



RANCHO
CALIFORNIA
WATER
DISTRICT

DISTRICT

Southern California Water Dialogue

April, 23, 2014

Matt Stone
Rancho California Water District
General Manager



Rancho California Water District's Regional Integrated Resources Strategy

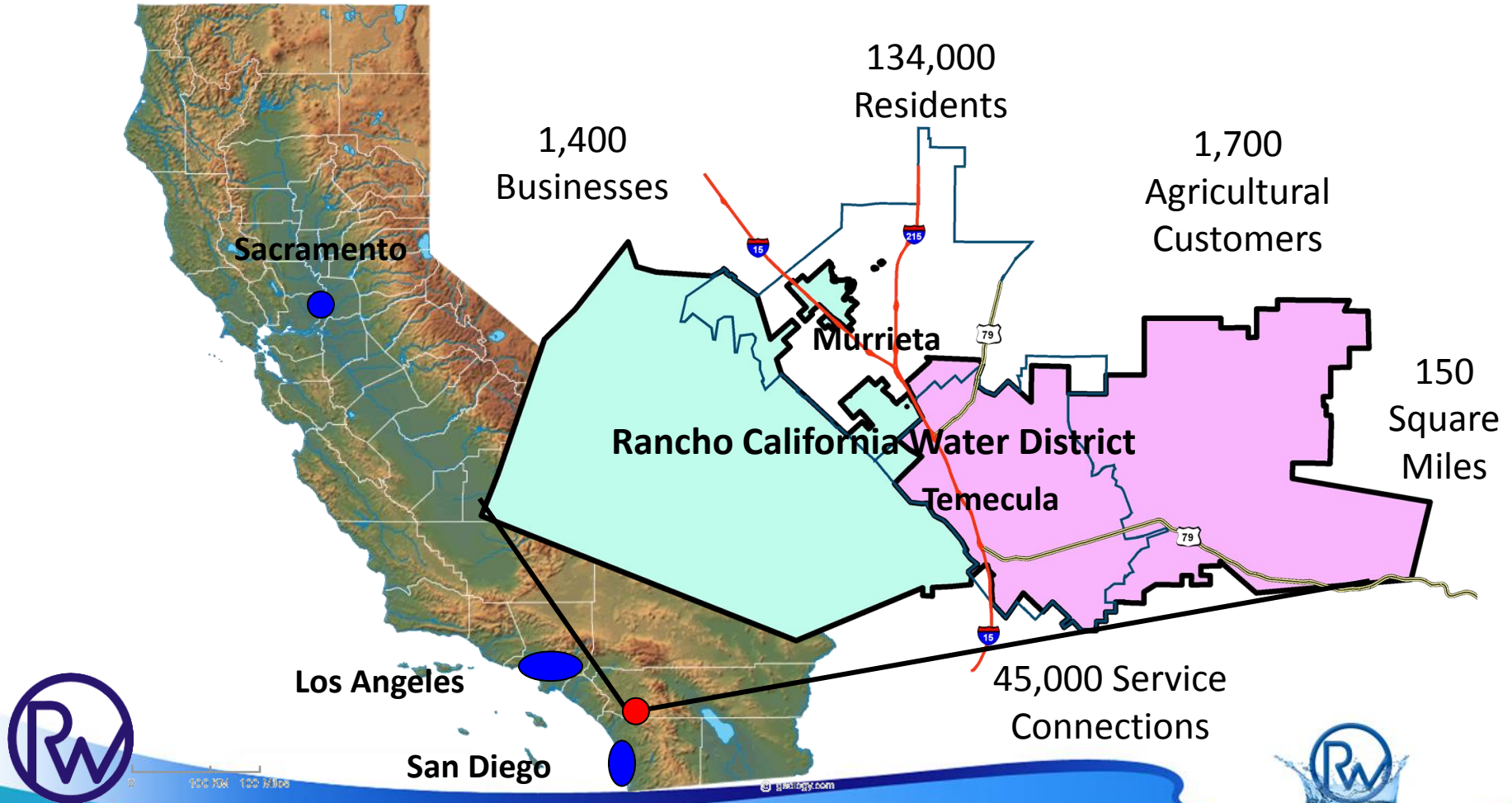
"Getting the Most from Every Resource"



*Reducing Reliance on the
California Bay Delta and Colorado River*



Rancho California Water District Service Area



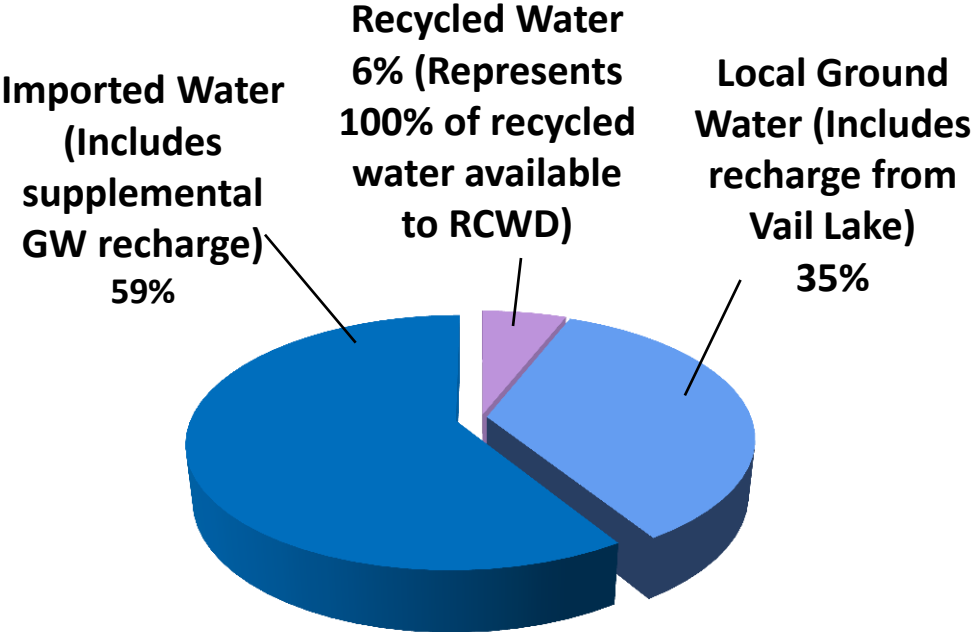
Rancho California Water District - Overview

- Provides potable water, recycled water and wastewater service
- Consumptive Water Use: 68,000 acre-feet per year
- Businesses: Abbott Laboratories; Professional Hospital Supply, Inc.; International Rectifier; Wineries, Hospitality and Events, Equestrian
- Agriculture: Vineyards, Avocado Groves, Citrus and Specialty/Organic Crops
- Attractions: Old Town; Wine Country; Santa Rosa Plateau Reserve; Santa Margarita River Ecological Reserve; Clean Air and Mix of Urban, Suburban, and Rural Living

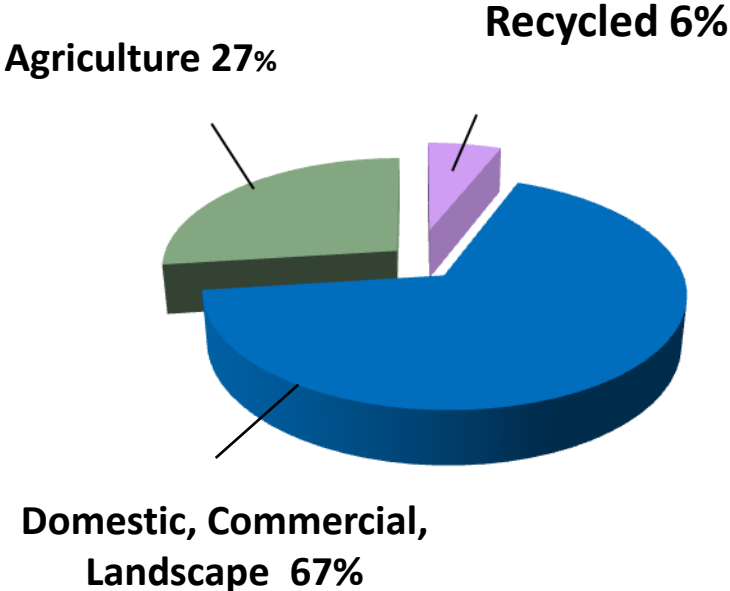


CURRENT WATER PRODUCTION SOURCES AND SALES

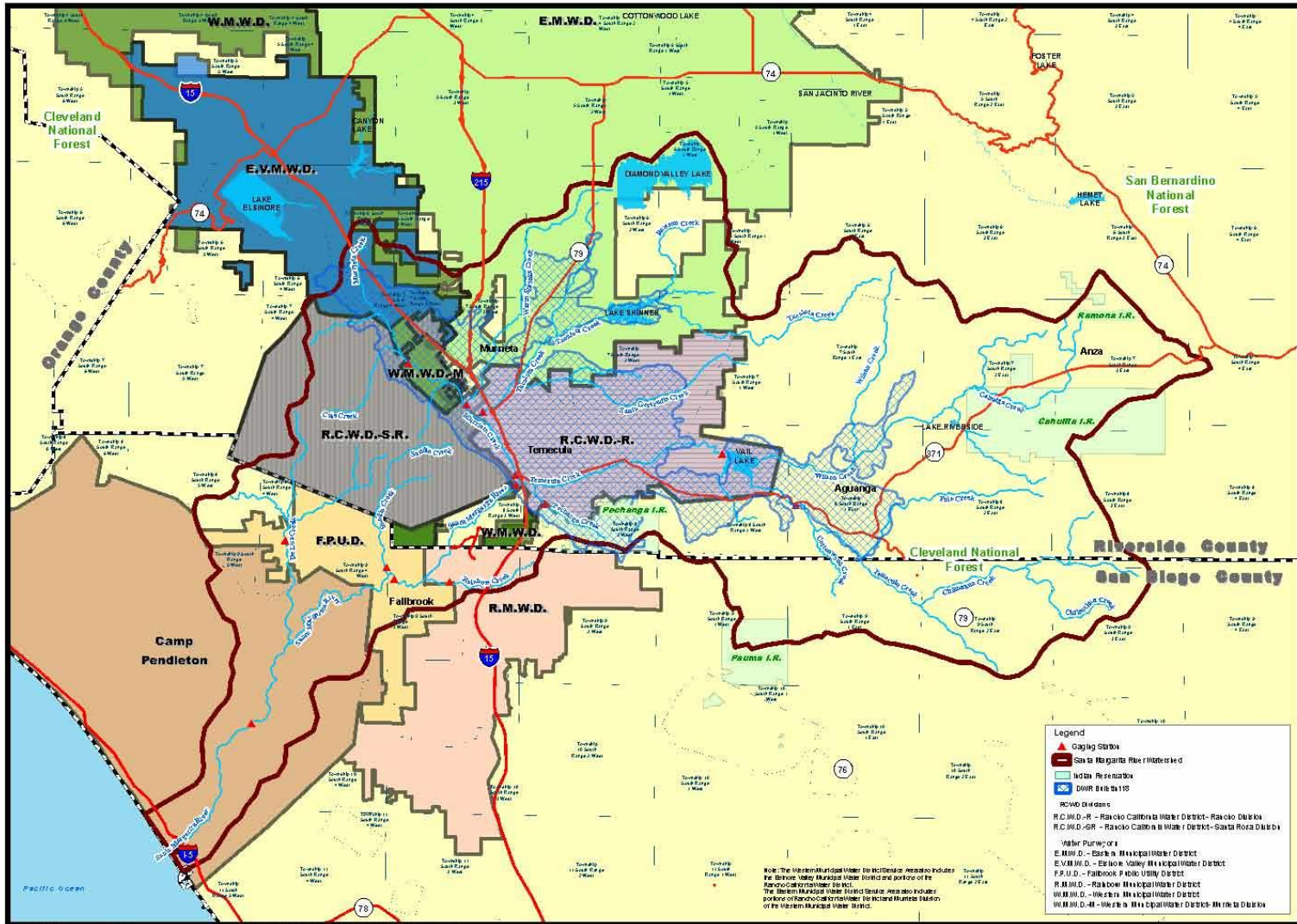
Water Production By Source



Water Sales by User Type



The Upper Santa Margarita River Watershed



Map Produced by:
 Rancho California District
 Geographic Information Systems
 March 2009

RW GIS

1 inch = 4 miles

**Temecula Valley Groundwater Basin
 Santa Margarita River Watershed Watermaster**



Watershed History (Brief)




Surface Water and Ground Water Rights

- Ongoing downstream flow obligations under court adjudication (1924... 1940 stipulated judgment and 1966 final decree) of the Santa Margarita River, annual reporting in cooperation with court appointed watermaster. (Ongoing)
- State Water Resources Control Board surface water appropriative right permit for Vail Lake (1948, amended 1971 and 2009)
- Cooperative Water Resource Management Agreement with Fallbrook PUD and Camp Pendleton (2002)
- Groundwater Management Agreement (2006) and Proposed Water Rights Settlement Agreement (2010) and Pending Settlement Legislation with Pechanga



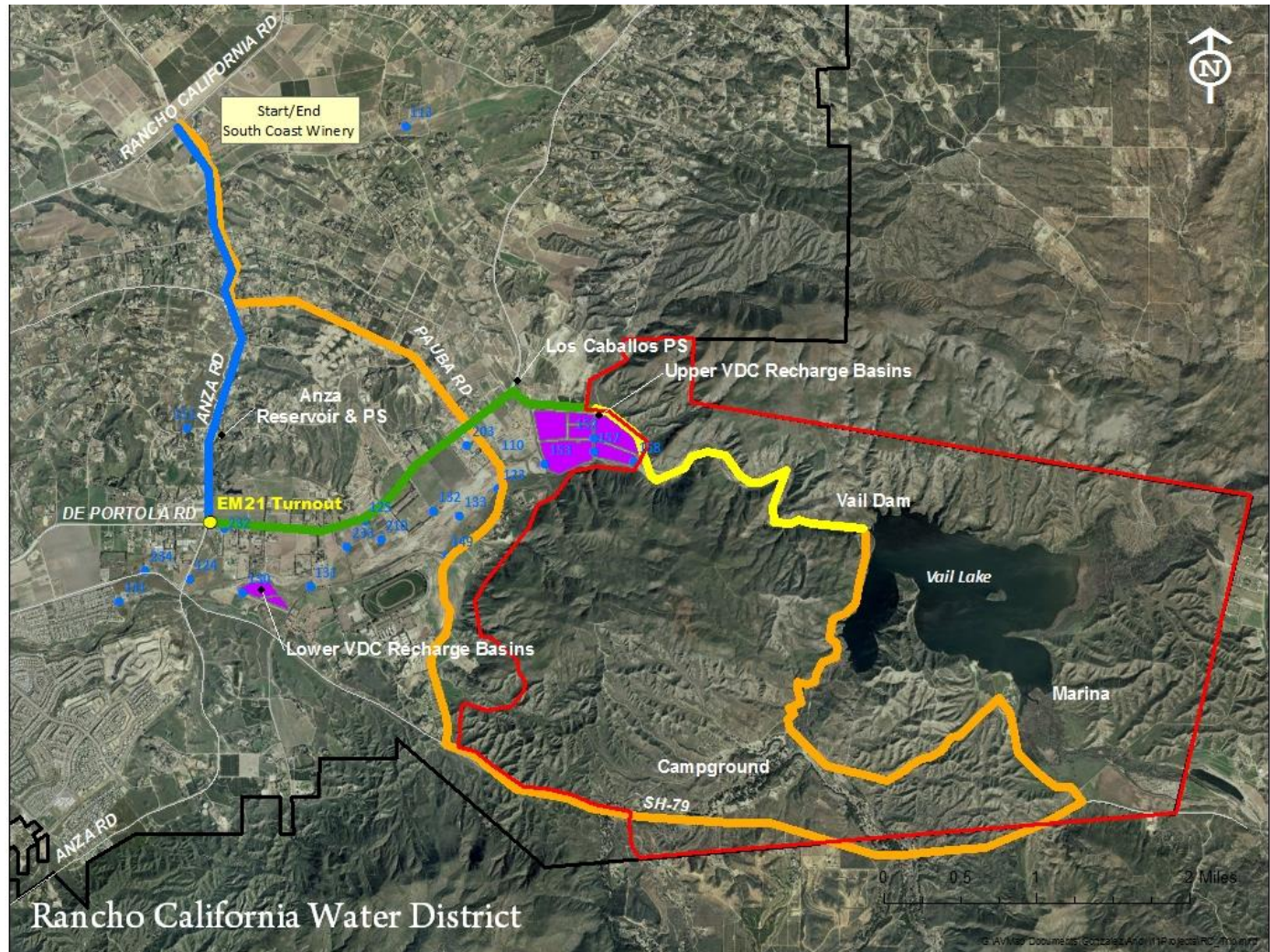
RCWD Resources

- Vail Lake
- Groundwater Basin
- Recycled Water
- Efficiency 
- Innovation and Technology



Tour Highlights

- Pauba Valley and Wells
- Vail Watershed Area
- Vail Lake Area
- Vail Dam
- Canyon and Vail Pipeline, with Habitat Restoration
- Vail Lake Pumping Station
- Valle De Los Caballos Spreading Basins
- EM 21 - Imported Water Turnout



Watershed Tour Itinerary Map

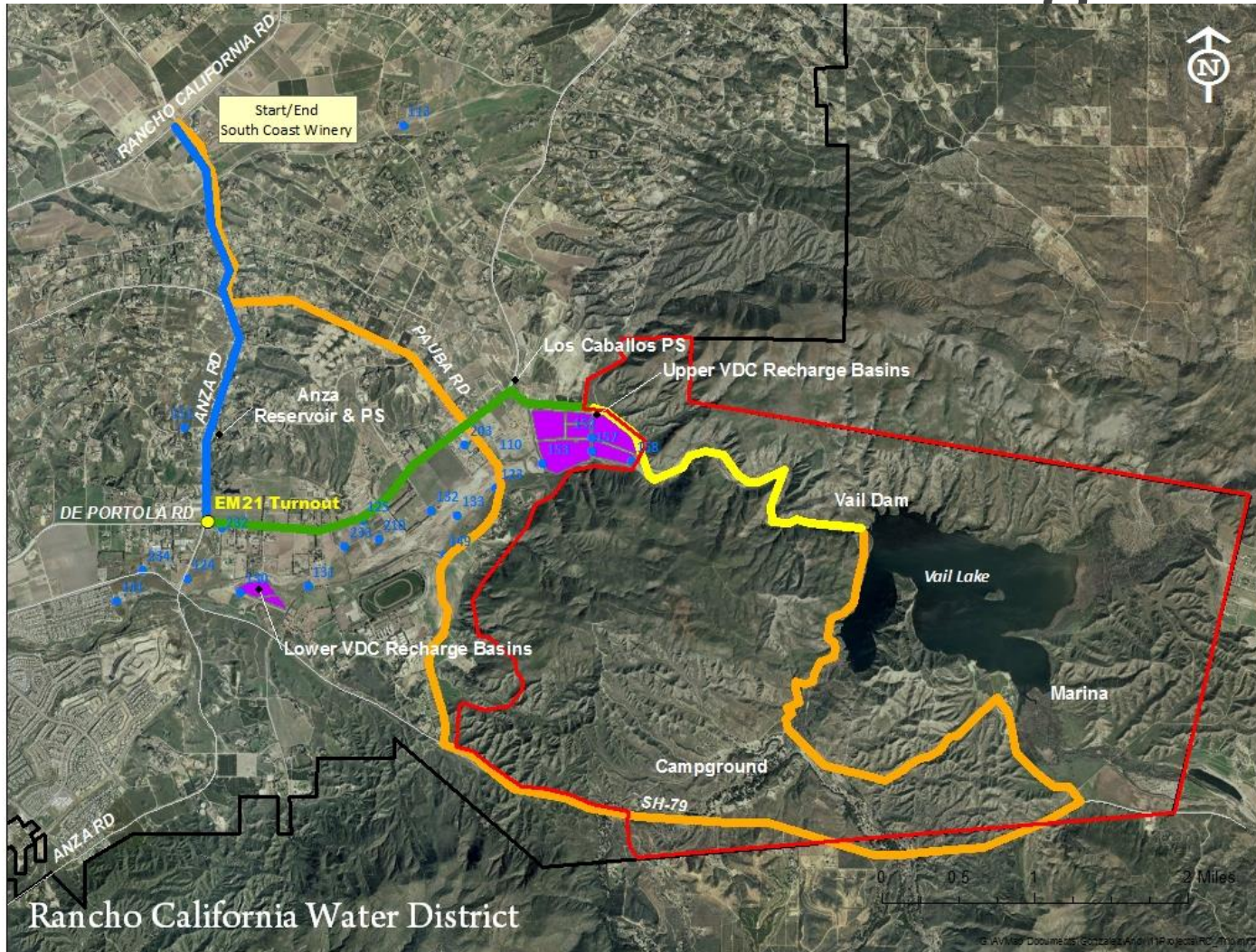


Vail Dam and Lake

- Built in 1948 for Vail Ranch
- Holds ~ 50,000 AF; captures Temecula Creek surface water during winter months
- State Water Right Permit #7032 (1948) update complete in 2009 to capture up to 40,000 AF during winter, pass through flows during summer.
- Annual storm water runoff averages 5,000 – 6,000 AF. Varies widely.
- Captured water is released for groundwater recharge and to meet downstream water rights obligations.



Vail Lake and VDC Recharge Ponds



Recent Vail Dam Projects

- Vail Lake Pump Station and Pipeline (2008-09)
 - Provides connection from imported water system for potential recharge
 - Rebuilt and enhanced outlet pipeline
 - Quagga Control Facilities (2013)
 - Restoration of habitat in canyon (2009-2014)
- Bathymetry Survey (evaluate sedimentation)
- Division of Dam Safety Review (in progress)



Vail Lake Pump Station

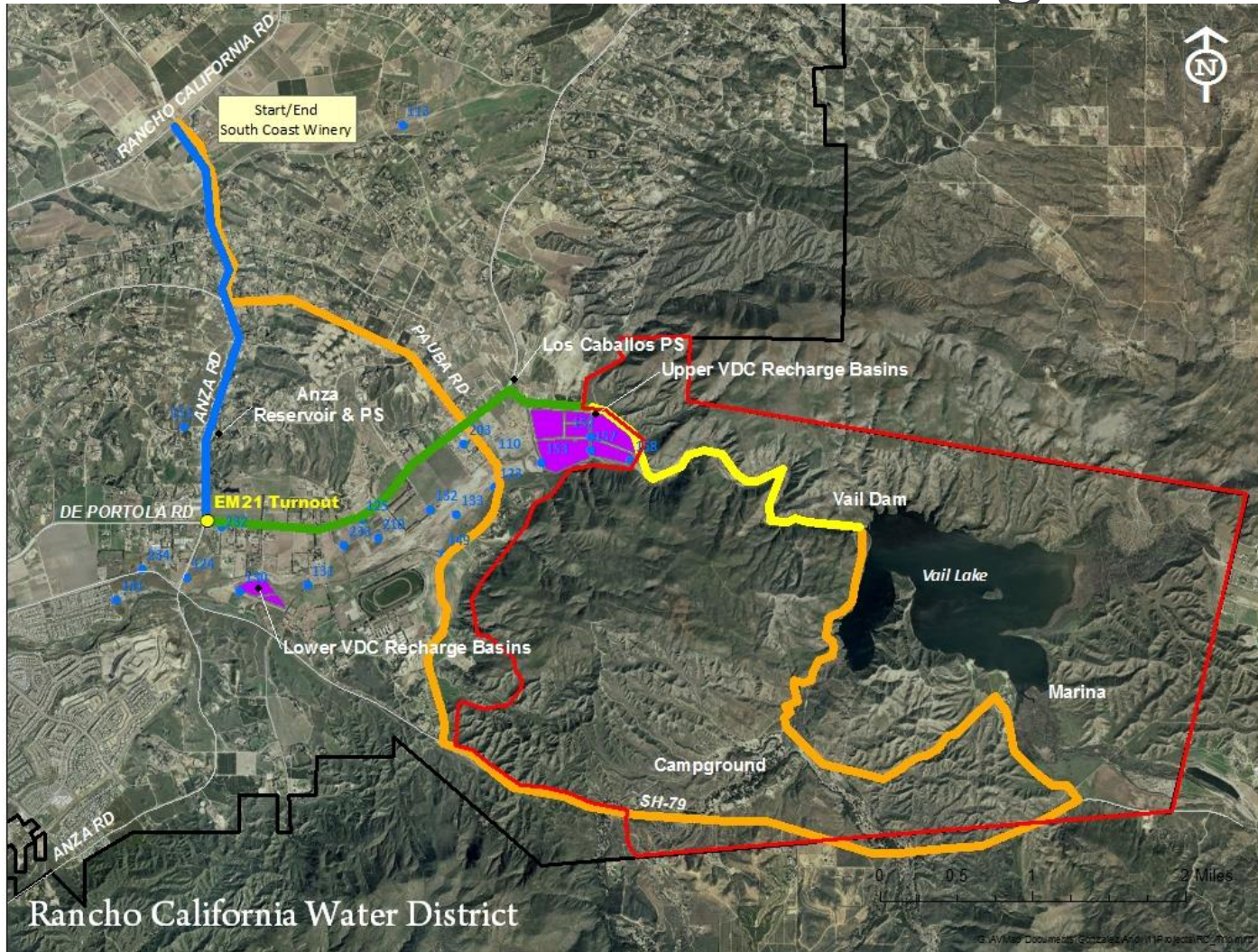


Groundwater Basin

- The foundation of RCWD's water supply
- 47 Production wells, Monitoring wells
- Upper and Lower Valle De Los Caballos (VDC) recharge basins
- Ability to recharge with Vail Lake releases and untreated MWD imported water
- 23,000 AF yield + Vail Recharge + MWD Recharge
- Large Investment in Modeling and Basin Management Tools



Vail Lake and VDC Recharge Ponds



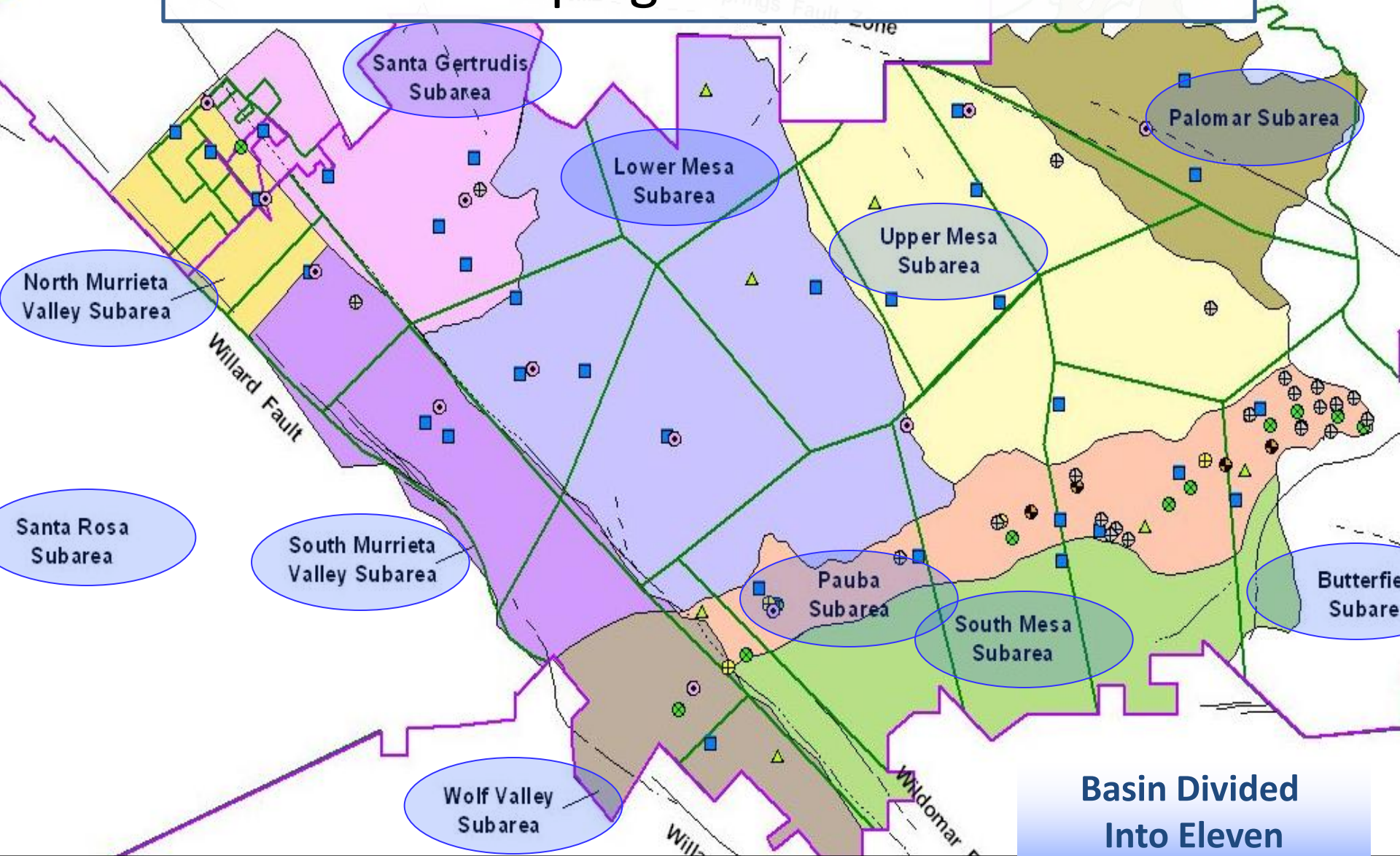
Upper VDC Recharge Area



Recharging MWD Water

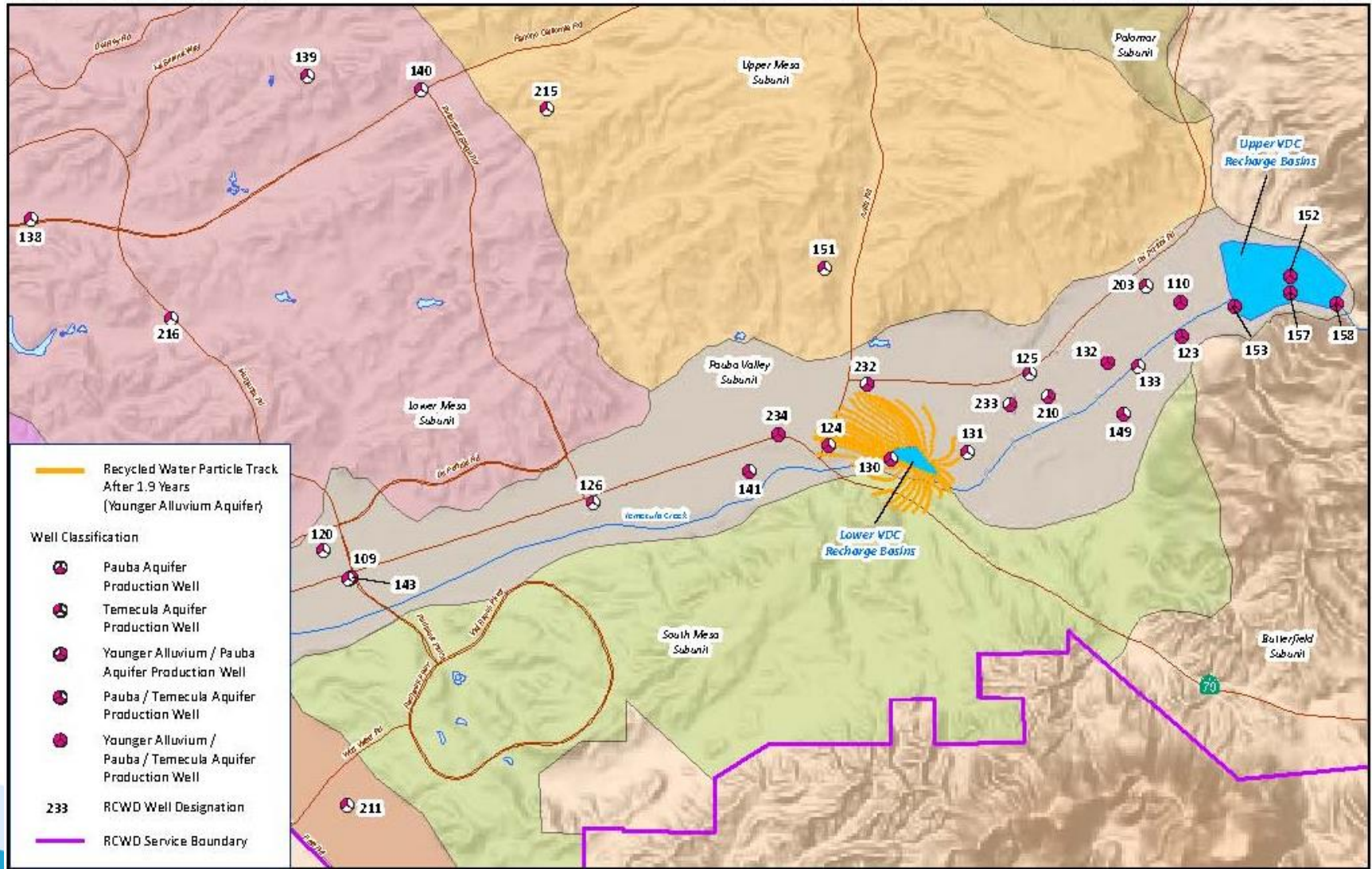


Annual Pumping Yield Determination



**Basin Divided
Into Eleven
Hydrologic Subunits**

Groundwater Basin and Modeling



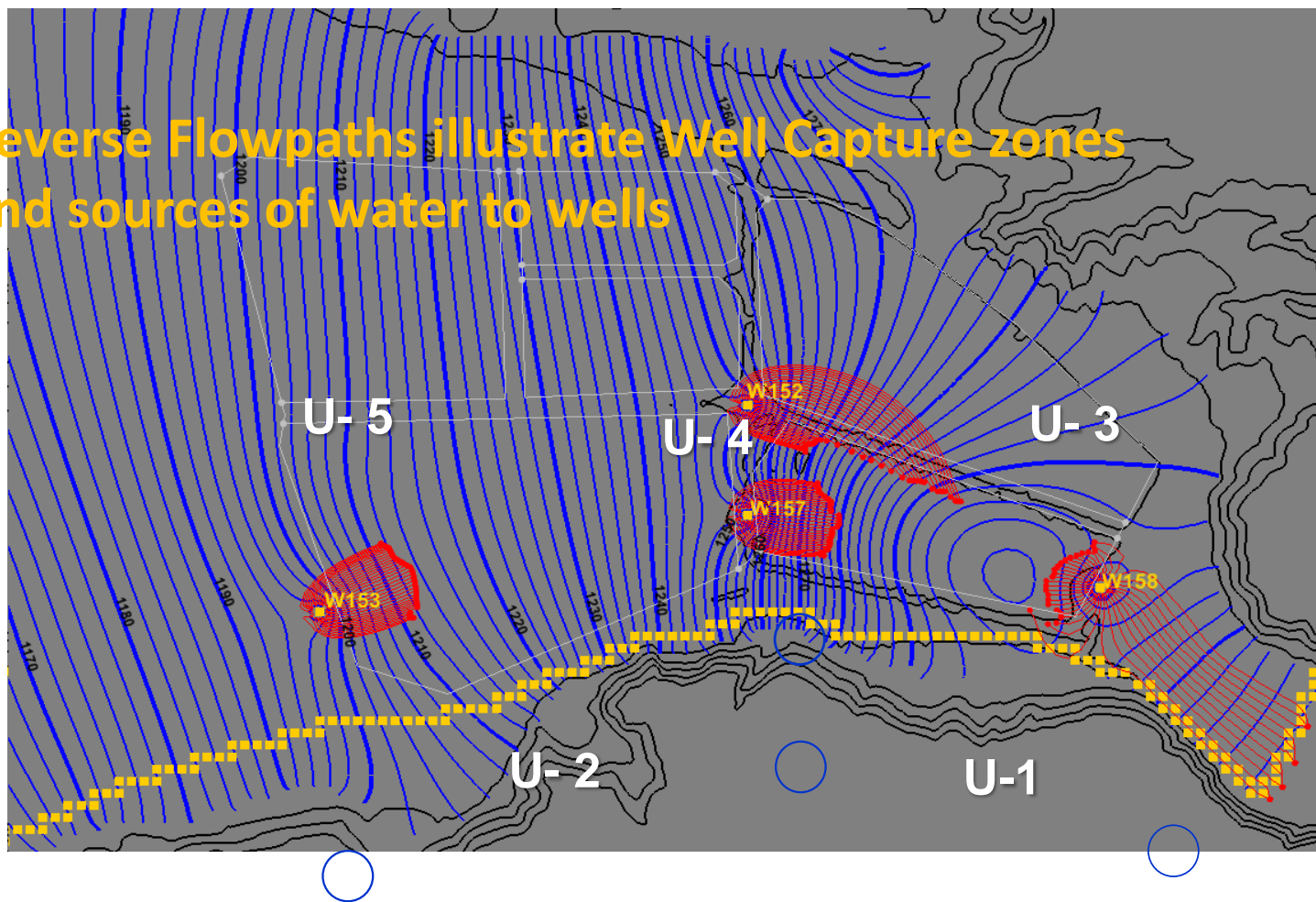
Recent Groundwater Projects

- High precision modeling, field testing, and analysis to reclassify recharge requirements with State Health Department (2011-12)
- Phase I Improvements to VDC
 - Reconfigure basins based on model findings
 - Refurbish 4 production wells
 - Disinfection system improvements
 - Increase recharge recovery by 25%
- Installation of 2 USGS monitoring wells
- Efforts to avoid potential quality impacts



Extensive Modeling to Optimize Recharge

Reverse Flowpaths illustrate Well Capture zones and sources of water to wells



Groundwater Protection

- Provides high quality water to our customers
- Provides a reliable source during drought times
- Significantly less expensive than imported water
- RCWD is protecting the availability and quality
 - Working with other agencies to require use of sewer systems for large commercial developments
 - Groundwater monitoring
 - Approved Groundwater Protection Policy
 - Groundwater recharge



Recycled Water

- Currently Nonpotable Recycled Water System for Landscape Irrigation
 - 4,000+ AF/YR, represents virtually 100% of recycled water available to RCWD
 - Used for landscape irrigation over higher salinity basin areas
- Additional future supply of 5,000 to 6,500 AF
 - Growth in RCWD sewer service area
 - Agreement with EMWD



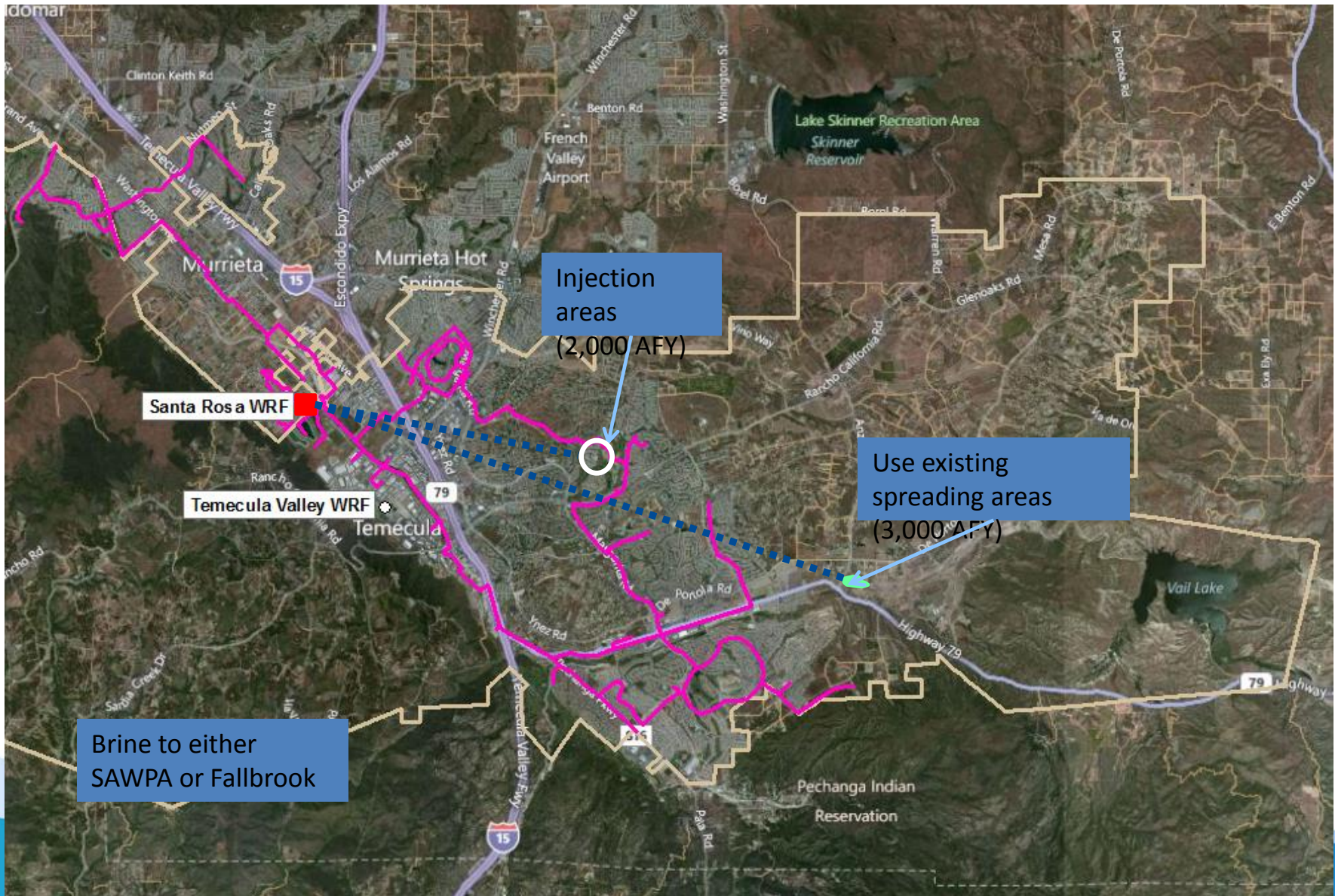
Future Options for Recycled Water

- Recently Completed IPR Feasibility Study
 - Remove salts to below 500 mg/l, build dual distribution, pumping and tank facilities, as well as large wet weather storage ponds and serve Ag
 - Treat to groundwater recharge standards with either full RO or partial RO and recharge groundwater basin (Indirect potable reuse)
- Both project options will require brine disposal facilities



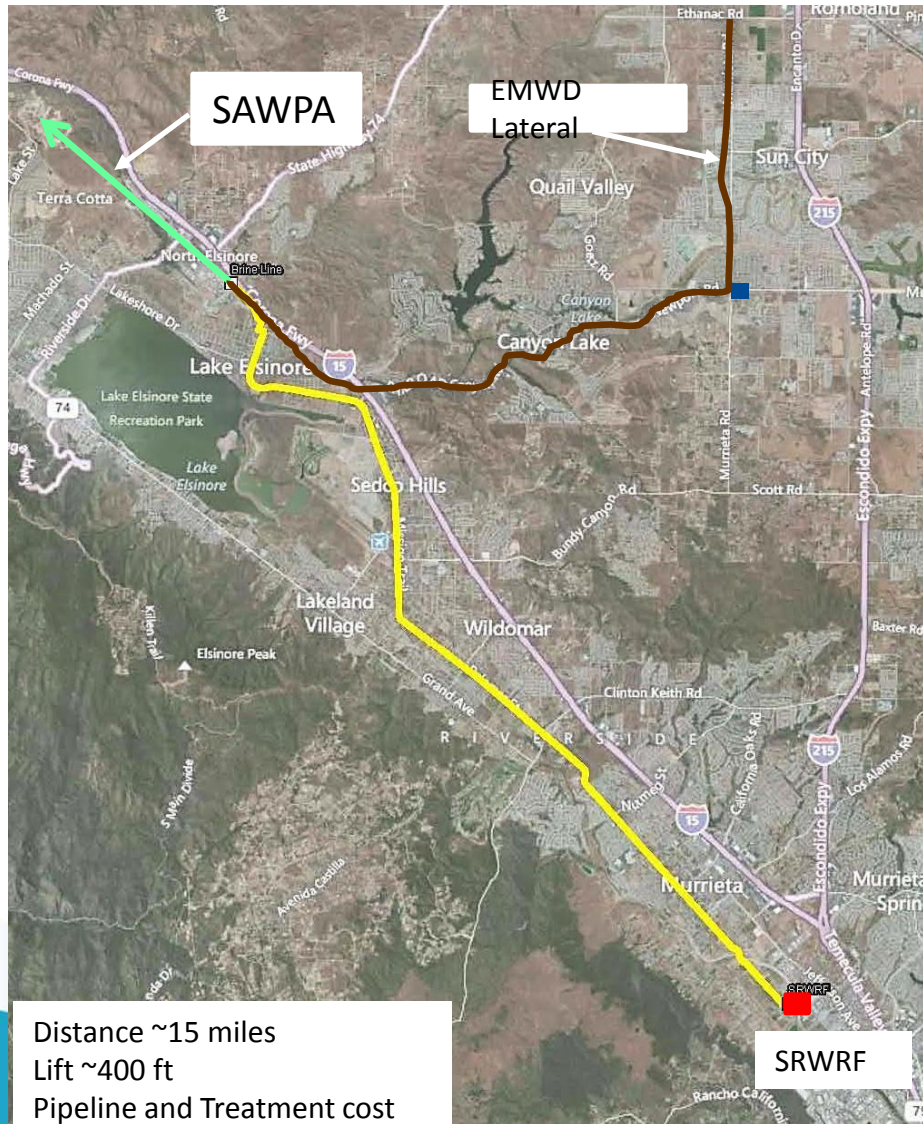
Concept 2 – AWTF at SRWRF

Partial RO for spreading, FAT for injection

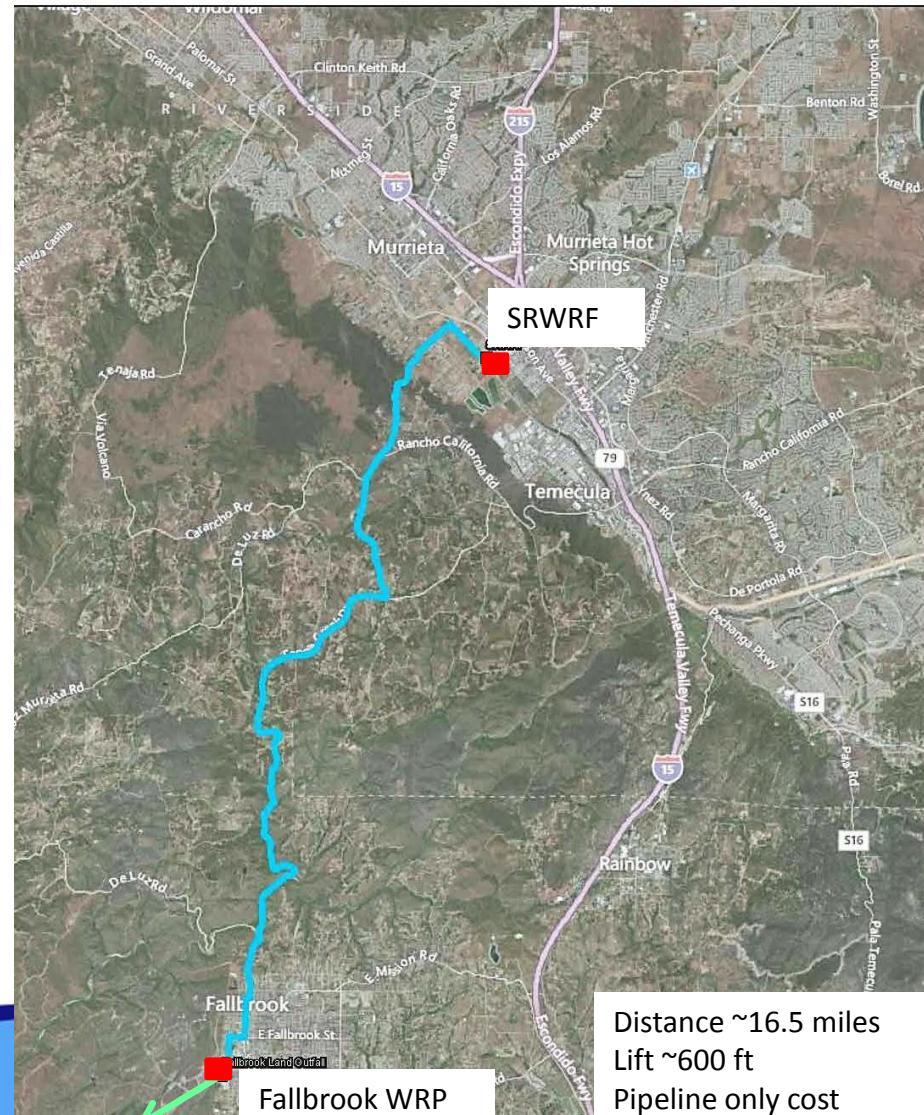


Brine Discharge Options

SRWRF to SAWPA (north)



SRWRF to Fallbrook (south)



Recycled Water – Next Steps

- Evaluate both brine disposal options
- Negotiate with potential brine partners
- Pipeline alignment studies
- Lower VDC basin recharge capacity study
- Continue to work on project funding
 - Title XVI (have authorization)
 - MWD Local Resources Program (can apply once CEQA completed)
 - Other



Efficiency

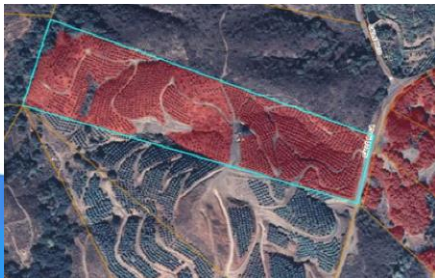
- M&I Efficiency Programs offered through both MWD Regional rebate programs and some customized RCWD programs
- Ag Efficiency Program consisting of system audits, retrofit cost share.
- RCWD has secured or facilitated a significant amount of outside funding to make this program work.



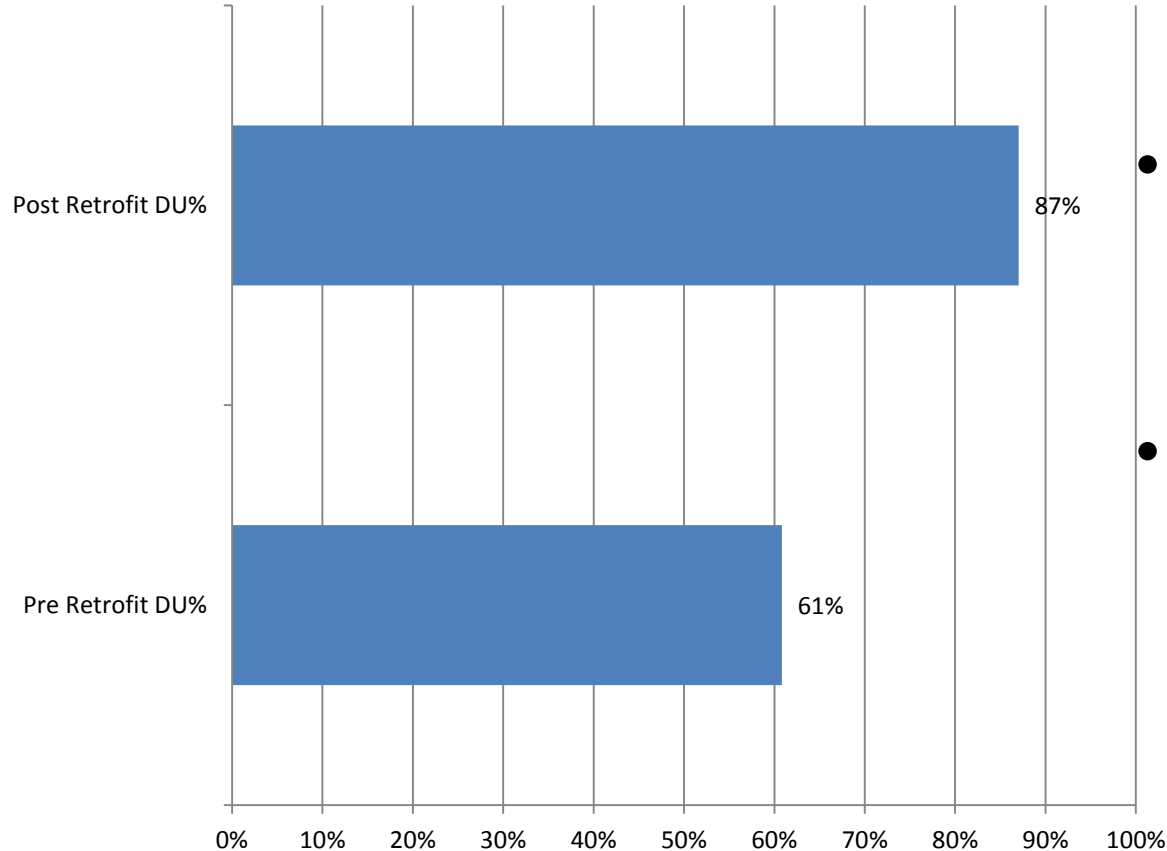
Agricultural Water Efficiency Program

Program Elements

- Water budgets for 1,724 groves and vineyards using GIS and infrared
- Target 100+ sites with greatest potential for water efficiency gains
- Field audit irrigation systems for efficiency and uniformity
- Offer incentives to improve irrigation system efficiency
- Implement wireless telemetry technologies, including weather stations, soil capacitance probes, and radio relays and base stations
- Audit the irrigation systems after retrofits, and quantify efficiency gains
- Early results indicate 20+% efficiency gains on targeted sites



Efficiency Improvements through Retrofit

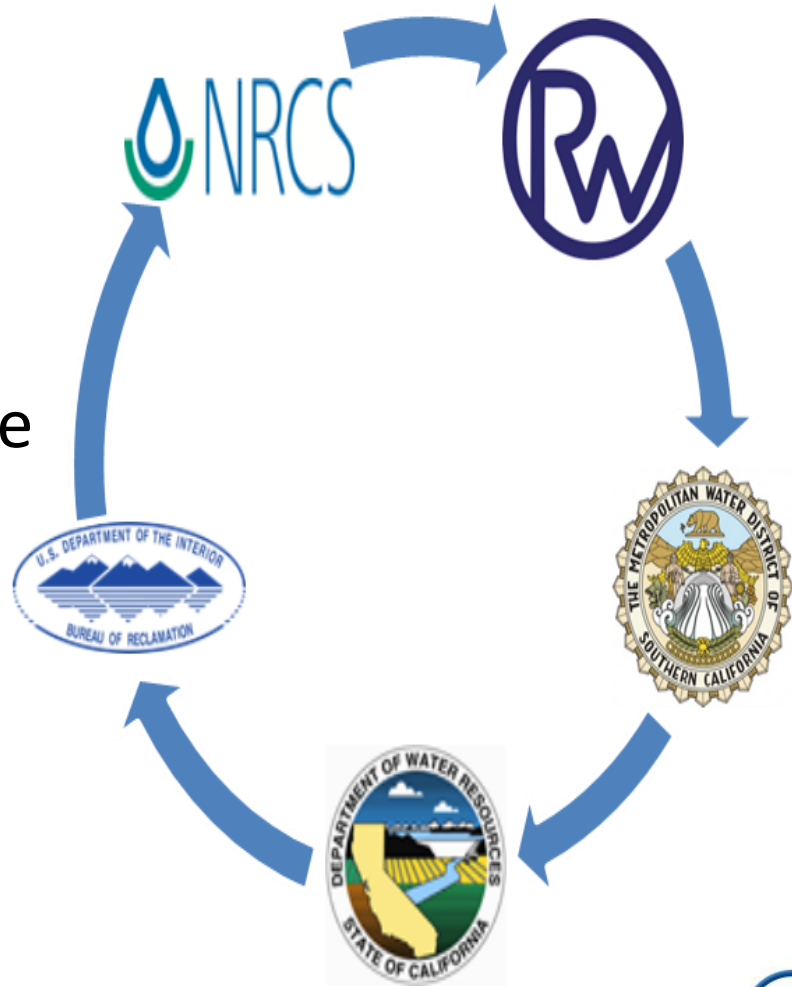


- 54 Irrigation Systems Retrofitted
- 100% success rate



Cooperative Effort

- A combined ~\$2M in funding provided by five cooperating agencies



MWD Water Savings Incentive Program (see: www.bewaterwise.com)

- Open to commercial, industrial, agricultural, institutional and large landscape customers
- Eligible projects include
 - Replace older, less water-efficient equipment with new efficient equipment
 - Installation of new water-efficient commercial and industrial equipment that will help minimize water demand from new construction or industrial process expansion



MWD Water Savings Incentive Program (continued)

- Comprehensive changes to industrial processes that reduce water consumption per unit of output and improve efficiency
- Improvements to existing irrigation systems and landscaping to improve water use efficiency for agricultural operations and large landscapes on a minimum of one acre
- Water management services that may include new equipment, materials and horticultural practices to improve water use



Rebates for Commercial, Industrial and Institutional Customers

(see: www.socalwatersmart.com)

- A variety of devices including
 - Conductivity Controllers
 - Dry Vacuum Pumps
 - High Efficiency Toilets
 - Ultra Low and Zero Water Urinals
 - Connectionless Food Steamers
 - Laminar Flow Restrictors
 - Irrigation Controllers



Water Use Efficiency

- Residential Rebates
 - Rotating Nozzles
 - Weather Based Irrigation Controllers
 - High Efficiency Toilets



Water Use Efficiency

- Toilet Voucher Program
 - Buy one get one free (Niagra Stealth 0.8 toilet \$165.87)
- Free Sprinkler Nozzle Program
 - Customers receive high efficiency sprinkler nozzles at no cost
 - www.freesprinklernozzles.com



Water Use Efficiency

- Residential Irrigation Efficiency Implementation Program
 - Do it yourself kits
 - Irrigation system retrofits
- Residential Water Use Efficiency Evaluation Program
 - Individual customer evaluations



Water Use Efficiency

- Neighborhood Water Use Efficiency Workshops
 - Workshop with approximately 10 homeowners with hands-on water use efficiency experience



Upcoming Programs

- Home Depot Plant Sale: Temecula, March 22nd
- Home Depot Plant Sale: Murrieta, April 12th
- Community Water Conservation Festival: April 12th 9:00 a.m. to 1:00 p.m. Big League Dreams Perris
- Landscape Contest: April- June
www.westernlandscapecontest.com



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Opportunities

- Better Utilize Unused Storage in Vail Lake
- Increase Available Storage in Vail Lake
- MWD Raw Water, Vail Lake, VDC Recharge and Well Fields can be integrated
- Recharge capacity can be expanded with relatively small investment
- Well production (recovery) capacity could be expanded if economically justified
- Potential for conjunctive use arrangements using both surface and groundwater components



Suggestions for MWD

- Operate existing Prop 13 Conjunctive Use Programs that are in good standing.
- Price replenishment depending on MWD storage and supply conditions.
 - Shortage = price at full rate if within allocation, at penalty rate if above allocation.
 - Normal/Non Shortage = price discount to reflect marginal rate of other storage options available to MWD
 - Full Surplus (MWD storage full) = price to reflect value of water not being lost or recovery of variable costs for delivery and treatment



Suggestions for MWD

- Economic Terms of Future Conjunctive Use Arrangements Could Reflect a Variety of Factors
 - Incentive for capital deferral or operational assistance with MWD capacity (in some cases put/take may relieve need to build new MWD treated facilities).
 - Mild incentive for 12 months carryover – hedges against dry year in next season. This is the traditional interruptible Replenishment Rate.
 - Moderate incentive for 24 months carryover. Additional hedge against future dry year.
 - Higher incentive for elements such as “put discretion”, longer storage hold, and “call discretion” provisions
 - Longer holds would need to account for losses/spill risk in pricing or call provisions.
 - Would need to guard against basins overcommitting to performance that can't be sustained at time of call. This is getting close to the contractual storage model, which already has precedent in place in several basins.

