

PURE WATER MONTEREY GROUNDWATER REPLENISHMENT PROJECT



Pure Water Monterey
A Groundwater Replenishment Project

CENTRAL COAST RWQCB
MARCH 9, 2017



Pure Water Monterey
A Groundwater Replenishment Project

Overview

- **Local Water Supply Issues**
- **Overcome Obstacles**
- **Successful Collaboration**
- **A Regional Solution**
- **More Water equals More Beneficial Uses**



WHY PURE WATER MONTEREY?

PRIMARY OBJECTIVE

- **SWRCB Cease and Desist Order (WR 2009-0060)**
 - Requires new water supply by end of 2016
- Pure Water Monterey can reduce CalAm's Carmel River diversions by 3,500 AFY; thereby *Restoring Carmel River Habitat*
- AND can be implemented sooner than other projects



National Marine Sanctuary

Reduces pollutants
discharged to Bay

Salinas Groundwater Basin

Reduce seawater intrusion

Salinas River

Reduces pollutant loads from
Clean Water Act 303(d)-
listed impaired waters

Seaside Groundwater Basin

Adjudicated Basin with limited
extraction

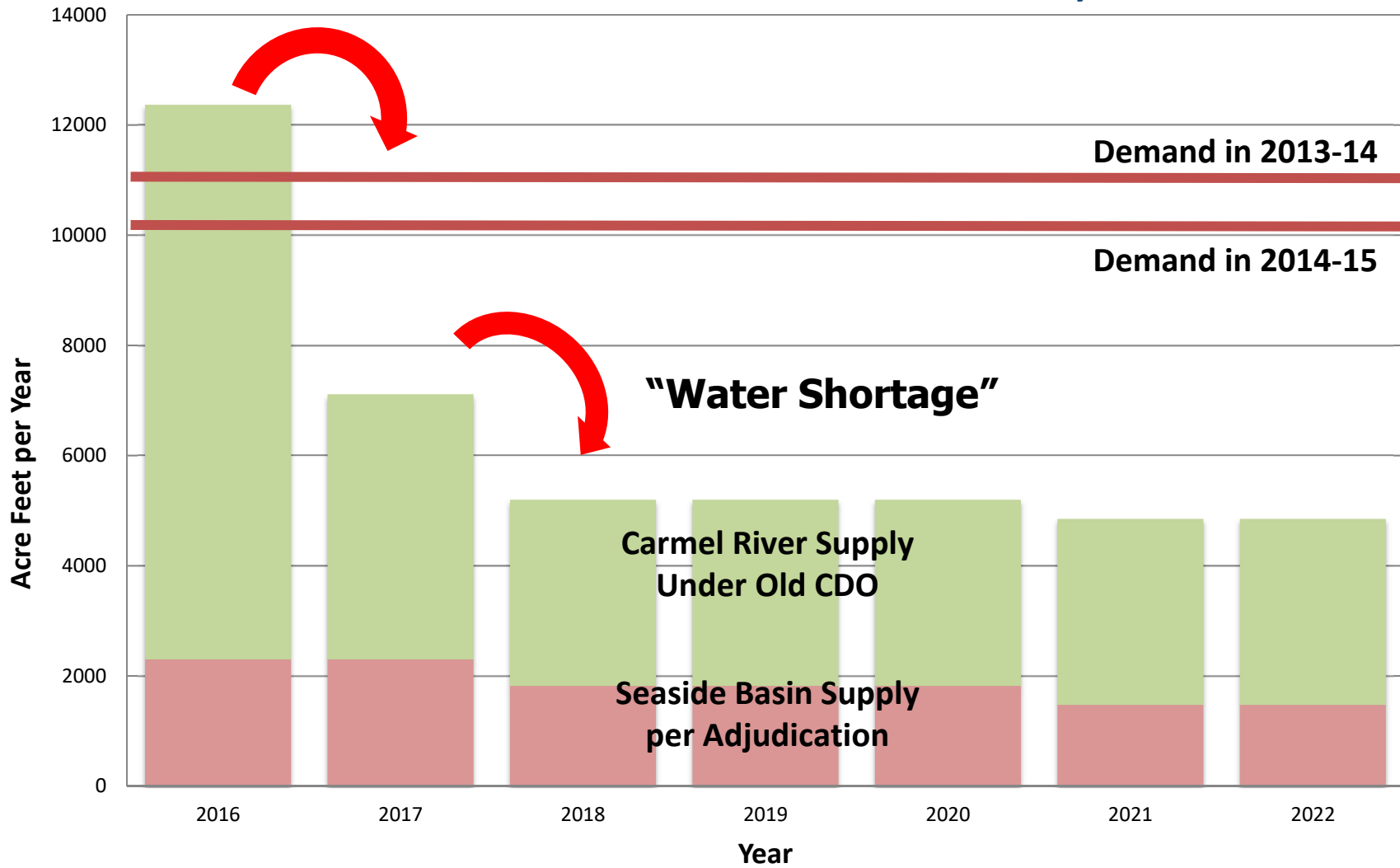
Meeting SWRCB Orders

Cease and Desist orders on
Carmel River diversions

Legally Available Water Supply in MPWMD Territory

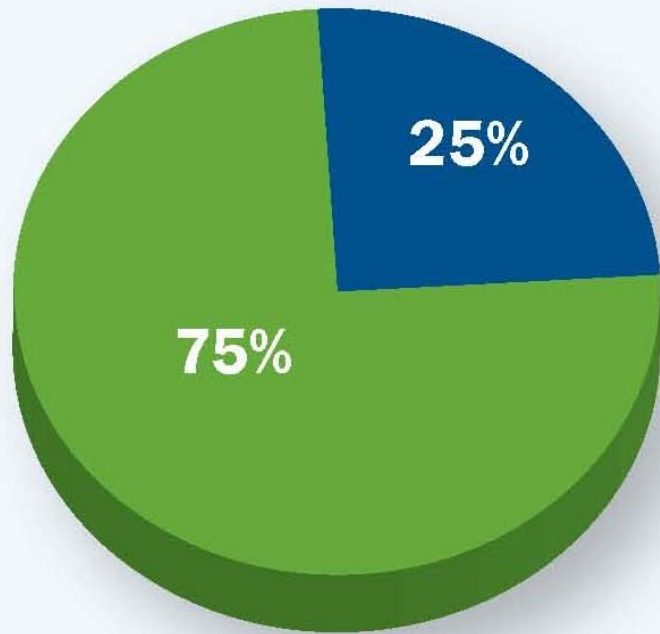
Compared to

Consumer Water Demand in MPWMD Territory



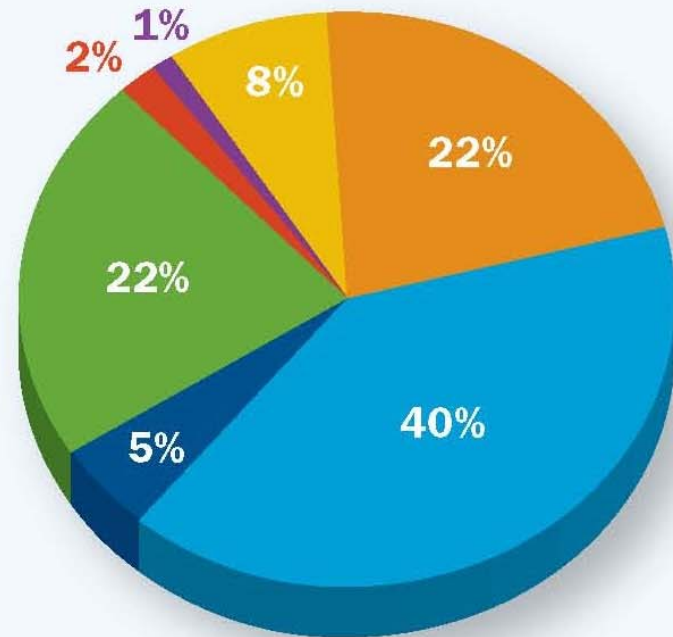
Water Supply Diversification

Traditional Sources

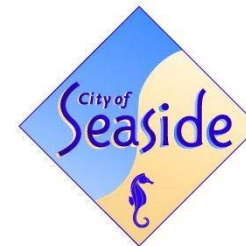


- Seaside Basin
- Carmel River

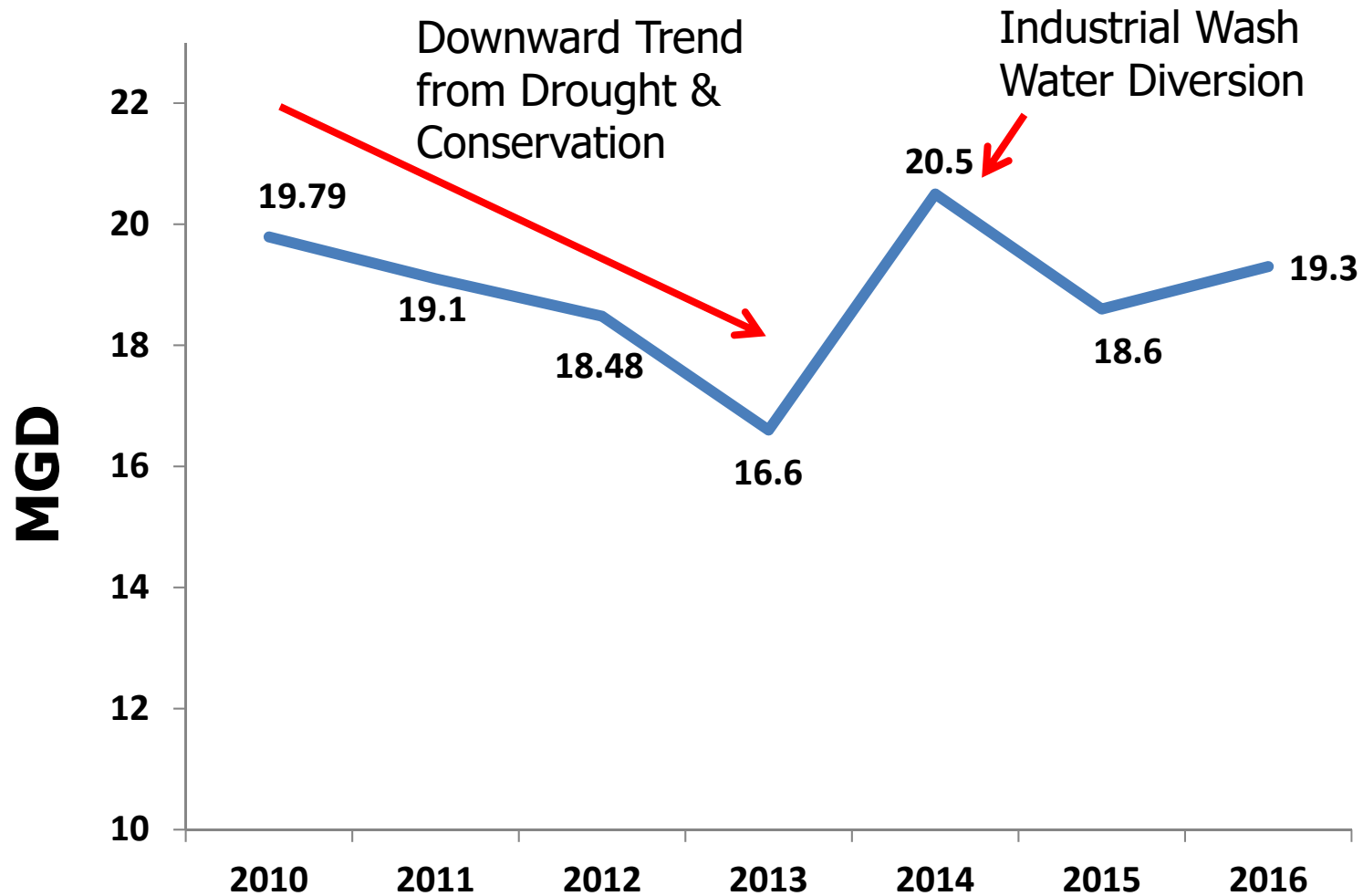
Future Sources



- Groundwater Replenishment
- Sand City
- Desalination
- Pacific Grove
- Seaside Basin
- Aquifer Storage Recovery
- Carmel River

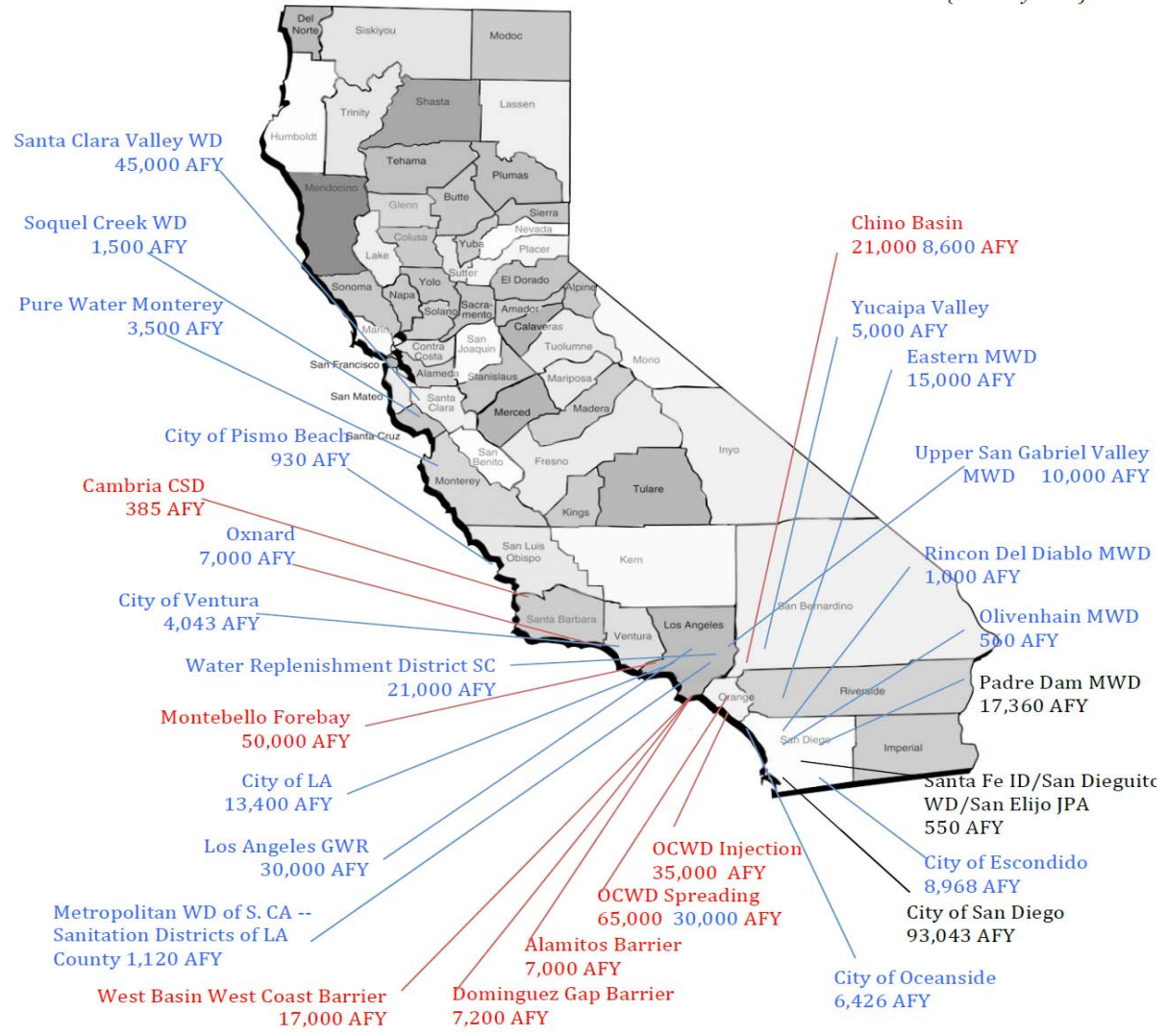


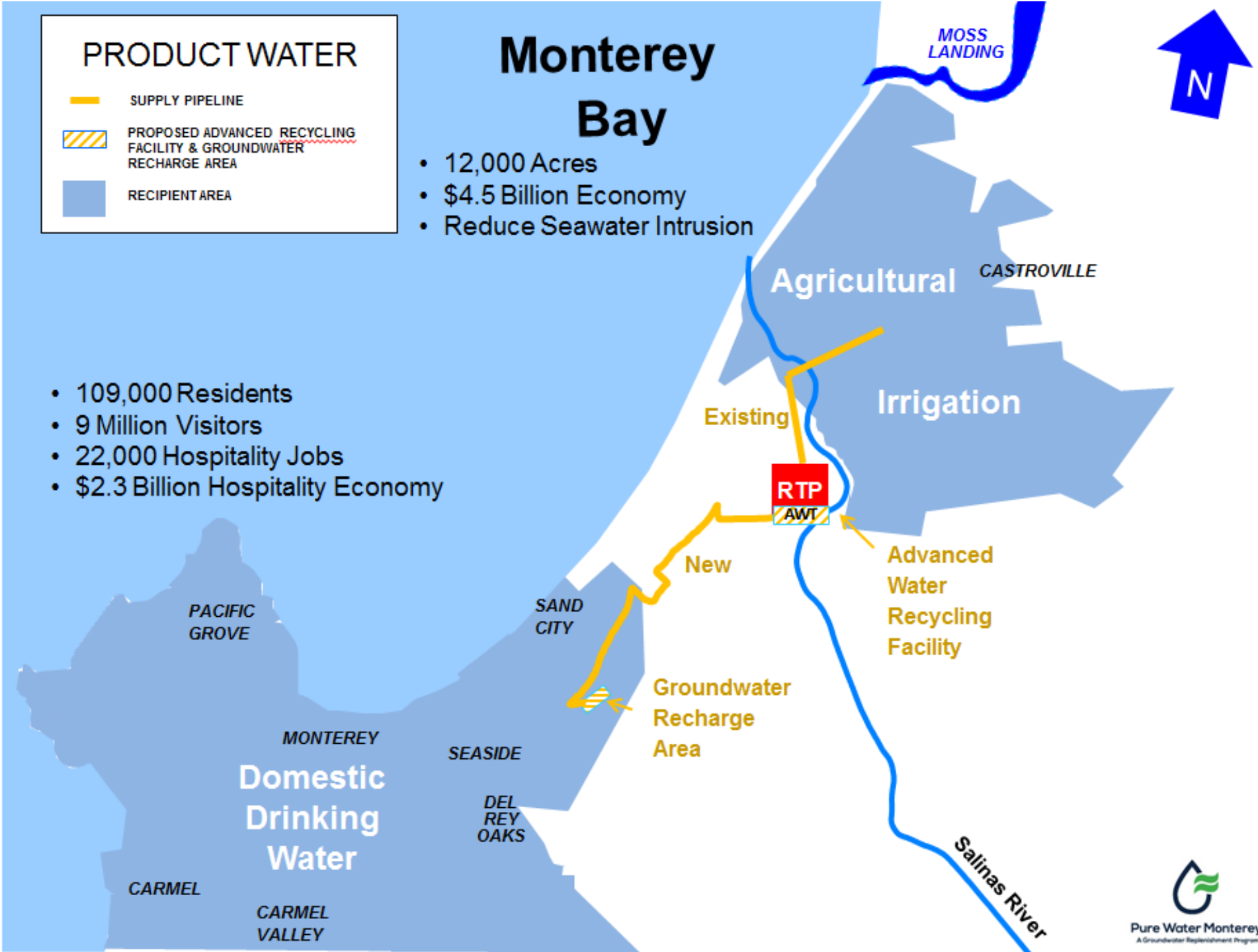
Regional Treatment Plant Annual Flows



Red = Permitted groundwater—202,585 AFY
Blue = Planned groundwater -- 215,447 AFY
Black = Planned surface water augmentation—110,910 AFY

(February 2016)





PRODUCT WATER

- SUPPLY PIPELINE
- PROPOSED ADVANCED RECYCLING FACILITY & GROUNDWATER RECHARGE AREA
- RECIPIENT AREA

Monterey Bay

- 12,000 Acres
- \$4.5 Billion Economy
- Reduce Seawater Intrusion

- 109,000 Residents
- 9 Million Visitors
- 22,000 Hospitality Jobs
- \$2.3 Billion Hospitality Economy

Domestic Drinking Water

PACIFIC GROVE
 MONTEREY
 CARMEL
 CARMEL VALLEY
 SEASIDE
 DEL REY OAKS
 SAND CITY

Agricultural Irrigation

CASTROVILLE

Existing
 RTP
 AWT
 New

Advanced Water Recycling Facility

Groundwater Recharge Area

Salinas River

Drinking Water Quality

Regulatory Compliance Overview

- **June 2014:** State Division of Drinking Water (DDW) agreed to Pure Water Monterey Project concept
- **April and Sept 2015:** Draft and Final EIRs addressed all comments and garnered statements of support from both DDW and RWQCB, and was an open/transparent process
- **January – May 2016:** Broad letters of support from all levels of government. Plus: non-profit/environmental groups, and CalAm
- **May 2016:** DDW reviewed the draft Engineering Report for compliance with Division of Drinking Water Criteria (Title 22) and provided non-substantive edits; all of which now addressed by the PWM team
- **November 2016:** DDW approves ER and provides recommendations to Regional Board for permit
- **November 2016:** Anti-Degradation analysis submitted to Regional Board
- **Next Step:** Secure permit from RWQCB

Findings of EIR & Engineering Report

- PWM purified water would meet or exceed:
 - Basin Plan groundwater quality standards
 - state/federal drinking water quality standards.
- Treatment processes selected for redundancy – multiple barriers (+) for constituent removal
- Monitoring program to document project performance and safety
- Additional regulatory safeguards to public health protection required by regulations, including response time and source control

PURE WATER MONTEREY

- **Source Water** - develop new water sources and convey them to the MRWPCA RTP for treatment
- **Full Advanced Treatment (FAT+)** – to produce 3,500 AFY of purified water
- **Replenishment Seaside Basin** – by subsurface application for subsequent extraction and delivery through the CalAm system; offsets existing use of Carmel River water on a 1:1 basis, RWC is 100% - no diluent needed

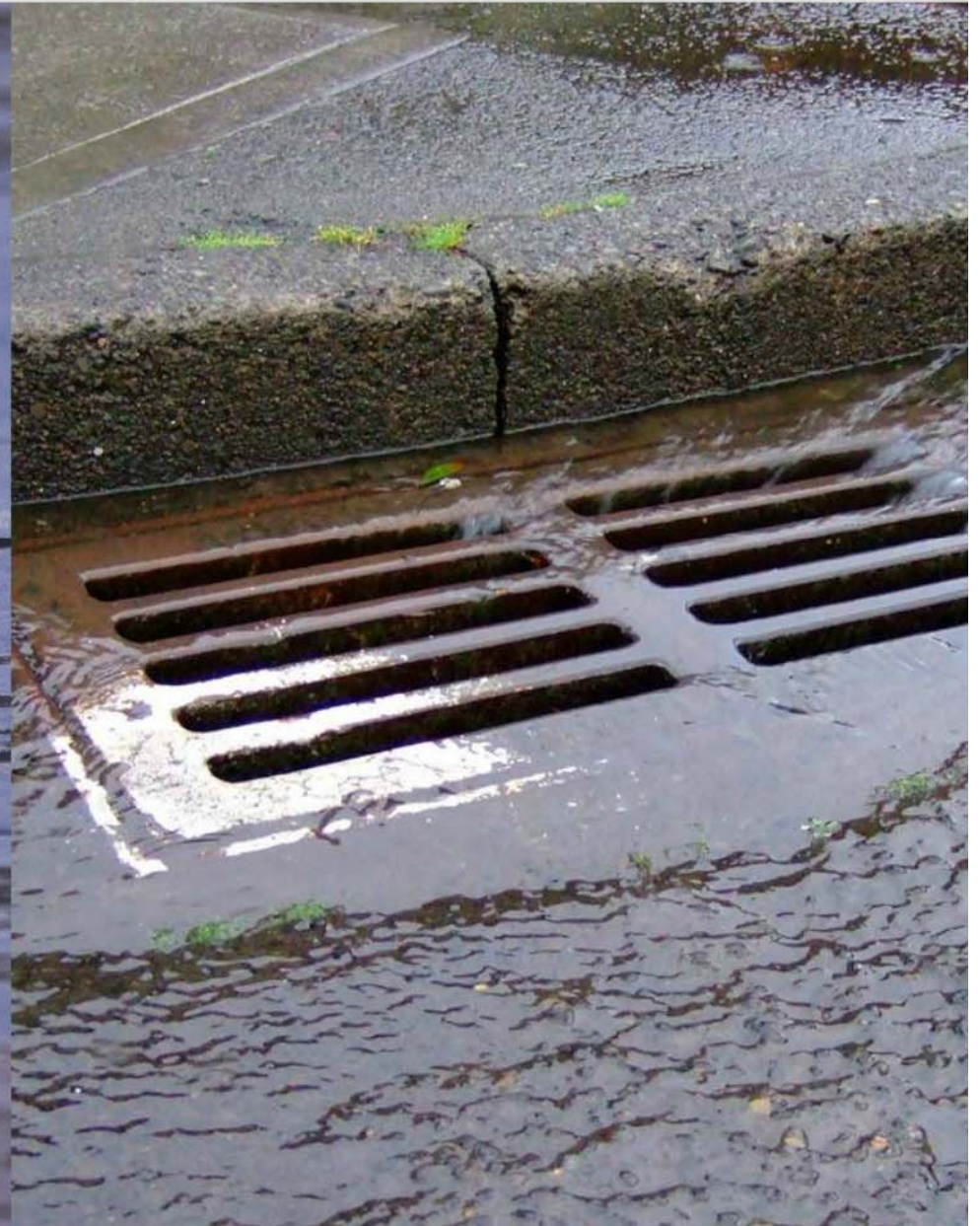
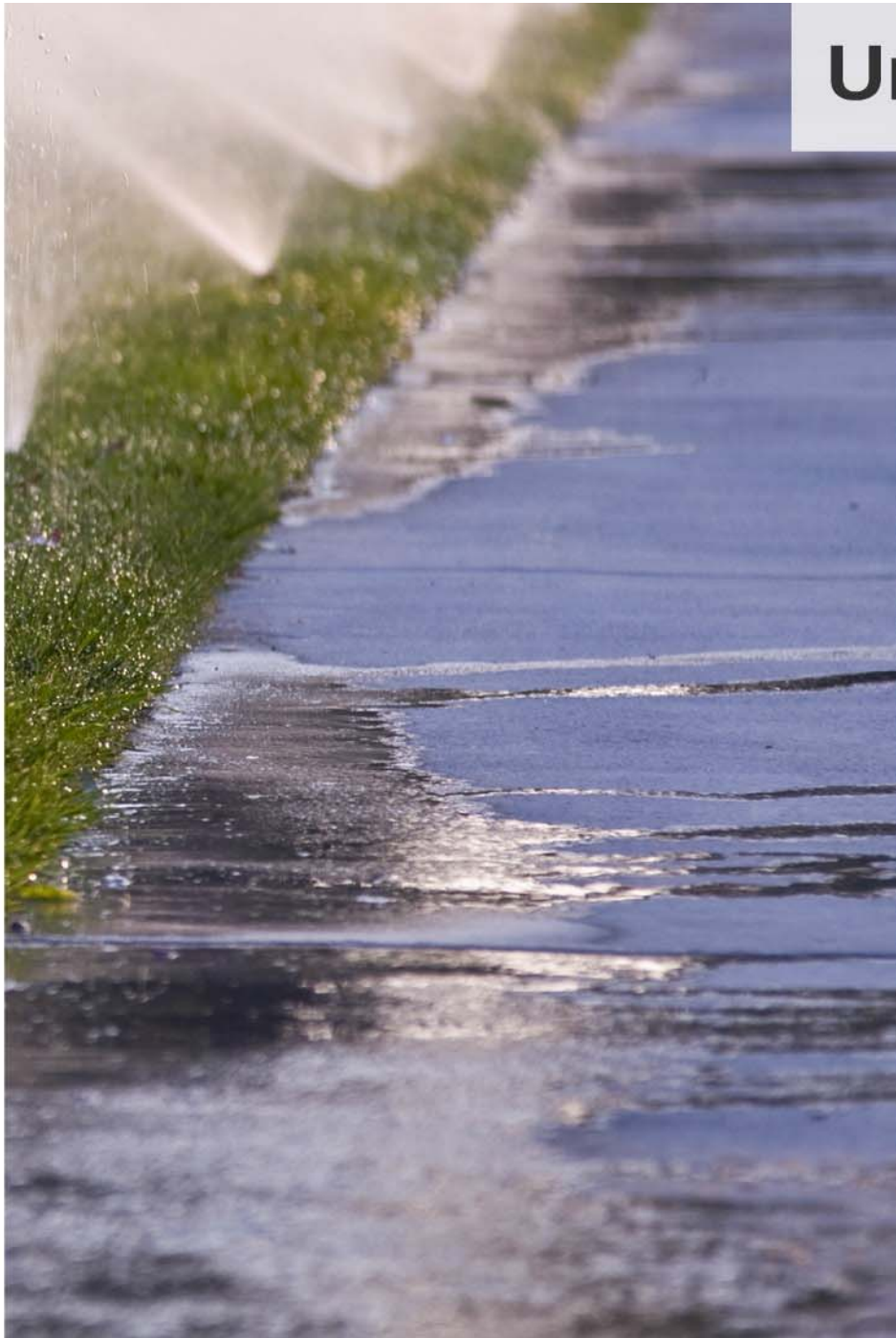
Secondary Treated Wastewater





Salinas Agricultural Wash Water

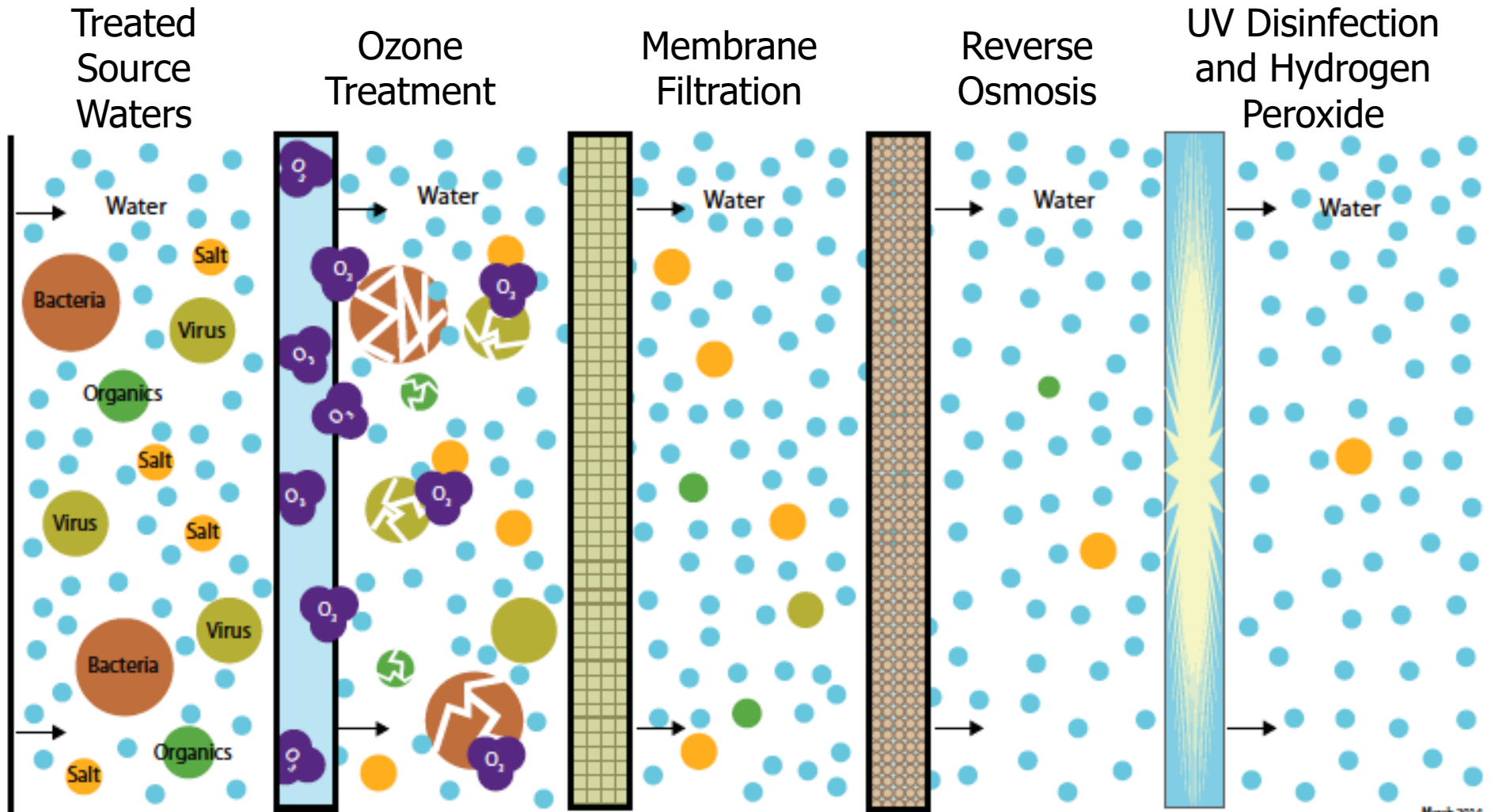
Urban Stormwater Runoff



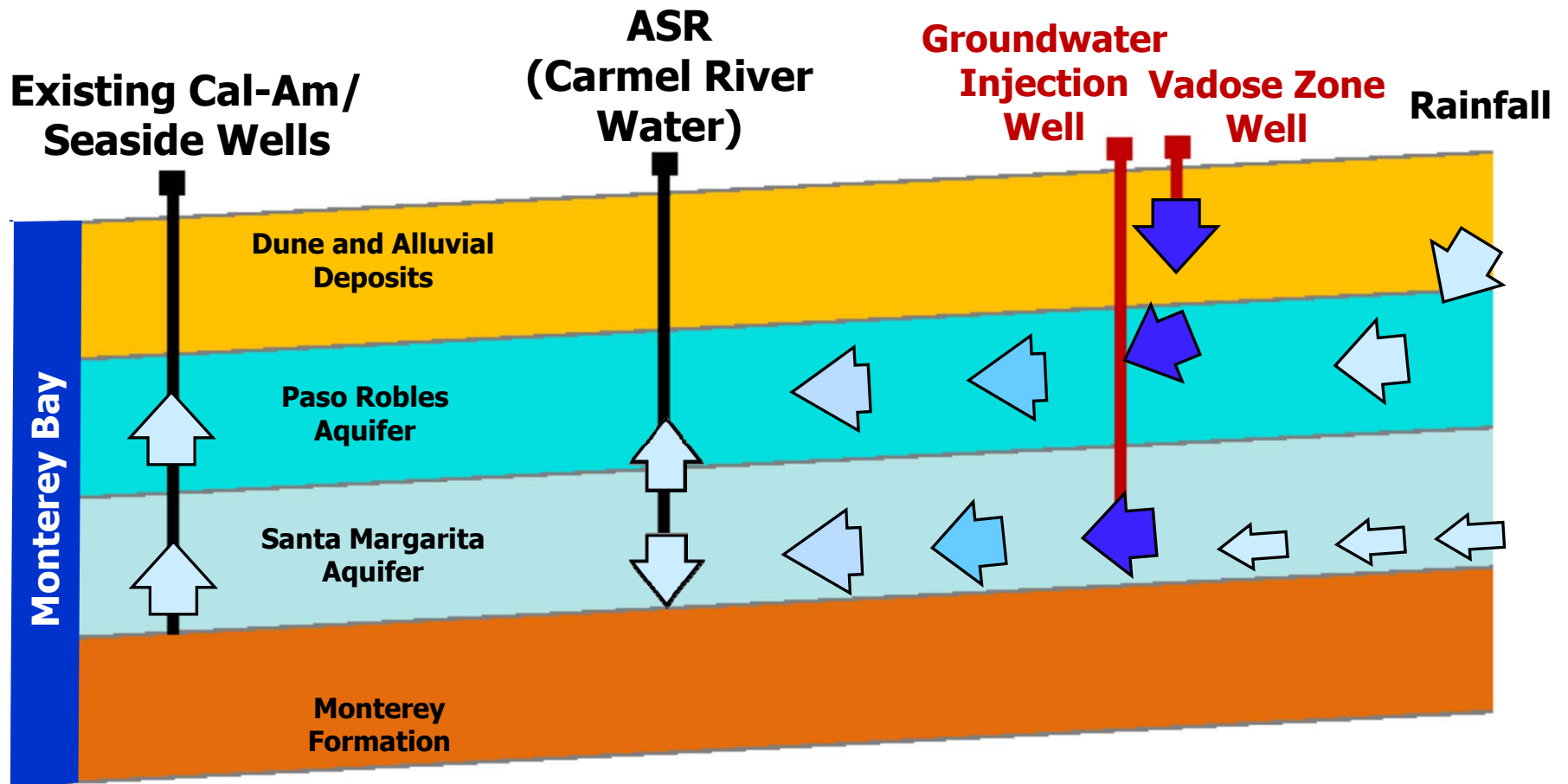
Agricultural Drainage Water



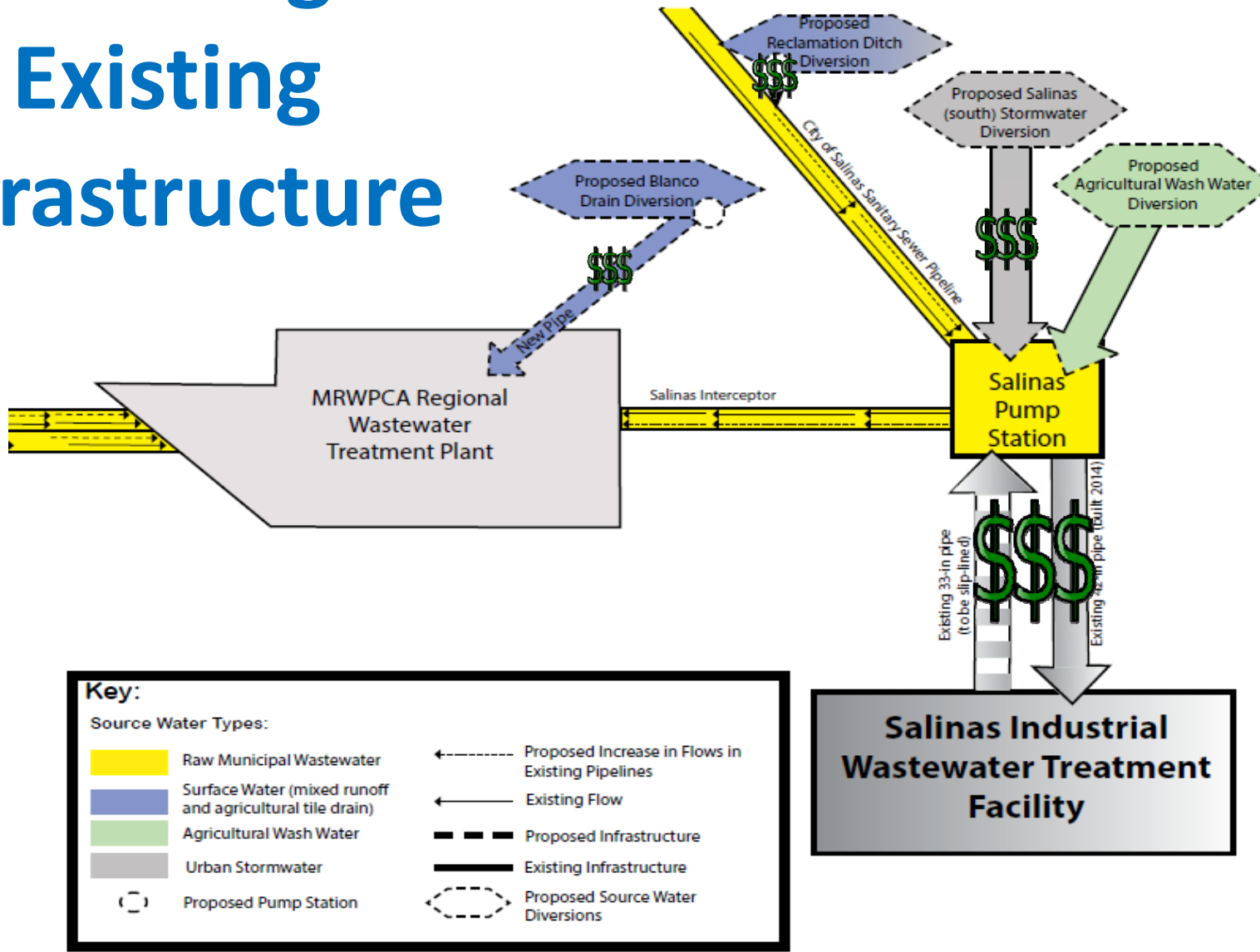
How Does Advanced Purification Work?



Groundwater Replenishment Schematic



Utilizing Existing Infrastructure

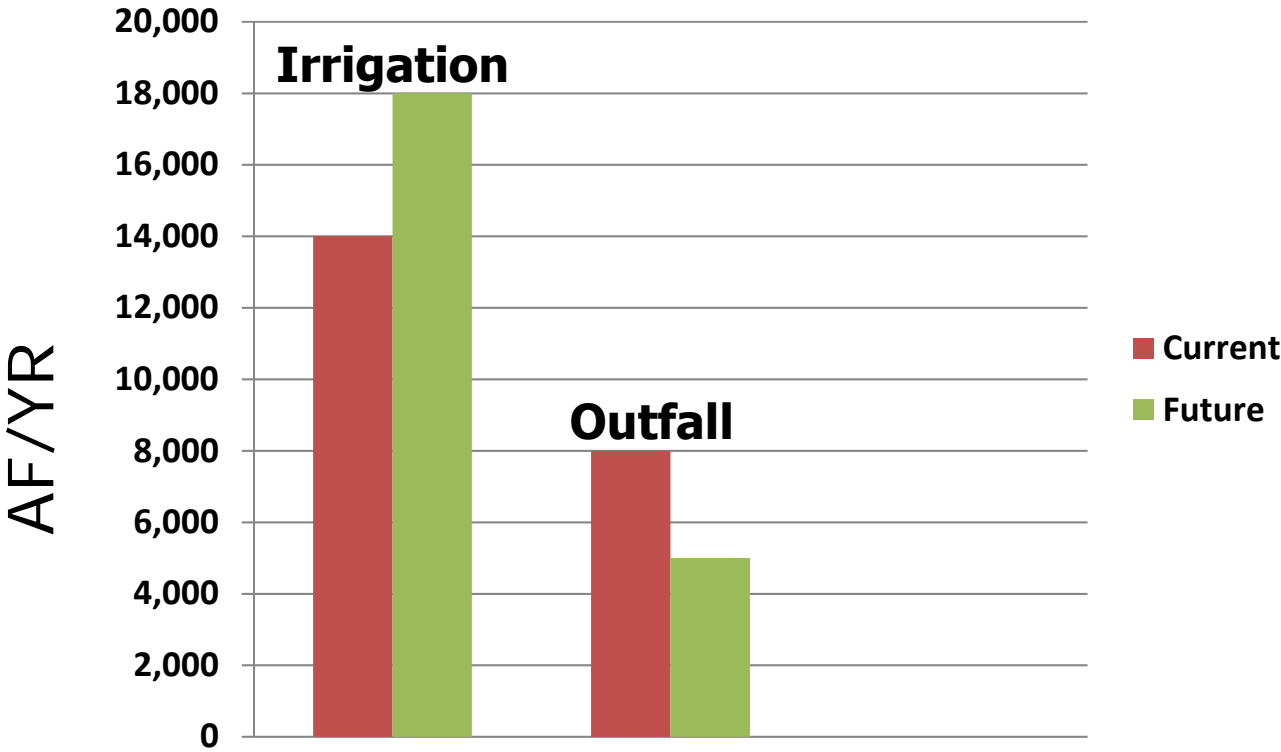


PURE WATER MONTEREY

SECONDARY OBJECTIVES

- Reduce wastewater discharges to Monterey Bay
- Reduce pollutant loads to lower Salinas watersheds
- Minimizes new electricity demand and climate impacts for new water supplies
- Diversifies water portfolio
- Reduces Salinas Valley groundwater pumping by augmenting recycled water for growers

More Recycled Water Available for Agriculture



ADDITIONAL BENEFIT

- **Banked Drought Reserve** – created by recharging 200 AFY FAT water during wet and normal years up to 5 consecutive years; during dry years replenish < 3,500 AFY product water



Pure Water Monterey Demonstration Facility



Pure Water Monterey

Pure Water Monterey is a:

- **multi-benefit,**
- **multi-region,**
- **multi-agency**

project that will provide purified, high quality, drinking water for the Monterey Peninsula and additional irrigation water for the Salinas Valley.



Questions



Concerns about legacy pesticides

- Evaluated extensively in the environmental review process
- Residue found primarily in Soil
- Amounts small and found not to be harmful
- Estimated reduction after treatment - to 99.998% or between 0.42 and 4.2 picograms per liter
- Detail info at: PureWaterMonterey.org/FAQs

Agricultural Drainage Water Compliance with Standards/Guidelines

- Diazinon, chlorpyrifos were not detected in ANY of the agricultural drainage waters sampled
- DDT, dieldrin in *untreated* agricultural drain waters are 50x less than WHO drinking water guidance
- Pilot program in 2013-2015 and bench tests in 2016 demonstrated non-detectable levels (>99.99% removal)
 - 91 to 99.9% through primary and secondary PLUS
 - 99% through reverse osmosis systems PLUS
 - additional reduction through UVAOP that destroys compounds.