AMP = Adaptive Management Plan; WY = water year;



Baseline establishes variability in watershed

Metric	Fall 2020 Results	Compared to Fall 2019
SWP	Lower in Group 4 Higher in midstream Groups 2 & 3 Highest in Group 5	Slightly higher overall
CV	Highest in Group 1 & 5 Lowest in Group 3 Average in Groups 2 & 4	Slightly higher overall
PO	No significant SWP response to differences in bank position	Similar
CS	Less than optimum in some increments Some within optimum	Similar
SR	Greatest in Groups 1 & 4 65 species observed: 22 native & 43 exotic	Similar
RE	13% (3 of 22) Most common in Group 4	Slightly lower
SU	49% fines 48% fines/cobble/gravel 3% cobble	N/A
VM	VM not collected in 2019, no comparison	N/A



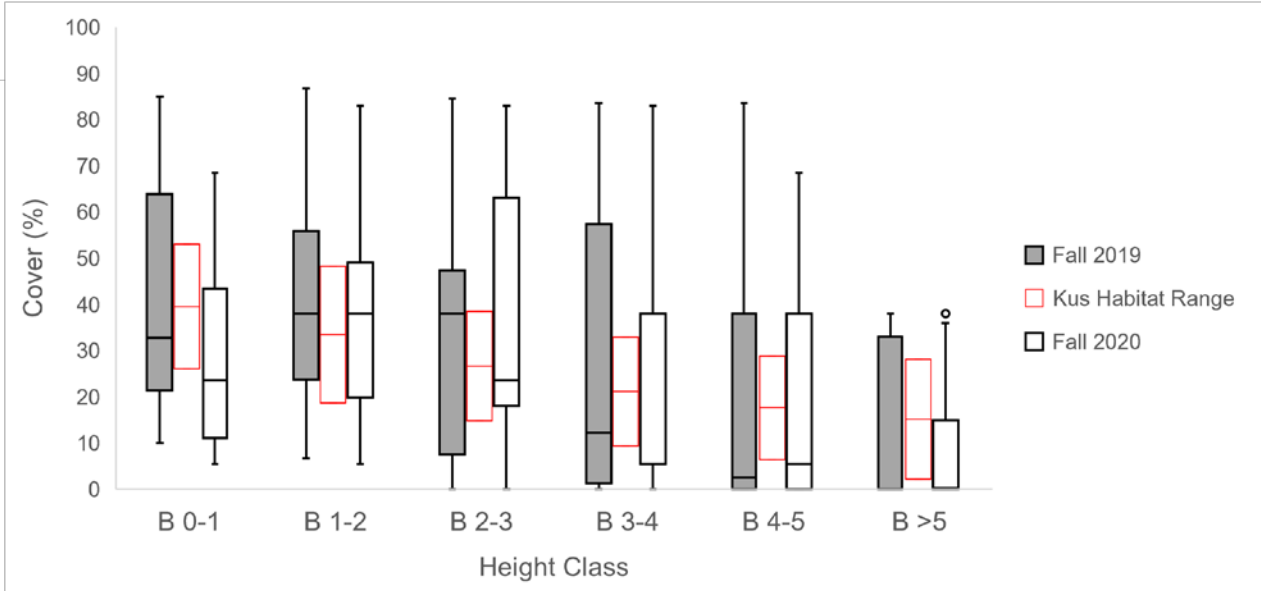
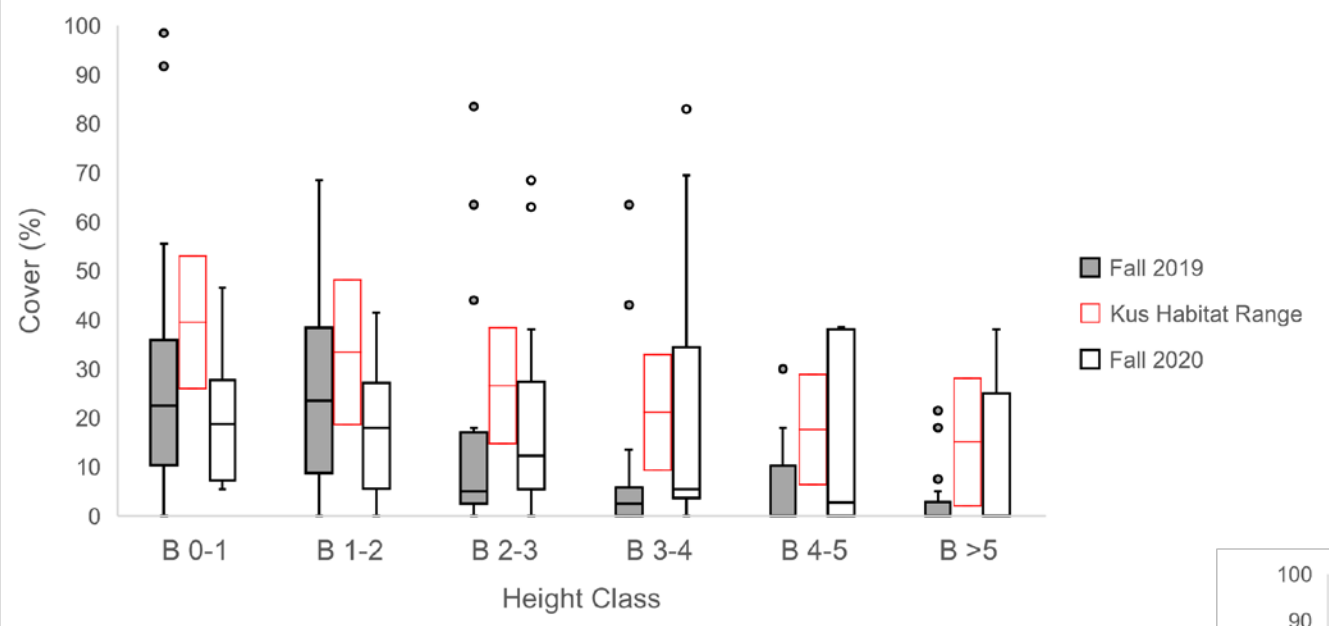
Habitat Assessment Areas – Revisited



-  Group 1
-  Group 2
-  Group 3
-  Group 4
-  Group 5



CS records plant cover by species in stacked cubes

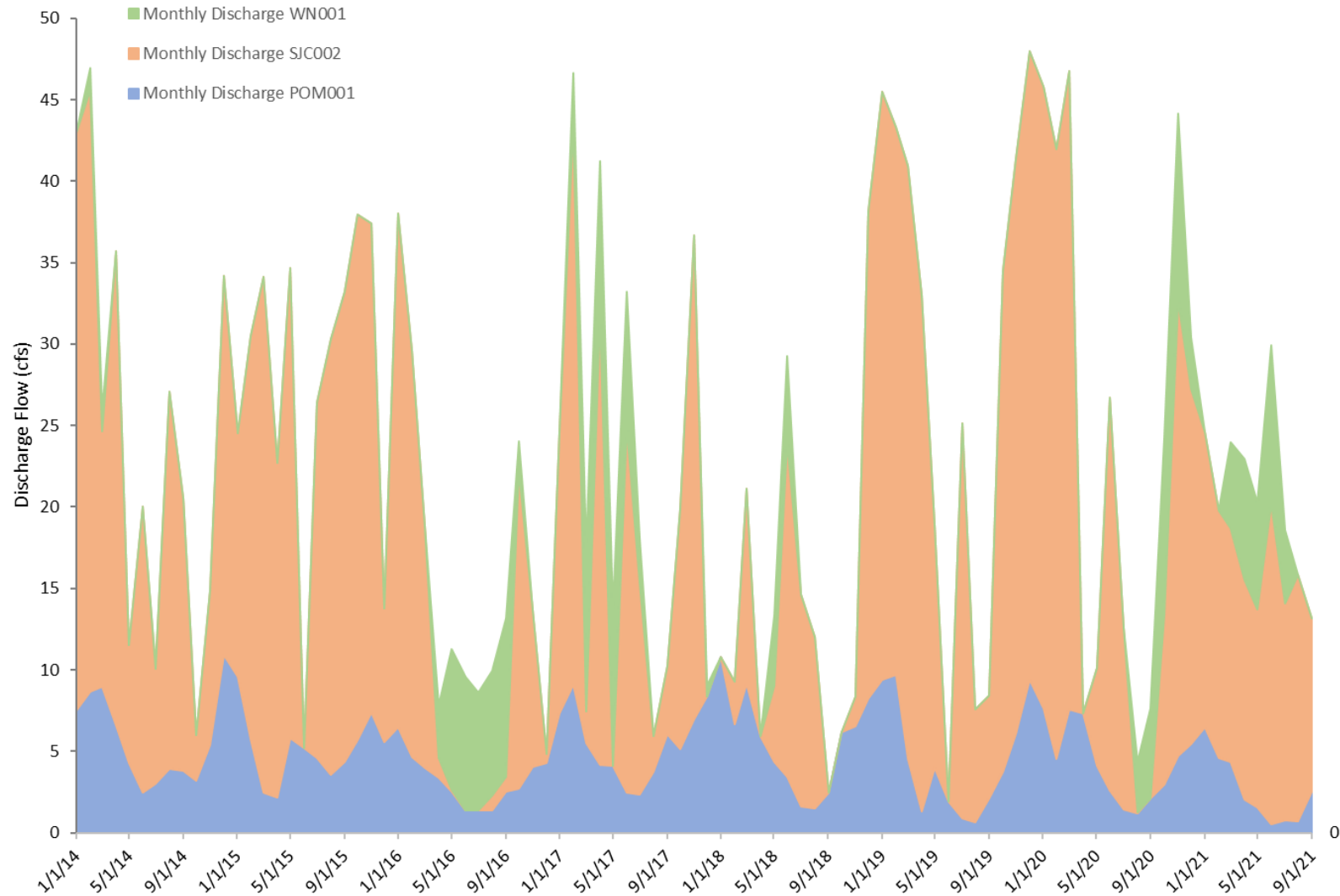


Fall 2021 monitoring uncovers new impacts to LBV habitat, but not from the project

- Three AMP triggers identified:
 - Canopy structure in Group 1*
 - Recruitment
 - Vegetation Mapping
- Potential causes:
 - Recent fires and other vegetation removal activities associate with the homeless encampments
 - Flood control maintenance activities (understory clearing)
 - Record low rainfall year (5.72 inches)



Project discharge is similar to baseline



Our Project still has many ongoing efforts.

Baseline
Conditions

Statistical
Analysis

Spring and Fall
Monitoring

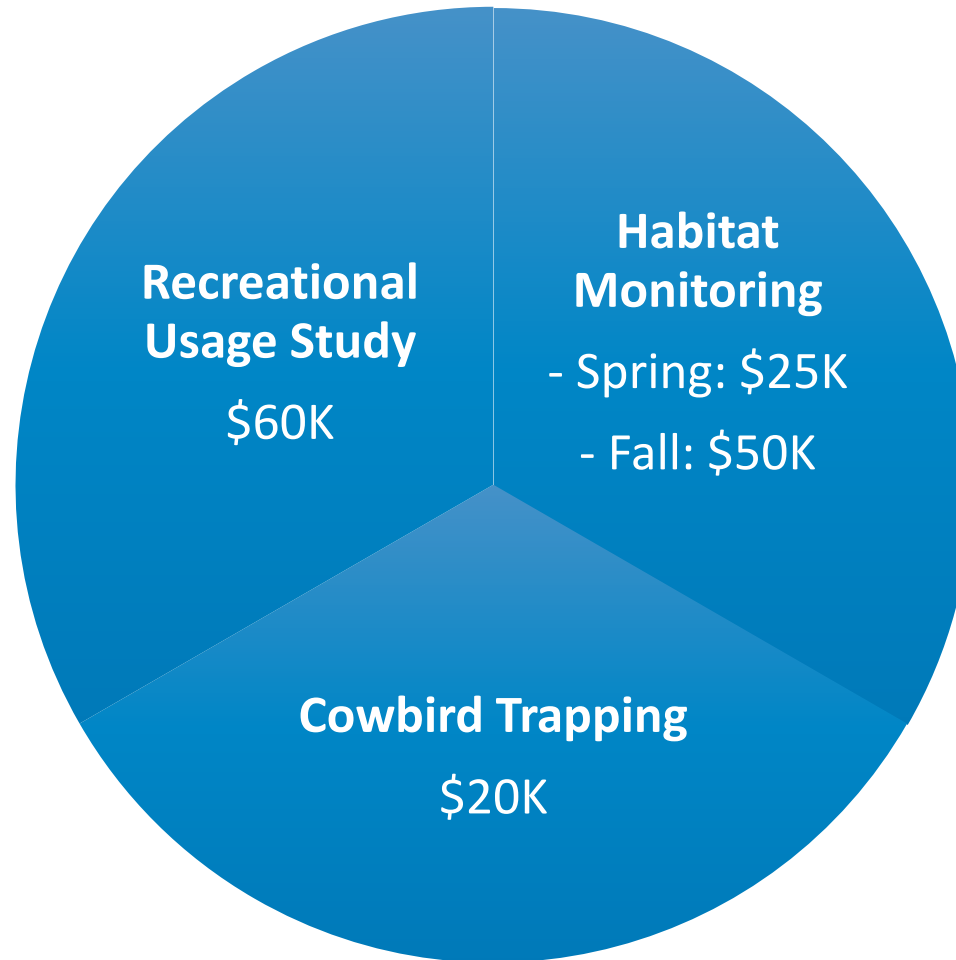
Cowbird
Trapping

Recreational
Usage Study

Coordination
with HMC



So how much does it all cost?



The team has learned several lessons

Involve
resource
agencies early

Coordinate
with agencies
often

Communicate

Maintain
schedule

Be transparent

Balance
habitat and
water needs



Questions



Thank you for attending our webinar today.

Would you like to attend our next webinar?

Join us March 23rd as Orange County Water District discusses their PFAS Treatment Study
We have several other webinars scheduled as well. Go to AAEES.org/Events to reserve your spot.

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A recording of today's event will be available on AAEES.org tomorrow.

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You will be emailed a PDH Certificate for attending this webinar within two weeks.

Questions?

Email Marisa Waterman at mwaterman@aaees.org with any questions you may have.

