

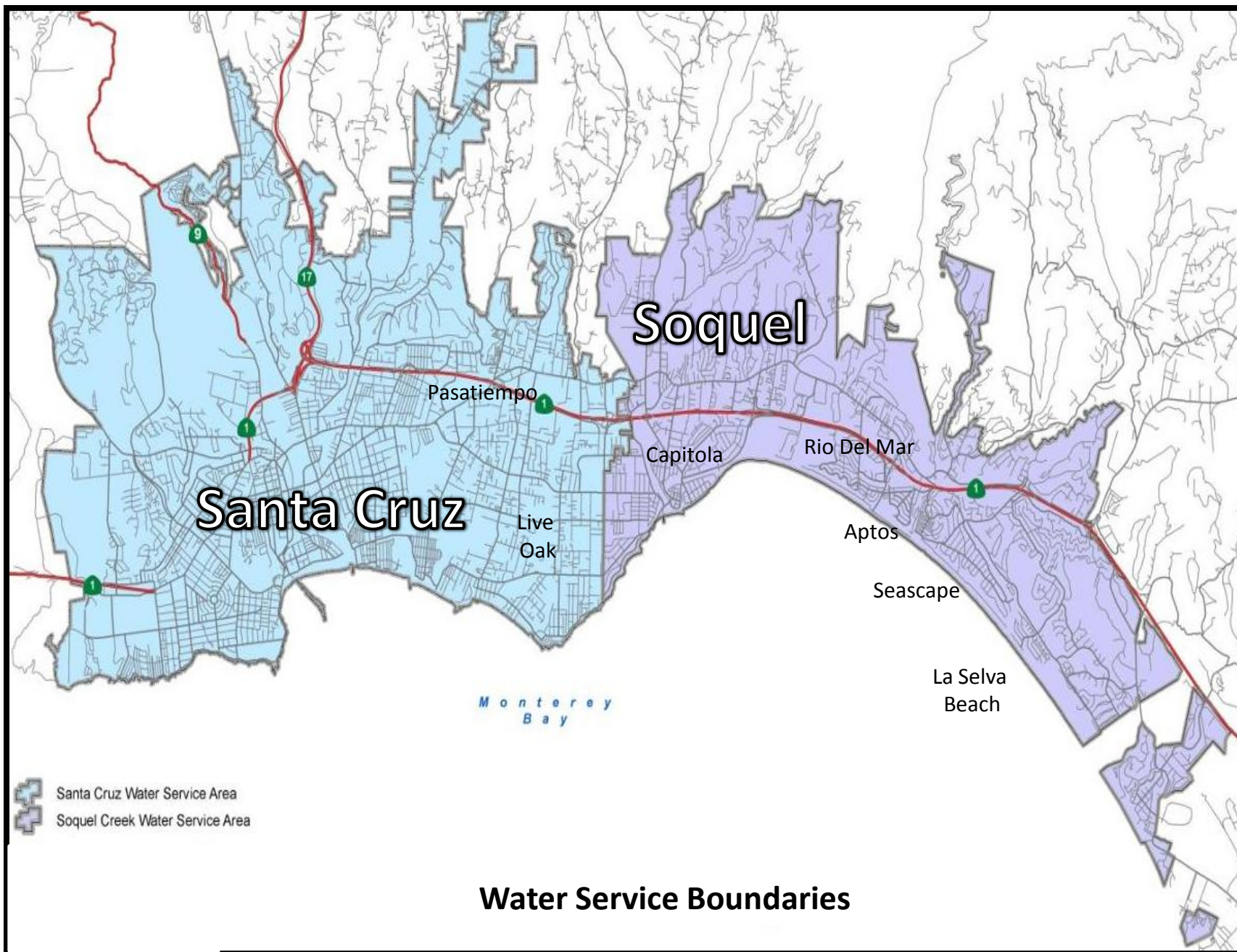
# **Salt or Sewer? Supplemental Water Supplies for Santa Cruz County**

Northern California Chapter of WaterReuse

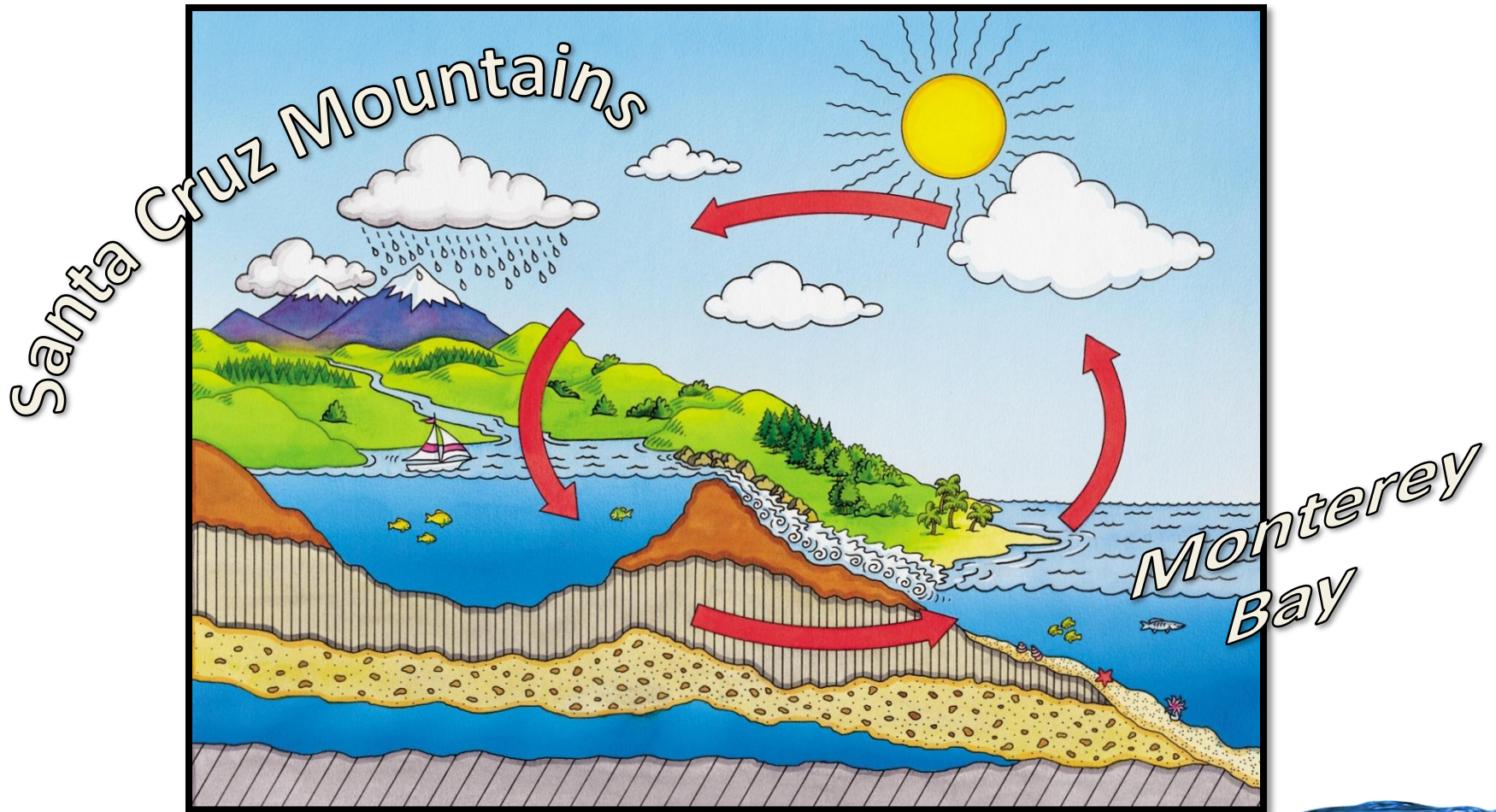
August 22, 2014

**Todd Reynolds, P.E.**

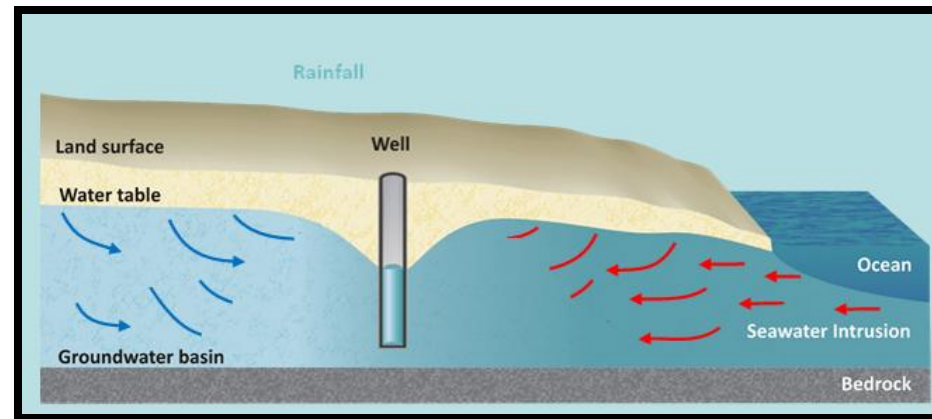
**Dawn Taffler, P.E., LEED<sup>AP</sup>**



# Dependence on Local Hydrology



# The Need for Supplemental Supplies



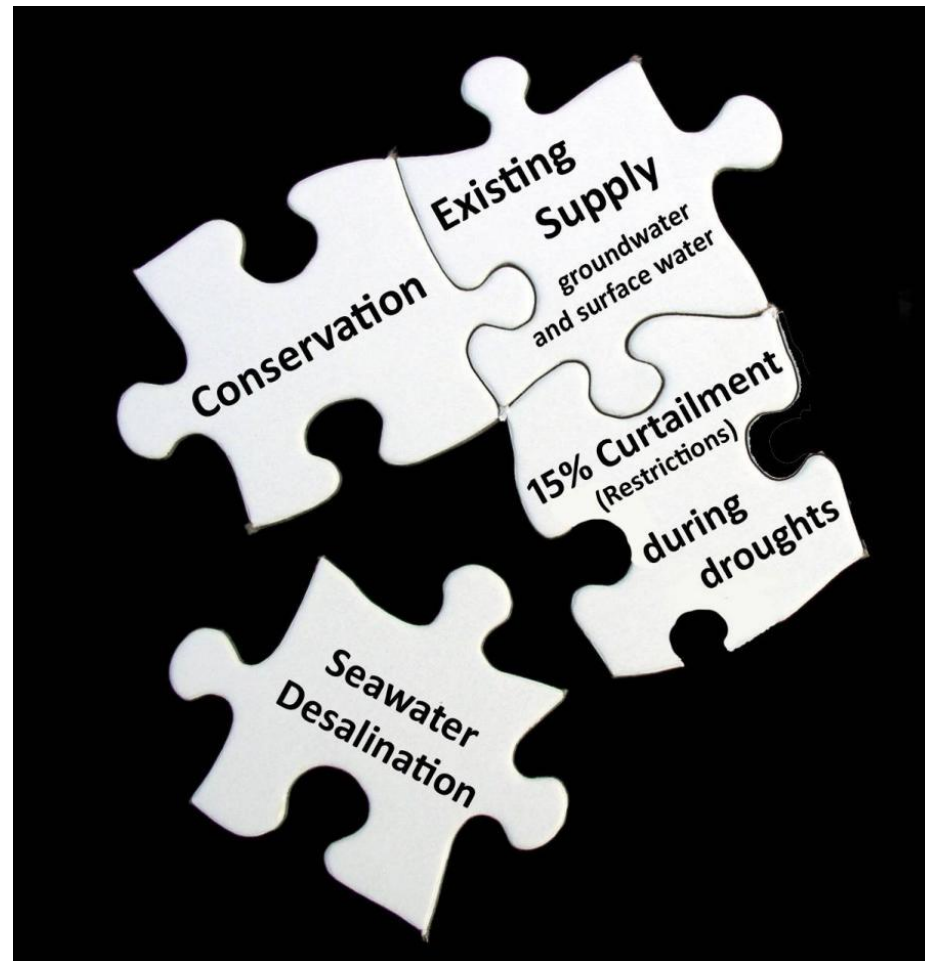


# **Water Department Mission Statement:**

**“To assure public health & safety by providing a clean, adequate and reliable supply of water.”**

# Integrated Water Planning

## A Public Process with a Citizens Advisory Committee



Early 2000's

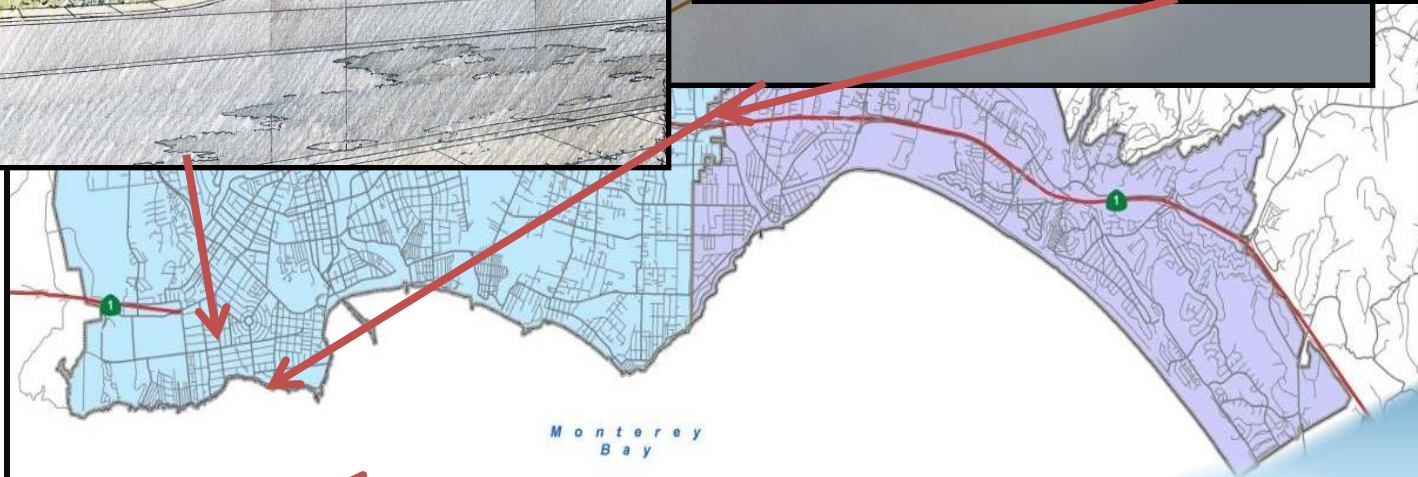
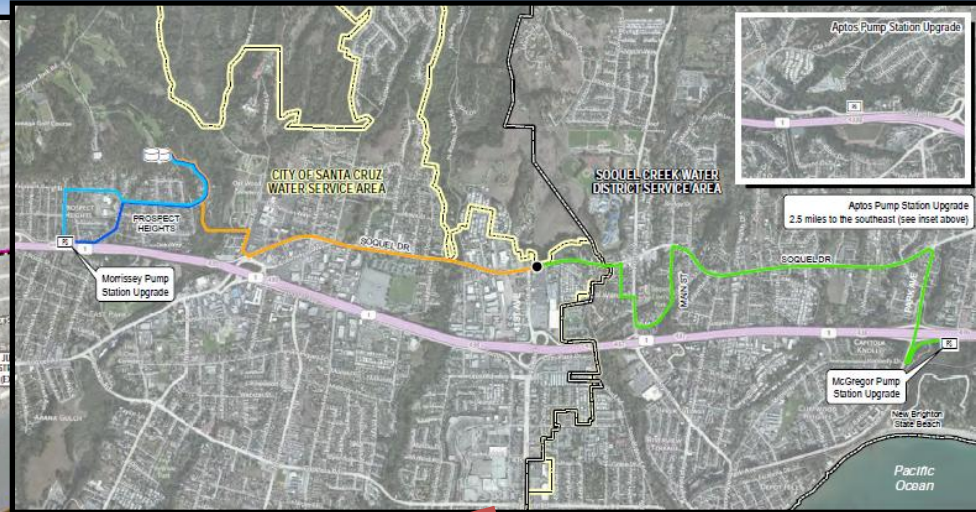
# Regional Desalination Project





- Up to 2.5 mgd
- Operate in drought years



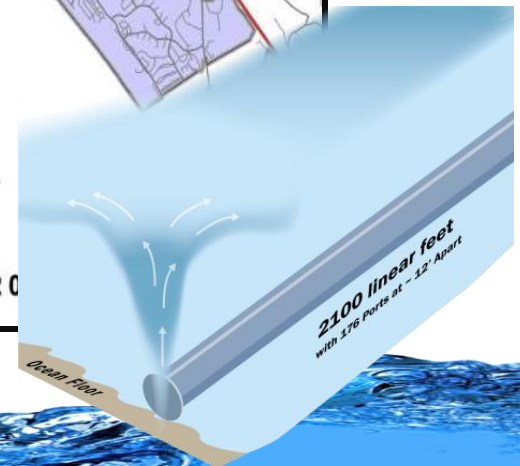
- Average ~1.5 mgd
- Operate to restore groundwater levels



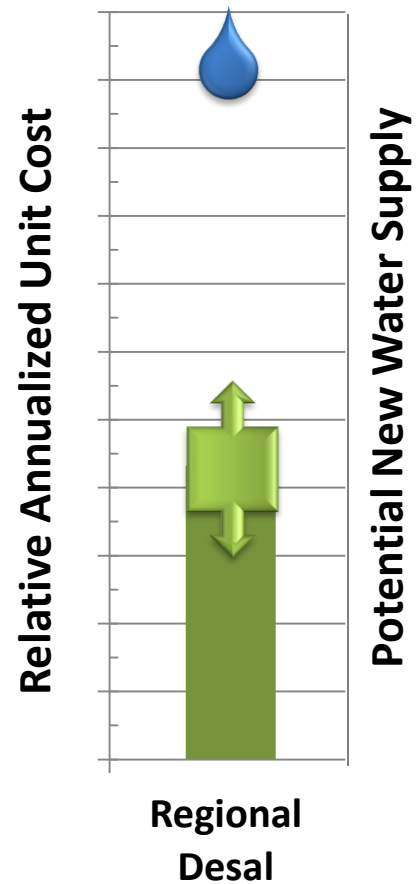
 Santa Cruz Water Service Area  
 Soquel Creek Water Service Area



Water Service Area Boundary Exhibit - 20



# Comparing Alternatives



# Water Supply is a Political Issue



**It's all fun and games ....  
until the EIR comes along.**



# Political Pressure Fueled by the Desal EIR...



By 2013

The New City Council took the Heat

# Back to the Drawing Board...



# Public Perceptions Can and Will Change



# Potential Recycled Water Alternatives

RW for  
Irrigation

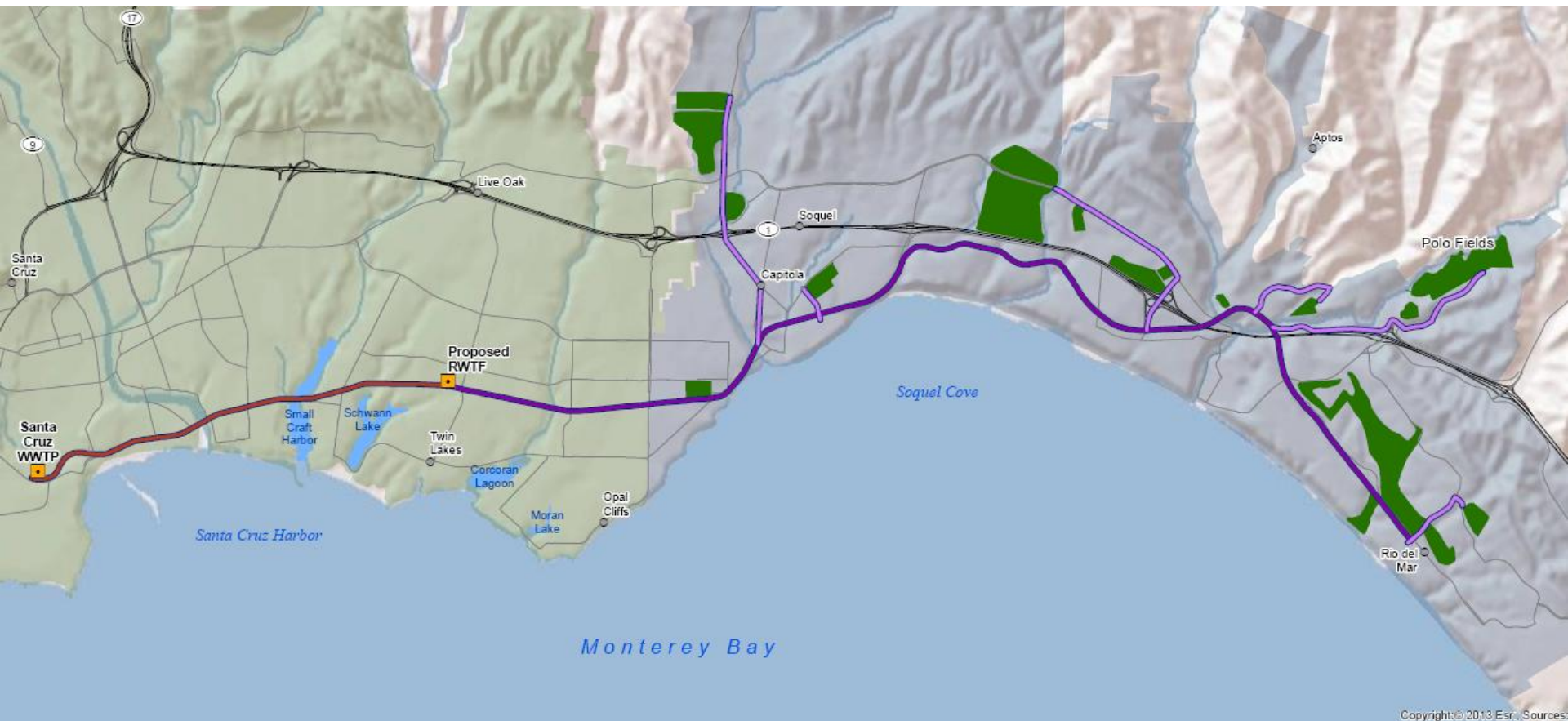
Seawater  
Intrusion  
Barrier

Groundwater  
Replenishment

Reservoir  
Augmentation

Direct Potable  
Reuse

# Recycled Water for Irrigation



Copyright © 2013 Esri. Sources:

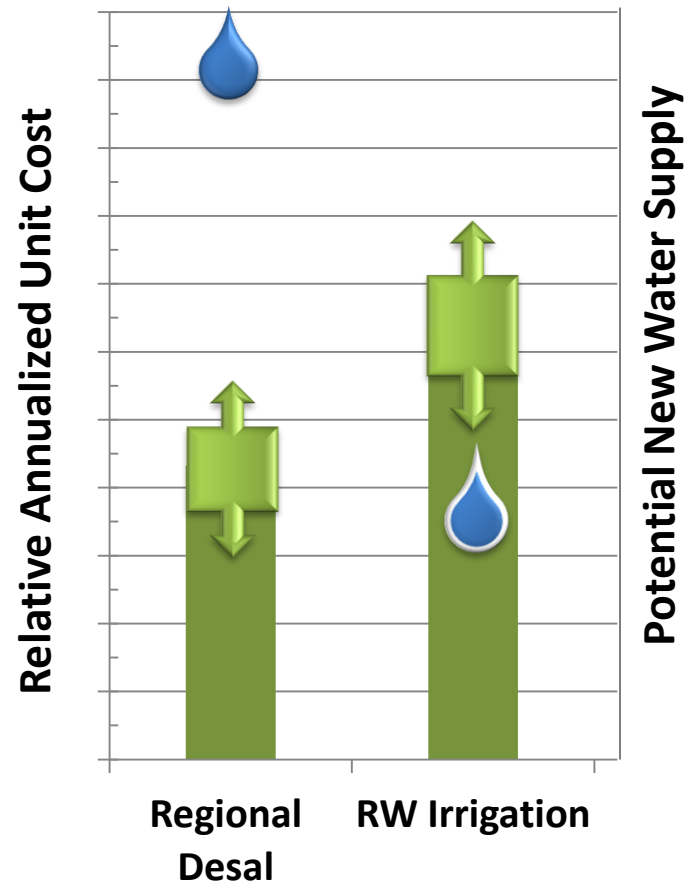
## Legend

### Proposed Pipelines

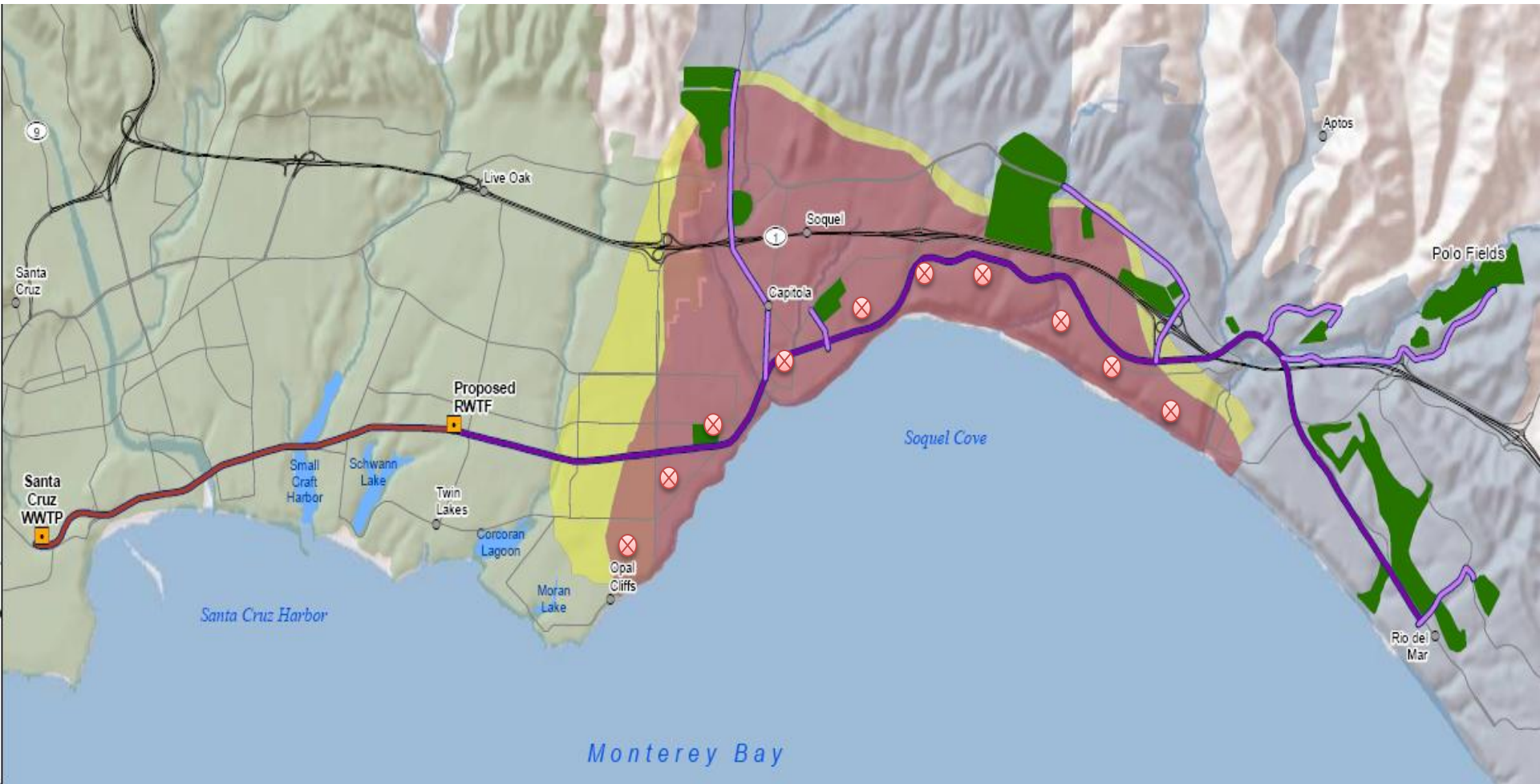
- Recycled Water Conveyance
- Recycled Water Distribution
- Secondary

- Irrigation Customer
- Santa Cruz Water Department
- Soquel Creek Water District

# Comparing Alternatives



# Seawater Intrusion Barrier



## Legend

### Proposed Pipelines

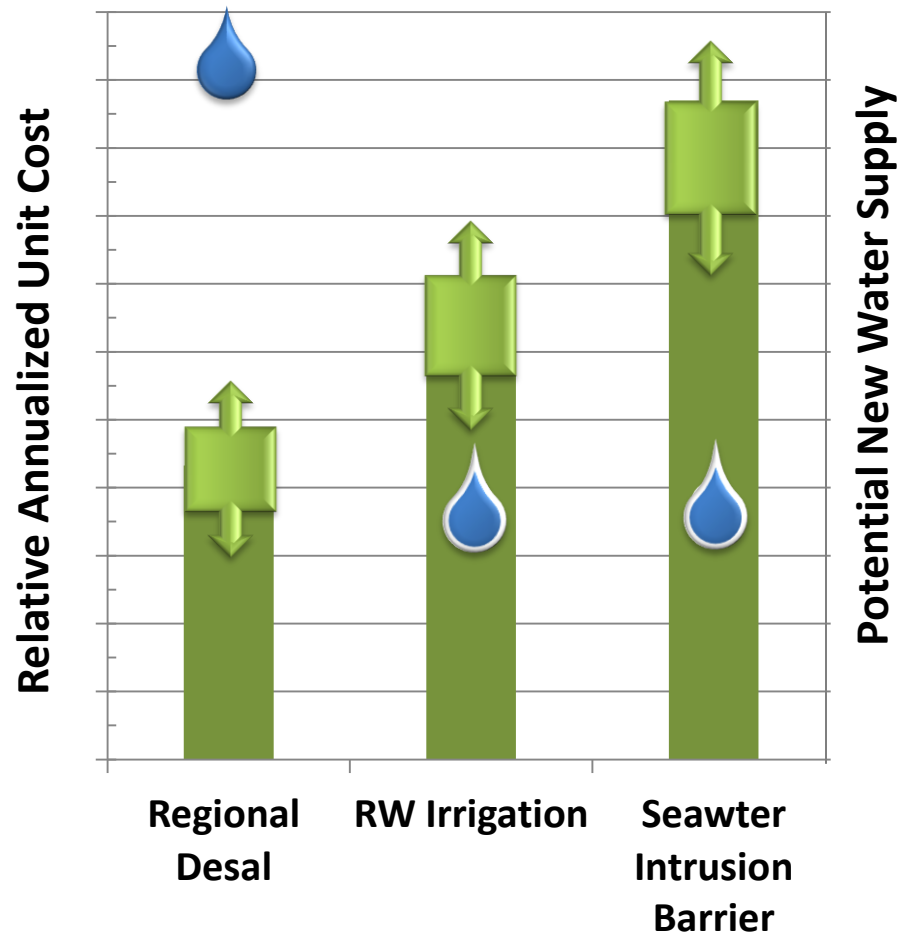
- Recycled Water Conveyance
- Recycled Water Distribution
- Secondary

- Irrigation Customer
- Santa Cruz Water Department
- Soquel Creek Water District
- X Seawater Injection Well

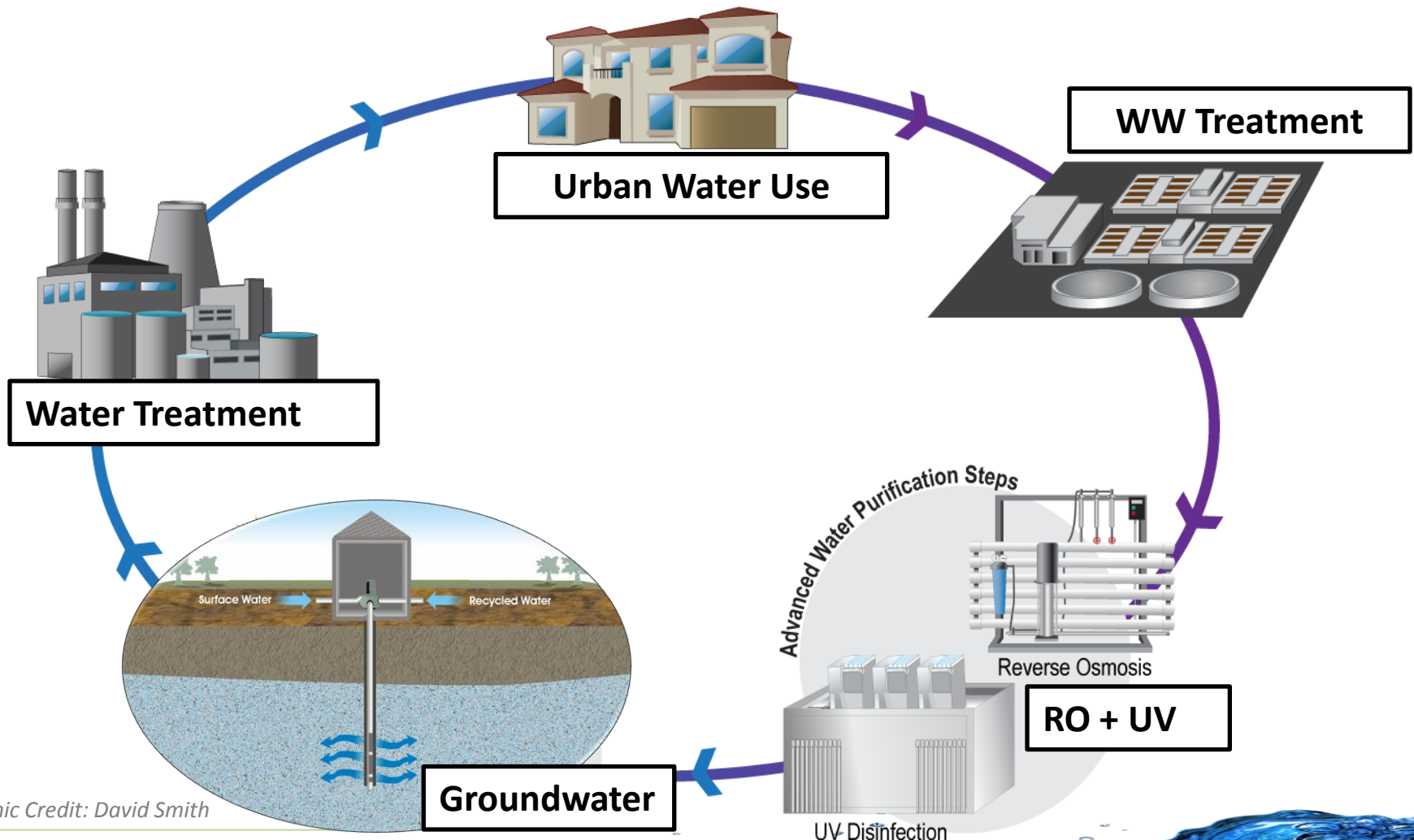
### Water Levels

- -10' to 0'
- 0' - 10'

# Comparing Alternatives



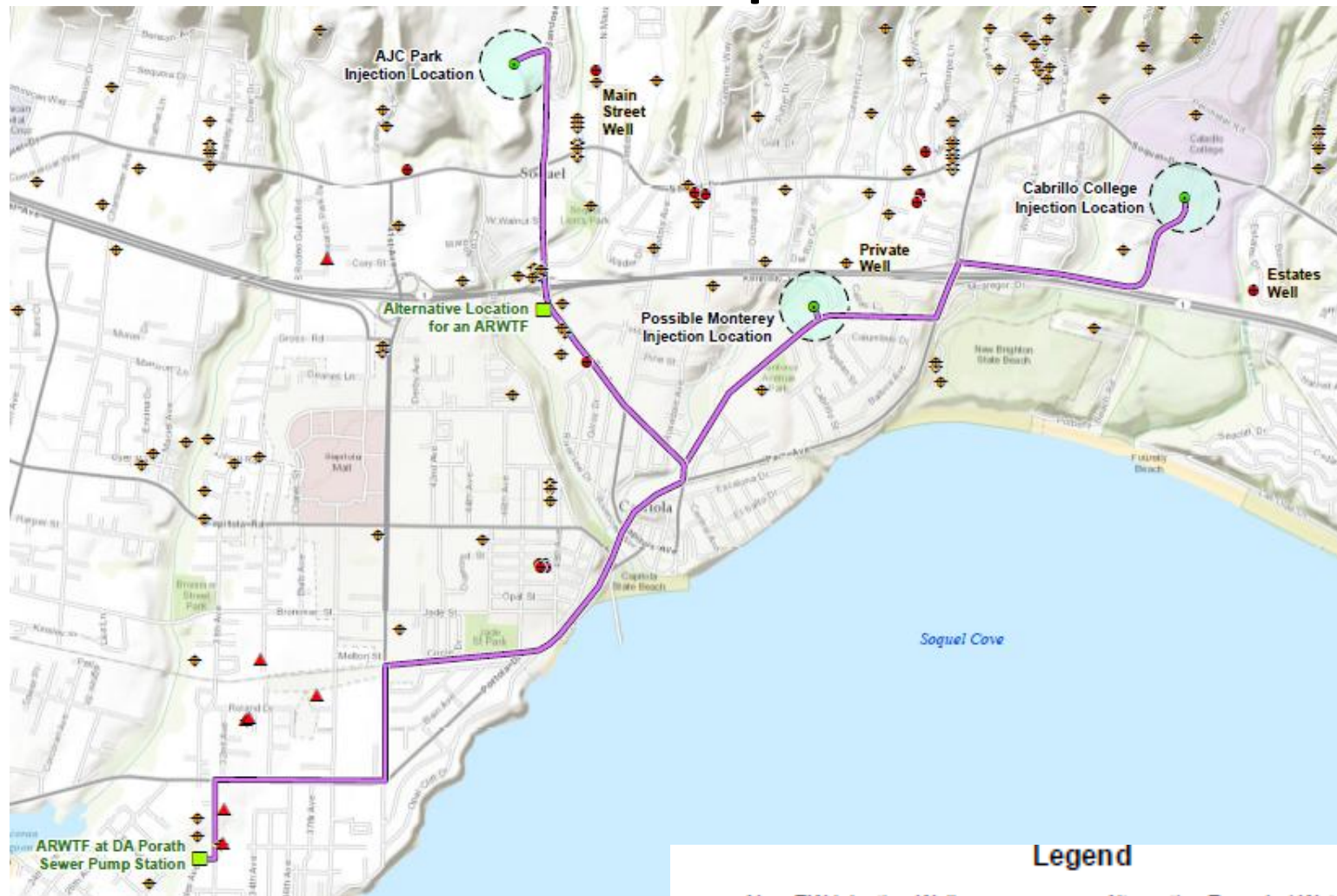
# Planned Groundwater Replenishment



Graphic Credit: David Smith

Kennedy/Jenks Consultants

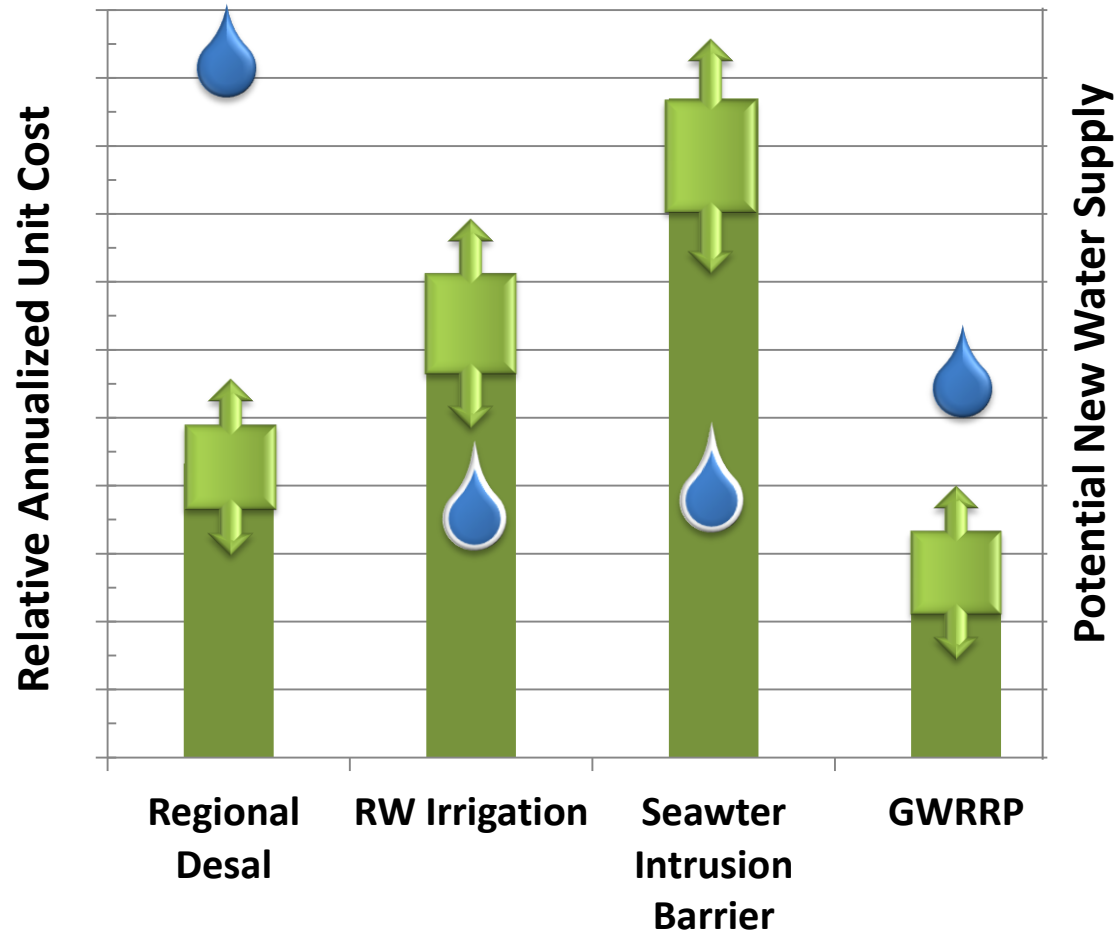
# Groundwater Replenishment



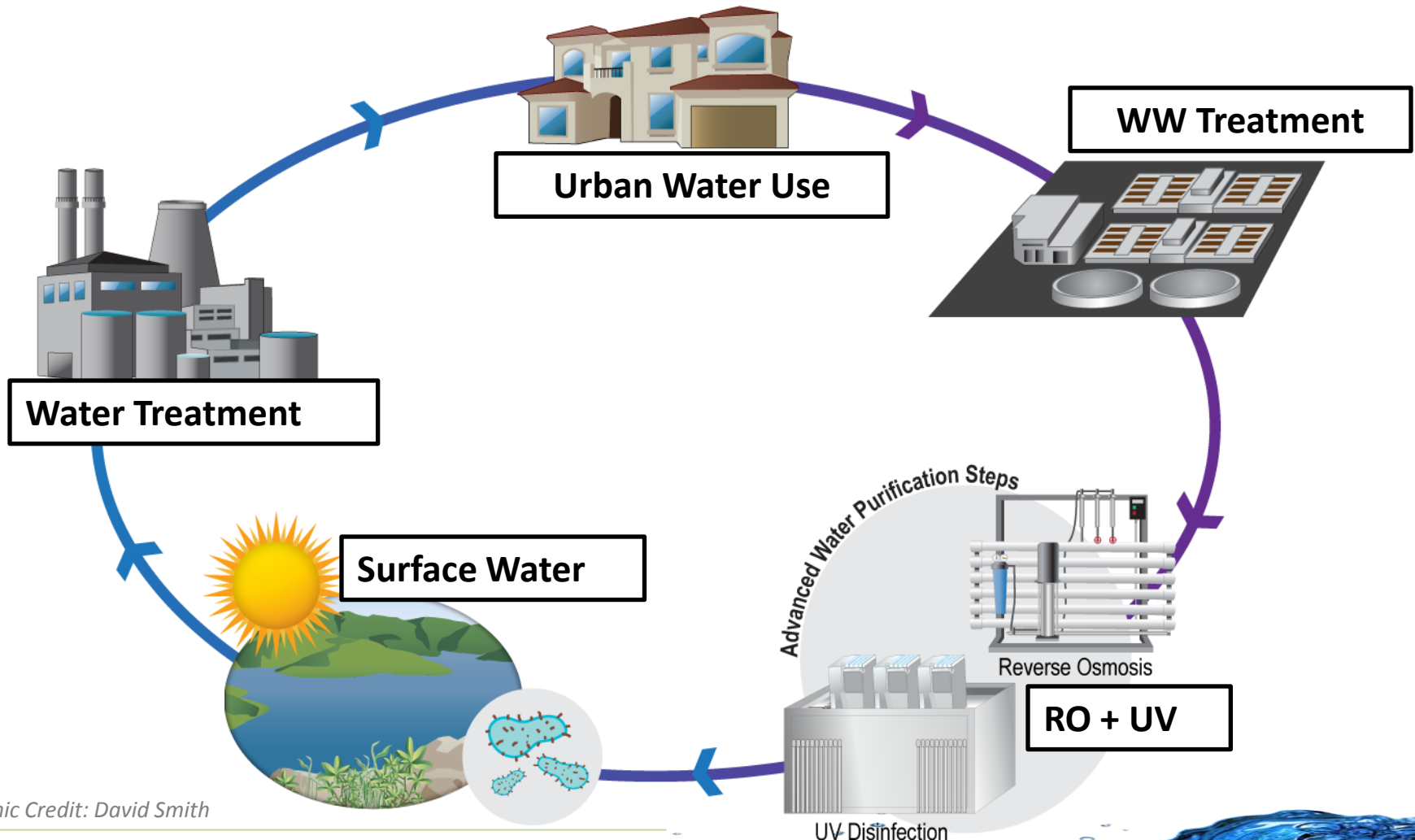
## Legend

- New RW Injection Well
- ▲ City Production Wells
- District Production Wells
- ◆ Potential Private Wells
- Alternative Recycled Water Treatment Facility (ARWTF)
- RW Pipeline
- 500ft Radius  
= 6mo-1yr Underground Residence Time

# Comparing Alternatives



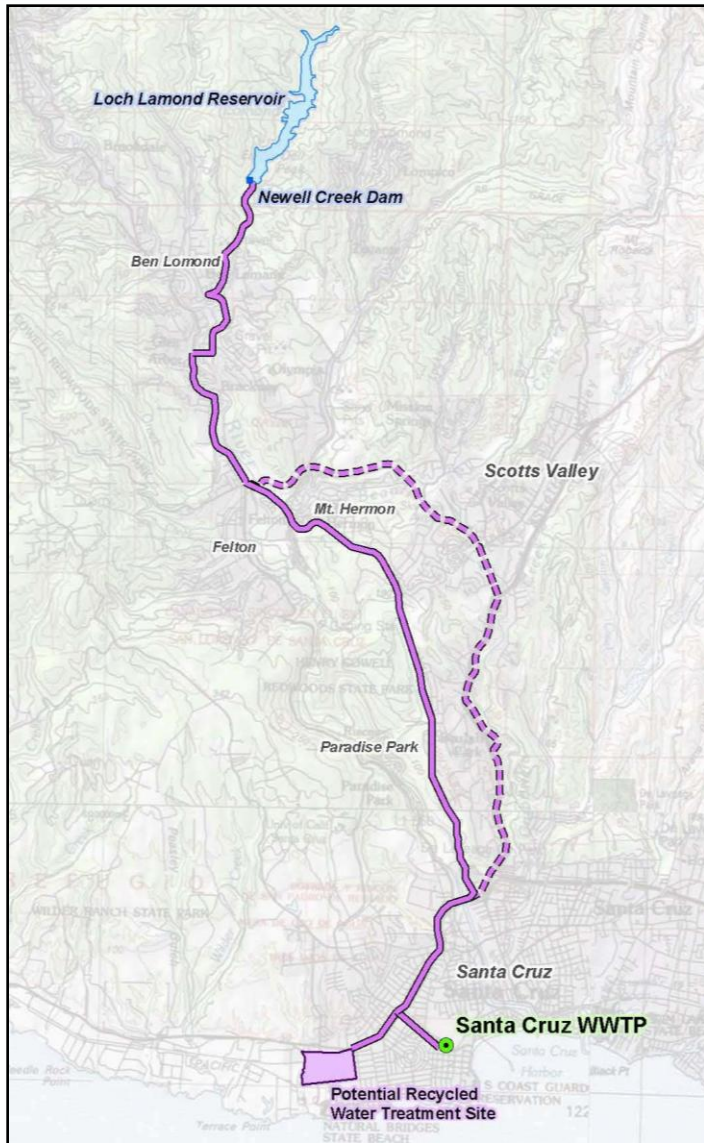
# Planned Surface Water Augmentation



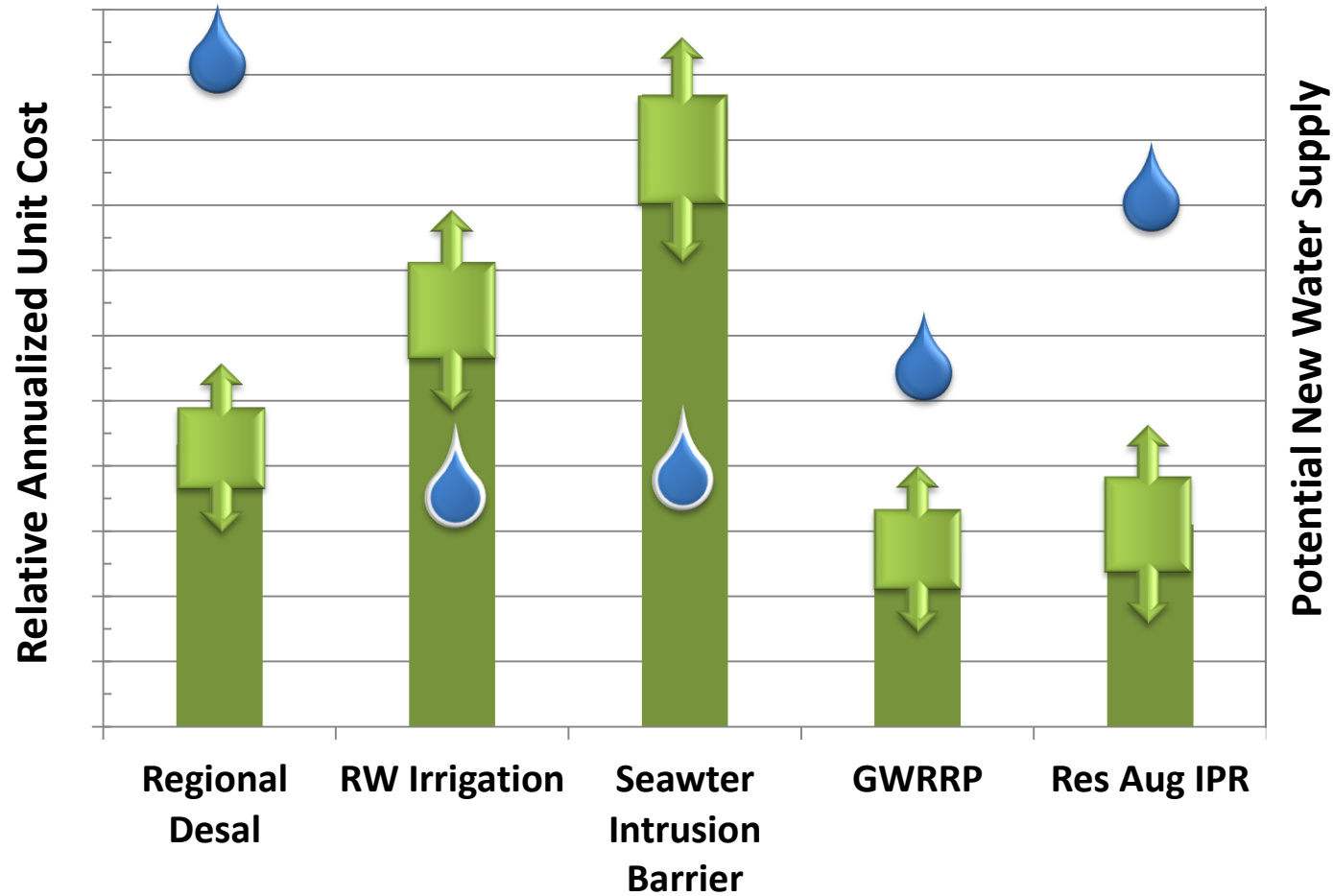
Graphic Credit: David Smith

Kennedy/Jenks Consultants

# Reservoir Augmentation



# Comparing Alternatives



# The New Frontier

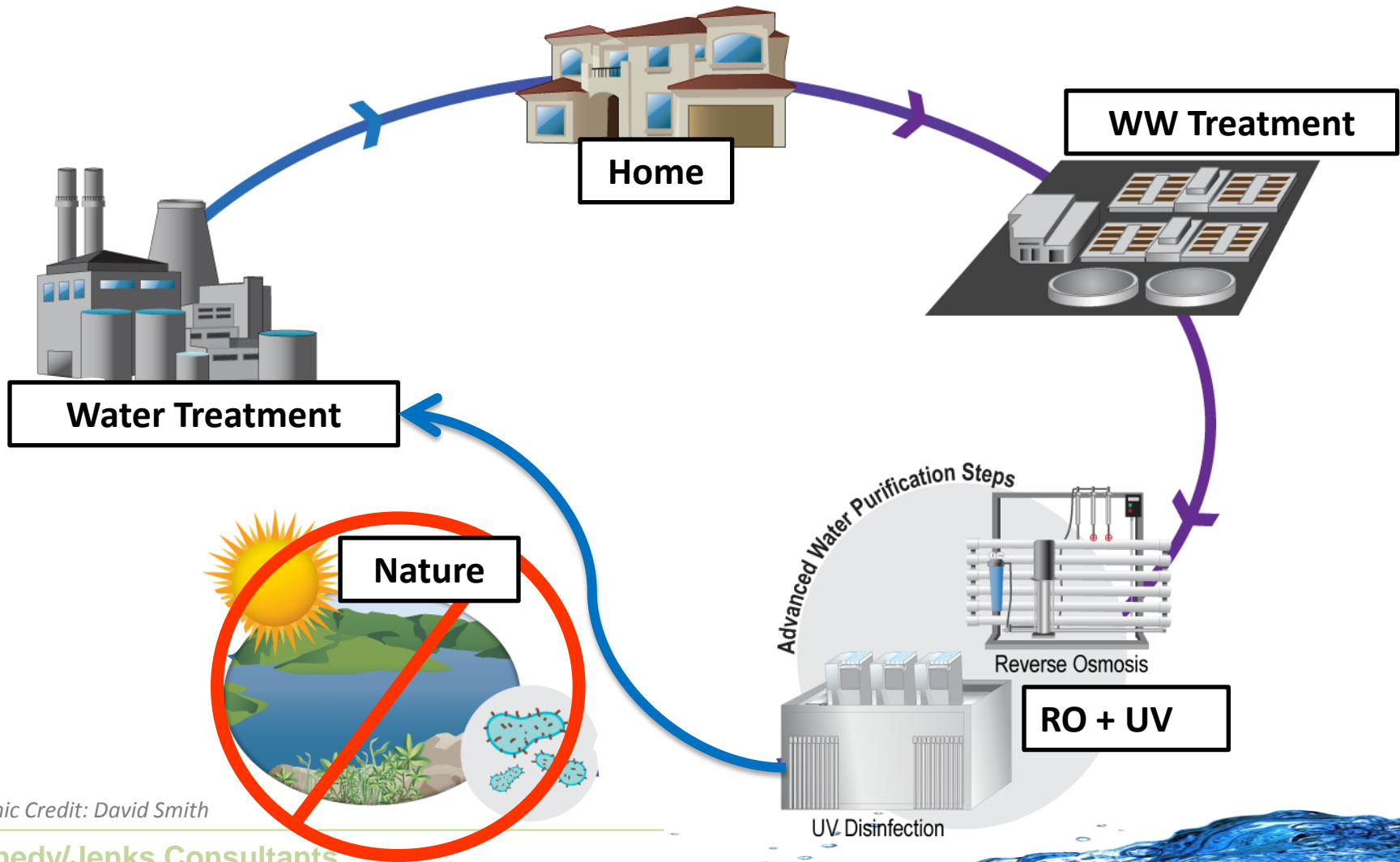


## DRINKING WATER THROUGH RECYCLING

THE BENEFITS AND COSTS OF  
SUPPLYING DIRECT TO THE  
DISTRIBUTION SYSTEM

A REPORT OF A STUDY BY THE  
AUSTRALIAN ACADEMY OF TECHNOLOGICAL  
SCIENCES AND ENGINEERING (ATSE)

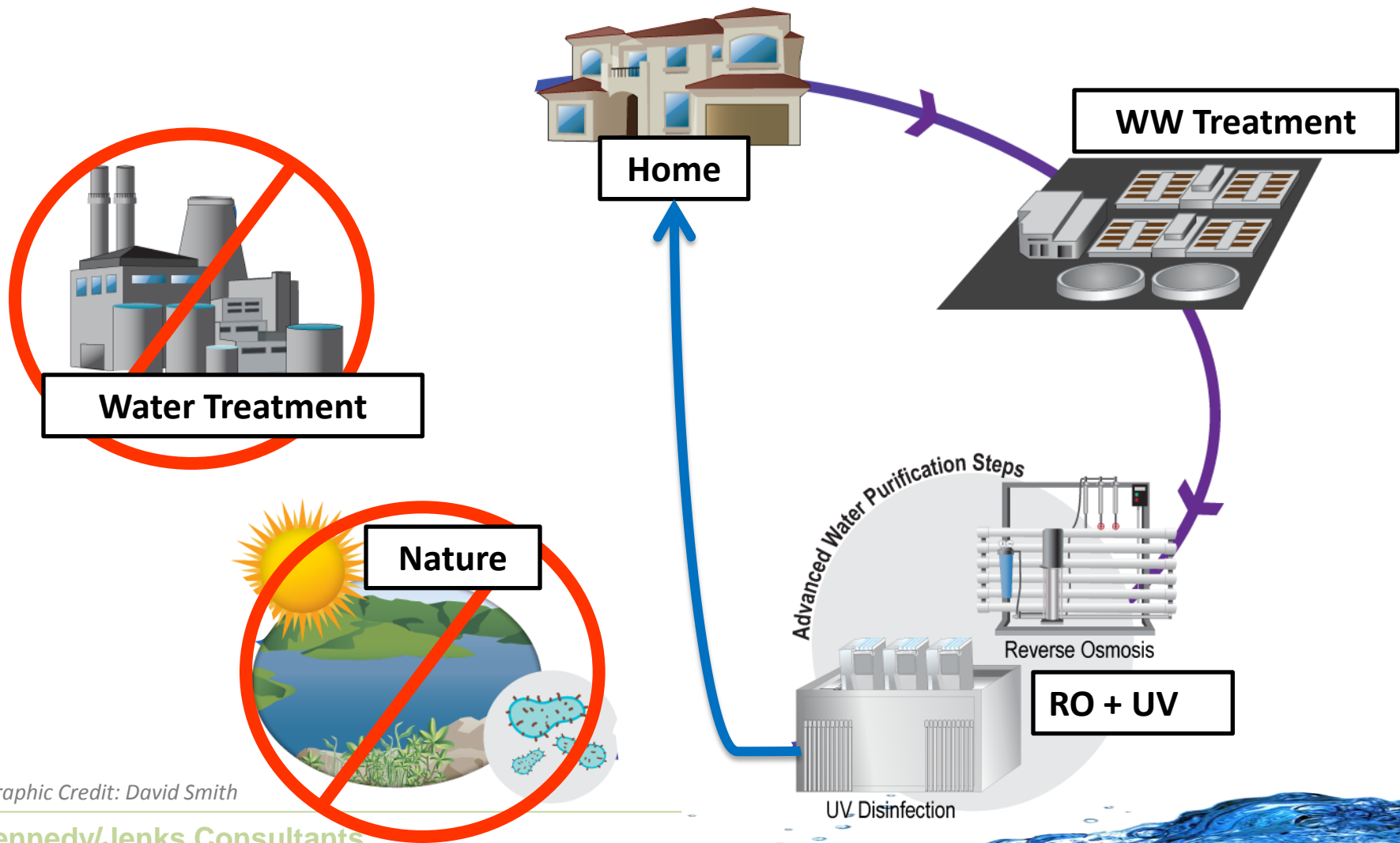
# Direct Potable Reuse



Graphic Credit: David Smith

**Kennedy/Jenks Consultants**

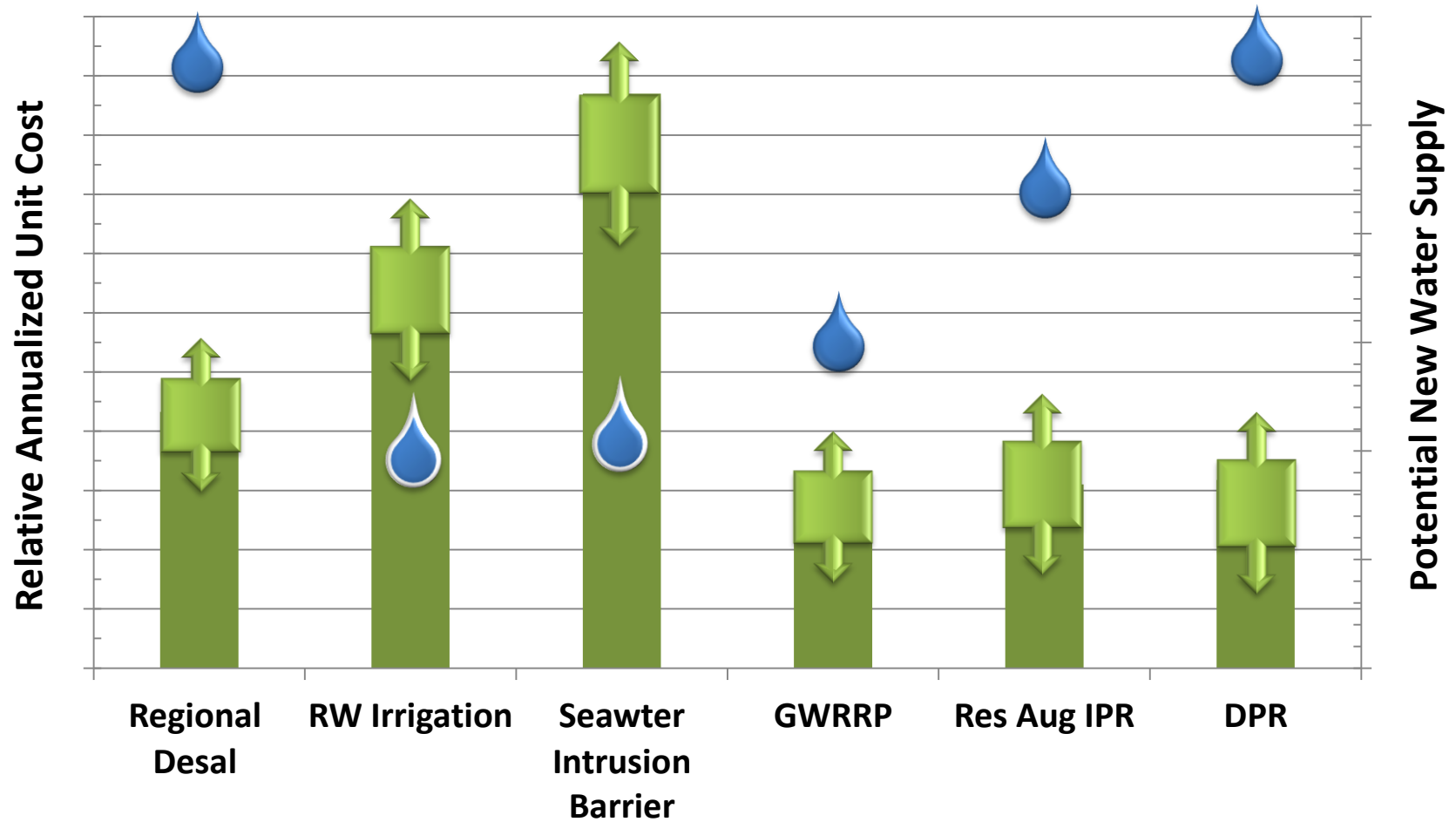
# Pipe-to-Pipe Direct Potable Reuse



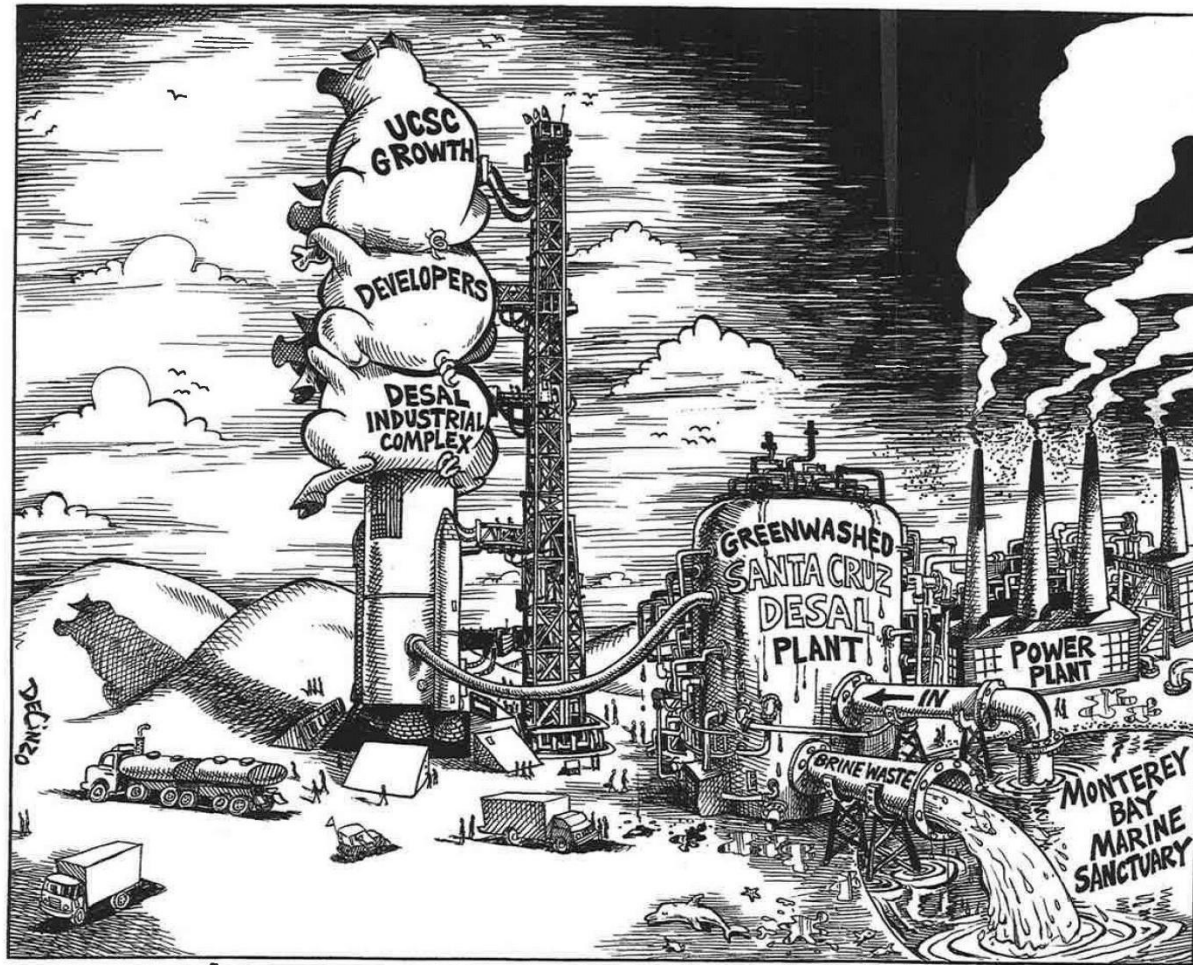
Graphic Credit: David Smith

Kennedy/Jenks Consultants

# Comparing Alternatives



But new water supplies cost more than traditional supplies and spark fears of growth



**T-MINUS \$140 MILLION AND COUNTING...ALL SYSTEMS ARE GO!**

# Salt or Sewer?

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Dawn Taffler, P.E., LEED [DawnTaffler@KennedyJenks.com](mailto:DawnTaffler@KennedyJenks.com)