

Thank you to our Patrons



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



Leadership and Excellence in Environmental Engineering and Science

Planning and Execution of the Los Angeles Groundwater Replenishment Project

Water Resources Division

Recycled Water Planning, Policy, & Management Group

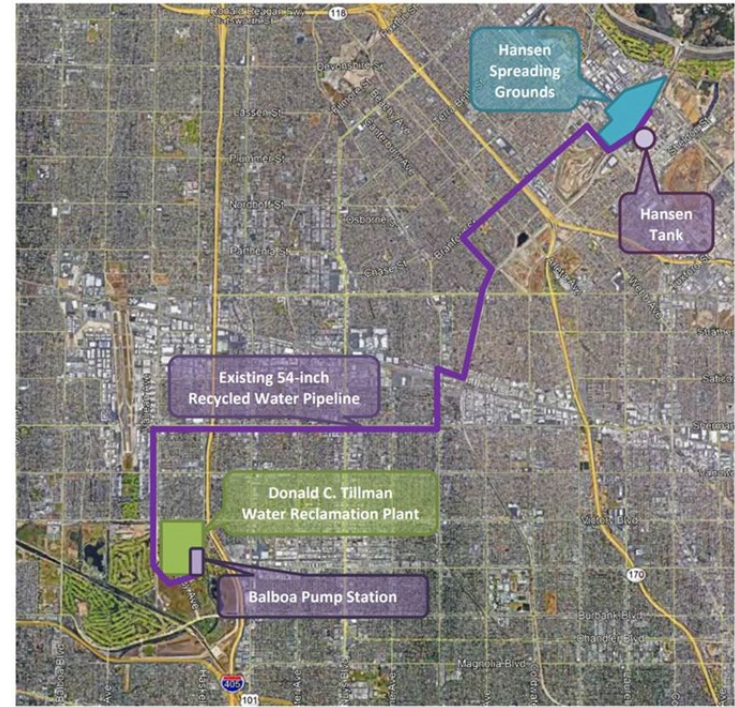


November 8th, 2023

Project Overview

Project Cornerstones

- Treatment of tertiary effluent from Donald C. Tillman (DCT) in an Advanced Water Purification Facility (AWPF)
- Conveyance to Hansen Spreading Grounds via Existing Pump Station and Pipeline
- Surface spreading at Hansen Spreading Grounds
 - **21,000 AFY**, a 24% increase over existing groundwater rights
 - **Will supply water to 250,00 Angelenos**

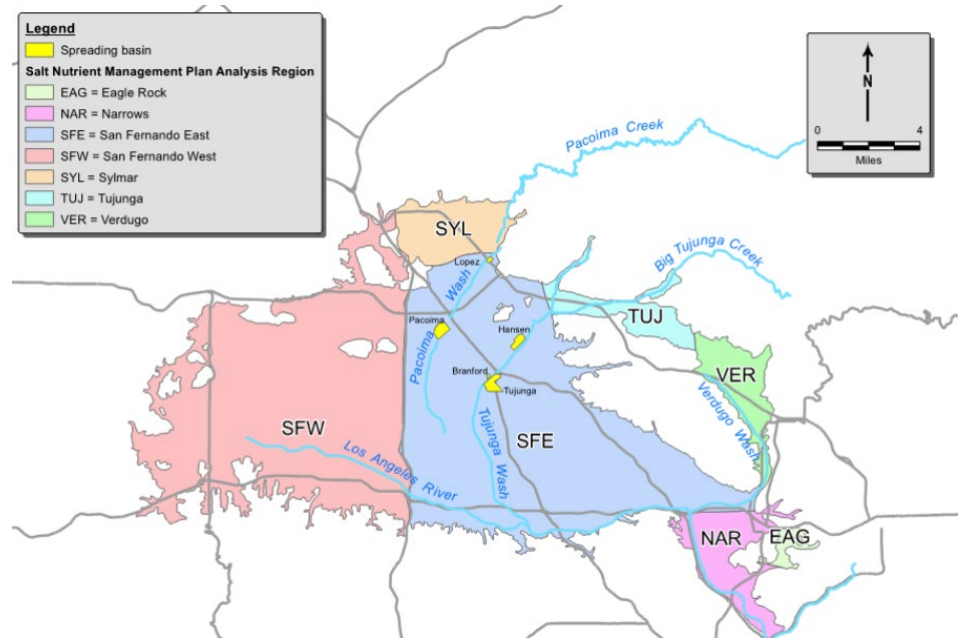


Satellite view of Eastern San Fernando Valley

GWR: Groundwater Replenishment

San Fernando Groundwater Basin

- Principal groundwater resource for the City of Los Angeles
- Up to 23% of total water supply during dry periods
- Replenishment increases resilience of local water supply



Project History

“East Valley Water Recycling Project”



‘TOILET TO TAP’ CRITICS ARE RAISING A STINK

Bill VoriWagner, manager of the East Valley Reclamation Project, holds water from a sampling tap at the Donald C. Tillman plant in Van Nuys. Below, he looks at water in the second step of treatment, during which bacteria eats organic matter in the water.

Would L.A.'s glass be half-empty or half-full, and of what?

By Shanti Morgan
CALIF. NEWS SERVICE

Roy Hefner isn't bothered by the possibility of one day filling his glass with water that once ran through the city's sewer system.

The 72-year-old Westchester resident figures that all water has been recycled in some fashion. So, Hefner says, the Los Angeles city Department of Water and Power's proposed "toilet to tap" project would only serve as another way to conserve water for future use.

"There is nothing better than mountain spring water, but that is just not a reality today," Hefner said. "In this day and age, with diminishing water supplies, we have to do something to conserve water."

But Gerald Silver, president of the Encino Homeowners Association, said he's not sure the proposal is so great.

"The science of all this is questionable," said Silver. "It's one thing to use reclaimed water to water flowers,

WATER/15

SAFE WATER!

TILLMAN — A LAST

...en working on a water-recycling
... (East Valley Water Reclamation

The community has a fundamental leg
drinking, cooking and bathing. The integrity
and cannot be challenged by:

THE VALLEY
O'CONNOR

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Act that screens developer
R issued by the DWP for

**“Not
agents of
chemicals
the aquifer
deny this.”**

PATRICK O'CONNOR / L.A. DAILY NEWS



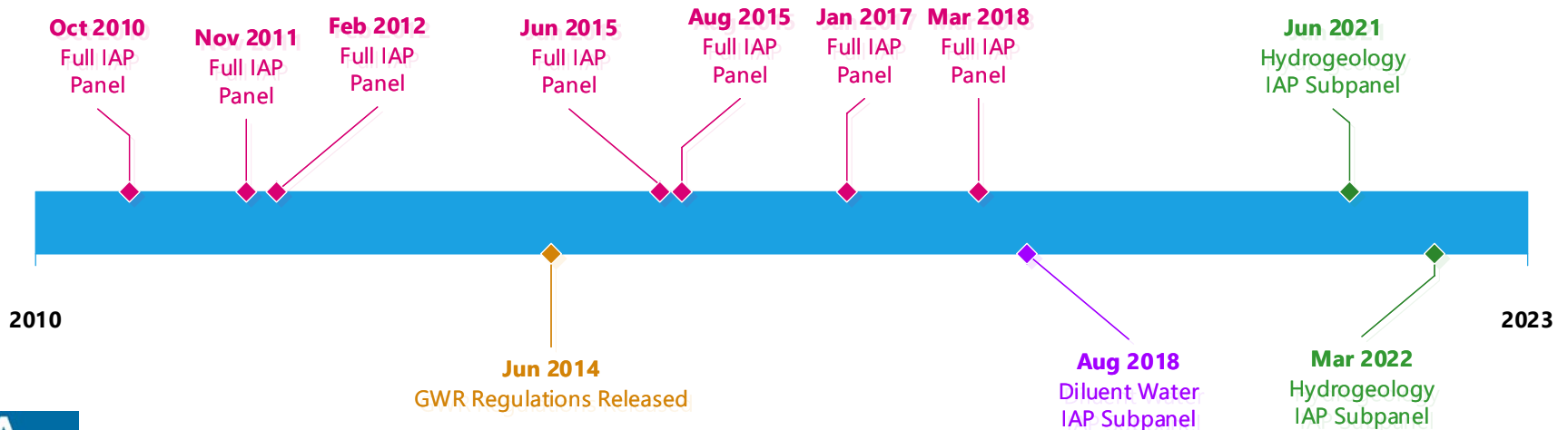
A Decade of Studies and Outreach

- 2010: Phase 1 Pilot
- 2011: GWR Master Plan
- 2016: Phase 2 Pilot
- 2017: Soil Aquifer Treatment Study
- 2021: Conceptual Design Report



A Decade of Studies and Outreach

Several meetings with full Independent Advisory Panel (IAP) and subpanels for feedback on project treatment studies and input on regulations.

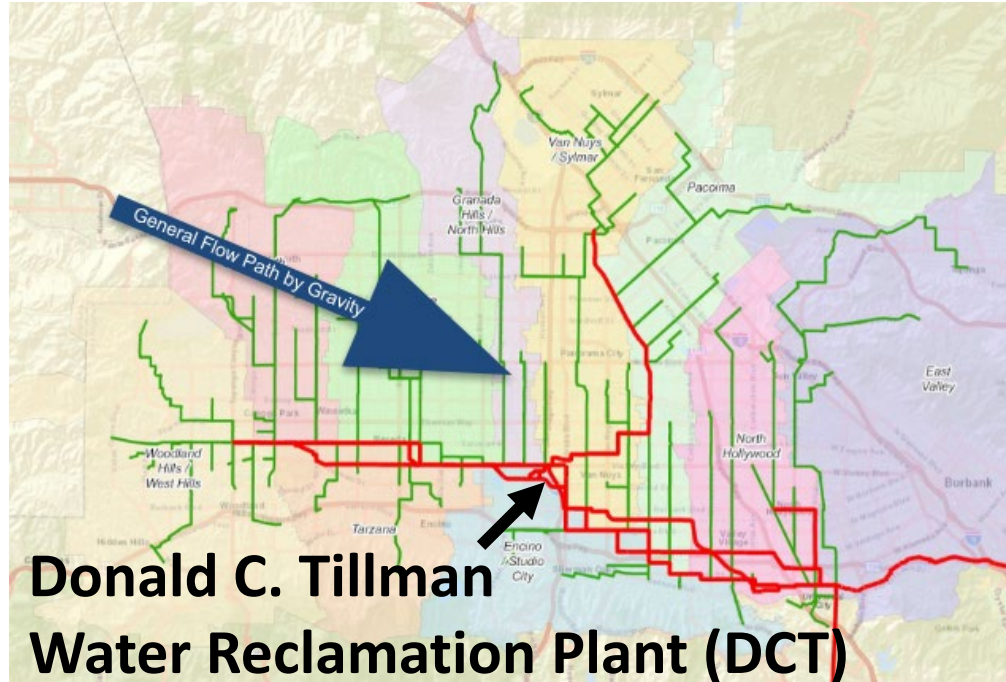


Current Project Team

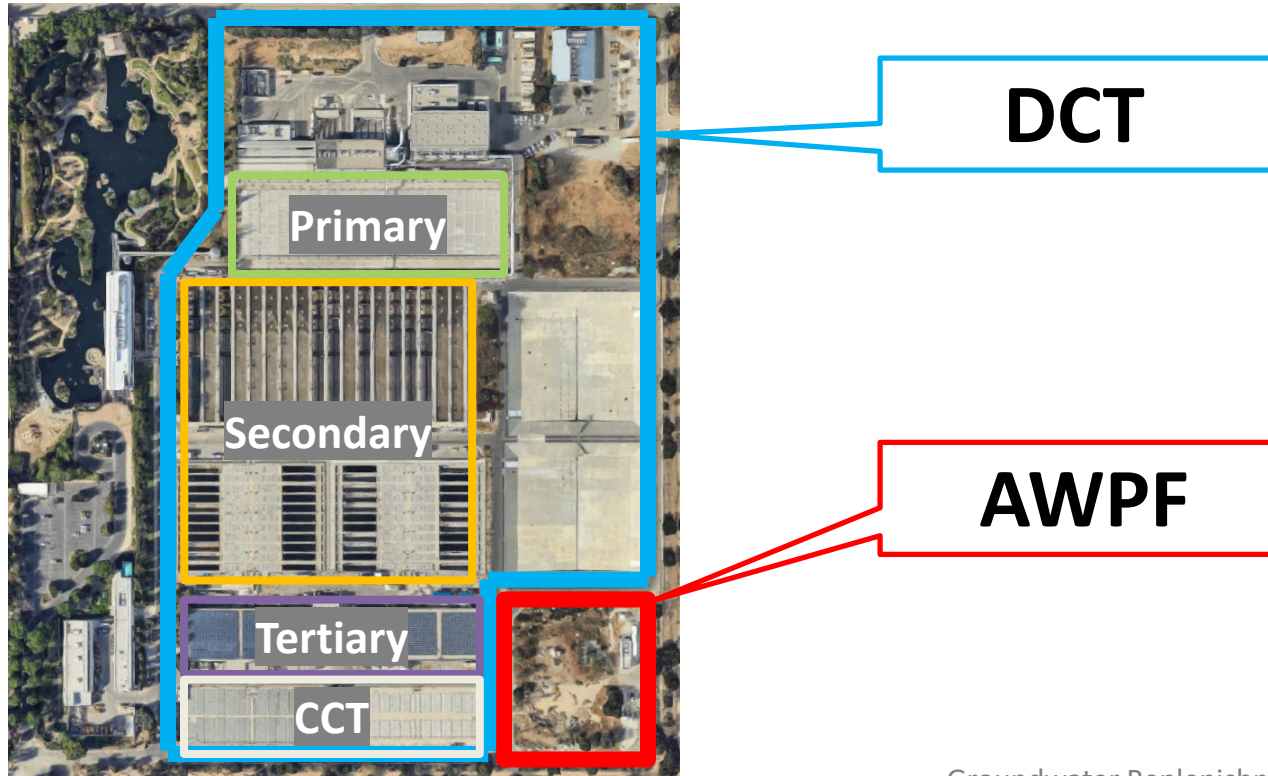


DCT Improvements

San Fernando Valley Sewershed



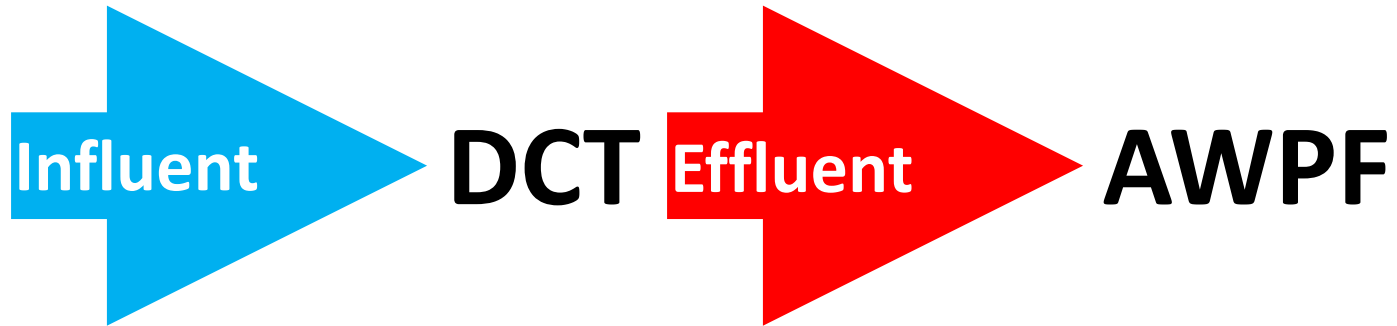
Siting for Context



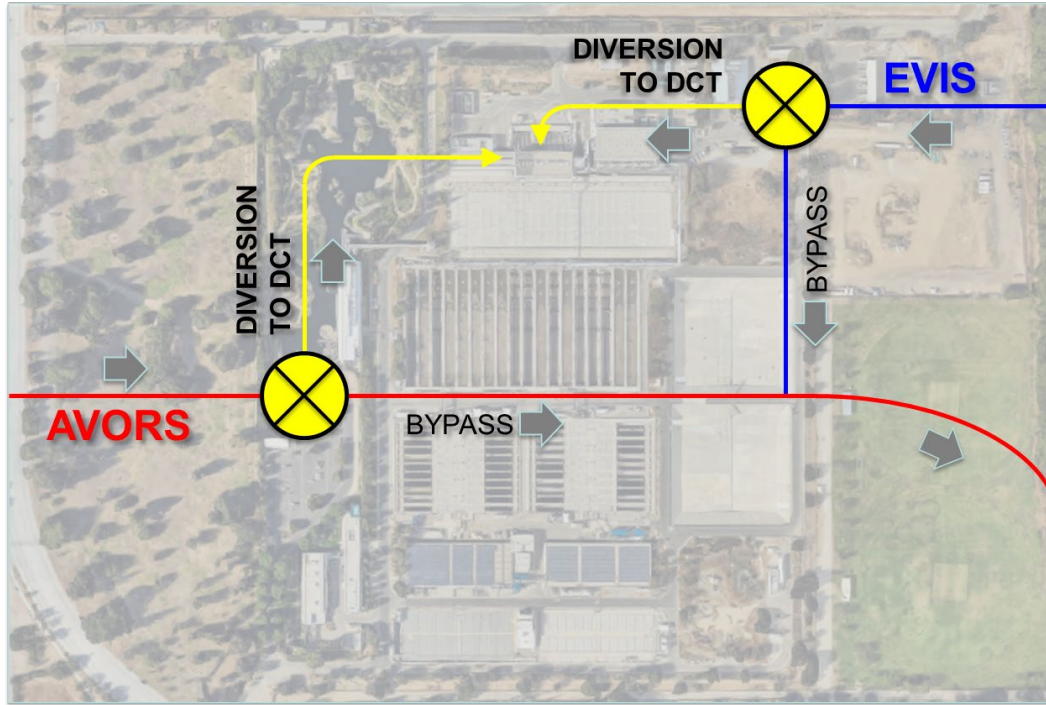
Flow Increase



Flow Increase

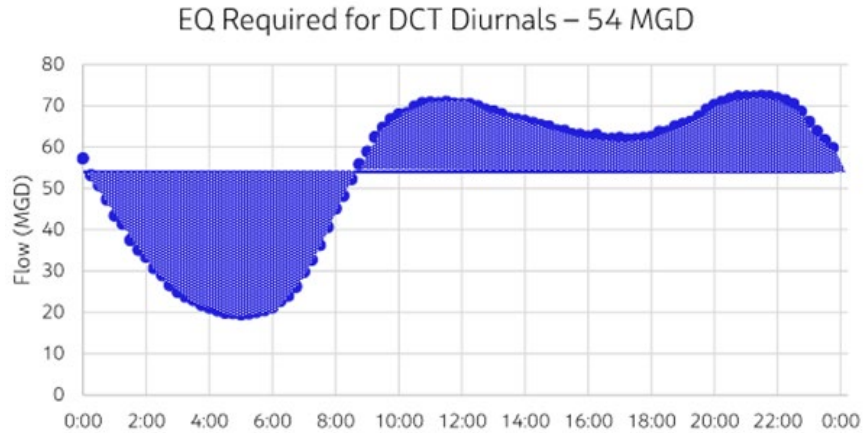


Flow Increase: Diversions

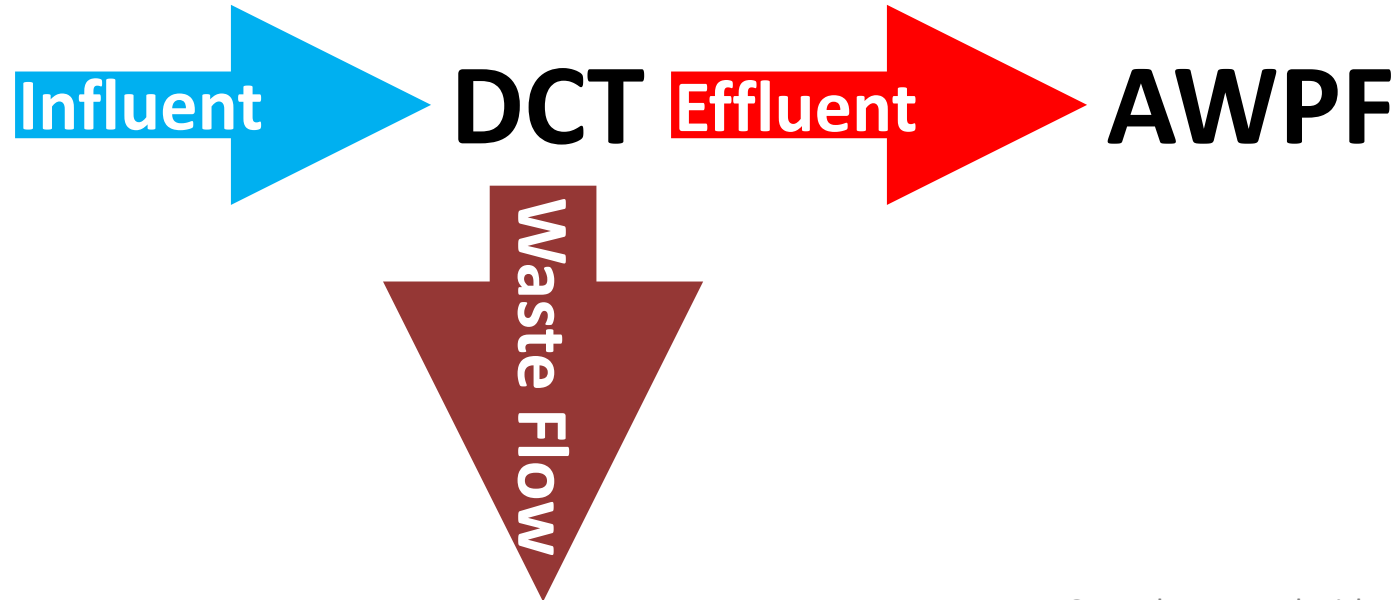


- **+5 MGD of flow!**
- **~2x of Valley RW delivered in 2022**

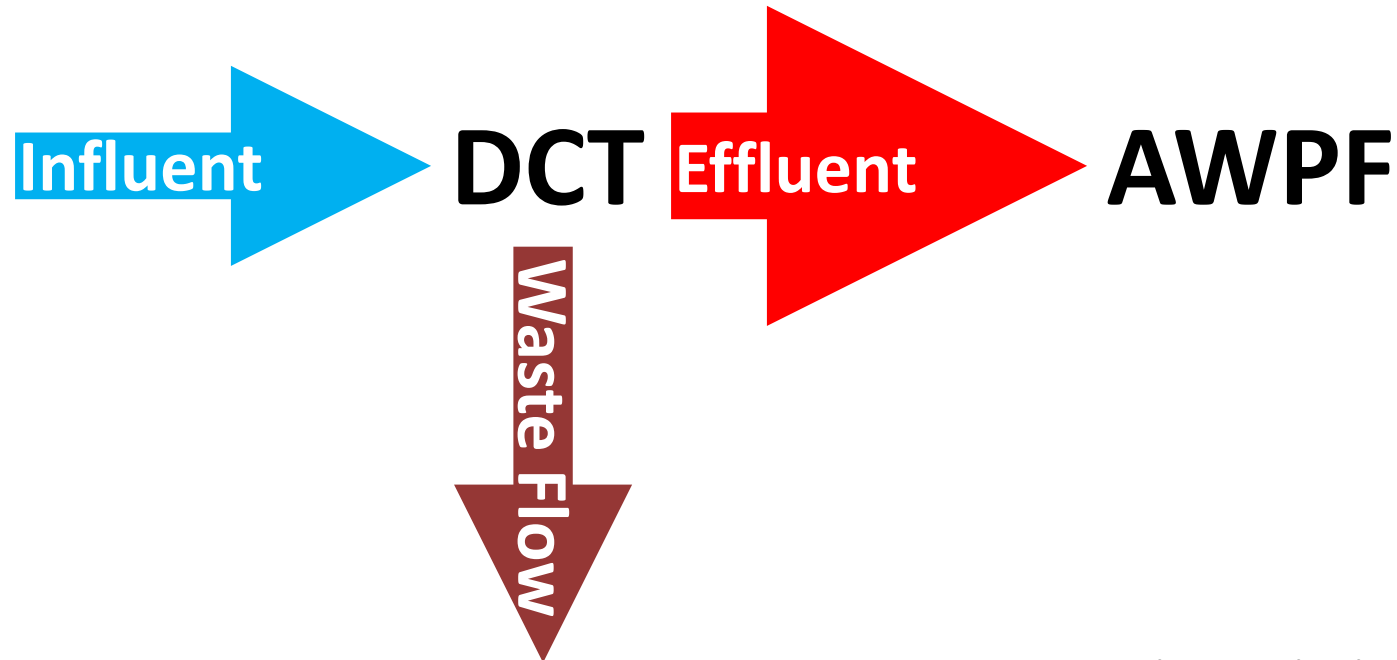
New Equalization: 8 MG



Internal Optimization



Internal Optimization



Flow Increase: Internal Optimization



- Worked alongside LASAN & Jacobs engineers at DCT
- Optimized secondary scum removal
- Estimated 1 MGD of water saved
- Effort saves City of Los Angeles \$1 million per year

AWPF

Siting for Context



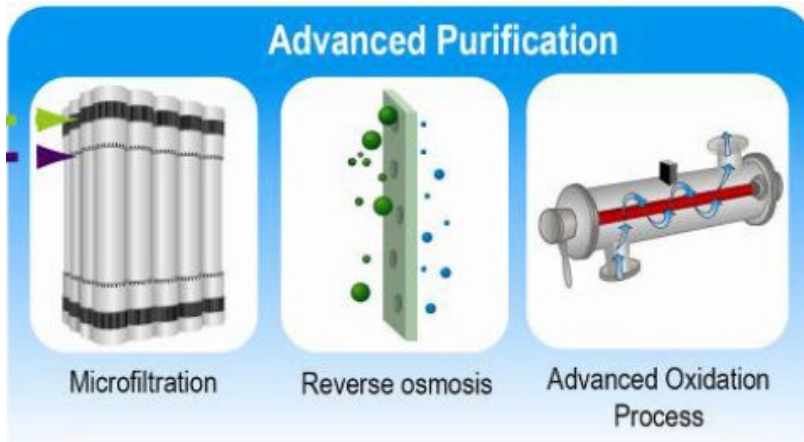
DCT

AWPF

AWPF Building

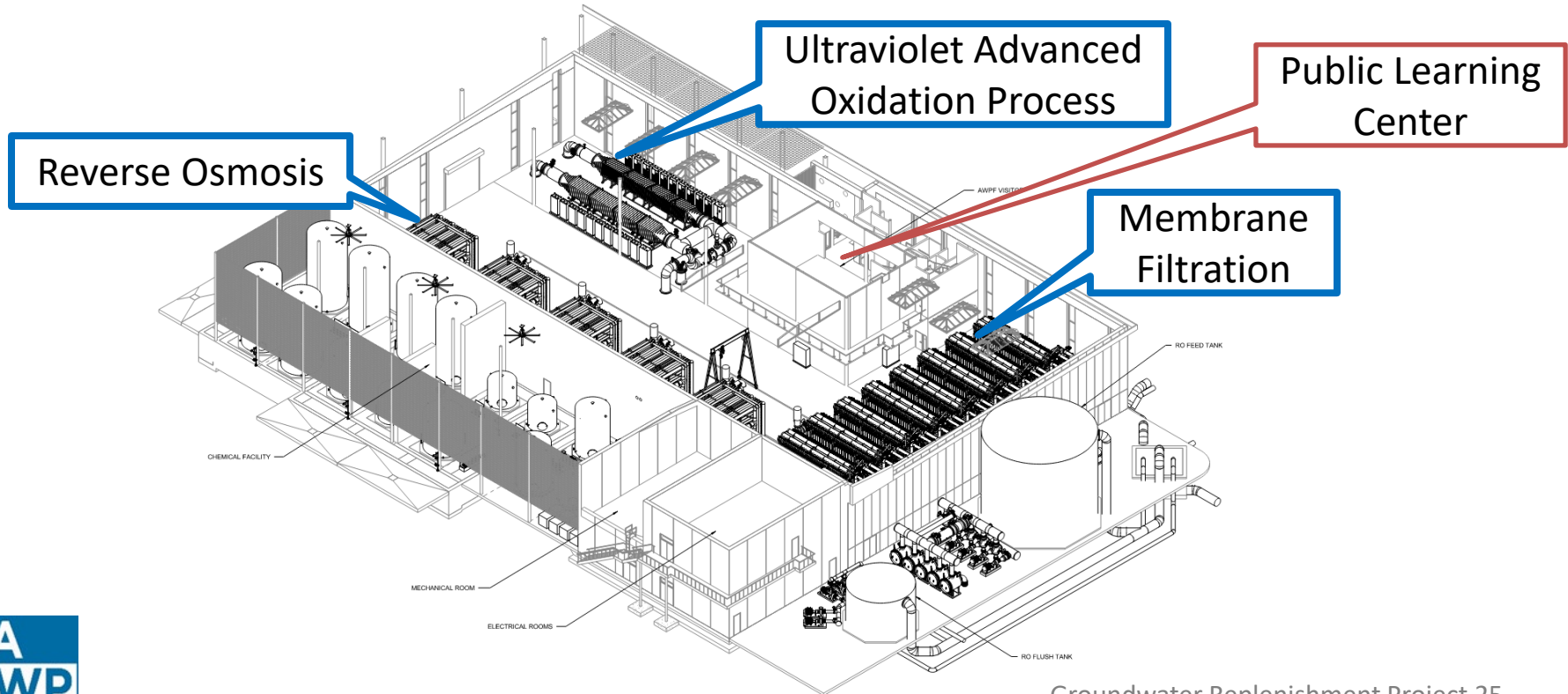


Full Advanced Treatment



- Microfiltration
 - Filters TSS, organics, pathogens
 - Prevents fouling of RO
- Reverse Osmosis
 - Removes TDS
 - PFAS
- Ultraviolet Advanced Oxidation
 - Oxidant + UV = OH⁻ (radicals!)
 - Inactivation of pathogens
 - Destruction of CECs

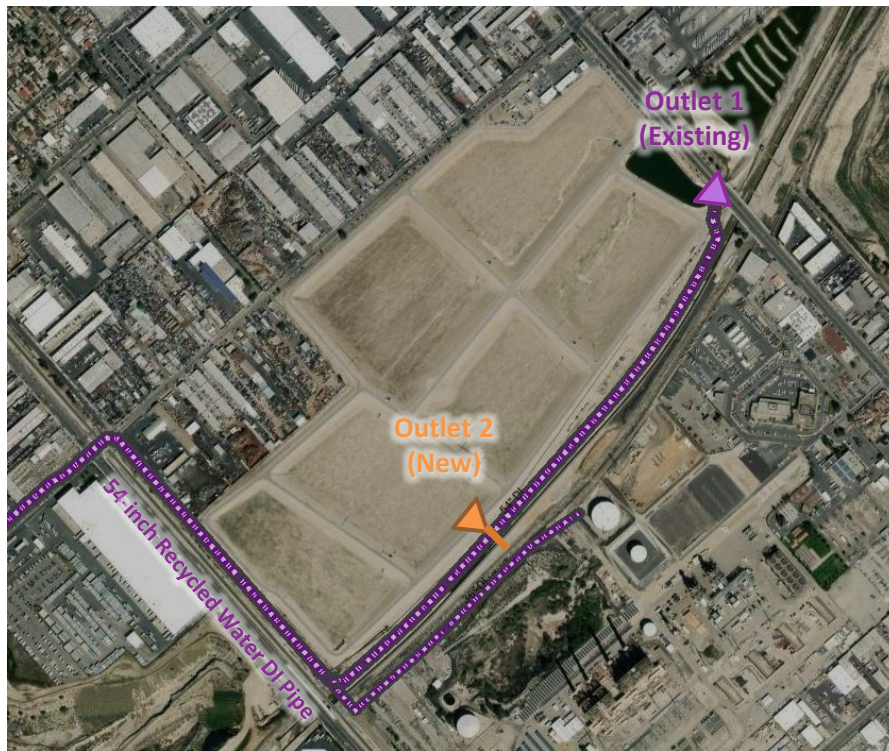
Full Advanced Treatment: MF/RO/UVAOP



Hansen Spreading Grounds

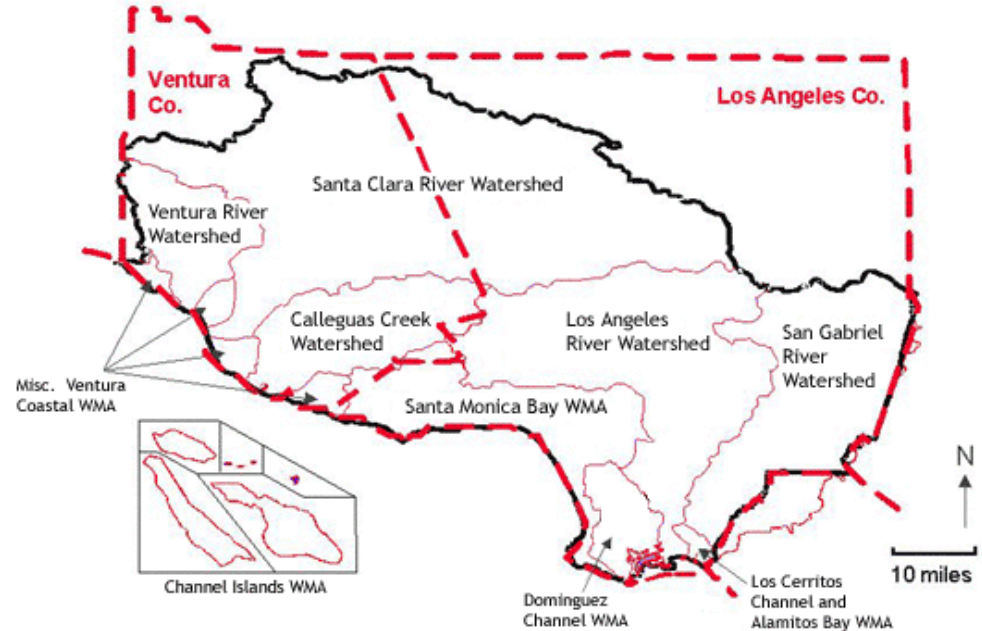
Hansen Spreading Grounds Improvements

- HSG owned and operated by County Public Works
- Objectives
 - Operational flexibility
 - Flow monitoring and control
- Project Components
 - Connect and refurbish existing outlet
 - New outlet (Outlet 2)
 - New flow meter and flow control valve

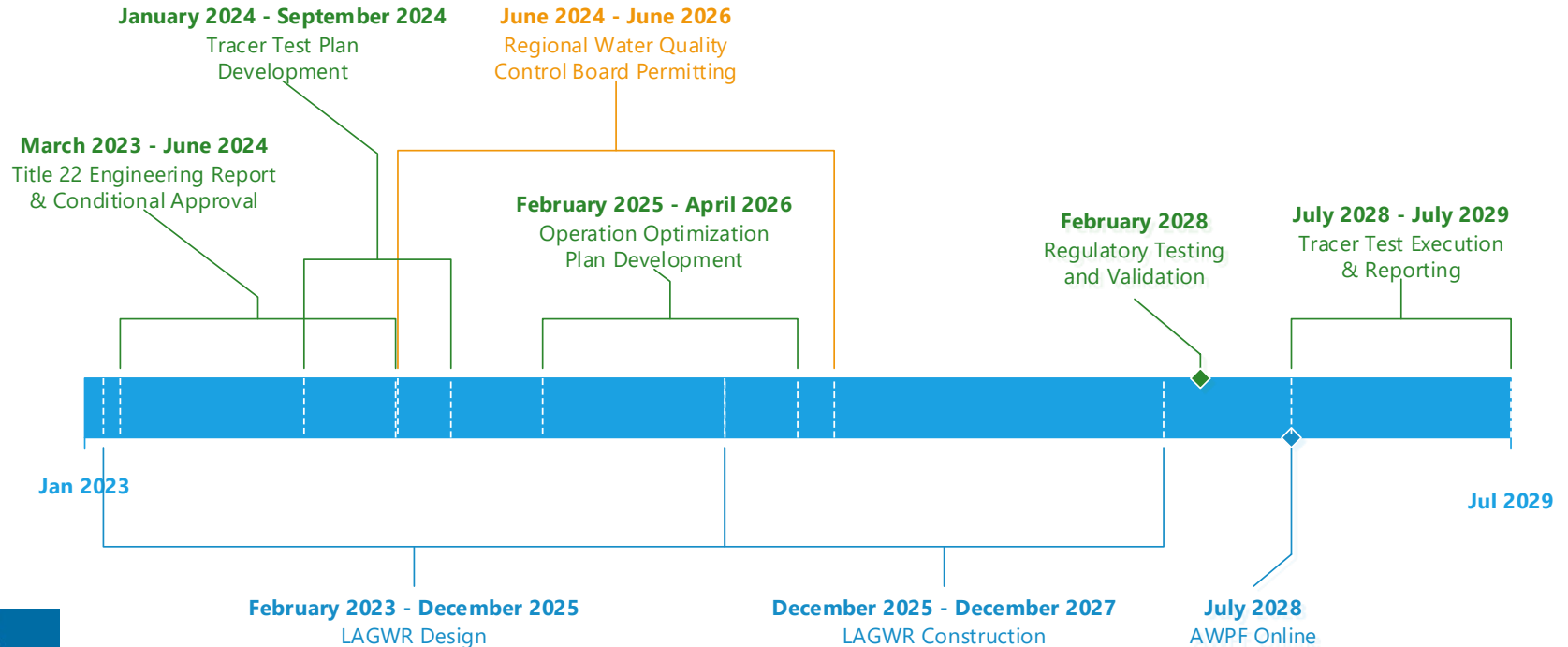


Regulatory Approval Pathway

DDW and the LA Regional Board

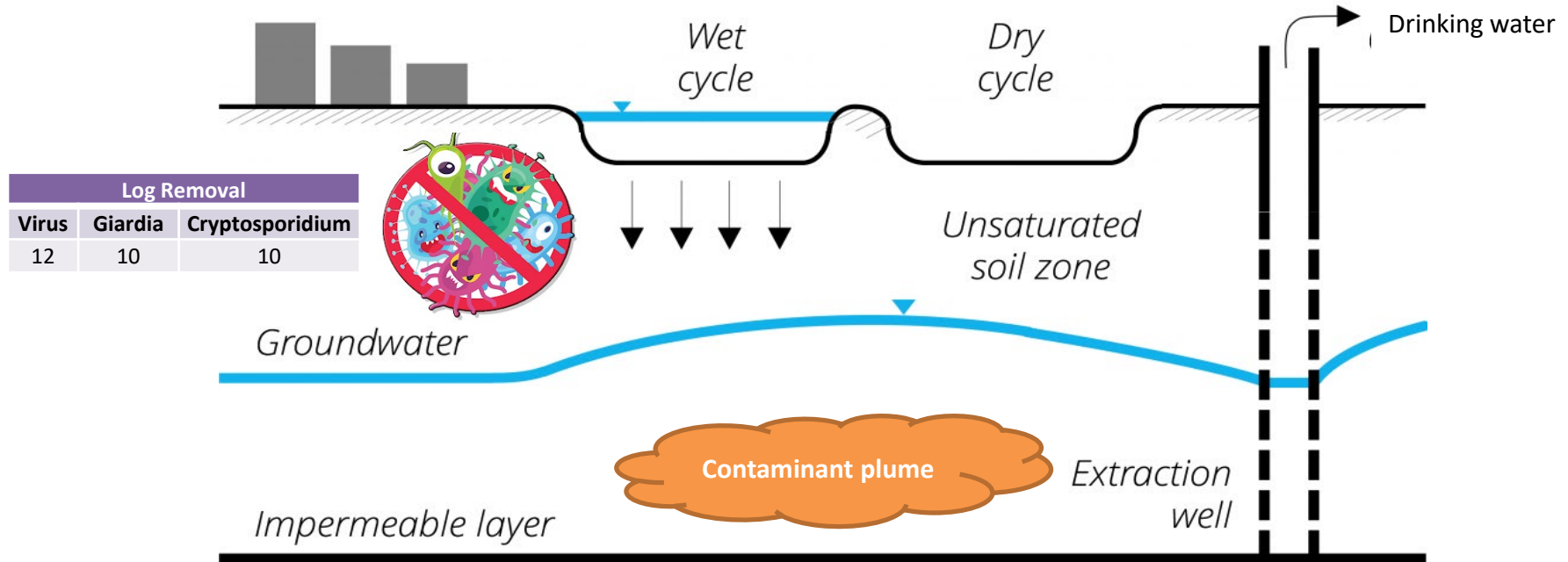


Title 22 Recycled Water Permitting



Groundwater Basin Modelling

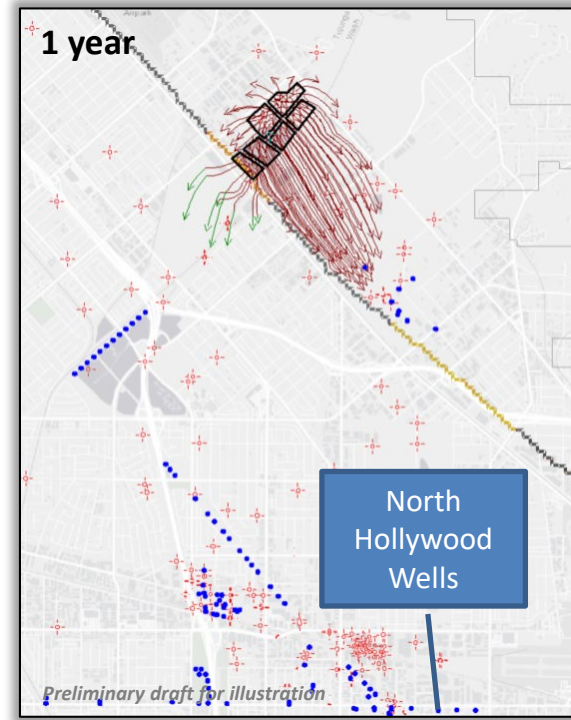
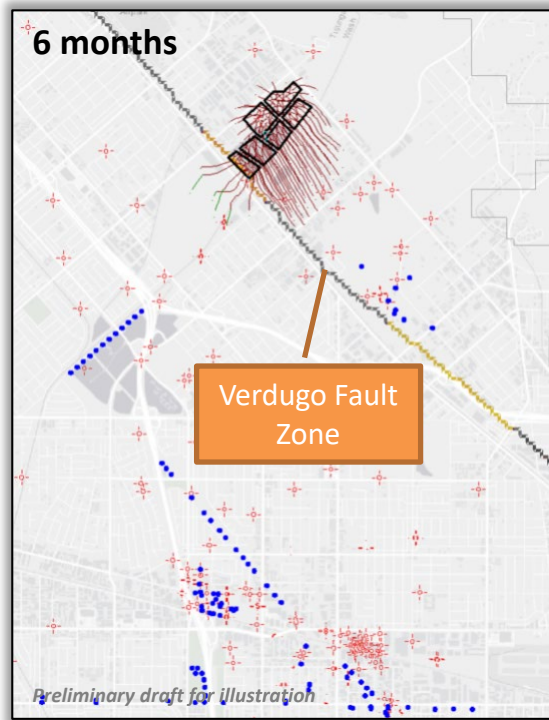
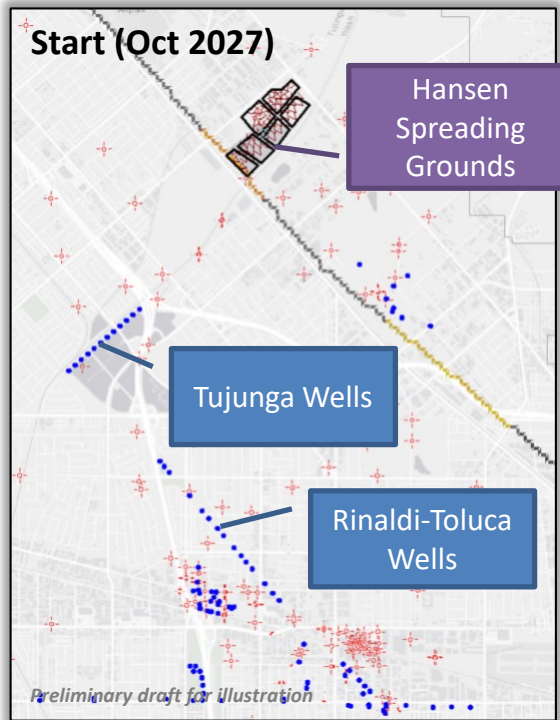
Regulatory Requirements



Model retention time for pathogen removal/inactivation and minimum retention time.
 Determine impacts to ongoing remediation efforts in San Fernando Basin.

Subsurface Retention Time (1)

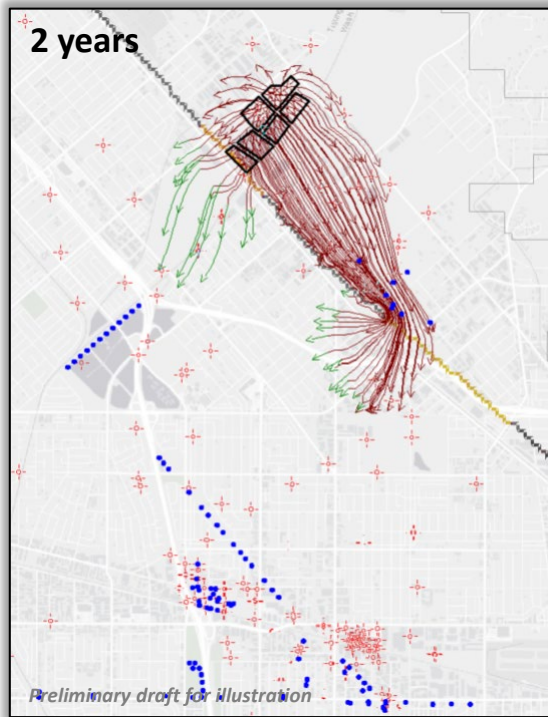
Particle Tracks By Model Layer



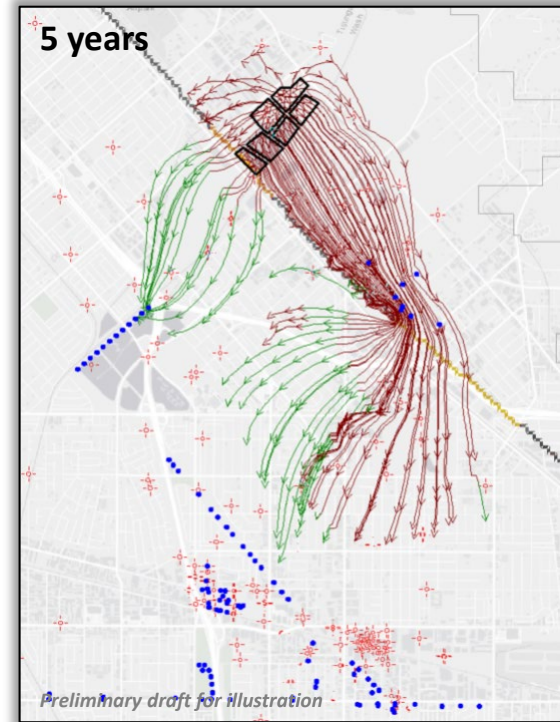
Subsurface Retention Time (2)

Particle
Tracks By
Model
Layer

- 1
- 2
- 3
- 4




28-month estimated arrival time

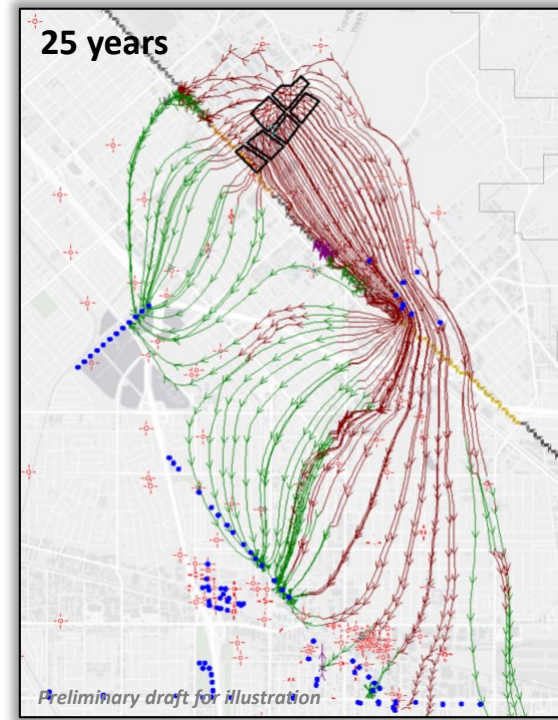
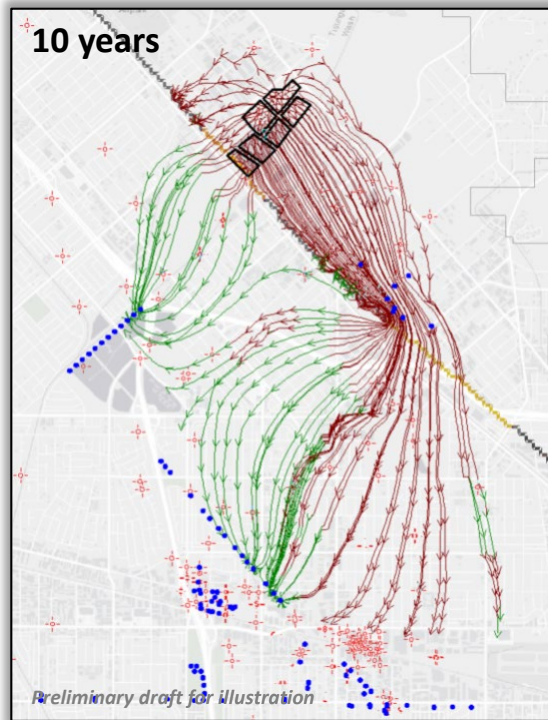


Groundwater Replenishment Project 34

Subsurface Retention Time (3)

Particle
Tracks By
Model
Layer

-  1
-  2
-  3
-  4



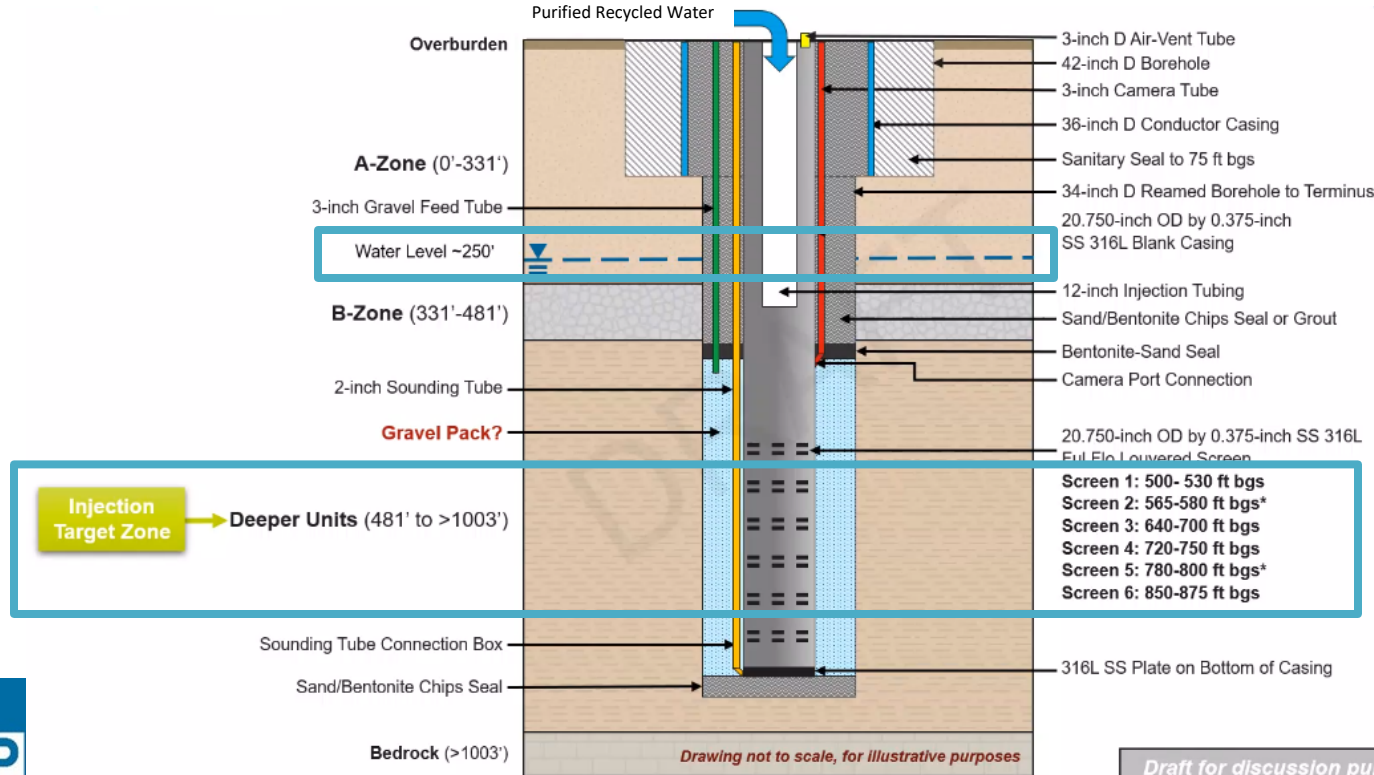
Injection Wells

What to do with all the water!?



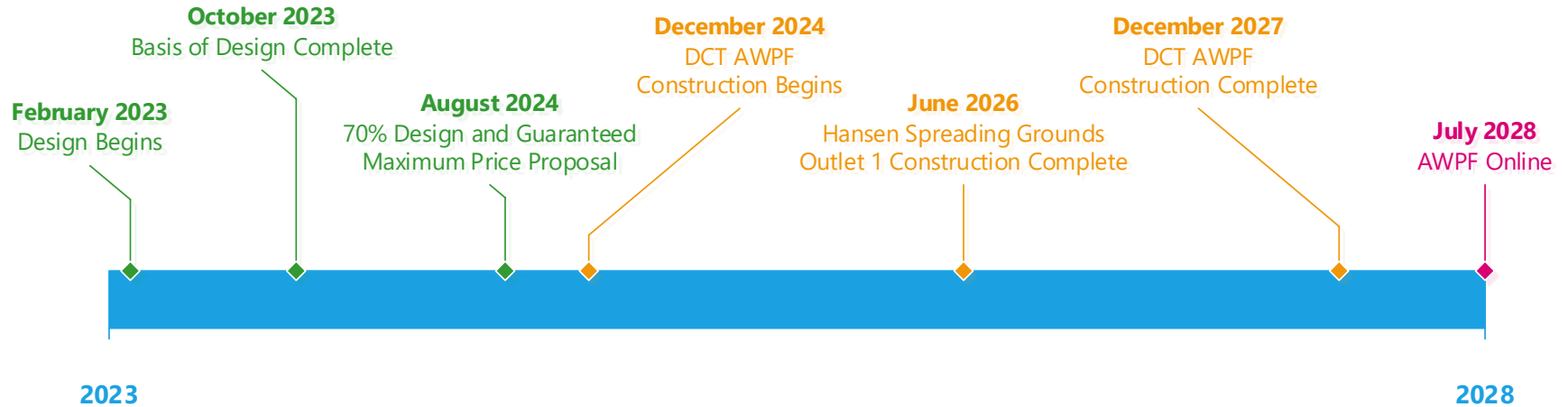
Hansen Spreading Grounds

What to do with all the water!?



Schedule & Budget

Schedule & Budget



Project Capital Cost:
\$707,000,000



Setting the Stage



Thank you!

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