Futuristic Water Quality Management is Happening

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SF Bay Water Board

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Water Quality Management = mostly very good

We are fixing

• Sanitary sewer overflows

• Private laterals
Water Quality Management = mostly good and getting better

We are fixing controllable legacy contamination

- Mercury
- PCBs

Happy Harbor Porpoises in SF Bay
Remaining Pollutant Challenges

Trash

Nutrients?
Cumulative Metals Loadings to Bay from Publicly Owned Treatment Works

50% Reduction!
200 Billion Gallons of Wastewater Generated Annually

Wastewater Discharged (million gallons/year)
- <100
- 100-1000
- 1000-3000
- 3000-7000
- Cen San 25,400
- EBMUD 23,700
- EBDA 21,600
- San Francisco Bayside 25,100
- San Jose/Santa Clara 36,800
9% of Wastewater Recycled Regionwide
9% of Wastewater Recycled Regionwide

36 Water Recycling Treatment Plants
10-40% Recycling

40-100% Recycling

9% of Wastewater Recycled Regionwide

High % in Napa and Sonoma

<1% Recycling

1-10% Recycling

10-40% Recycling

40-100% Recycling
9% of Wastewater Recycled Regionwide

- <1% Recycling
- 1-10% Recycling
- 10-40% Recycling
- 40-100% Recycling
10-40% Recycling

40-100% Recycling

<1% Recycling

1-10% Recycling

9% of Wastewater Recycled Regionwide

Cooling Towers for a Power Plant in Pittsburg

Industrial Uses

5 billion gal/yr

Richmond Advanced Recycling Expansion (RARE)
~ 2 billion/yr
Oro Loma Experimental Horizontal Levee

Can a wedge of gravel, mud and grasses, irrigated by treated wastewater, help San Francisco Bay shorelines and sewage plants adapt to future extremes? Groundbreaking Spring 2015

> 1 billion/yr
3 billion gal/yr now
15 billion in future?

Sunnyvale
4 bgal/yr
Sewer System Improvement Program ($6.9 billion)
Phase I ($2.7 billion)
Urban Watershed Stormwater Management ($400 million)
Sewer System Improvement Program

Phase I ($2.7 billion)

Urban Watershed Stormwater Management ($400 million)

Lake Street Drainage Improvements

Baker Beach

Green Street EIP

Sunset Boulevard

Greenway EIP

Holloway Green Street EIP

Visitacion Valley

Green Nodes EIP

Upper Yosemite Creek Daylighting EIP

Mission & Valencia Green Corridor EIP

Cesar Chavez Green Infrastructure

Chinatown Green Alleys EIP

Wiggle Neighborhood Green Corridor EIP

Van Ness BRT Sewer/Green Infrastructure Improvements
Sewer System Improvement Program ($6.9 billion)

Phase I

Urban Watershed Stormwater Management ($400 million)

- Lake Street Drainage Improvements
- Baker Beach
- Green Street EIP
- Sunset Boulevard Greenway EIP
- Holloway Green Street EIP
- Visitacion Valley Green Nodes EIP
- Upper Yosemite Creek Daylighting EIP
- Mission & Valencia Green Corridor EIP
- Cesar Chavez Green Infrastructure
- Chinatown Green Alleys EIP
- Wiggle Neighborhood Green Corridor EIP
- Van Ness BRT Sewer/Green Infrastructure Improvements
Municipal Regional Urban Runoff Permit

Treat runoff from development projects
≥10,000 ft² of hardscape
≥5000 ft² if auto service, retail gas, restaurants, parking lots

To date > 1000 projects treat ~ 5 sq. miles

1000 sq. miles of Bay Area is urban
Municipal Regional Urban Runoff Permit

Street replacement exempted from treatment requirement

10 green street demonstration projects
MRP 2.0

Green infrastructure plans in lieu of
Lower area for treatment
Remove street exemption

Green infrastructure = path to pollutant load reduction = multibenefit
Bay Bridge Toll Plaza and Approach Area Treatment

> 140 acres
San Pablo Avenue Spine Green Street Project
Oakland Rain Barrel Program

> 400,000 gallons stored
San Jose Flea Market

130 acres

Site includes riparian frontage on Coyote Creek
Berryessa Crossing North Village

53 acres treated

Aerial Photo – North Village Construction
Planned and Future Green Street Sites
Two Things We Can Do

Demand real integrated water resource (watershed) management

Support funding initiatives
Integrated Water Resource Management

- Habitat
- Water Supply
- Water Quality
- Flood
Integrated Water Resource Management

Habitat

Water Supply

Water Quality

Flood

Land Use
Integrated Water Resource Management

- Habitat
- Energy
- Water Supply
- Climate Change
- Flood
- Transportation
- Water Quality
- Public-Private Partners
Integrated Water Resource Management

Funding $$$$$
## Bay Area $$$$  

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
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<tbody>
<tr>
<td>Assessed property value</td>
<td>$1.5 trillion</td>
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<tr>
<td></td>
<td>1% = $15 billion</td>
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<tr>
<td>Bay Area GDP</td>
<td>$540 billion/yr</td>
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<tr>
<td></td>
<td>$75,000 per capita</td>
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<tr>
<td>Wastewater management</td>
<td>$1 billion/yr</td>
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<tr>
<td>Urban runoff management</td>
<td>&lt; $100 million/yr</td>
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Welcome to the Future