

San Francisco's Non-Potable Water Program

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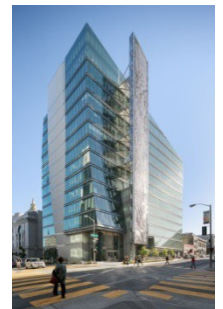
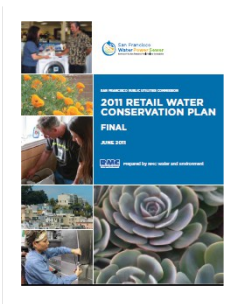
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San Francisco's Local Water Program

- **Conservation:** average residential 40 gpcd
- **Groundwater:** blend groundwater with surface water for potable purposes during normal and drought years
- **Recycled Water:** provide recycled water for irrigation of parks and golf courses
- **Non-potable Water:** collect and treat alternate water sources for non-potable applications within buildings

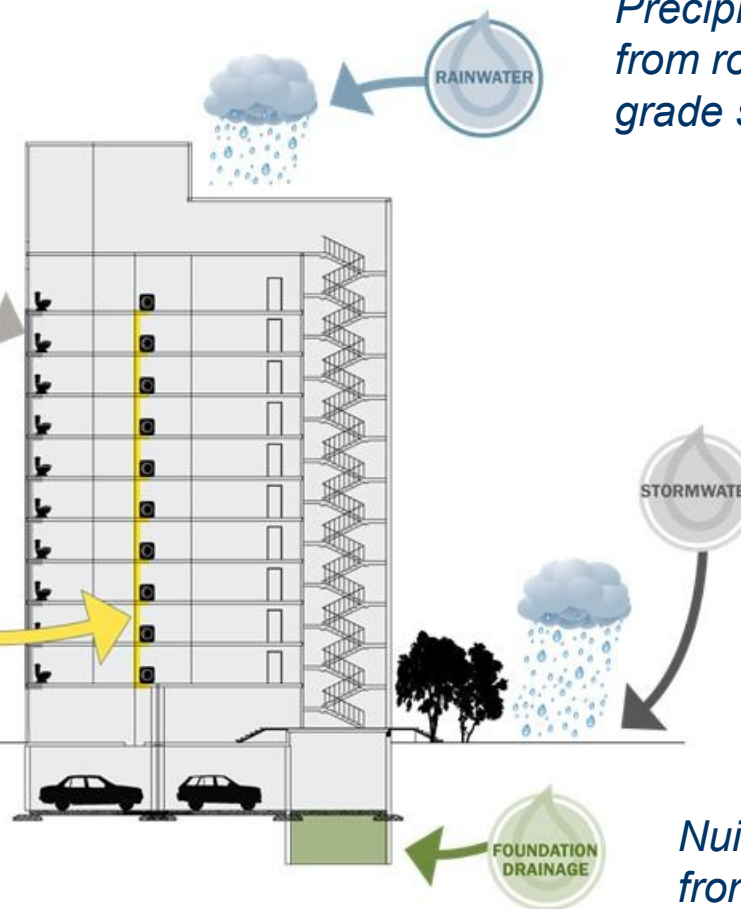


Types of Alternate Water Sources for Non-potable Applications

Wastewater from toilets, dishwashers, kitchen sinks, and utility sinks



Wastewater from clothes washers, bathtubs, showers, and bathroom sinks



Precipitation collected from roofs and above-grade surfaces

Precipitation collected at or below grade

Nuisance groundwater from dewatering operations

SFPUC Headquarters Incorporates Onsite Water Systems



Interest from Developers to Collect & Treat Water Onsite



Regulatory Oversight for Onsite Water Systems

- Who should set water quality standards?
- Who should issue permits and provide operational oversight?
- What type of on-going monitoring and reporting should be implemented?



2013 California Plumbing Code Updates

- Incorporated graywater and rainwater end uses & water quality standards
- Provided construction requirements
- Included purple and signage requirements



CAUTION
RECYCLED WATER, DO NOT DRINK. DO NOT CONNECT TO DRINKING WATER SYSTEM.

NOTICE
CONTACT BUILDING MANAGEMENT BEFORE PERFORMING ANY WORK ON THIS WATER SYSTEM.

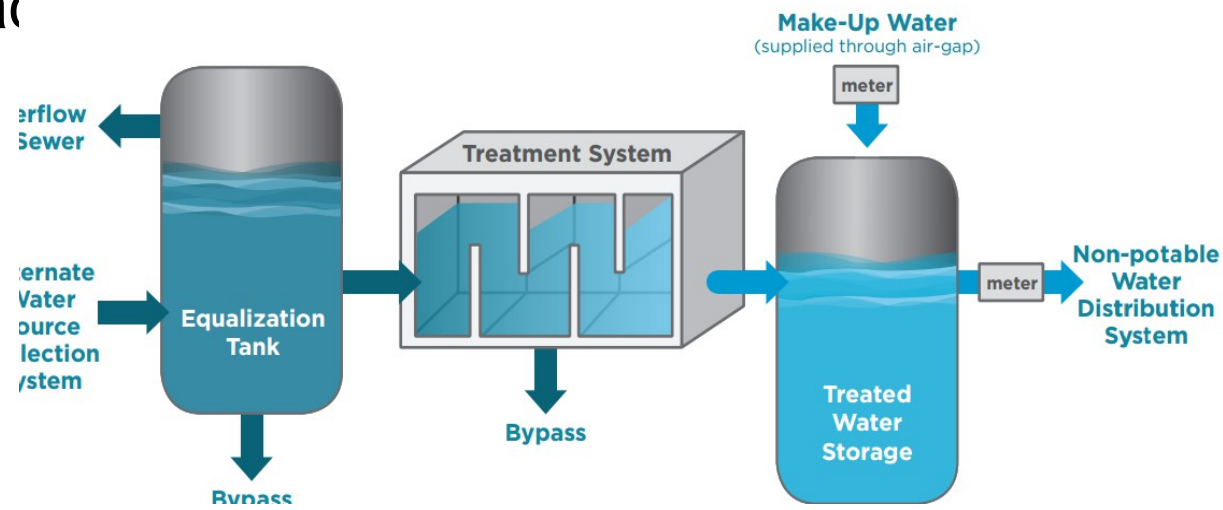


San Francisco Ordinance Provides Oversight and Management

SFPUC	SFDPH	SFDBI	SFDPW
Program Administration	Public Health	Construction	Right of Way and Mapping
<p>Review onsite non-potable water supplies & demands</p> <p>Administer citywide project tracking & annual potable offset achieved</p> <p>Provide technical support & outreach to developers</p> <p>Provide financial incentives to developers</p> <p>Cross Connection Test</p>	<p>Issue water quality & monitoring requirements</p> <p>Review and approve non-potable engineering report</p> <p>Issue permit to operate onsite systems</p> <p>Review water quality reporting</p>	<p>Conduct Plumbing Plan check and issue Plumbing Permit</p> <p>Inspect and approve system installations</p>	<p>Issue Encroachment Permits as needed for infrastructure in the Right-of-Way (if needed)</p> <p>Includes condition on a subdivision map or a parcel map requiring compliance with the Non-potable Ordinance prior to approval and issuance of said map (if applicable)</p>

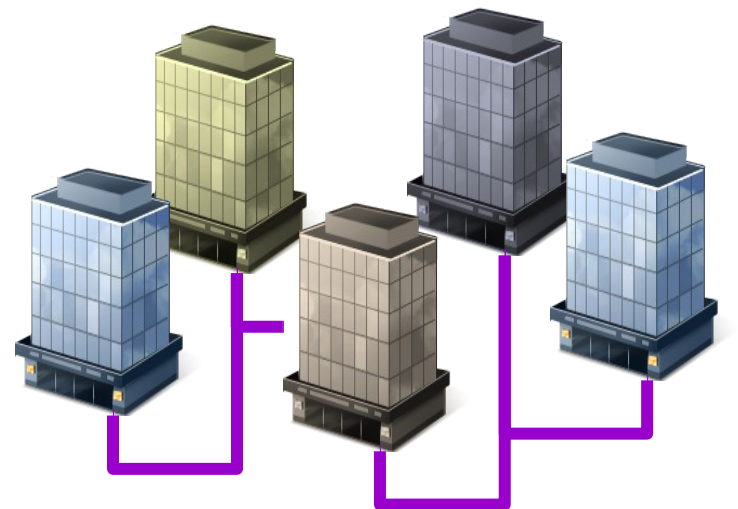
Key Requirements for Onsite Systems

- Water and Sewer Connections
- Backflow Protection Requirements
- Cross Connection Test Prior to Operation
- Operator Capabilities

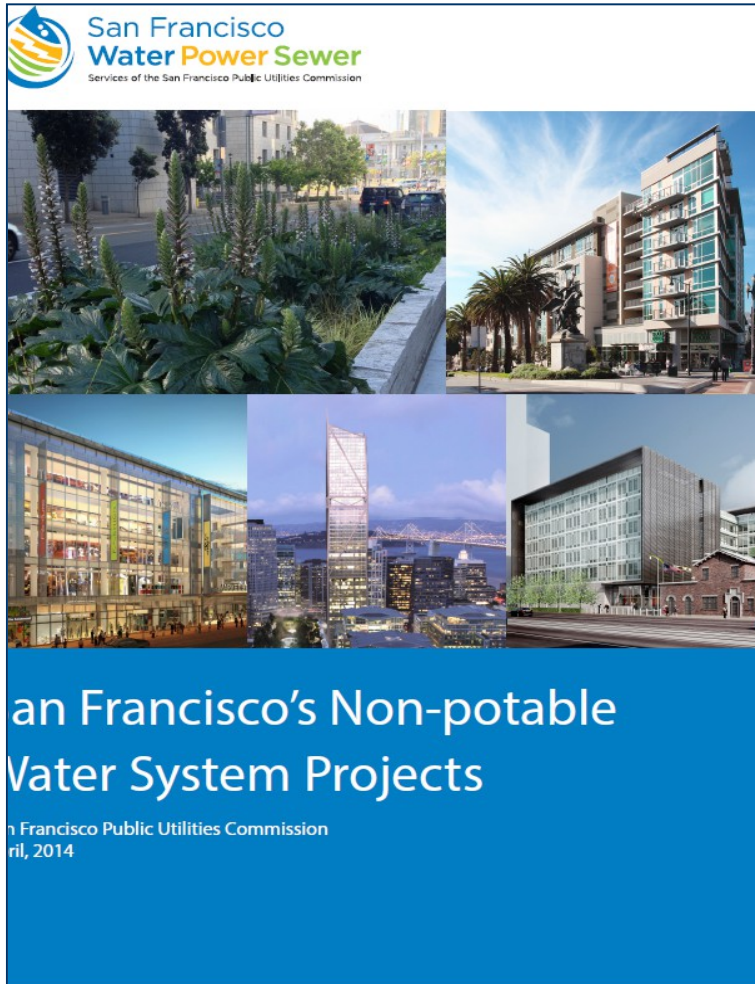


Non-Potable Water Program Timeline

- 2012: Single Building
- 2013: District Scale Systems
- 2015: Mandatory for projects over 250,000 square feet



SFPUC Track Projects



- Overview of onsite water system
- Water sources collected and treated
- End use applications
- Costs

St. Anthony's Building

- Source: Rainwater
- End Use: Toilet & Urinal Flushing
- Status: System Constructed



PG&E Office Building Retrofit

- Source: Foundation Drainage
- End Uses: Toilet & Urinal Flushing
- Status: System Constructed



San Francisco Public Safety Building

- Sources: Rainwater, Stormwater, & Graywater
- End Uses: Toilet & Urinal Flushing and Irrigation
- Status: System Constructed



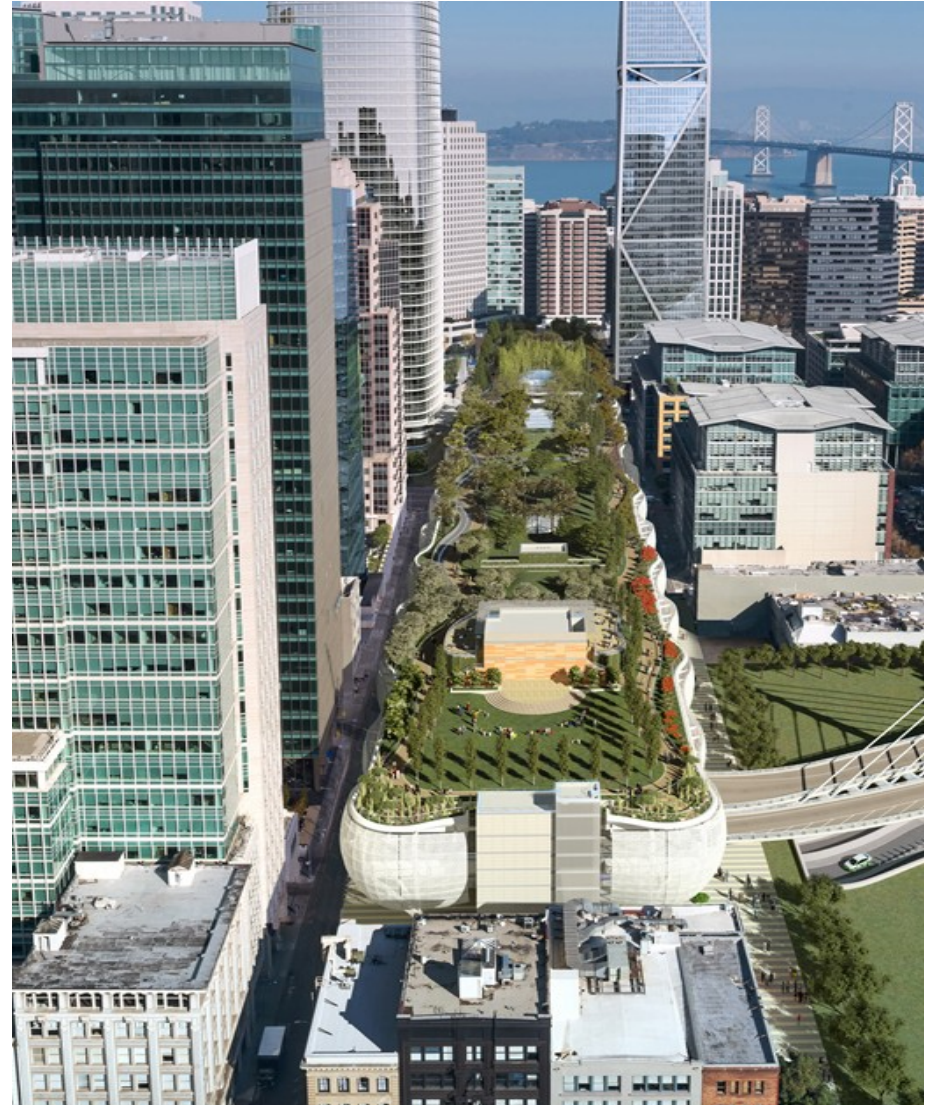
181 Fremont Mixed Use Development

- Source: Graywater & Rainwater
- End Use: Toilets & Irrigation
- Status: Under Construction



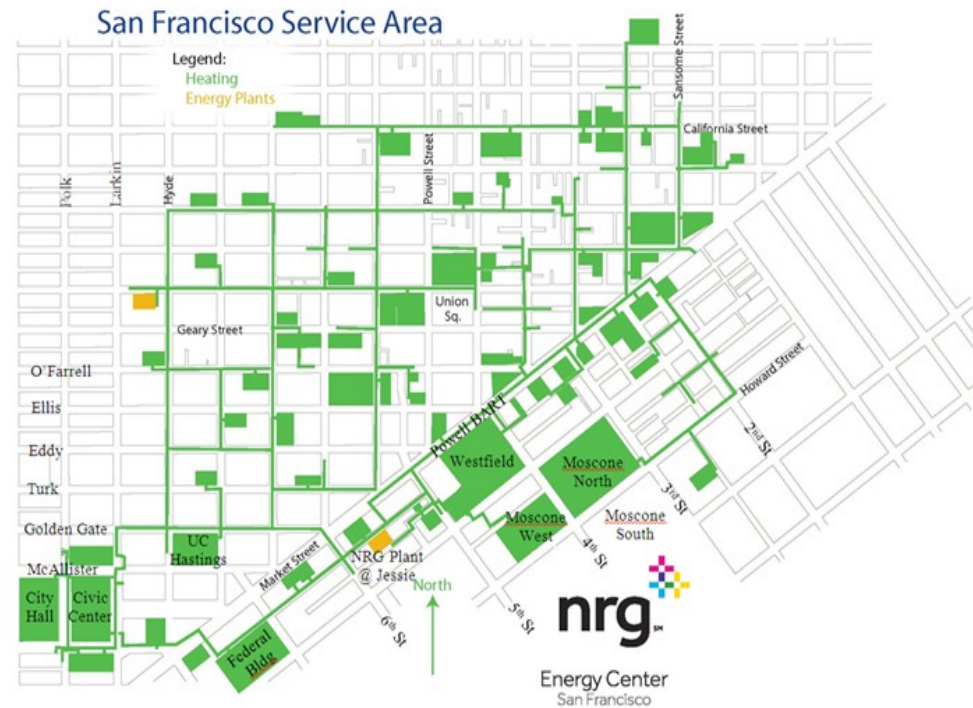
Transbay Transit Center

- Sources: Rainwater & Graywater
- End Uses: Toilet & Urinal Flushing and Irrigation
- Status: Final Design



Downtown Steam Loop

- Sources: Foundation Drainage
- End Uses: Steam Loop
- Status: Final Design



Graywater Treatment Systems

- \$250,000- \$500,000
(1,200 gpd-5,000 gpd)

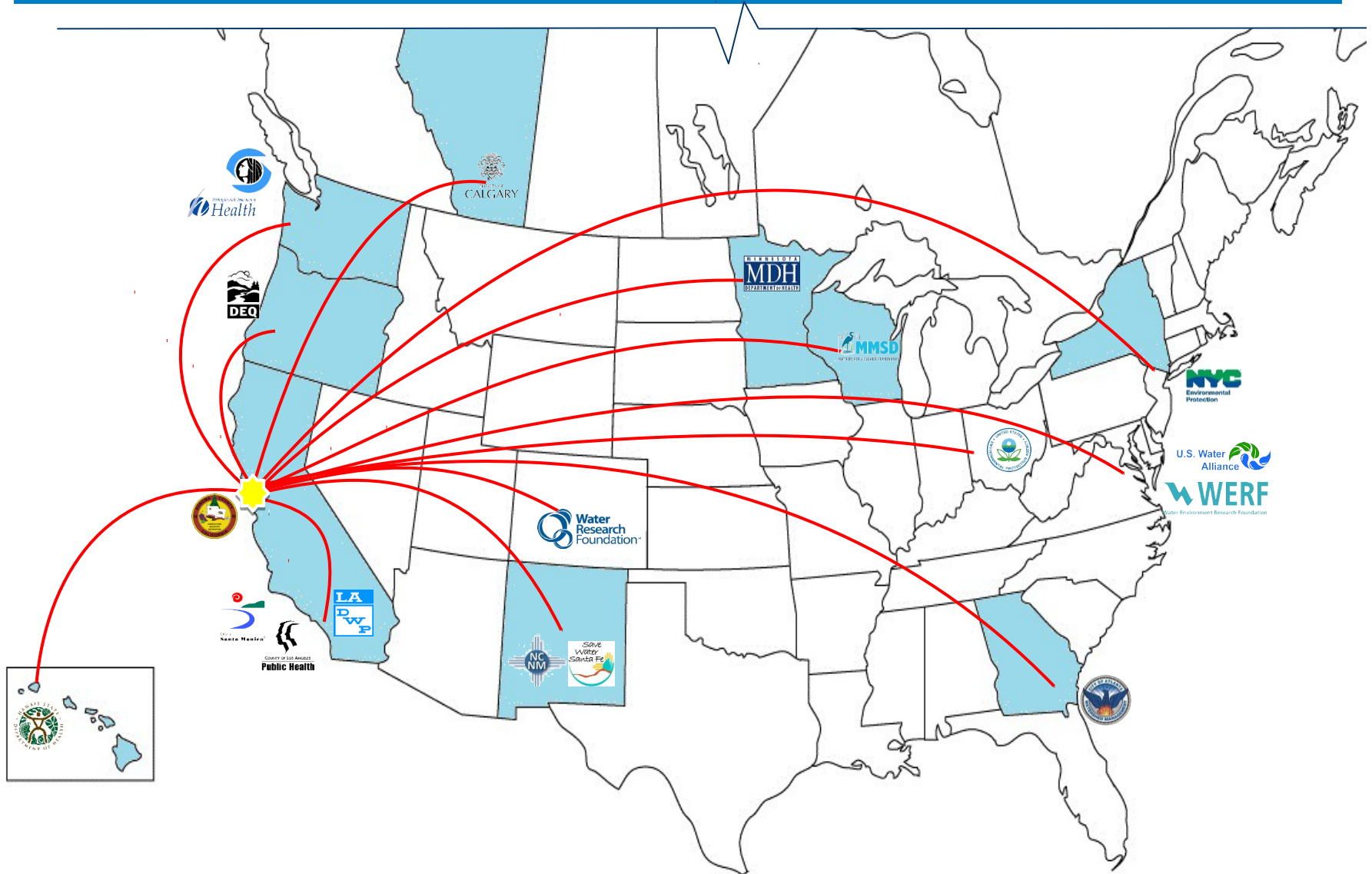
Blackwater Treatment Systems

- \$400,000 - \$2.3 M
(5,000 gpd- 50,000gpd)

ROI: 6-15 years



Onsite Water Systems Summit San Francisco May 2014



BLUEPRINT for Onsite Water Systems

A Step-by-Step Guide for Developing a Local Program to Manage Onsite Water Systems





Technical Guidance for Public Health Standards for Onsite Water Systems



Develop Key Recommendations for Commercial and Multi-family Buildings:

- Water quality/performance criteria for treated alternate water sources
- End use applications (toilet/urinal flushing, irrigation and clothes washers)
- Monitoring and reporting
- Operational requirements and permitting



Onsite Water Systems Policy for CA

IMAGINE {  } H₂O
WINNER



National Blue Ribbon Commission

- Collaborate with state public health + water utilities
- Develop consistent state policies
- Engage EPA
- Two year effort starting Fall 2016



**US Water
Alliance**



San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

THANK YOU

sfwater.org/np

sfwater.org/np/iuws

