



Southern California
Water Dialogue

Update on the Proposed Regional Recycled Water Program: A New Source of Water for Southern California

Deven Upadhyay, Metropolitan
Martha Tremblay, LA Co Sanitation Districts

OCTOBER 28, 2020

Southern California Water Dialogue Co-chairs

CONNER EVERTS

Executive Director

Southern California Watershed Alliance

DEE ZINKE

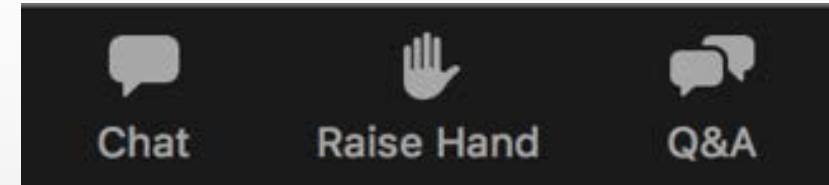
Assistant General Manager, External Affairs

The Metropolitan Water District of Southern California

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San Diego County Water Authority
- RICH ATWATER
Foothill Municipal Water District
- ZITA YU
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LA County Chief Sustainability Office
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- E.J. CALDWELL
West Basin Municipal Water District
- KATHY CALDWELL
So Cal Water Dialogue, Coordinator

Webinar Ground Rules



- **Technical Difficulties:** Use chat feature to let us know
- **Asking a Question:** Use Q/A feature, type in question, state if you want to ask it live, and click send. Questions addressed after presentation.
- **Poor Connection:** Move closer to your wireless router and turn off other services using bandwidth (e.g. Netflix)
- **Audio Muted:** Attendee audio on mute by default
- **Timetable:** Presentation runs apx. 45 minutes followed by Q/A session

How to Ask A Question



On the bottom of your screen, click “Q&A”





Type in question,
indicate if you want to
ask live, then click send

Q&A

Welcome

Feel free to ask the host and panelists questions

Type your question here...



You can upvote
by clicking
“thumbs up” icon

Q&A

Open (2) Answered (0) Dismissed (0)

Jack Barker 2:43:31 PM

When is the next webinar?

1

Answer live Type answer

Eren Yaeger 2:42:44 PM

When are office hours?

Answer live Type answer



Agenda

- Announcements and Introductions
- Introduction of Speakers
- Presentation
- Dialogue (Q/A)
- Concluding remarks

Speakers

Deven Upadhyay
Assistant GM and COO, Metropolitan



Martha Tremblay
Dept. Head, Technical Services, LACSD



October 28, 2020



UPDATE: REGIONAL RECYCLED WATER PROGRAM

Deven Upadhyay
Assistant GM/
Chief Operating Officer

Martha Tremblay
Department Head,
Technical Services



**LOS ANGELES COUNTY
SANITATION DISTRICTS**

Converting Waste Into Resources

A NEW SOURCE OF WATER FOR SOUTHERN CALIFORNIA

Presentation Overview



Metropolitan
and LACSD:
Regional
Agency
Partners



An In-Depth
Look: Regional
Recycled Water
Program



Advanced
Purification Center:
New Treatment
Process, Water
Quality Protection
and Direct Potable
Reuse



Next
Steps

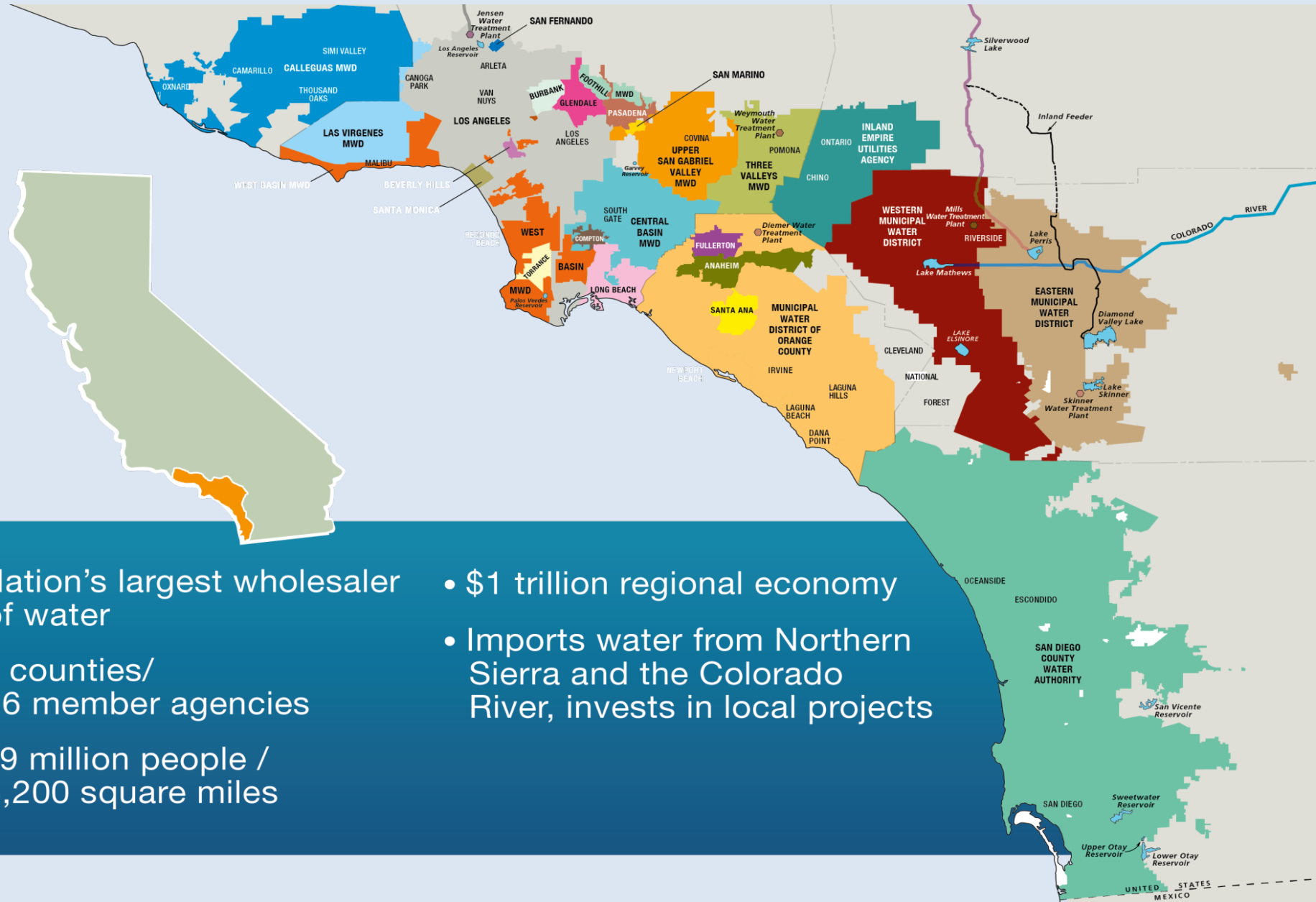




Regional Agency Partners

METROPOLITAN AND LACSD

METROPOLITAN OVERVIEW



- Nation's largest wholesaler of water
- 6 counties/
26 member agencies
- 19 million people /
5,200 square miles
- \$1 trillion regional economy
- Imports water from Northern Sierra and the Colorado River, invests in local projects



PROGRAM PARTNER



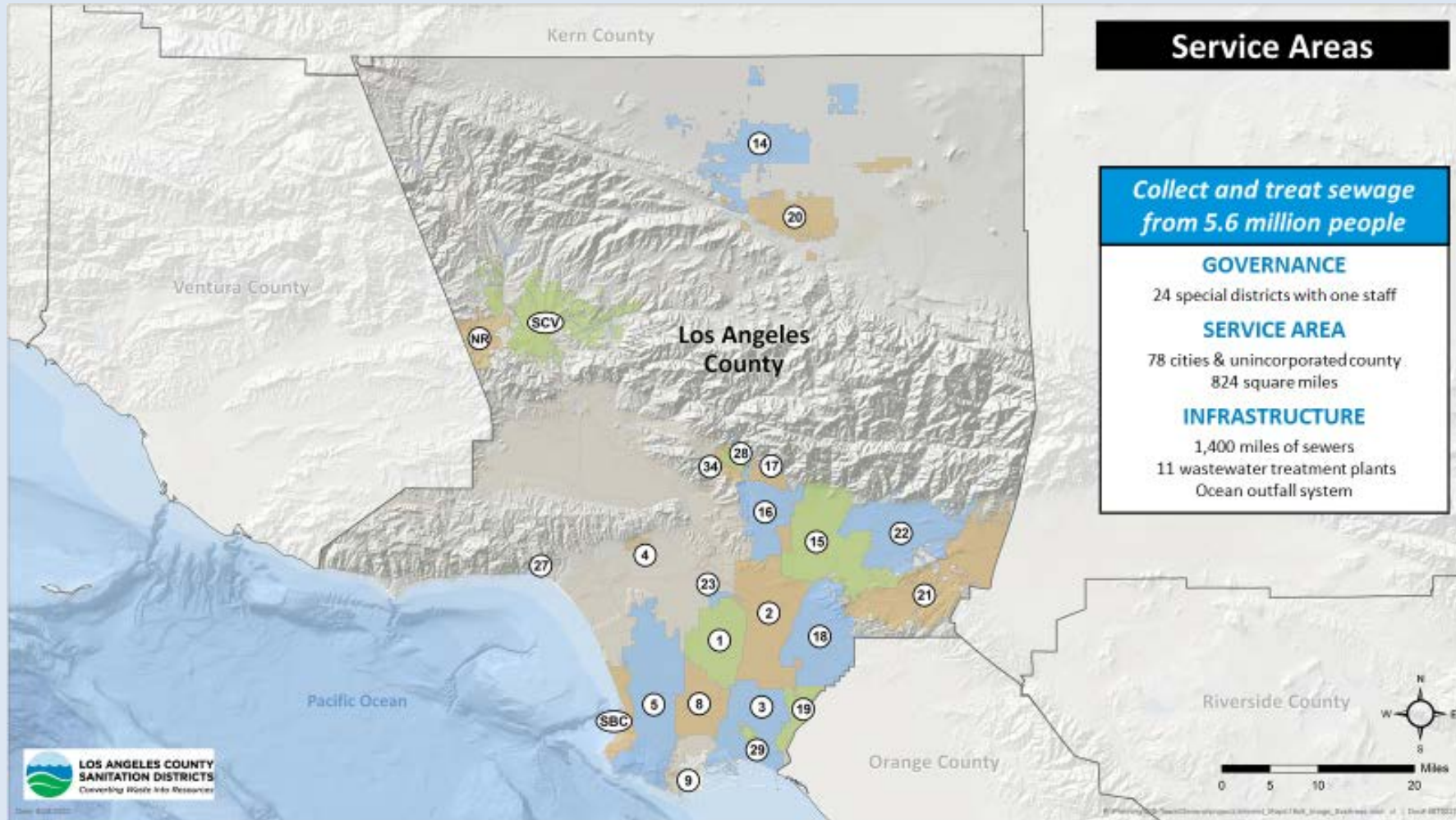
**LOS ANGELES COUNTY
SANITATION DISTRICTS**

Converting Waste Into Resources

A partnership that began with initial technical studies in 2009 and continues to progress.



LOS ANGELES COUNTY SANITATION DISTRICTS



JOINT OUTFALL SYSTEM

Main sewer system serving over 5 million people



JOINT WATER POLLUTION CONTROL PLANT



NEW ADVANCED WATER TREATMENT PLANT SITE



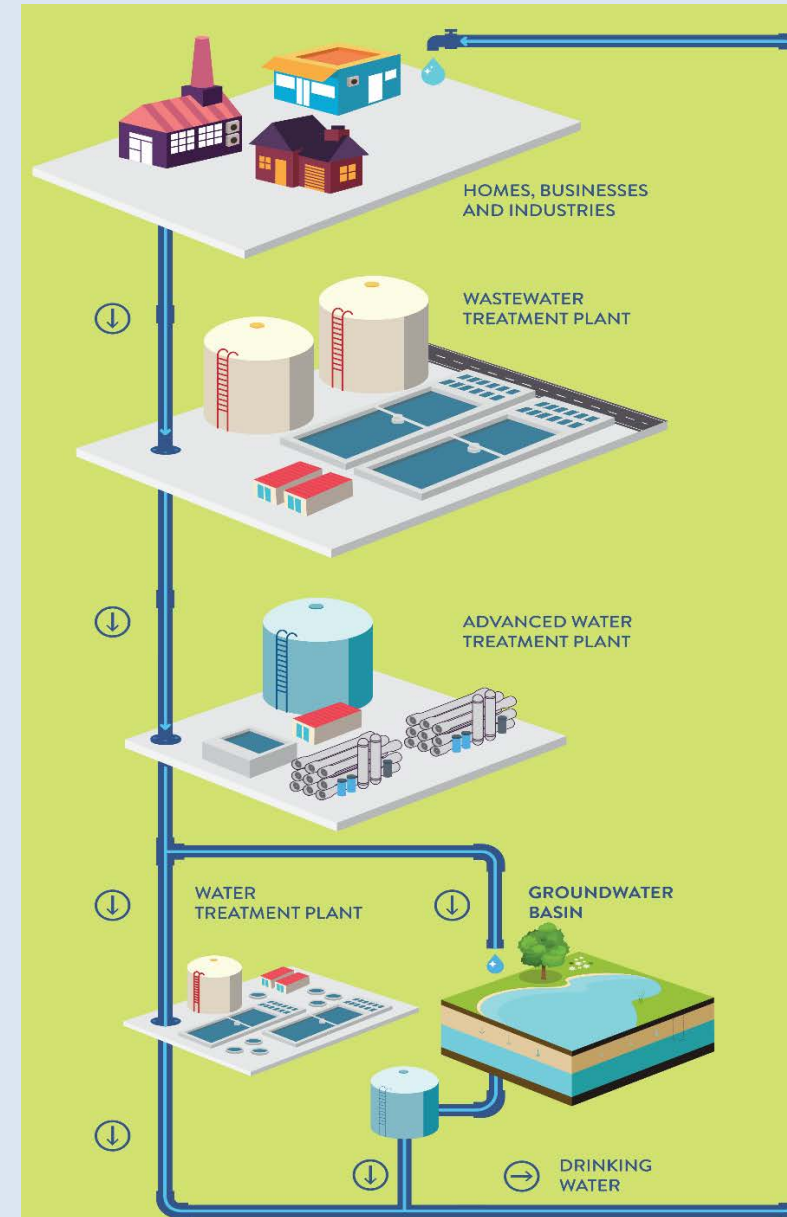


A New Source of Water for Southern California

REGIONAL RECYCLED WATER PROGRAM

REGIONAL RECYCLED WATER PROGRAM

- Development of a new regional water source
 - Replenish groundwater basins
 - Provide water to industries
 - Connect to Metropolitan's water treatment plants



REGIONAL RECYCLED WATER PROGRAM

In numbers



Up to 150 million
gallons per day or
168,000 acre-feet
per year



Enough water
for over 500,000
homes



One of the
largest programs
of its kind in
world



PROGRAM BENEFITS



Earthquake

Prepares the Southland for the event of a catastrophic earthquake by increasing local water supplies.



Drought

Produces a drought-proof source of water, readily available rain or shine.



Groundwater

Replenishes groundwater basins, which provide 30% of Southern CA's water supply and have seen levels drop to historic lows in recent years.



Economy

Helps meet needs of region's growing economy and population at a cost comparable to other local water resources.



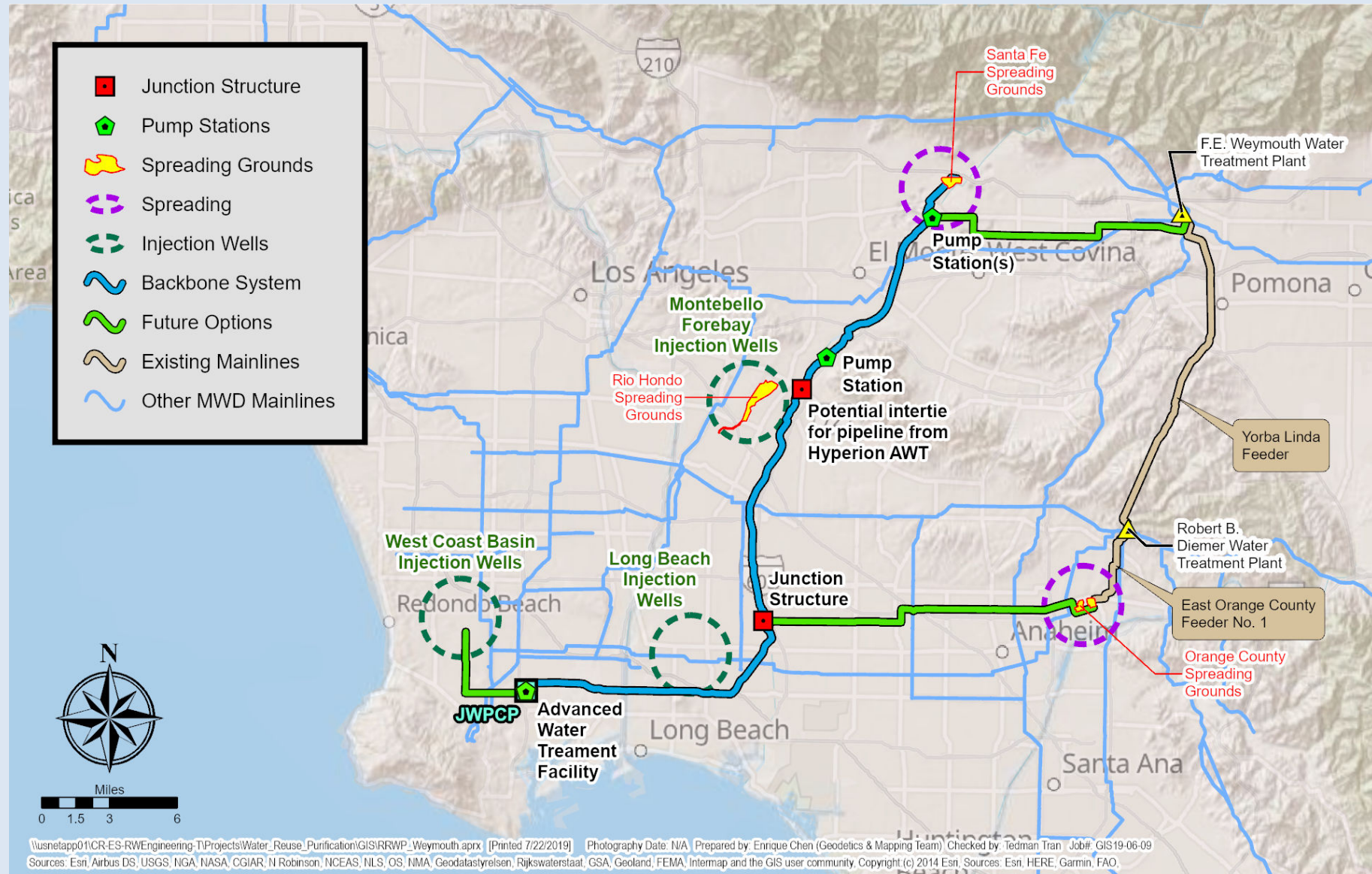
Wastewater

Uses region's largest untapped source of wastewater, currently sent to the ocean.



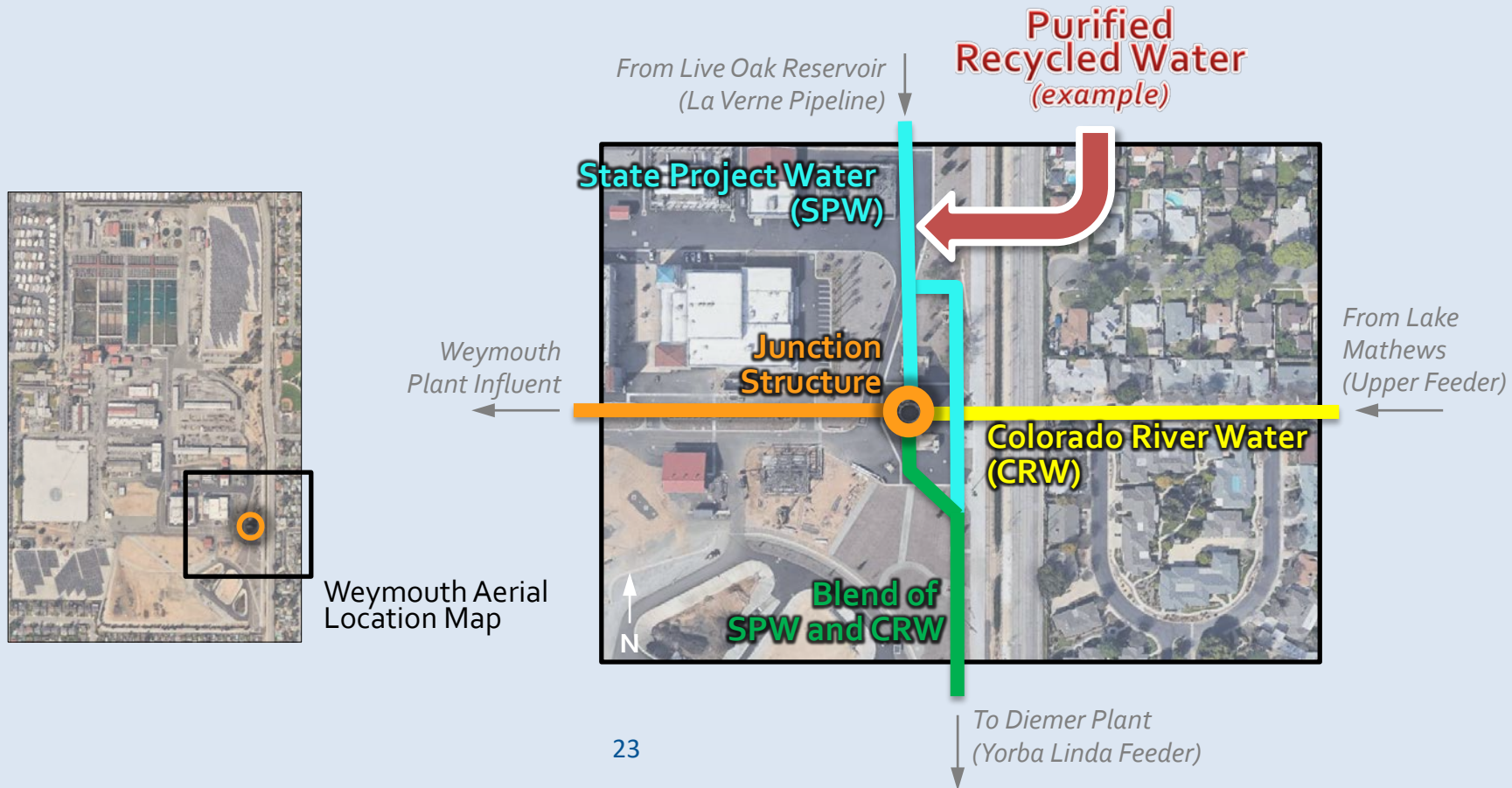
REGIONAL RECYCLED WATER PROGRAM

Potential Full-Scale Program

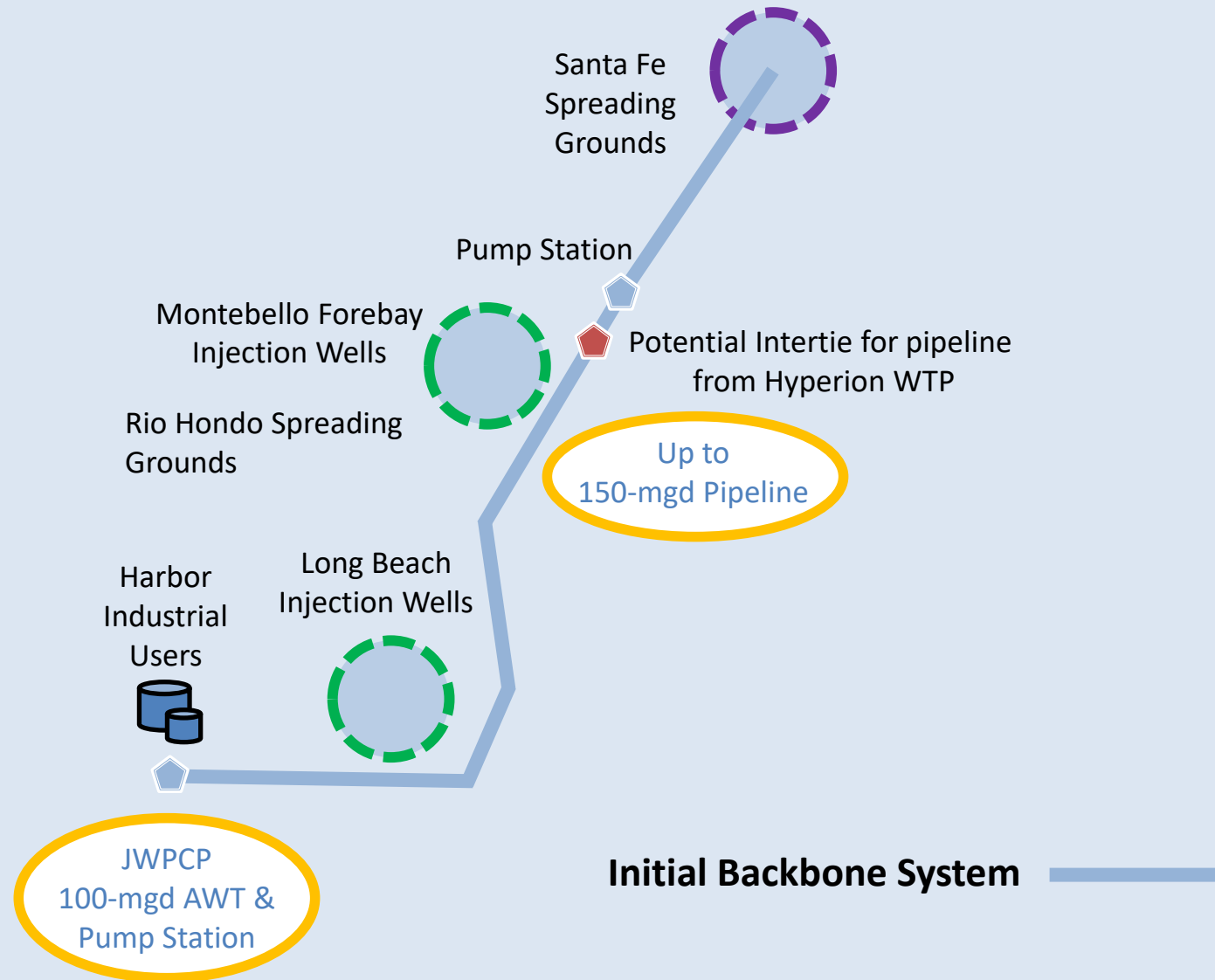


BLENDING WATER SUPPLIES AT WEYMOUTH

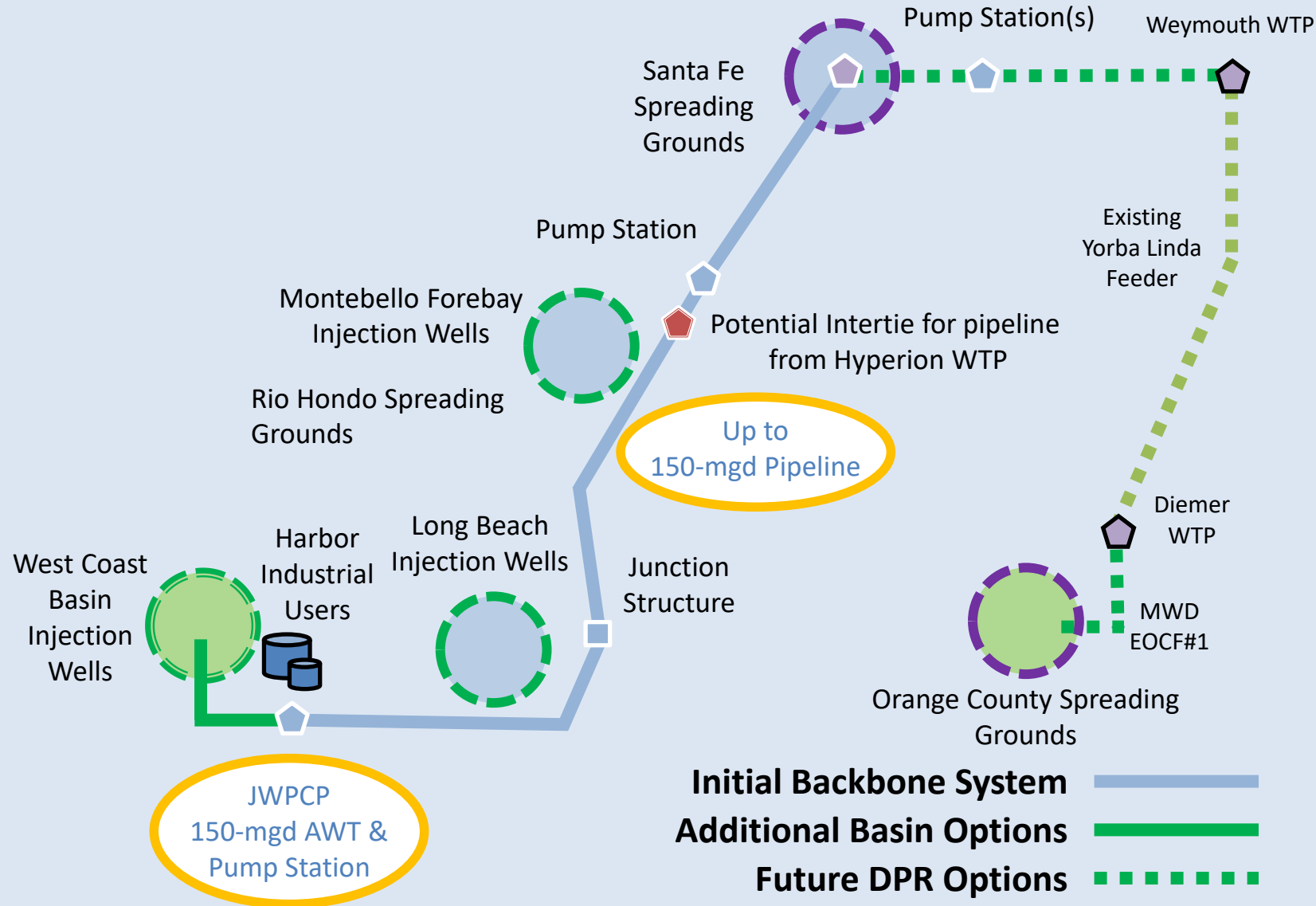
Raw Water Augmentation



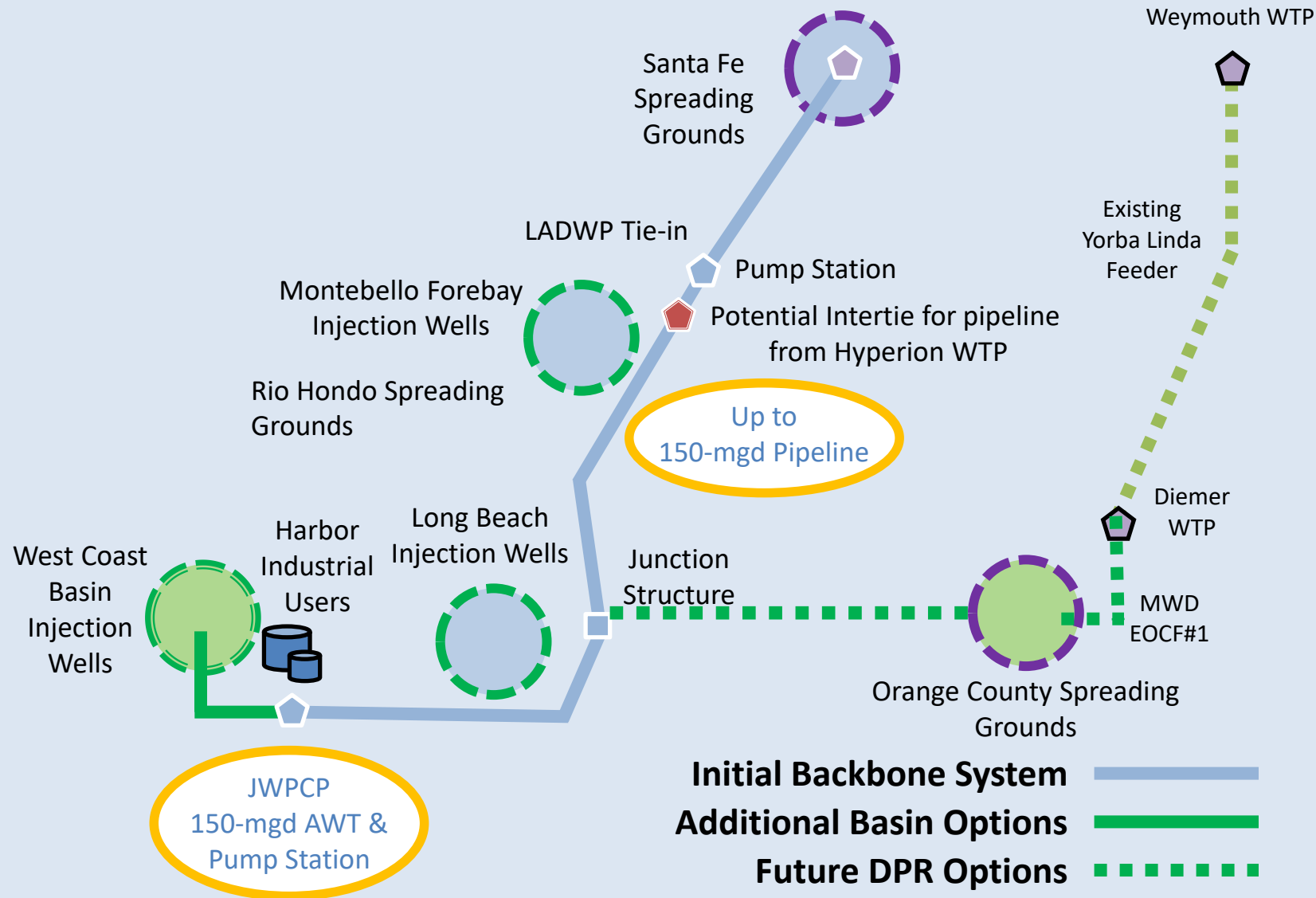
PHASE 1: BACKBONE SYSTEM



DPR OPTION: NORTHERN ROUTE



DPR OPTION: SOUTHERN ROUTE



PARTNERS AND STAKEHOLDERS

Main San Gabriel
Watermaster

Upper San Gabriel
Valley Municipal
Water District

Los Angeles
Department of
Water and Power

West Basin
Municipal Water
District

Three Valleys
Municipal Water
District

City of Long Beach

City of Torrance

Water
Replenishment
District

State Water
Resources Control
Board

Los Angeles
County Public
Works

Southern
California Edison

U.S. Army Corps of
Engineers

LACSD

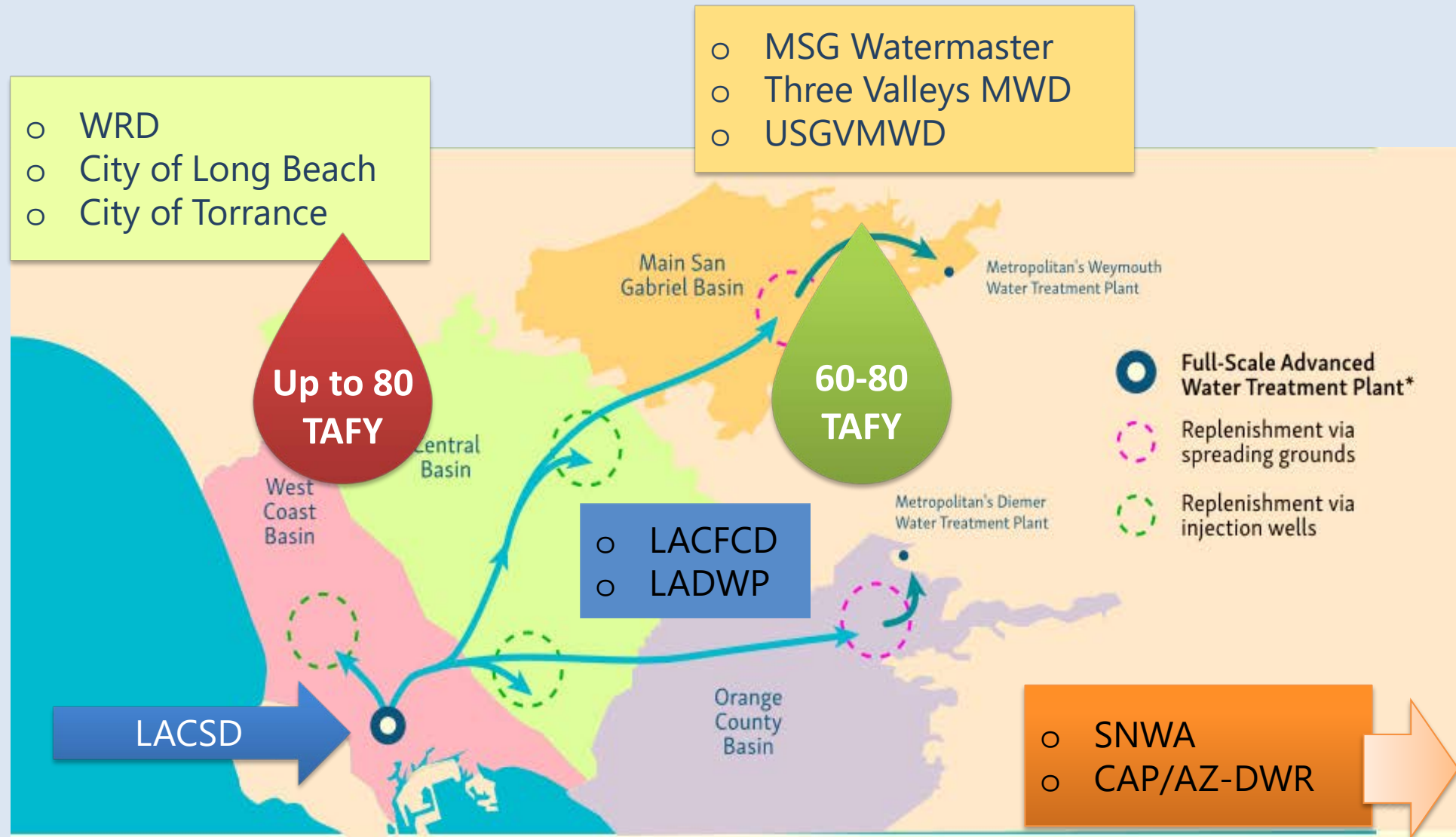
Central Arizona
Project & Arizona
DWR

Southern Nevada
Water Authority



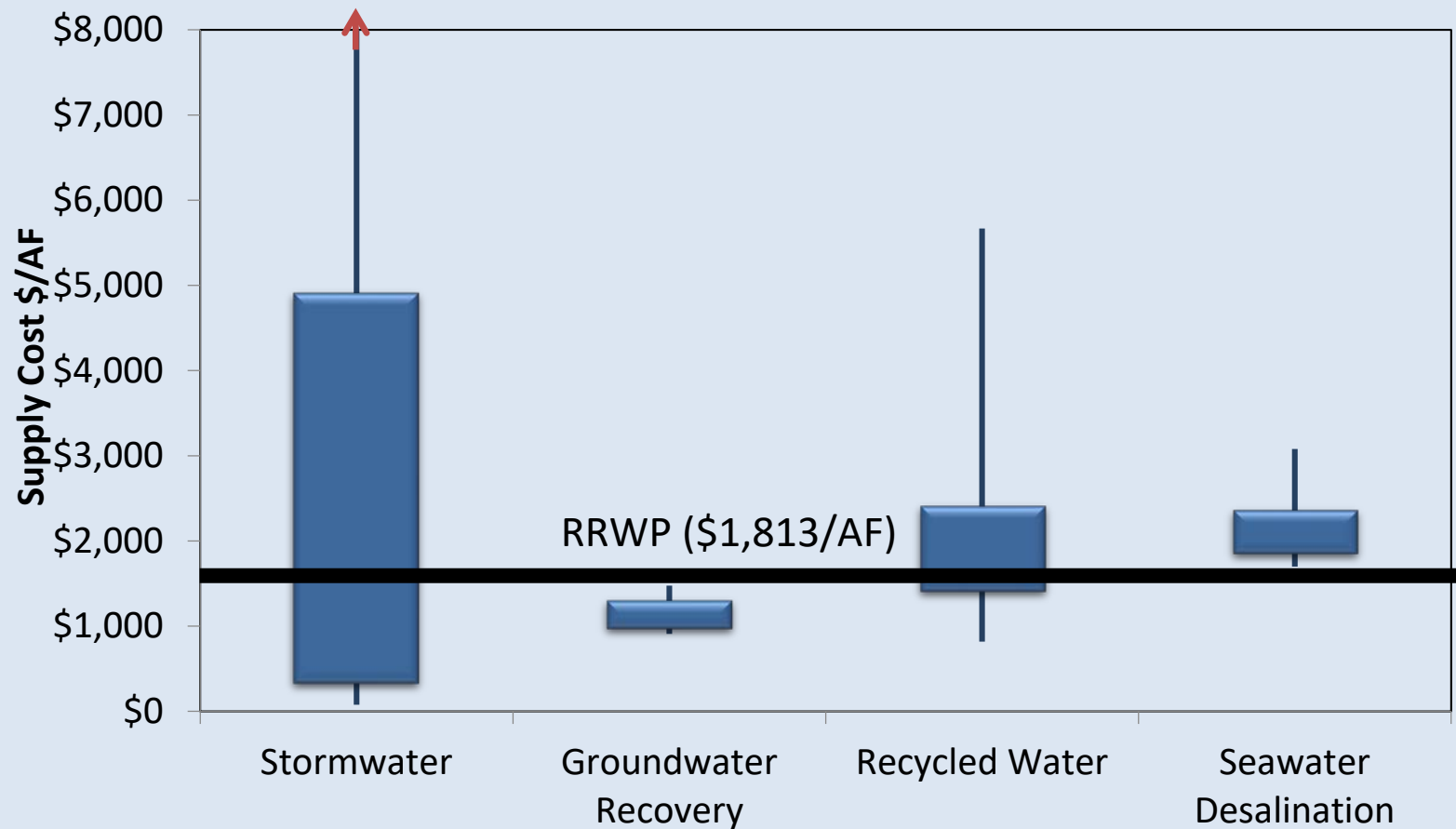
PROGRAM COLLABORATION

LOIs and MOUs developed



PROGRAM COSTS

- Total capital cost of \$3.4 billion
- Annual O&M cost of \$129 million
- Unit cost of approximately \$1,800/AF
- Approximately 42,000 jobs created





Regional Recycled Water Advanced Purification Center

ADVANCING TECHNOLOGY AND DIRECT POTABLE REUSE

REGULATIONS DEVELOPMENT



ABOUT THE ADVANCED PURIFICATION CENTER

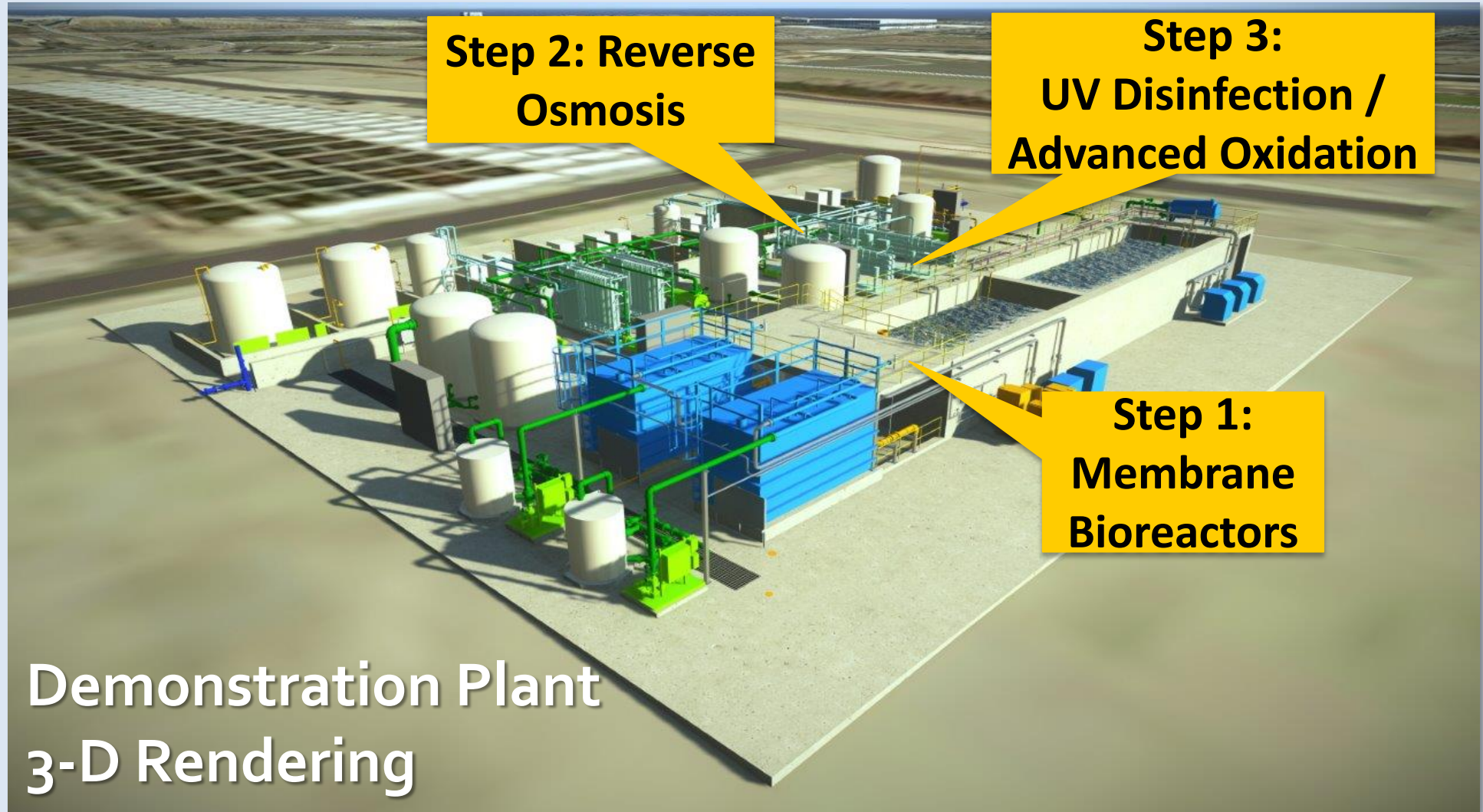
A New Demonstration Facility

- Tests innovative purification process
- Obtain regulatory approval of process
- Provides costs and data for full-scale facility
- Gain public support





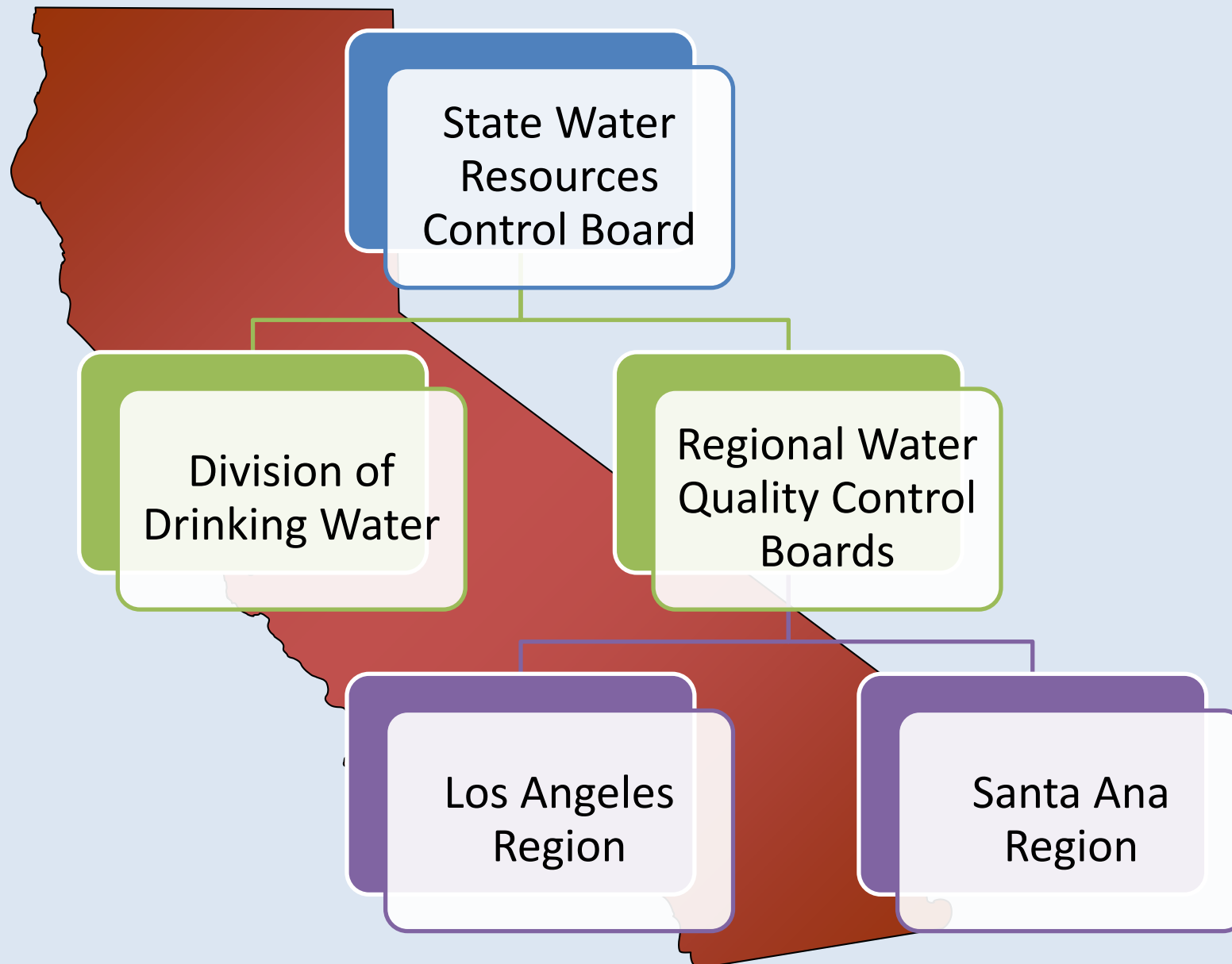
Regional Recycled Water Advanced Purification Center



Demonstration Plant
3-D Rendering



REGULATORY OVERSIGHT



INDEPENDENT SCIENTIFIC ADVISORY PANEL

NWRI

Administration

Ed Means

Facilitation

Panel Members

Paul Anderson, Ph.D.

Toxicology

Adam Olivieri, Ph.D.

Regulations and Permitting

Joe Cotruvo, Ph.D.

Chemistry

Vernon Snoeyink, Ph.D.

Pipeline Corrosion/Water Chemistry

Charles Haas, Ph.D.

Microbiology

Nancy Love, Ph.D.

Wastewater Treatment

Thomas Harder, R.G.

Hydrogeology

Paul Westerhoff, Ph.D.

Drinking/Advanced Water Treatment



CURRENT SANITATION DISTRICTS' EFFORTS



Implementation
of Testing and
Monitoring Plan



FORCO Site
Cleanup



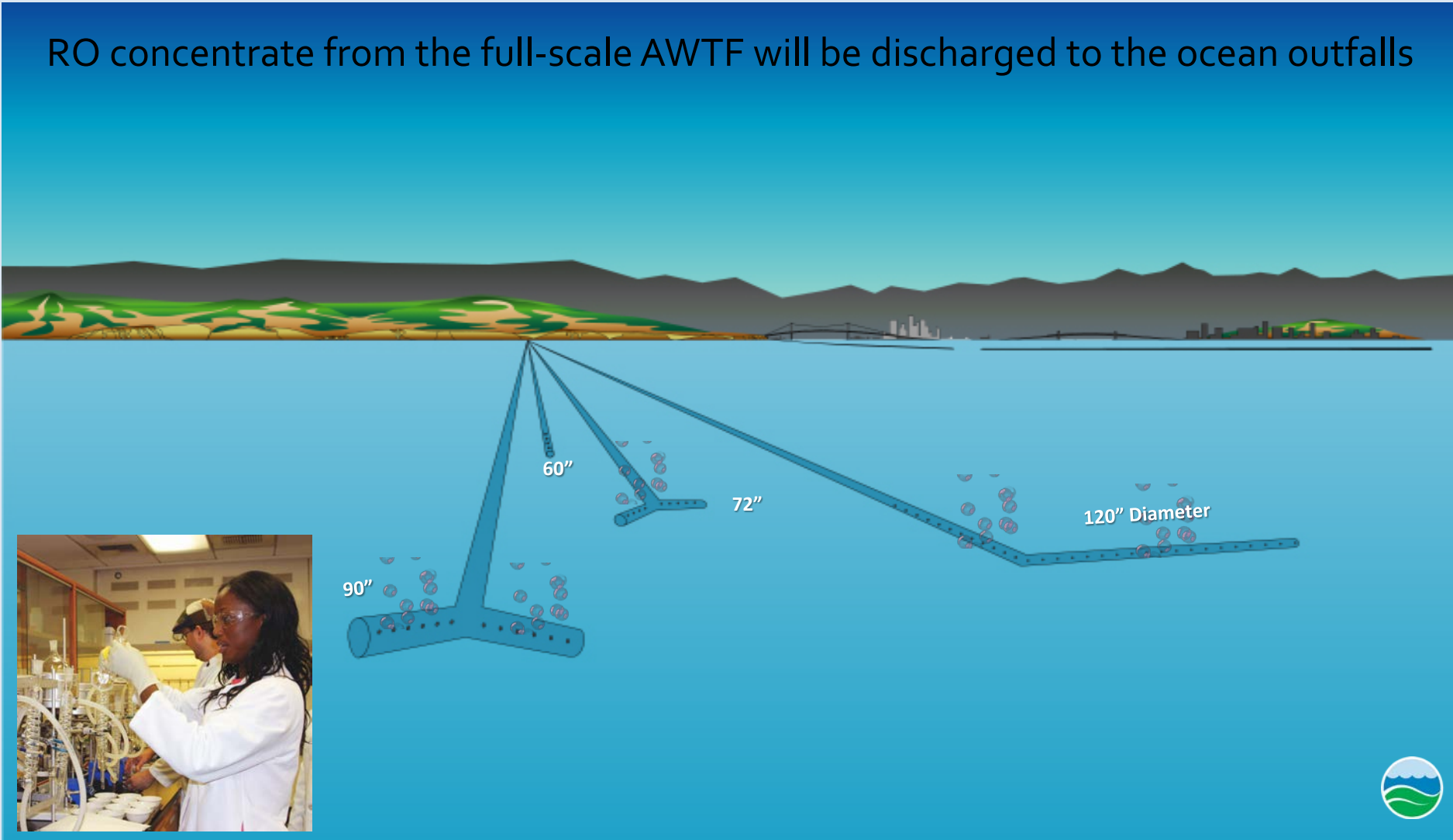
Manage
Waste
Residuals



Evaluate
enhanced JWPCP
operation for
reuse

RESIDUALS TESTING

RO concentrate from the full-scale AWTF will be discharged to the ocean outfalls



NITROGEN MANAGEMENT

Nitrogen Management Work Group

Objective - Identify optimal nitrogen management practice based on the following:



Retrofit existing or
build new



Wet weather
capacity



Ability to meet
water quality goals



Cost



Operational
compatibility



Environmental
impact



Operational reliability
and redundancy



Constructability



SOURCE CONTROL PROGRAM ENHANCEMENTS

Constituents of Concern

- Boron
- Nitrosamines
- 1,4-Dioxane

Approach

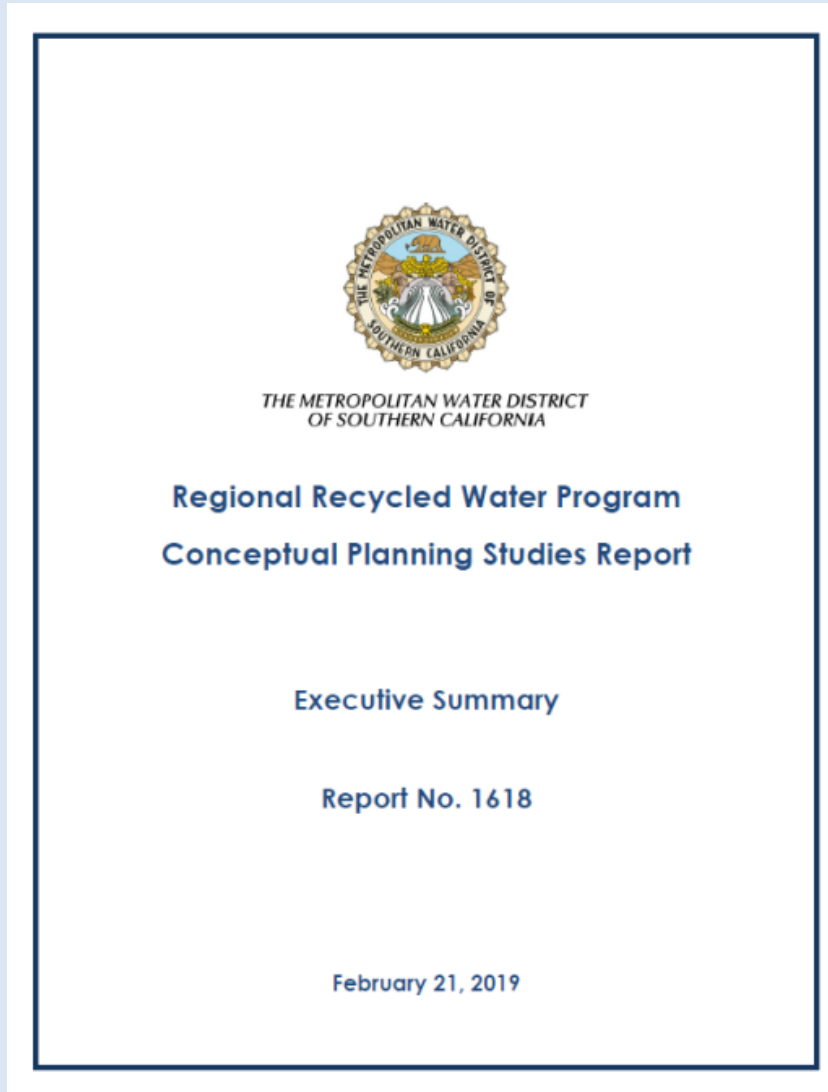
- Identify Potential Source(s)
- Initiate source control efforts as warranted





OUR PROGRESS AND NEXT STEPS

SUMMARY OF WORK TO DATE



- Technical Studies (2009)
- Pilot Scale Studies (2012)
- Feasibility Study Report (2016)
- Conceptual Planning Studies Report (2019)
- Demonstration Plant (2019)
- White Paper #1 (2019)
- White Paper #2 (2020)

COLLABORATION AND FUNDING

More than \$ 2 million in Grants Awarded to Date

Program	Amount
USBR Title XVI Reuse Research Grant	<ul style="list-style-type: none">• Awarded \$750,000 to study MBR pathogen removal
California Water Recycling Funding Program (WRFP) State Prop 1 /68	<ul style="list-style-type: none">• Awarded \$1M for Demonstration Plant• Awarded \$300,000 for four groundwater basin planning studies



AWARDS AND RECOGNITION

- Engineering News Record Owner of the Year
- ASCE Los Angeles Section Water/Wastewater Project of the Year
- Environmental Communication Award, AAEES
- Articles in Journal AWWA, Water Environment and Technology
- Featured presentations at water industry conferences



MAJOR POLICY DECISION

NOVEMBER 2020

- First in-region water supply developed by Metropolitan
- Seek Board approval for:
 - Environmental Phase Services
 - Amendment to LACSD Agreement
 - MWD/LACSD shared roles and responsibilities for environmental review
 - Participation from Southern Nevada Water Authority
 - Additional support for demonstration facility



PROGRAM SCHEDULE



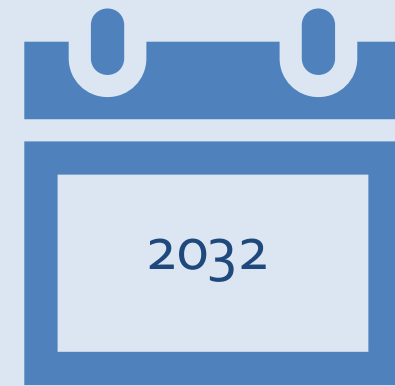
Board
Action on
Next Steps



Environmental
Planning



Design and
Construction



Start-up and
Operations



OPPORTUNITIES TO WORK TOGETHER



- Regional Recycled Water Program
 - Board action
 - Environmental planning
 - Virtual tours
- 2020 Integrated Resources Plan
- Climate Action Plan



ENSURING WATER RELIABILITY FOR THE FUTURE



METROPOLITAN RECYCLED WATER WEBSITE



www.mwdh2o.com/RRWP



Thank you for joining today!

Deven Upadhyay

Assistant General Manager and Chief Operating Officer

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Martha Tremblay

Department Head, Technical Services

mtremblay@lacs.org

mwdh2o.com/rrwp



@mwdh2o



Question and Answer



How to Ask a Question



Click “Q&A” on the bottom of your screen





Type in question,
indicate if you want to
ask live, then click send

The screenshot shows a window titled "Q&A" with standard macOS window controls (red, yellow, green buttons). The main content area has a "Welcome" heading followed by the text "Feel free to ask the host and panelists questions". At the bottom, there is a text input field with the placeholder text "Type your question here..." and a "Send" button to its right.



You can upvote
by clicking
“thumbs up” icon

The screenshot shows a more advanced "Q&A" window. At the top, there are tabs for "Open (2)", "Answered (0)", and "Dismissed (0)". Below the tabs, there are two question entries. Each entry includes the user's name and timestamp, the question text, a thumbs up icon with a count, and two buttons: "Answer live" and "Type answer". The first entry is from Jack Barker at 2:43:31 PM, asking "When is the next webinar?", with 1 upvote. The second entry is from Eren Yaeger at 2:42:44 PM, asking "When are office hours?", with 0 upvotes. A "Dismiss" button is visible next to the first question.



Next
Southern California Water Dialogue Webinar

Wednesday, January 27, 2021
12:00 – 1:30 pm

Your feedback on today's meeting is important to us. For the next ten minutes, you can use the Zoom Chat feature to send us any comments.