

# The Bay Area Water Supply in 2050: Planning for a Resilient Water Future

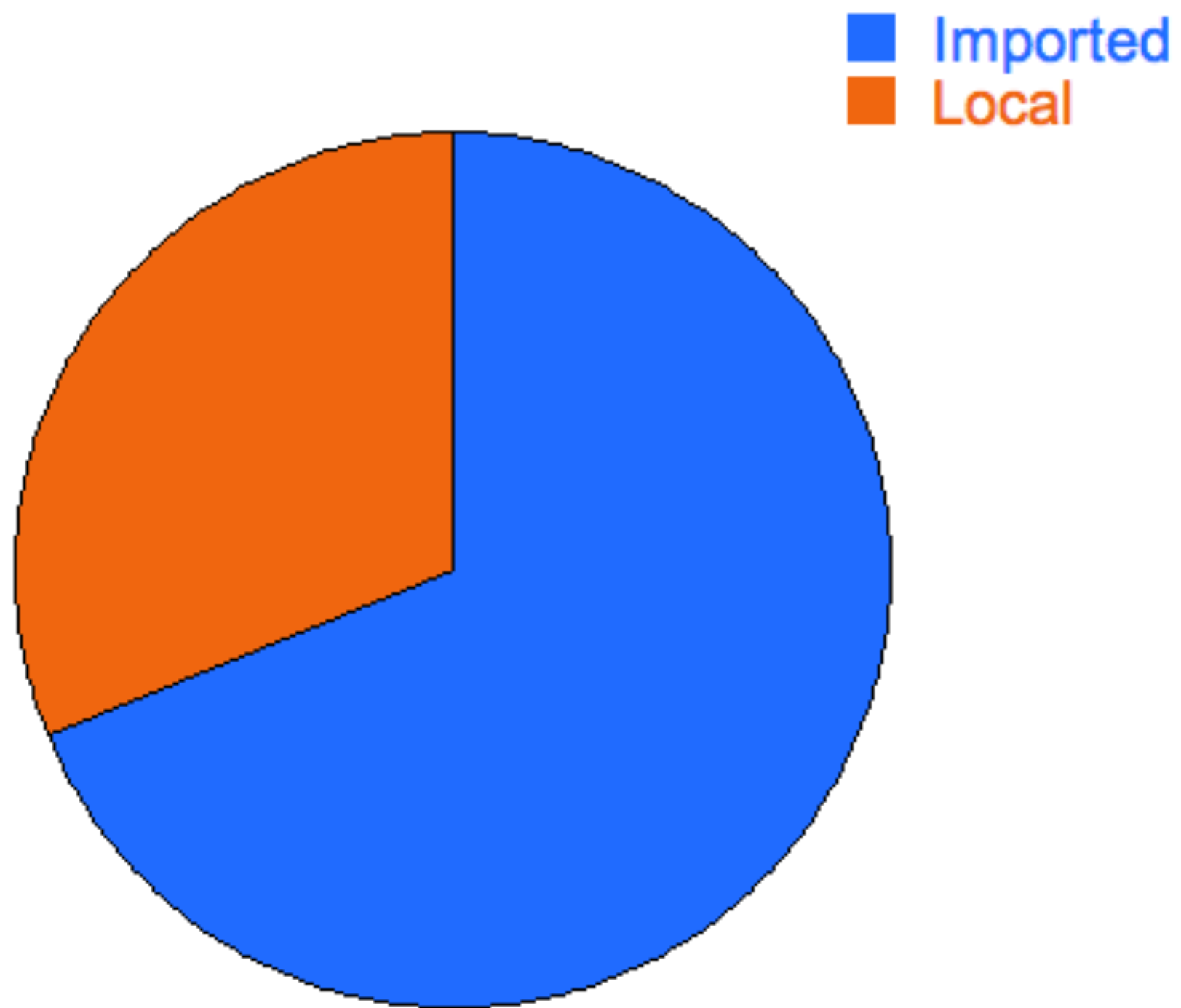
David L. Sedlak  
UC Berkeley

SPUR Regional Strategies Webinar

May 5, 2021

# The Bay Area's Water Portfolio

## 2016 Water Portfolio



Total = 1.3 billion gallons/day



**Imported Water**



**Local Supplies**



**Demand Management**



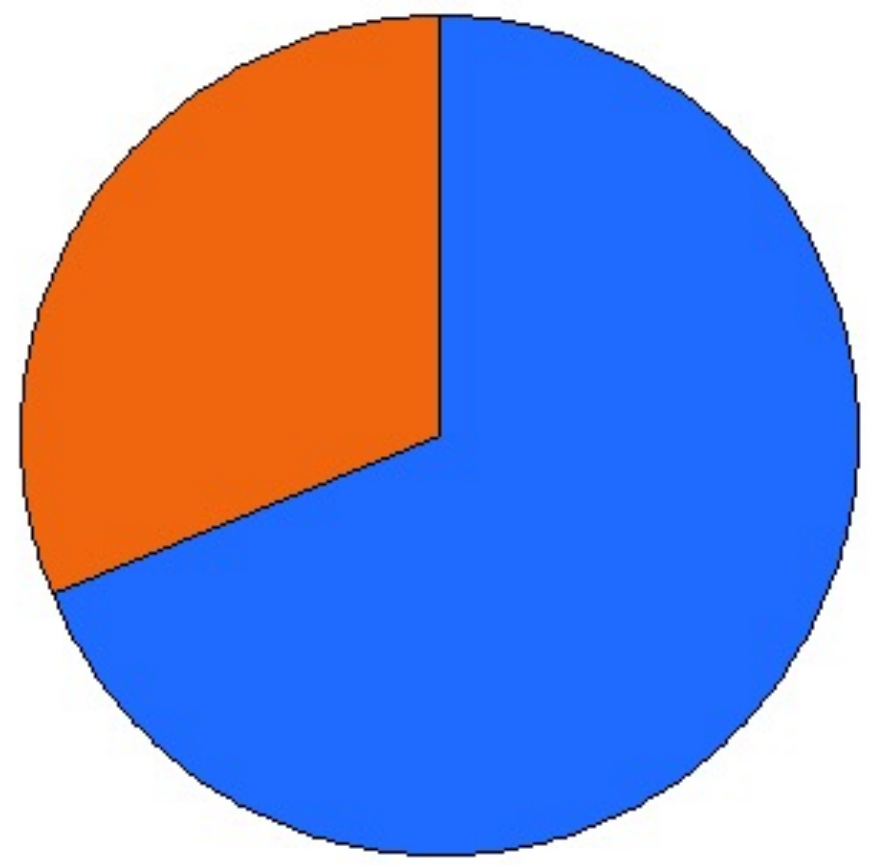
**Water Reuse**



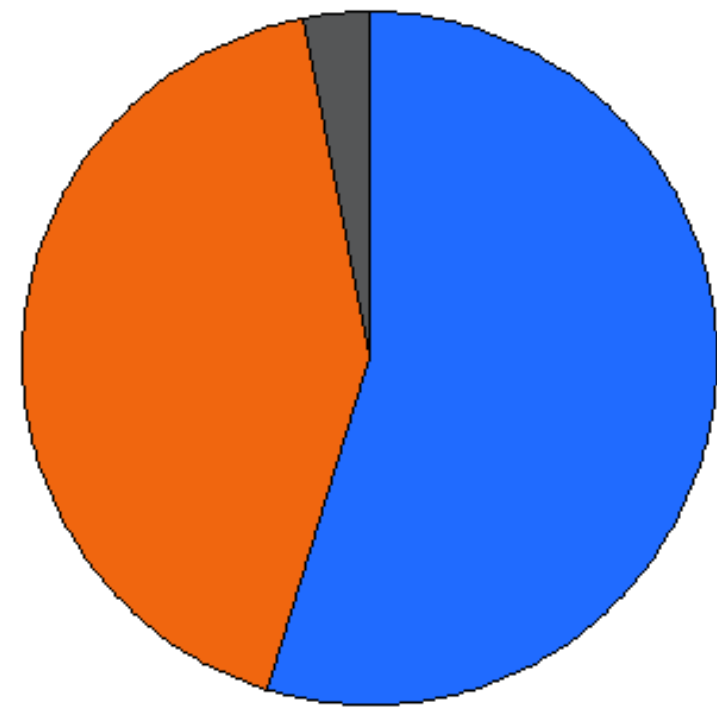
**Desalination**

# The Bay Area's Water Portfolio

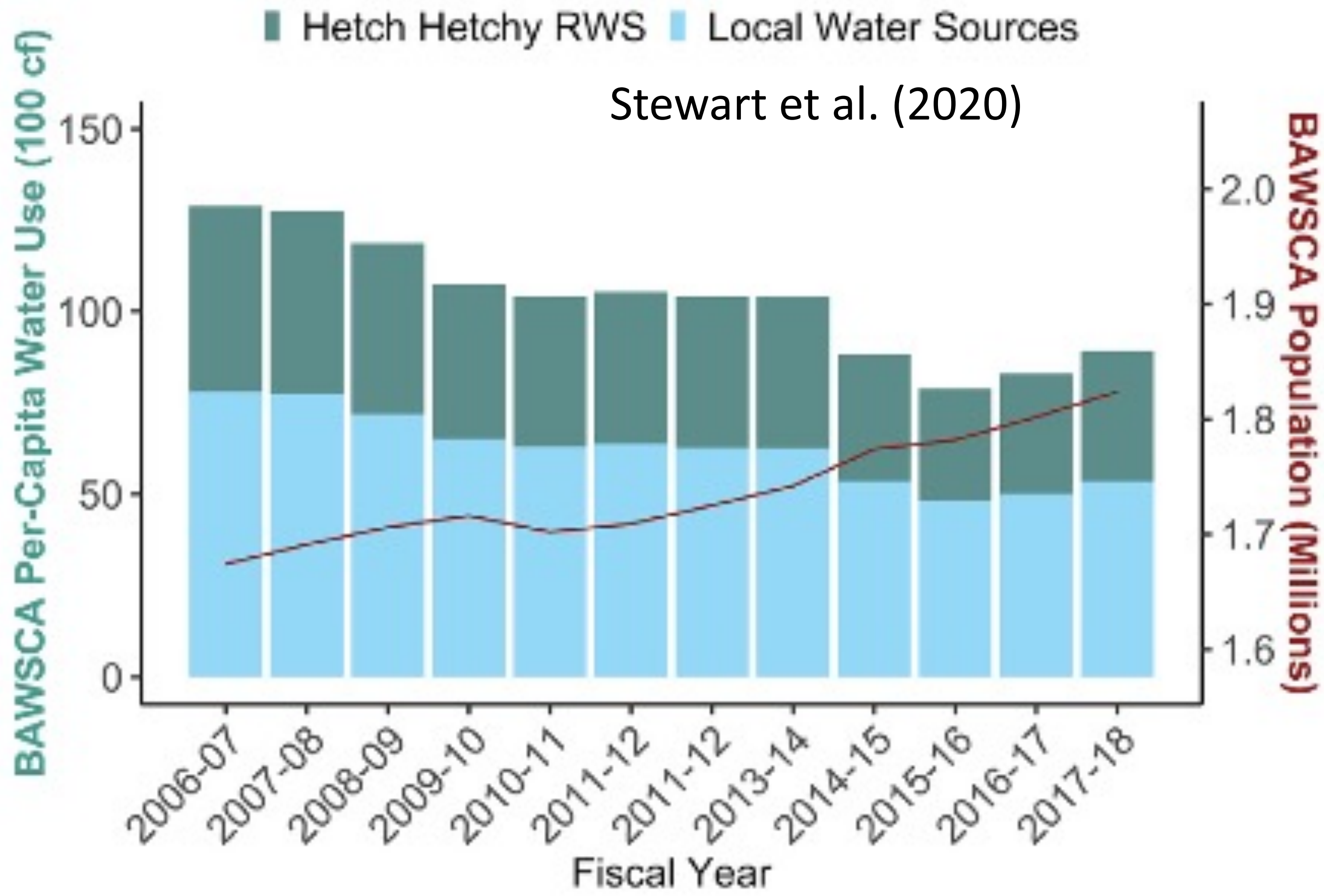
2015



2025



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# The Bay Area's W

News

## With new deal, Palo Alto banks on recycled water for drought protection

City Council approves 76-year agreement with Mountain View and Valley Water for a new salt-removal plant

by Gennady Sheyner / Palo Alto Weekly



Uploaded: Mon, Nov 18, 2019, 8:47 pm  
Updated: Wed, Nov 20, 2019, 1:41 pm  
Time to read: about 3 minutes

1

Seeking to fortify the city against future droughts, the Palo Alto City Council endorsed on Monday a long-term agreement with Santa Clara Valley Water District and Mountain View to build a salt-removal plant in the Baylands and then transfer the treated wastewater south.

SLIDESHOW



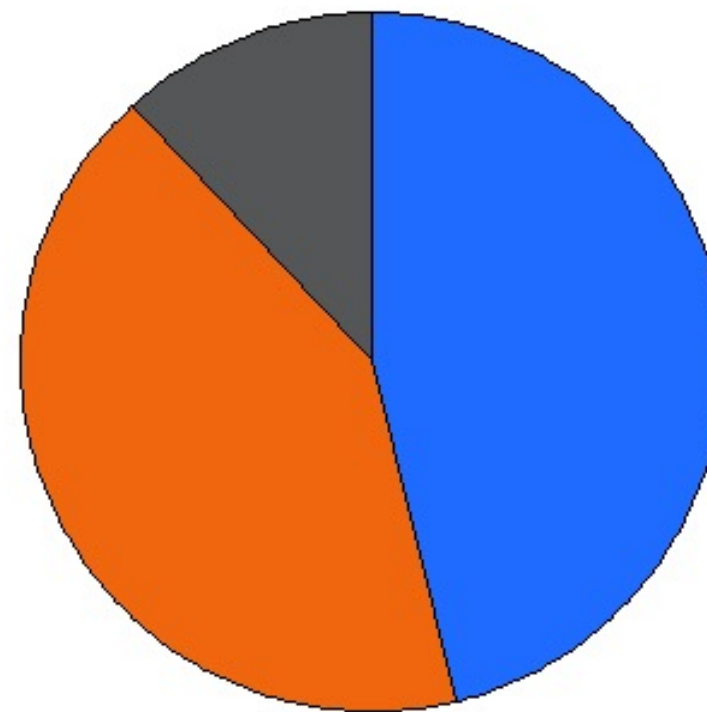
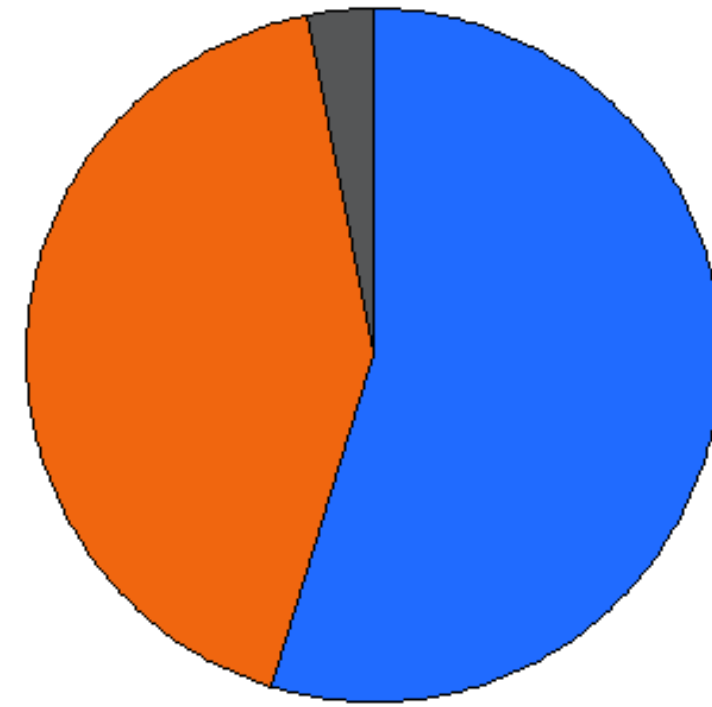
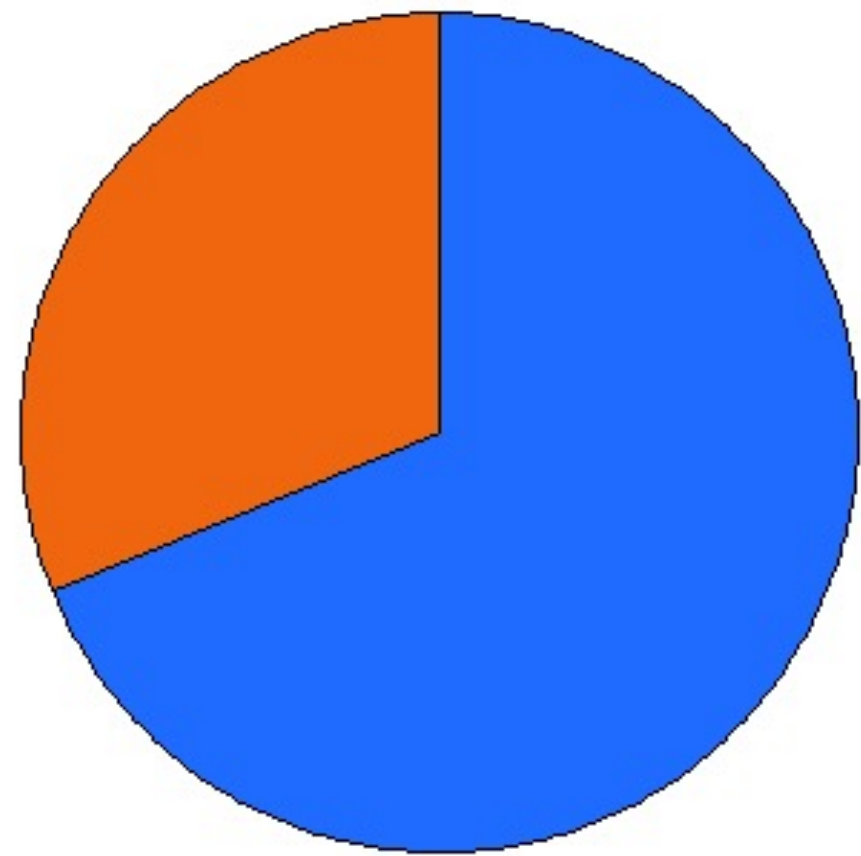
Under the 76-year deal, Valley Water would have 13 years to build the \$20-million plant, toward which it would contribute \$16 million. Until

The Palo Alto City Council approved on Nov. 18 a deal with the Santa Clara Valley Water District that would expand usage of recycled water and allow Palo Alto and Mountain View to purchase additional supplies from the water district. File photo by Veronica Weber.

2015

2025

2030



- Imported
- Local
- Reuse
- Desalination

# The Bay Area's Water Portfolio

**BREAKING NEWS** California passes 2 million coronavirus cases, doubling its total in just six weeks X

NEWS > ENVIRONMENT • News

## Antioch approves \$87 million bid for brackish water desalination plant

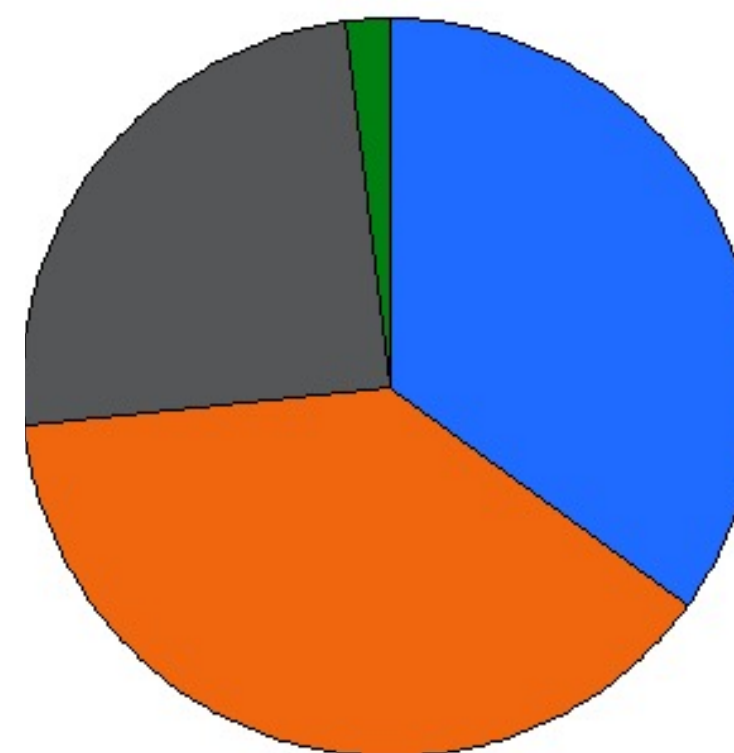
Shimmick Construction will build new facility to make salty river water usable



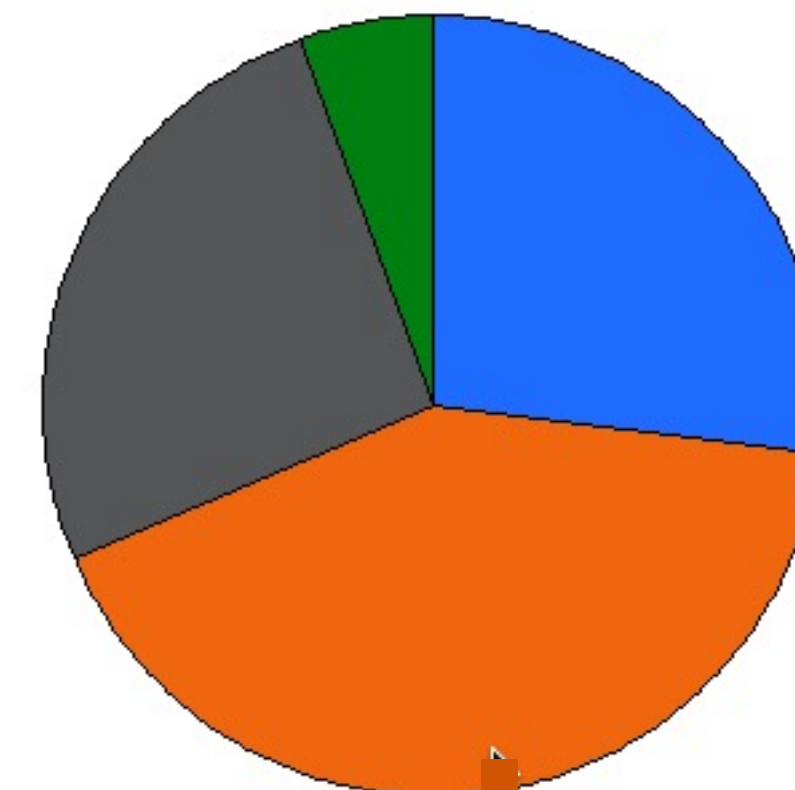
City of Antioch water treatment plant superintendent Tim Coley sits next to a large pipe that transfers water from a river pump station in Antioch, Calif., on Thursday. The pump draws water from the San Joaquin River which is then sent to a treatment plant and processed into drinking water. Antioch is one of only three cities/water agencies to receive \$10,000,000 in State of California Prop 1 Grant Funding for the construction of a water desalination facility. The desalination facility will help Antioch treat water when salt levels rise in the river. (Jose Carlos Fajardo/Bay Area News Group)

By **JUDITH PRIEVE** | [jprieve@bayareanewsgroup.com](mailto:jprieve@bayareanewsgroup.com) | Bay Area News Group  
PUBLISHED: December 21, 2020 at 1:07 p.m. | UPDATED: December 22, 2020 at 5:20 a.m.

### 2040



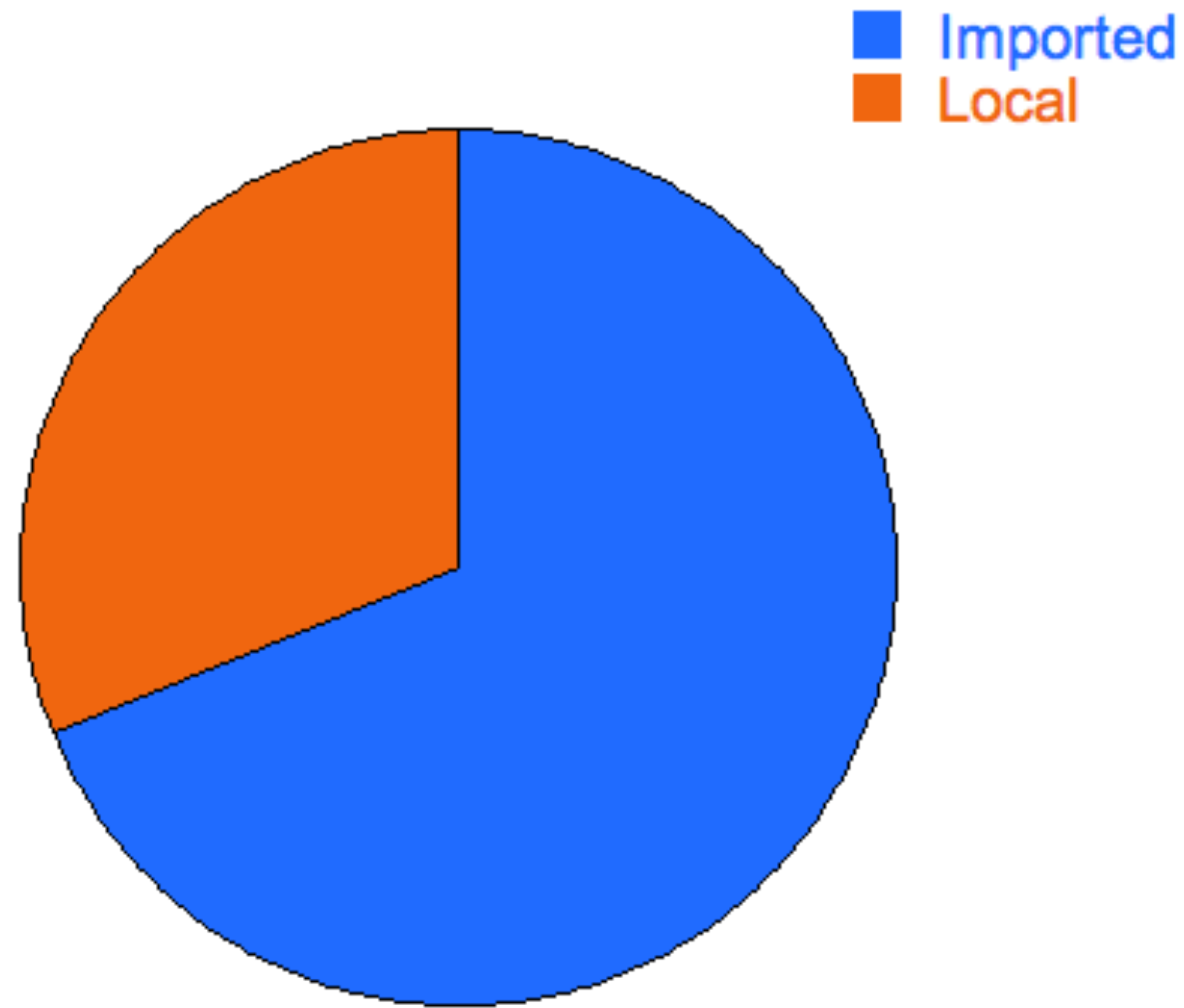
### 2050



**ReNUWIt**  
Re-inventing the Nation's  
URBAN WATER  
INFRASTRUCTURE

# The Bay Area's Water Portfolio

## 2016 Water Portfolio



Total = 1.3 billion gallons/day

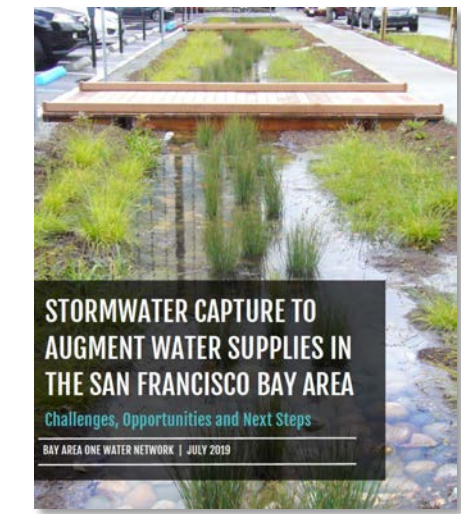
<https://www.bayareawater.org/reports>



**Imported Water**



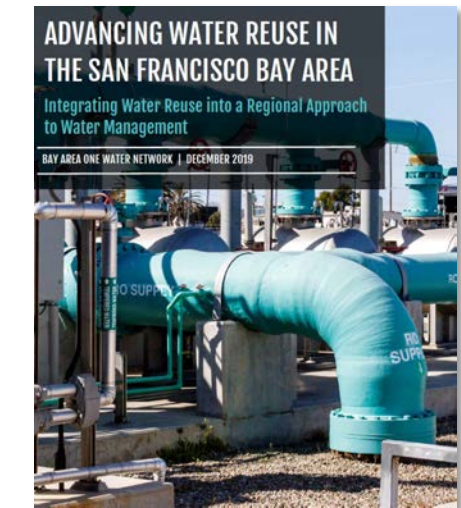
**Local Supplies**



**Demand Management**



**Water Reuse**

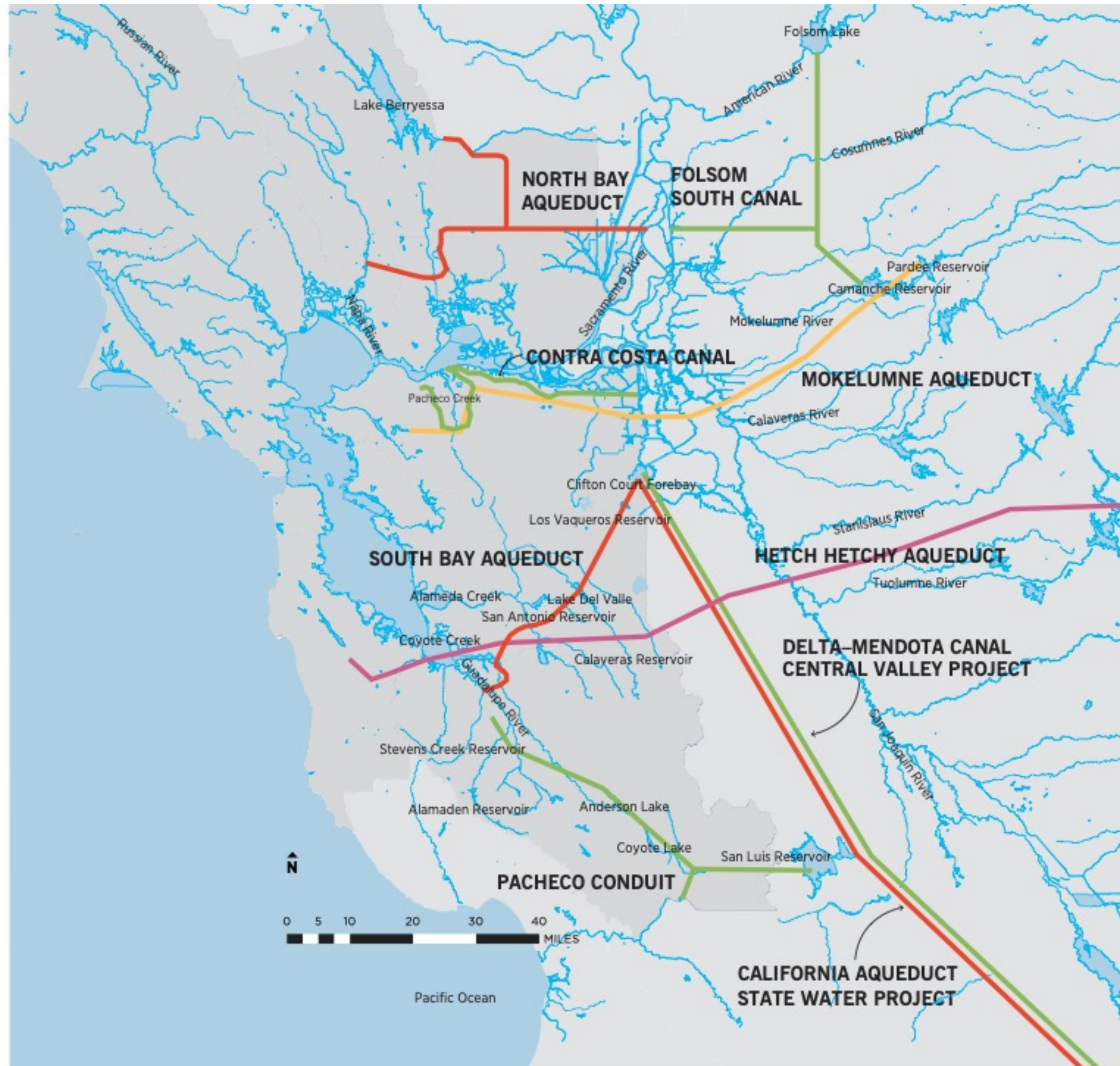


**Desalination**



**ReNUWIt**  
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# Driver 1: Less Imported Water



Source: SPUR map with data from: Cal-Atlas, PG&E, Santa Clara Valley Water District, Bay Area Integrated Regional Water Management Plan

NEWS CALIFORNIA NEWS · News

## Santa Clara Valley Water District files suit challenging state plan to divert water for fish

The state has said water flow to the Delta must increase to protect endangered fish, but that could impact the local water supply



Rich Pedroncelli/Associated Press archives

FILE — In this Feb. 25, 2016 file photo, water flows through an irrigation canal to crops near Lemoore, Calif. The powerful Metropolitan Water District voted Tuesday, Oct. 10, 2017 to pay its share of the \$16 billion project to build two massive tunnels to pipe water from Northern California to Southern California cities. The vote gives Gov. Jerry Brown's ambitious project an important boost of support after an influential agricultural group withdrew its support last month. The tunnels, which have been discussed in one form or another for generations, would pipe water around the Sacramento-San Joaquin Delta — where Sierra Nevada water flows toward the sea — to a system of canals that deliver water to farms and residents mostly in the southern half of the state. (AP Photo/Rich Pedroncelli, File)

By **EMILY DERUY** | [ederuy@bayareanewsgroup.com](mailto:ederuy@bayareanewsgroup.com) | Bay Area News Group

PUBLISHED: January 14, 2019 at 11:10 a.m. | UPDATED: January 14, 2019 at 3:46 p.m.

In an attempt to block the state's plan to divert more water toward the Sacramento-San Joaquin River Delta and away from the Bay Area, the Santa Clara Valley Water District has filed a lawsuit arguing the project could significantly reduce the local water supply.

If the plan advances, the water district might have to spend millions of dollars to obtain alternate water supplies and pull up more groundwater.

In December, the State Water Resources Control Board said more water needs to flow through the San Joaquin River and the rivers that flow into it to protect endangered and threatened fish species in the delta. But if that happens, the San Francisco Public Utilities Commission (SFPUC) would see a significant decrease in water, leaving its customers, including some in Santa Clara County, relying more heavily on the water district.

# Driver 2: Limits on Ocean Discharge

NEWS

## See all that water flowing into the ocean? Bill by Sen. Hertzberg aims to save it



In a file photo, California state Sen. Bob Hertzberg, D-Van Nuys, talks about a transportation proposal benefiting Cal State Northridge students and faculty. (Photo by David Crane/SCNG)

By **KEVIN MODESTI** | [kmodesti@scng.com](mailto:kmodesti@scng.com) | Daily News  
PUBLISHED: February 20, 2019 at 4:57 p.m. | UPDATED: February 21, 2019 at 8:52 a.m.



“... locally generated pollution has the potential to accelerate the rate at which coastal waters are acidifying, especially in semi-enclosed waters like estuaries and bays.”

OCTOBER 2018



# Driver 3: Easier Desalination/Reuse

## National Water Reuse Action Plan

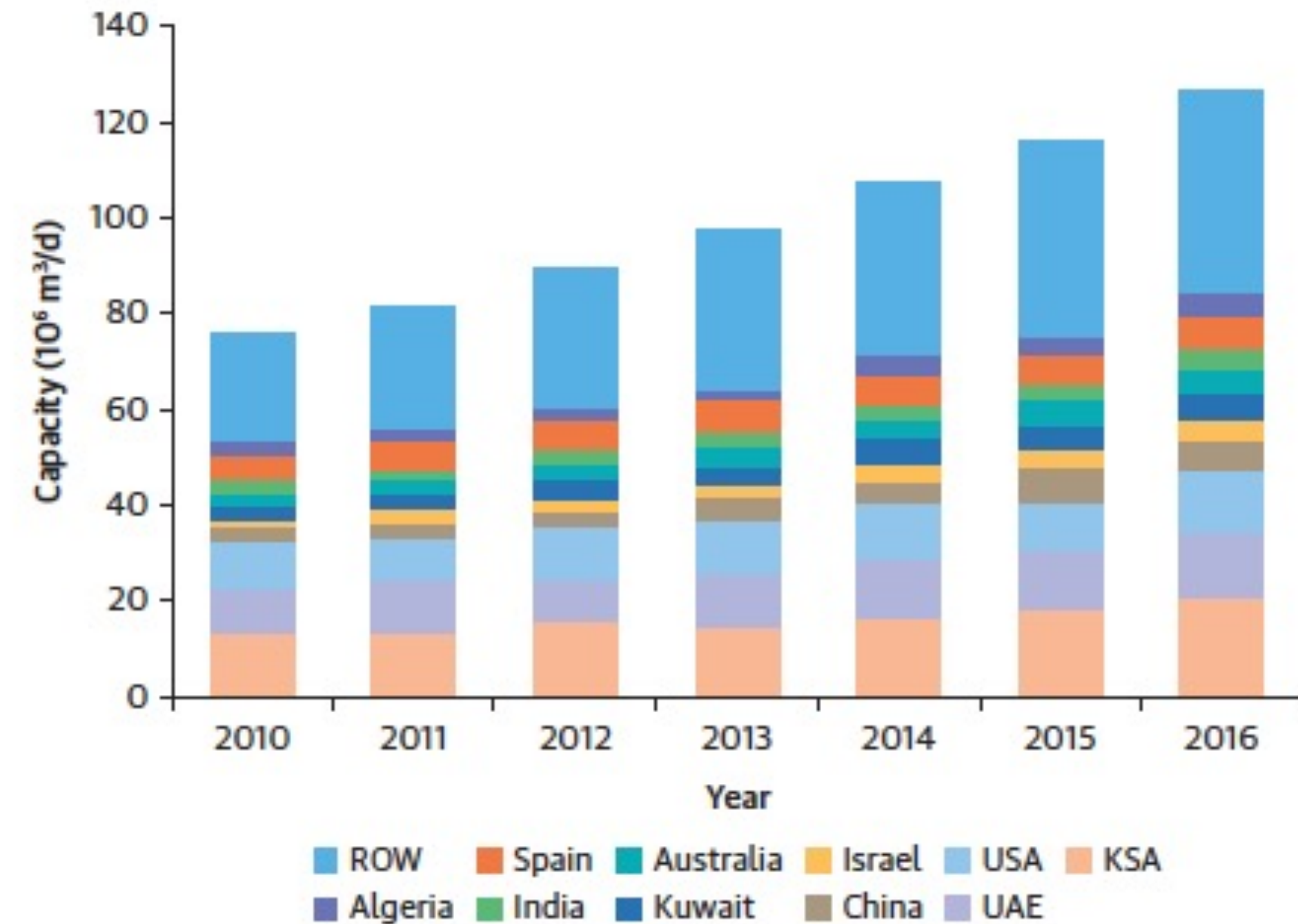
Improving the Security, Sustainability, and Resilience of Our Nation's Water Resources

### Collaborative Implementation (Version 1)



February 2020

FIGURE 2.2. Global Installed Desalination Capacity, 2010-16



Source: DesalData 2017.

Note: KSA = Kingdom of Saudi Arabia; UAE = United Arab Emirates; ROW = rest of the world; USA = United States of America.

The World Bank (2019)

# Driver 4: Urban Adaptation Investments

## Urban Greening Bay Area

🕒 JUNE 14, 2017



### PROJECT AT A GLANCE

#### FUNDERS

Environmental Protection Agency

#### PARTNERS

City of San Mateo

City of Richmond

Contra Costa County

Bay Area Stormwater Management Agencies Association

Association of Bay Area Governments

City of Sunnyvale

Environmental Protection Agency

City of Oakland

City of San Jose

San Francisco Estuary Institute

San Francisco Bay Regional Water Quality Control Board

Urban Greening Bay Area is a collaborative effort to re-envision Bay Area urban landscapes with widespread green infrastructure in order to:

- Improve water quality by treating urban and stormwater runoff
- Reduce local flooding by impounding stormwater and releasing it slowly
- Help mitigate anticipated climate change impacts

With SF Bay Area population growth projections from seven to nine million people by 2040, many water-related challenges are emerging. These challenges include competition for safe, reliable drinking water, on-going environmental impacts of chemical products (past, present, and future), and continued development pressure.

The San Francisco Estuary Partnership (SFEP) is working with the San Francisco Estuary Institute (SFEI) and several Bay Area municipalities to advance regional capacity for Green Infrastructure in a programmatic approach with three tracks: **Planning**, **Implementation**, and **Tracking**. The US EPA is funding Phase 2 of the project, expected to complete on December 30, 2019. The initial **Phase 1**, which began on July 1, 2015, was funded by the State Water Resources Control Board.

## On the Front Lines of Sea-Level Rise, Sewage Treatment Plants Adapt

WATER DEEPLY

Some coastal sewage treatment plants are beginning to experience challenges from climate change, such as backflow from seawater and potential discharge problems. Two experts explain how facilities in the San Francisco Bay Area are addressing these risks.

WRITTEN BY  
Matt Weiser

PUBLISHED ON  
Feb. 26, 2018

READ TIME  
Approx. 4 minutes



This so-called "horizontal levee" was built along the San Francisco Bay shoreline in a partnership with Oro Loma

# A Few Predictions...



- Population growth will be matched by improved water use efficiency (~25% for each).
- Climate change will stress imported water and drive investments in non-traditional supplies.
- Sea-level rise adaptation will create opportunities for infrastructure improvements.
- Water providers will continue to struggle with decaying infrastructure, earthquakes fires and affordability.