Meeting Agenda
April 12, 2022
11:30 a.m. – 1:00 p.m.

Location: **Long Beach Water Department**
Long Beach Ground Water Treatment Plant
2950 Redondo Ave
Long Beach, CA 90808

For virtual participation, please register for the *Zoom meeting via the following link:*

https://us02web.zoom.us/meeting/register/tZIuduyrpzorHdwL-QCcPf9XQzXVAoidpqna

The mission of Los Angeles Chapter of the WateReuse Association is to enhance the resiliency and sustainability of Los Angeles County by increasing the safe, beneficial use of recycled water. Its objectives shall be to promote water reclamation and recycling as a sustainable supplemental source of water for the state; to work for the adoption of legislation and regulations that allow the safe use of recycled water; to facilitate the development of technology aimed at improving water recycling; to promote legislation that would increase funding for water recycling projects; to provide mutual assistance and support between and among Chapter members involved with water recycling projects; and to increase public awareness and understanding of related water problems and solutions.

Welcome, Introductions and Instructions……..…….…. 11:30 a.m.

1. Host presentation: Preparing for Future Recycled Water Demands *(Dean Wang, Long Beach Water Department)*
2. Sponsor presentation: Enhancing Urban Waterways While Obtaining Water Supply Benefits in the City of Los Angeles *(Chris Mote/Stantec)*
3. Technical Topic: Las Virgenes-Triunfo Pure Water Project: Demonstration Facility Lessons Learned *(Oliver Slosser/LVMWD)*
4. Water Recycling Legislative/Regulatory Updates *(Raymond Jay)*
5. Regulatory Agency Update
    a. SWRCB Division of Drinking Water *(Scott Miller)*
    b. Los Angeles Regional Water Quality Control Board *(Steven Webb)*
    c. LA County Department of Public Health
6. California State Section Update *(Rafael Villegas)*
7. Chapter Updates *(Judi Miller)*
    a. December 2021 and February 2022 Member Meeting Summaries
    b. Volunteer Opportunities
    c. Emerging Professionals Committee Update *(Alex Waite)*
8. Membership Roundtable *(Jared Lee)*
9. Next Meetings
    - June 14, 2022 – Host: TBD; Sponsor: TBD
    - August 9, 2022 – Host: West Basin Municipal Water District; Sponsor: TBD
10. Adjournment ……..…… 1:00 p.m.

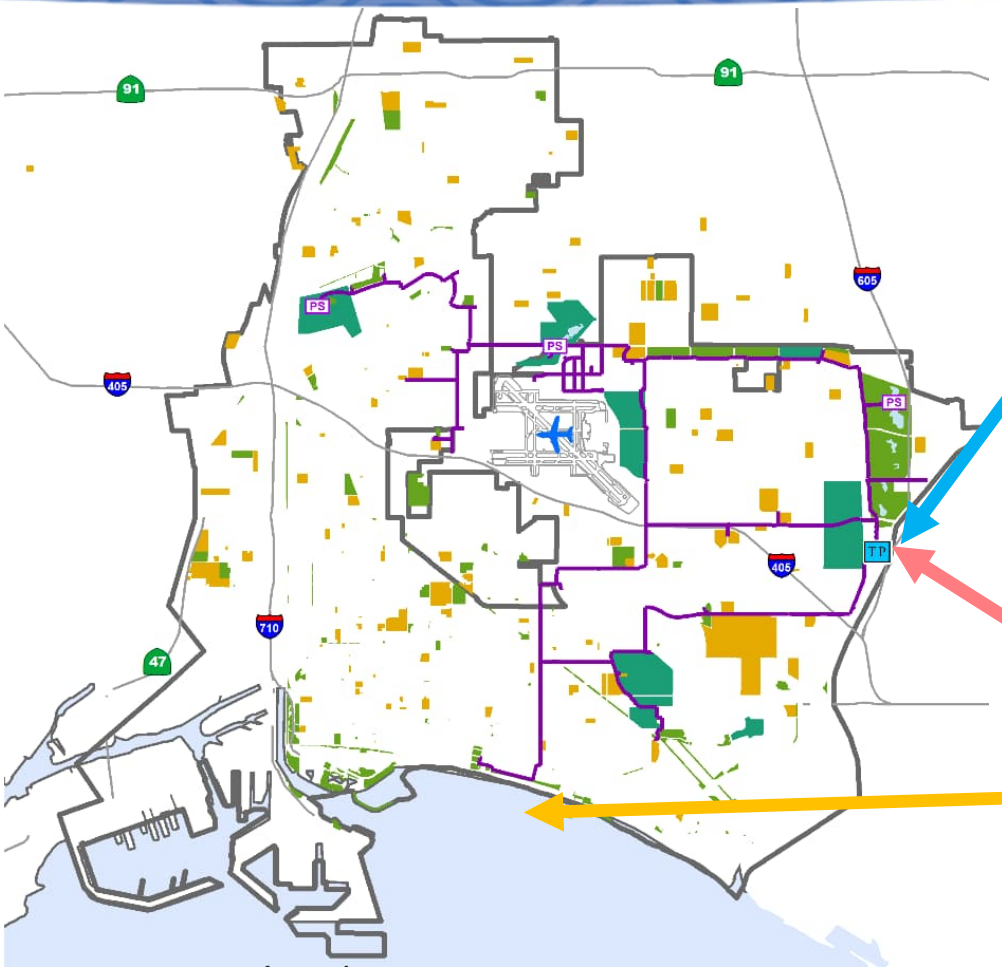
Los Angeles Chapter Officers for 2020/2022

Fred Gerringer, President	626-319-1107	fgerringer@hazenandsawyer.com
Jared Lee, Vice President	626-379-8443	JLee@burbankca.gov
Judi Miller, Secretary/Treasurer	213-228-8236	judi.miller@jacobs.com
Rafael Villegas, Chapter Trustee	213-367-1289	rafael.villegas@ladwp.com
Raymond Jay, Past-President	213-217-5777	rjay@mwdh2o.com

Preparing for Future Recycled Water Demands

Long Beach Water
Exceptional Water • Exceptional Service

Recycled Water System



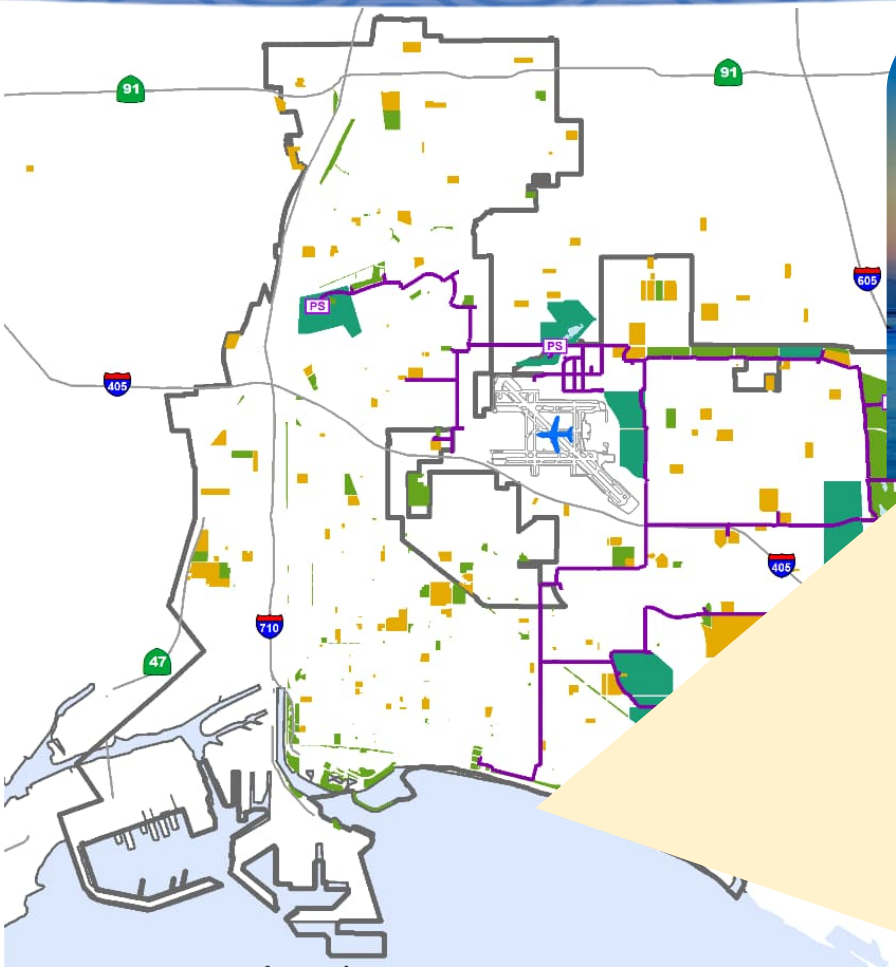
Legend

- LBWD Recycled Water Mains
- PS — Recycled Water Pump Station
- TP — Long Beach Water Reclamation Plant
- Schools
- Golf Courses
- Parks

2 largest recycled water uses:

1. WRD LVL AWTF
2. THUMS

THUMS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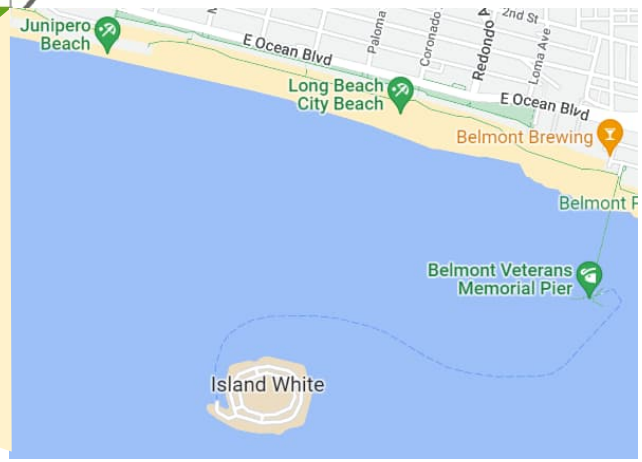
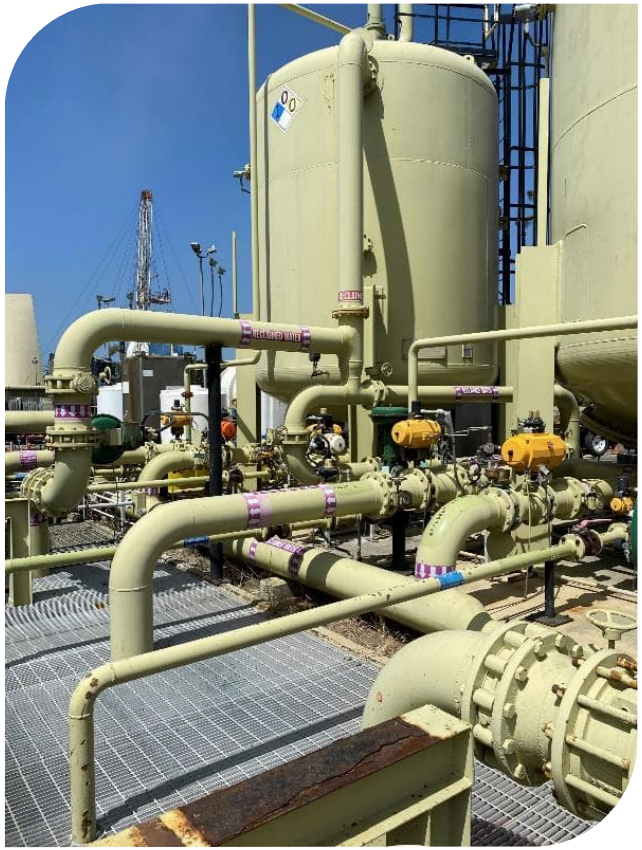

Junipero Beach
E Ocean Blvd
Paloma
Coronado
Redondo
2nd St
Loma Ave
Long Beach City Beach
E Ocean Blvd
Belmont Brewing
Belmont P
Belmont Veterans Memorial Pier
Island White

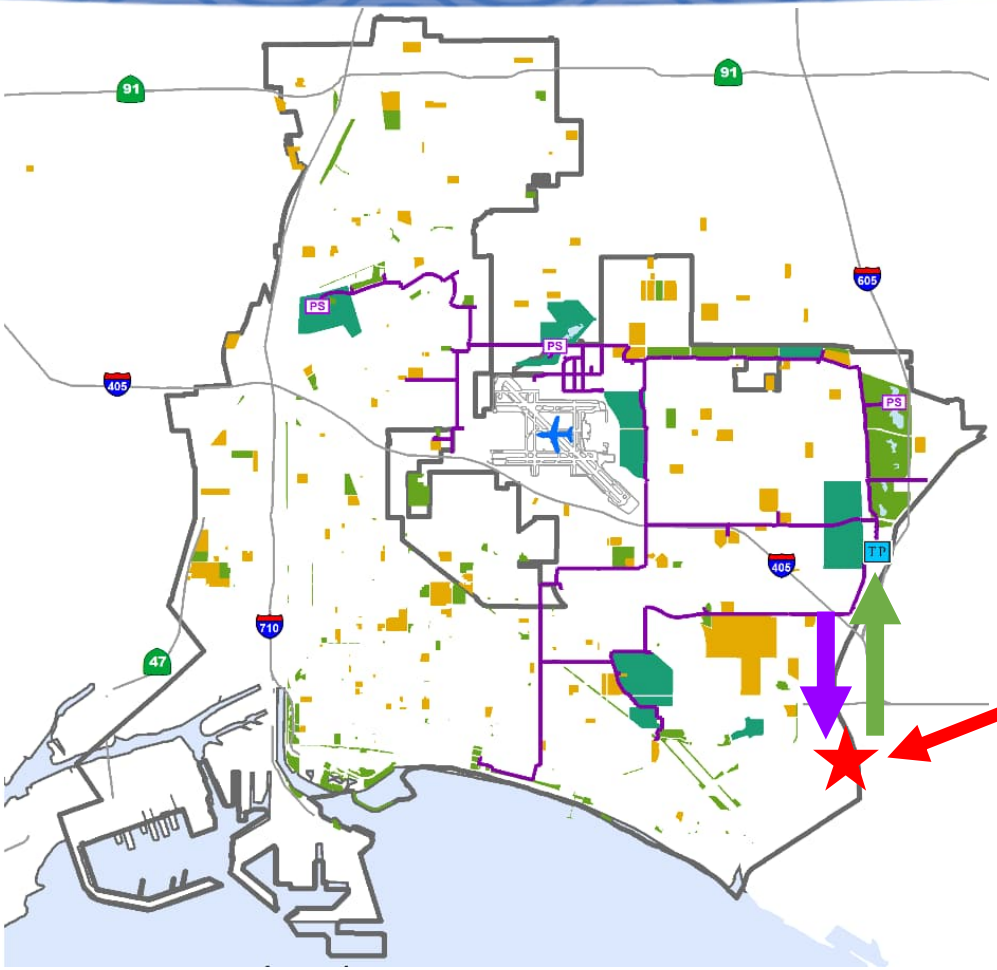
THUMS



WRD Leo J. Vander Lans AWTF

- Built in 2003 with a capacity of 3 MGD
- Expanded in 2014 to 8 MGD
- Evaluating additional expansion

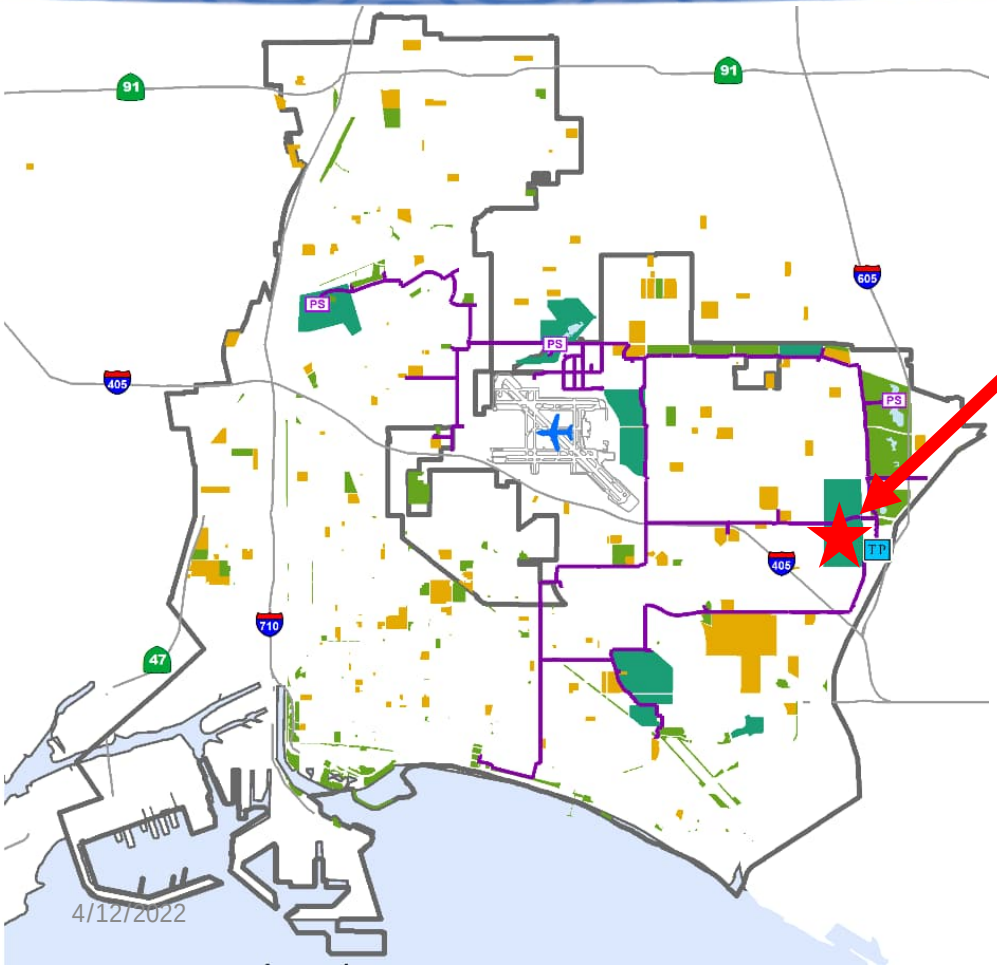
LADWP Haynes Generating Station

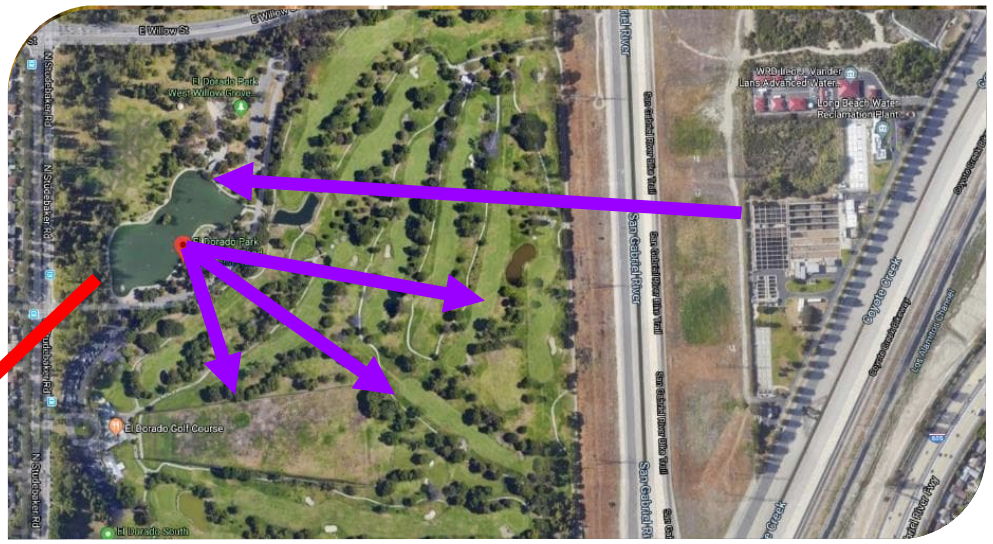


Current: Ocean water cooling discharged back to ocean

Proposed: Recycled water discharged back to LBWRP

El Dorado Park Duck Pond Storage



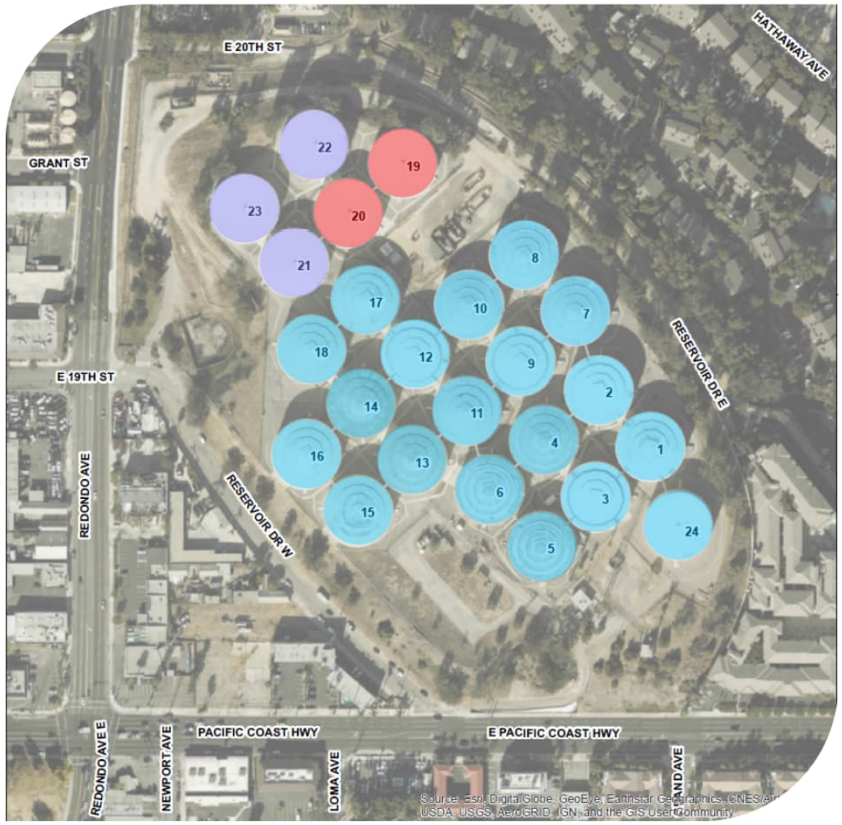


1. Fill pond during day time when supply > demand
2. Golf course irrigates at night drawing from the pond

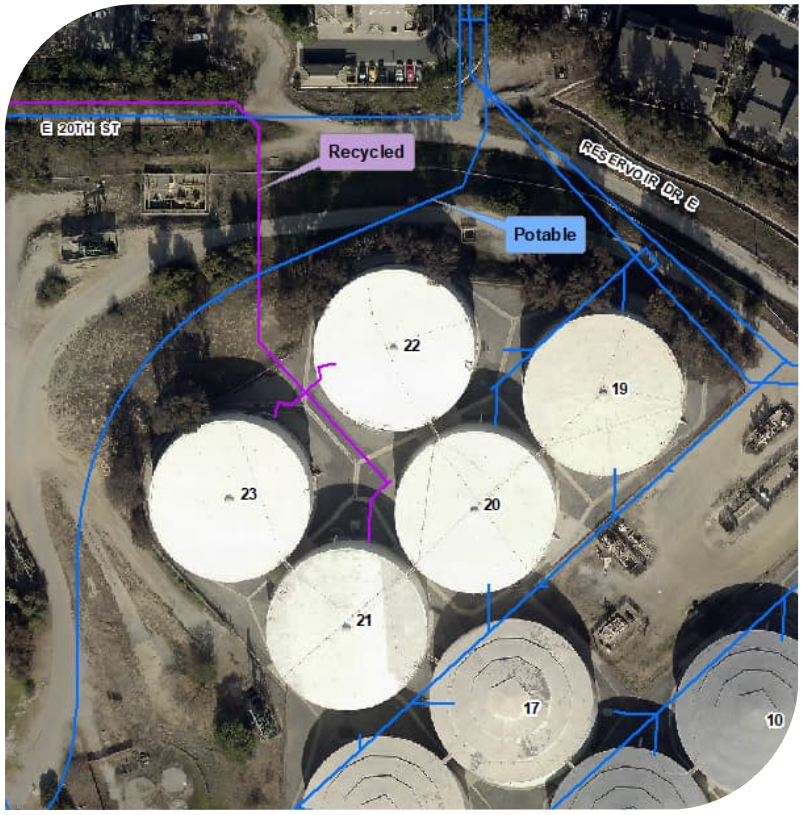
Alamitos Reservoir Tank Conversion

- Currently **21 potable water tanks** and **3 recycled water tanks**

- Project will **convert two potable tanks into recycled water tanks**
  - Originally constructed in 1960s
  - 3.3 million-gallon capacity each
  - Piping reconfiguration, interior/exterior coating, cathodic protection, valves, fittings, structural improvements



Potable-to-Recycled Water Transfer System



Long Beach Water

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Stantec

Los Angeles Bureau of Engineering
TOS-14

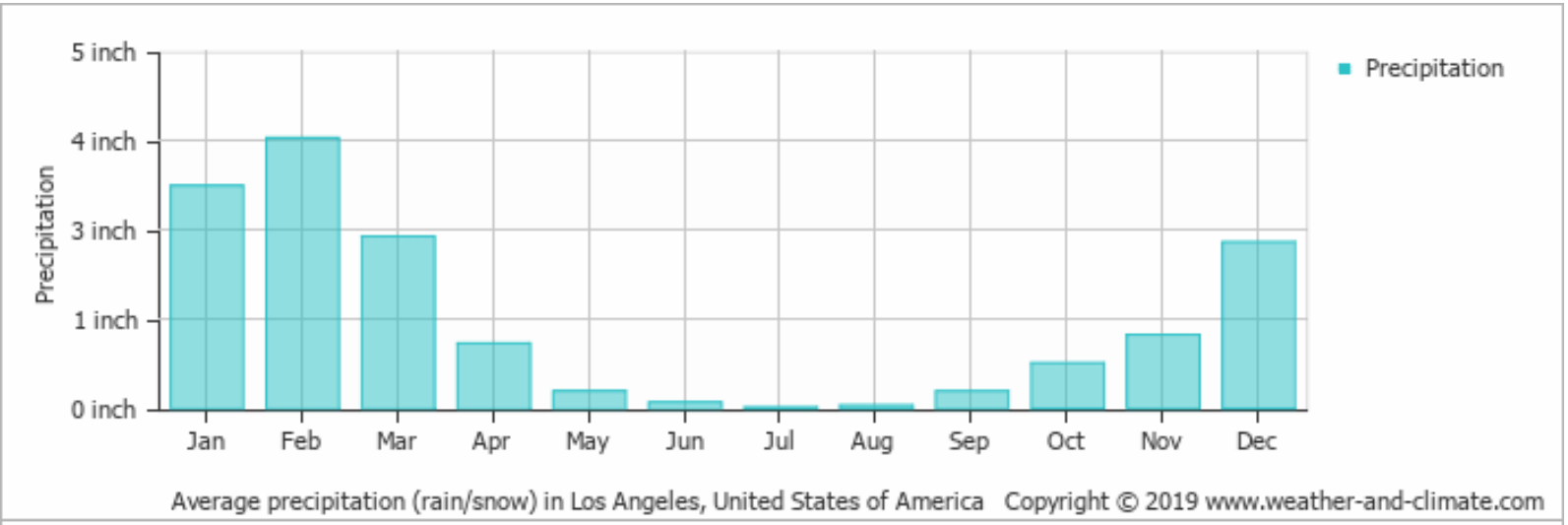
LA River and Arroyo Seco Low Flow Diversion Structures

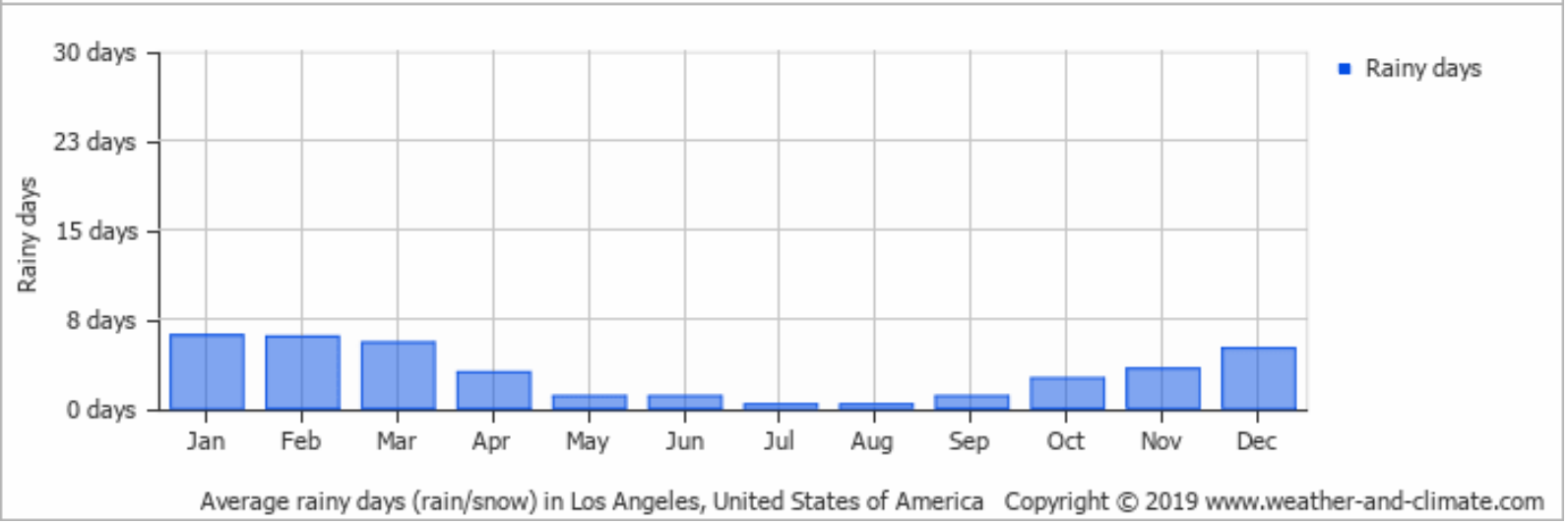
Enhancing Urban Waterways while Obtaining Water Supply Benefits in the City of Los Angeles

Agenda

1. Defining the Challenges of Urban Runoff Pollution
2. Defining Low Flow Diversions and Design Considerations
3. Construction Phases and Project Status
4. Conclusion

Defining the Challenges of Urban Runoff Pollution





Los Angeles Rainfall 2019

Limited water supply options; rainfall unreliable

Infrequent storms leave pollutants undisturbed on paved surfaces for extended durations

Urban Runoff

- Urban Runoff: flow in non-storm conditions from paved surfaces → waterways → ocean
- Runoff will pick up: pet waste, leaves, motor oil, detergents, trash, etc
- Water conservation → Less urban runoff → Higher runoff pollutant concentrations

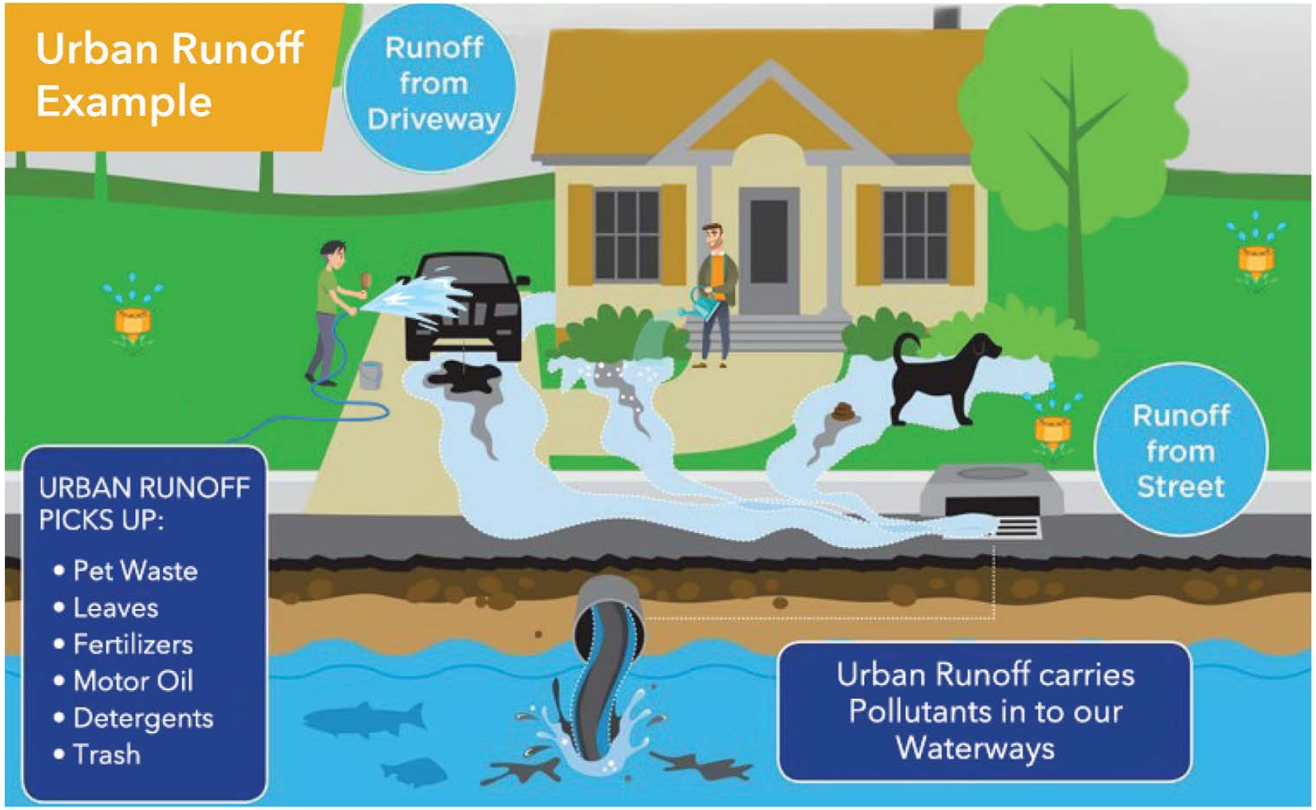
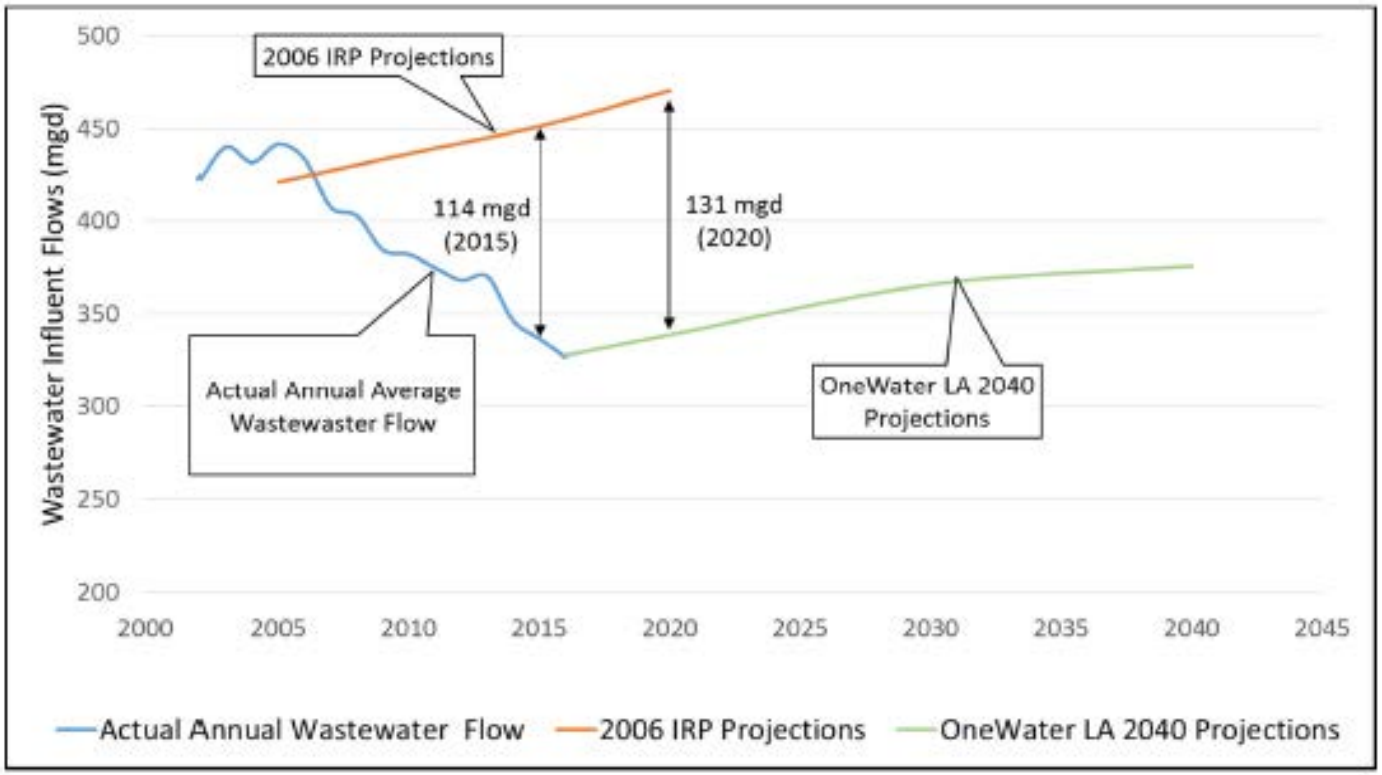


Figure from City of Richmond, VA

Decreased WRP Influent Flow Across Los Angeles



Water conservation
→ Less sewer flow
→ Available capacity to treat polluted runoff

Project Drivers and Goals

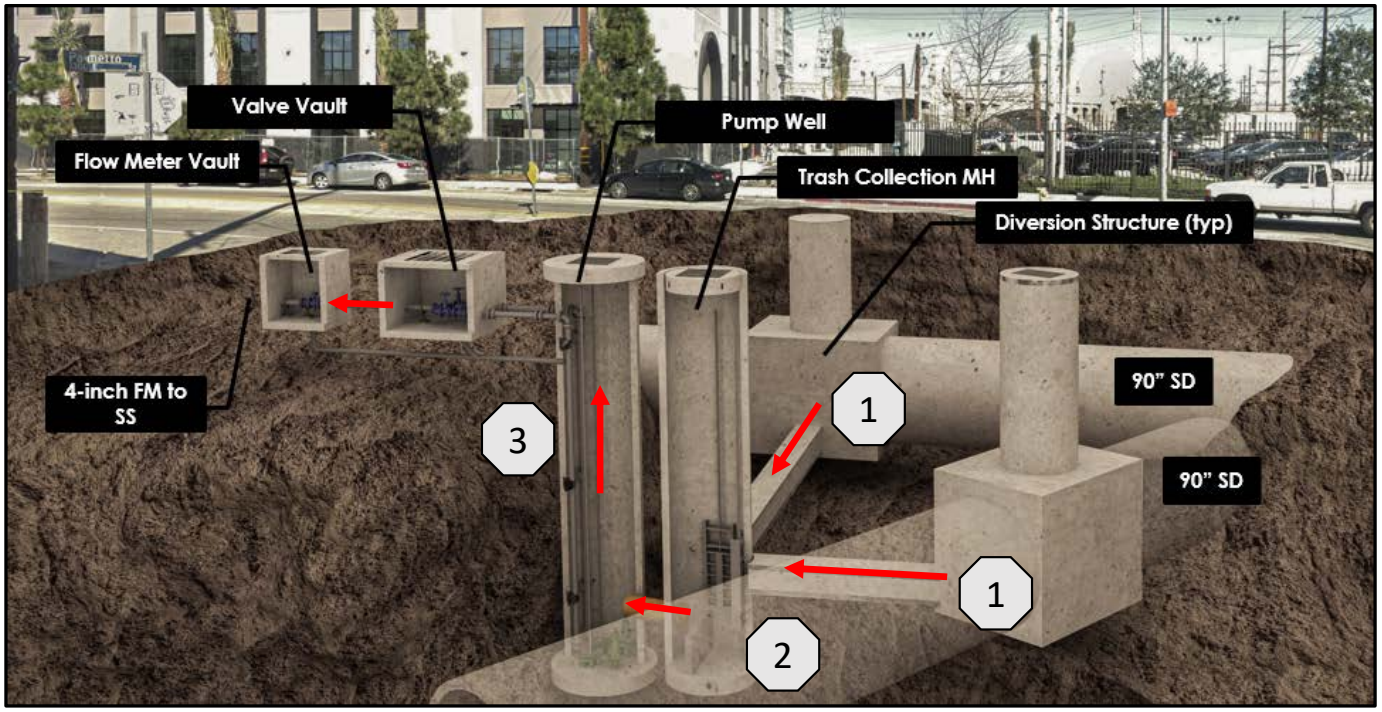
- Divert polluted urban runoff from storm drains for treatment
- Comply with Regional Water Quality Control Board requirements and meet state and federal Total Maximum Daily Loads requirements (TMDLs)
- Supplement the reduced influent flow to WRPs due to conservation

Impact Within Los Angeles

- Bolster water supply to cope with uncertain climatological future
- Improve the health of the Los Angeles River and surrounding bays
- Zero Ocean Discharge from Los Angeles by 2035

Defining Low Flow Diversions and Design Considerations

What are Low Flow Diversion Structures?

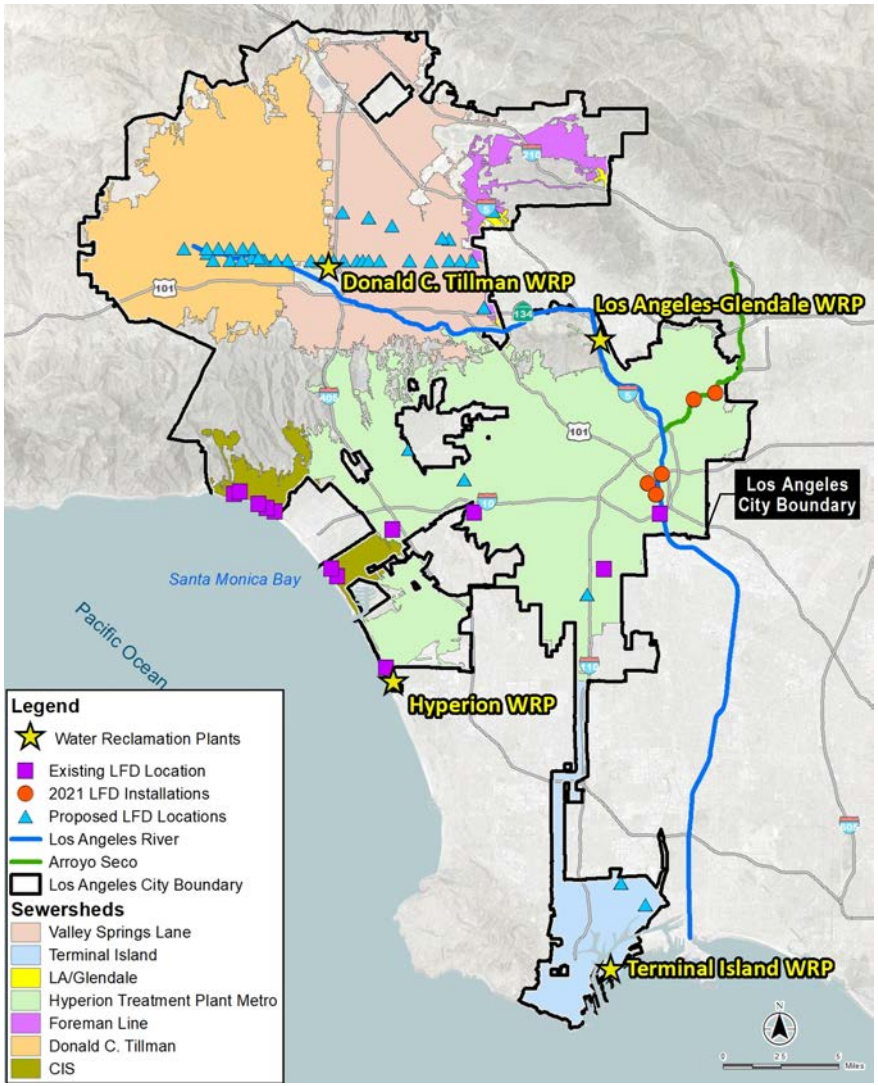


Steps:

1. Divert urban runoff from SD during dry weather
2. Screen trash
3. Pump water to SS to Hyperion WRP

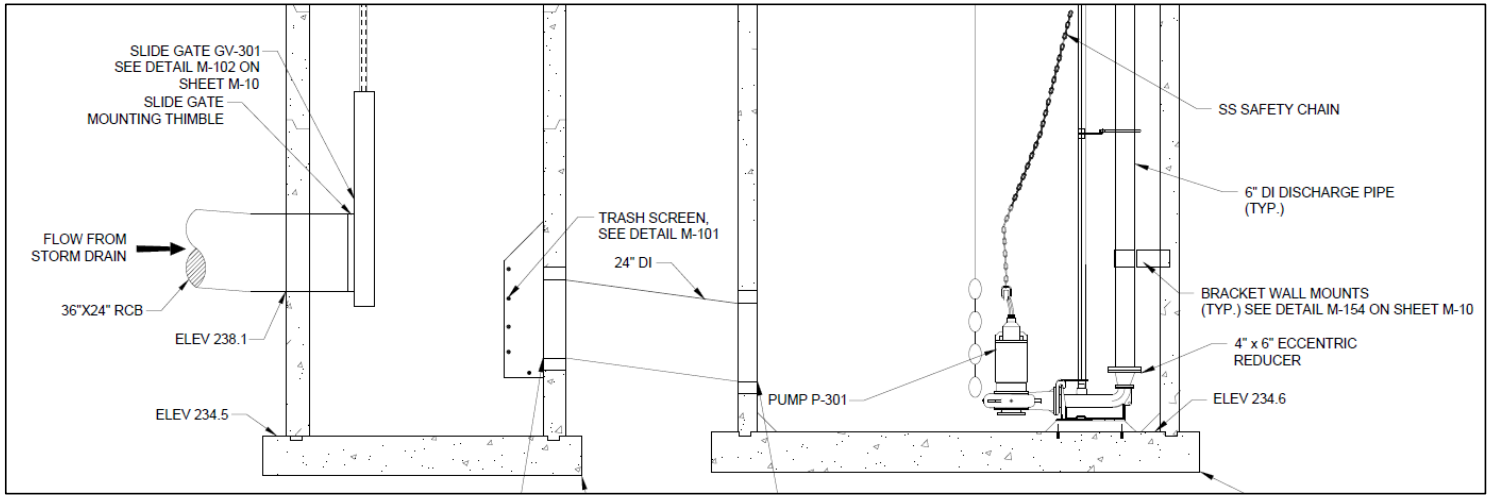
LFD Systems in the City of Los Angeles

- 12 Existing
- 42 Proposed
- 5 with Complete Design for 2022 Installation



Design Considerations

- Depth of existing storm drains and sewers
- 9-inch diversion berm
- Trash screening and removal



Design Considerations

- Pump well sizing and pump selection to
  - Maintain high efficiency
  - Optimize pump well diameter
- Flow bypass, varying by month/season
- City standards
- Traffic control

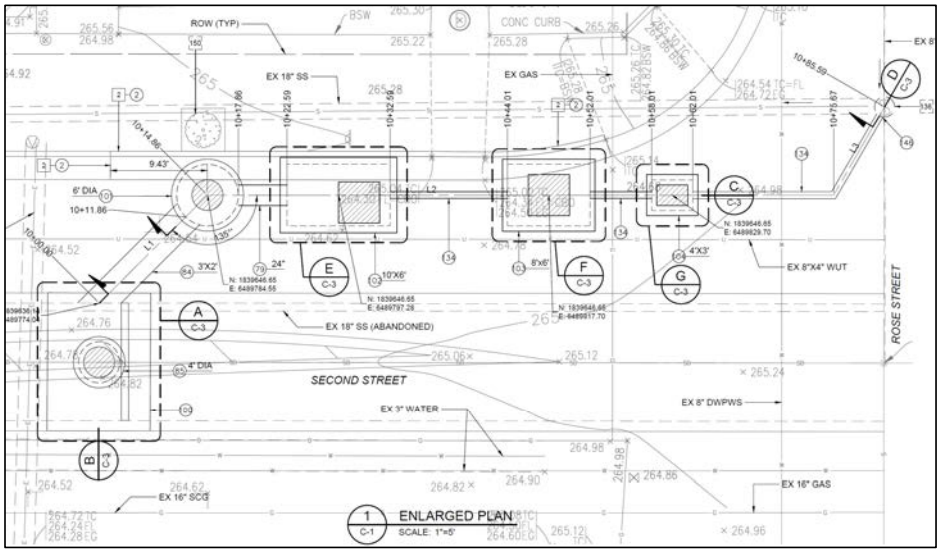
Design Considerations

- Maintenance Access
- Monitoring during wet weather, with automation to control pumps and slide gates through SCADA
- Impact to Public
- Consultation with various permitting agencies including:
  - LA Sanitation, LACPW, LABOE, LADBS, LADOT, Caltrans, LADWP, LA Recreation and Parks, City Council Districts, CEQA

Construction Phases and Project Status

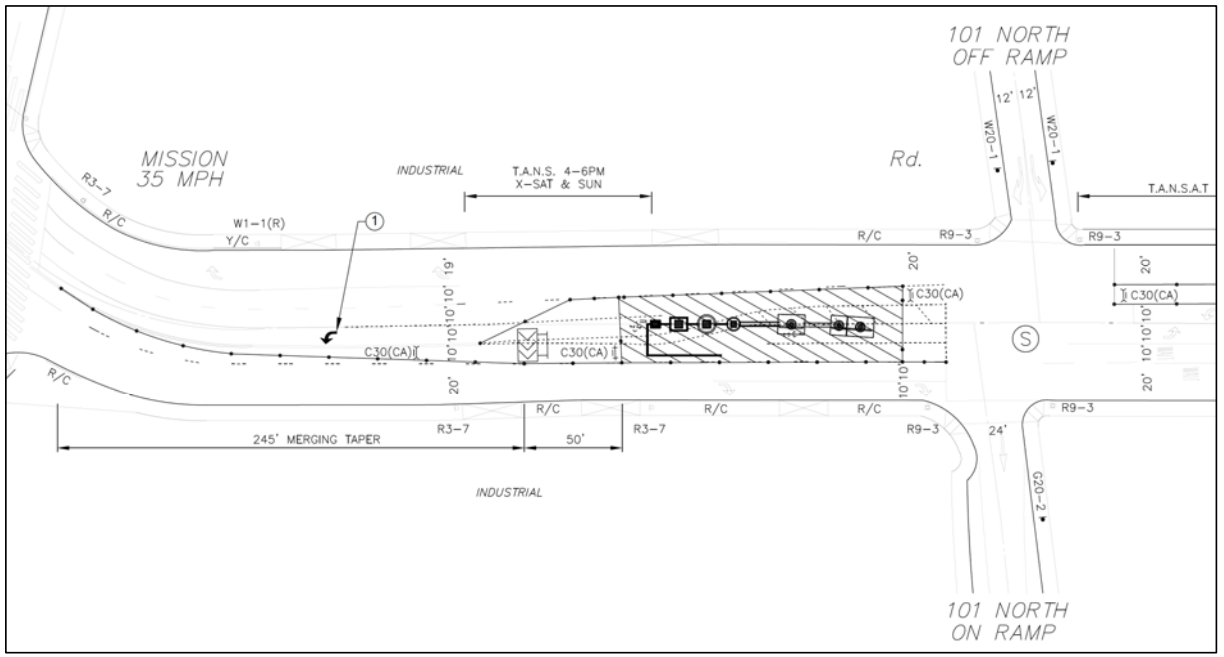
Construction

- 12 Month Construction Schedule
- Sequence:
  1. Mobilization
  2. Excavation
  3. Construction of below-grade facilities
  4. Backfilling
  5. Construction of above-grade facilities
  6. Repair of Pavement
  7. Start-up and Testing
  8. Demobilization



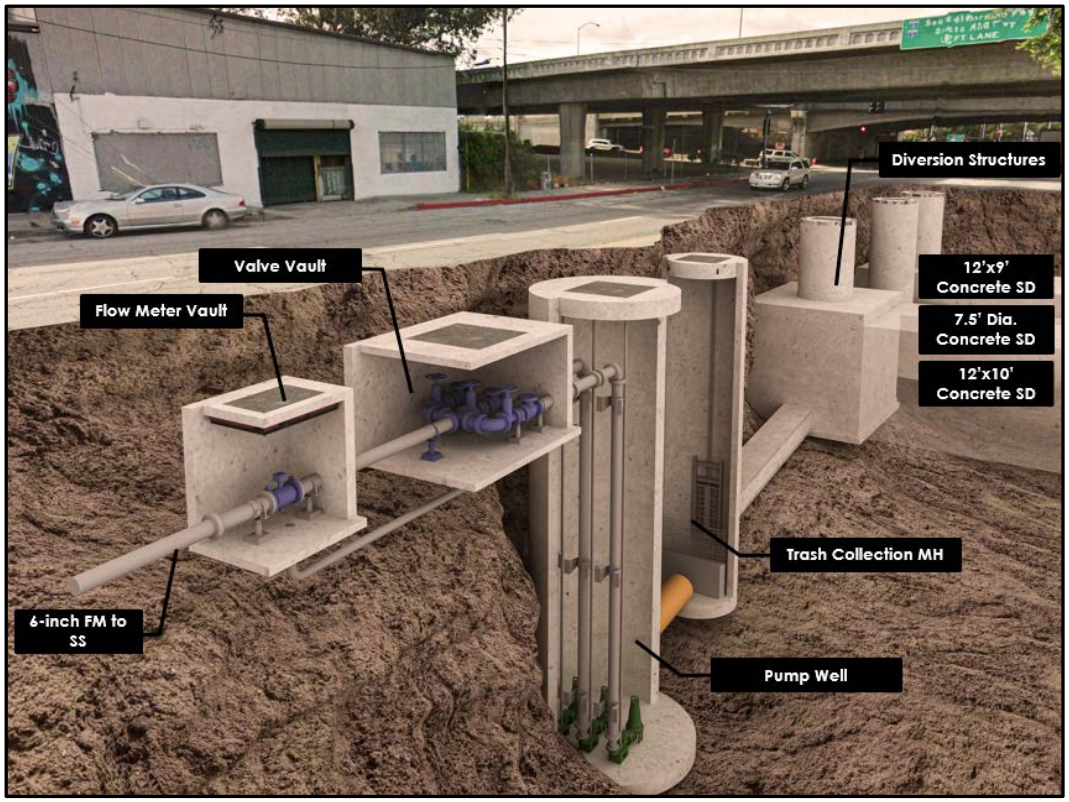
Expected Construction Challenges

1. Traffic Control
2. Shoring
3. Construction Schedule Restrictions for Storm Drain Work and TMDL Compliance
4. Existing Utilities
5. Flow Diversion



Project Status

- 100% Design completed
- Project bid in December 2020
- Construction Began in Autumn 2021
- Construction is Ongoing
- Completion Anticipated Summer of 2022



Conclusion

Conclusion

- >1 million gallons of urban runoff can be reclaimed each day with these five LFD sites.
- LFD projects will:
  - Increase water supply and provide tangible community benefits
  - Generate a low-cost, local, drought-proof water supply via non-potable and potable reuse
  - Maximize existing unused wastewater treatment potential
  - Improve water quality of receiving waters and oceans
- Adaptable for other urban environments with separate SD and SS

Acknowledgements

- Los Angeles Department of Public Works
  - Los Angeles Bureau of Engineering
    - Andy Flores, PE
    - Naushin Kamal, PE
    - Mohammad Al-Jamal, PE
  - Los Angeles Sanitation
    - Phuoc Le, PE
    - Kwasi Berko, PE
    - Alfredo Magallanes, PE

PURE WATER PROJECT
LAS VIRGENES-TRIUNFO

Bringing Our Water Full Circle

Demonstration Facility Lessons Learned

WateReuse Association, Los Angeles Chapter

April 12, 2022

Oliver Slosser, PE, Engineering Program Manager, LVMWD

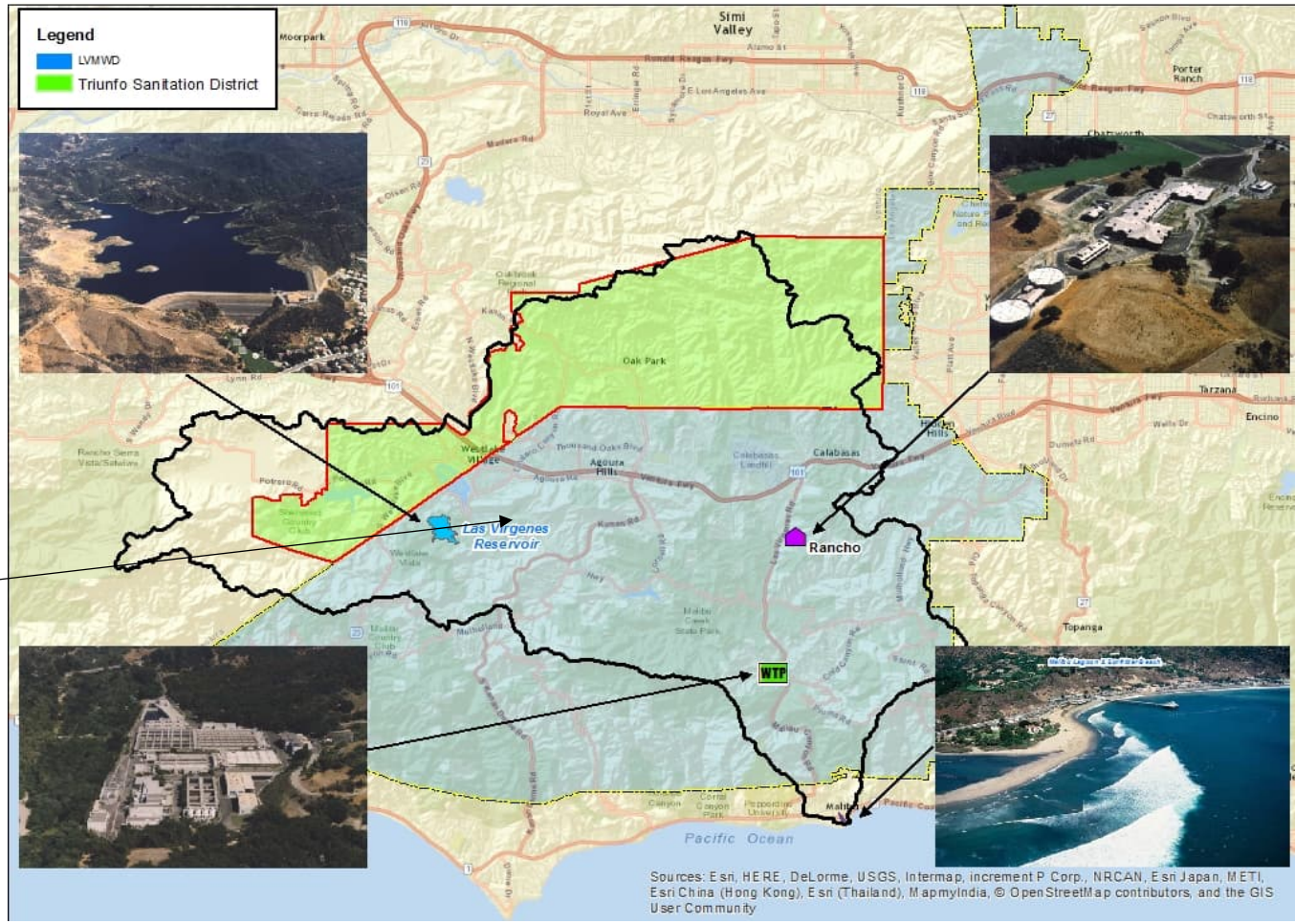
Agenda

1. Program Overview
2. Demonstration Project
3. Lessons Learned
4. DBP and Pipe Run Testing
5. Operator Training
6. Next Steps and Discussion

01

Program Overview

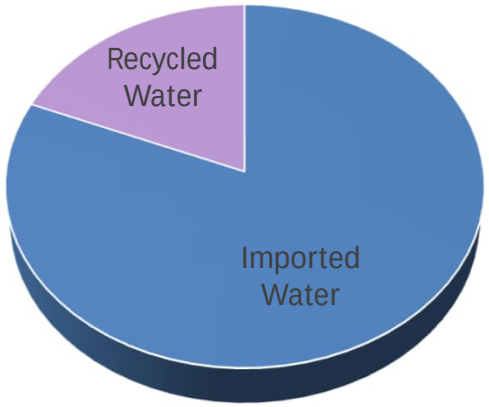
JPA System Overview



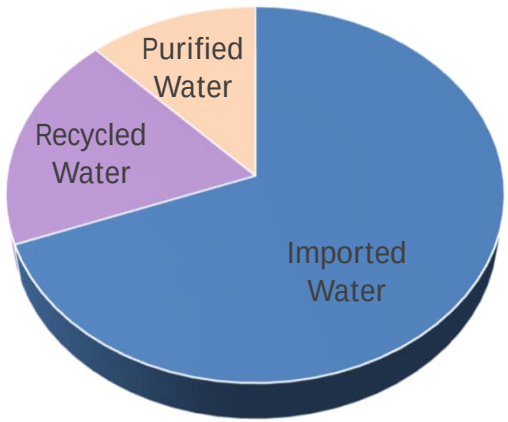
Challenges/Drivers

- Meet regulatory requirements
- Improve water supply reliability
- Beneficially reuse our reclaimed resource

Current



Future



Regulatory Driver

- Implemented by LARWQCB May 2017
- Summer Limits (April 15 – November 15)
  - 1 mg/L (total nitrogen) & 0.1 mg/L (total phosphorous)
  - By May 16, 2022
- Winter Limits (November 16 – April 14)
  - 4 mg/L (total nitrogen) & 0.2 mg/L (total phosphorous)
  - By November 16, 2030

Program Elements

- New 7.5 MGD Advanced Water Purification Facility
  - Evaluating two sites, Agoura Rd. and adjacent to LVR
- New Brine Line to convey RO concentrate to CMWD's Salinity Management Pipeline
- New Product water line to convey water to LVR
- New source water line connecting the existing RW distribution system to the AWPF
- Total of 13-15 miles of new pipeline
- Possible improvements to our existing RW distribution system and Tapia WRF to provide flow equalization

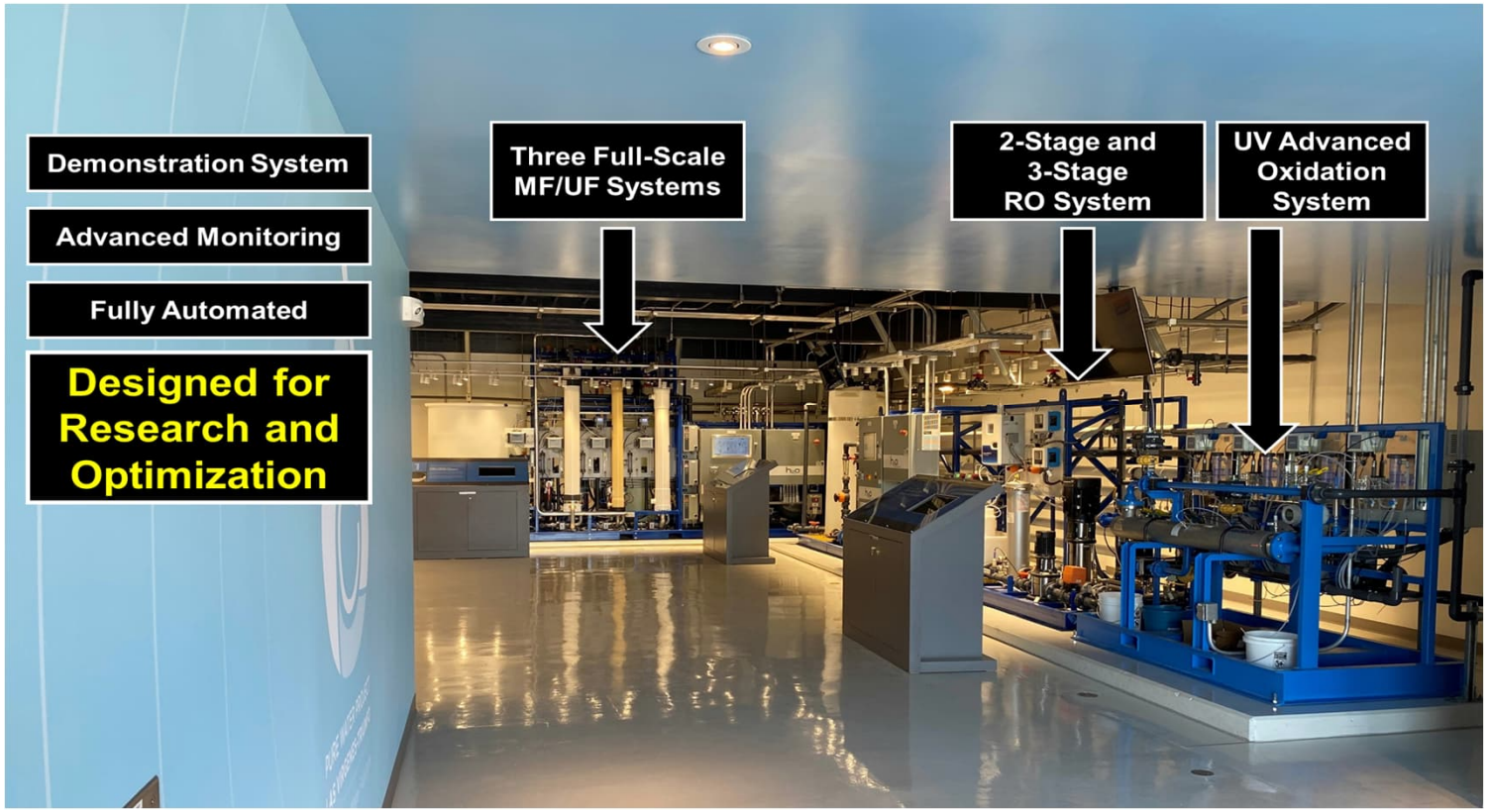
02

Demonstration Facility

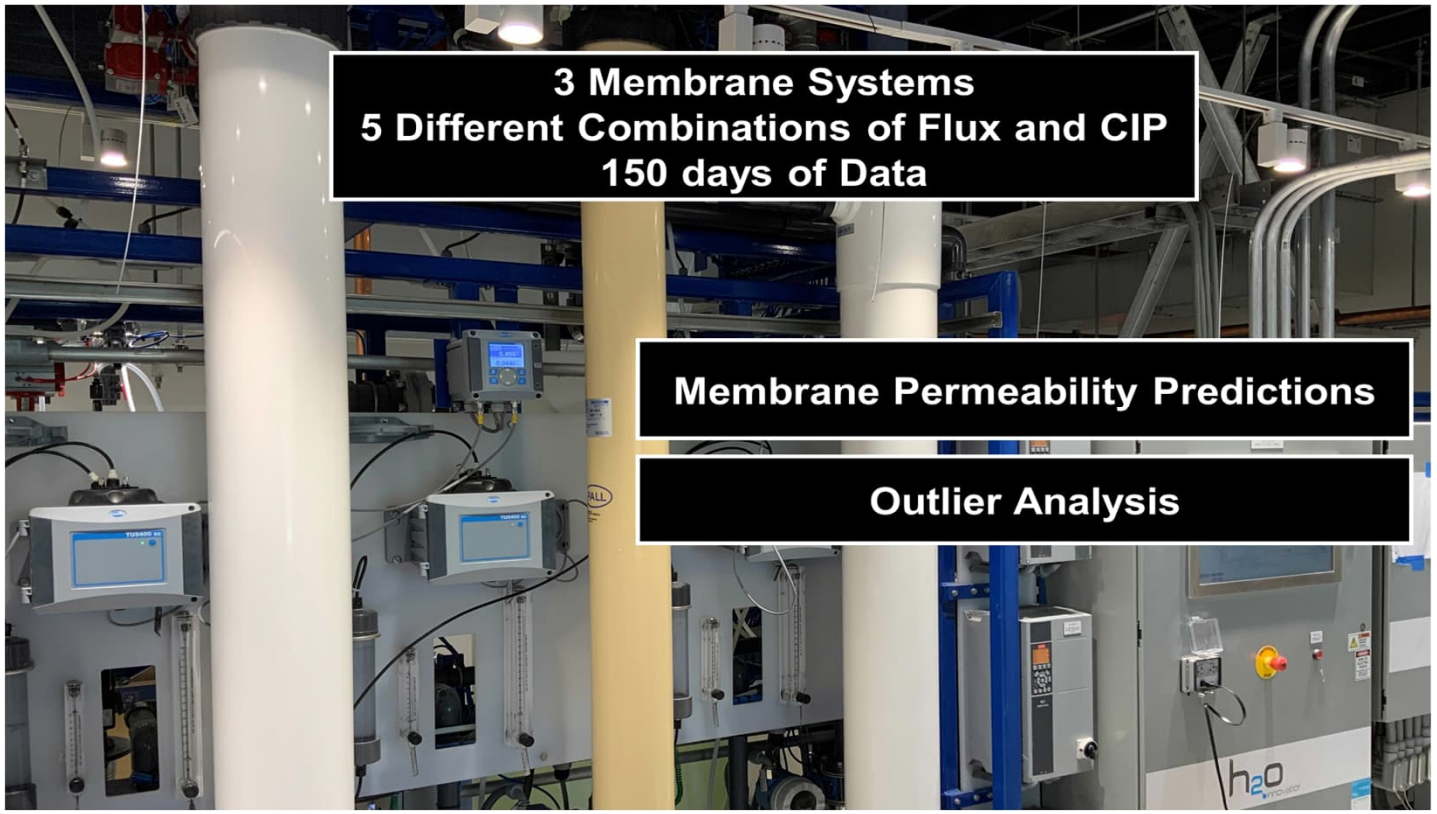
Demonstration Facility

- Completed in October 2020
- Processes up to 25 gpm
- Demonstration project serves to achieve three primary goals:
  - (1) treatment technique validation and research;
  - (2) public outreach; and,
  - (3) operator training.
- The facility is also utilized for testing that will help in the development of preliminary design for the AWPF

Demonstration Facility Elements



Demonstration Facility Elements



03

Lessons Learned

Vendor Testing

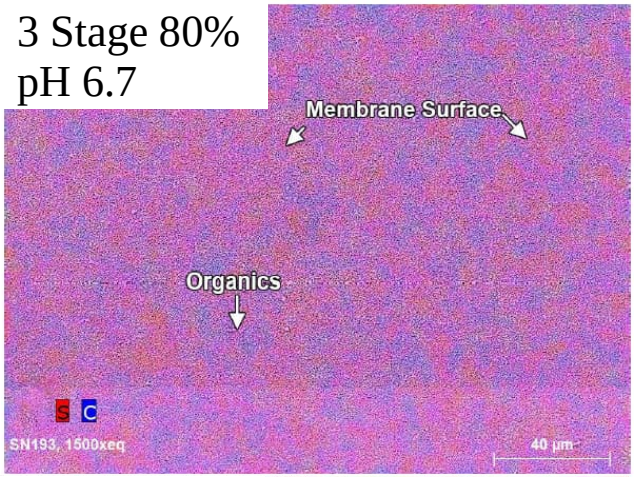
MF/UF/RO

- Optimization of maintenance cleans and CIPs
- Maximizing flux across processes
  - Level 5 cost model indicates >10% reduction in capital cost/MG moving from 30 – 40 gfd.
- Ability to simulate full scale flux and assess cost implications
- Multiple iterations of UF/MF and different stage RO's to determine most cost efficient and reliable configuration
- Long term runs (over two years of data) to help determine performance over time and give experience with maintainance such as pinning.
- Testing of different rack systems and manu and some experience with daily operations/access for the full facility

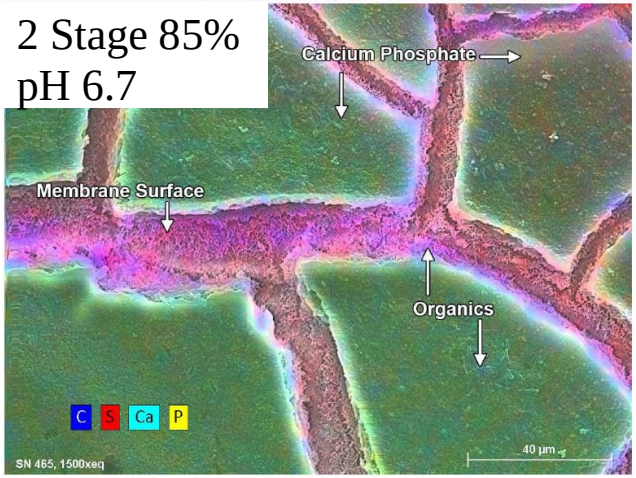
RO Fouling

- Demo Facility allows us to troubleshoot things like fouling and optimize the operations to minimize downtimes, cleaning, and increase longevity of the equipment
- Appears to be some success at limiting organic fouling at higher pH
  - 3 stage 85% had a more prevalent biological/organic surface coverage than 3 stage 80%.
- Type of fouling very influenced by recovery and configuration.
  - 2- Stage 85% Calcium Phosphate Scaling
  - Much lower cross flow velocity for 2 stage 85% than 3 stage.

3 Stage 80%
pH 6.7

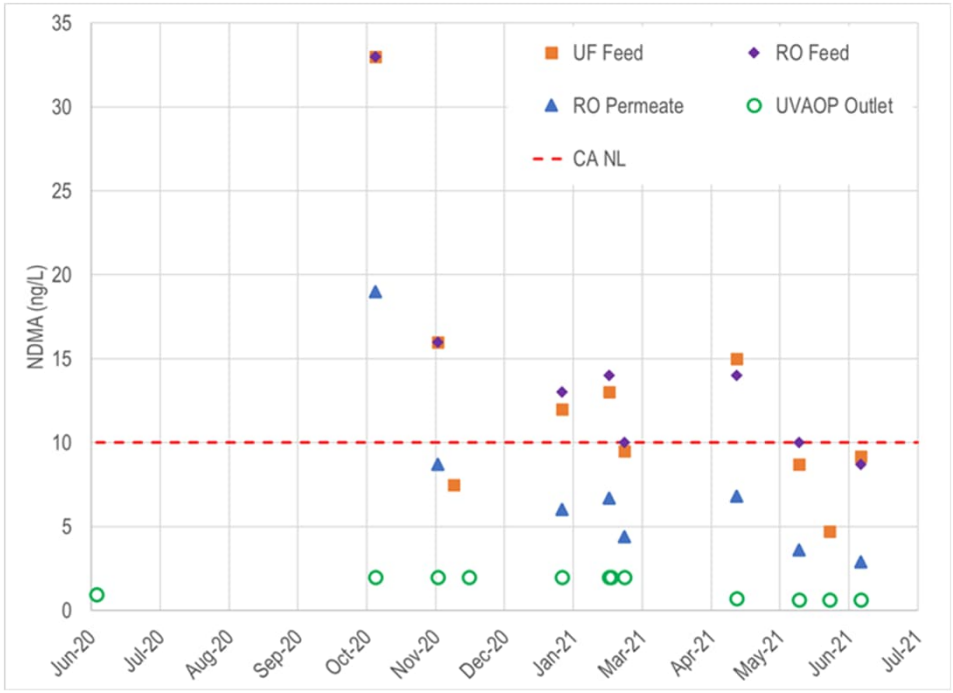


2 Stage 85%
pH 6.7



NDMA Loading and UVAOP Validation

- NDMA detected in RO permeate, but below Notification level of 10 ng/L most of the time.
- CA SWA Requires < 0.69 ng/L.
- Solution – Use indigenous NDMA data to determine necessary NDMA LRV through UVAOP
- Target NDMA LRV = 1.5



Conclusions

The demonstration facility continues to be successful in:

- Community Engagement
- Operator Training
- Engineering Optimization
- Industry Research

The demonstration has allowed for preoptimization of full-scale operational criteria which is likely to result in capital savings

Ongoing water quality sampling continues to demonstrate the high quality of produced water.

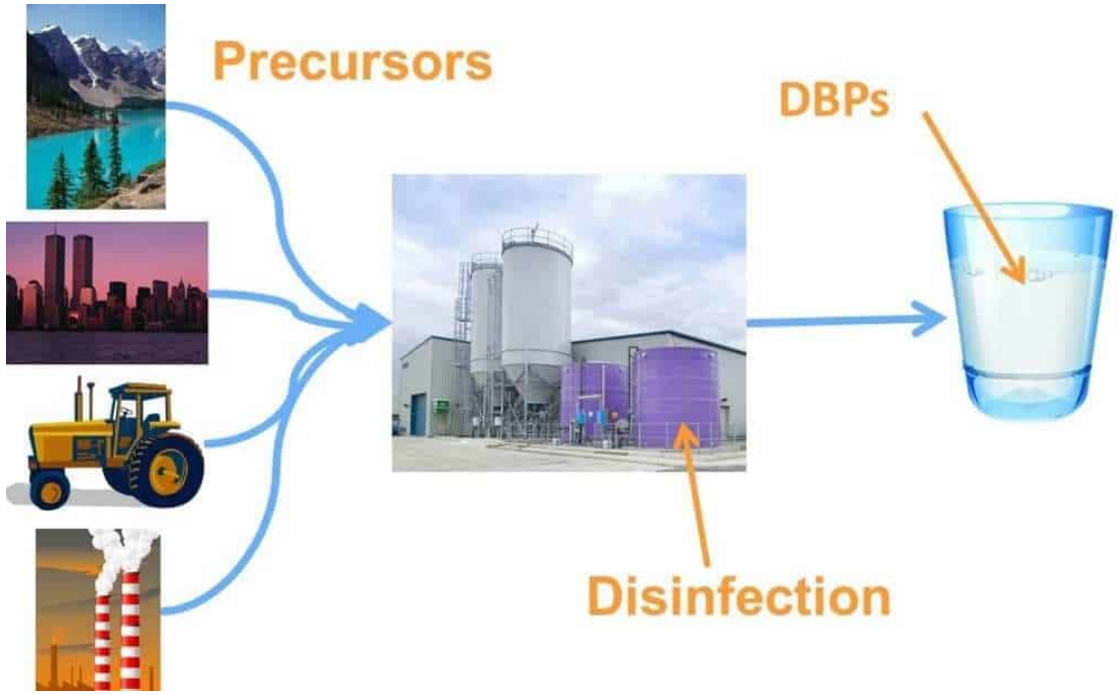
The demonstration is at the forefront of research applying semi-autonomous operation for operator decision support.

04

DBP and Pipe Run Testing

DBP Testing

- DBP Testing initiated to improve influent water quality to AWPF
- Testing ability to meet California Toxics Rule
- Ability to make changes at Tapia WRF and assess changes at the Demo facility
- Ability to optimize the treatment processes at Tapia and test those changes on the advanced treatment process equated to capital and operational savings



Pipe Run Testing

- Brine line for the AWPF is expected to be between 11 and 14 miles with large changes in elevation
- Ability to operate the AWPF and brine line continuously more important than high recovery
- Demo facility allows us to test different concentrate qualities and likelihood to form scale

05

Operator Training

Advanced Treatment Operator Experience

- CA AWTO accreditation requires experience.
- Operators firsthand experience full range of activities beyond that examined in accreditation:
  - Membrane Cleaning and Repair
  - Troubleshooting
  - Instrument Calibration and Maintenance
  - Compliance Sampling
  - System Optimization
- Training now means competent full scale operation.

06

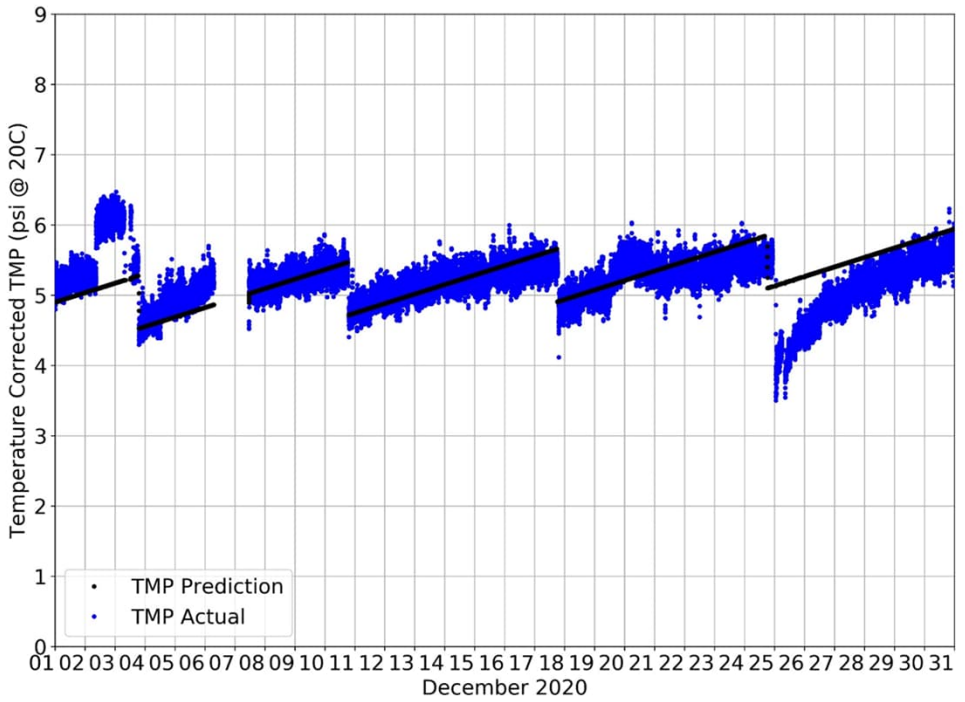
Next Steps and Discussion

Next Steps

- Further technical studies and testing
- Sample point for regulatory compliance
- Artificial INtelligence
- Public Outreach and Community Education

The Pure Water Demonstration Facility

The Future – Machine Learning for Feed Forward Optimization of Membrane Processes



Questions/Discussion

Oliver Slosser, PE
Engineering Program Manager
Las Virgenes-Triunfo Joint Powers Authority
(818) 585-7123
oslosser@lvmwd.com

PURE WATER PROJECT
LAS VIRGENES-TRIUNFO

Bringing Our Water Full Circle

WateReuse California
Los Angeles Chapter Meeting

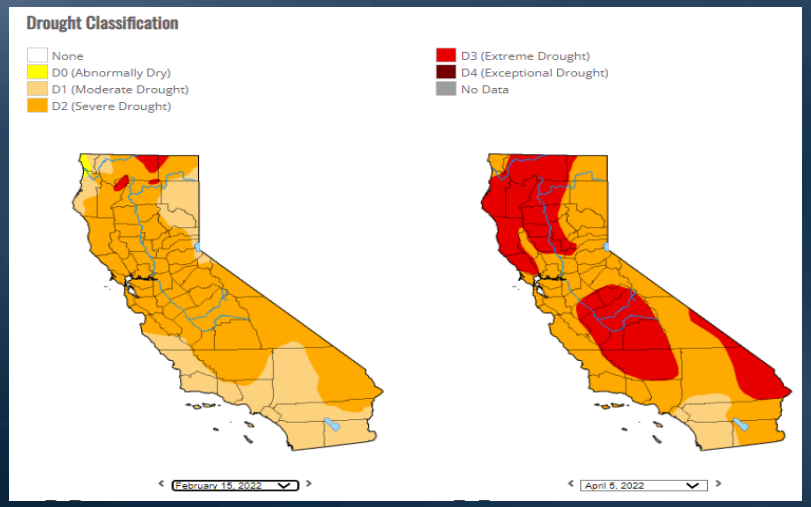
WATEREUSE
LOS ANGELES

April 12, 2022
Legislation & Regulation Update

Raymond Jay
Metropolitan Water District of Southern California
(213) 217-5777 or rjay@mwdh2o.com

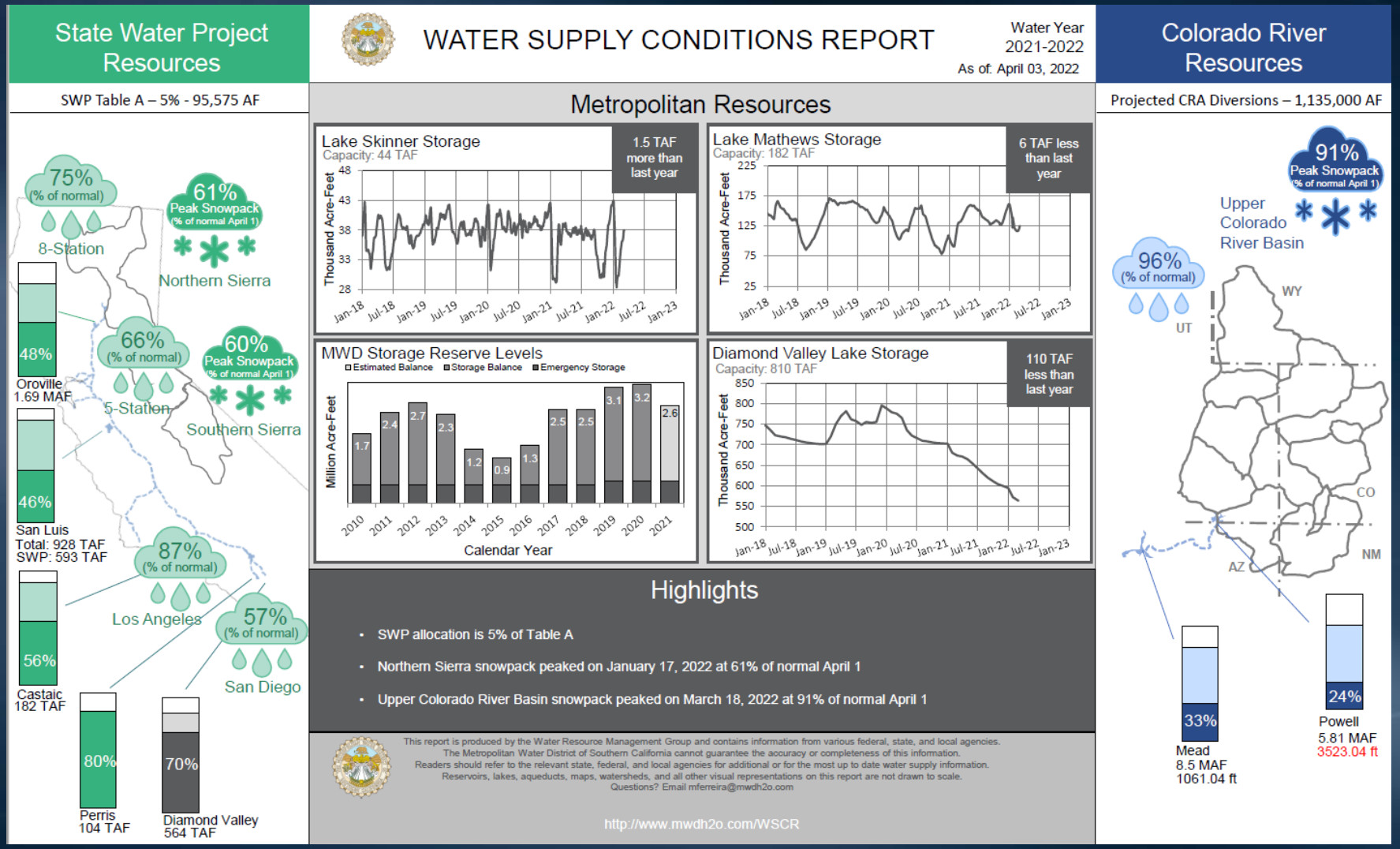
Drought

- Worsening drought conditions – driest 3 months
- SWP allocation decreased to 5% for 2022
- Governor's Exec. Order N-7-22 prohibits irrigating “non-functional turf” in CII settings
- Require water suppliers to implement Level 2 response actions in WCPs
- Suspends policies prohibiting hauling water, etc.



2022 Water Supply Conditions

- https://www.bewaterwise.com/water_supply_conditions/water_supply_conditions.pdf



2022 California Legislative Calendar

- Jan. 1 — Statutes take effect
- Jan. 4 — Legislature reconvenes
- Jan. 10 — Governor submits budget to Legislature
- Feb. 18 — Last day for bills to be introduced
- Apr. 29 — Last day policy comm. to report fiscal bills
- May 6 — Last day fiscal comm. to report fiscal bills
- June 4 — Last day for bills to pass house of origin
- June 15 — Last day to pass budget
- Sept. 10 — Last day for any bill to be passed
- Sept. 30 — Last day for Governor to sign or veto bills
- See: http://assembly.ca.gov/legislativedeadlines

2022 Water Legislation of Interest

- AB 1001 (C. Garcia): Environment: mitigation measures for air and water quality impacts: environmental justice
- AB 1845 (Calderon): MWD: alternative project delivery methods; WRCA = Support
- AB 2387 (Garcia, E): Safe Drinking Water, Wildfire Prevention, Drought Preparation, Flood Protection, Extreme Heat Mitigation, and Workforce Development Bond Act of 2022; WRCA = Watch
- AB 2787 (Quirk): Microplastics in products; WRCA = Support
- AB 2811 (Bennett): California Building Standards Commission: recycled water: nonpotable water systems; WRCA = Oppose Unless Amended
- https://watereuse.org/sections/watereuse-california/legislativeregulatory-committee/

2022 Water Legislation of Interest

- SB 230 (Portantino): State Water Resources Control Board: CECs in Drinking Water Program; WRCA = Support
- SB 991 (Newman): Public contracts: progressive design-build: local agencies; WRCA = Support
- SB 1124 (Archuleta) Public health goal: primary drinking water standard: manganese
- SB 1144 (Wiener): Water efficiency and quality assessment reports: state buildings and public-school buildings; WRCA = Seek Amendments
- SB 1157 (Hertzberg): Hertzberg. Urban water use objectives: indoor residential water use; WRCA = Oppose Unless Amended
- SB 1188 (Laird): Safe Drinking Water State Revolving Fund: financial assistance
- SB 1219 (Hurtado): Water: 21st century water laws and agencies: committee
- SB 1221 (Hurtado): Wastewater operator certification program

California Budget and RW Funding

- Governor's FY22-23 Budget - proposed
  - $286 billion
  - $45.7 billion projected budget surplus
  - $1.63 B for Drought & Water Resilience
  - Expect updates in May and Final by June 15, 2022

- $400M for recycled water & groundwater recovery (WRCA requests 50% for RW)
  - $200M in FY 21-22
  - $100M in FY 22-23 & FY 23-24
- $100M for PFAS support
- WRCA request $750M for RW in FY22/23

Water Use Efficiency Implementation

- Water Conservation and Drought Planning
  - AB 1668 (Friedman, 2018) SB 606 (Hertzberg, 2018)
  - SB 1157 (Hertzberg, 2022): Hertzberg. Urban water use objectives: indoor residential water use
- Establish water use efficiency objectives & reporting
- SB 1157 decrease indoor water use from 55 GPCD to 47 GPCD by 2025 and 42 GPPD by 2030
- Potable reuse credit of 10-15% for new or existing facilities
- Follow MWELO for outdoor uses
- No penalties before Nov. 2027

Regulatory Update

- Cross Connection Control Handbook – Title 17
  - Use of Swivel-ell requirements
  - DDW is still evaluating comments (per website)
  - Second public comment, Public Hearing, & Board adoption : TBD
    - https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/cccph/cccph_draft_feb2021.pdf
    - https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/cccph.html
- Water Use Efficiency Implementation
  - RW variances and potable use credit Workshops
  - Potential variances for RW with >1,000 mg/l TDS
  - Accepting comments through 2/11/22
  - Proposed adoption in Spring 2022
- Submittal of RW volumetric report by 4/30/22

Federal Infrastructure Update

Infrastructure Investment and Jobs Act (IIJA)

- $1 billion for western water recycling
  - $550M over 5 years for Title XVI WIIN program
  - $450M Large-Scale Water Recycling and Reuse
- $48 billion for nationwide programs
- Reauthorizes Alternative Water Source Grants
- Establishes federal interagency water reuse group

Federal Update

- FY22 appropriations completed March 15, 2022

	IIJA	Appropriations	Total
Reclamation			
Water Recycling (Title XVI)	$245 M	$17.5 M	$262.5 M
Safety of Dams	$100 M	$182.5 M	$282.5 M
Lower CR DCP	$50 M	$52.2 M	$102.5 M
CALFED	0	$33 M	$33 M
EPA			
Drinking Water SRF	$1.9 B	$1.1 B	$3.0 B
Clean Water SRF	$1.9 B	$1.6 B	$3.5 B
WIFIA	0	$69.5 M	$69.5 M

- SCOTUS decision on WOTUS
- Build America/Buy America requirements

Questions?

If you have any questions, please contact:

Raymond Jay, Past President

WATEREUSE LOS ANGELES

c/o Metropolitan Water District of Southern California
700 N Alameda Street
Los Angeles, CA 90054
(213) 217-5777
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Regulatory Agency Updates

- State Water Board Division of Drinking Water
  - *Scott Miller*

- Los Angeles Regional Water Quality Control Board
  - *Steven Webb*

- Los Angeles County Department of Public Health

WATEREUSE LOS ANGELES

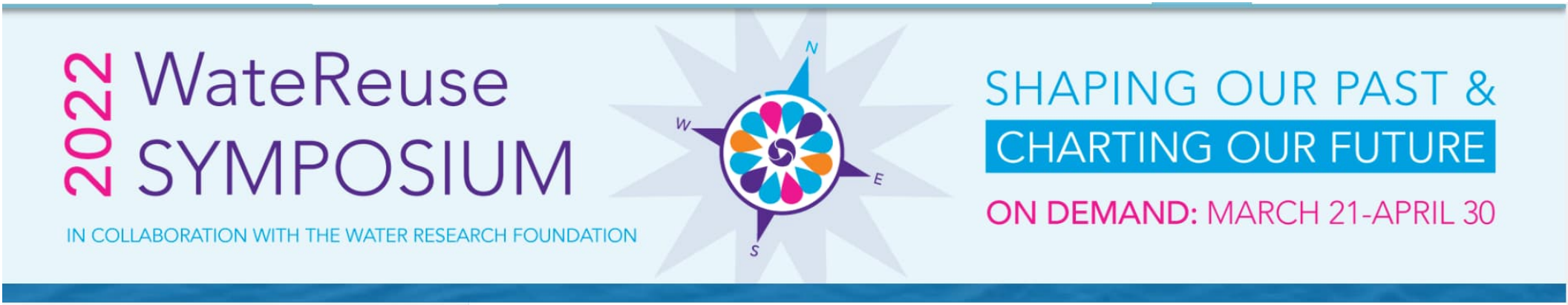
Chapter Trustee Updates
WateReuse LA Chapter – April 12, 2022

Last WateReuse CA Board of Trustees Meeting: February 4, 2022

Next WateReuse CA Board of Trustees Meeting: May 13, 2022

2022 - 37th WateReuse Symposium Recap

- Over 45 technical sessions across 6 tracks
- 6 Plenary Sessions
- LA Chapter representation in ~8 presentations
- Steve Clouse Water Recycling Center Tour



Chapter Trustee Updates
WateReuse LA Chapter – April 12, 2022

Recycled Water Funding Request

- Letter sent to California Governor, Senate Pro-Tempore, Assembly and Senate Budget Committee Chairs, Speaker of Assembly
- $750M for Water Recycling
- Language revision to decouple current and future budget from GW cleanup
- Requesting inclusion of “Large Project” funding category

Chapter Trustee Updates
WateReuse LA Chapter – April 12, 2022

WRCA Communications Collaborative Group

- April 21, 2022, 12pm -1:30pm
- Best Practices for Advanced Water Treatment Exhibits
- Update from Managing Director Jennifer West
- Tool Time: Tips for Using Canva

WateReuse Webcasts

- Alternate Approaches to Replace Ozone and BAC in CA DPR Projects (Recording)
- Direct Potable Reuse in the Four Corners (5/18/22; 11am-12pm PT)
- WateReuse.org > Engage > Webcasts

Chapter Trustee Updates
WateReuse LA Chapter – April 12, 2022

2022 - WateReuse California Annual Conference

- September 11-13, 2022
- San Francisco, California
- Hyatt Regency Embarcadero in San Francisco

2023 - 38th Annual WateReuse Symposium

- March 4-8, 2023
- Atlanta, Georgia
- Marriott Marquis in Atlanta

Save the Date!

Chapter Updates *(Judi Miller)*

- December Meeting Summary Approval
  - Voting by one rep from each member org
- Volunteer Opportunities
  - Communications Lead
- Emerging Professionals Committee Update
  - Chair: *Alex Waite*
    alex.waite@smgov.net
- Membership Committee
  - Chair: *Everett Ferguson*
    eferguson@wrd.org
- Technical Topics Committee
  - Chair: *Alex Franchi*
    alex.franchi@aecom.com

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Membership Roundtable *(Jared Lee)*

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Next Meetings

- Tuesday, June 14, 2022:
  - Location TBD
  - Possibly joint w/OC Chapter
  - Sponsorship opportunity
- Tuesday, August 9, 2022:
  - West Basin Municipal Water District (+ virtual)
  - Sponsorship opportunity

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