URBAN WATER INSTITUTE, INC.
A Non-Profit Organization

MAKING THE IMPOSSIBLE, POSSIBLE: RETHINKING INSTITUTIONAL AND REGULATORY CHALLENGES TO DRIVE SUCCESS

PAUL D. JONES II, P.E. - MODERATOR

WHAT MAKES A SUCCESSFUL INDUSTRY-LEADING PROJECT OR INSTITUTIONAL PARADIGM CHANGE ?

- THE NEED TO OVERCOME ONEROUS TECHNICAL, FINANCIAL AND GOVERNANCE CHALLENGES.
- "WHAT IF…." THINKING.
- PIONEERING WILL (KEEPING IN MIND THAT OLD WESTERN SAYING: *"PIONEERS ARE THE ONES WITH ARROWS IN THEIR BACKS"*).
- PATIENCE (BUT NOT TOO MUCH).
- RECOGNIZING AND SEIZING OPPORTUNITY.
- SLEEPLESS NIGHTS.

IT TAKES ALL THIS AND MORE !

TODAY'S PANEL

- **MIKE MARKUS,** P.E. D.WRE, BCEE, F.ASCE GENERAL MANAGER ORANGE COUNTY WATER DISTRICT
- **MATT STONE,** P.E. GENERAL MANAGER SANTA CLARITA VALLEY MUNICIPAL WATER DISTRICT
- **DAVID PEDERSEN,** P.E. GENERAL MANAGER LAS VIRGINES MUNICIPAL WATER DISTRICT
- **JOE MOUAWAD,** P.E. ASSISTANT GENERAL MANAGER, EASTERN MUNICIPAL WATER DISTRICT

TRANSFORMING GWRS IMPLEMENTATION

Michael R. Markus, P.E., D.WRE, BCEE, F.ASCE

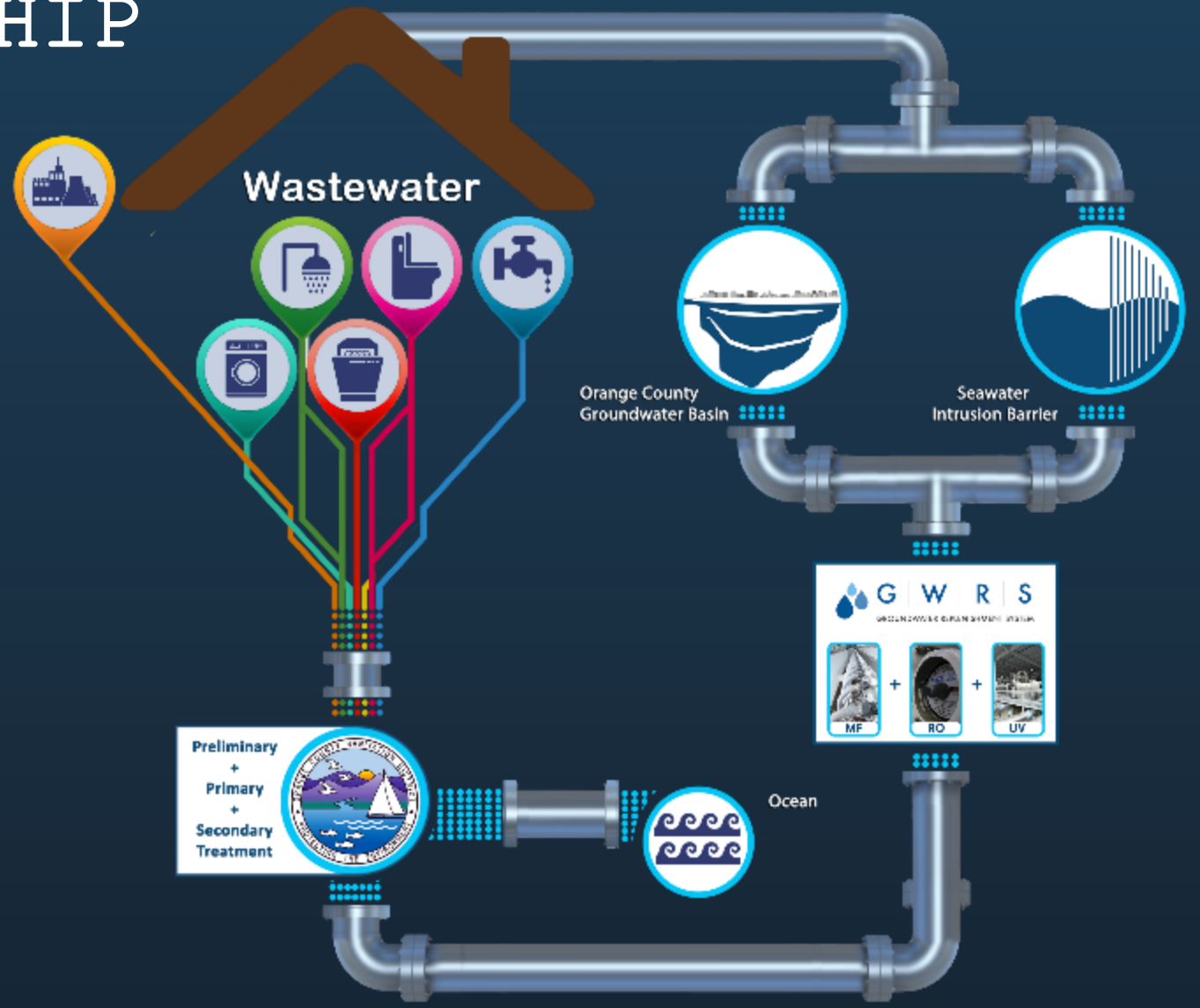
General Manager

Orange County Water District

February 20, 2020

THE GWRS PARTNERSHIP

G | W | R | S
GROUNDWATER REPLENISHMENT SYSTEM



Reverse Osmosis

SEWAGE SOLUTIONS

Toilet-to-tap water plan may be delayed

By Kathryn Balint
STAFF WRITER

San Diego is considering delaying its controversial project to turn sewage water into drinking water for two years so that the purified waste water could flow from faucets throughout most of the city — not just part of it.

The proposed delay, until about 2005, is meant to address objections from residents living in the central part of San Diego.

"This will eliminate their concern that they're going to be guinea pigs," said David Schlesinger, director of the city of San Diego's Metropolitan Wastewater Department.

Councilman Harry Mathis said the proposal makes sense.

"By the time we go online (with the purification project), everybody will be receiving the water, not just part of the city," Mathis said. He is chairman of the council committee that is overseeing the project.

The city's $154 million plan calls for taking reclaimed water, putting it through four intensive treatment processes and mixing it with raw drinking water in San Vicente Reservoir southeast of Poway.

The water would remain there, theoretically for about a year, before reaching outflow pipes and undergoing conventional water treatment at the Alvarado Water Filtration Plant and reaching water customers.

It would be the first project of its kind in California and only the second in the nation.

As originally envisioned, only

See WATER on Page B-7

OC POST

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FRIDAY, NOV. 30, 2007

FROM SEWER TO TAP

MANY O.C. RESIDENTS WILL SOON DRINK WATER THAT HAS A DIRTY HISTORY PAGE 3

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Orange County Register
Tuesday, September 17, 2002
Local News, Page 6

Too much project too soon

Water, sanitation districts tout $427 million plan over more prudent approach.

PEER SWAN
director of the Irvine Ranch Water District and former director and vice chairman of the Orange County Sanitation District

While the proposed Groundwater Replenishment System (GWRS) has merit in concept, its current bloated, rapidly growing cost and overly broad scope make it too much project too soon.

For those who haven't been following the long-running debate, the GWRS is a $427 million project proposed by the Orange County Water District and the Orange County Sanitation District to purify wastewater to produce approximately 72,000 acre-feet of high-quality water annually. About 50 percent of the project's flow would replace and expand an outdated water plant that treats and injects water into the ground to form a barrier that prevents seawater intrusion into the fresh water aquifer. This portion of the project is both cost-effective and necessary.

The remaining 50 percent of the water from the project would be pumped through a new large-diameter pipeline to spreading basins near Anaheim to help replenish groundwater.

Currently, this replenishment water is purchased from the Metropolitan Water District (MWD) at a cost of $238 per acre-foot. Even under the county districts' most optimistic scenarios about the tab for operating the pipeline and its pump stations, GRWS replenishment water would cost almost twice that much.

It doesn't take a water expert to realize the replenishment portion of the GWRS project isn't cost-effective – especially given its staggering capital cost: $200 million.

Surprisingly, despite the extreme cost of pursuing the entire project, the current thinking from leaders of the water district and sanitation district is full speed ahead. But their reasoning doesn't stand up to inspection.

Project advocates claim that MWD's replenishment supplies are not reliable. But while MWD's replenishment deliveries may be reduced in the two or three dry years a decade, the 500,000 acre-foot usable storage space in the county's groundwater basin can easily pick up the slack. That's the beauty of a vast groundwater basin – you can draw off your storage when it is dry and squirrel lower-cost water away when it is available.

During the next 20 years, MWD will have several million acre-feet of surplus water available and few places to store it. Orange County can readily purchase this water, which costs MWD only a little more than $150 per acre-foot.

GWRS advocates at the water district and sanitation district also argue that MWD water quality is inferior, causing salt build-up in the groundwater basin. But the relatively small amount of replenishment water produced by GWRS would do little to change the average salt content in the inland portion of the groundwater basin.

Why? Because the flow of poorer quality Santa Ana River storm water is seven times greater than what would be produced by the project.

Furthermore, MWD has already committed to building a new pipeline to bring in less salty Northern California water.

The Sanitation District also has its own particular reason for touting the project. It will accommodate occasional peak storm flows and let the district avoid the expensive and difficult construction of a third outfall, a pipeline extending offshore for the disposal of treated sewage flows.

But phasing in the GWRS project and not building the replenishment portion until it is needed can provide enough additional storm flow capacity to avoid a third ocean outfall. The phasing would allow less expensive treatment such as microfiltration and ultraviolet disinfection of secondary treated flows so they can be disposed using existing facilities.

Phasing in the project makes good financial sense and better matches facilities to real needs. Delaying the replenishment pipeline and pumps could save tax and ratepayers $200 million in capital and more in operations. On behalf of the public, water district and sanitation district officials need to rethink their position and not build too much project too soon.

VALLEY EDITION EDITORIALS

Safe Water, Iffy Politics

SUNDAY

Comics • TV Book • USA Weekend

Discover Panama GREAT ESCAPES

Ripken joins 3,000 hit club

SPORTS

Daily News

SUNDAY, APRIL 16, 2000

Tapping toilet water

Treated sewage to recharge underground aquifers

KEY TAKEAWAYS

In order for a potable reuse project to be successful it must:

1. Develop strong partnerships
2. Provide high quality dependable treatment
3. Demonstrate the need

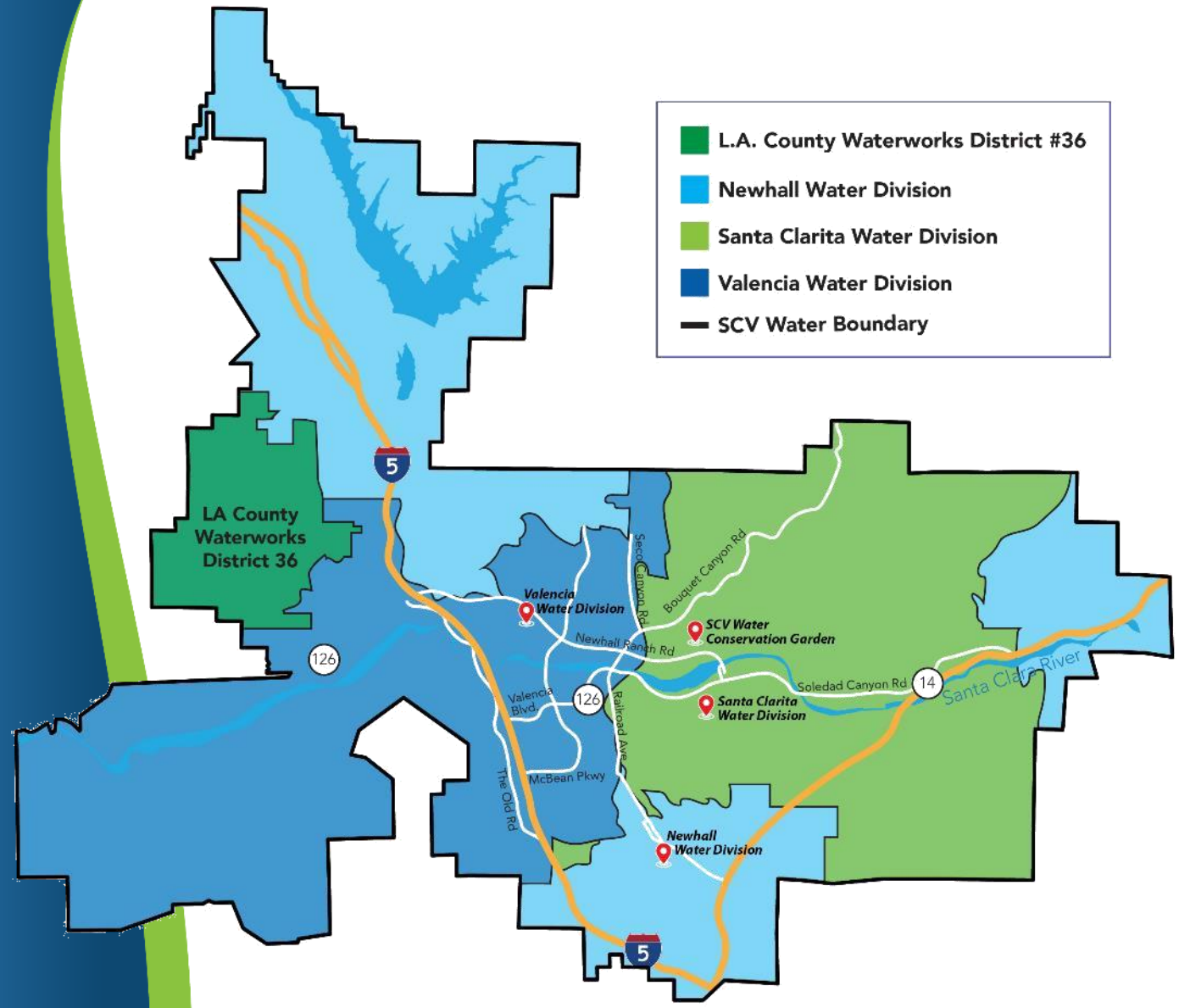
February, 2020

California's Newest Water Agency

From Vision to Attainment

Matt Stone, General Manager

Urban Water Institute



Who We Are

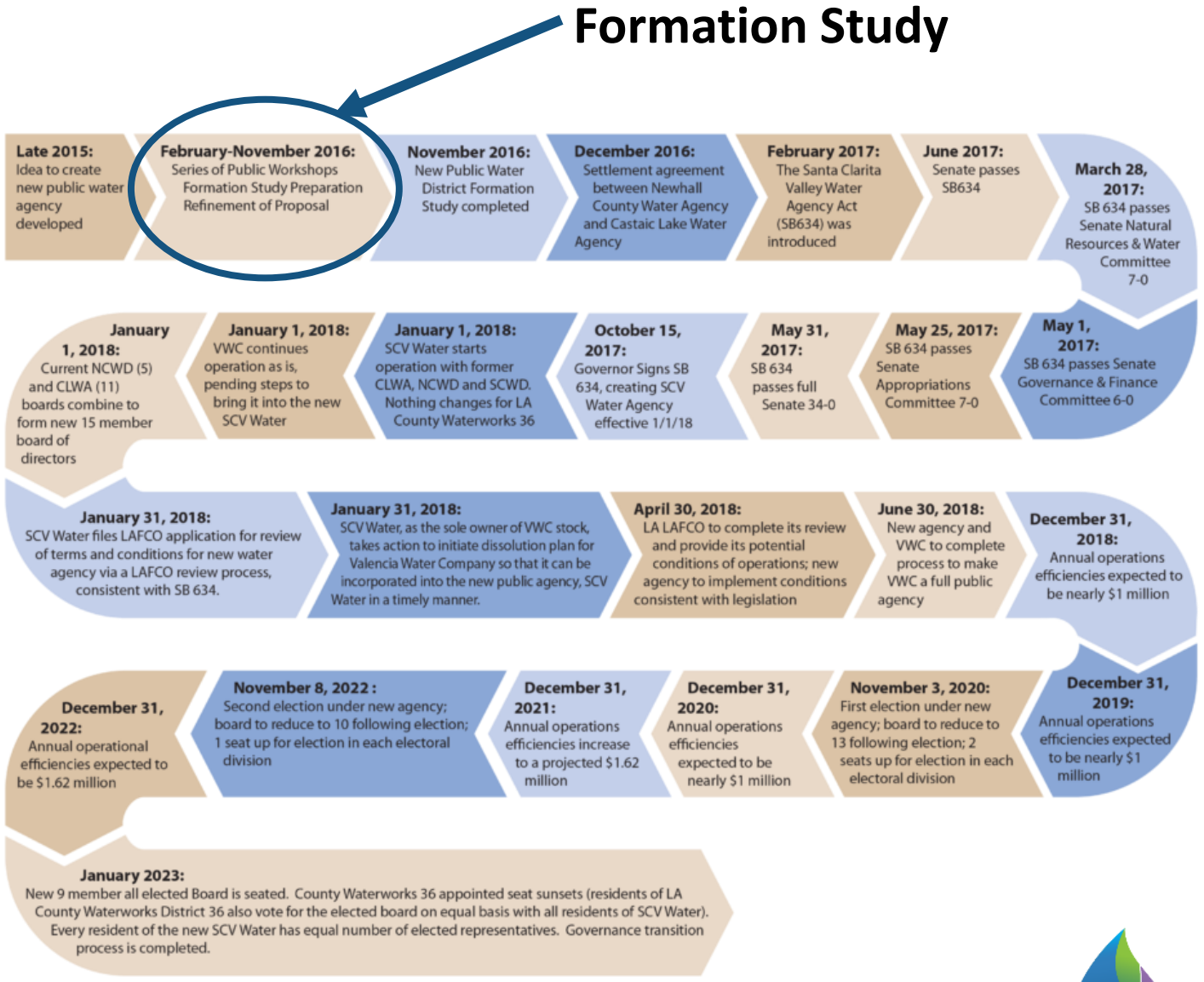
- CLWA+SCWD+NCWD+VWC
- 200 square miles
- 72,500 connections
- Water Portfolio
  - Groundwater
  - SWP
  - Banking

The Why

- From litigation to compromise
- Unify and modernize water governance
- Gain efficiency in operations
- Scale to meet watershed wide opportunities and challenges

The Roadmap

- **The Past**: Conflict, overtures, cooperation, missed opportunities, more conflict
- **2015**: Mediation, negotiation and visioning the future
- **2016**: Public input, technical studies and shaping the idea
- **2017**: Legislation to bring the vision into being
- **2018 and Beyond**: Integration of organizations, realization of our vision



A Few Key Accomplishments

- **Economy** - $14 million in first 3 years (estimated to take 10)
  - Eliminate redundancies (auditors; legislative advocacy; insurance)
  - Staff savings through attrition and realignment of organization
  - Reduction in taxes, franchise fees and dividends from Valencia Water Company
- **Efficiency**
  - Consolidated work groups and departments into shared locations
  - Implementing consistent technology, software systems, GIS, FMIS, etc
  - First 2-year budget
  - 5-year Strategic Plan
- **Enhance Water Resource Management**
  - Groundwater Sustainability Agency
  - Developing watershed partnerships
  - Agility to respond to emerging PFAS issues

Key Takeaways

- You need a **committed group of leaders** on the Boards. Identify who they are and set them up to be successful with support of the Boards and resources to get things done.
- It is a **team effort** and doesn't end on the "first day" of consolidation. That is just as important and requires a similar level of commitment and support.
- You cannot **communicate** too often – externally, but also internally.
- **Go big** (or go home). This is a once in a generation opportunity.
- **Persistence**. There will be hurdles and unexpected challenges. Keep moving forward as you address them.

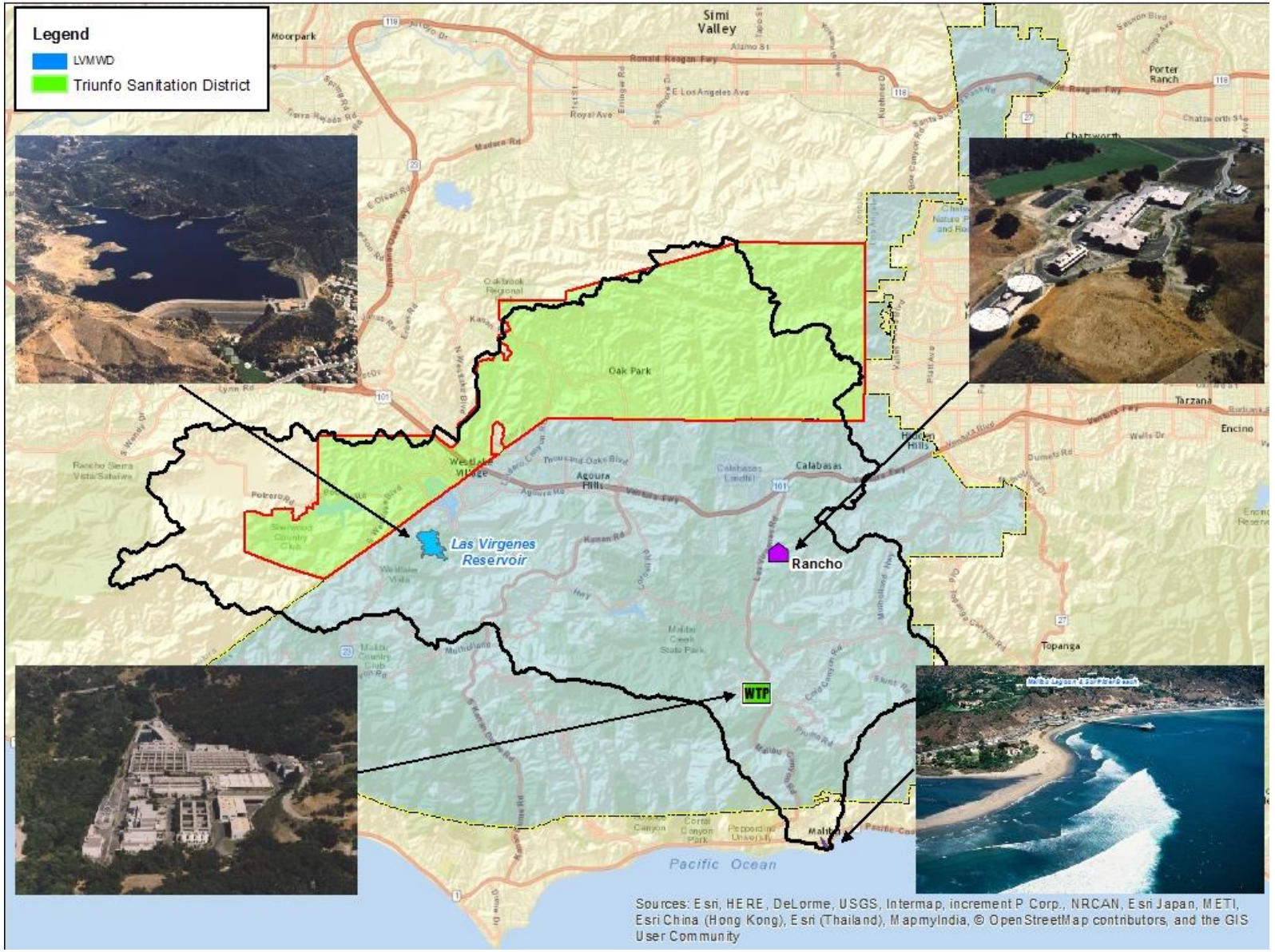
Potable Reuse: Shifting from Conflict to Collaboration

February 20, 2020

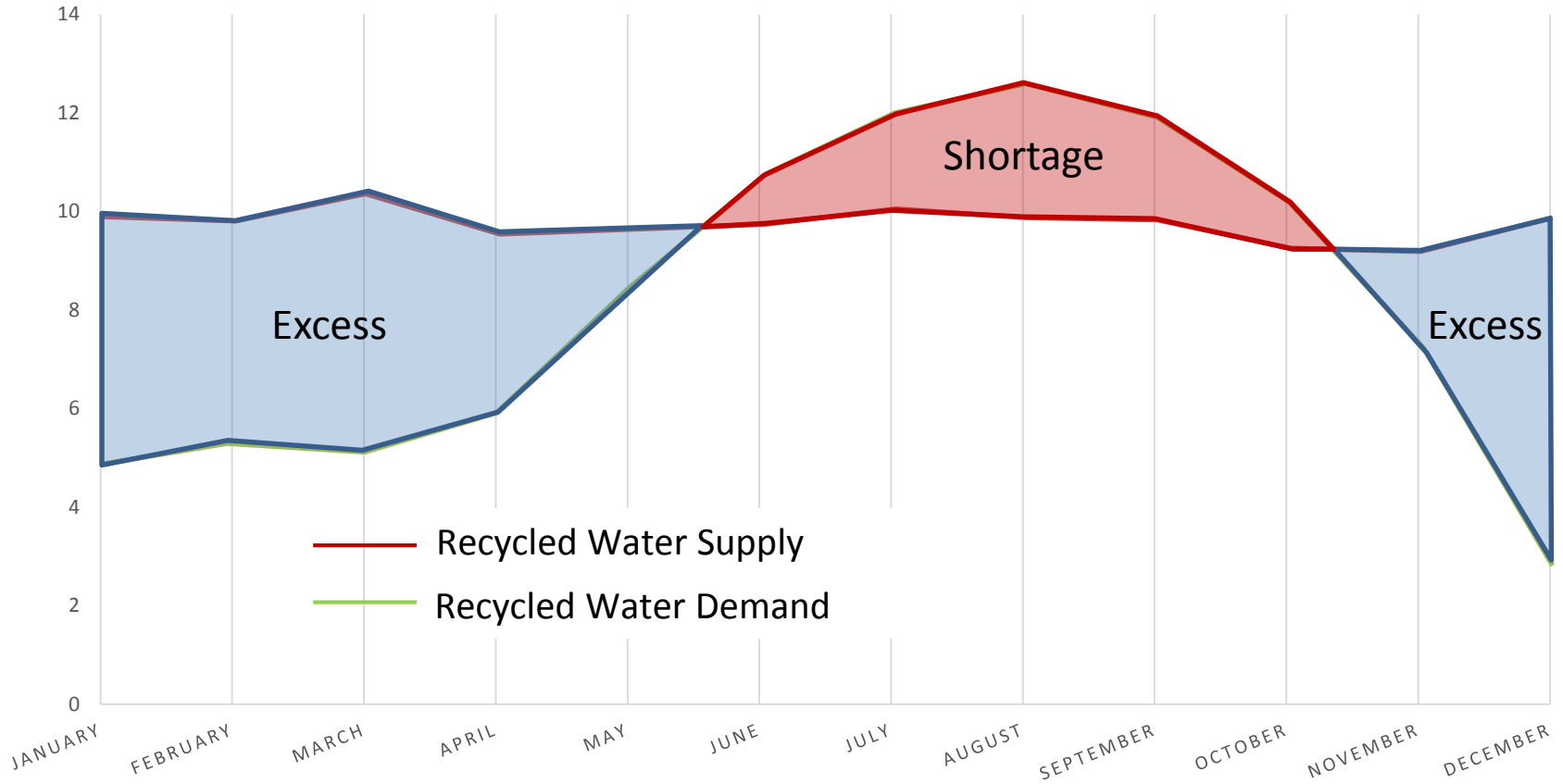
David Pedersen, General Manager
Las Virgenes Municipal Water District

PURE WATER PROJECT
LAS VIRGENES-TRIUNFO

Bringing Our Water Full Circle


Legend
LVMWD
Triunfo Sanitation District
Simi Valley
Moorpark
Porter Ranch
Chatsworth
Oak Park
Tarzana
Encino
Calabasas
Agoura Hills
Westlake Village
Las Virgenes Reservoir
Rancho
Topanga
WTP
Pacific Ocean
Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Supply/Demand Imbalance



“Navigating” a Paradigm Shift

Key Takeaways

- Start with the problem not the solution.
- Be willing to redefine the problem.
- Engage stakeholders on all sides.
- Be open to new ideas.
- Expand your geographic periphery.
- Encourage long-term thinking.
- Look for the win-win strategy.

A New Mindset: Taking on a Failed Water System to Provide Safe Drinking Water

Joe Mouawad, P.E.

February 20, 2020

Consolidation - Eastern Municipal Water District and County Water Company of Riverside

County Water Company of Riverside

Privately Owned ("Mom and Pop") Water Company

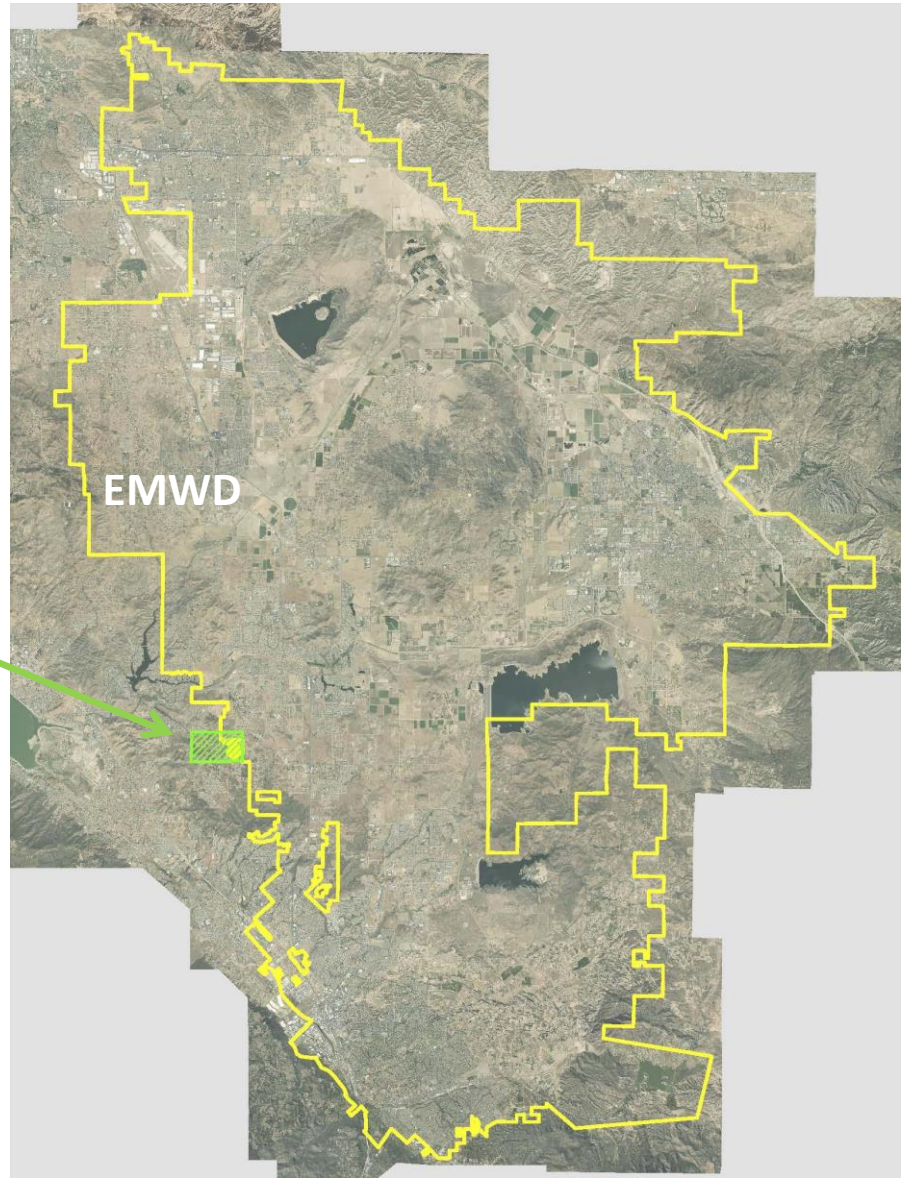
140 Customers on 1,032 acres

Two uncertified contract employees

Severely Disadvantaged Community

Facilities:

- Substandard 50,000 gallon tank
- Failing, branched distribution system – no isolation capacity
- Inadequate fire flow and only one hydrant
- Single source of supply (well) with frequent outages
- Chronic well water contamination - Notices of Violation (Nitrates, bacteria)



Challenges and Liabilities

- County Water Company (CWC) financially insolvent.
- Severe infrastructure needs and astronomical costs ($5.75 million).
- Only one source of water (contaminated well violating state and federal standards) needing immediate replacement.
- Potential legal exposure for successor agencies based upon negligence of existing owners.

Production Well

Lone hydrant

Failed Hydro-tank

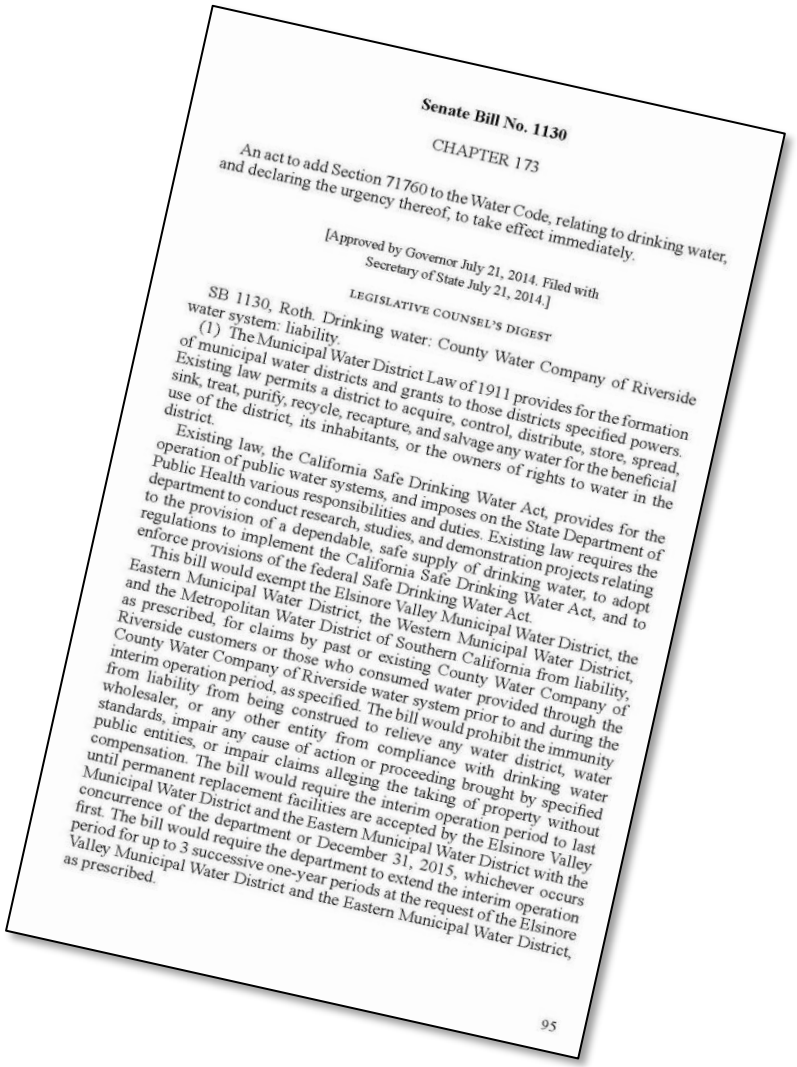
Numerous leaks

Adopted Foundational Policy Principles for Consolidation

- Existing customers *cannot* subsidize improvements to CWC system.
- No liability from claims relating to CWC's prior ownership and/or operation of the system.
- Prioritize the installation of potable interim supply source.
- No payment for system to existing owners.
- System incorporated when improved to safe and reliable standards.
- All partners and community support solution.

Consolidation of a Failing Water System - Process

- Water supply above-ground “lifeline” immediately installed.
- County places CWC into receivership – contracts with two Districts to operate.
- Two grants secured from SWRCB (avoided grant cap)
  - **Eastern MWD** – east side grant
  - **Elsinore Valley** – west side grant
- LAFCO annexes respective areas of former CWC into Eastern MWD/Elsinore Valley MWD.
- Upon completion of infrastructure improvements, County deeds former CWC infrastructure, easements, and records to Eastern MWD and Elsinore Valley MWD.
- Introduction and Passage of SB 1130 - legal and financial protection to successor agencies.



Senate Bill No. 1130

CHAPTER 173

An act to add Section 71760 to the Water Code, relating to drinking water, and declaring the urgency thereof, to take effect immediately.

[Approved by Governor July 21, 2014. Filed with Secretary of State July 21, 2014.]

LEGISLATIVE COUNSEL'S DIGEST

SB 1130, Roth. Drinking water: County Water Company of Riverside water system: liability.

(1) The Municipal Water District Law of 1911 provides for the formation of municipal water districts and grants to those districts specified powers. Existing law permits a district to acquire, control, distribute, store, spread, sink, treat, purify, recycle, recapture, and salvage any water for the beneficial use of the district, its inhabitants, or the owners of rights to water in the district.

Existing law, the California Safe Drinking Water Act, provides for the operation of public water systems, and imposes on the State Department of Public Health various responsibilities and duties. Existing law requires the department to conduct research, studies, and demonstration projects relating to the provision of a dependable, safe supply of drinking water, to adopt regulations to implement the California Safe Drinking Water Act, and to enforce provisions of the federal Safe Drinking Water Act.

This bill would exempt the Elsinore Valley Municipal Water District, the Eastern Municipal Water District, the Western Municipal Water District, and the Metropolitan Water District of Southern California from liability, as prescribed, for claims by past or existing County Water Company of Riverside customers or those who consumed water provided through the County Water Company of Riverside water system prior to and during the interim operation period, as specified. The bill would prohibit the immunity from liability from being construed to relieve any water district, water wholesaler, or any other entity from compliance with drinking water standards, impair any cause of action or proceeding brought by specified public entities, or impair claims alleging the taking of property without compensation. The bill would require the interim operation period to last until permanent replacement facilities are accepted by the Elsinore Valley Municipal Water District and the Eastern Municipal Water District with the concurrence of the department or December 31, 2015, whichever occurs first. The bill would require the department to extend the interim operation period for up to 3 successive one-year periods at the request of the Elsinore Valley Municipal Water District and the Eastern Municipal Water District, as prescribed.

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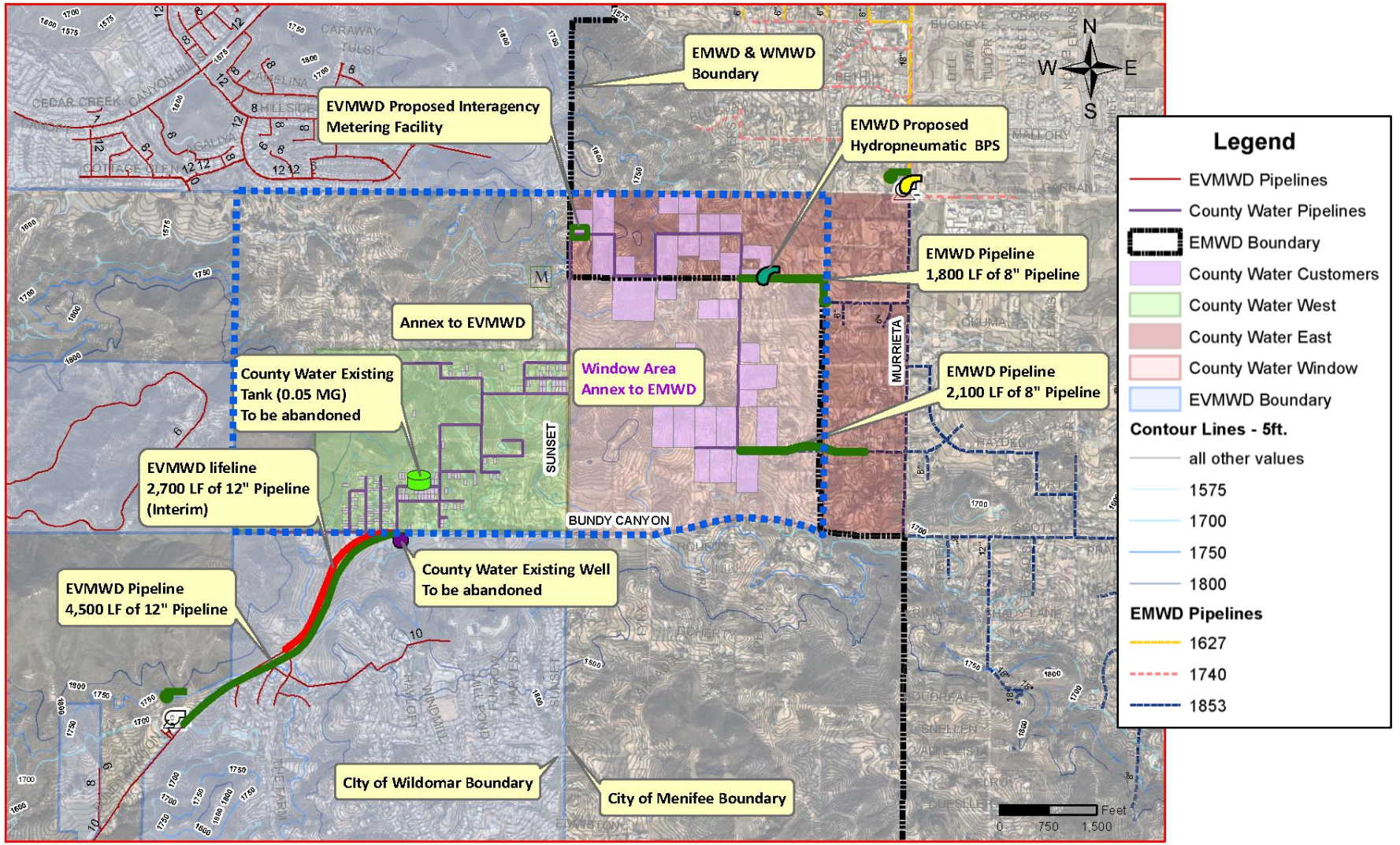
Rebuilding a Water System - Infrastructure Improvements



Key Takeaways – Failing Water System Consolidations

- Capable agencies going out of their comfort zone to help the public is difficult but necessary.
- Protections – financial and legal – are critical for agencies involved.
- Pooling resources through local and state agency partnerships is vital – but takes leadership.
- Community must be engaged at grass-roots level and can be a huge partner in success.

QUESTION AND ANSWER

URBAN WATER INSTITUTE, INC.
A Non-Profit Organization

Moderator:
PAUL JONES

- **MIKE MARKUS**
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