

Water Management in a Changing Climate: Recycling and Reuse

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Outline

- ▶ Mission and Service
- ▶ Water Supply and System
- ▶ Recycled and Purified Water Goals
- ▶ Current Recycled Water Use
- ▶ Purified Water Program
- ▶ IPR/DPR
 - ▶ Potable Reuse Demonstration Test Plan
 - ▶ DPR Regulations
- ▶ Next Steps

Santa Clara Valley Water District (SCVWD)

Bay Area Water Supply
and Conservation Agency*

Alameda County
Water District

Zone 7
Water Agency

Santa Clara Valley
Water District

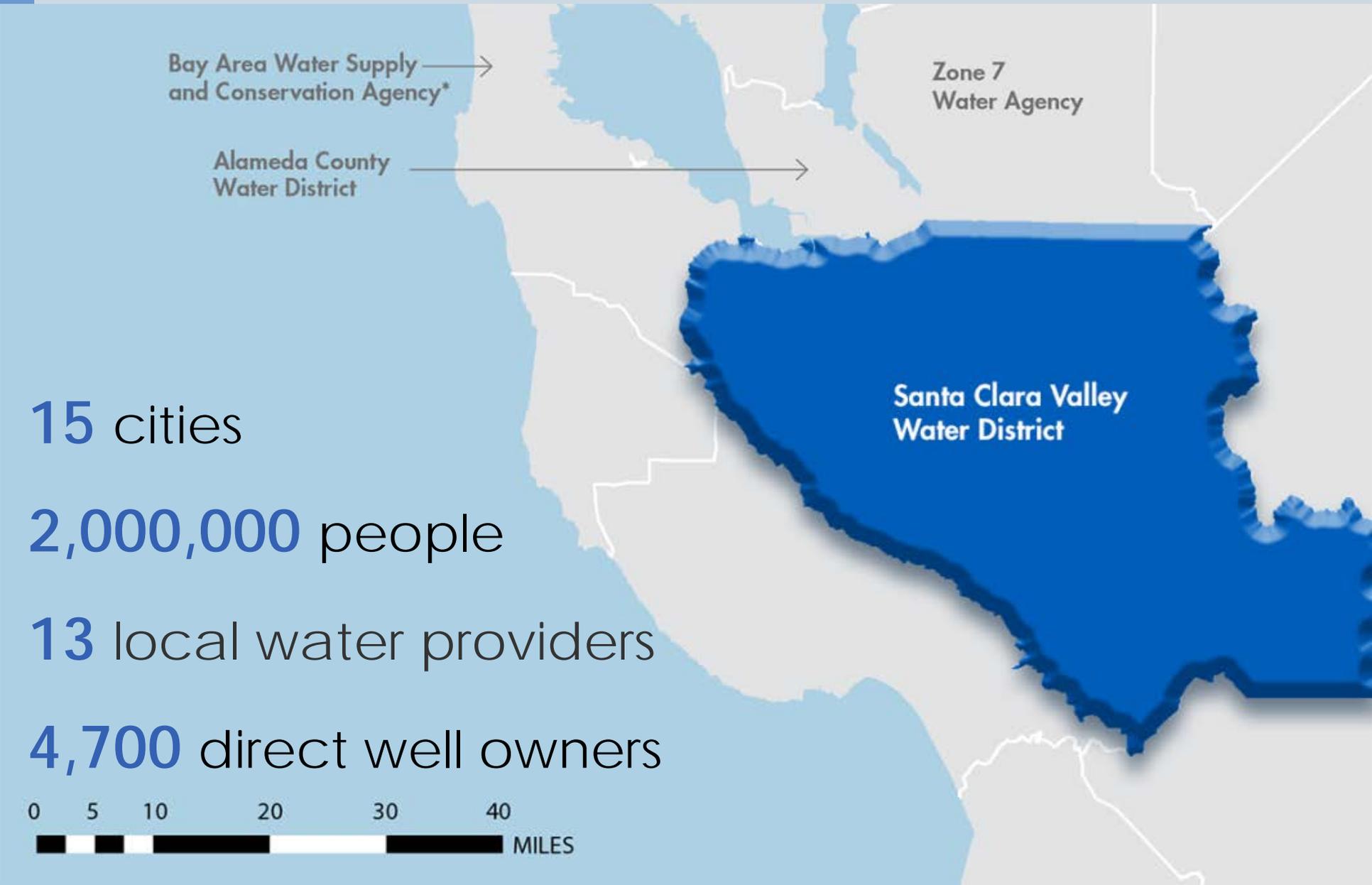
15 cities

2,000,000 people

13 local water providers

4,700 direct well owners

0 5 10 20 30 40
MILES

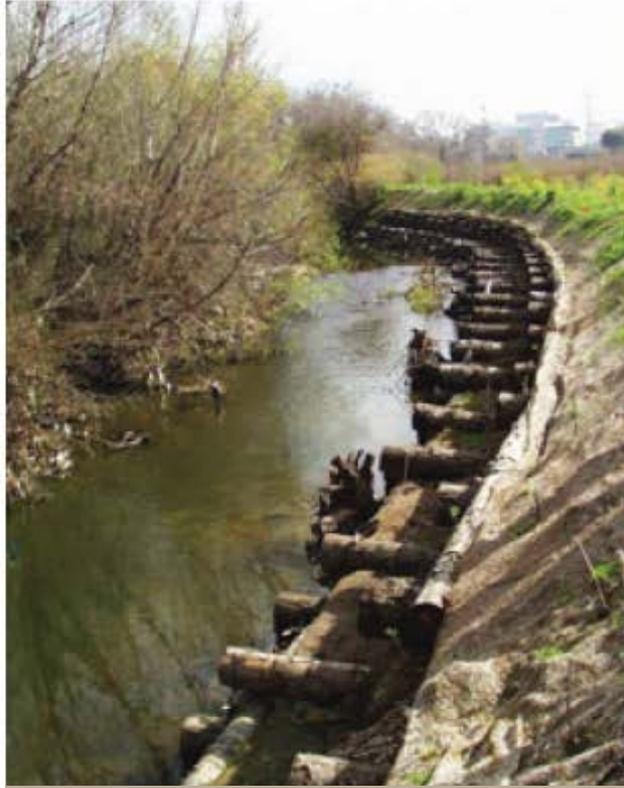


SCVWD Mission and Services

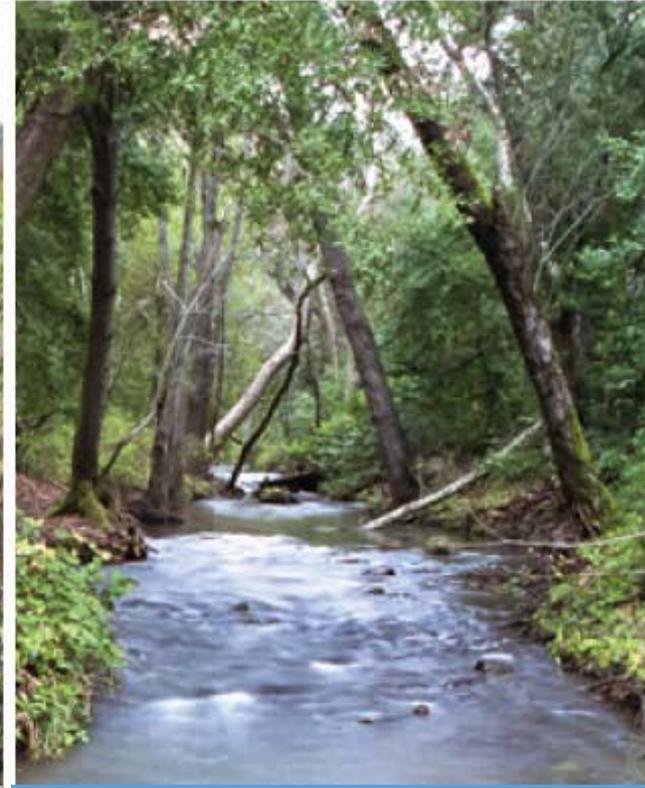
Safe, clean water for a healthy life, environment and economy



CLEAN, RELIABLE WATER



FLOOD PROTECTION



**HEALTHY CREEKS &
ECOSYSTEMS**

Water Supply



Shasta Lake

Federal Central Valley Project

Lake Oroville

State Water Project



Sacramento-San Joaquin
River Delta

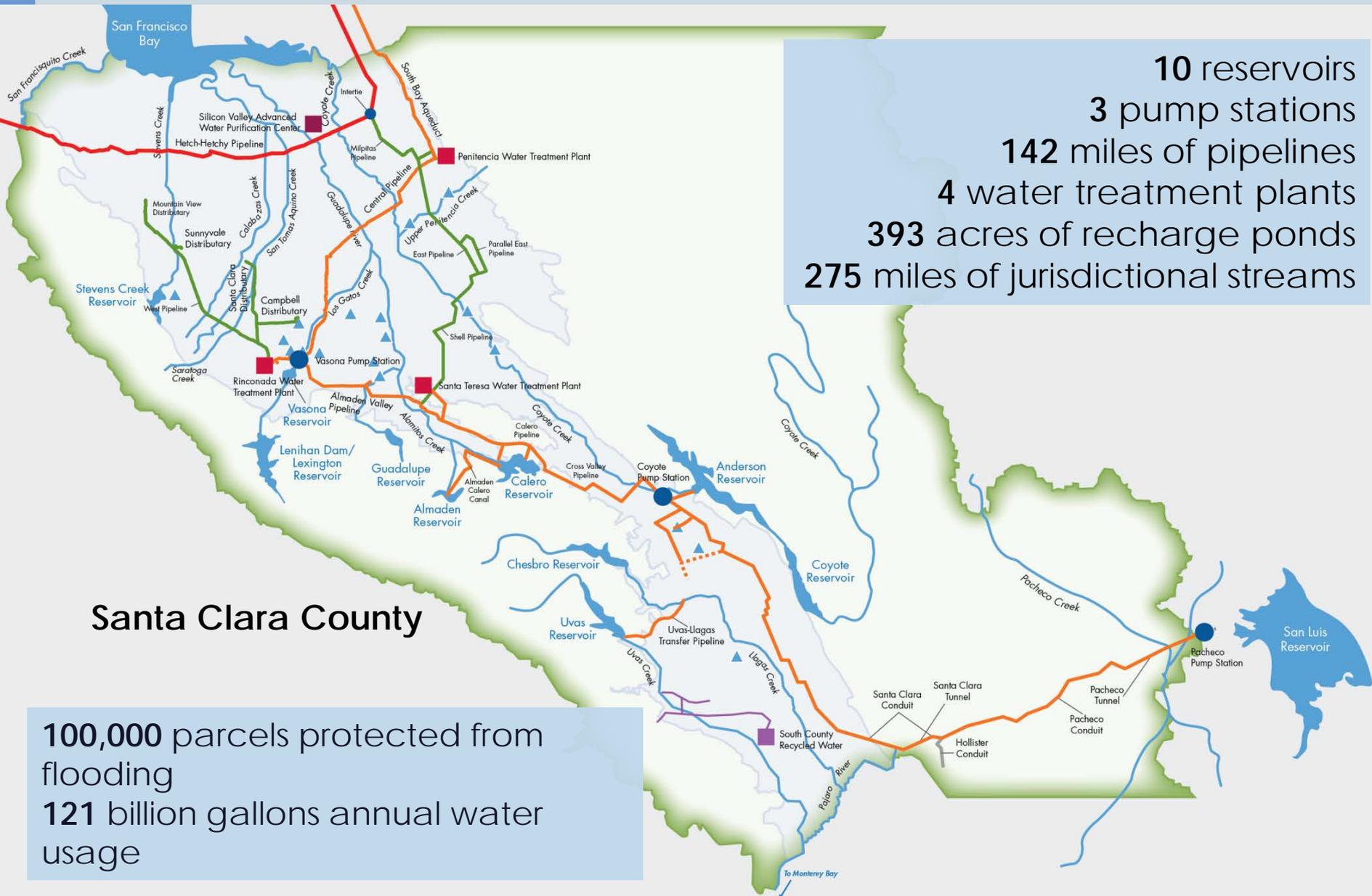
Hetch Hetchy

San Francisco



Water supply*
55% Imported
30% Local
5% Recycled
10% Conservation savings
** in average year*

Water System



10 reservoirs
3 pump stations
142 miles of pipelines
4 water treatment plants
393 acres of recharge ponds
275 miles of jurisdictional streams

Santa Clara County

100,000 parcels protected from flooding
121 billion gallons annual water usage

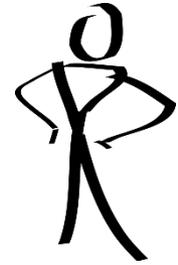
District Recycled and Purified Water Goals

Board Ends Policy:

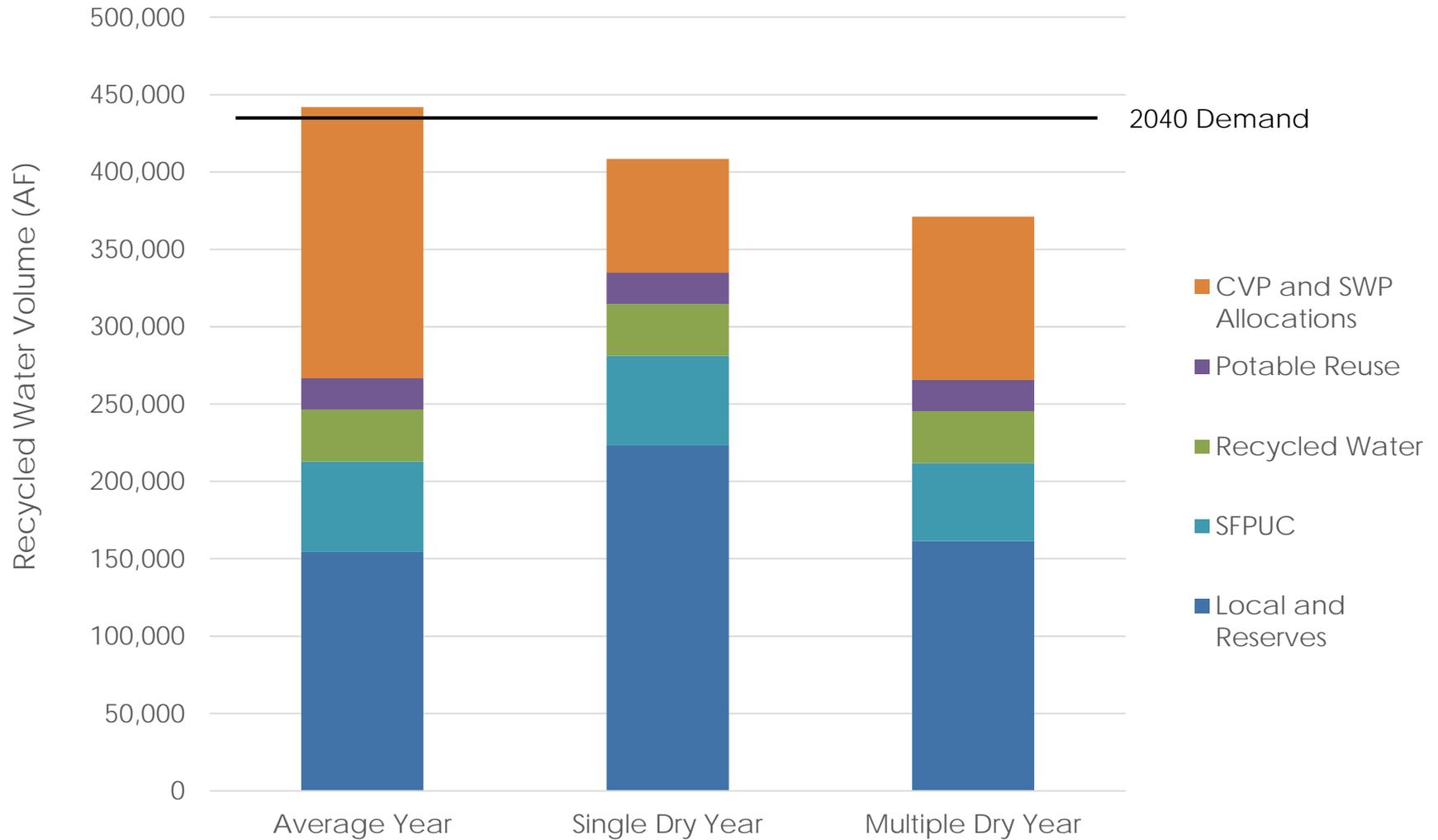
Protect, maintain, and develop recycled water

Outcome Measure:

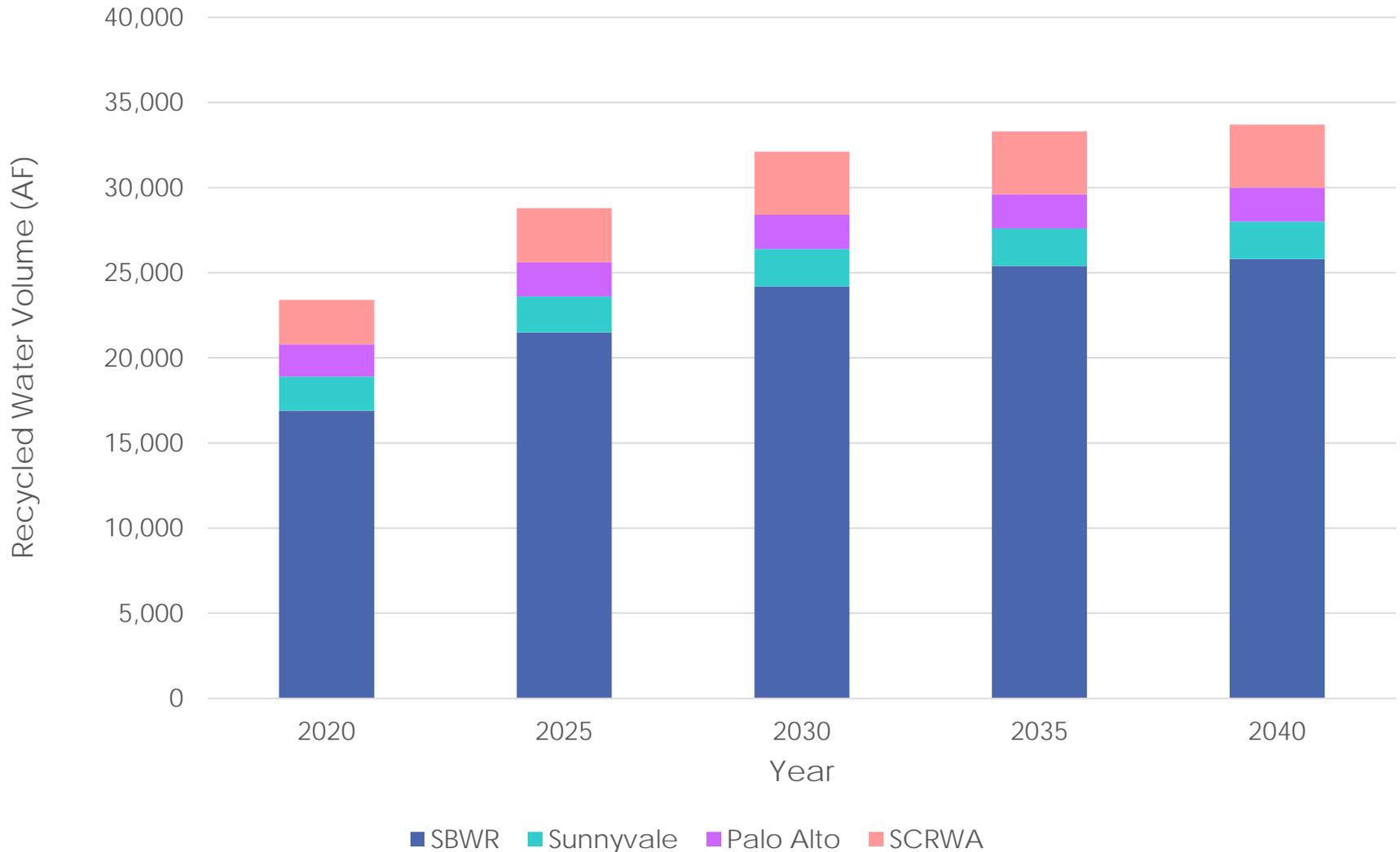
At least 10% of water supply comes from recycled water production by 2025



Future Water Demand vs Supply

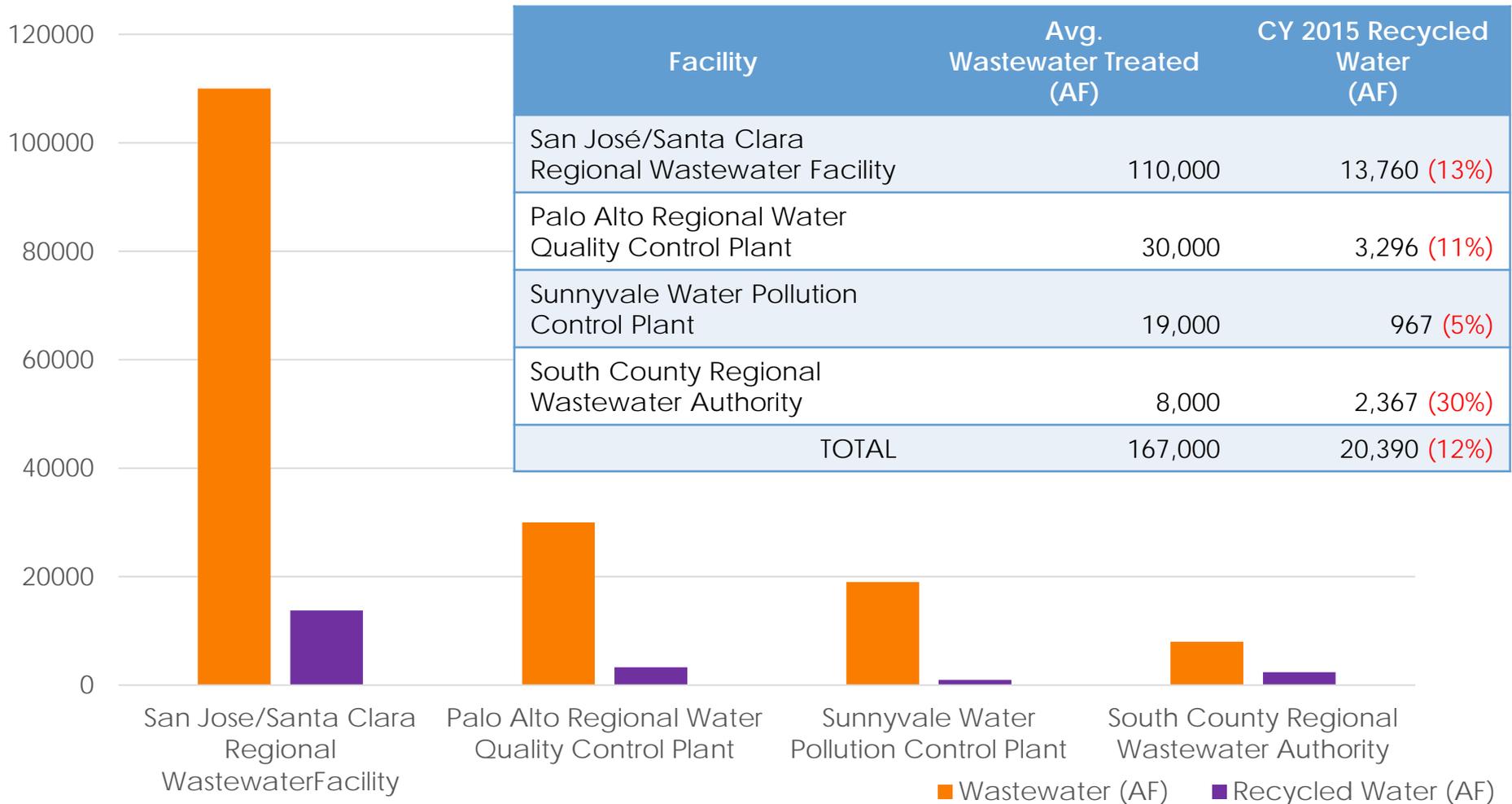


Non-Potable Recycled Water Supply (AF)

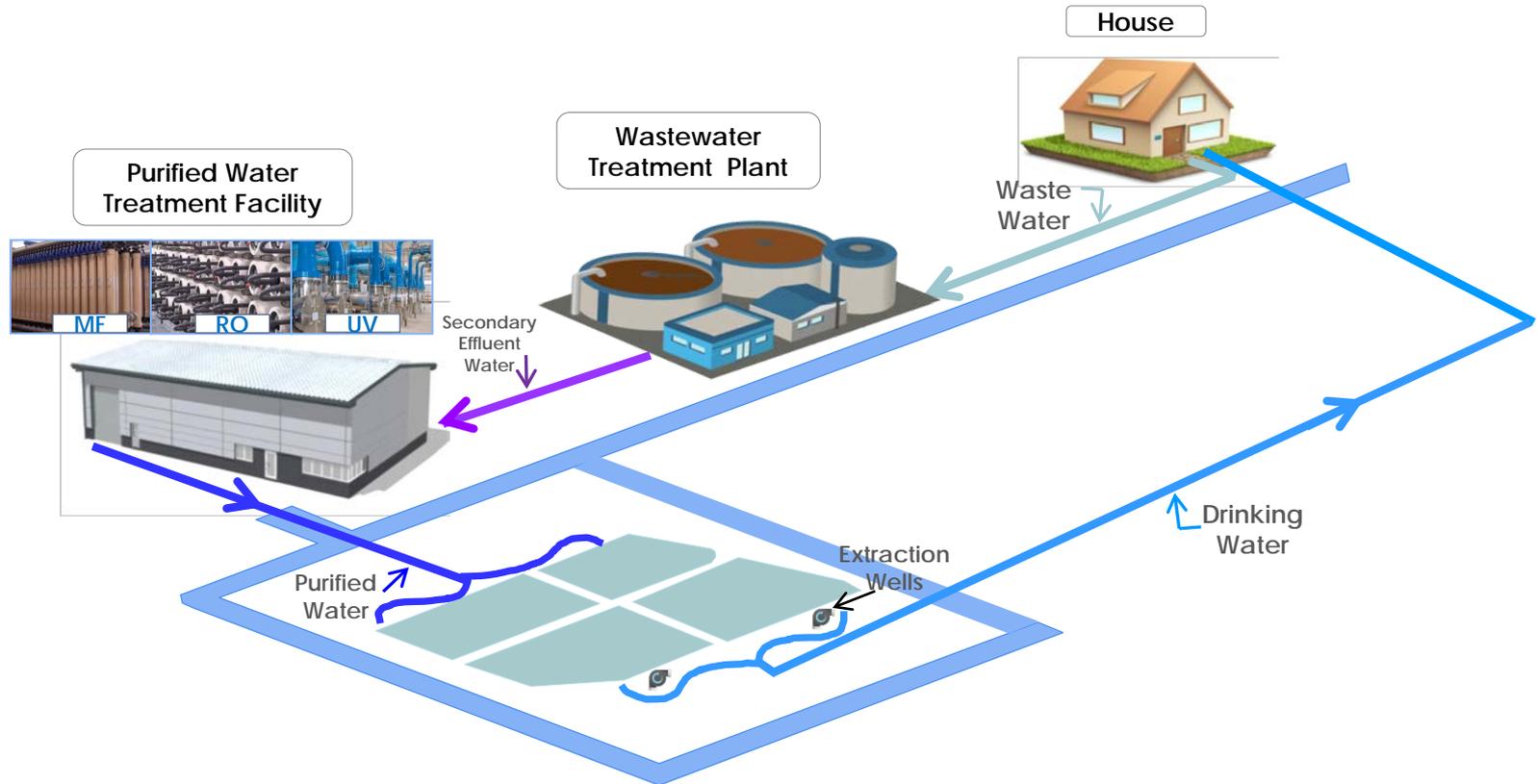


Current Recycled Water Use

Wastewater Treated vs. Recycled Water for 2015

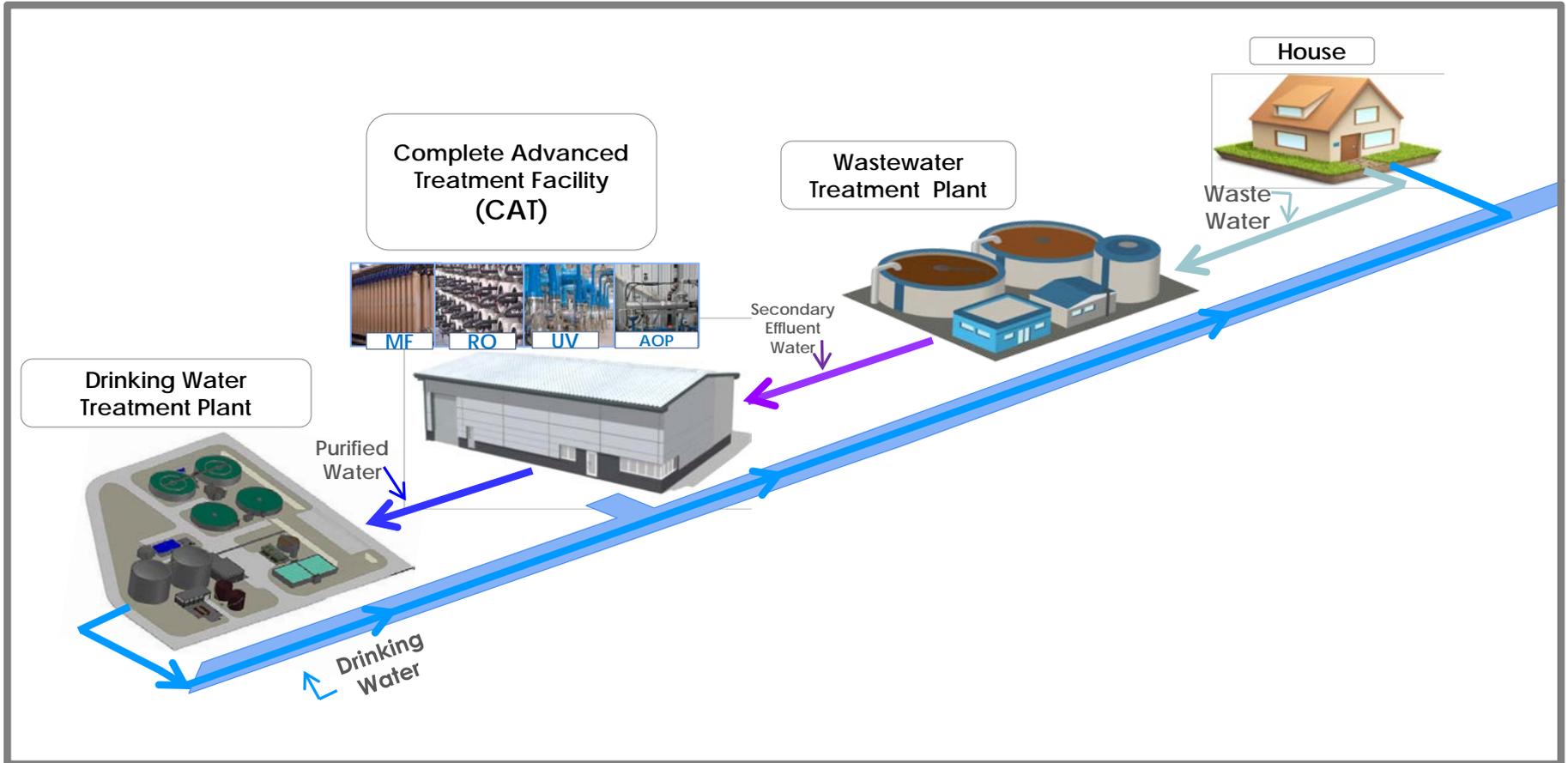


Indirect Potable Reuse



Source: *Opflow – Practical Ideas for Water Operations* Vol. 41, No. 2 Feb. 2015 –American Water Works Association - page 11 (www.awwa.org/opflow)

Direct Potable Reuse



Source: *Opflow – Practical Ideas for Water Operations Vol. 41. No. 2 Feb. 2015 –American Water Works Association - page 11 (www.awwa.org/opflow)*

Silicon Valley Advanced Water Purification Center



- ▶ Online in March 2014
- ▶ Produces 8 MGD of purified water from secondary effluent
- ▶ Advanced treatment technologies:



Microfiltration



Reverse Osmosis

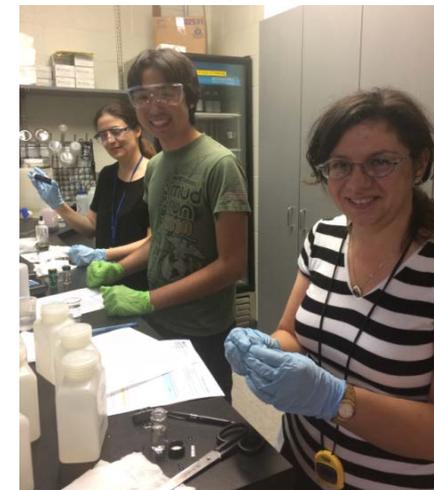


UV Disinfection

Potable Reuse Demonstration Test Plan

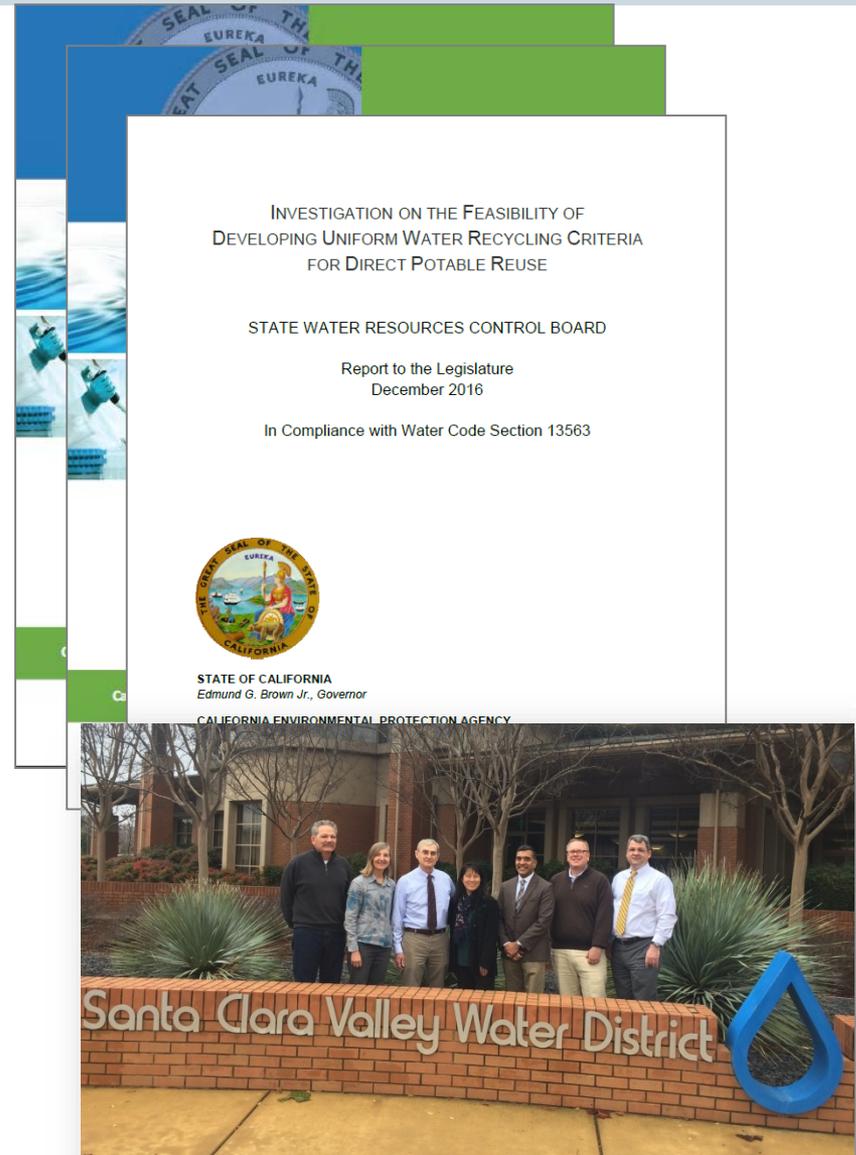
Goals:

- ▶ Demonstrate treatment performance in compliance with Indirect Potable Reuse (IPR) regulations
- ▶ Demonstrate treatment performance based upon future expectations of Direct Potable Reuse (DPR) regulations
- ▶ Gain approval of potable reuse operations, internally (District), externally (public) and with the regulators.
- ▶ **...Understand changes to operation and maintenance necessary for future potable reuse projects**

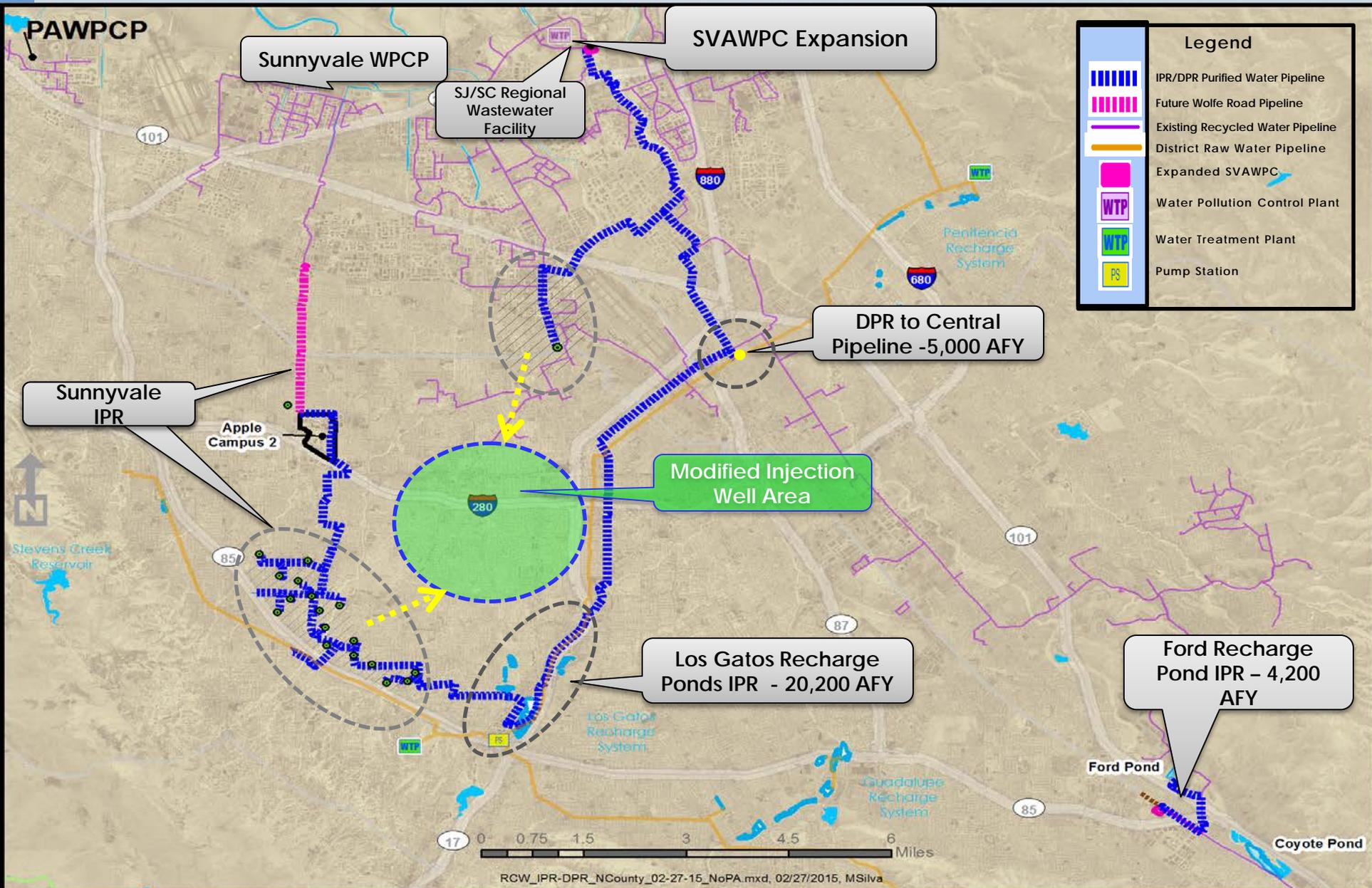


District's Interest in DPR Findings

- ▶ December 2016, DDW released final feasibility report to legislature
- ▶ Expert Panel found:
“ ... that it is **technically feasible** to develop uniform water recycled criteria for DPR in California, ... ” (DDW, pg iv)



Proposed Projects for Purified Water Expansion



Even a basic description of the process involved in direct potable reuse inspires confidence

How would you feel about using advanced treated recycled water as an addition to the supply of drinking water, that is water treated with ultra-filtration, reverse osmosis, and advanced oxidation?

