

Santa Monica's Sustainable Water Infrastructure Project and Future for DPR

WateReuse CA Los Angeles Chapter December 5, 2023

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City of Santa Monica – Water Resources Division





93,000+ residents **2,700+** commercial customers Drinking water and fire protection

groundwater (local) surface water (MWD)



Sewer collection and recycled water

9 million gallons

of high-quality drinking water daily

14 million gallons

of wastewater captured and delivered for treatment each day

1.5 million gallons

per day of advanced treated recycled water

4 water storage reservoirs

totaling 40 million gallons



Goals of the City's Sustainable Water Master Plan

- Diverse, sustainable, & drought resilient water supply to support a sustainable community
- Reduction of energy footprint to support carbon reduction goals for the City
- Long term cost benefits for rate payers



Closing the Loop on the One-Water Cycle



Sustainable Water Infrastructure Project (SWIP)







Santa Monica Urban Runoff Recycling Facility







SWIP Advanced Water Treatment Facility (AWTF)



| Process | Virus | Cryptosporidium | Giardia |
|-------------------------------|-------|-----------------|---------|
| MBR | 1.0 | 2.5 | 2.5 |
| Cartridge Filters | - | 2.0 | 2.5 |
| RO | 1.5 | 1.5 | 1.5 |
| UV-AOP | 6.0 | 6.0 | 6.0 |
| Chlorine | 5.0 | - | - |
| Total | 13.5 | 12.0 | 12.5 |
| Required for Title 22 GRRP | 12.0 | 10.0 | 10.0 |







First underground AWTF in CA!

Santa Monica Urban Runoff Recycling Facility (SMURRF)

UF









- Originally constructed in 2000 as stormwater BMP
- Provides pollution control for MS4 and EWMP compliance
- Produces up to 500 AFY of Title 22 diluent water pending WDR/WRR permit amendment for GRRP





Drinking Water Treatment: Olympic AWTF and Arcadia WTP

Olympic Advanced Water Treatment Facility:

- Wellhead treatment for contaminated Olympic Wellfield
- UV/H2O2 AOP designed for >2.4 log removal of 1,4-dioxane
- Provides multi-barrier treatment to comply with DDW 97-005 requirements

Arcadia Water Treatment Plant:

- Groundwater softening facility
- Retrofitting existing RO skids to Flow Reversal RO to achieve >90% recovery



Drivers towards considering DPR

- Limited groundwater injection capacity
- Limited space for new injection wells
- Potential loss of injected water
- Increased energy demand for IPR
- Limited new infrastructure required
- Regulatory pathway developing



Draft Pathogen Control Requirements for DPR in CA

| Pathogen | Requirement to meet Annual Risk | Additional Safety Factor | Total |
|-----------------|------------------------------------|-----------------------------|-------|
| | | | |
| Virus | 16 | 4 | 20 |
| Giardia | 10 | 4 | 14 |
| Cryptosporidium | 11 | 4 | 15 |

Draft DPR Treatment Requirements

4 processes at least 1 log for each pathogen with 3 different removal mechanisms:

- 1. Membrane physical separation
- 2. Chemical inactivation
- 3. UV inactivation



Draft DPR Treatment Requirements

3 named, required unit processes



What this means to City of Santa Monica



Proposed DPR Treatment Scheme



Title 22 Advanced Treated Recycled Water Pipeline Title 22 Diluent Water Pipeline

Proposed DPR Treatment Scheme











Example potential modification

Minimum LRV Credit: Virus/Giardia/Cryptosporidium

Enhanced Source Control Program (ESCP) for DPR – Minimum requirements for the wastewater entity providing the source water

In compliance with...

 wastewater management agency's waste discharge requirements

Has legal authority...

• to implement an industrial pretreatment and pollutant source control program

Administers a source control program that...

- Identifies and limits contaminants in wastewater
- Assesses fate of chemicals in WW prior to treatment
- Investigates chemicals detected in monitoring
- Maintains an inventory of chemicals
- Operates an outreach
 program
- Is audited every 5 years

DiPRRA: Early warning program, source control committee

Staffing and Operator Certification Constraints



¹ Required if pathogen or chemical control provided at the facility

² Required if pathogen and/or chemical control provided at the facility

Contact Info:

Start - Car

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THANK YOU...







Woodard & Curran Company Overview and LA Water Plan

Watereuse LA Chapter Meeting City of Santa Monica Institute Meeting Room December 5, 2023

Company Overview







WATER

Woodard [&] Curran

Recycled Water

Key Themes

- Climate change resiliency
- Water supply from reuse
- Stringent discharge limitations
- State and federal funding for reuse projects

Key Services

- Customer Conversions
- Program Implementation
- Hydraulic Modeling
- Feasibility & Master Planning
- Advanced Water Treatment Alternative Analysis
- Permitting & Regulatory



Los Angeles County Water Plan Vision



The CWP articulates a shared, inclusive, regional path forward to sustainably achieve safe, clean, and reliable water resources for Los Angeles County.

Planning Purpose





Regional Collaboration



Woodard & Curran

Complementary Efforts

CWP is intended to build from and complement other initiatives and efforts

> Including regional and local recycled Water Programs

SAFE CLEAN WATER

- Providing regional leadership on environmental water quality
- Partner on CWP stormwater and recharge related strategies and actions

CurCounty

- Established regional resilience goals from community input to inform CWP
- Water related targets supported by CWP strategies and actions

INFRASTRUCTURELA

- Providing regional leadership on infrastructure resilience
- Partner on CWP infrastructure related strategies and actions
- Leading regional collaboration to bring resources to the region, including funding.

LA COUNTY WATER PLAN The CWP complements and builds upon

other local and regional planning efforts.

LOCAL & REGIONAL WATER RESOURCES PLANS

- Identified regional needs supported by CWP strategies and actions
- Implementing direct projects and programs needed to meet CWP targets

INTEGRATED REGIONAL WATER MANAGEMENT PROGRAMS

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- Providing regional funding for water resilience initiatives and forums for stakeholder engagement
- Implementing regional projects and programs needed to meet CWP targets

A focus on areas that could benefit from regional collaboration in addition to existing efforts



REGIONAL WATER SUPPLY RELIABILITY

Improving regional water supply reliability by better leveraging our collective local and imported water resources and infrastructure.



GROUNDWATER MANAGEMENT AND QUALITY

Realizing our shared groundwater management opportunities by sharing expertise and resources to overcome challenges.



SMALL, AT-RISK SYSTEM RESILIENCE AND DRINKING WATER EQUITY

Ensuring a consistently high standard of water service for everyone in Los Angeles County by providing regional support for small systems, with focused attention to under-resourced communities.



WATERSHED SEDIMENT MANAGEMENT

Mitigating the impacts of wildfire on our water supplies through coordinated efforts between land and water managers.



CWP Elements



STRATEGY 3

Coupling local supply development with regional conveyance

Partnerships between agencies on local supply development and regional conveyance can increase the overall volume of local supply that can be used countywide, increase overall cost-effectiveness, and increase the potential for outside funding. Viewing and using existing water infrastructure networks in Los Angeles County as interconnected systems can provide opportunities, where appropriate, to better connect sources of supply to demands and/or storage. Examples of these types of efforts include regional recycled water programs and the Safe, Clean Water Program. This will improve regional reliability while also ensuring sustainable groundwater levels for communities that rely on local groundwater resources.

Actions to support this strategy

- Explore options to improve feasibility of beneficial reuse of recycled water within the Antelope Valley and Upper Santa Clara River areas of Los Angeles County.
- 3.2 Encourage the use of Los Angeles County Flood Control District facilities to convey water supplies across Los Angeles County while mitigating known issues.

3.3 Promote use of smart technology (e.g., advanced metering infrastructure) to assess capacity and ability of wastewater systems to accept stormwater diversion flows in existing and planned infrastructure and to provide real-time controls and monitoring to more effectively conserve stormwater. Promote use of both regional local supply development and distributed local supply development (e.g., cisterns, graywater systems in unsewered areas) and stormwater capture.

WATER PLAN Target Link

Connecting local supplies to local needs can provide alternative water supplies in alignment with the CWP target to maximize ability to meet health and safety needs following an emergency by confirming 100% of small water systems have access to alternative sources of supply.





Los Angeles County has vast water infrastructure networks of conveyance and distribution systems, storage, and supply sources. Better connecting these networks can improve regional reliability.

The total amount of untapped local water supply potential in Los Angeles County is significant and could greatly reduce our dependence on imported water. Without economies of scale, stormwater and recycled water supply projects are often cost-prohibitive for individual water agencies to implement locally. While there has been great progress on advancing regional recycled water program concepts, there are further opportunities for collaboration on supporting local supply development for the benefit of the entire region through partnerships on regional conveyance and using existing infrastructure. Local supply development also offers opportunities for local projects that use our local workforce.

Questions

If you have any questions or would like more information, please visit our website and subscribe to our mailing list for more updates, or contact:

https://lacountywaterplan.org

LACountyWaterPlan@pw.lacounty.gov

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Questions?

Chapter Trustee Updates WATEREUSE LA Chapter – December 5, 2023

Last WRCA Board Meeting: November 5, 2023

Finance Report

2023 Finances to Date

- Revenues came in higher than budgeted and expenditures
- Reserves rolled over into T-Bills

Motion to Approve 2024 Budget Adopted





Chapter Trustee Updates WATEREUSE LA Chapter – December 5, 2023

Last WRCA Board Meeting: November 5, 2023

WateReuse California 2023 Conference Update

689 Registrations

- Conference sold out at capacity
- Biggest year in sponsorships,
 \$253k (goal was \$200k)

Sold Out Golf Tournament

• Raised \$15k for scholarships

Informational Items

Recycled Water Funding Opportunities, November







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Chapter Trustee Updates WATEREUSE LA Chapter – December 5, 2023

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WRA Executive Director's Report

Membership

• Net 40, California net 5 members

National Symposium – Denver

- Upcoming year, focus on Colorado River
 GM Panel on RW implications for
 Colorado River
- Regulator Summit States can learn from each other







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Reimaging Water Together

- Update from March 10-13, 2024 to March 11-14, 2024
- Early bird registration ends 12/13/2023



IN COLLABORATION WITH THE WATER RESEARCH FOUNDATION

REMOVING BARRIERS, ELEVATING OPPORTUNITIES



LA Chapter Updates

➤Communications

OChair: Oliver Slosser

oslosser@lvmwd.com

 Next Fall-Winter Newsletter coming in February 2024.

Rising Professionals Committee OChair: Seto Cherchian Scherchian@BrwnCald.com Meeting Summary - August 2023 • Thank you Karina Gonzalez, LA Sanitation & Environment

Volunteer Opportunity OLeg/Reg Updates





Rising Professionals: Weymouth WTP Tour



Rising Professionals: Weymouth WTP Tour