

Public Utilities Department

Proposition 50 – Project 6

6A – Recycled Water Distribution System Expansion

6B – Parklands Retrofit

6C – IPR/RA Demonstration Project and Extended Testing

IRWM Regional Advisory Committee  
December 7, 2016



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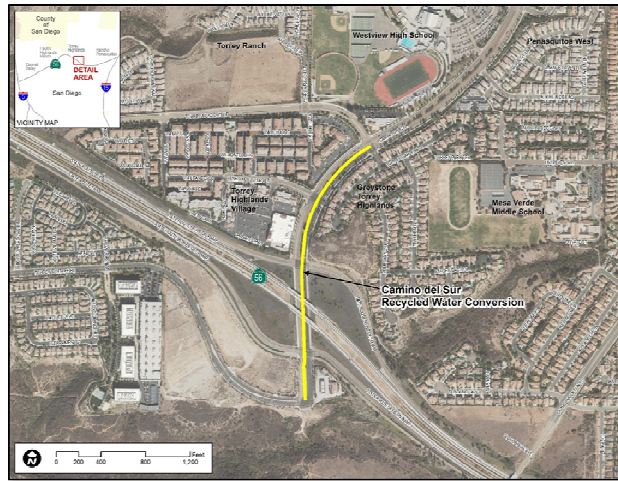
**Project 6A**  
**Recycled Water Distribution**  
**System Expansion**





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## Camino del Sur Recycled Water Conversion Project



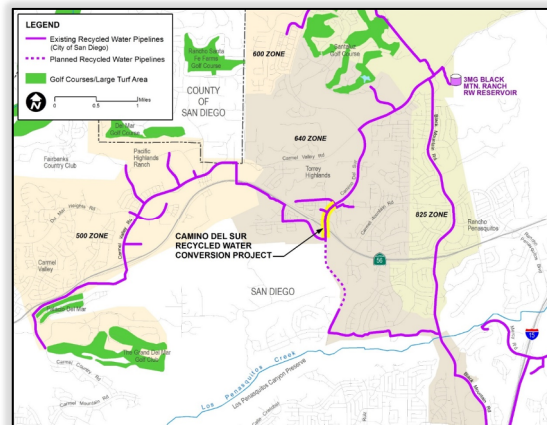
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## Background

- Located on Camino Del Sur (between Torrey Meadows Drive and Torrey Santa Fe Road)
- Project Completed in 2013
- Connected 80 new sites
- Estimated of 1100 AFY Recycled Water in Northern Service Area



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## Service Areas

### Project 6A provided recycled water to:

- Schools
- Retail sites
- HOAs
- Commercial sites
- Parks
- Street medians
- Caltrans
- Golf courses

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## Schools



Westview High School



Canyon Crest Academy



Solana Ranch Elementary



Pacific Trails Middle School

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## Retail Sites



The Village of Pacific Highlands Ranch



Torrey Highlands Plaza

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## Parks and Medians



Solana Ranch Park



Pacific Highlands Ranch Parkway

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## Home Owners Association



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## Commercial Site



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## Caltrans (State Route 56)



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## Golf Courses



Palacio Del Mar Golf Course



Grand Del Mar Golf Course



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## Project 6B Parklands Retrofit



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## Westview Neighborhood Park Recycled Water Retrofit



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## Project Location

- Mira Mesa Community Planning Area
- Southwest corner of Westview Parkway and Capricorn Way (West of I-15)



## Tasks Completed

- Installed recycled water pipelines
- Upgraded electrical service and booster pump
- Replaced existing 2-inch potable irrigation meter with a recycled water meter
- Trained park staff for use of recycled water
- Since 2007, City Sites have increase from 23 to 114 recycled water meters.





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## Westview Neighborhood Park



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### Project 6C Indirect Potable Reuse/Reservoir Augmentation (IPR/RA) Demonstration Project and Extended Testing







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## Project Objectives

- Evaluate feasibility of advanced treatment technology for potable reuse and reservoir augmentation
- Determine viability of a full-scale Indirect Potable Reuse/Reservoir Augmentation (IPR/RA) project
- Extended Testing to evaluate efficacy of two additional treatment steps
  - Ozone
  - Biological activated carbon (BAC)



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## Tasks Completed

- Advanced Water Purification (AWP) Facility (Demonstration Plant)
- Independent Advisory Panel (IAP)
- San Vicente Reservoir Limnology Study
- Regulatory Coordination
- Conveyance Pipeline Study
- Public Outreach & Education Program
- AWP Facility with additional treatment and monitoring equipment – Extended Testing

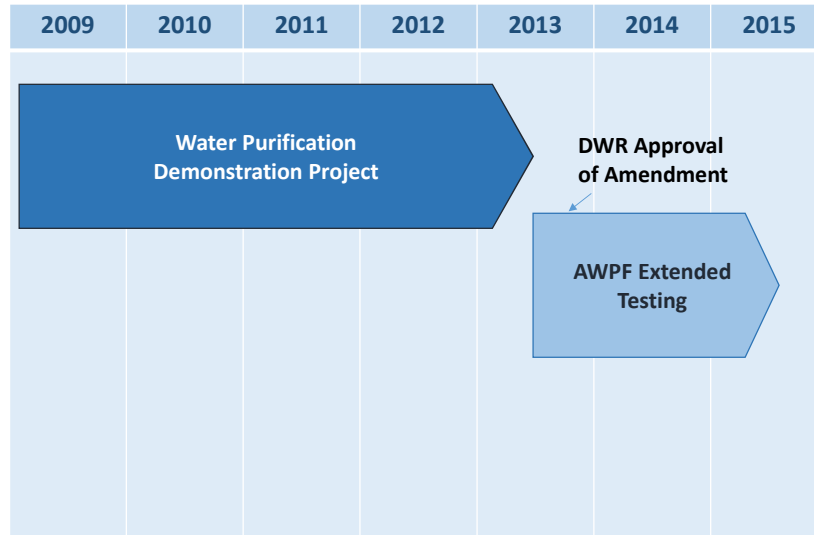


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## Project 6C Timeline

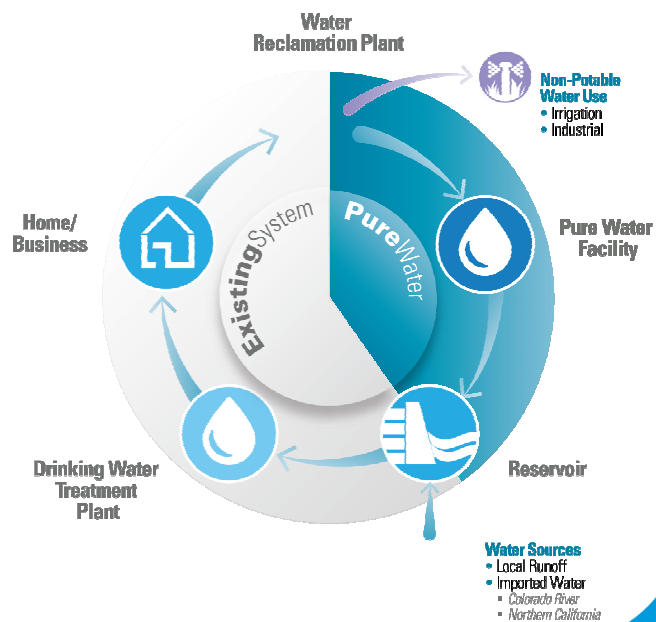


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## Purification Process... Completes Our Water Cycle



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## Demonstration Plant

- Designed, procured, installed, operated, and tested a one MGD AWP Demonstration Plant at North City
- Developed and implemented a Testing and Monitoring Plan
- Prepared a report based on the operation and testing of the demonstration plant



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## Demonstration Plant Conclusions

- Purified water met all federal and state drinking water standards
- Continuous and daily monitoring verified integrity of treatment process and equipment
- Lab tests plus continuous monitoring ensures only high quality water is produced
- Water quality comparable to Orange County's Groundwater Replenishment System



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## Independent Advisory Panel (IAP)

- Convened to provide expert peer review of the technical, scientific, and regulatory aspects of the Demonstration Project
- Provided feedback regarding
  - Reservoir augmentation
  - AWP Demonstration Plant
  - Proposed regulatory framework
- Unanimously concluded the Demonstration Project satisfied all City Council directives

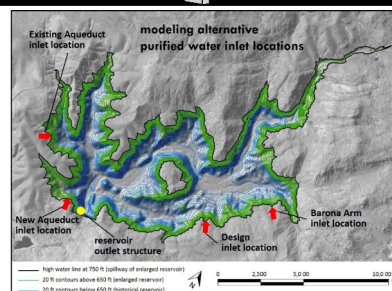
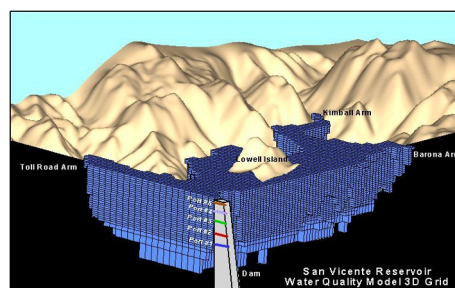


- Ten IAP meetings over three years



## San Vicente Reservoir Limnology Study

- Three-dimensional computer model
- Model calibrated and validated with measured data from the reservoir
- Input from DDW and IAP
- Modeled ten different scenarios with varying
  - Reservoir volumes
  - Purified water inlet locations
  - Seasonal changes





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## Regulatory Coordination

- Regulatory agencies DDW (formerly CDPH), Regional Water Board, and County Dept of Environmental Health, attended IAP meetings
- Regulators commented on:
  - AWP Demonstration Plant equipment
  - Testing & Monitoring Plan
  - San Vicente Reservoir Limnology Study
  - Reservoir Augmentation Concept Proposals



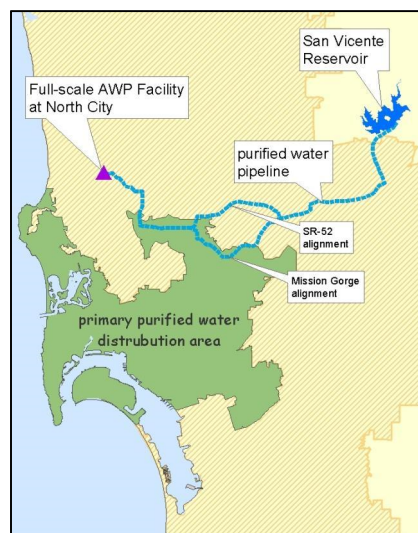
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## Conveyance Pipeline Study

- 22 mile, 36-inch pipeline to convey water from the AWP Facility to San Vicente Reservoir
- Two potential alignments identified



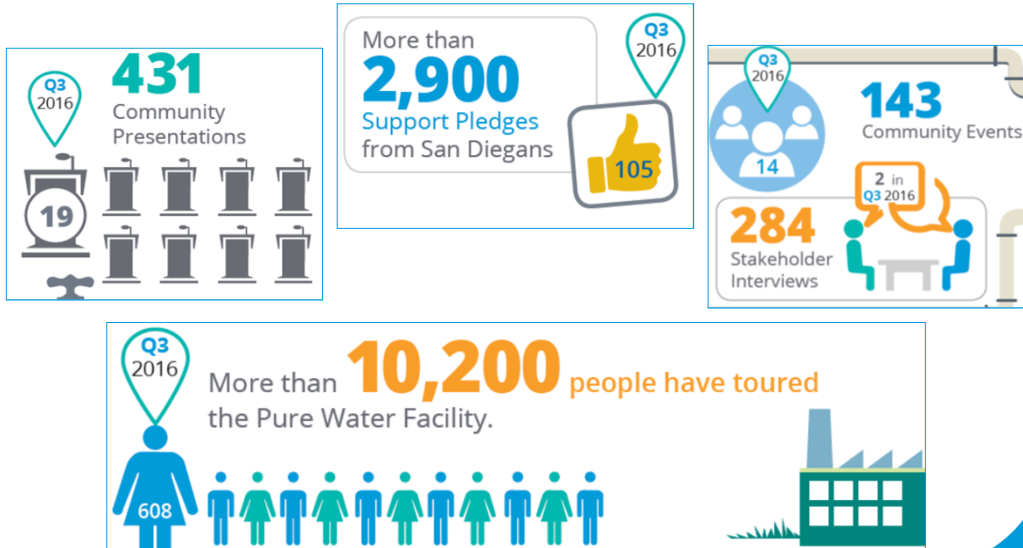
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## Public Outreach & Education Program



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## Media Coverage



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## Demonstration Project and Next Steps

### Water Purification Demonstration Project

- Final report summarizing all project components was adopted by City Council on April 23, 2013

### Next Steps after Demonstration Project

- City Council directed staff was to continue to operate the Demonstration Plant for research projects and on-going education and outreach
- City secured grant funding through a Prop 50 Grant Amendment to continue to operate the Demonstration Plant, known as the AWP Facility Extended Testing

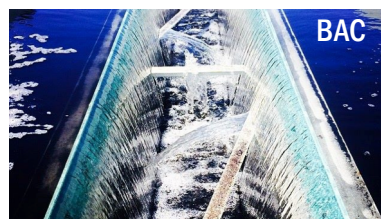
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## Extended Testing

- Designed, installed, operated two additional treatment steps, ozone and biological activated carbon (BAC) to the existing Demonstration Plant's treatment train.
- Developed and implemented a Test Plan
- Report based on the operation and testing of the demonstration plant was finalized July 2015



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## Pure Water Program

- The Demonstration Project and Extended Testing enabled implementation of PW
- Pure Water: 20-year program to provide a safe, secure, and sustainable local drinking water supply
  - Reliable and locally controlled
  - Drought proof, climate independent
  - Decreases reliance on imported water



Goals of IRWM and Prop 50

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## Pure Water Program Supporters






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## Questions?

 [www.purewatersd.org](http://www.purewatersd.org)

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