MRWPCA Groundwater Replenishment Project Update

MPWMD Ordinance No. 152 Oversight Panel
August 1, 2013

Keith Israel, MRWPCA General Manager

TOPICS

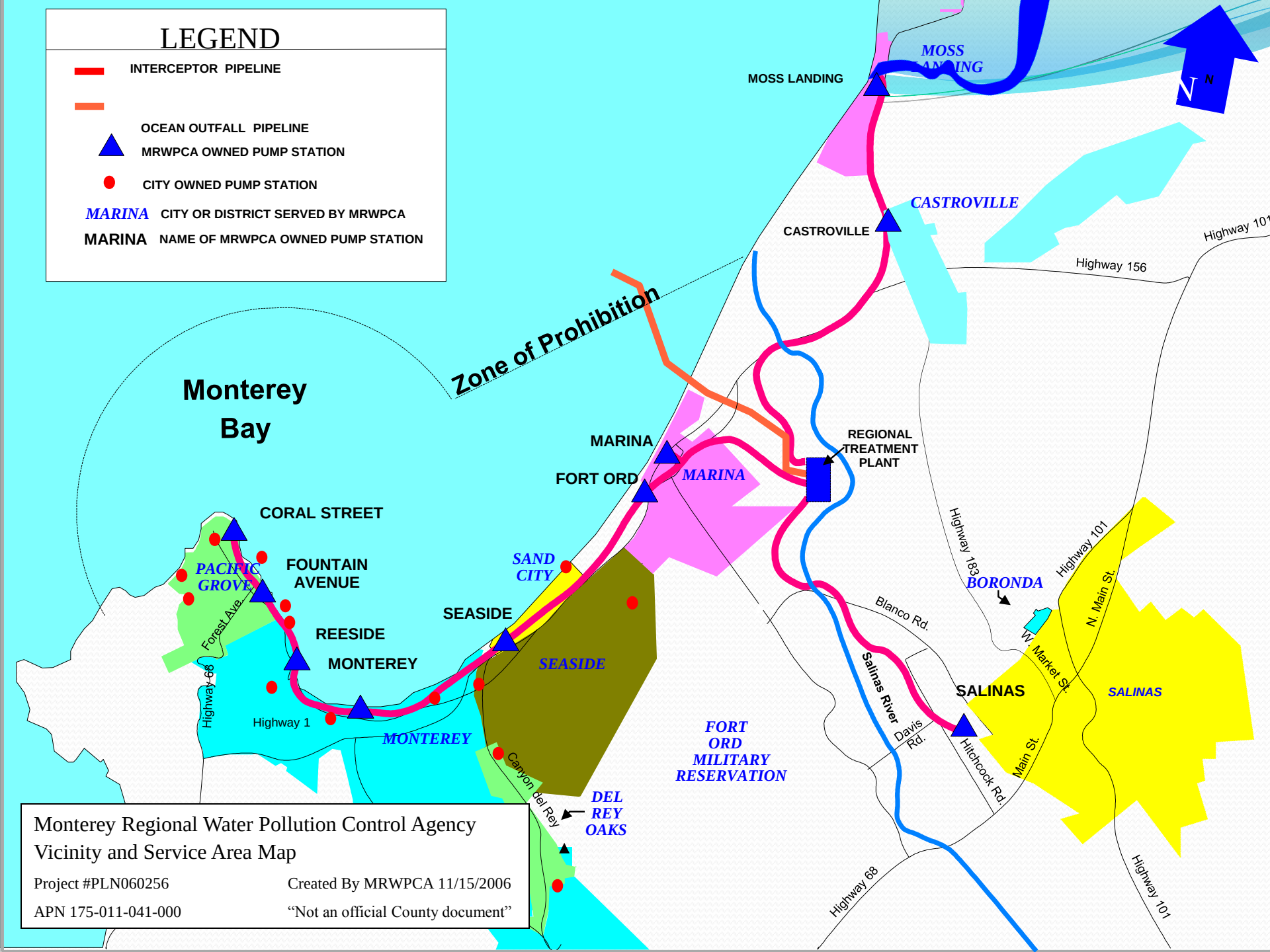
- Who/What is MRWPCA
- What is Groundwater Replenishment
- Regional Water Supply Project – CPUC
- Current Project Status
- FY 2013/14 developments
- Project Team of experts
- Notice of Preparation
- Development of additional water sources
- Community collaboration/cooperation

11 JPA Members/12 Service Areas

- Pacific Grove, Monterey, Del Rey Oaks, Seaside, Sand City, former Fort Ord, Marina, Castroville, Moss Landing, Monterey County, Salinas, and Boronda

FACILITIES

- 29.6 MGD Secondary Treatment Capacity
- 3 Major Interceptors and 10 Pump Stations
- 2 ½ Mile Outfall to Monterey Bay
- Current Average Daily influent Flow (18 MGD)
- 60% of Incoming Wastewater Recycled



Monterey Regional Water Pollution Control Agency
Vicinity and Service Area Map

Project #PLN060256 Created By MRWPCA 11/15/2006

APN 175-011-041-000 "Not an official County document"

MRWPCA

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Español

MRWPCA operates the regional wastewater treatment plant; maintains 25 wastewater pump stations; and operates the water recycling facility and manages the distribution system that provides irrigation water to 12,000 acres of farmland. The agency serves [illegible]ey Oaks, Monterey, Pac[illegible]ve, Salinas, Sand City, Sea[illegible]oronda, Castroville, Mo[illegible]ding, Fort Ord, Monter[illegible], and Marina.

NEWS & ANNOUNCEMENTS

Monterey County Science Fair Participants Recognized by MRWPCA

On March 10 at the Monterey County Science Fair at California State University Monterey Bay, two student projects were selected by Monterey Regional Water Pollution Control Agency staff for special recognition.View the story as HTML, or view or download as PDF or Word doc.

Click to Learn More about the Groundwater Replenishment Project

Monterey Peninsula Groundwater Replenishment Project

www.mpwaterreplenishment.org

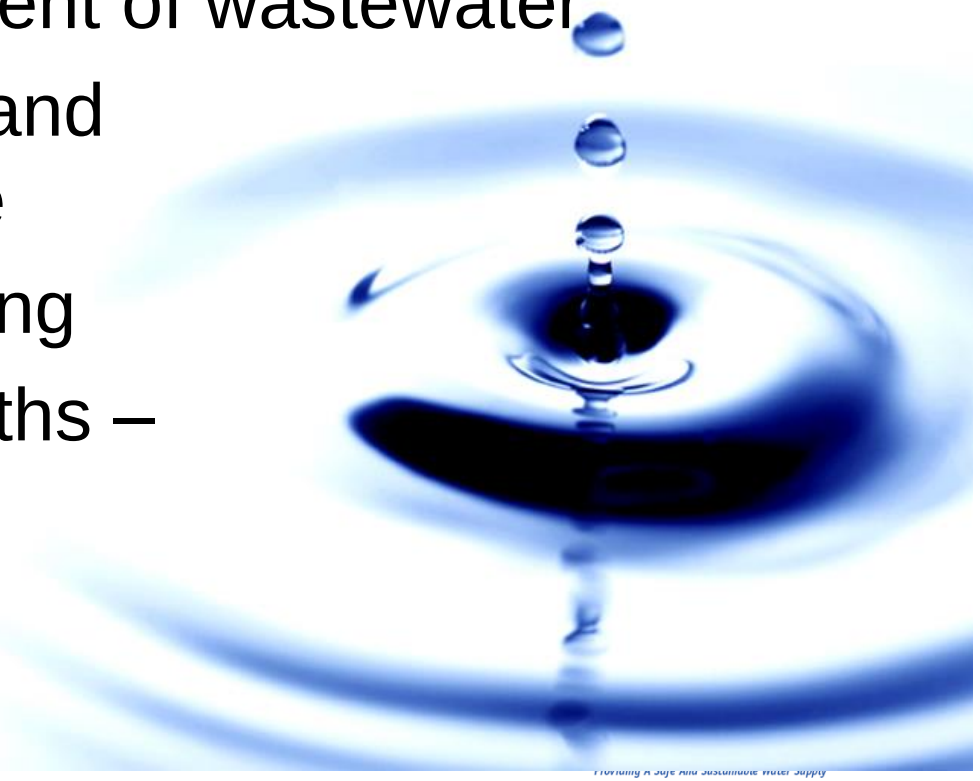
Notice of Preparation:

GWR Project EIR

View or Download (PDF)

What is Groundwater Replenishment?

- **New Source of Water and a Type of Indirect Potable Reuse**
  - Advanced Treatment of wastewater
  - Injection into soil and groundwater table
  - Groundwater mixing
  - After several months – clean water is available for use

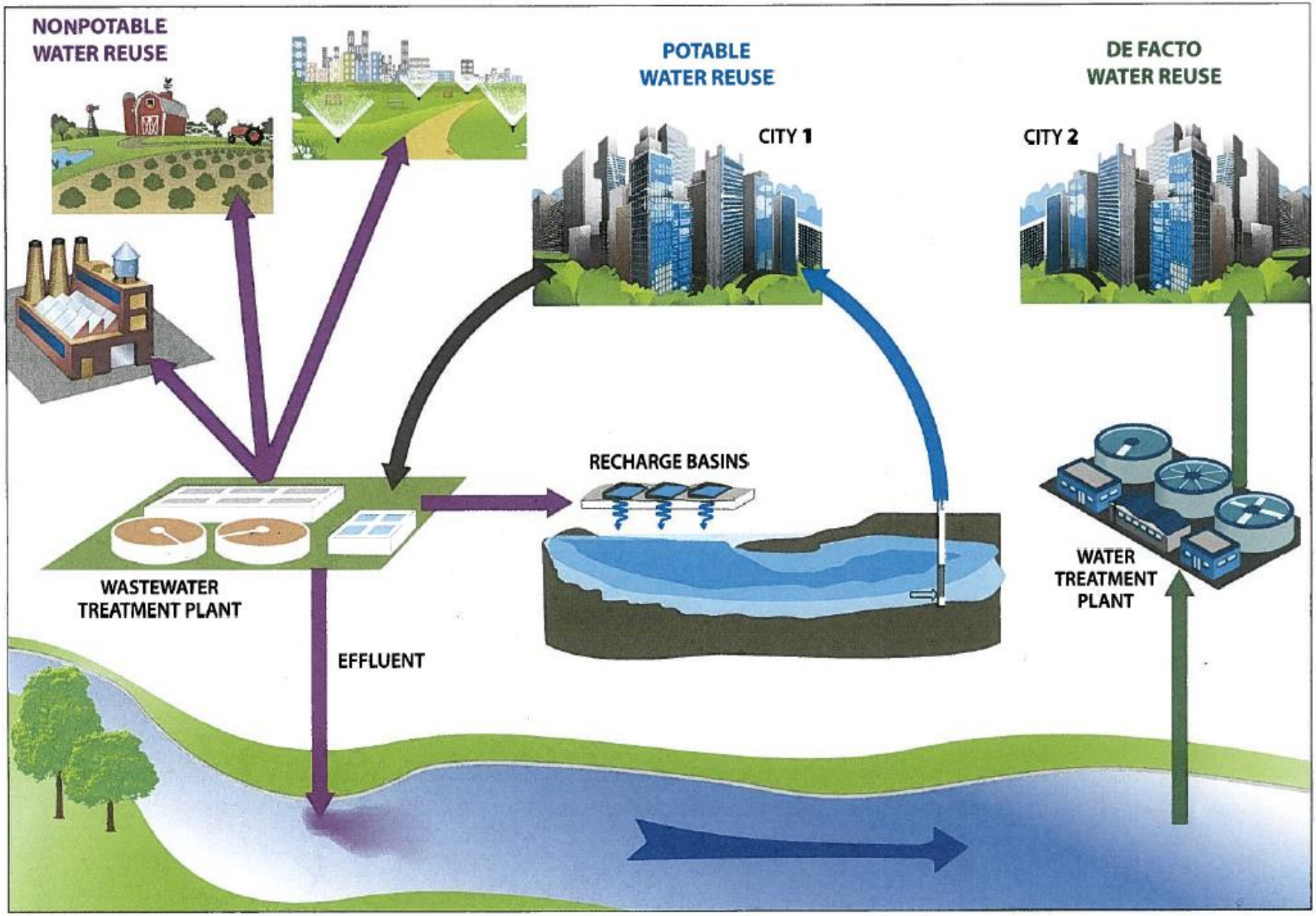


What is Groundwater Replenishment? (continued)

- Potential element of the overall Monterey Peninsula Water Supply Project
- Supply about 3,500 AFY of advanced treated, purified water for recharging the Seaside Groundwater Basin

Monterey Peninsula
Groundwater Replenishment Project
Providing A Safe And Sustainable Water Supply

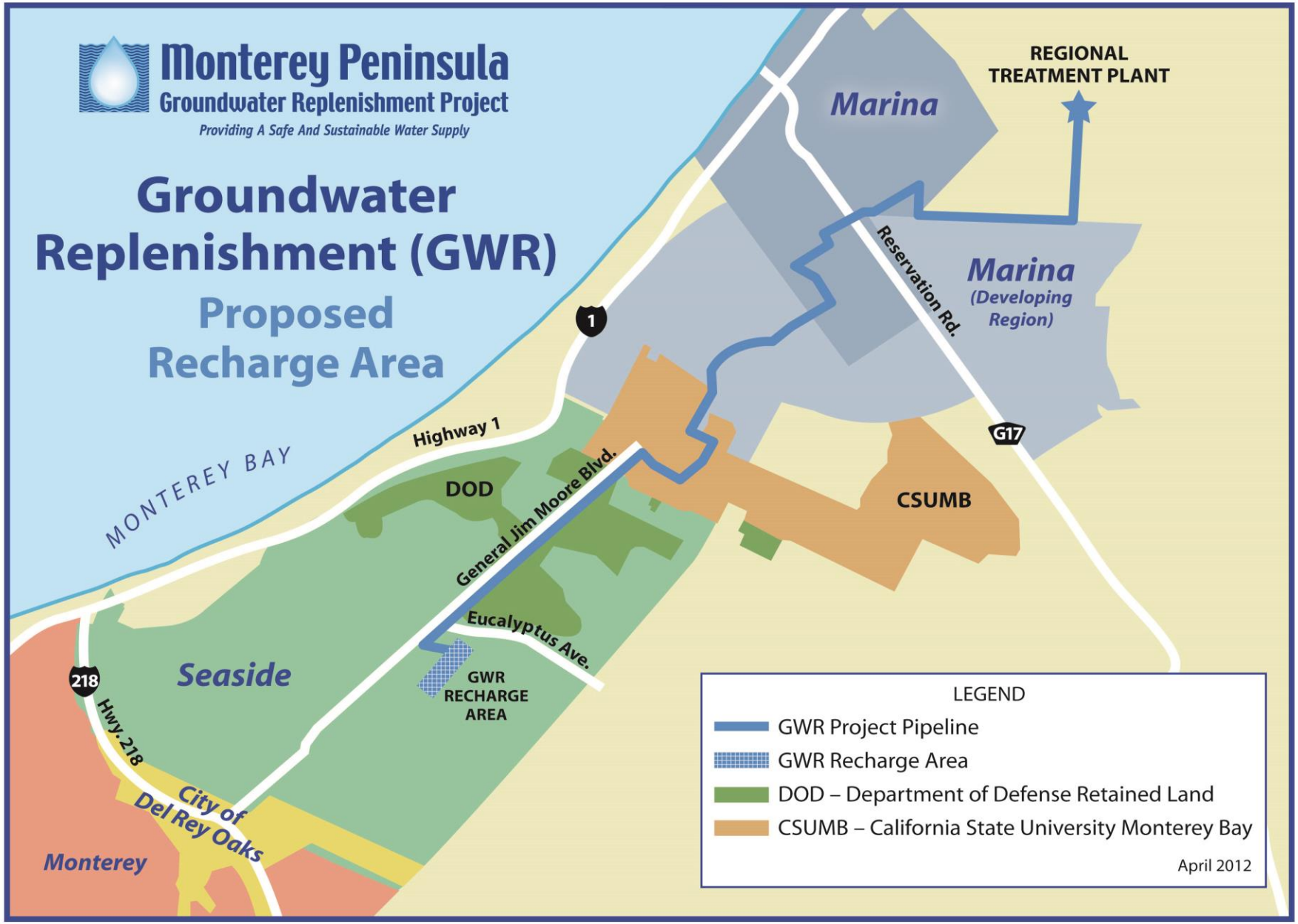
De Facto Reuse



Groundwater Replenishment is a Good Water Portfolio Component

- Good potential to be implemented by late 2016
- Has a long, successful track record in California and other places
- Energy efficient
- Cost effective
- Highly drought proof
- Reuse of valuable resource
- Program-level environmental review completed in 2009

Monterey Peninsula
Groundwater Replenishment Project
Providing A Safe And Sustainable Water Supply


Monterey Peninsula
Groundwater Replenishment Project
Providing A Safe And Sustainable Water Supply
Groundwater Replenishment (GWR)
Proposed Recharge Area
REGIONAL TREATMENT PLANT
Marina
Marina (Developing Region)
Reservation Rd.
1
Highway 1
MONTEREY BAY
DOD
General Jim Moore Blvd.
CSUMB
G17
Eucalyptus Ave.
GWR RECHARGE AREA
Seaside
218
Hwy. 218
City of Del Rey Oaks
Monterey
LEGEND
GWR Project Pipeline
GWR Recharge Area
DOD – Department of Defense Retained Land
CSUMB – California State University Monterey Bay
April 2012

Proposed Purification Process

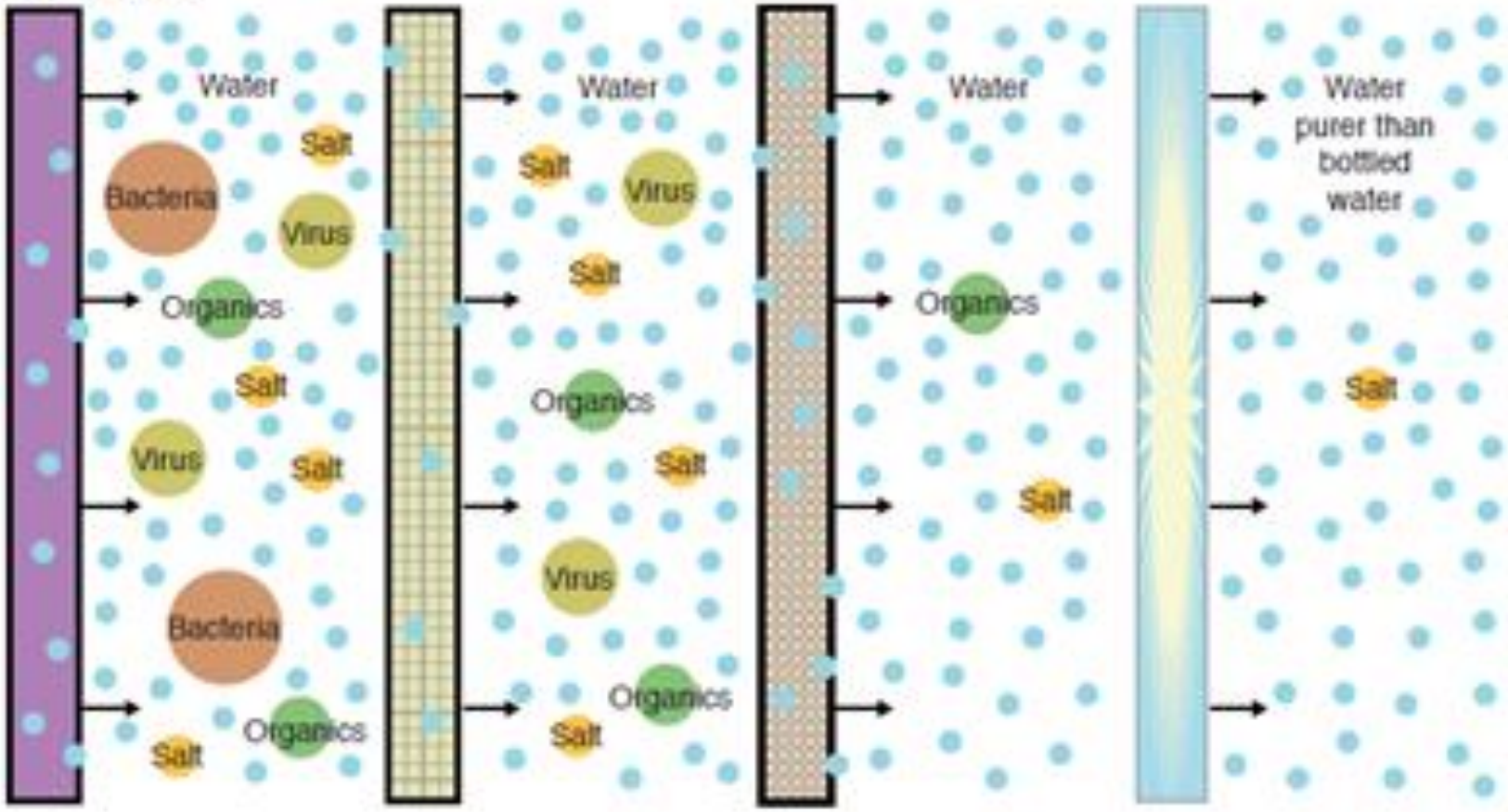
Pre-Treatment

Dissolved Air Flotation
Ozonation
Biologically Active Filtration
Primary Treatment
Secondary Treatment

Micro Filtration

Reverse Osmosis

Ultraviolet and Hydrogen Peroxide Oxidation



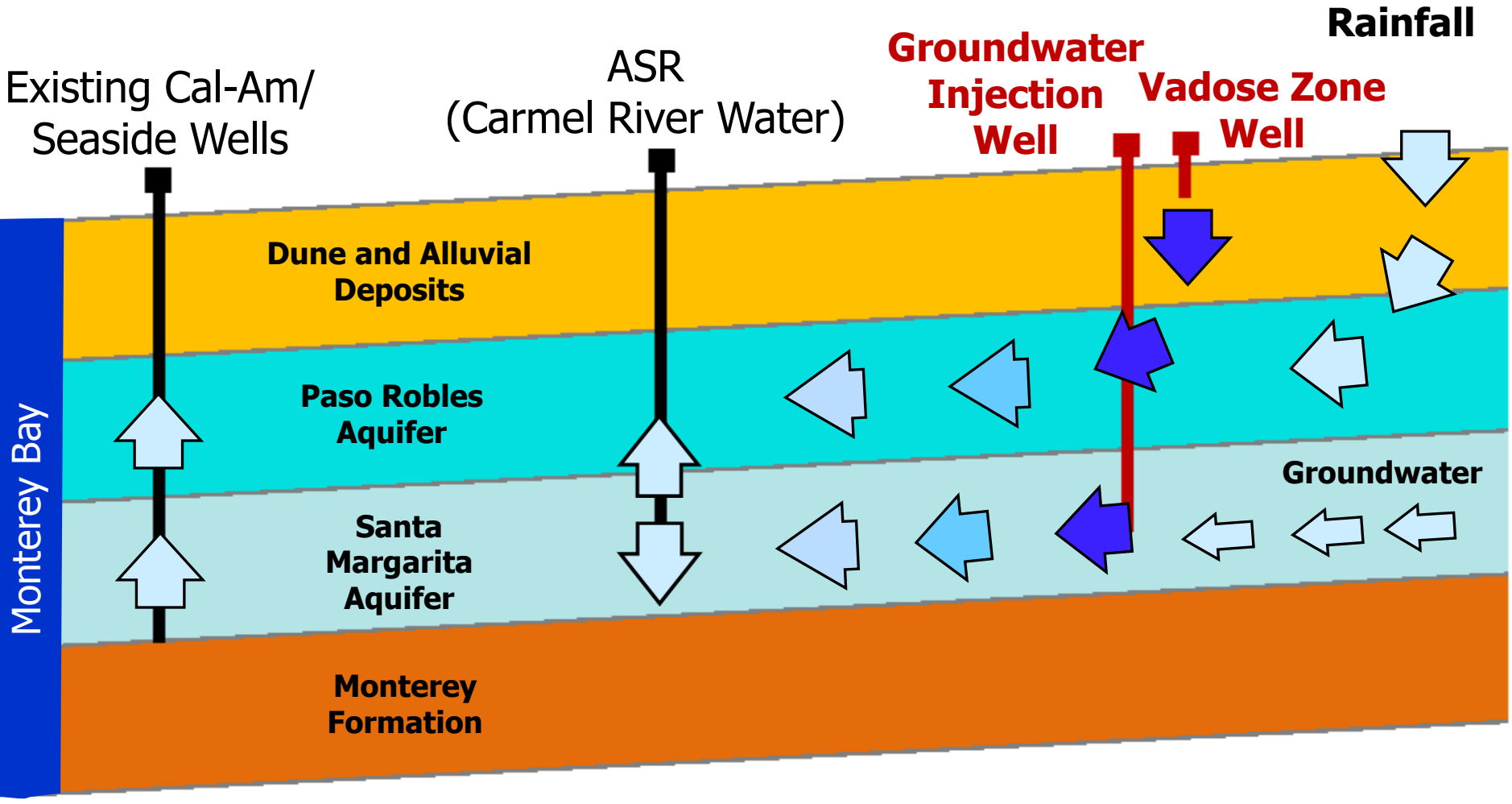
Safety of Groundwater Replenishment Water

- Based on Orange County Water District treatment technology - 35 years experience
- 6 Levels of treatment
- Built in process and quality control redundancies
- Independent advisory panel
- Requires CA Dept. of Public Health approval
- Pharmaceuticals and CEC's are reduced to non-detect or well below levels of concern.

Monterey Peninsula
Groundwater Replenishment Project
Providing A Safe And Sustainable Water Supply

Advanced Treatment Facility Siting Proposal
MRWPCA Regional Facility

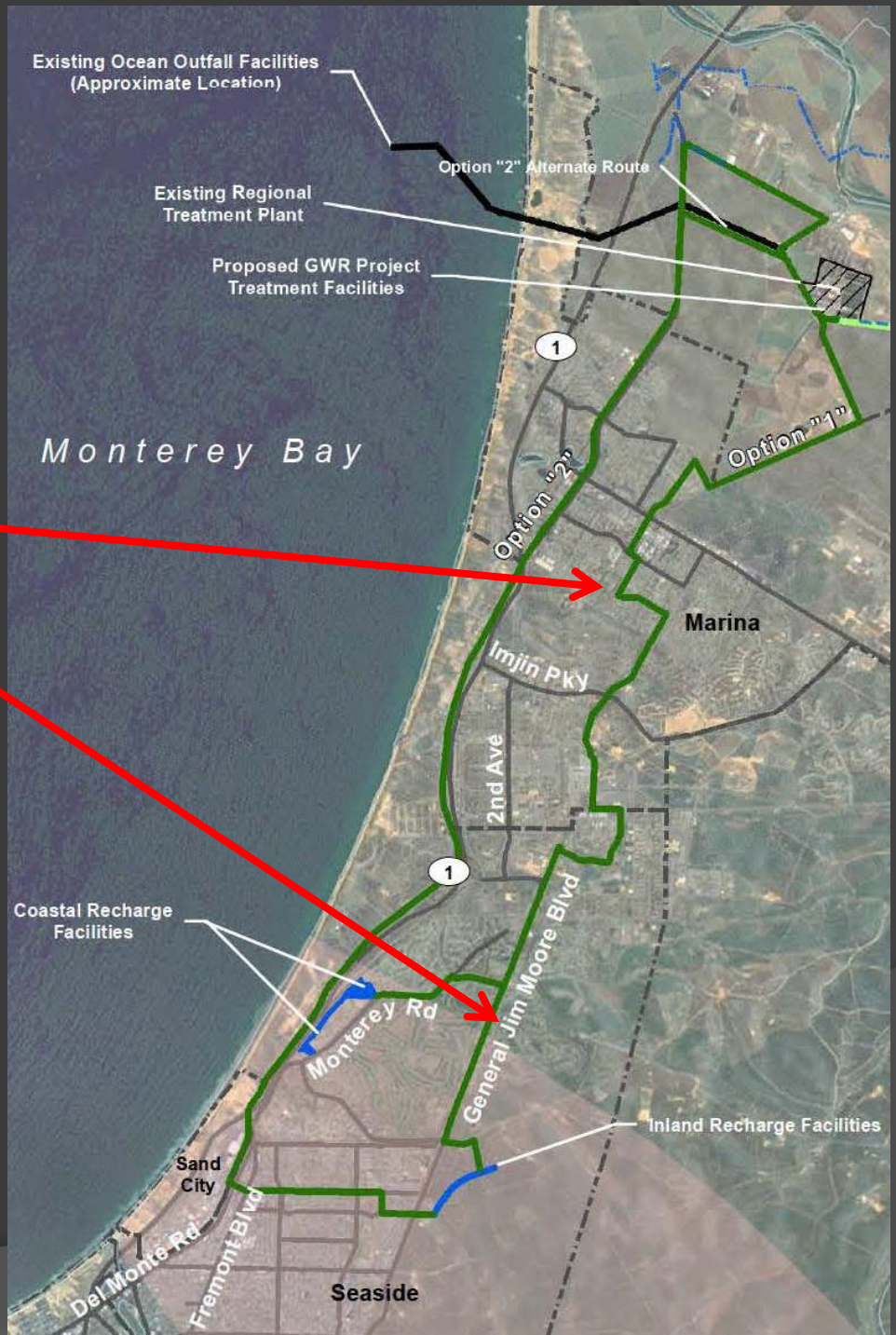
GW Recharge – Seaside Basin



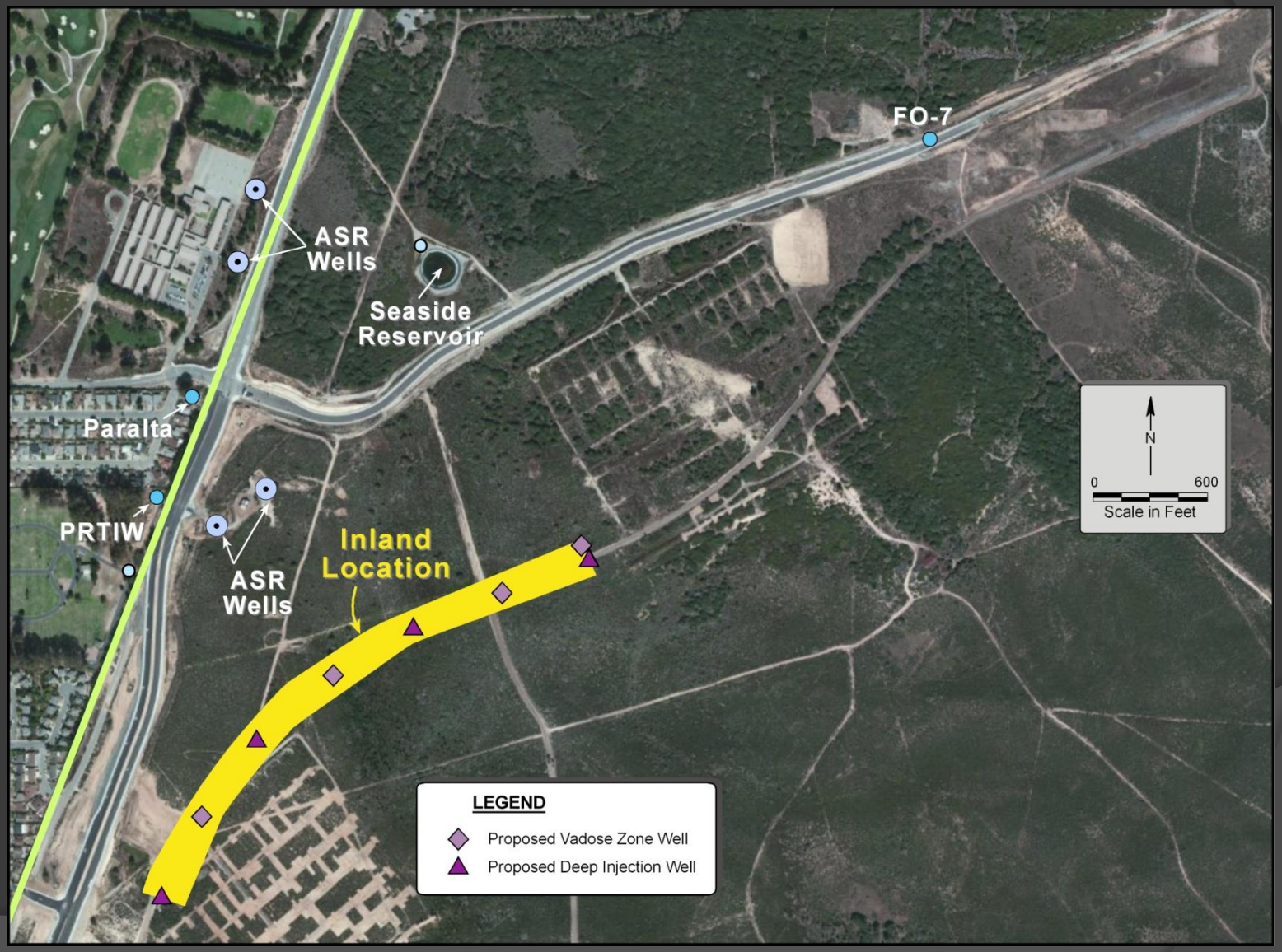
Minimum of 2 Months Required Retention, but Most Likely More than 6 Months Until Extraction

Mixing Waters: Rainfall, ASR, and Groundwater

Proposed GWR Injection Conveyance Options



Conceptual GWR Project – Inland Location

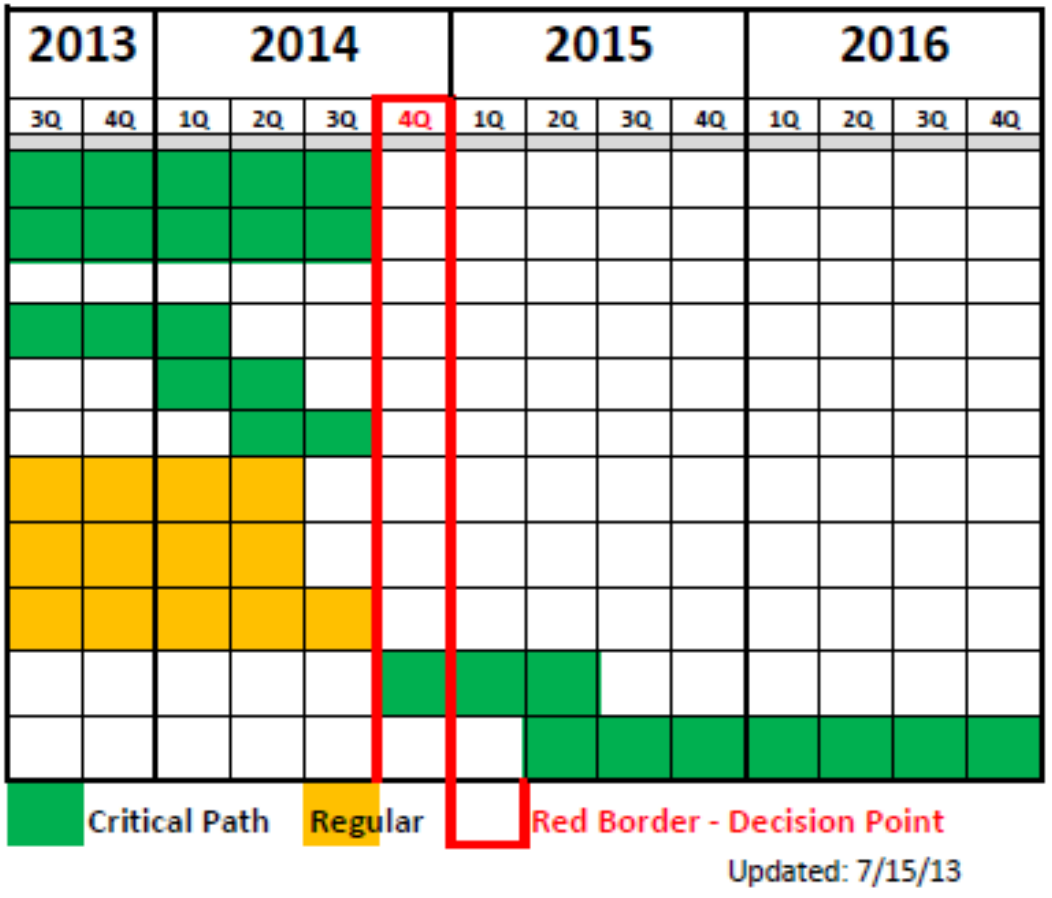


Project Benefits

- Reasonable cost solution (<$3,000/AF)
- Supports State Water Recycling Goals
- Online by December 2016
- Positive environmental attributes
- Fully proven technology (OC, etc.)
- Eligible for SRF Loans
- Expandable for longer term reduced costs

Groundwater Replenishment Schedule

- CEQA+
- Collaboration with Other Entities
  - Salinas, MCWRA, SWRCB, MCWD
    - Develop/Draft Term Sheet
    - Refine/Develop Agreement Language
    - Circulate/Approve MOUs
- Monitoring Well-Permits/Drill
- Feasibility Study-Facilities Planning
- Pilot Treatment-Bench/Pilot Tests
- Treatment Design
- Construction



CPUC Process

- Settlement Agreement approved by parties
- Must complete the next 1 ½ years to confirm project is on schedule and cost effective to implement
- If progressing, a smaller desal plant will be constructed

Groundwater Replenishment Expenditures (UR 502)

Expense	FY 05/06 through FY 11/12	FY 12/13 Budget	FY 12/13 Expenses	Total to Date
Technical/Consultants	$1,193,088	$127,910	$86,714	$1,279,802
Legal	$223,898	$143,652	$111,856	$335,754
Environmental	$93,513	$142,043	$151,920	$245,433
Contingency		$50,000		$0
Watermaster (reimbursement)	($100,000)	$0	$0	($100,000)
MPWMD (reimbursement)	$0	($300,000)	($367,667)	($367,667)
SRF Feasibility Grant (reimbursement)	$0	($25,000)	$0	$0
BOR Title 16 WaterSMART Grant (reimbursement)	$0	($50,000)	$0	$0
Internal Labor	$875,620	$286,395	$337,546	$1,213,166
Total Expenditures	**$2,286,119**	**$375,000**	**$320,370**	**$2,606,489**

Updated 7-12-13

FY 2013/14 Budget for GWR

Expense	Draft FY 13/14 Budget	SRF & BOR Grants	MPWMD	MRWPCA
CEQA including Technical Support	1,292,430		(969,323)	323,107
Technical/Consultants	1,941,388	(149,674)	(1,343,786)	447,928
Pilot and Laboratory	216,182		(162,137)	54,045
Legal	250,000		(187,500)	62,500
Internal Labor	300,000		(225,000)	75,000
Total Expenditures	$4,000,000	($149,674)	($2,887,746)	$962,580

Key Project Tasks during the coming year . . . .

- Complete Feasibility Study and Facilities Planning
  - More detailed cost estimates
  - Clearer definition of project timelines
- Secure agreements/MOUs with Salinas, MCWRA and MCWD
- Approve the Water Purchase Agreement
- Complete draft EIR/CEQA+

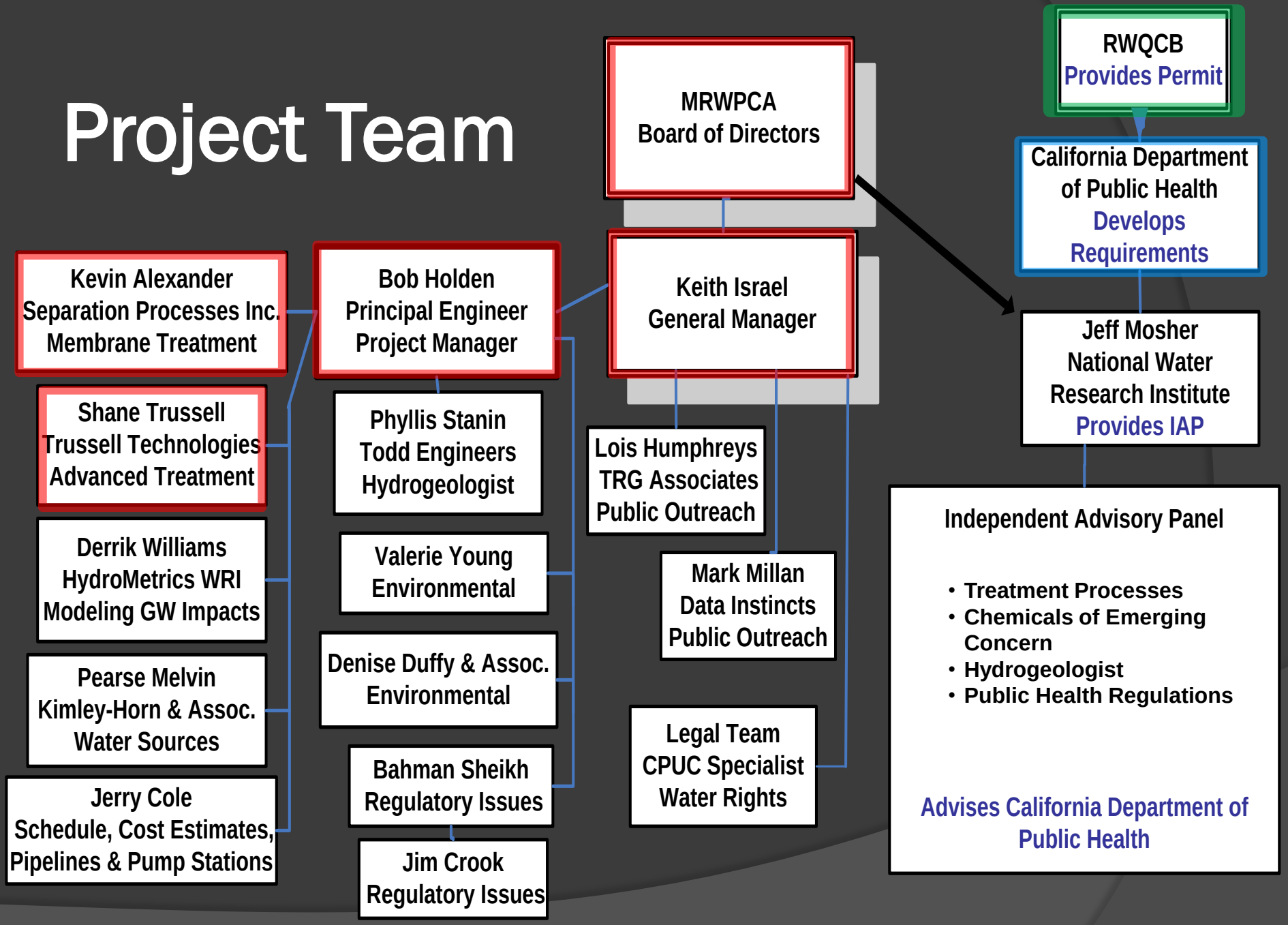
Key Project Tasks during the coming year . . . . (continued)

- Complete hydrogeological modeling for Seaside Basin
- Determine viability of potential additional source waters
  - Bench Testing
  - Pilot Testing
    - PreTreatment
    - Advanced Water Treatment process
- Monitoring Well in place
- Independent Advisory Panel (IAP) and regulatory meeting (CDPH, RWQCB)

Advantages of Picking an "All Star Team"

- Select premier experts in each field with specific resources and expertise
  - Better work
  - More easily accepted by Independent Advisory Panel, CDPH and RWQCB
- Tighter Scope of Work
- Reduced overhead
- More closely monitor project costs
- Reduce time
  - To perform work
  - To review work
- Coordinate parallel efforts

Project Team



Kevin Alexander, P.E.
Vice President
Separation Processes, Inc.

Mr. Alexander has extensive experience in the planning, design, construction and operation of membrane water, wastewater and water reclamation facilities. Assignments have included leading the pilot and demonstration testing of membrane systems, developing procurement documents, life-cycle evaluations, membrane process evaluations, value engineering studies, operations evaluations, planning studies, detailed design and construction services. Experience with different project delivery methods and has participated in various project including design-bid-build, design build and design-build-operate projects.

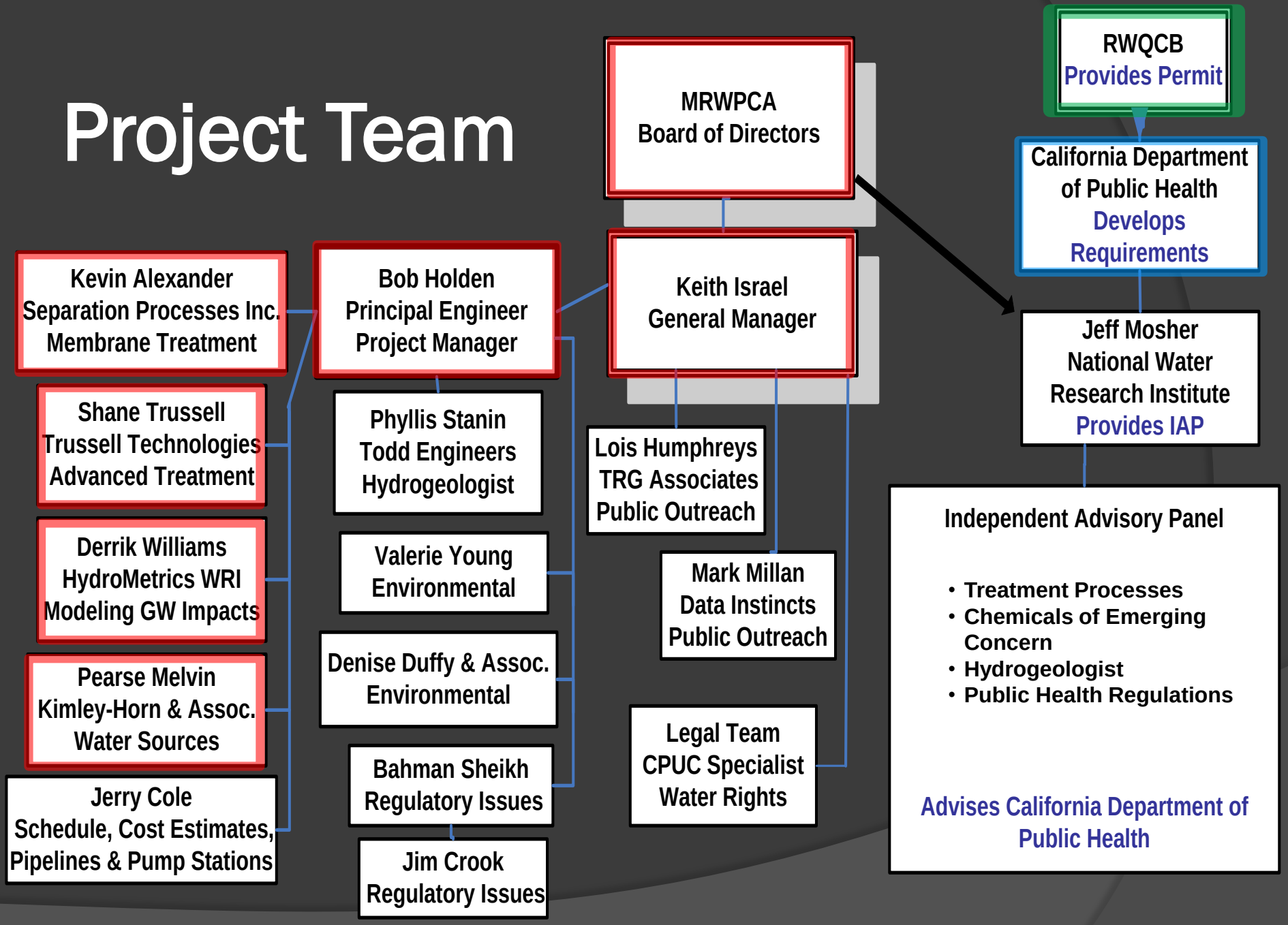
Trussell Technologies

Dr. Shane Trussell, PhD, PE, BCEE

Dr. Shane Trussell has more than 15 years of hands-on experience with advanced wastewater treatment processes. He has authored more than 56 publications with a focus on advanced wastewater and water treatment processes, particularly, membrane filtration, membrane bioreactors, reverse osmosis, ozone oxidation, electro-dialysis reversal, emerging contaminant removal and disinfection with ozone, chlorine and chloramines.

Trussell Technologies, an environmental engineering firm comprised of water quality and process specialists, is focused on emerging technologies and innovative applications.

Project Team

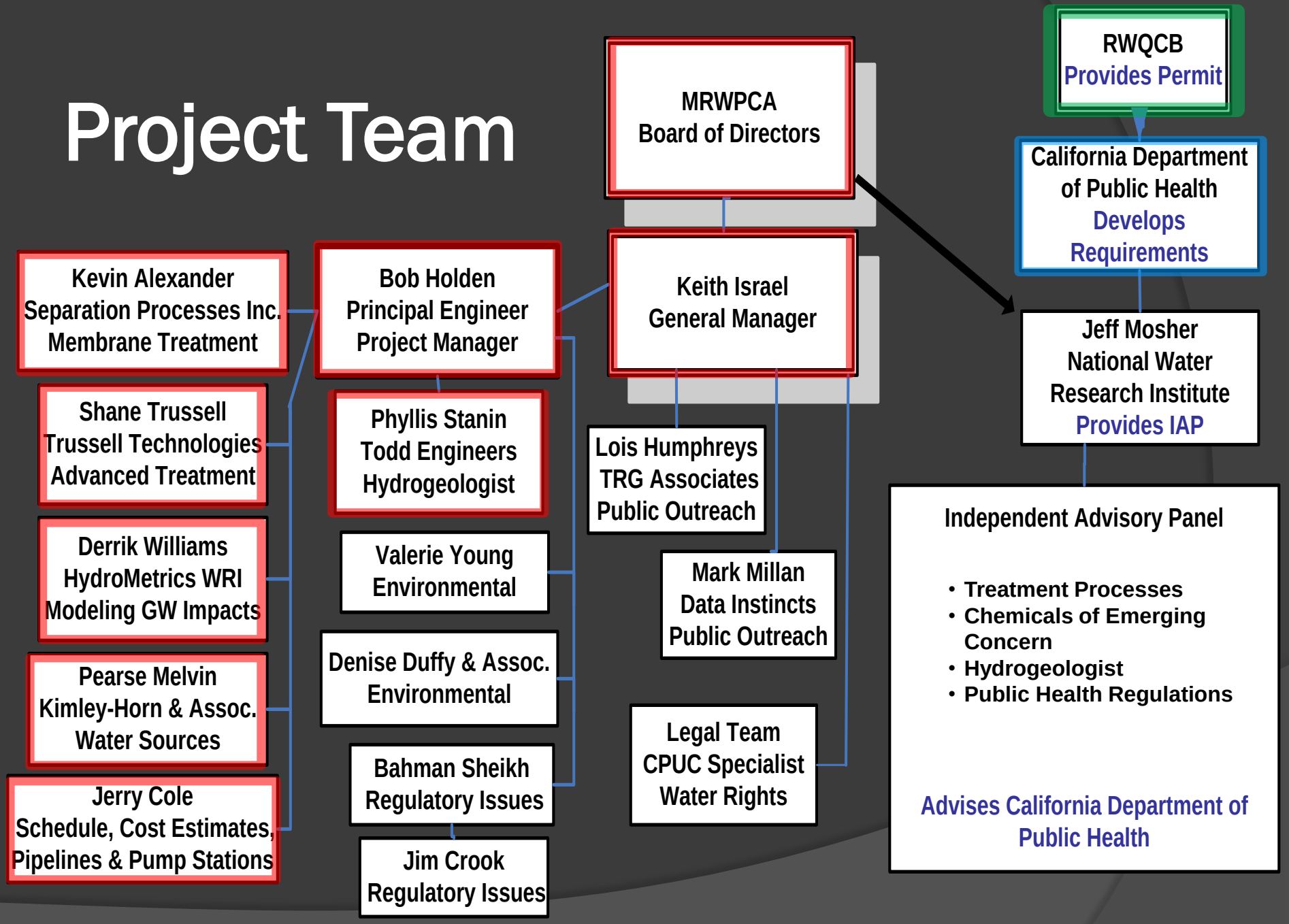


HydroMetrics Water Resources Inc., a Northern California based firm, provides water resources consulting with a staff of premier scientists and engineers providing expertise in developing, protecting, and managing groundwater and surface water resources.

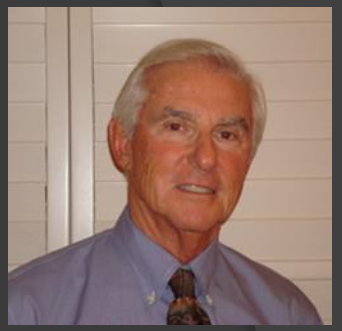
Mr. Derrik Williams, a practicing hydrogeologist in California since 1987, has extensive experience managing, reviewing, and assisting in analytical hydrogeology, with extensive application of groundwater flow and transport models. He has expertise in aquifer test analysis, well installation, and all aspects of groundwater management. His B.S. in Geology is from U.C. Davis and M.S. in Hydrology is from the University of Arizona.

Kimley-Horn professional staff uses the latest technology in hydrodynamic modeling software and decision–support tools to provide innovative methods for water supply issues. For the GWR project, KMA will prepare a Facilities Planning Report that analyses the feasibility of supplying additional raw waters as potential water sources for GWR. KHA will also provide services related to flow analysis, diversion structures, pump stations and diversion pipelines.

Project Team



T. Gerald Cole, P.E., BCEE
Recycled Water Management

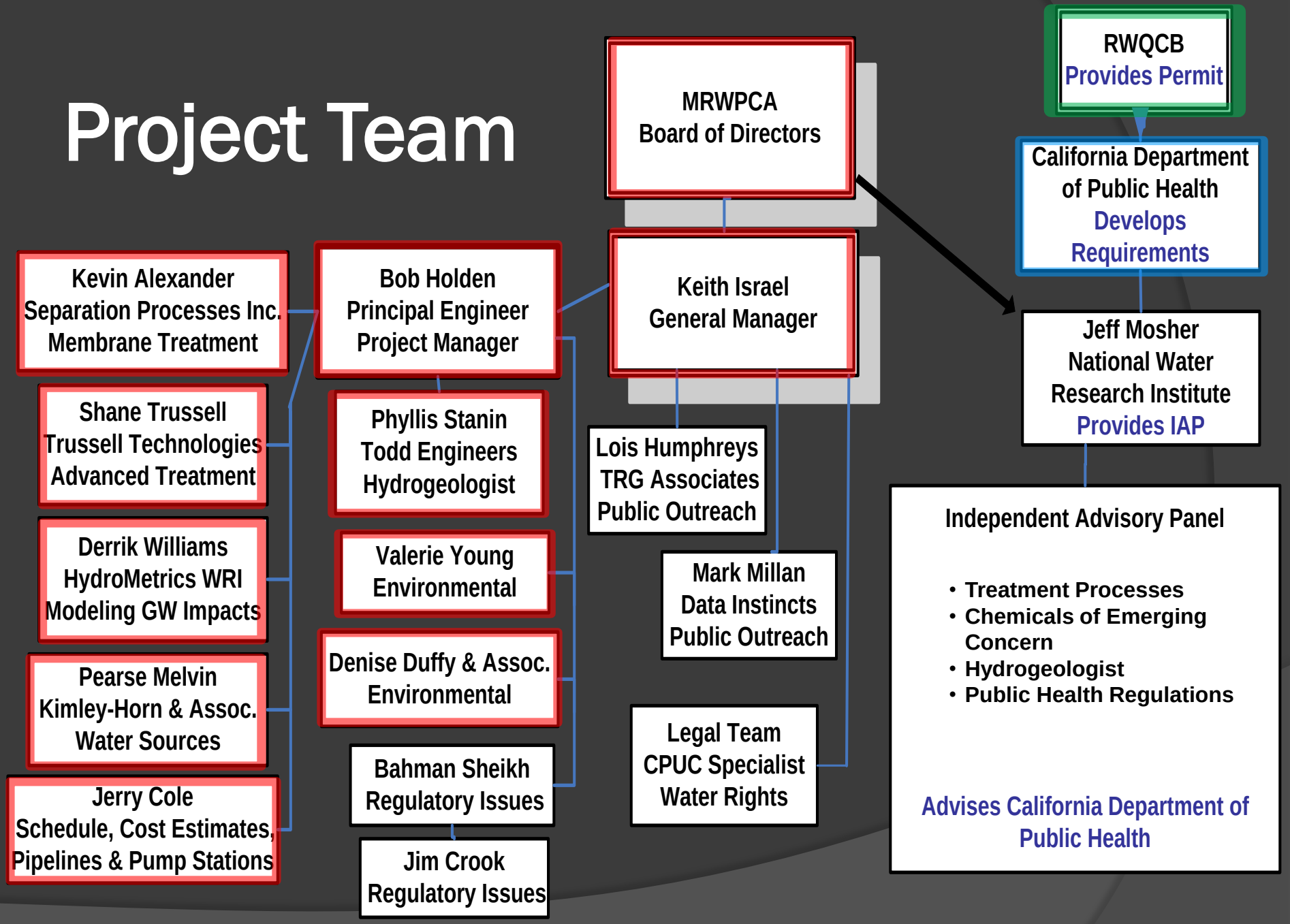


T. Gerald (Jerry) Cole has a broad base of experience in conceptual planning, design, construction management, and project and program management of potable water, recycled water and wastewater projects spanning over 35 years of professional service to municipal, foreign, commercial, and industrial clients. The primary focus of his professional career has been assisting clients in the development of recycled water projects. Because of his diverse experience, he possesses a big picture vision for both large and small projects, and also attends to all the important details necessary for successful project implementation.

Phyllis Stanin, PG, CEG, CHg
Vice President and Principal Geologist
Todd Engineering

Phyllis Stanin has been a professional geologist for more than 30 years with expertise in hydrogeology and groundwater basin management. She has conducted numerous regional hydrogeologic assessments, with a particular emphasis on managed aquifer recharge and conjunctive use. Her expertise also includes fate and transport of contaminants in groundwater including emerging contaminants and a variety of inorganic and organic constituents. She has significant experience in groundwater resource development including well siting and design, geophysical log interpretation, and all aspects of the hydrogeologic characterization of a groundwater basin.

Project Team



Environmental Planning Consultant

Valerie J. Young, AICP

Over 30 years of experience providing environmental planning services for wastewater, recycled water, and water resources clients.

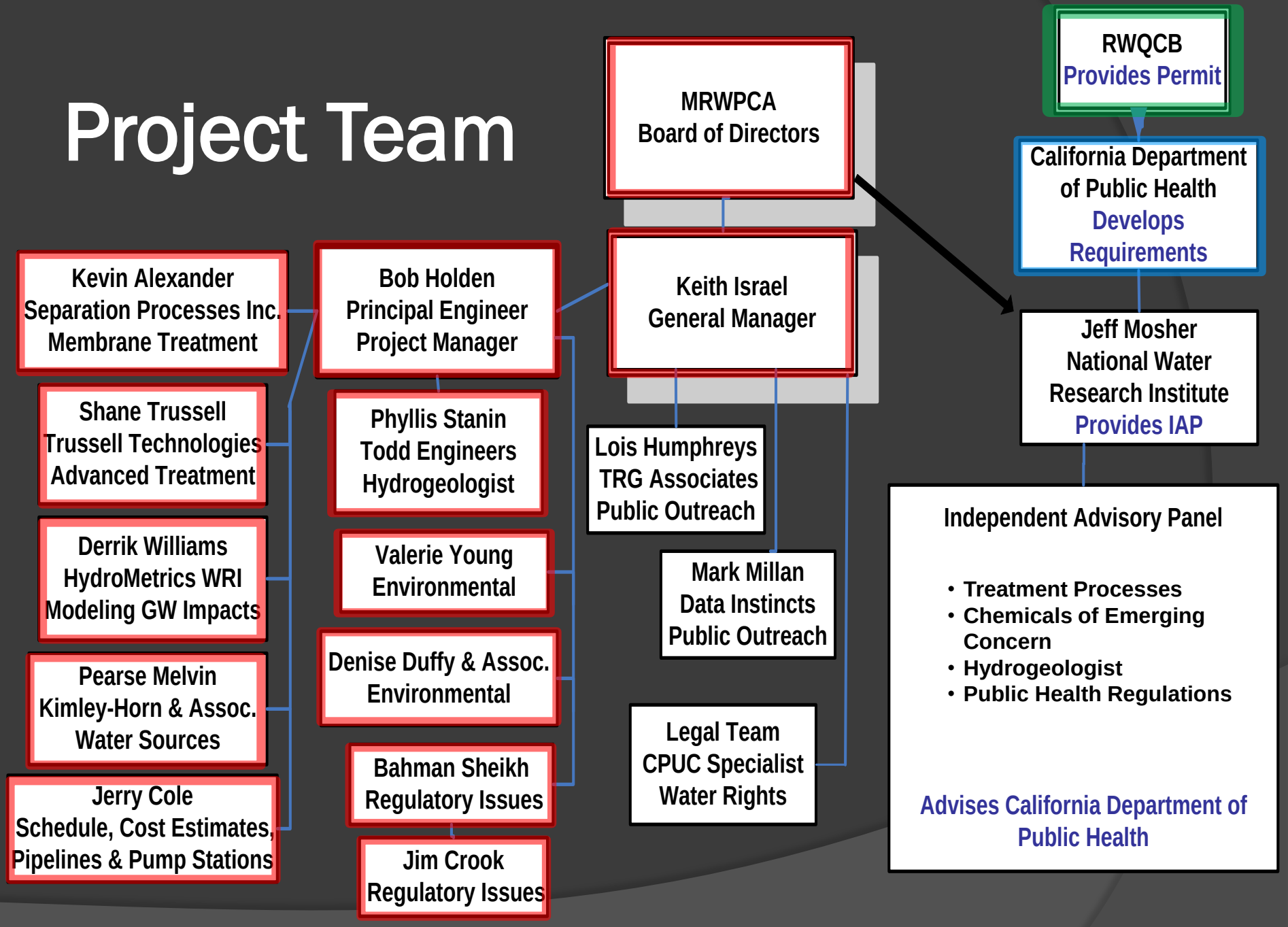
Providing strategic advice on CEQA/NEPA compliance, senior review and quality assurance services for complex environmental documents on water-related public infrastructure projects. Primary area of expertise is working closely with engineering and supporting disciplines to ensure environmental planning protocols are incorporated into water infrastructure projects, from project inceptions through construction and operation.

Denise Duffy and Associates

Alison Imamura, AICP

Denise Duffy & Associates, Inc. (DD&A) offers professional planning and environmental consulting services. DD&A is qualified in all phases of project development and implementation, particularly the preparation of environmental documentation in compliance with the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA). Using the latest planning techniques and scientific methods, DD&A's staff of planners and environmental specialists provide expert review of project development, detailed evaluation of environmental resources, and identification of innovative solutions for avoiding impacts.

Project Team



Dr. Sheikh has over 30 years of international experience specializing in water conservation, reclamation, reuse and recycling.

He has extensive experience in all aspects of water reclamation, recycling and reuse, including technical and regulatory issues, program management, alternatives analysis, feasibility studies, and planning for long-term development of water recycling in communities. He conceived, planned, and conducted major long-term pilot studies of pioneering water recycling programs in Monterey County and in the City of Los Angeles.

Water Resources and Water Recycling Specialist

Bahman Sheikh, PhD, PE

Distinguished Fellow, Center for Integrated Water Research, University of California, Santa Cruz

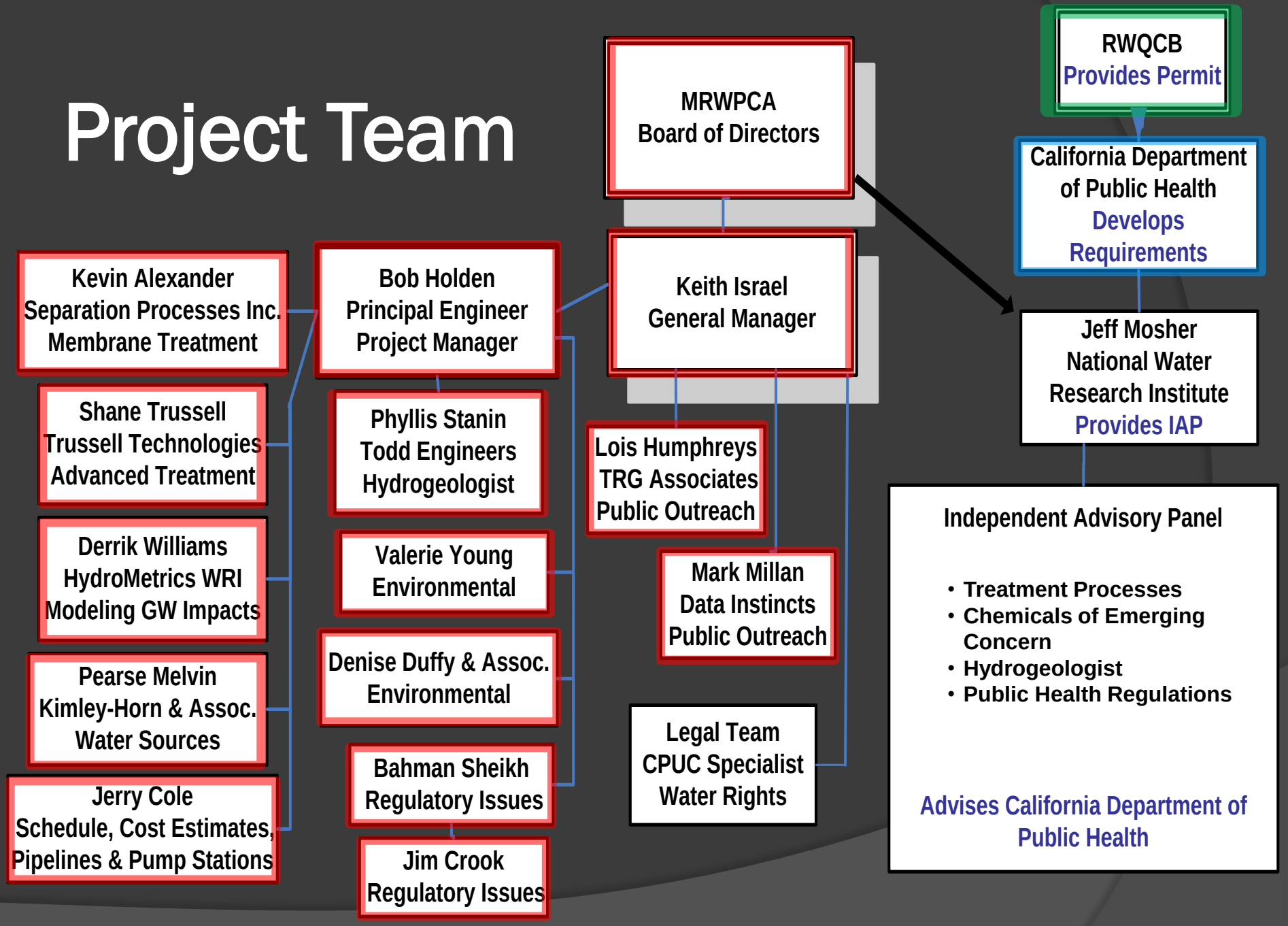
James S. Crook, PhD, PE

Environmental Engineering Consultant

With 40 years of experience in both consulting and state agency environments, Dr. Crook has developed and executed a broad range of engineering services for water and wastewater agencies in the public and private sectors in the US and abroad. Dr. Crook has authored more than 100 technical papers and reports, and is an internationally recognized expert in the area of water reclamation and reuse.

Dr. Crook helped develop water reuse regulation for several states, including California, Florida, Massachusetts, North Carolina, Virginia and Washington.

Project Team

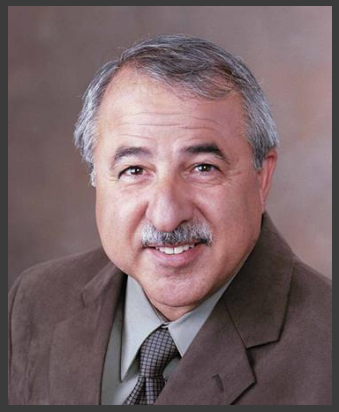


Lois Humphreys is owner and founder of TRG & Associates. Her expertise in marketing and education with recycled water is unparalleled. Lois has a passion for environment causes and a background in community activism.

Lois served as a director of the Leucadia Wastewater District for 25 years, and as president of the WateReuse Association and for 10 years. She was a member of the Board of Directors of the Encina Wastewater Authority. She is past President of the Inland Empire Chapter of Watereuse and was instrumental in the formation of the chapter.

TRG & Associates
Lois Humphreys

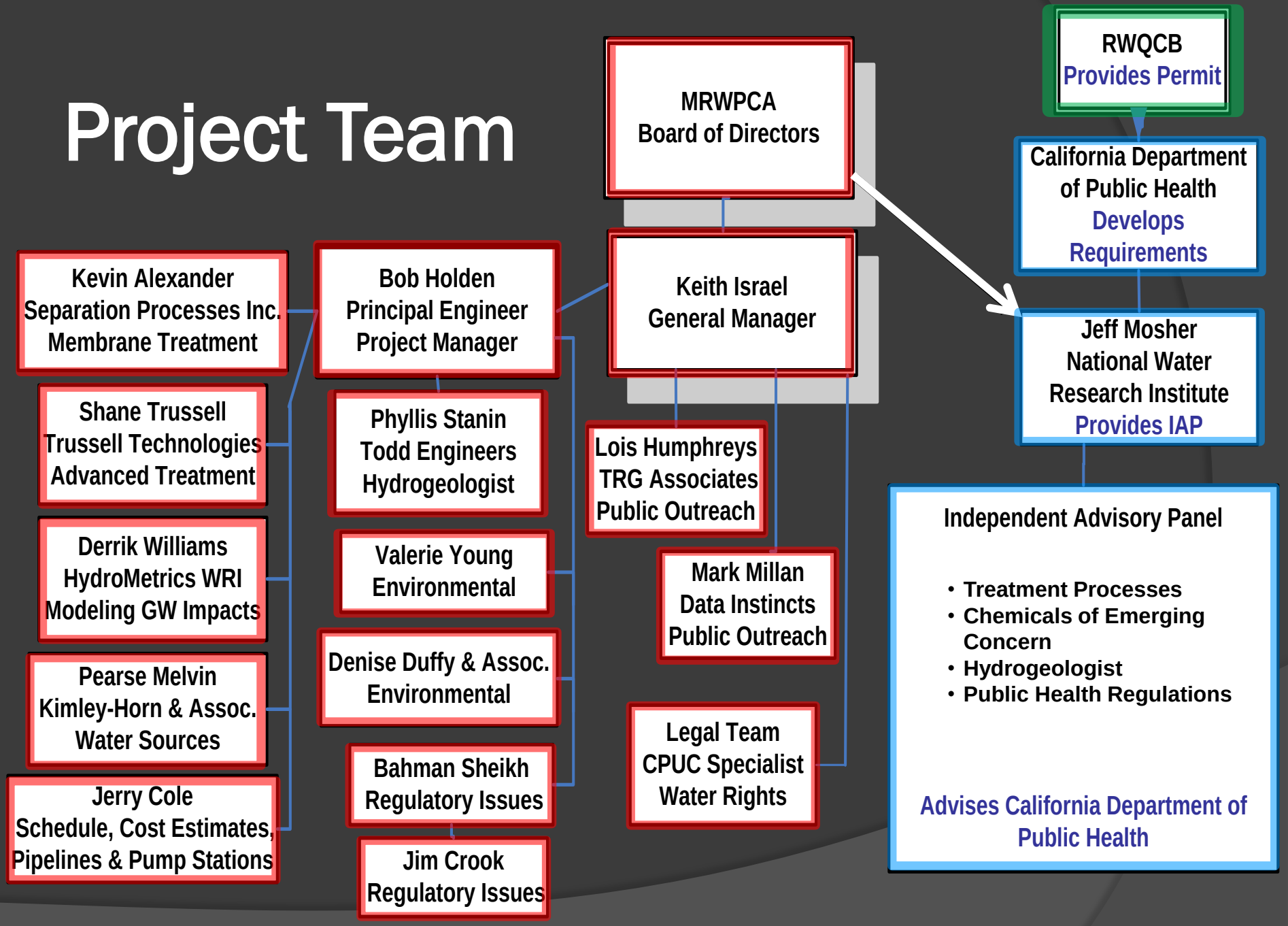
Mark Millan, Data Instincts,
Public Outreach Consultants



Mark Millan is the principal of Data Instincts – a professional consultancy specializing in public information, public outreach, and public involvement for implementing recycled water and desalination projects from pre-design, the EIR process, construction and completion. His recent work has included projects in King County, Washington, and in the California cities of Petaluma, Redwood City, San Francisco, Santa Cruz, Santa Rosa and Windsor.

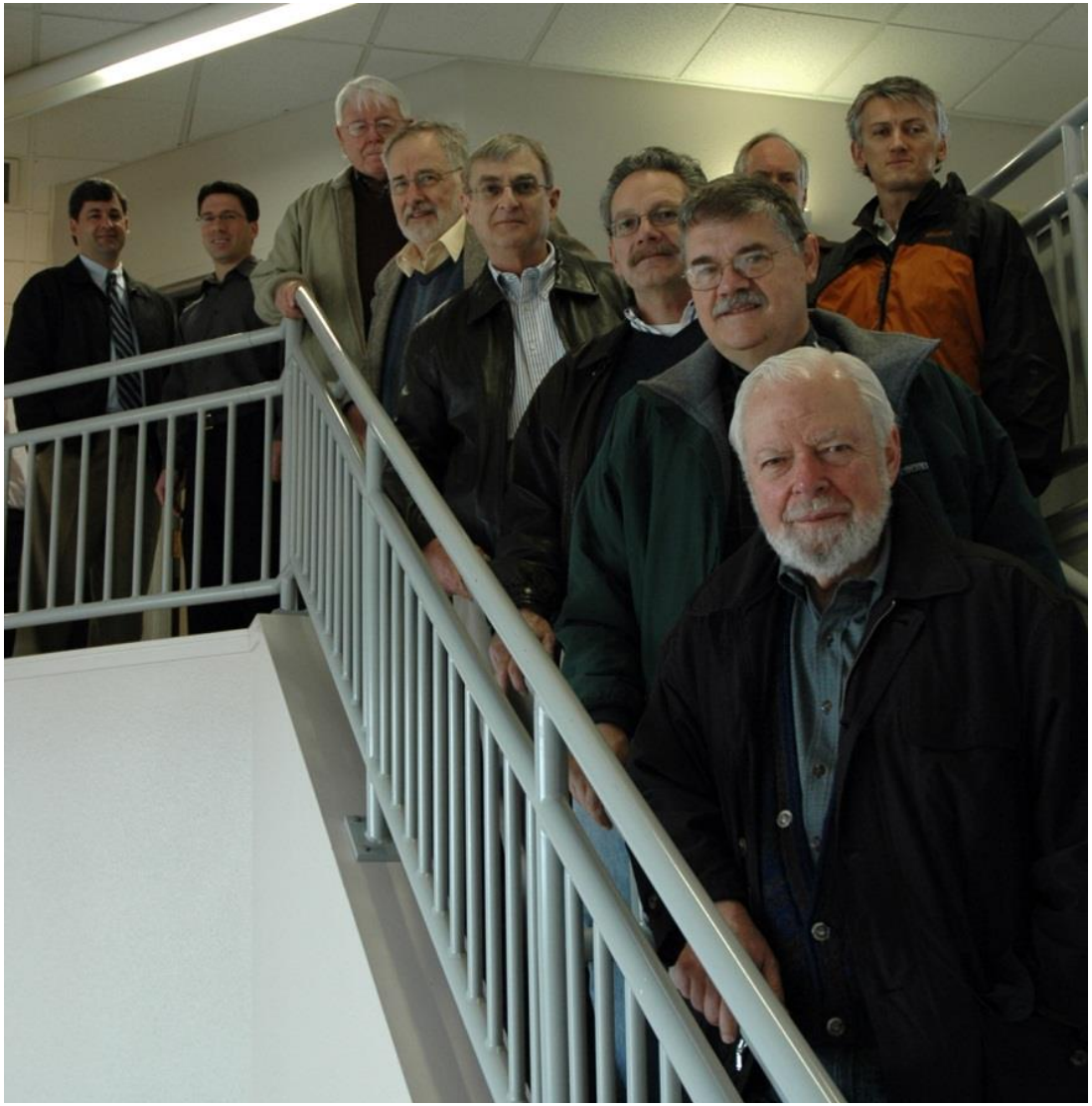
Mark has over thirty years experience in marketing and public relations, with the last eighteen focusing on water related projects and issues. For the past five years Mark has served nationally as chair of the WateReuse Association's Public Education and Outreach Committee and in 2007 was awarded the WRA President's Award for outstanding service.

Project Team



Independent Advisory Panel

- **Advises California Department of Public Health**
- Project team based on panel expertise and experience
- Last met 2007
- Extremely supportive of project



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Monterey Peninsula Groundwater Replenishment Project

Providing A Safe And Sustainable Water Supply

NOTICE OF PREPARATION: Monterey Peninsula Groundwater Replenishment Project Environmental Impact Report. View or download the PDF

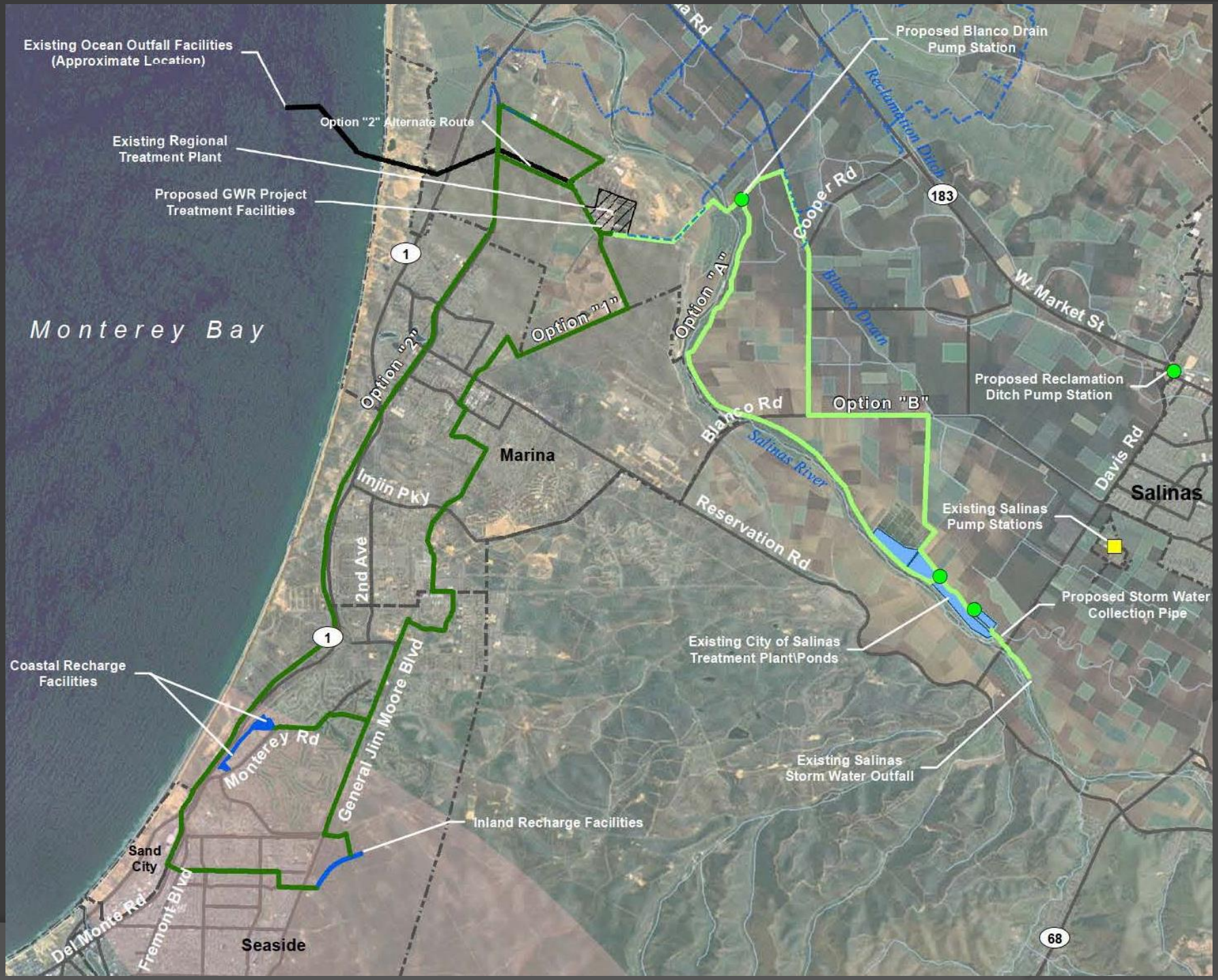
A Groundwater Replenishment Project to Help Address Critical Water Needs for the Region

In support of a sustainable, diverse water supply for the Monterey Peninsula, the Monterey Regional Water Pollution Control Agency (MRWPCA) has formed a partnership with American Water Company and the Monterey Peninsula Water Management District in proposing a Groundwater Replenishment Project (GWR Project). A groundwater replenishment project would recharge the Seaside groundwater basin with high quality purified water. The project being considered is sustainable, drought-resistant and would improve and protect drinking water supplies. The GWR Project is in advanced planning stages, and has been expedited to be online by the Fall of 2016. Funding will be provided by grants, project partners and water users on the Monterey Peninsula.

The GWR Project would:

Notice of Preparation

- Distributed NOP – May 31
- Copies to Libraries, Posted on website
- Notices Published in Local Papers
- Public Scoping Meeting
  - June 18th
  - 6 – 8 p.m.
  - Oldemeyer Center, Seaside CA
- Public Comment Period Closed July 2


Existing Ocean Outfall Facilities (Approximate Location)
Option "2" Alternate Route
Existing Regional Treatment Plant
Proposed GWR Project Treatment Facilities
Proposed Blanco Drain Pump Station
Reclamation Ditch
Cooper Rd
183
Monterey Bay
1
Option "1"
Option "2"
Option "A"
Blanco Drain
W. Market St
Proposed Reclamation Ditch Pump Station
Blanco Rd
Option "B"
Salinas River
Davis Rd
Salinas
Marina
Imjin Pky
Reservation Rd
Existing Salinas Pump Stations
2nd Ave
Proposed Storm Water Collection Pipe
Existing City of Salinas Treatment Plant\Ponds
Coastal Recharge Facilities
Monterey Rd
General Jim Moore Blvd
Existing Salinas Storm Water Outfall
Inland Recharge Facilities
Sand City
Del Monte Rd
Fremont Blvd
Seaside
68

Possible GWR Water Sources

Proposed GWR Water Sources

	Estimated 2017 Yearly Volumes
Salinas Wash Water	4,000+ AFY
Blanco Drain	2,300 AFY
Stormwater	750 AFY
Rec Ditch	1,000 AFY
Secondary Effluent	1,500 to 4,000 AFY
	9,550 to 12,050 AFY

Takes 4,321 AF of source water to generate 3,500 AF of product water for injection

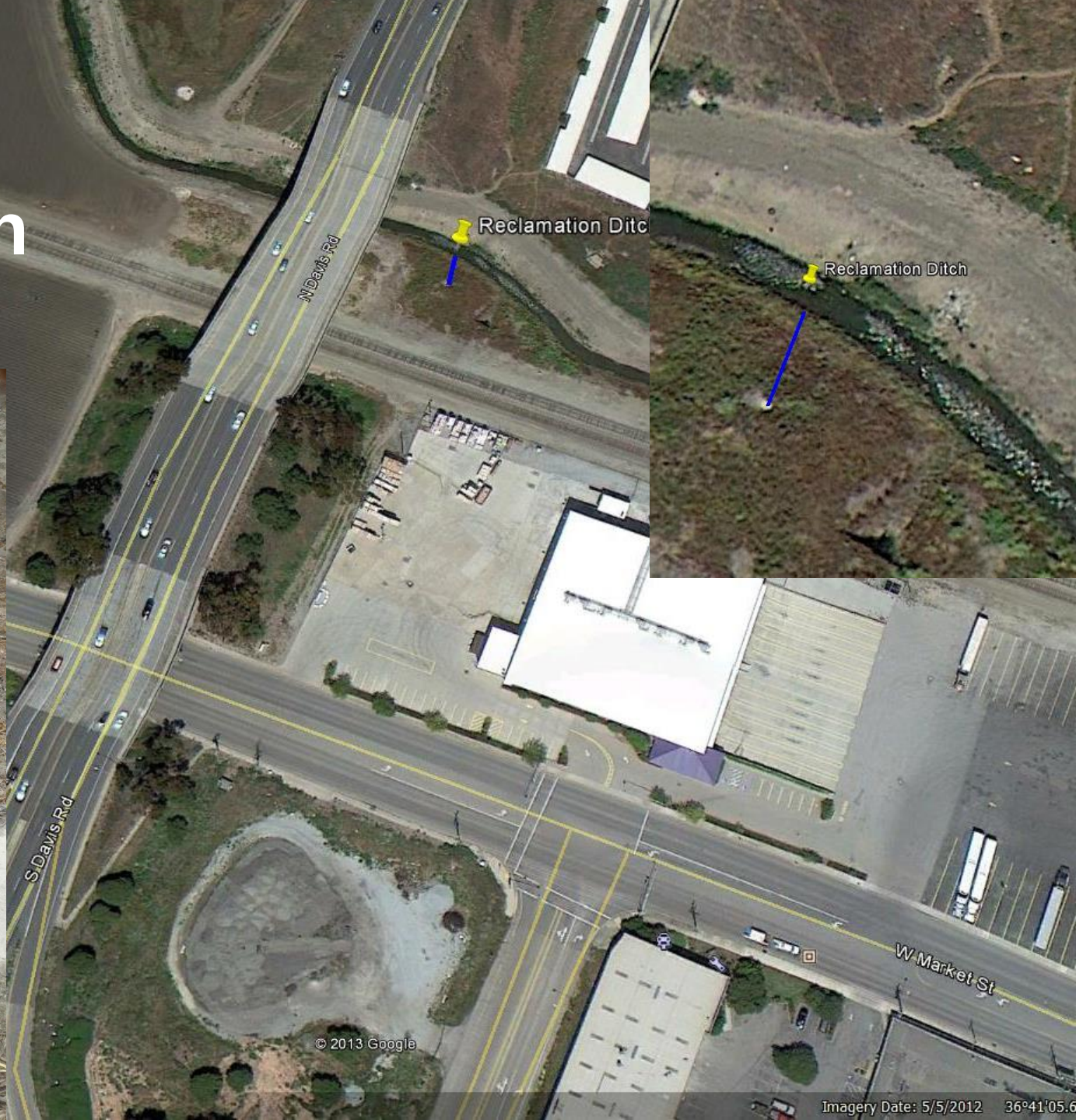

Salinas Ponds


Blanco
Drain

Salinas Stormwater Outfall

Rec Ditch


< 40 Feet


Reclamation Ditc
N Davis Rd
Reclamation Ditch
S Davis Rd
W Market St
© 2013 Google
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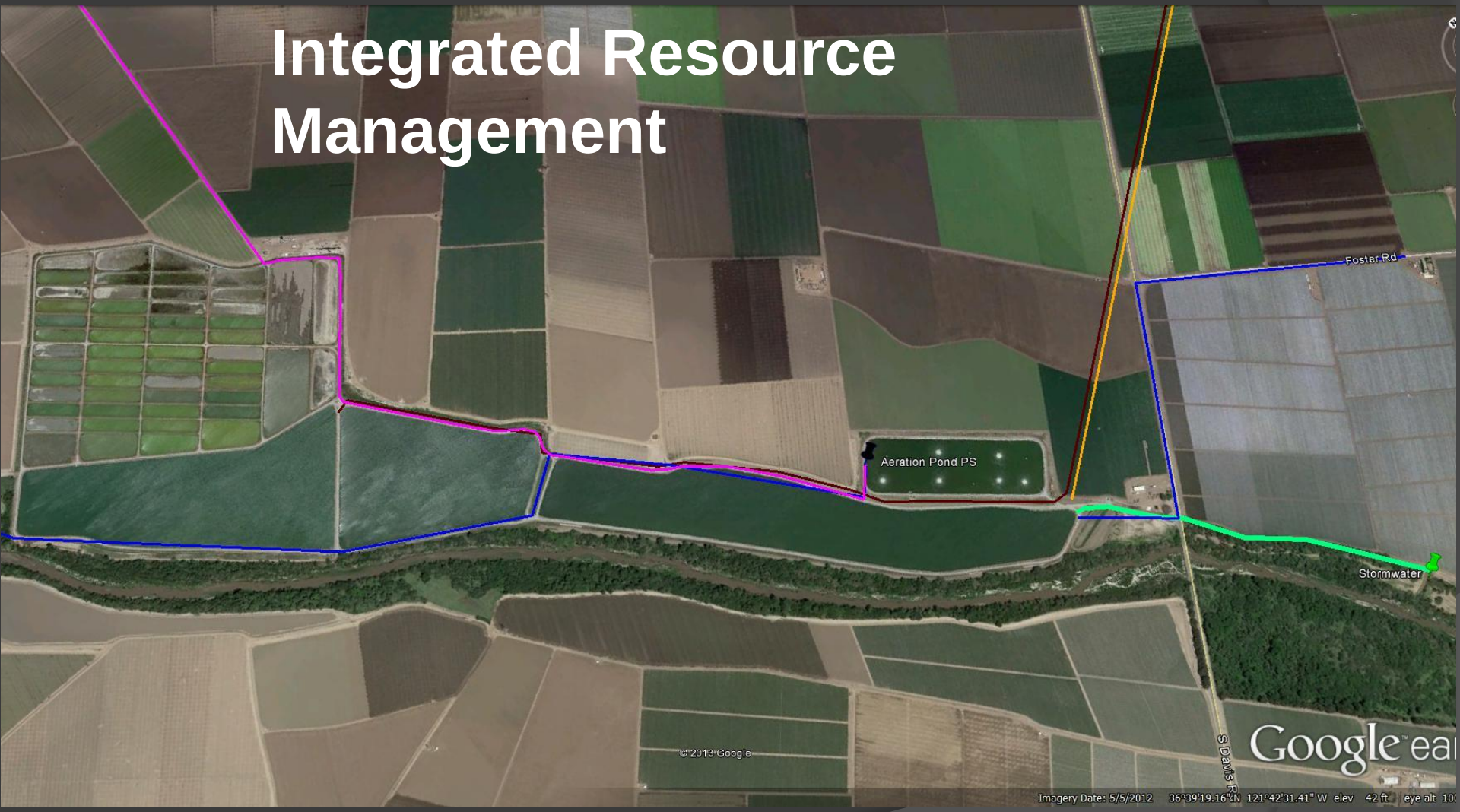
Integrated Resource Management



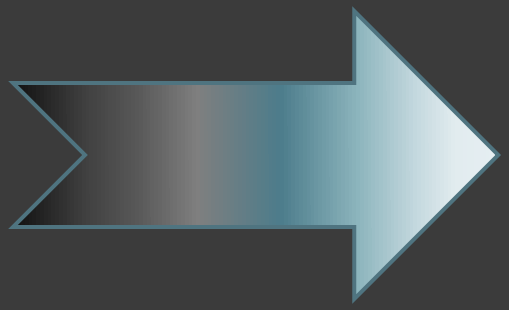
Value of Partnership with the MPWMD

- Collaboration of experts
- Funding
- Sharing of resources
- Integrated watershed planning
- Unified approach to public outreach

Water Resources Utility of the Future (UOTF)

Transformation

Handlers of Wastewater



Managers of Sustainable Resources

For more information contact:
Keith Israel, General Manager

Monterey Regional Water Pollution Control Agency

(831) 645-4603

www.mrwpca.org

www.mpwaterreplenishment.org