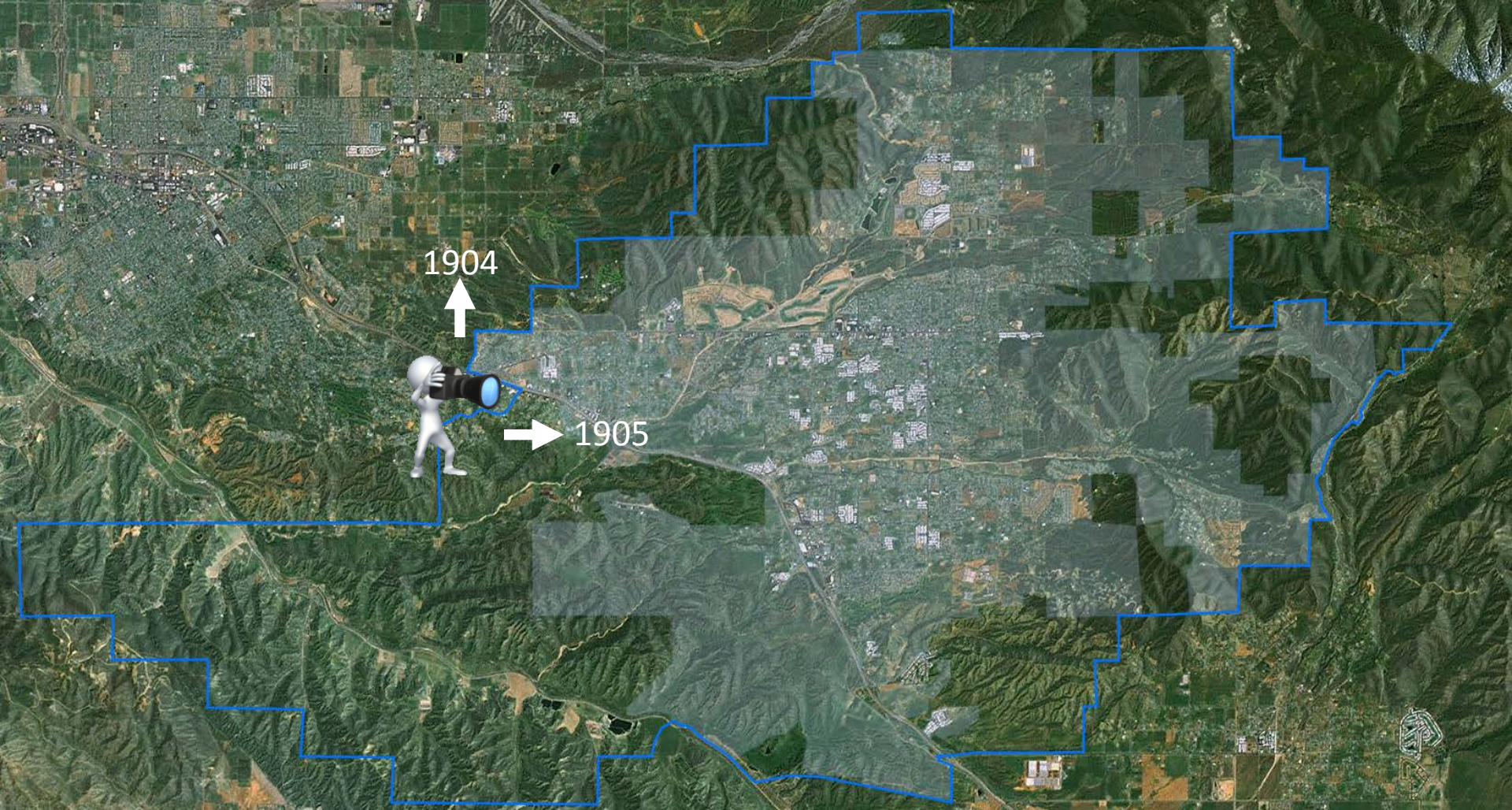




The Future Use of Recycled Water in Yucaipa Valley Water District's Service Area

**Joseph Zoba, General Manager
Yucaipa Valley Water District**

Tuesday, January 10, 2017





View of the Redlands and the San Bernardino Valley – 1904

Source: W. C. Mendenhall, USGS



View of the Yucaipa Valley – 1905

Source: W. C. Mendenhall, USGS

News of the Courts

OLD SHOOTING SCRAPE BEING AIRED IN COURT

Men Charged with Gun Play Are
Prosecuting Complainant
for Perjury

After postponements and continuances for a period covering two years, the trial of F. M. Bell on the charge of perjury was commenced before Judge Davis yesterday, the main witnesses for the prosecution being O. P. Widaman and A. R. Sanger. Two years ago they were arrested on the charge of assaulting Bell with deadly weapons in a room of the Hollenbeck hotel, the charges being subsequently dropped and Bell being charged with perjury.

Widaman was on the stand most of the afternoon and told his story of the shooting in the Hollenbeck hotel. He declared that Bell had drawn two pistols on him and that neither he nor Sanger had attempted to injure Bell. "Bell asked me to turn on the heat in the radiator," he said, "as he complained that the room was getting cool. I tried to turn the arrangement and he told me to let Sanger turn it, as he knew how. He was leaning against the bureau and the two of us were between him and the window."

"He then accused me of running around with his wife and causing trouble between them. I told him that he was wrong and that there never had been anything between his wife and me, and offered to help patch things up between them."

"He would not listen to what I said, but started to tell me what he was going to do. He slid out a drawer in the bureau and said I would be just as dead in a second as I ever would be after I was buried. I was astounded at his actions for the moment. Then I grabbed him around the waist so that his shots went wild and Sanger took the gun away from him. He had another in the drawer and we grabbed that also."

Widaman said that no attempt was made to injure Bell, but that when the police were notified of the shots, Bell swore that the two had tried to shoot him. Bell then swore out a complaint against them, he said, and the case was brought into the justice courts. Several other witnesses were called, but the court adjourned the trial until this morning.

NEWSPAPERS OPPOSE EVENING NEWS' OFFER

Establishment of Paper's Stand-
ing Fought by Publishers

A lively contest developed in Judge Wilbur's court yesterday afternoon when the matter of establishing the standing of the Los Angeles Evening News as a publisher came up for a hearing.

Proprietors of the San Pedro News and the Los Angeles Journal were present and opposed giving the Evening News any standing on the ground that it had no bona fide circulation. The city printing contract, which was recently awarded to the Evening News, was the real bone of contention, and the representatives of the other newspapers, by an act of defiance to the establishing of a status for the evening newspaper, hope to get a chance at the city printing.

Joseph Mosser, owner of the Evening News, was cross-questioned by the other two news-

DENTIST HELD TO ANSWER TO CHARGE OF YOUNG GIRL

Pretty Hazel Nichols Testifies at
Jarvis' Examination

With flushed cheeks pretty 16-year-old Hazel Nichols, a Los Angeles school girl, mounted the witness stand in Justice Summerfield's court yesterday at the preliminary examination of Dr. C. C. Jarvis, charged with her mistreatment, and under the careful guidance of attorneys for the prosecution unwillingly told of her visit to the dentist's office one year ago. At the conclusion of her story Jarvis was held to answer to the superior court in bonds of \$2000. The charge was the second to be lodged against Jarvis in several months. He is awaiting trial in Judge Wilbur's court on a similar charge under bonds of \$1000.

Hazel Nichols said she was introduced to Dr. Jarvis on the street by another girl friend her own age, who told her he was a good dentist. She later visited him for dental work and he is said to have mistreated her. The girl seemed unwilling to testify against the man and it was with considerable difficulty that the court was able to get her story of the affair.

PROTESTS IN ANNANDALE SCHOOL ROW ARE FILED

A petition was presented to the board of supervisors yesterday morning by residents of the Annandale school district for annexation to Los Angeles for school purposes only. Another petition was also presented by other residents protesting against the granting of the petition. The Los Angeles school board also protested against the granting of the application on the ground that it already has all the territory it can handle at the present time.

The supervisors discussed the petitions for a short time and laid them on the table indefinitely, in view of the prospects that the Annandale district is to vote on annexation to Los Angeles for all purposes in the near future.

DENIES PROBATION TO NOTORIOUS PICKPOCKET

Probation was refused Charles Lewis yesterday by Judge Davis, and he was sentenced to three years in San Quentin, the prosecution introducing evidence that Lewis has quite a previous record as a pickpocket in various parts of the country.

Lewis was charged by Charles Dietrich with picking his pocket and taking \$30 at Long Beach last summer. Dietrich chased him, and when caught Lewis endeavored to avoid prosecution by returning the money. A criminal complaint was sworn out against him, however, and he will spend the next three years in prison.

WILL TRY DRINK CURE

To give the criminal court's special brand of "liquor cure" time to soak into his system, to make sure that it is given a good chance to become effective, the sentencing of F. C. Shoemaker, charged with violating his parole by drinking intoxicants, was deferred by Judge Willis yesterday to April 25. The prisoner will be given another chance provided there is a good prospect of the "cure" doing its work.

GIVEN ANOTHER CHANCE

C. Torrez, charged with burglary, to which he pleaded guilty, was placed on three years' probation by Judge Willis yesterday, the court refusing to send him to the penitentiary on the charges made against him. Torrez was accused of entering the Pinar rooming house and exchanging his old shoes and a hat for similar articles in such

Municipal Affairs

SECURE STREET BOON BUT MUST HELP CITY

Right to Use Part of Municipal
Thoroughfare Is Granted
Under Conditions

Charles Frost and others can have a portion of Council street that is not of any public benefit, but Mr. Frost and others will have to do certain things in consideration of the abandonment of that part of the street by the city. They will have to dedicate for public use the necessary portions of lots 26 and 27 of subdivision No. 2 of Forest park for the extension of Commonwealth avenue from the north line of Council street to the north line of the lots.

They will have to improve Commonwealth avenue from First street north by constructing brick pavements and cement gutters, curbs and sidewalks. They will have to improve Council street from the west line of Commonwealth in the same manner.

This is the report the board of public works will make to the city council today. Last week Mr. Frost petitioned the council to abandon a portion of Council street that is not in use and the council sent the petition to the board of public works.

The board is forming a habit of demanding something in exchange for portions of the city's domain. The former council seldom referred these matters to the board of public works, but abandoned streets and alleys in a reckless manner without charge.

The new council has exacted as high as \$500 for the abandonment of a portion of a street that was of no value except to the person asking the favor.

SILENT OPPOSES PAYING \$10,000 FOR PARK LEASE

Payment on Demand for Agricultural
Square Is Held Up
by the Board

The demand for \$10,000 for the lease of Agricultural park for fifty years did not entirely meet the approval of some of the members of the park commission yesterday, especially Judge Silent, and payment on the demand was withheld until the judge can make a thorough examination of the lease.

The \$10,000 must be paid by the park department, although it will not come out of the park fund. The money was transferred by the council from the general expense fund to the credit of the park fund, to be used for this purpose. But Judge Silent does not want the agricultural association, and any plans he is so deeply interested to show this payment unless they also show that the city receives some adequate compensation.

Judge Silent would like to have the park commission have something to say about how the money is to be spent in Agricultural park. The park is under the control of the Sixth District Agricultural association, and any plans the city may make must first be approved by that body before they can be executed.

It is planned to make Agricultural park one of the most charming recrea-



Yucaipa Valley

Has Unlimited Water Supply

The Redlands and Yucaipa Land company has recently closed a deal with the South Mountain Water company, giving them in addition to their already large water supply all of the water in Potato canyon formerly owned by the South Mountain Water company, at present flowing nearly 200 inches, having an estimated value of \$200,000, a \$30,000 pipe line and \$60,000 worth of additional high-grade apple land.

THIS is one of the most important water deals ever consummated in the state and makes the Yucaipa valley one of the best watered valleys in the state.

Those who have already bought land in the valley will get the benefit of this deal without one dollar additional expense. The prices of land will remain the same for a short time, until the company completes its 20-inch pipe line, now in process of building, to carry this water to the new apple orchards and Yucaipa City townsite.

Get in touch with the Yucaipa Valley project, the most active and best selling land project in the west. First, last and all the time, we ask you to visit the Yucaipa Valley and see for yourself a body of land comprising 11,000 acres that is as near perfect for pleasant and profitable homes as it is possible to find anywhere on earth. We court the strictest possible investigation of the soil, water and climatic conditions. The soil is especially adapted for apples and all other deciduous fruits, and all kinds of vegetables.

Over \$50,000 worth of big red apples were shipped out of the Yucaipa valley last year. For years past, this portion of land has been rented for truck farms at an annual rental of \$25 per acre per year, thus giving you a comprehensive idea of how profitably this class of farming can be conducted.

The Yucaipa valley is surrounded by mountains, affording absolute protection from the winds that are so prevalent in some sections of the country. The altitude is over 2000 feet and the climatic conditions are perfect.

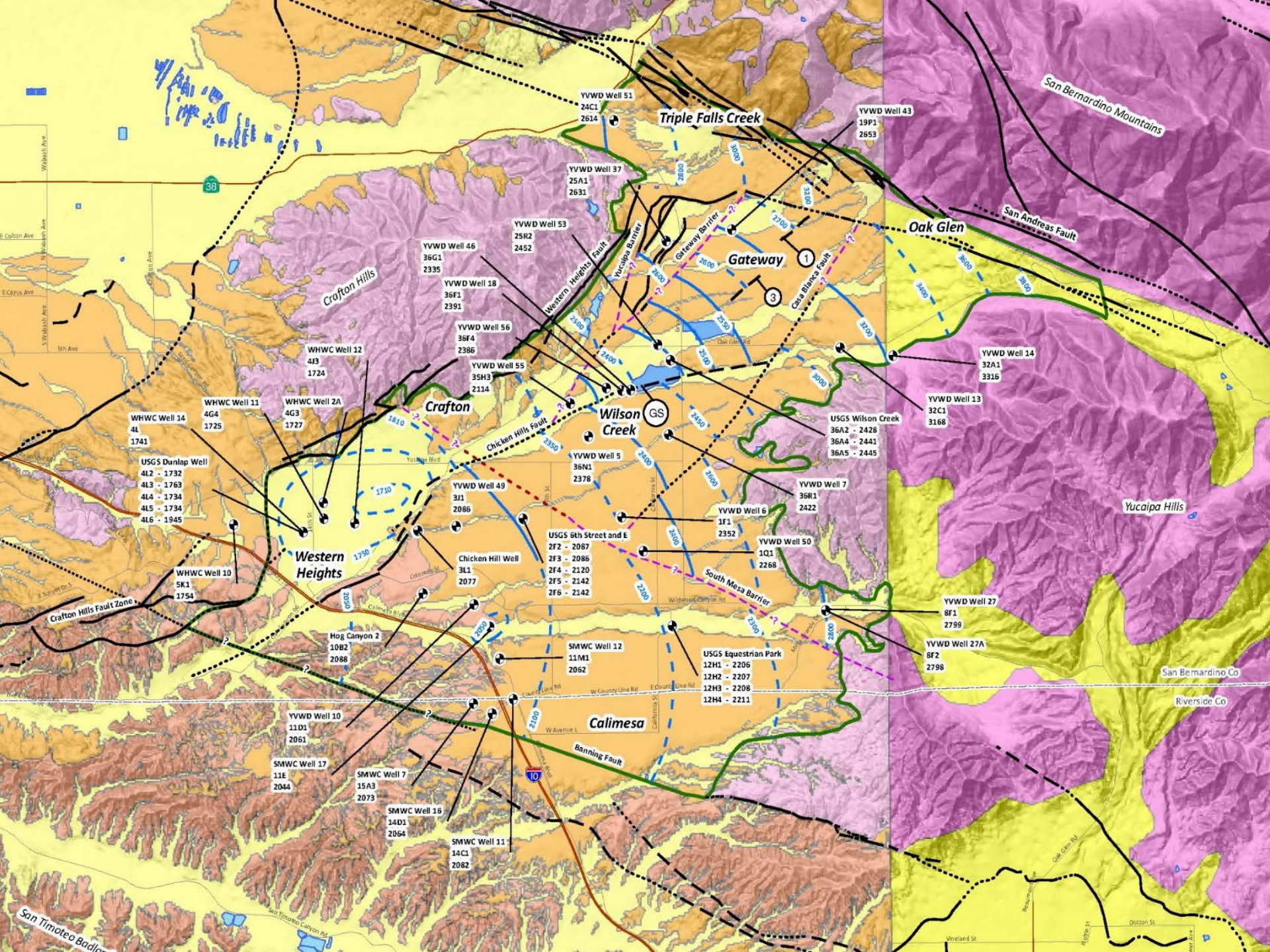
It is a difficult matter for us to convey to you in an advertisement the beauties of climate and scenery, and the exceptional attractiveness of the Yucaipa valley, but we urge you to visit us and draw your conclusions from an unprejudiced standpoint. For homeseekers, or for investment, the opportunities in the Yucaipa valley are exceptional.

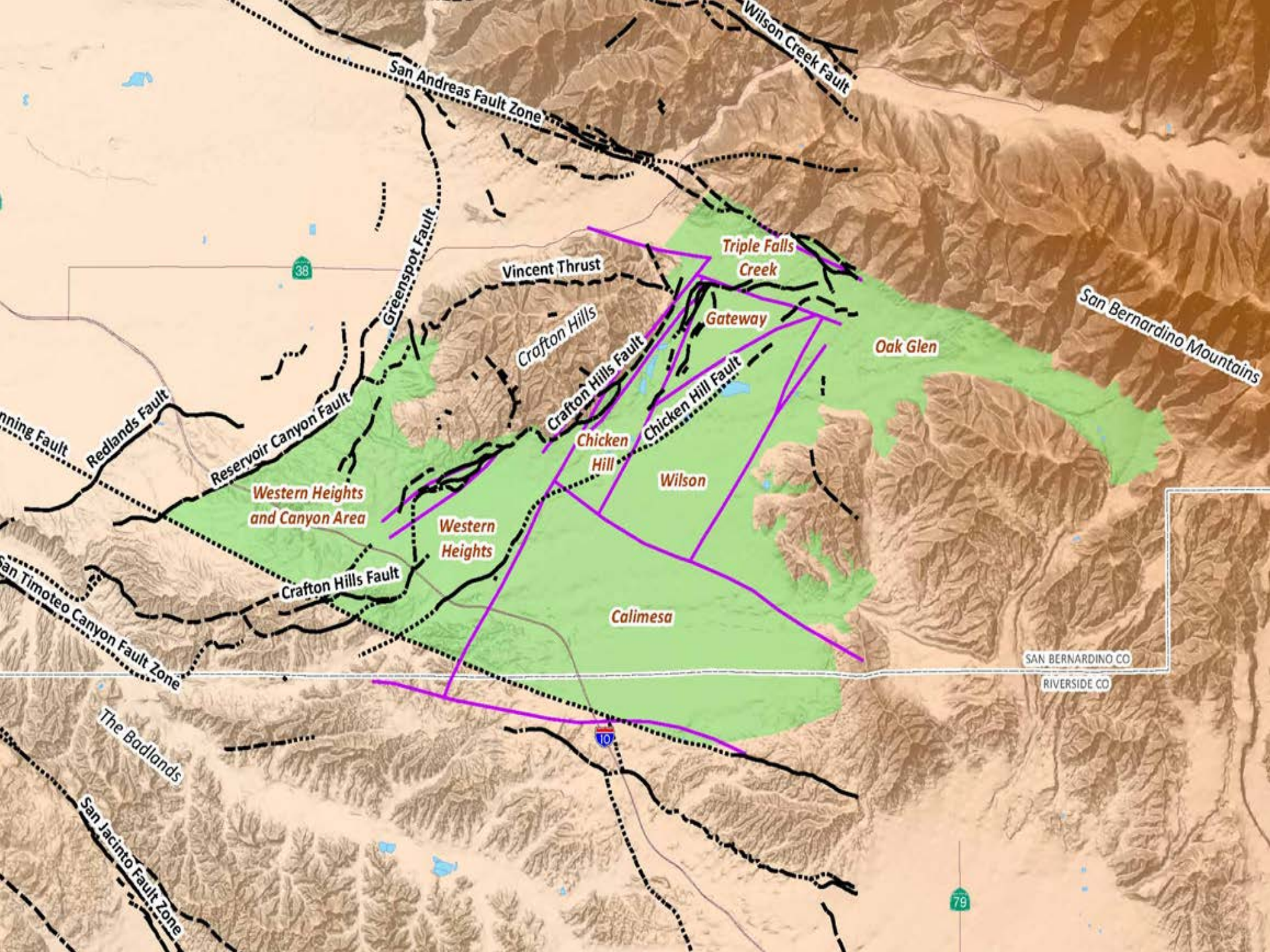
What We Have Done

The Official Opening of the Yucaipa valley occurred February 8 of this year. Since that time a portion of the land has been platted and a great many tracts sold. Over 200 acres of apples have already been planted by purchasers. The town of Yucaipa City has been laid out, palms and trees planted, streets graded and other improvements made. Water has been piped to all of the land sold. A modern 30-room hotel has been constructed and will be formally opened April 20. Several storerooms have been constructed; a part of them are occupied and others will be occupied soon.

What We Will Do

In addition to what has already been accomplished in laying out and establishing the townsite and subdivision No. 1, the company is now installing a permanent 20-inch pipe line to carry the Potato Canyon water recently acquired from the South Mountain Water company to a portion of the land. This pipe line will soon be completed. A large reservoir will be built to store this water. Other portions of the land will be platted shortly, and it is the intention to construct a line of railroad from Redlands to the valley, thus affording quick transportation; improvement that can be made for the



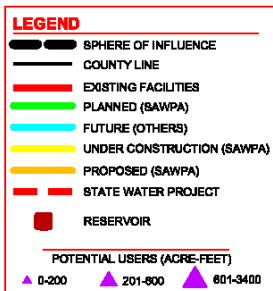


YUCAIPA VALLEY WATER DISTRICT

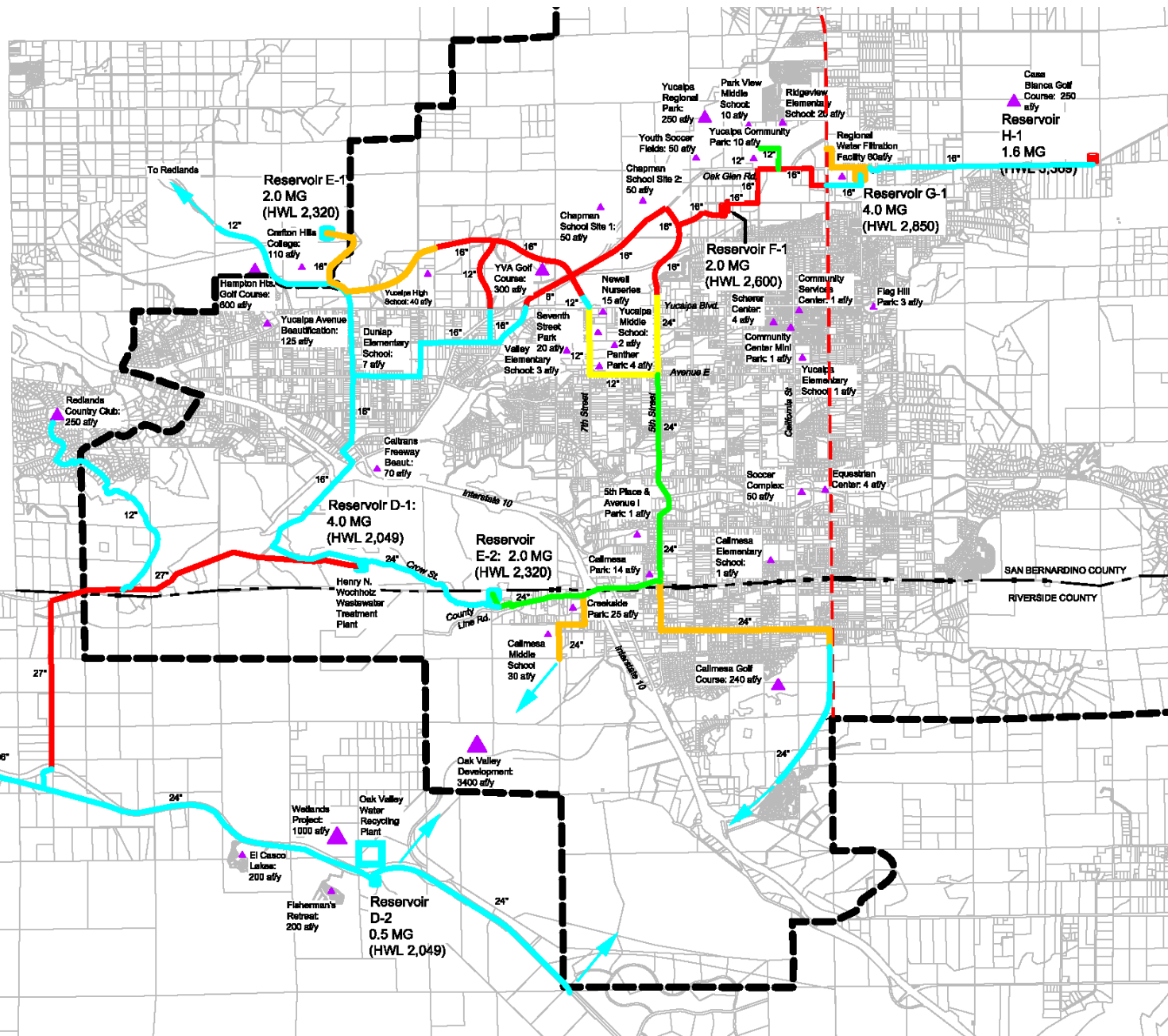
**Integrating Infrastructure
for a Sustainable Future**



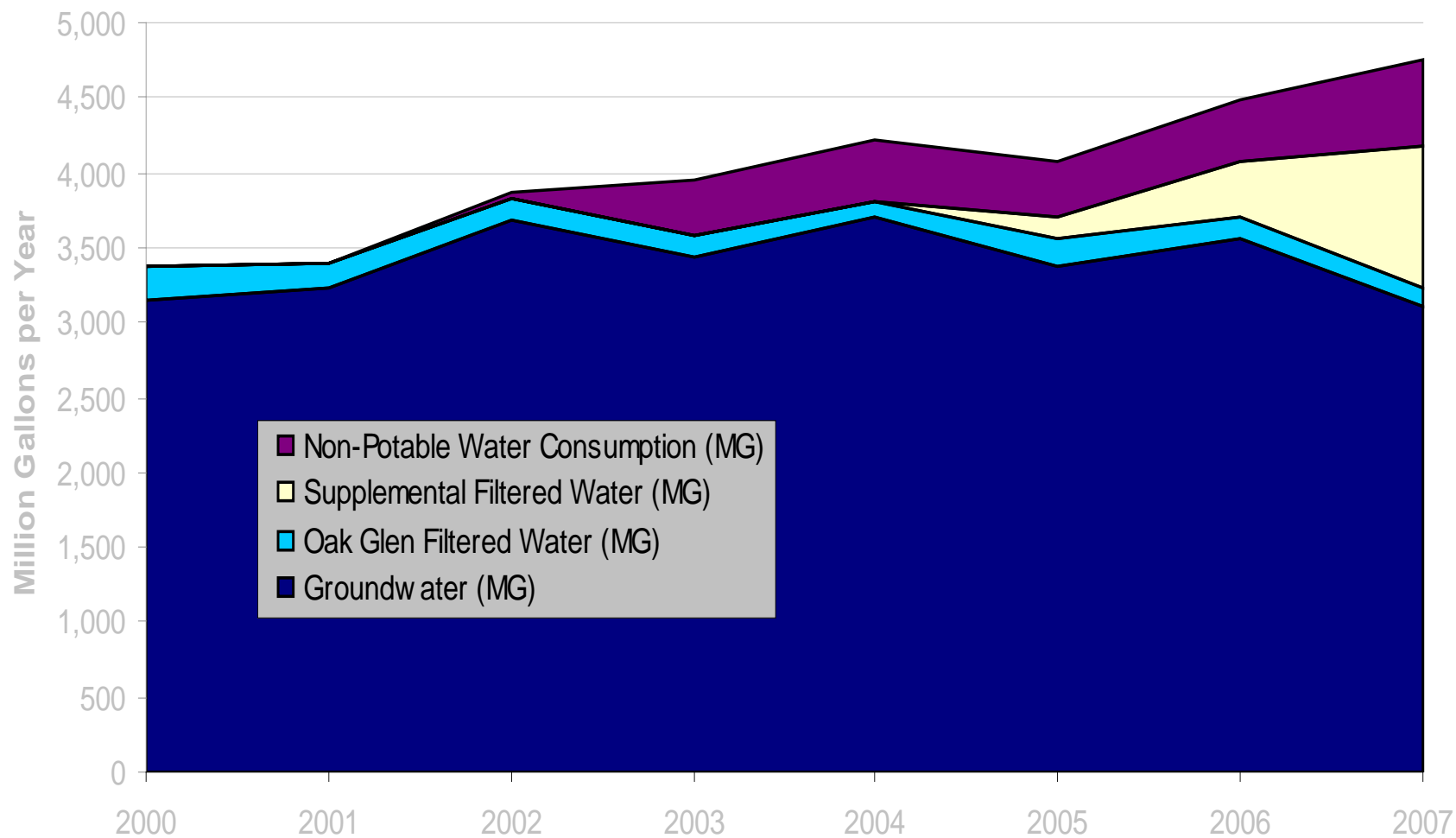
Yucaipa Valley Water District – Recycled Water Distribution System

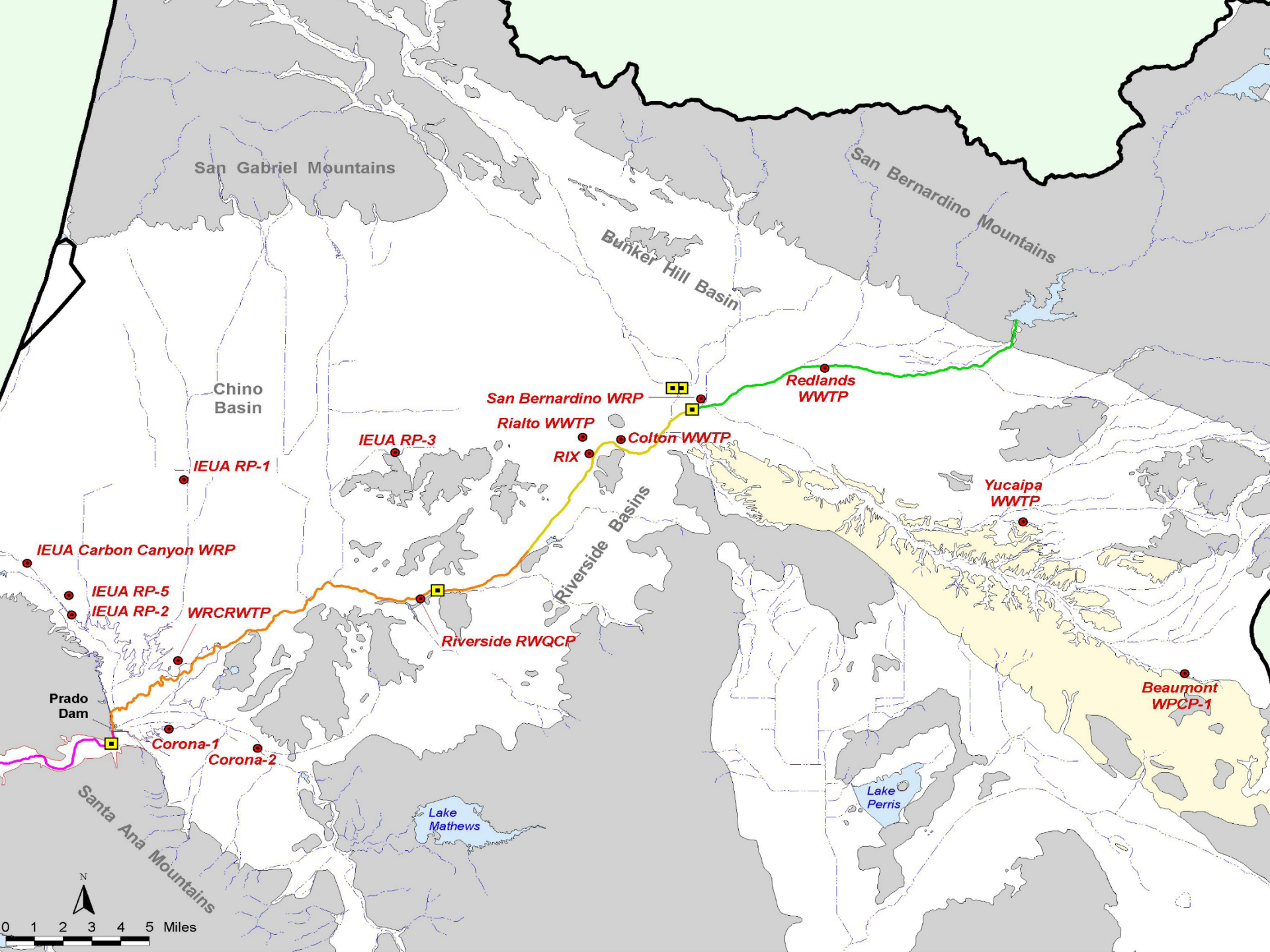


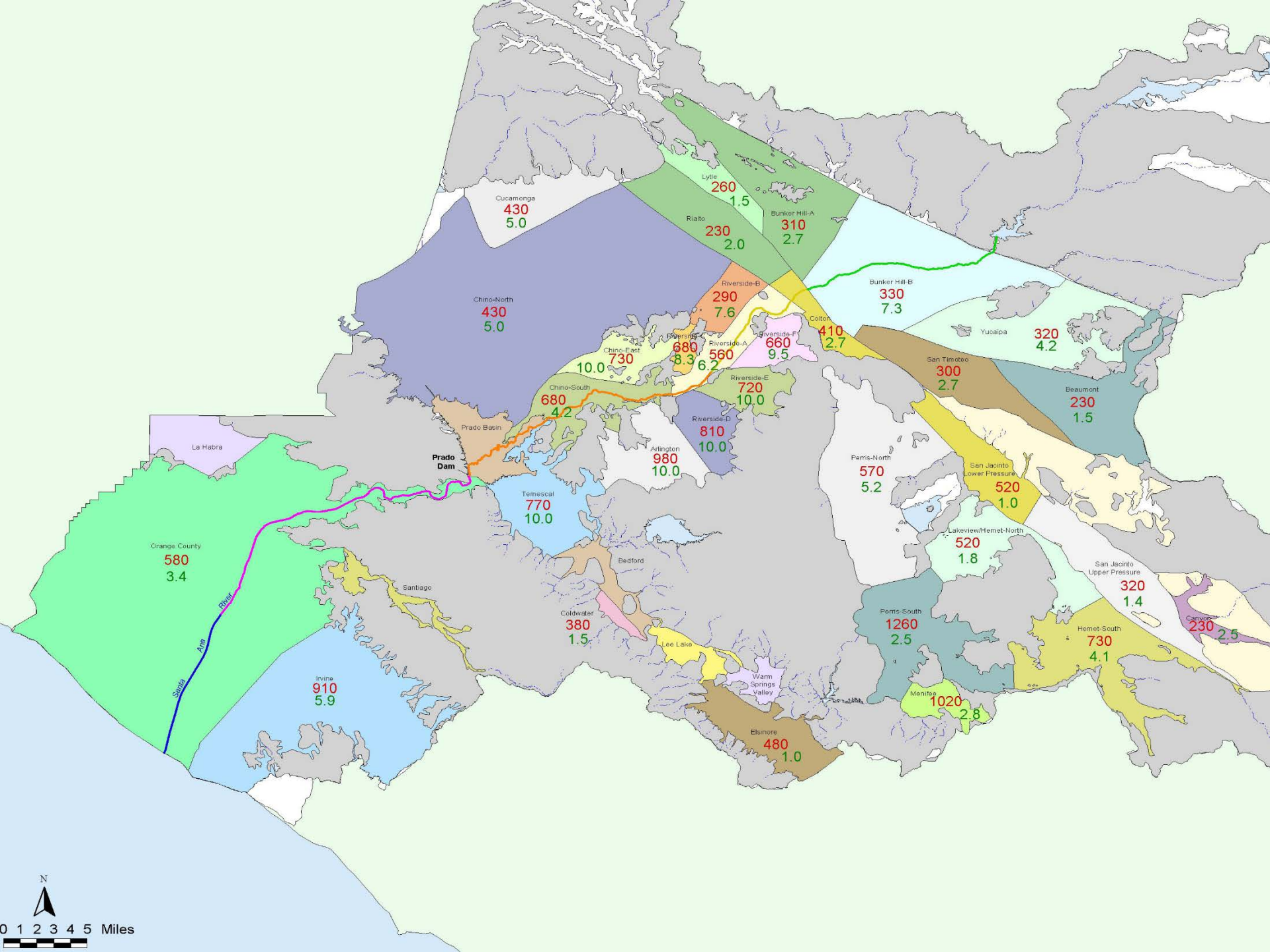
0 2750' 5500'

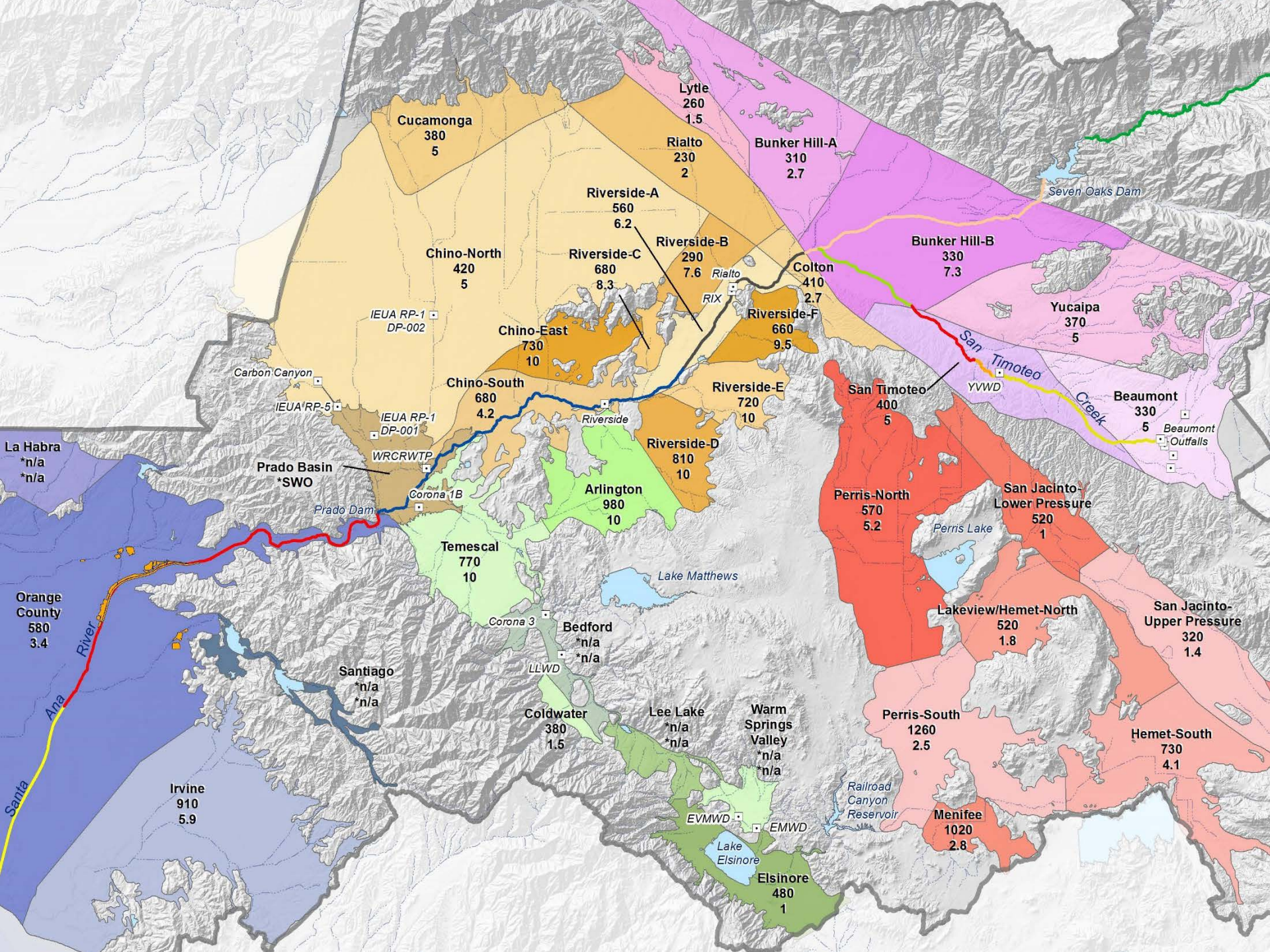


WATER RESOURCE MIX

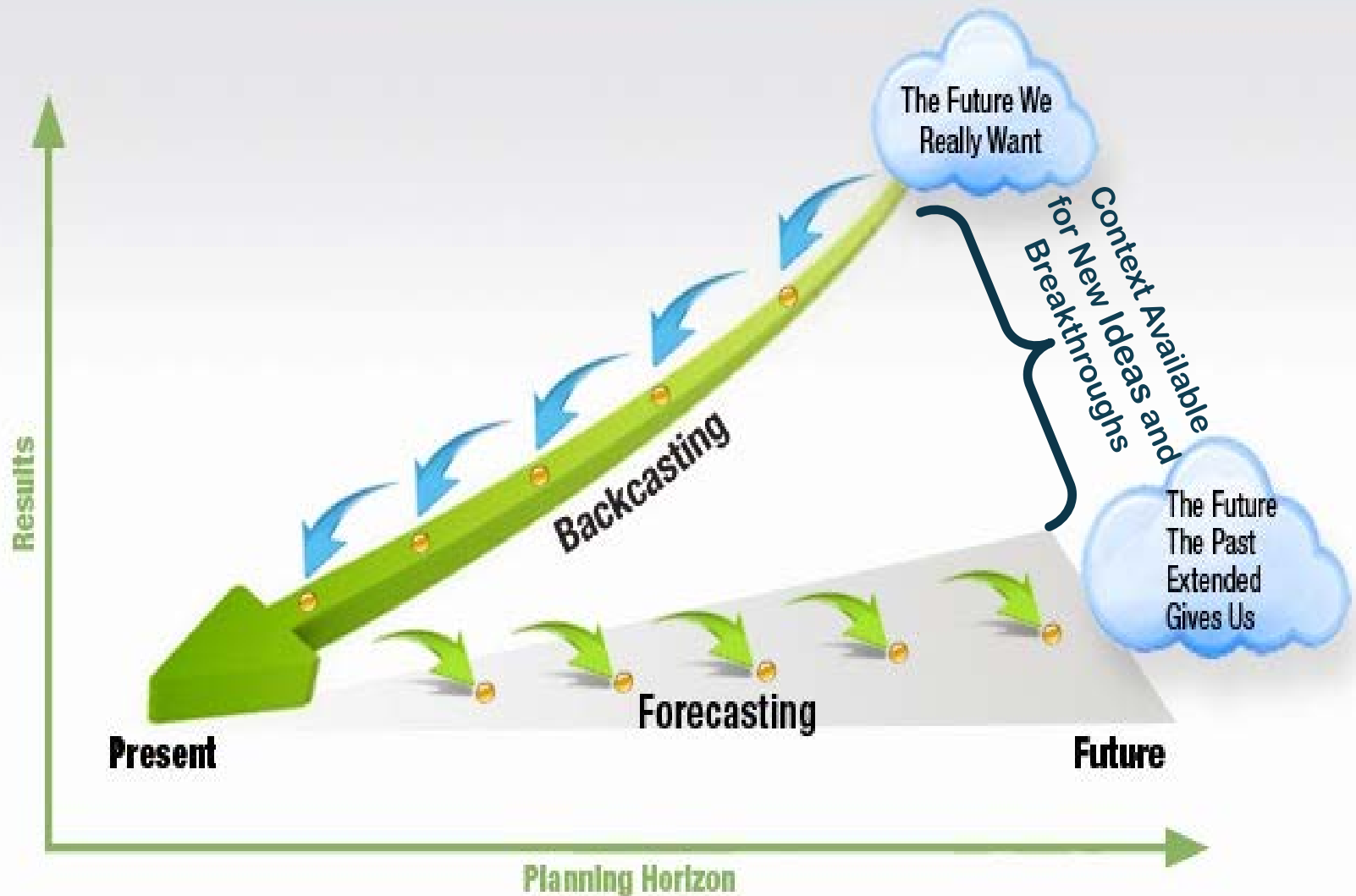




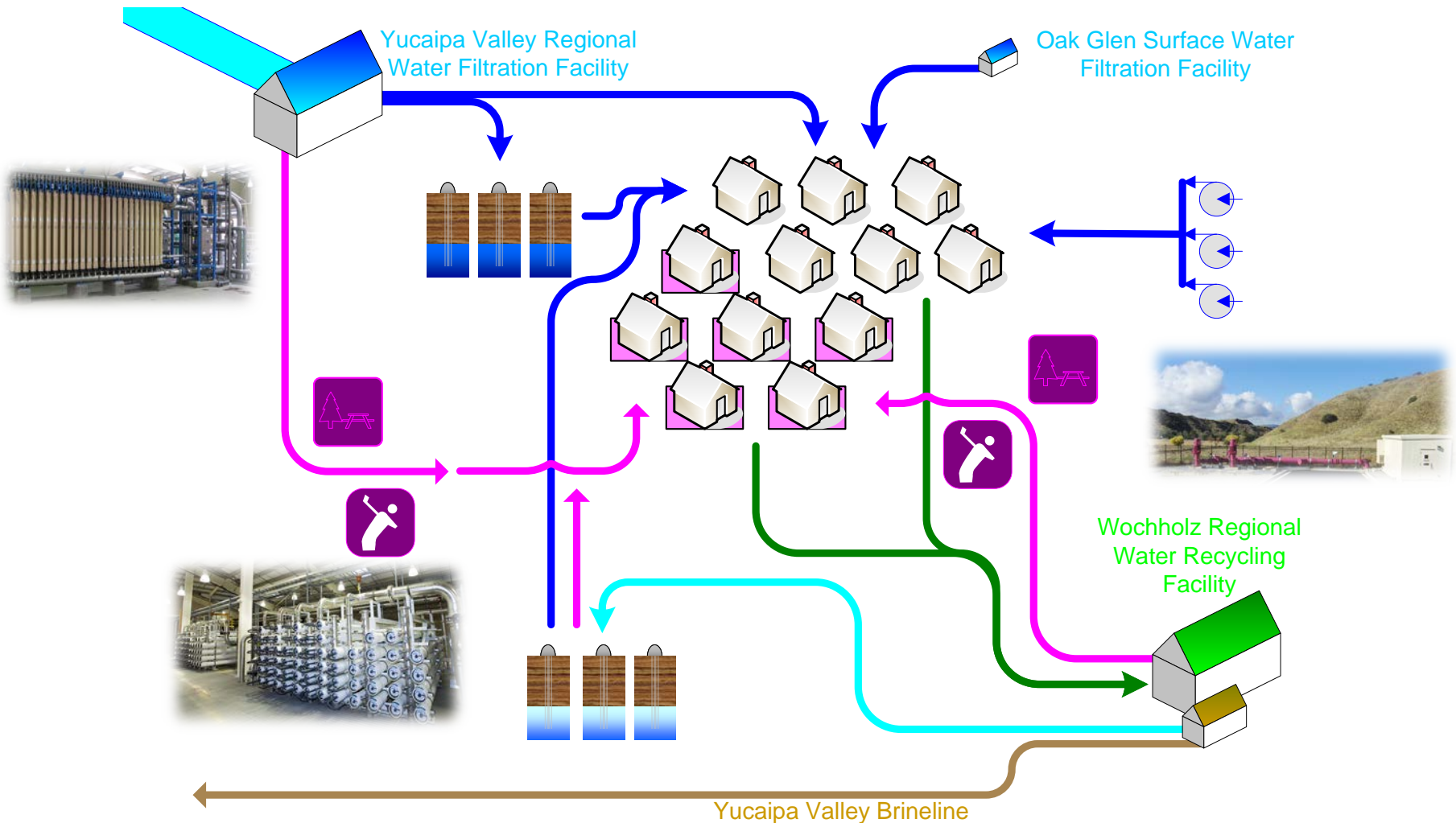




Backcasting

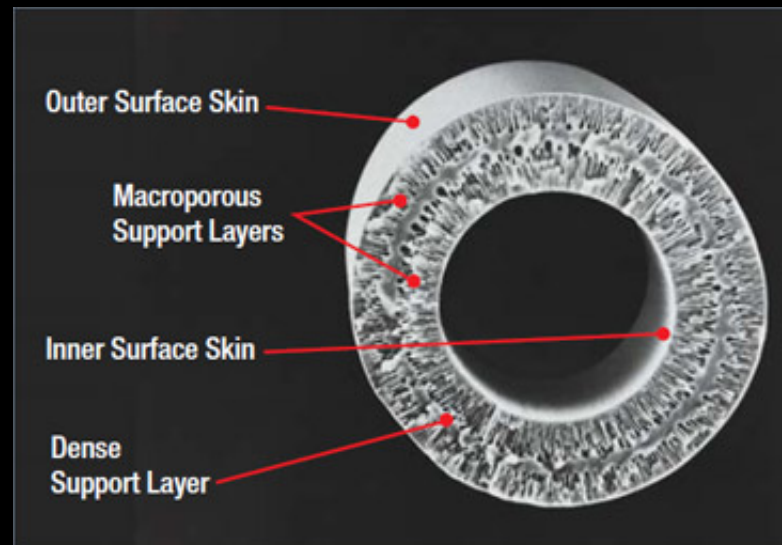
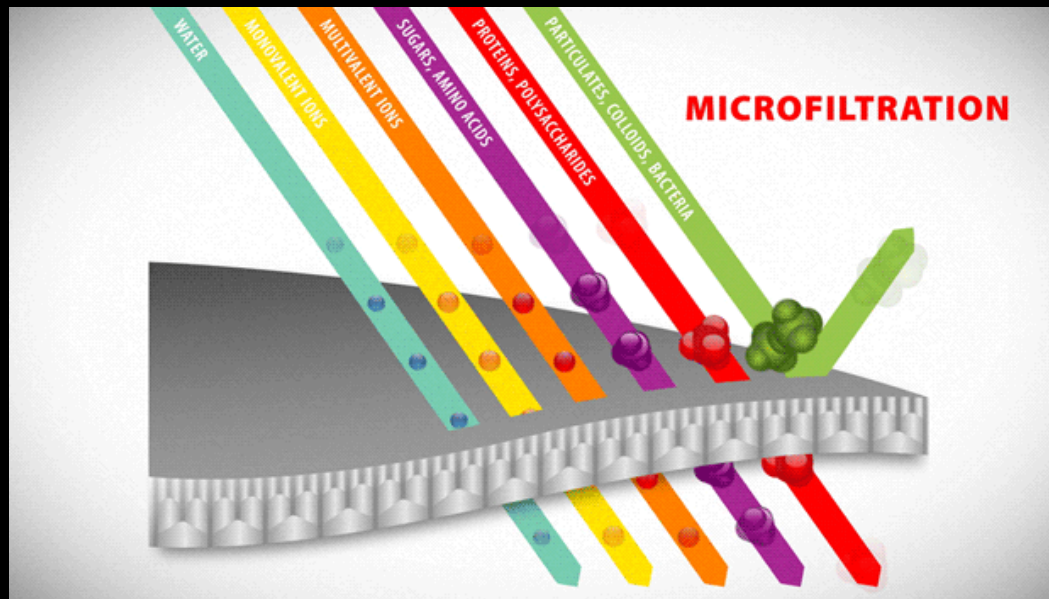


Water Resource Management Schematic for the Yucaipa Valley Water District

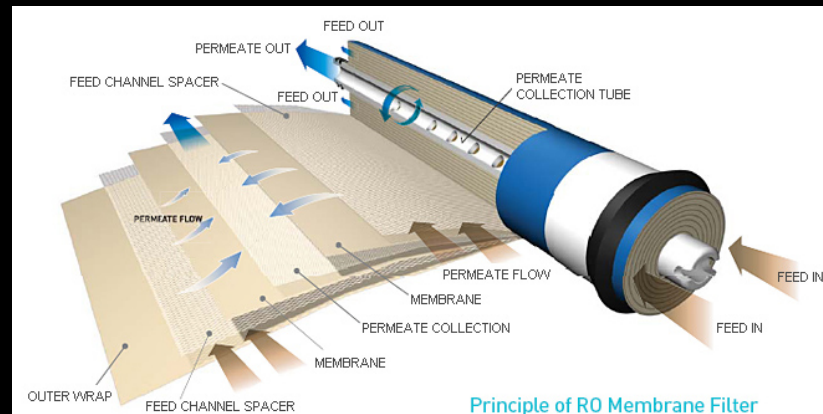
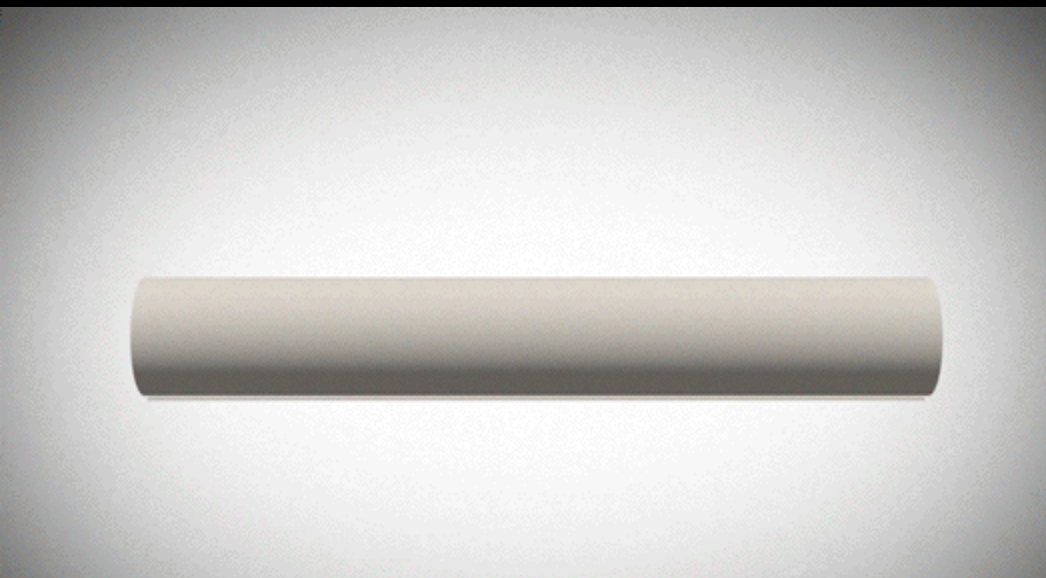
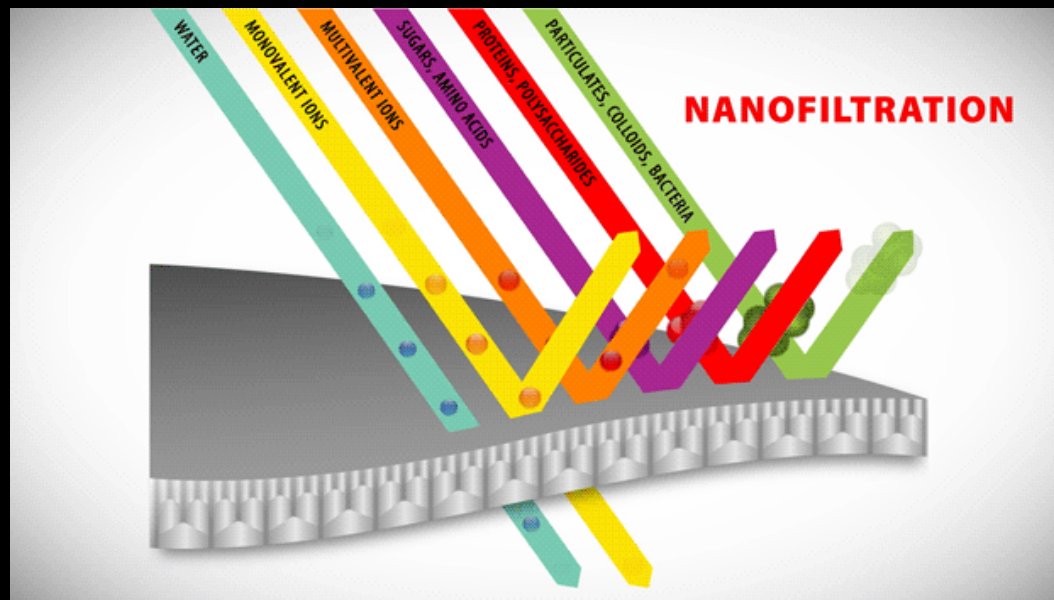




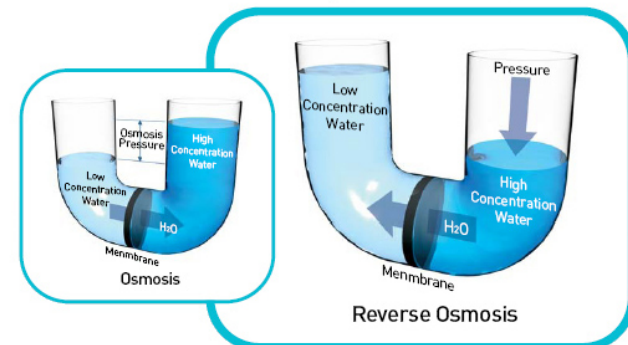


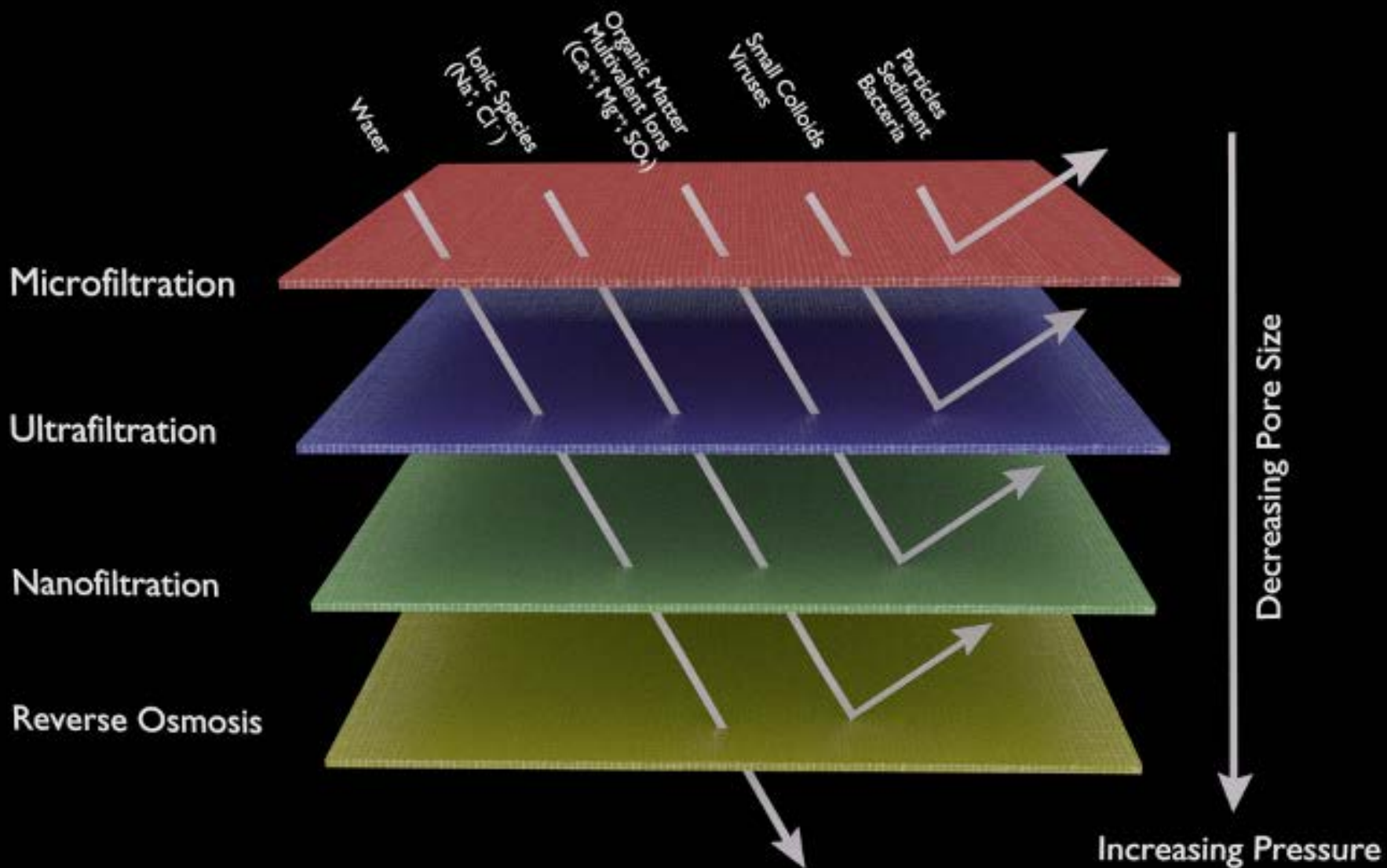






Principle of RO Membrane Filter





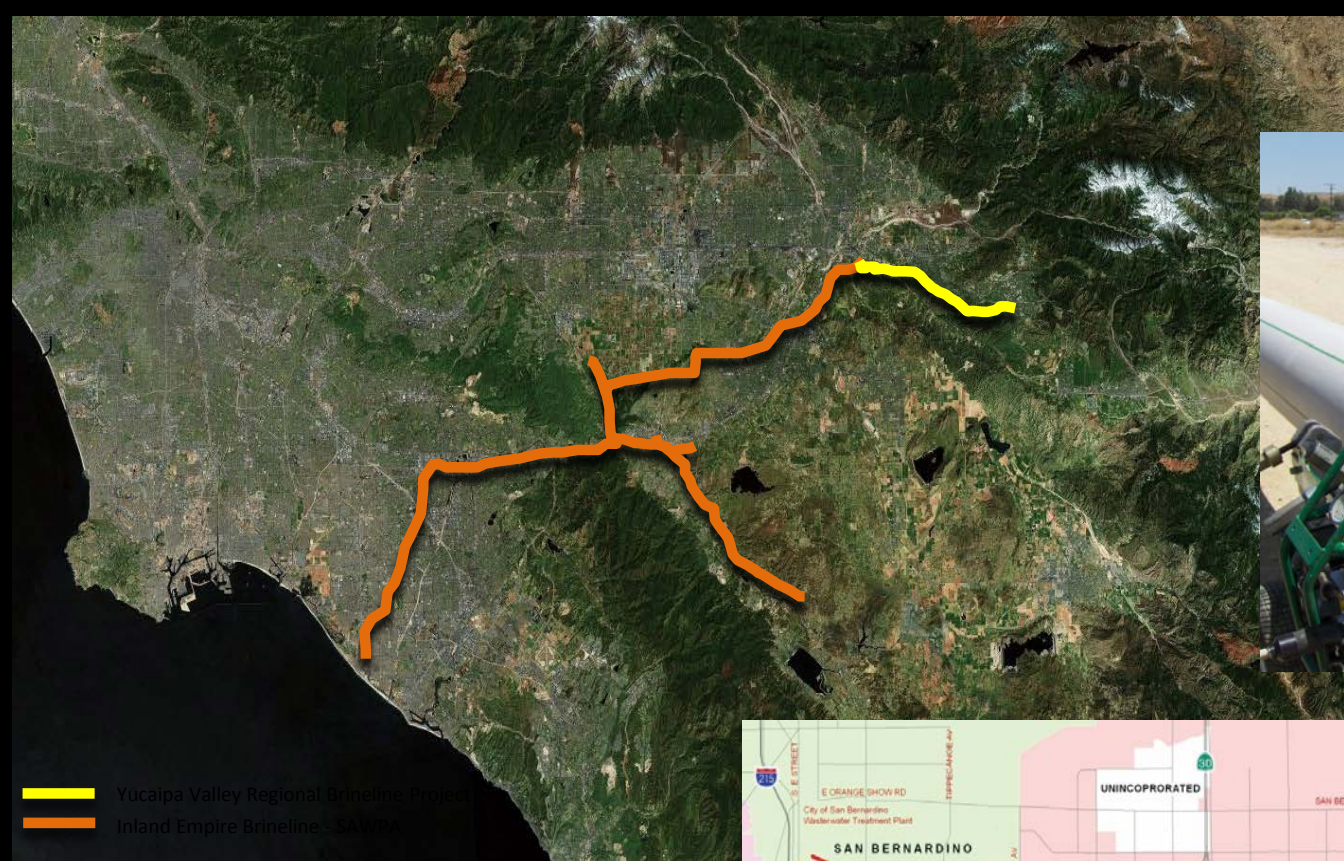




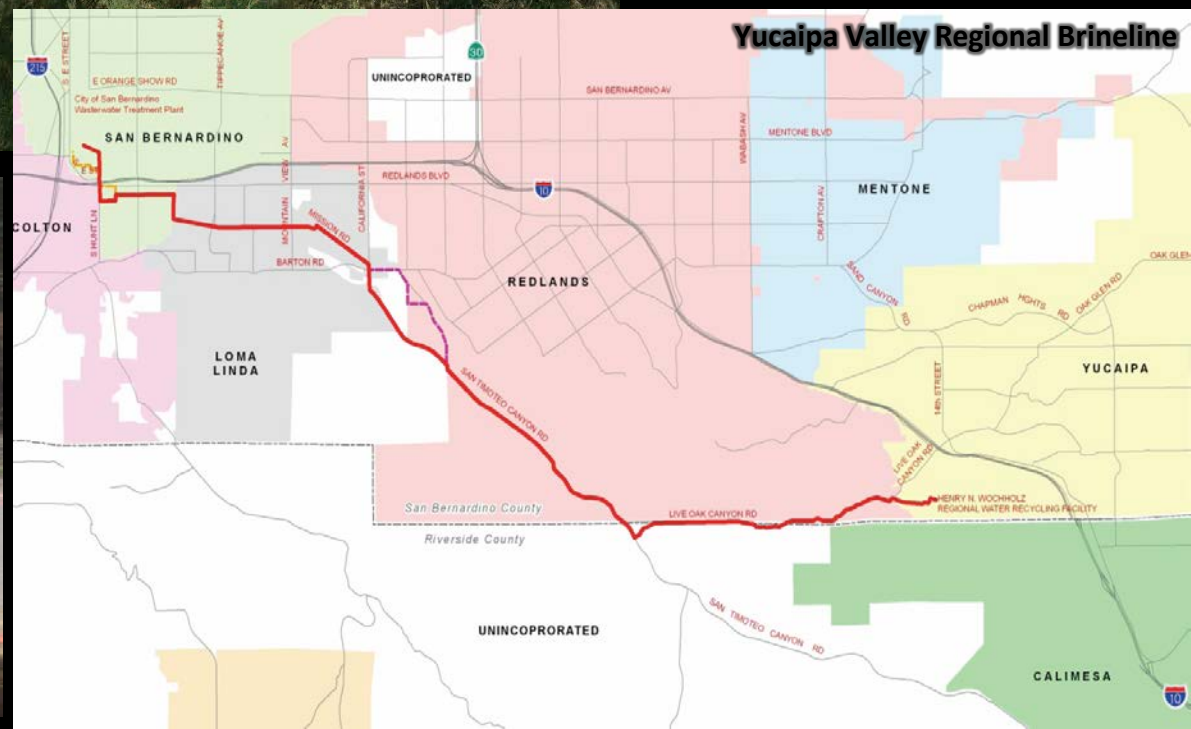






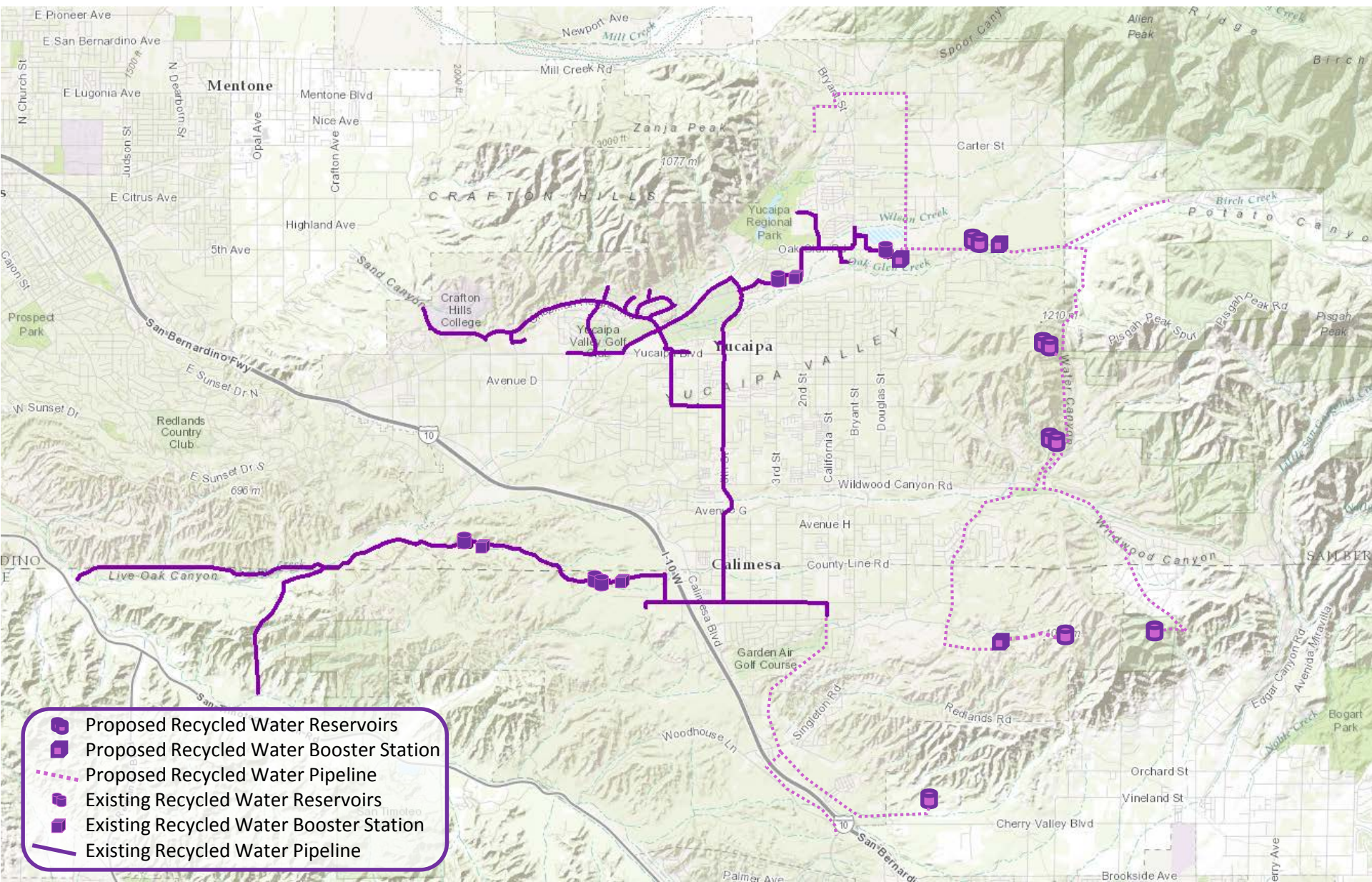


█ Yucaipa Valley Regional Brineline Project
█ Inland Empire Brineline - SAWPA



Integrated Recycled Water and Drought Management Project

Proposed Phase IV Recycled Water Facilities





YUCAIPA VALLEY WATER DISTRICT

New Constraints and Obstacles





28

Silverado Way
Hwy 101

Alameda Ave
Sage St

2nd St
Date St
Pascaden Ave
West Ln
Date Ave
Fair Dr
Addison St

Vista Ln
Madison St

Panorama Dr

Shady Wood Dr

Oak Glen Rd

Schuler Ranch Rd

Snow View Ct

Birchwood St

Pine St

Alameda St

Eastwood Ln

Fremont St

Deerbrook Rd







THE MEASUREMENT OF WATER PURITY

One Part per Hundred

- This is equivalent to about fifteen minutes out of one day.

One Part per Thousand

- This is equivalent to about one and a half minutes out of one day.

One Part per Million

- This is equivalent to about 32 seconds out of a year.

One Part per Billion

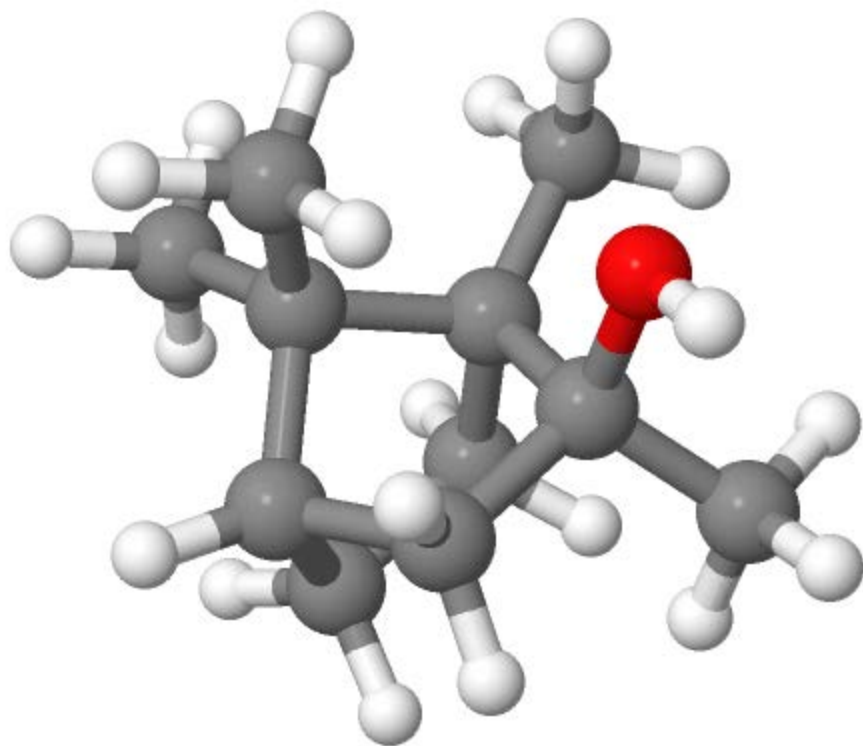
- This is equivalent to about three seconds out of a century.

One Part per Trillion

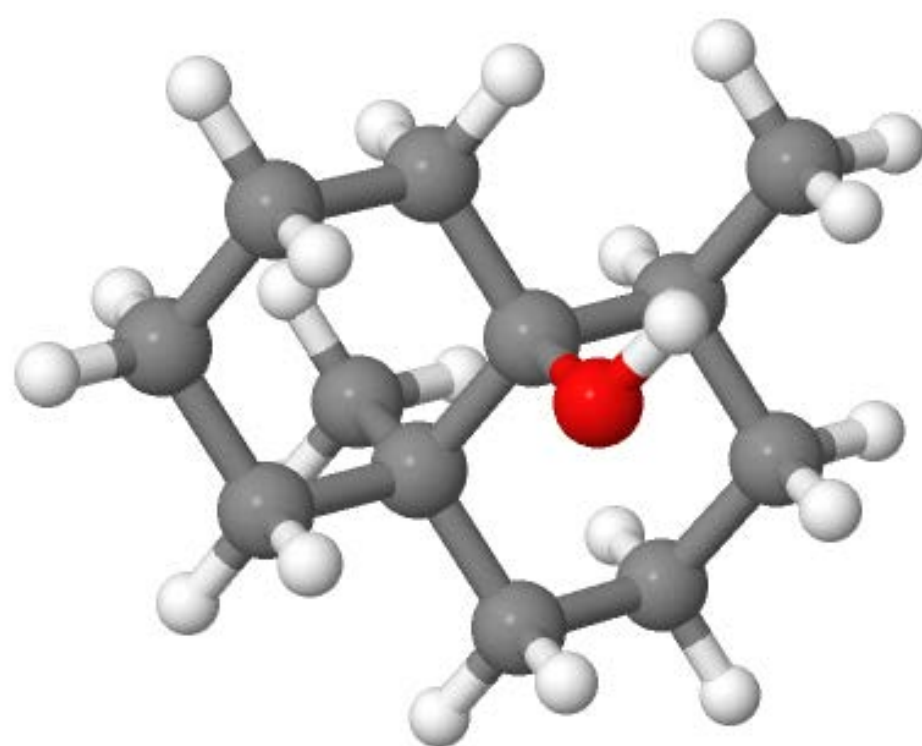
- This is equivalent to about three seconds out of every hundred thousand years.

One Part
per
Quadrillion

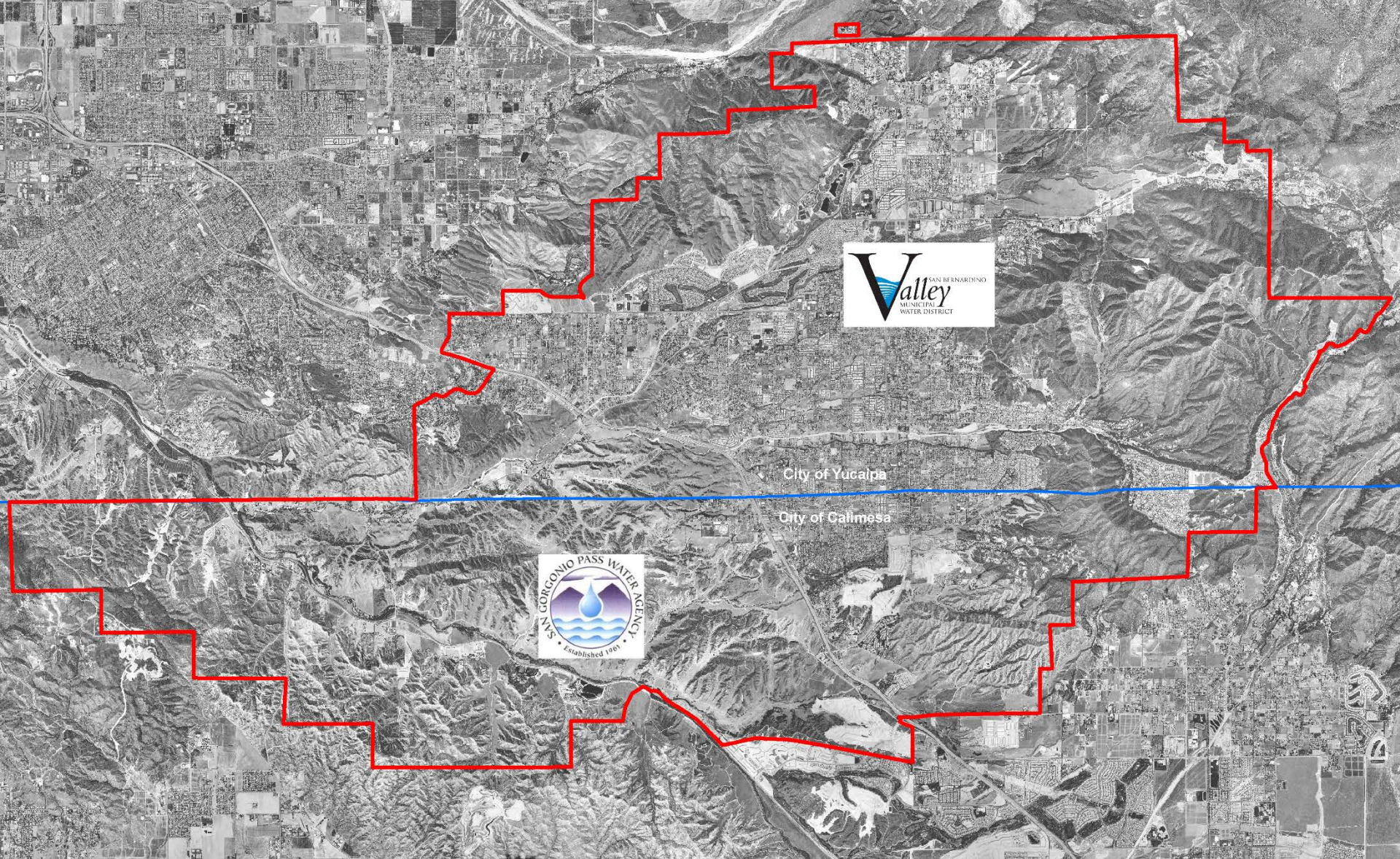
- This is equivalent to about two and a half minutes out of the age of the Earth (4.5 billion years).



2-Methylisoborneol
 $C_{11}H_{20}O$



Geosmin
 $C_{12}H_{22}O$



City of Yucaipa

City of Gailmesa

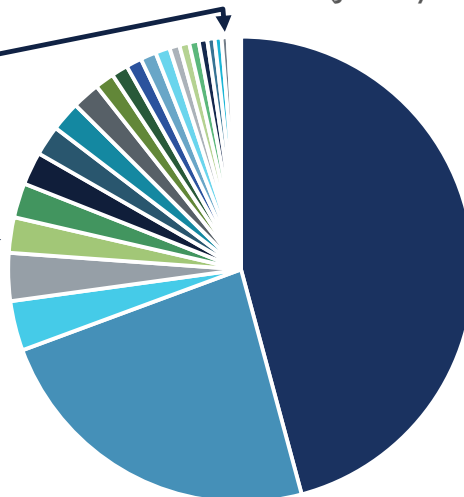


California State Water Project Contractors

Maximum Table A Amounts (January 2016)

**San Gorgonio Pass
Water Agency**
(17,300 acre feet or 0.4%)

**San Bernardino Valley
Municipal Water District**
(102,600 acre feet or 2.5%)



- The Metropolitan Water District of Southern California
- Antelope Valley-East Kern Water Agency
- San Bernardino Valley Municipal Water District
- Castaic Lake Water Agency
- Mojave Water Agency
- Desert Water Agency
- Santa Barbara County Flood Control & Water Conservation District
- Alameda County Water District
- San Gabriel Valley Municipal Water District
- San Luis Obispo County Flood Control & Water Conservation District
- Ventura County Watershed Protection District
- City of Yuba
- Crestline-Lake Arrowhead Water Agency
- Empire West Side Irrigation District
- Kern County Water Agency
- Coachella Valley Water District
- Santa Clara Valley Water District
- Tulare Lake Basin Water Storage District
- Alameda County Flood Control & Water Conservation District, Zone 7
- Solano County Water Agency
- Dudley Ridge Water District
- Napa County Flood Control & Water Conservation District
- County of Butte
- Palmdale Water District
- San Gorgonio Pass Water Agency
- County of Kings
- Oak Flat Water District
- Plumas County Flood Control & Water Conservation District

Annual Water Quantities Delivered to the San Gorgonio Pass Water Agency (AF)

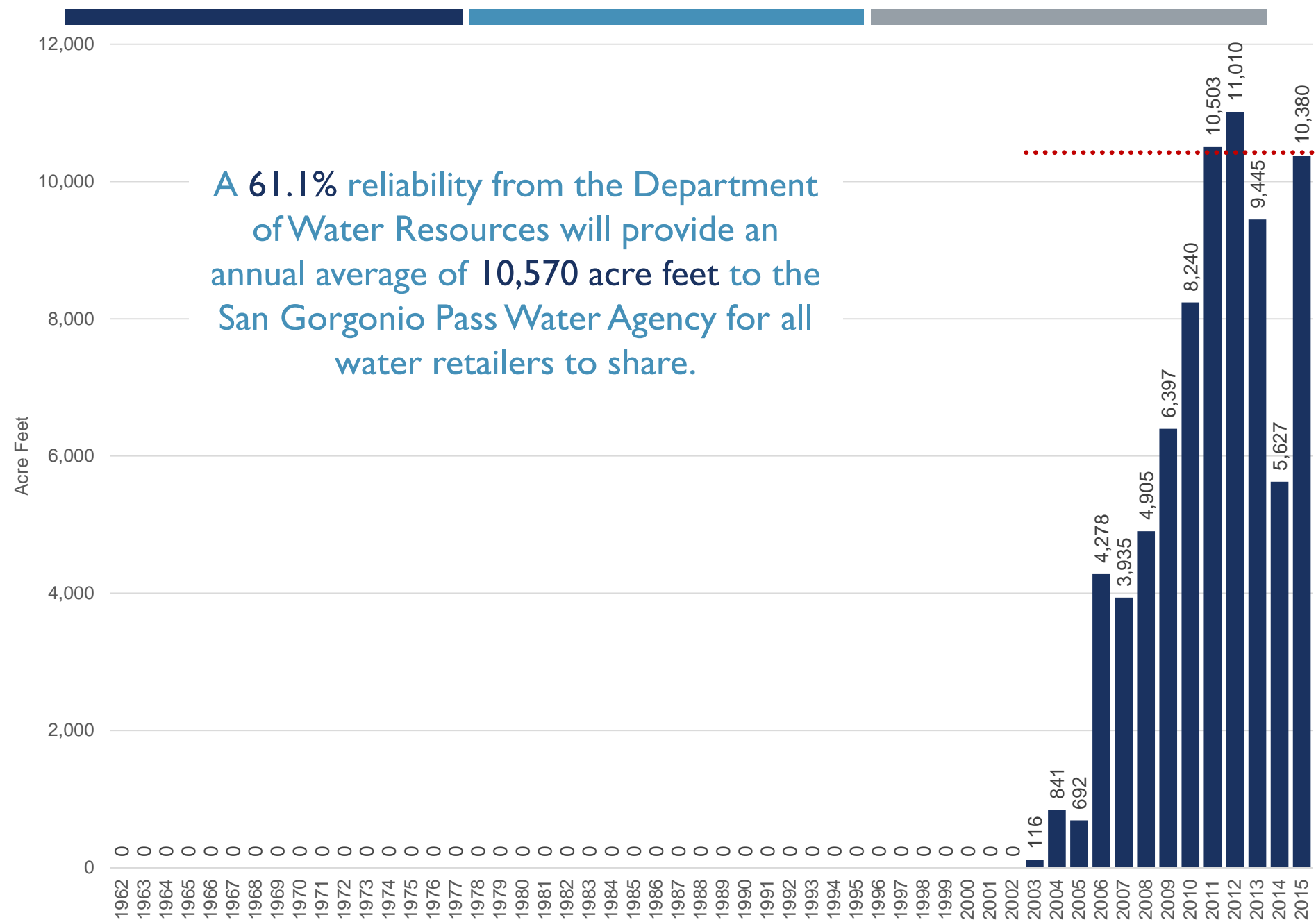
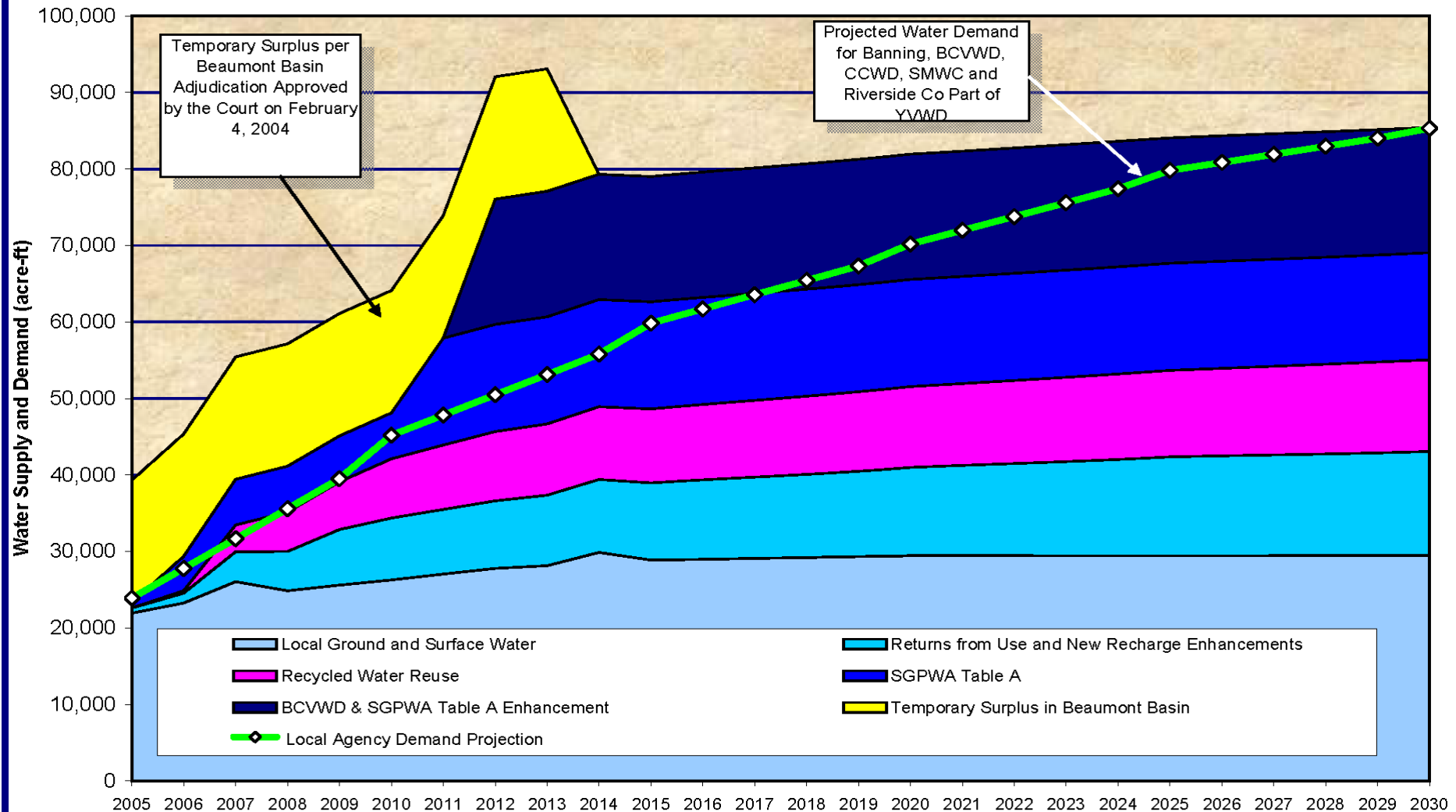
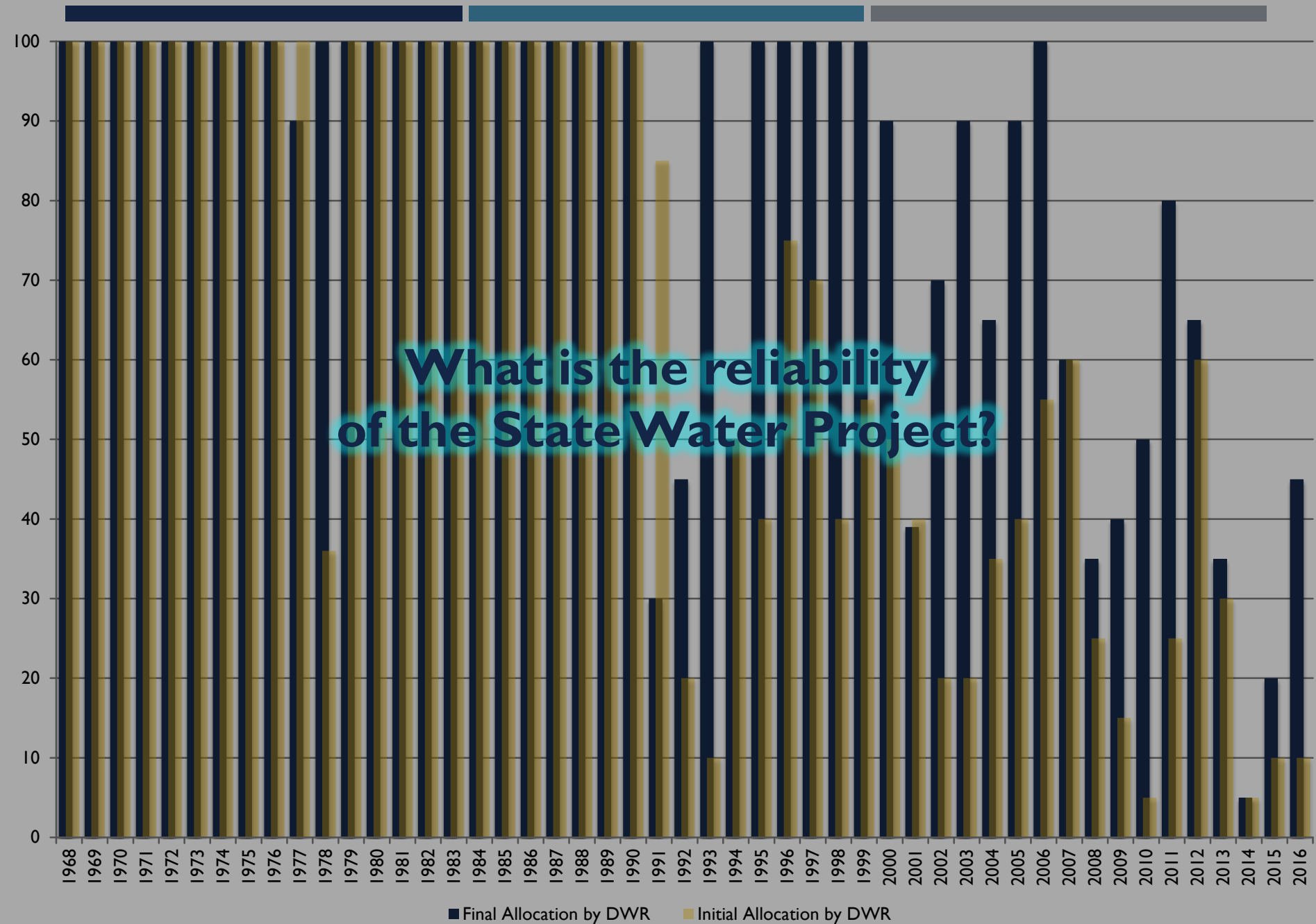


Figure 3 – Projected Water Supply Plan and Demand for Banning, the BCVWD, the SMWC, and Riverside County Part of the YVWD Based on Planning Information Provided by these Retail Agencies



State Water Project Allocation Each Year



Estimates of SWP Table A Water Deliveries

Table 6-2 presents the annual average, maximum, and minimum estimates of SWP Table A deliveries from the Delta for existing conditions, as calculated for the 2013 and 2015 Reports. The average, maximum, and minimum Table A deliveries are relatively close in the 2013 and 2015 Reports.

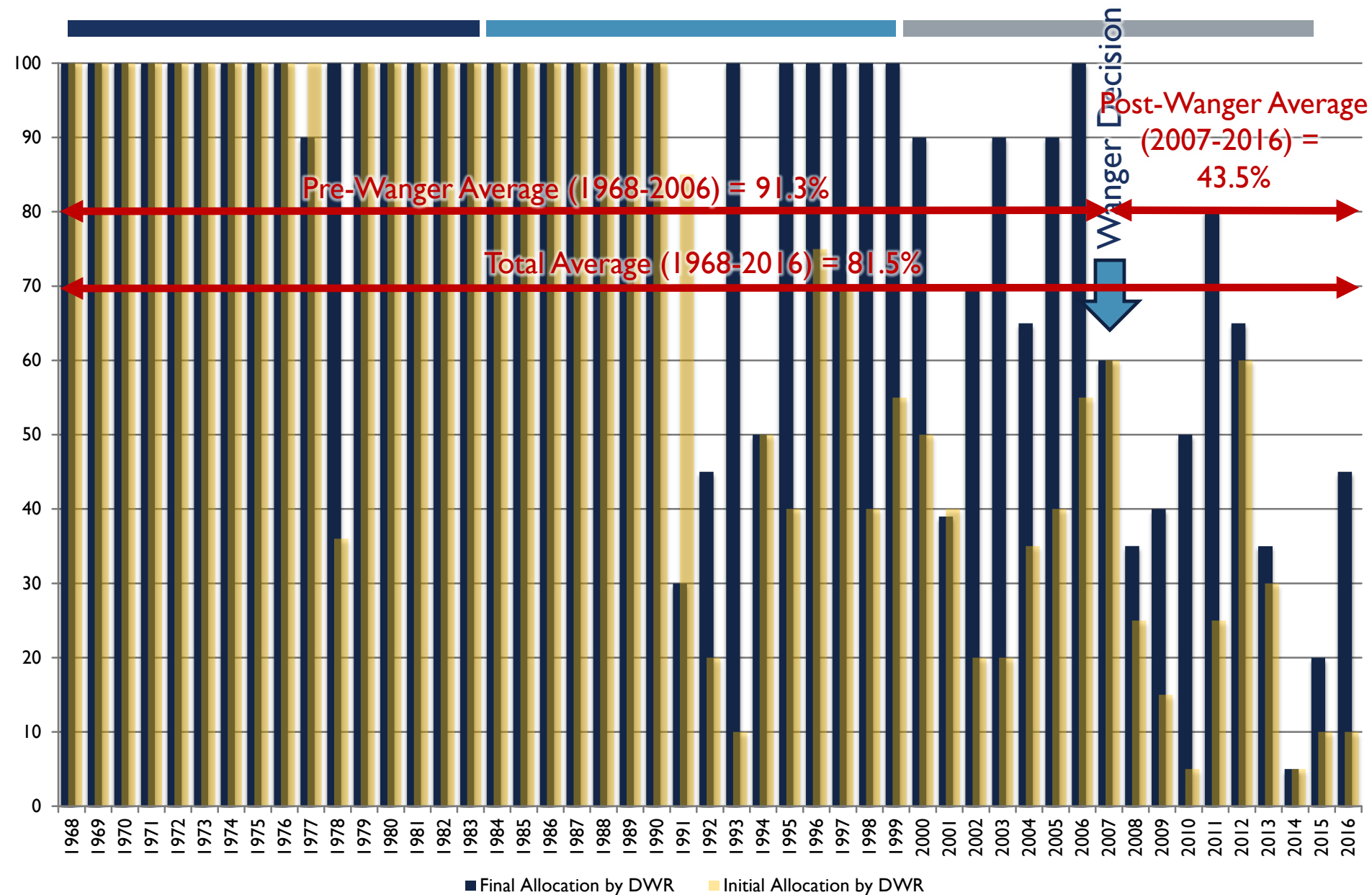
2013 Report
61.2% Reliability

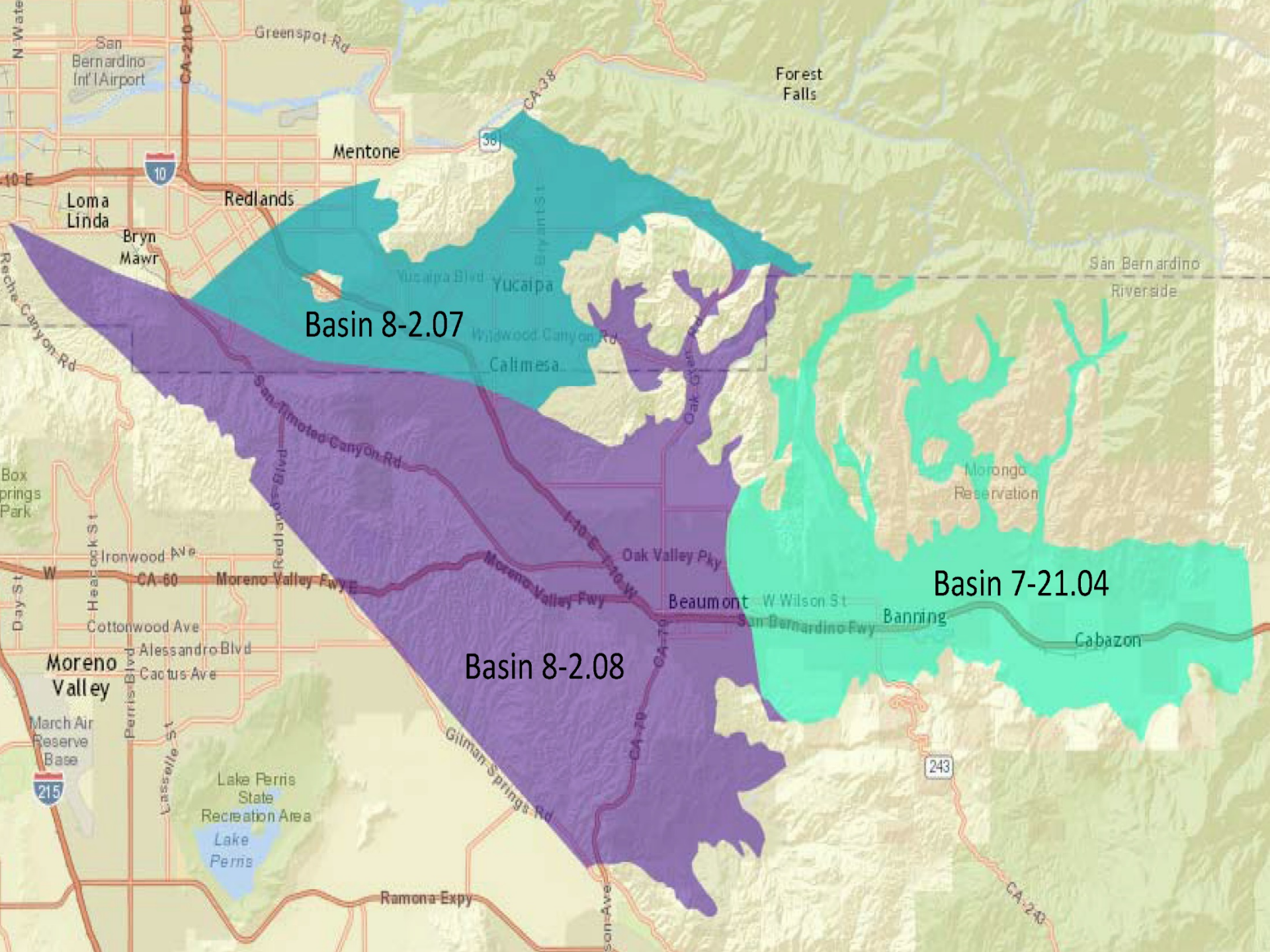
Table 6-2. Comparison of Estimated Average, Maximum, and Minimum Deliveries of SWP Table A Water (Existing Conditions, in taf/year)		
	2013 Report	2015 Report
Average	2,553	2,550
Maximum	3,996	4,055
Minimum	495	454

2015 Report
61.1% Reliability

Assumptions about Table A and Article 21 water demands, along with operations for carryover water, have been updated in the model based on discussions with State Water Contractors staff and DWR's Operations and Control Office.

State Water Project Allocations Each Year





Basin 8-2.07

Basin 7-21.04

Basin 8-2.08

SUMMARY OF ONGOING AND ANTICIPATED WATER RESOURCE CONSTRAINTS

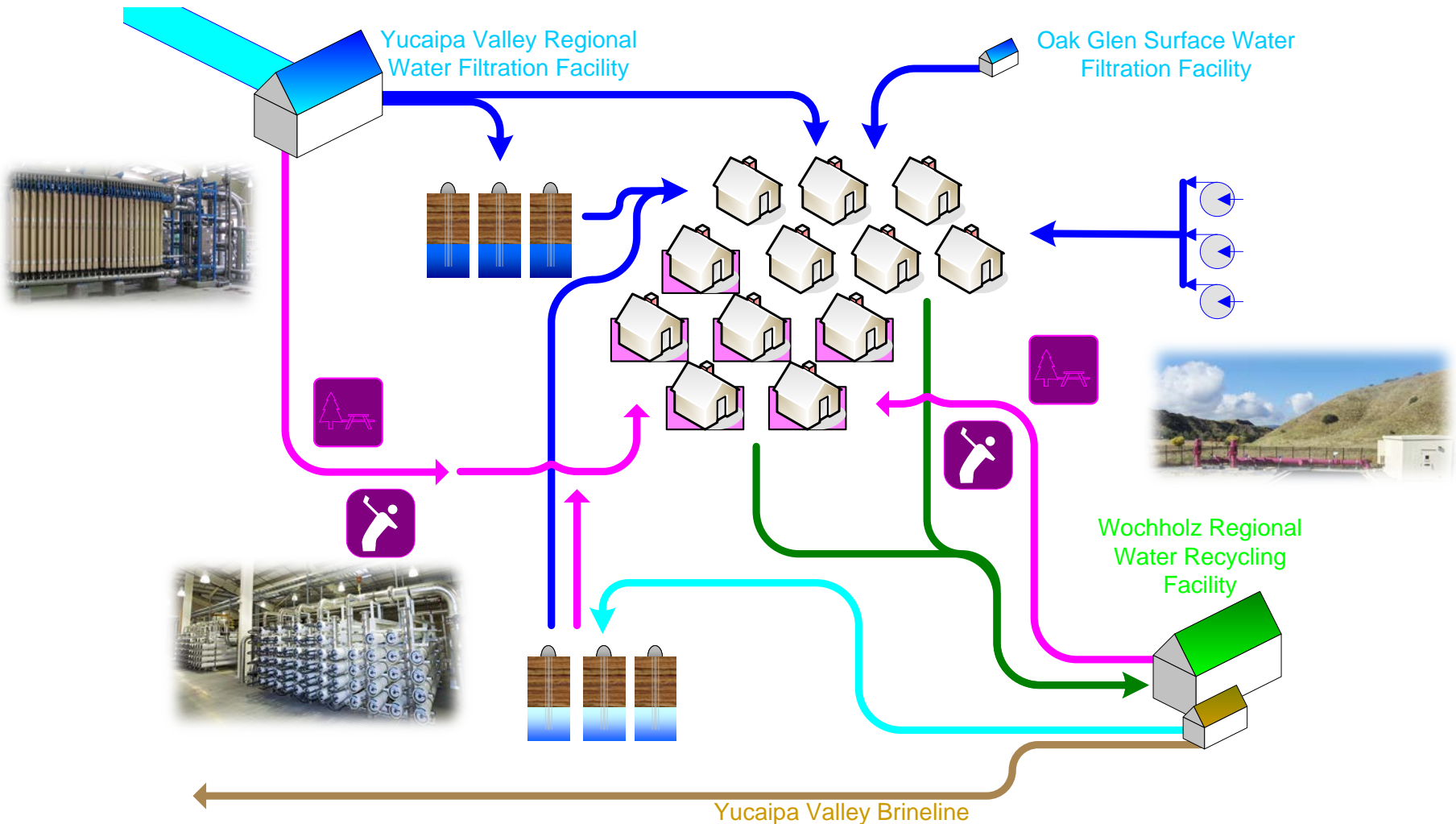
- Water Quality of State Water Project
- Lack of Available Imported Water Supplies – San Geronio Pass Water Agency
- Reliability of State Water Project
- Sustainable Groundwater Management Act
- Fully Utilized Existing Local Water Resources
- State Water Resources Control Board Water Use Goals

YUCAIPA VALLEY WATER DISTRICT

The Future Use of Recycled Water

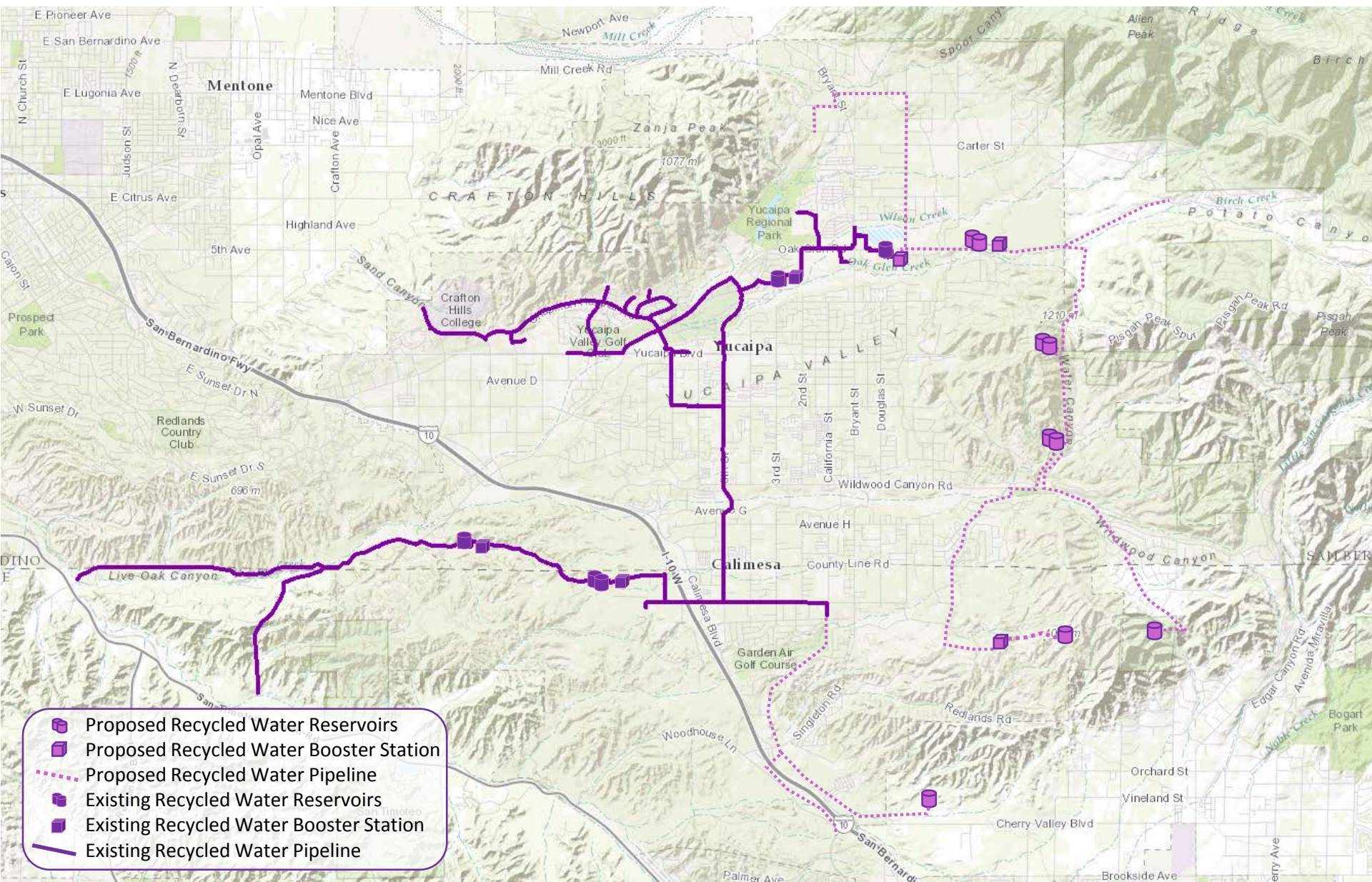


Water Resource Management Schematic for the Yucaipa Valley Water District



Integrated Recycled Water and Drought Management Project

Proposed Phase IV Recycled Water Facilities



One Water One Watershed



Santa Ana Watershed Recycled Water Systems

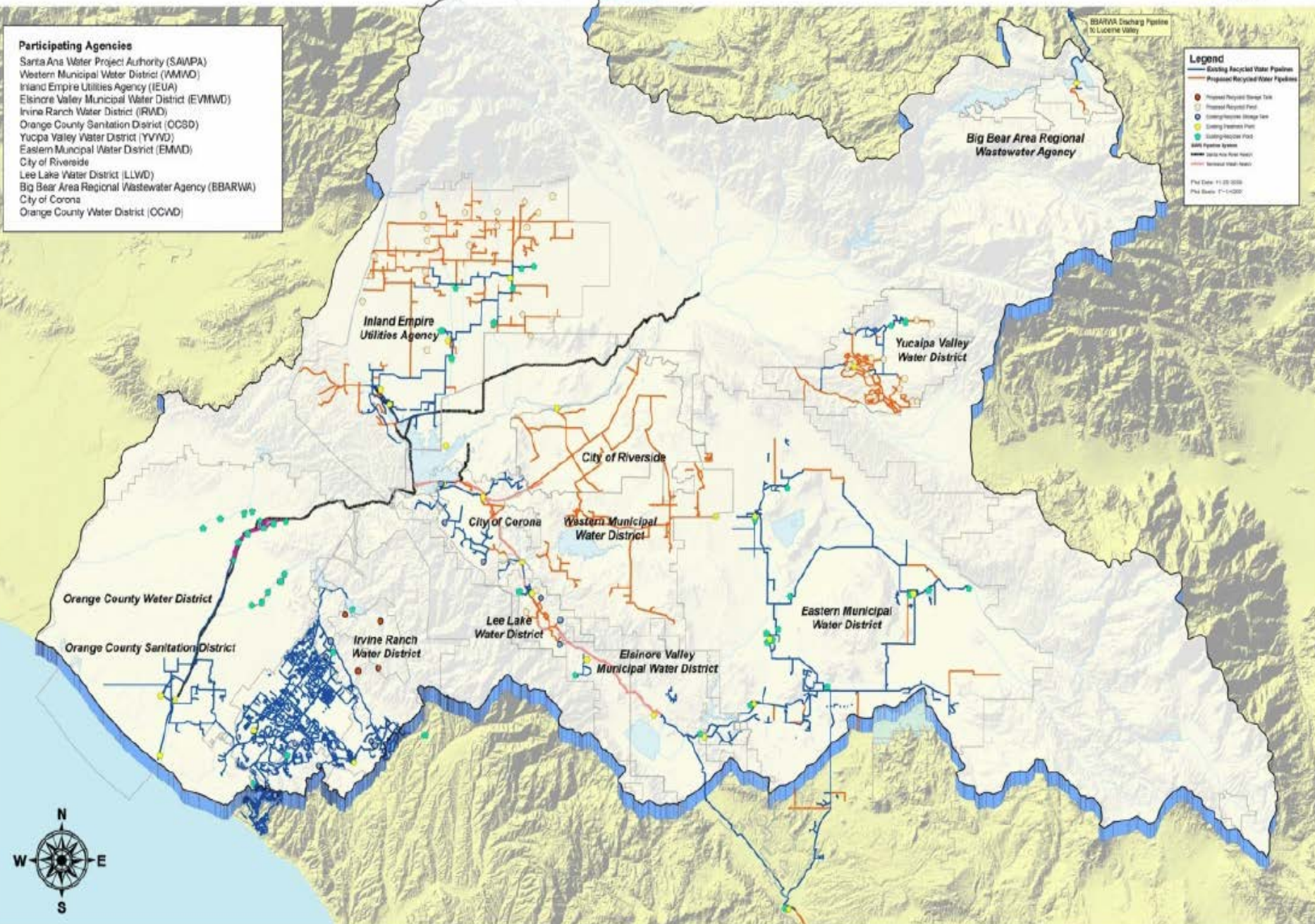


- Participating Agencies**
- Santa Ana Water Project Authority (SAWPA)
 - Western Municipal Water District (WMWD)
 - Inland Empire Utilities Agency (IEUA)
 - Elsinore Valley Municipal Water District (EVMWD)
 - Irvine Ranch Water District (IRWD)
 - Orange County Sanitation District (OCSD)
 - Yucaipa Valley Water District (YVWD)
 - Eastern Municipal Water District (EMWD)
 - City of Riverside
 - Lee Lake Water District (LLWD)
 - Big Bear Area Regional Wastewater Agency (BBARWA)
 - City of Corona
 - Orange County Water District (OCWD)

Legend

- Existing Recycled Water Pipelines
- Proposed Recycled Water Pipelines
- Proposed Recycled Storage Tank
- Proposed Recycled Pump
- Existing Treatment Plant
- Existing Wastewater Plant
- SAWPA Pipeline System
- Santa Ana River Right-of-Way
- San Gabriel River Right-of-Way

Plan Date: 11-25-2020
Plan Scale: 1"=1-0-00'



Proposed Requirements for New Development



- ❖ A Facility Capacity Charge shall be paid to the San Gorgonio Pass Water Agency sufficient to guarantee permanent imported water supplies for new homes and businesses in Calimesa
- ❖ Verification of Assigned Water Rights Required Prior to Issuance of Building Permits
- ❖ New homes shall be required to be dual-plumbed for recycled water unless the Board of Directors approves a development agreement omitting this requirement.



SERRANO

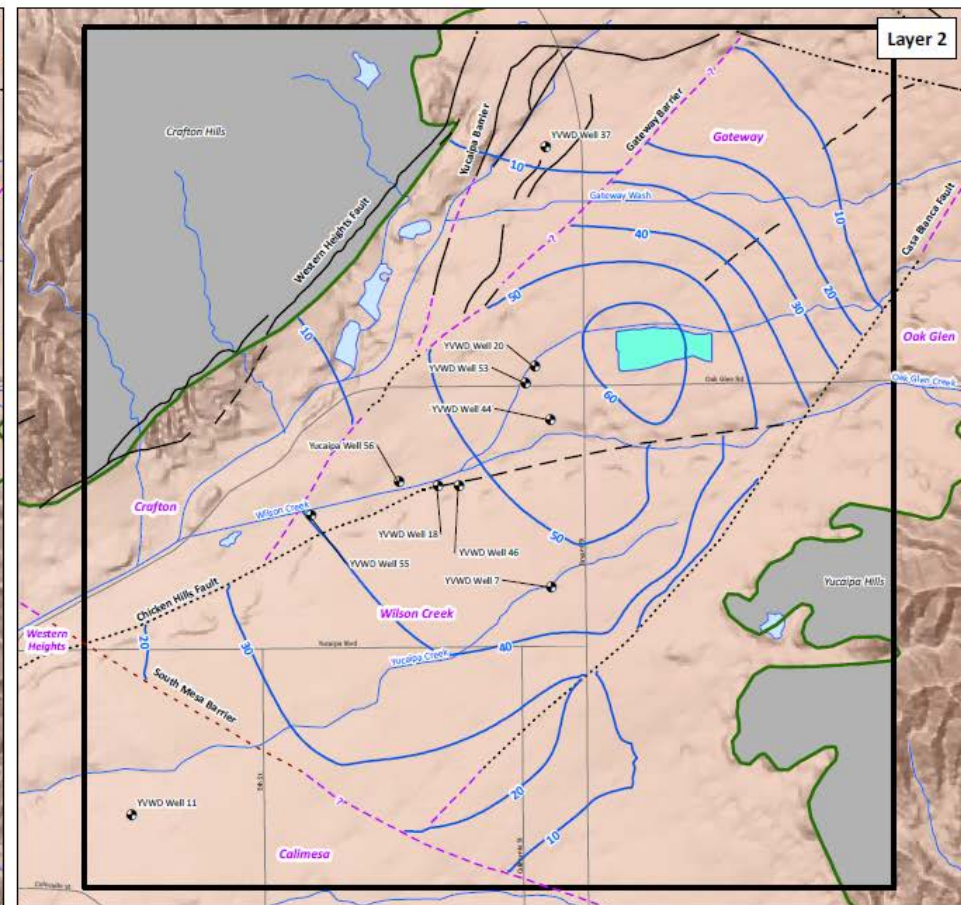
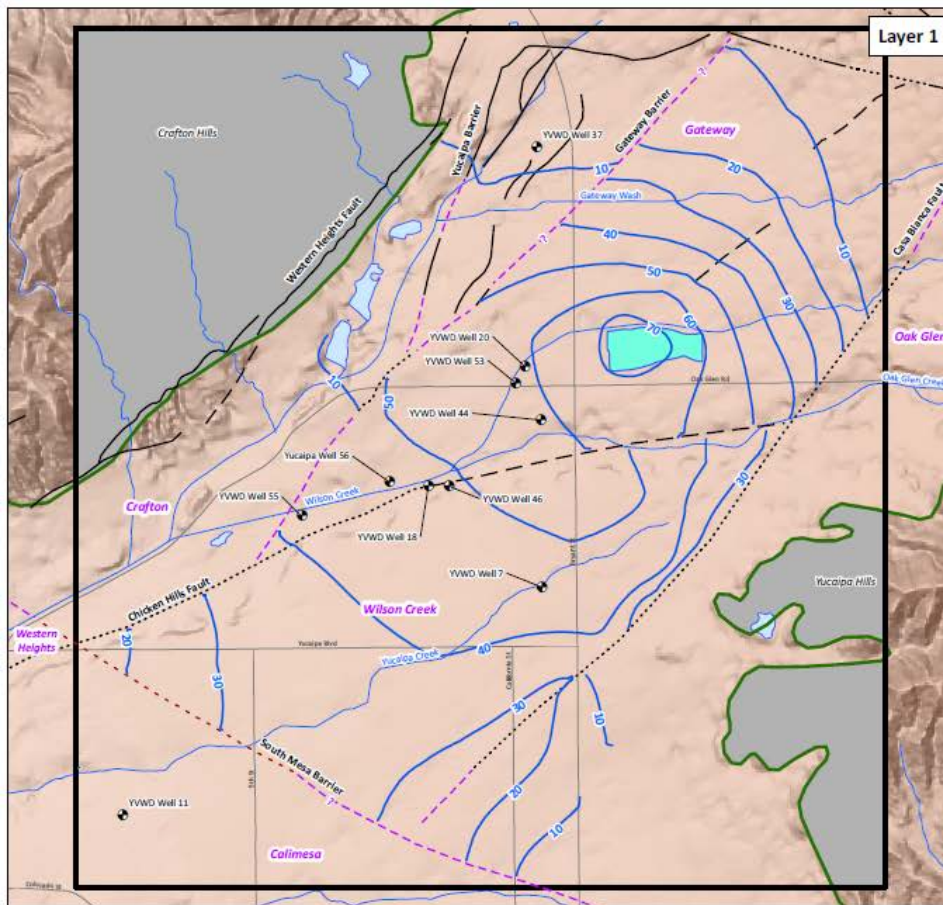
Respecting the Balance
and Conserving Water

ALL FRONT AND BACKYARD
LANDSCAPING IN THIS VILLAGE
IS IRRIGATED WITH
RECYCLED WATER







**EXPLANATION**

— 5 — Water Level Change (ft)

□ Model Boundary

Yucaipa Groundwater Basin Boundary (GEOSCIENCE, 2014)

■ No Flow Cells

Wilson Creek Recharge Basin

YVWD Well 20 Production Well



Total Recharge = 5,000 acre-ft

Scenario 2: Assume Recharge mix of
1,250 acre-feet/yr of Recycled Water
and 3,750 acre-feet/yr of Imported Water.

Scenario 3: Assume Recharge mix of
2,000 acre-feet/yr of Recycled Water
and 3,000 acre-feet/yr of Imported Water.

**WATER LEVEL
CHANGE
SCENARIOS 2 & 3
MINUS BASELINE**

GEOSCIENCE

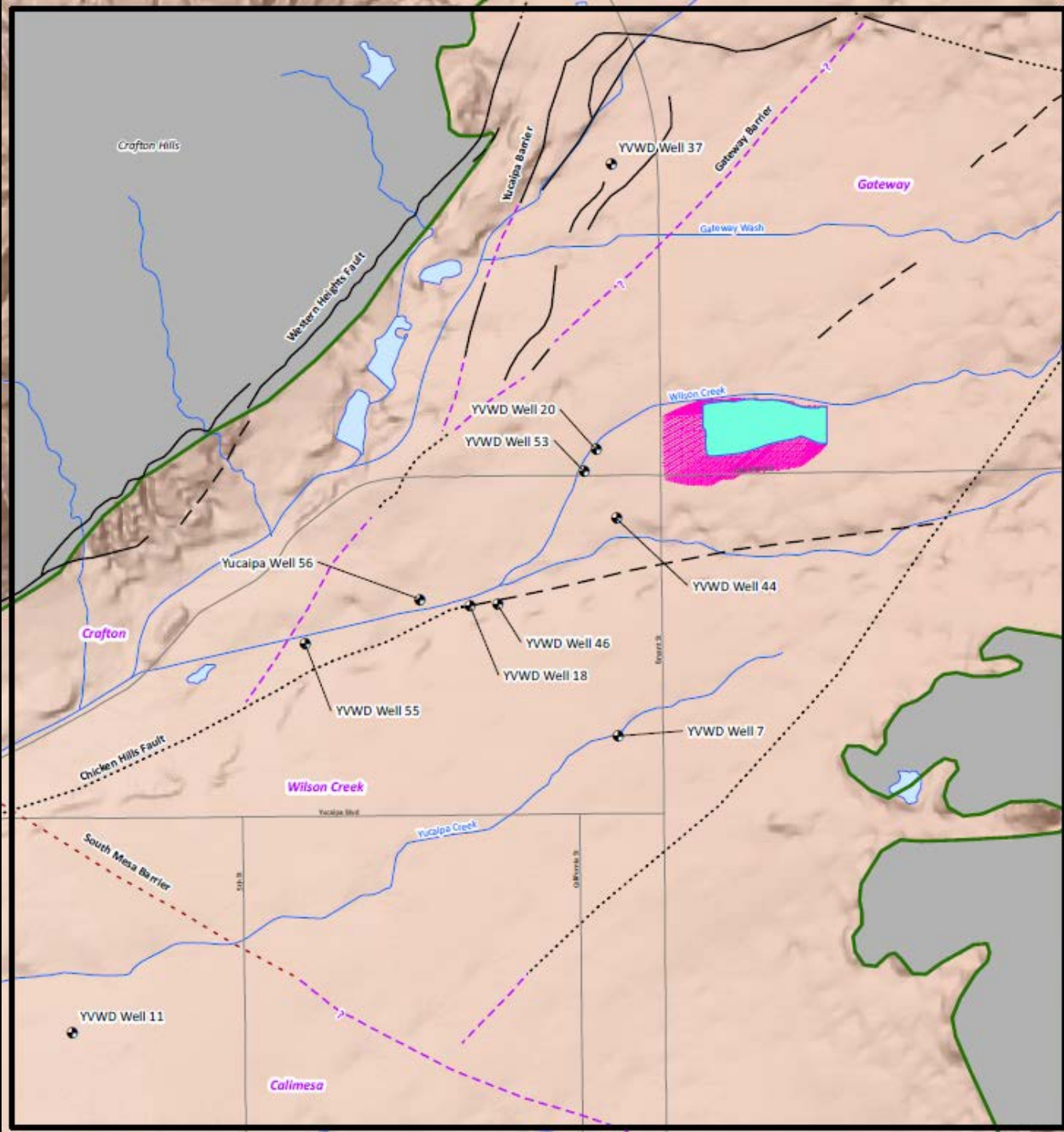
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P.O. Box 220, Claremont, CA 91711
Tel: (909) 451-6650 Fax: (909) 451-6638
www.geoscientists.com

DRAFT**Figure 15**

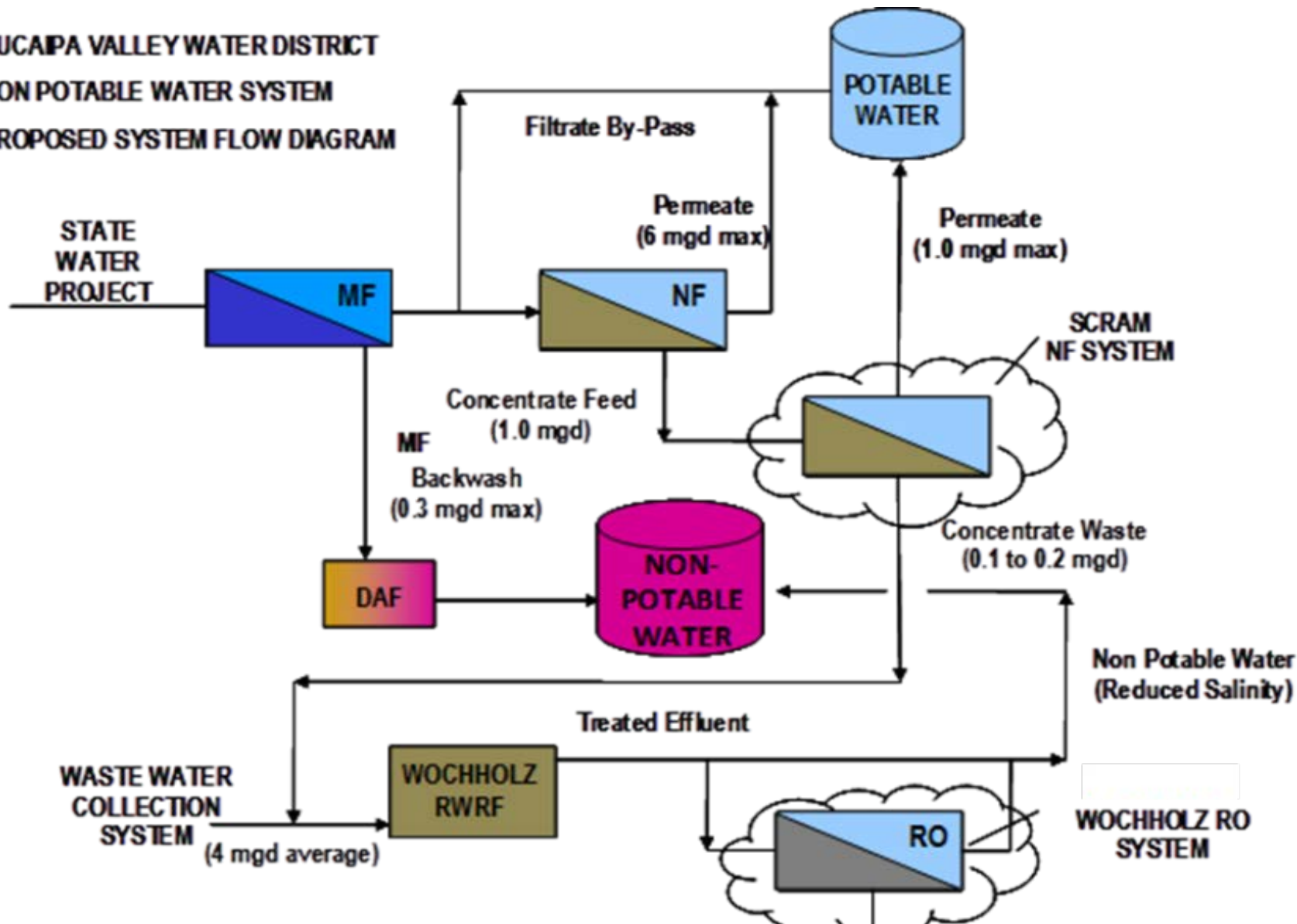
27-Feb-15

Prepared by: DB. Map Projection: State Plane 1983, Zone V.

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**YUCAIPA VALLEY WATER DISTRICT
NON POTABLE WATER SYSTEM
PROPOSED SYSTEM FLOW DIAGRAM**



INVESTIGATION ON THE FEASIBILITY OF
DEVELOPING UNIFORM WATER RECYCLING CRITERIA
FOR DIRECT POTABLE REUSE

STATE WATER RESOURCES CONTROL BOARD

Report to the Legislature
December 2016

In Compliance with Water Code Section 13563



STATE OF CALIFORNIA
Edmund G. Brown Jr., Governor

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
Matthew Rodriquez, Secretary

STATE WATER RESOURCES CONTROL BOARD
P.O. Box 100 Sacramento, CA 95812
Homepage: <http://www.waterboards.ca.gov>

Emerging Constituents	Untreated Surface Water	WWTP Effluent post RO Permeate	Detection Limit
Sample Date	6/10/2013	6/11/2013	2013 MRL
SAWPA Taskforce List			
Caffeine	42	ND	5
DEET	ND	44	10
Diuron	96	6.2	5
Sulfamethoxazole	22	ND	5
TCEP	190	ND	10
Gemfibrozil	13	ND	5
SAWPA Constituents detected	5/15	2/15	
Atenolol	88	ND	5
Azithromycin	77	ND	20
Bromacil	18	ND	5
Cimetidine	6.9	ND	5
DACT	10	5.6	5
DIA	10	ND	5
Quinoline	21	ND	5
Simazine	17	ND	5
Sulfamethoxazole	22	ND	5
Theobromine	26	ND	10
4-nonylphenol (semi-quantitative)	120	ND	100
Acesulfame-K	470	ND	20
Iohexol	180	ND	10
Sucralose	760	ND	100
Total Constituents detected	18/91	3/91	

One Part per
Trillion

- This is equivalent to about three seconds out of every hundred thousand years.



THANK YOU

