



San Francisco
Water Power Sewer



Sewer System Improvement Program

Wastewater System Overview

July 10, 2013
Mayors Water Council

George Engel
Operations Superintendent
Karen Kubick
Sewer System Improvement Program Director

San Francisco Public Utilities Commission

Water



Hetch Hetchy Reservoir

Power



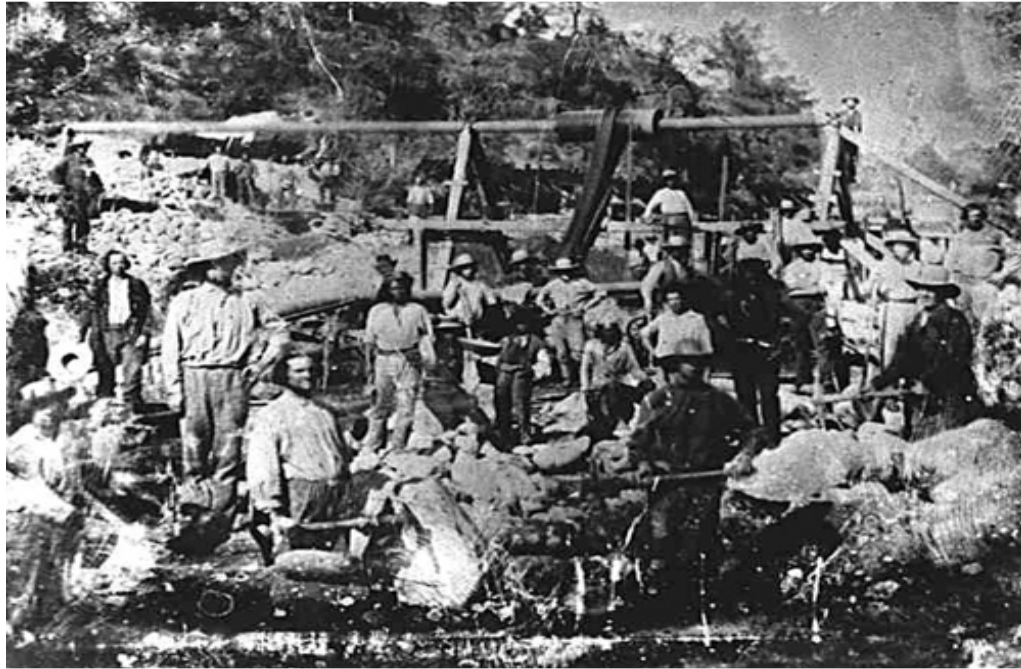
Solar Panels at Sunset Reservoir

Sewer



Oceanside Treatment Plant

Brick Sewers Built During the Gold Rush





Sewer
Construction
Began

1800's



Richmond-
Sunset
Treatment
Plant

1930

1938

1951

1952

Southeast
Treatment
Plant

1982



Oceanside
Treatment
Plant

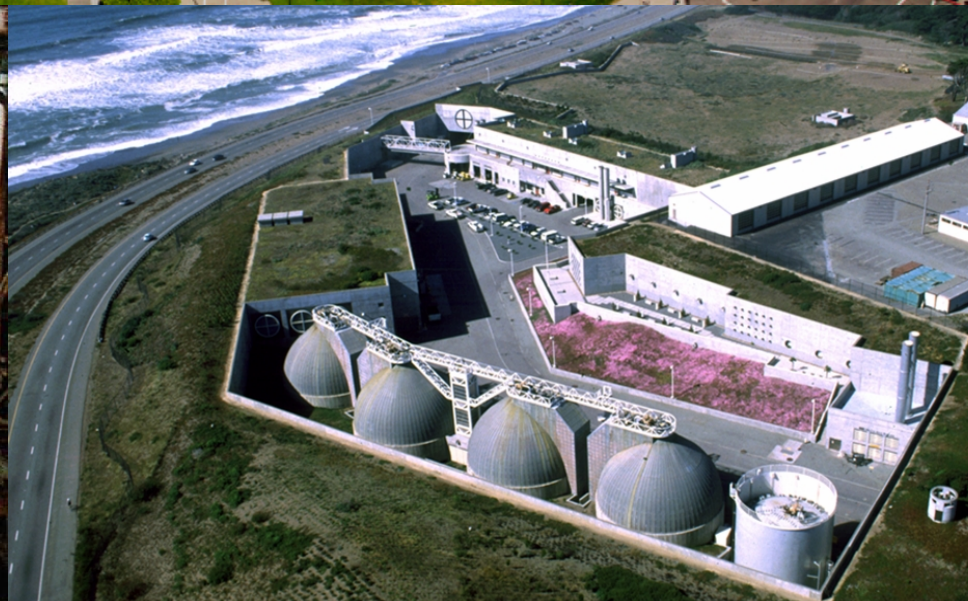
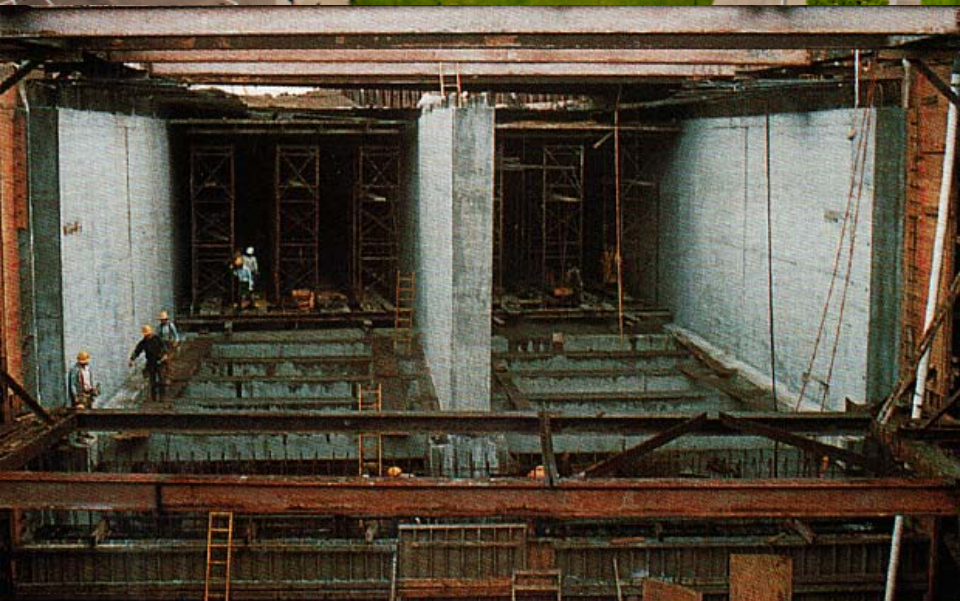
1993

McQueen
Treatment
Plant

North Point
Wet Weather
Facility

Southeast
Treatment Plant
Upgraded to
Secondary





1972 – Federal Clean Water Act

Our Combined Sewer System



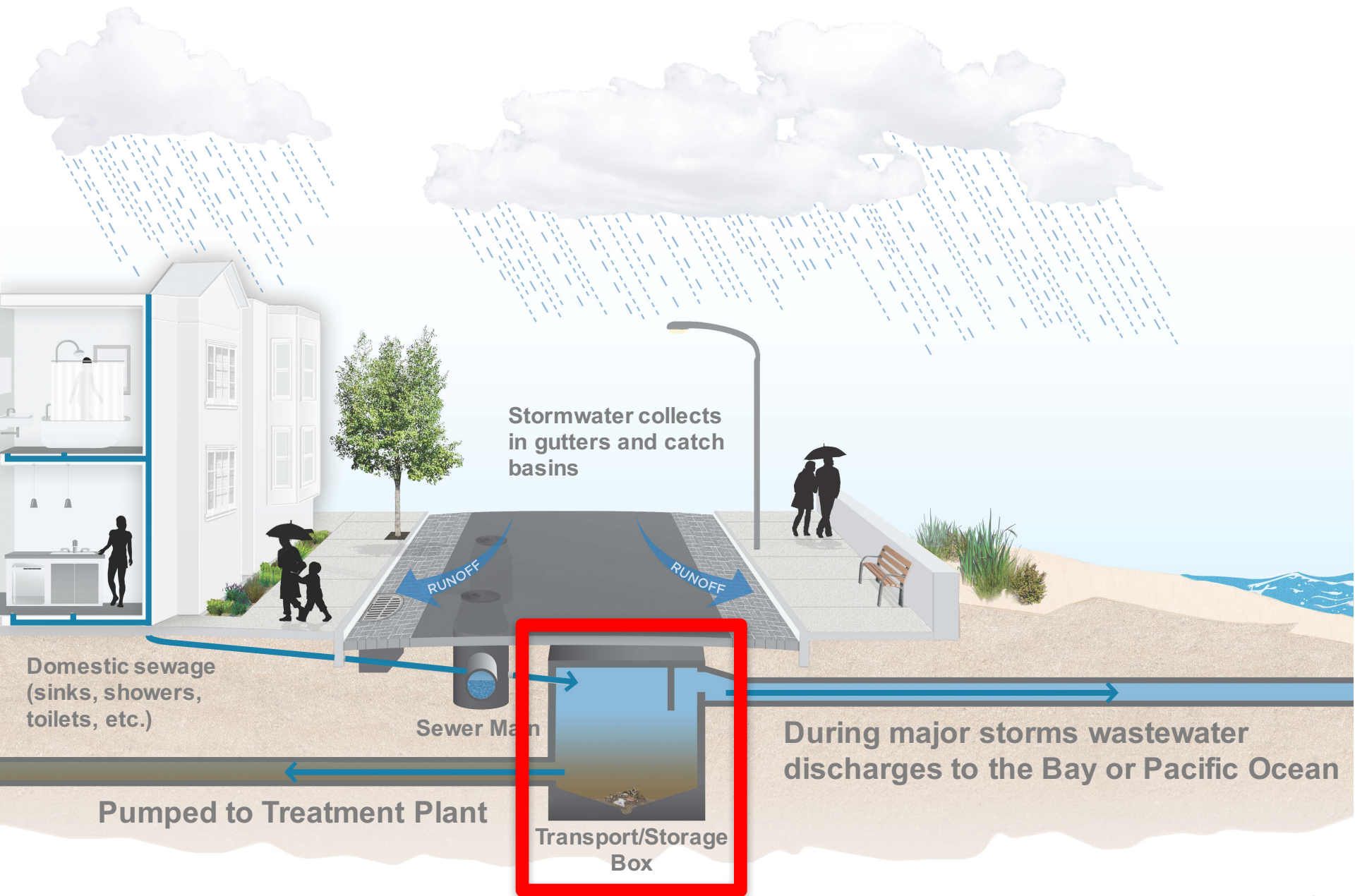
100-year-old system: 1,000 miles of pipes, 3 treatment plants and 27 pump stations

Treatment Capacity

- Average day without rain:
80 MGD
- Maximum wet-weather
treatment capacity: **583
MGD + 197 million gallons
of storage**

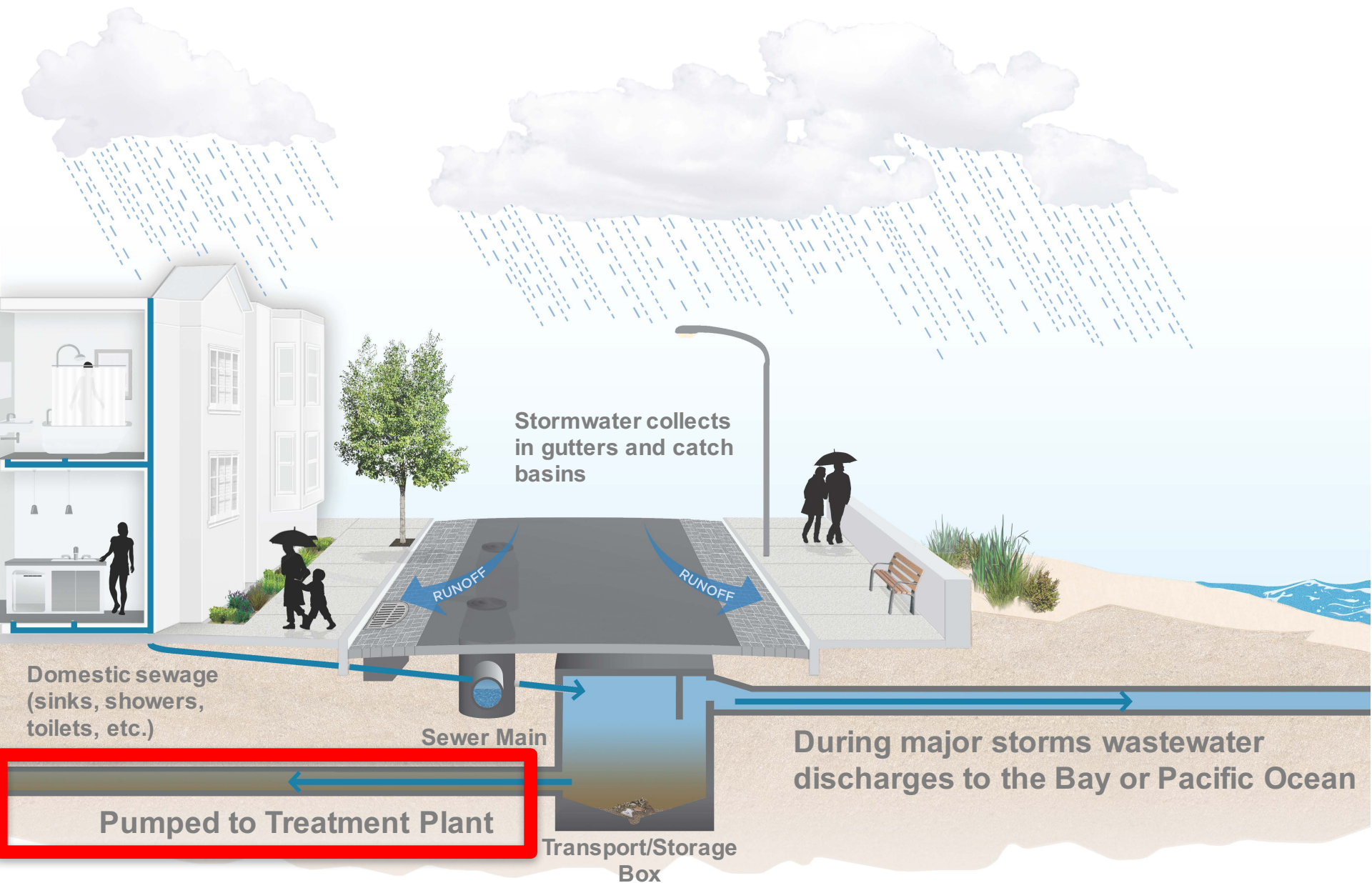


Clarifier at Southeast Treatment Plant



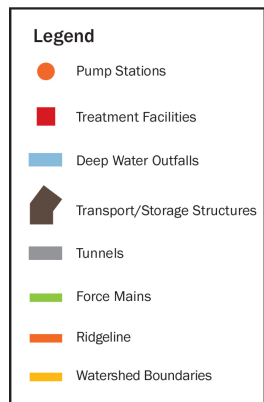


Westside Transport/Storage Boxes





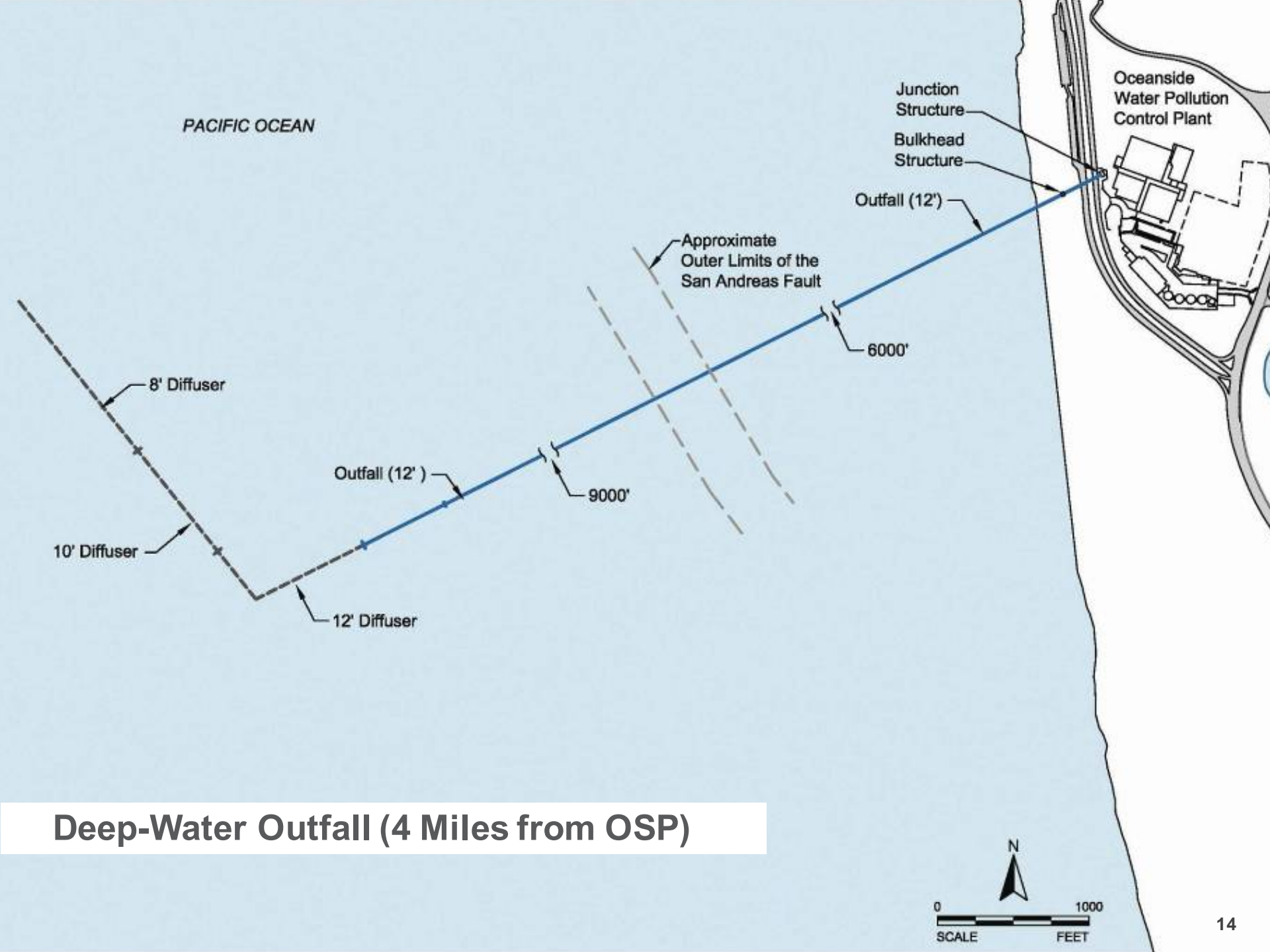
Sunnydale Pump Station



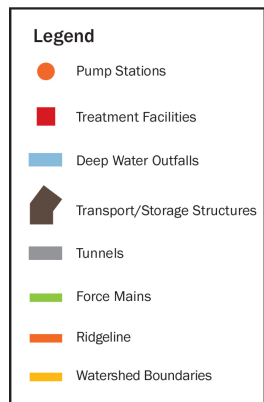
100-year-old system: 1,000 miles of pipes, 3 treatment plants and 27 pump stations



Oceanside Treatment Plant



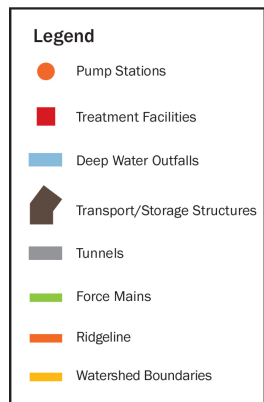
Deep-Water Outfall (4 Miles from OSP)



100-year-old system: 1,000 miles of pipes, 3 treatment plants and 27 pump stations



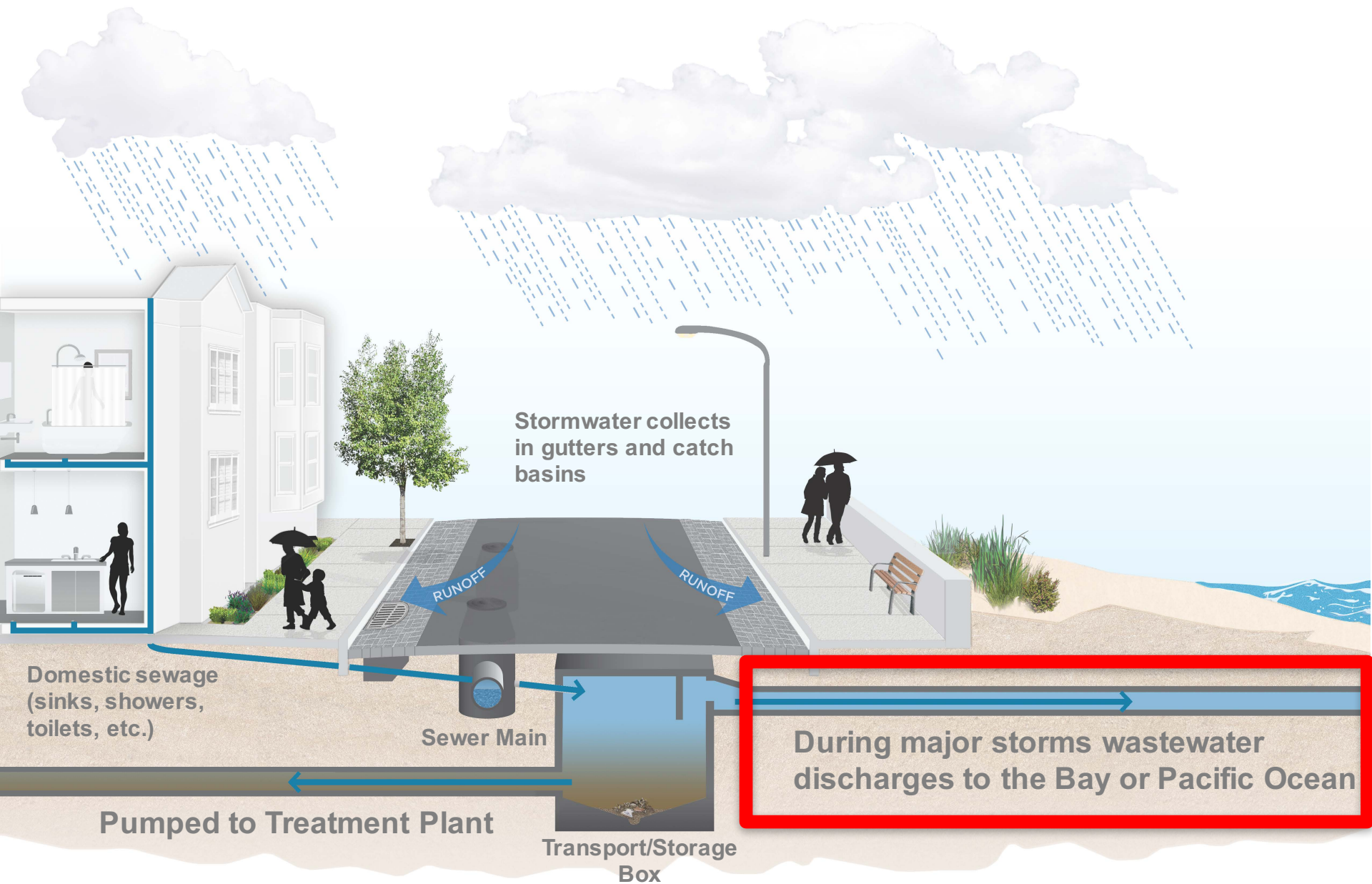
North Point Wet-Weather Facility

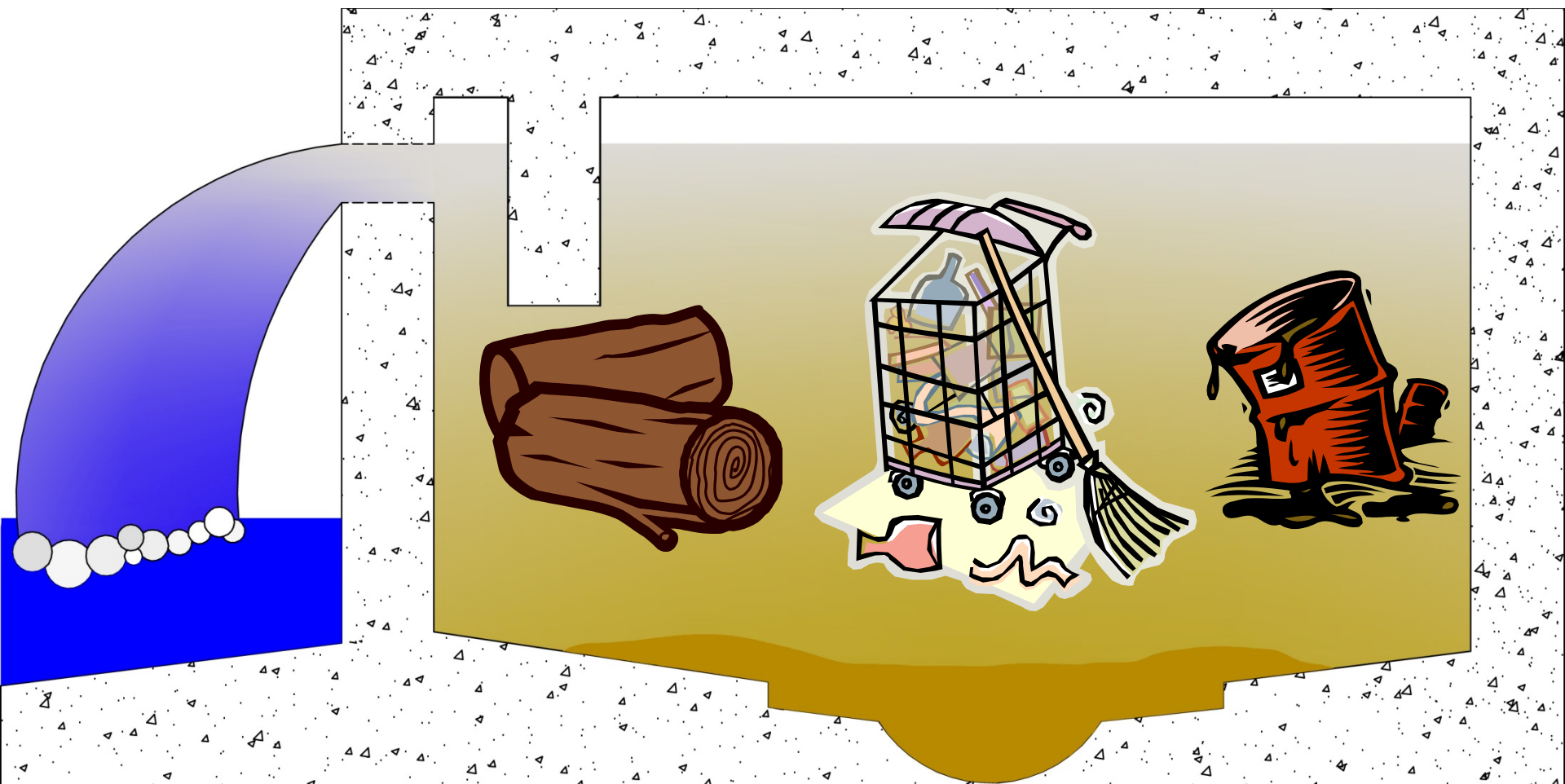


100-year-old system: 1,000 miles of pipes, 3 treatment plants and 27 pump stations



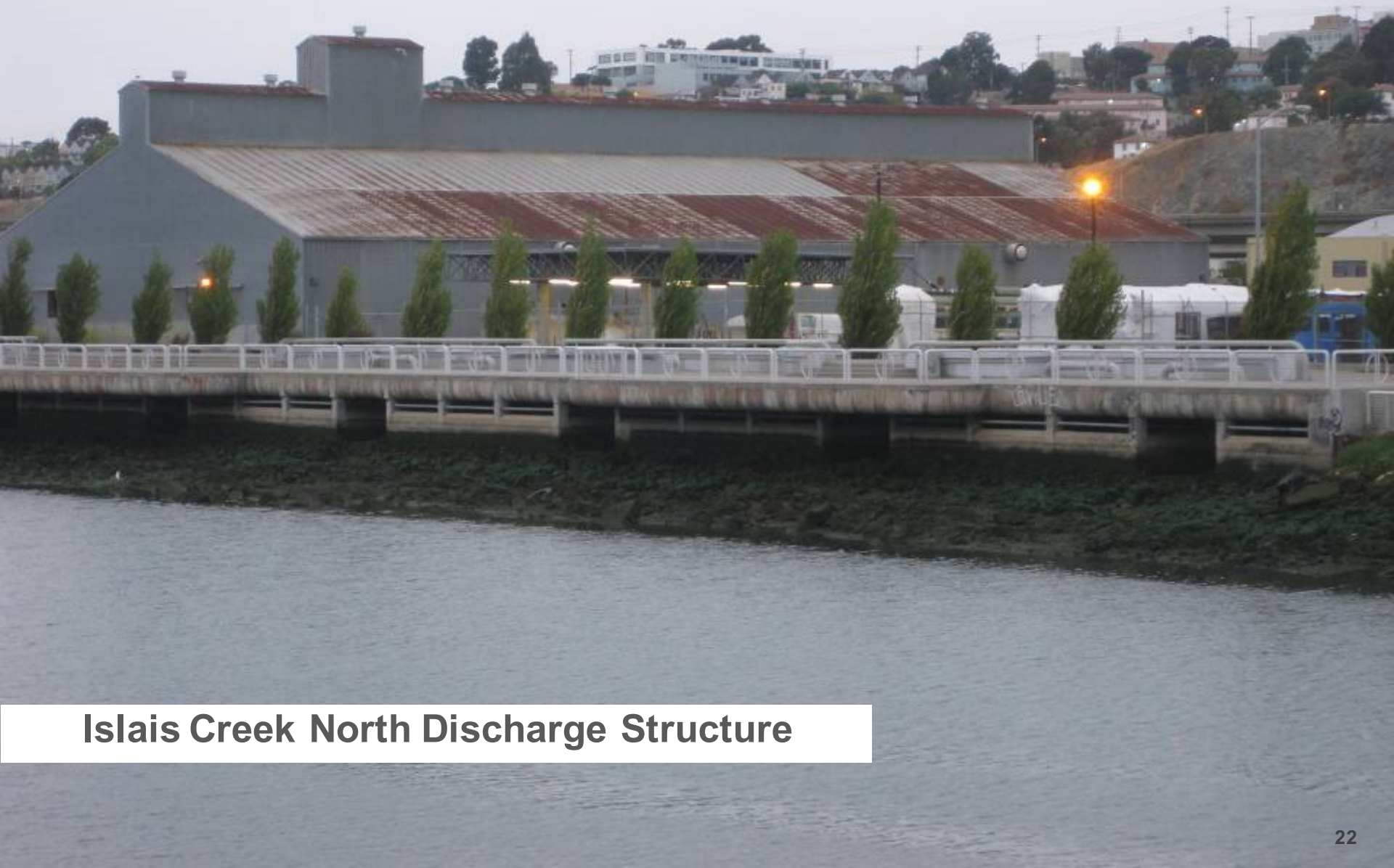
Southeast Treatment Plant







Combined Sewer Discharge Points



Islais Creek North Discharge Structure

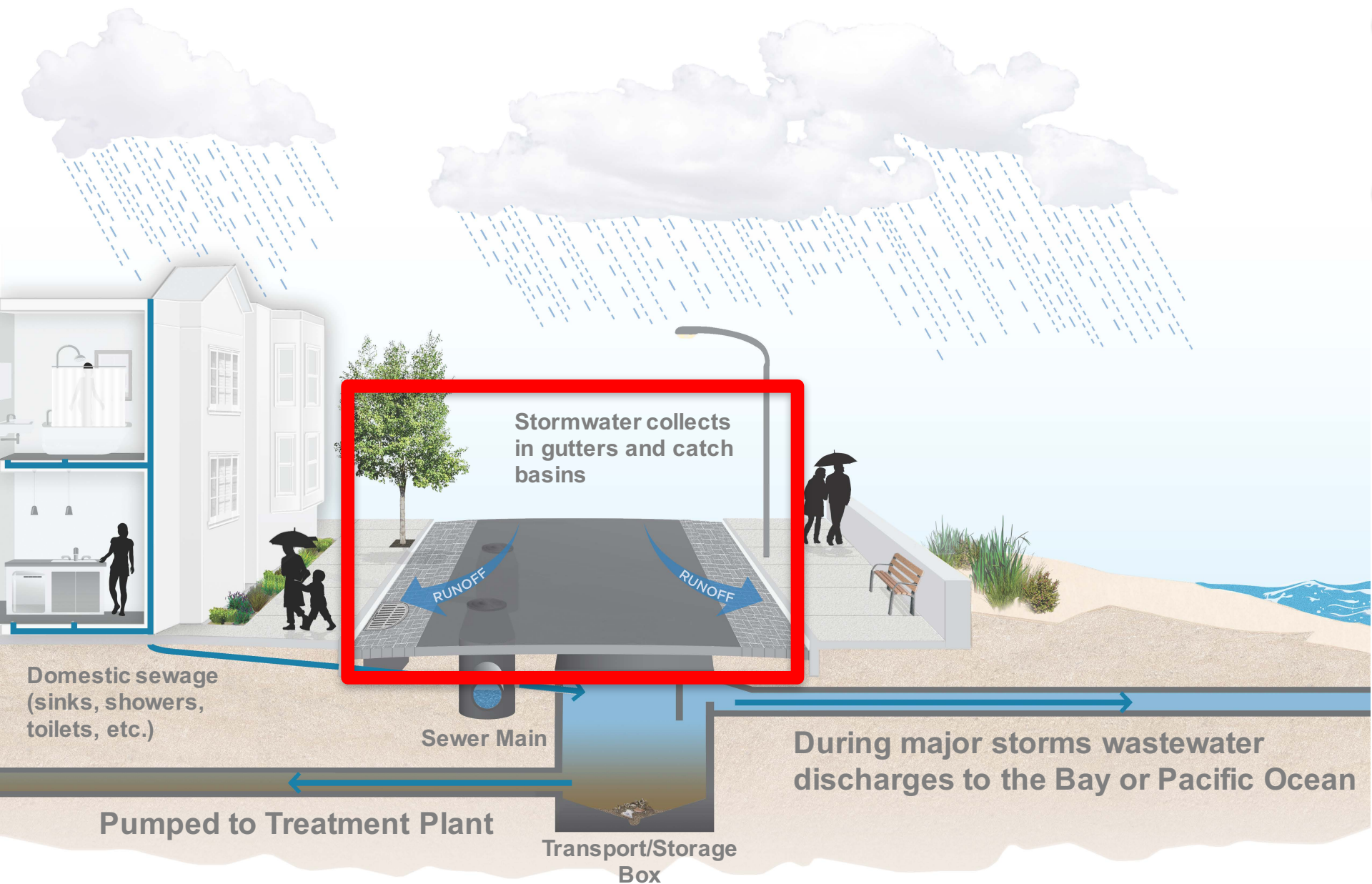




Example of Rising Sea Level



Effects of Climate Change: King Tide at the Embarcadero December 2012





0 Minutes into Treatment Process



5 Minutes into Treatment Process



10 Minutes into Treatment Process



15 Minutes into Treatment Process



20 Minutes into Treatment Process



25 Minutes into Treatment Process



30 Minutes into Treatment Process



120 Minutes into Treatment Process



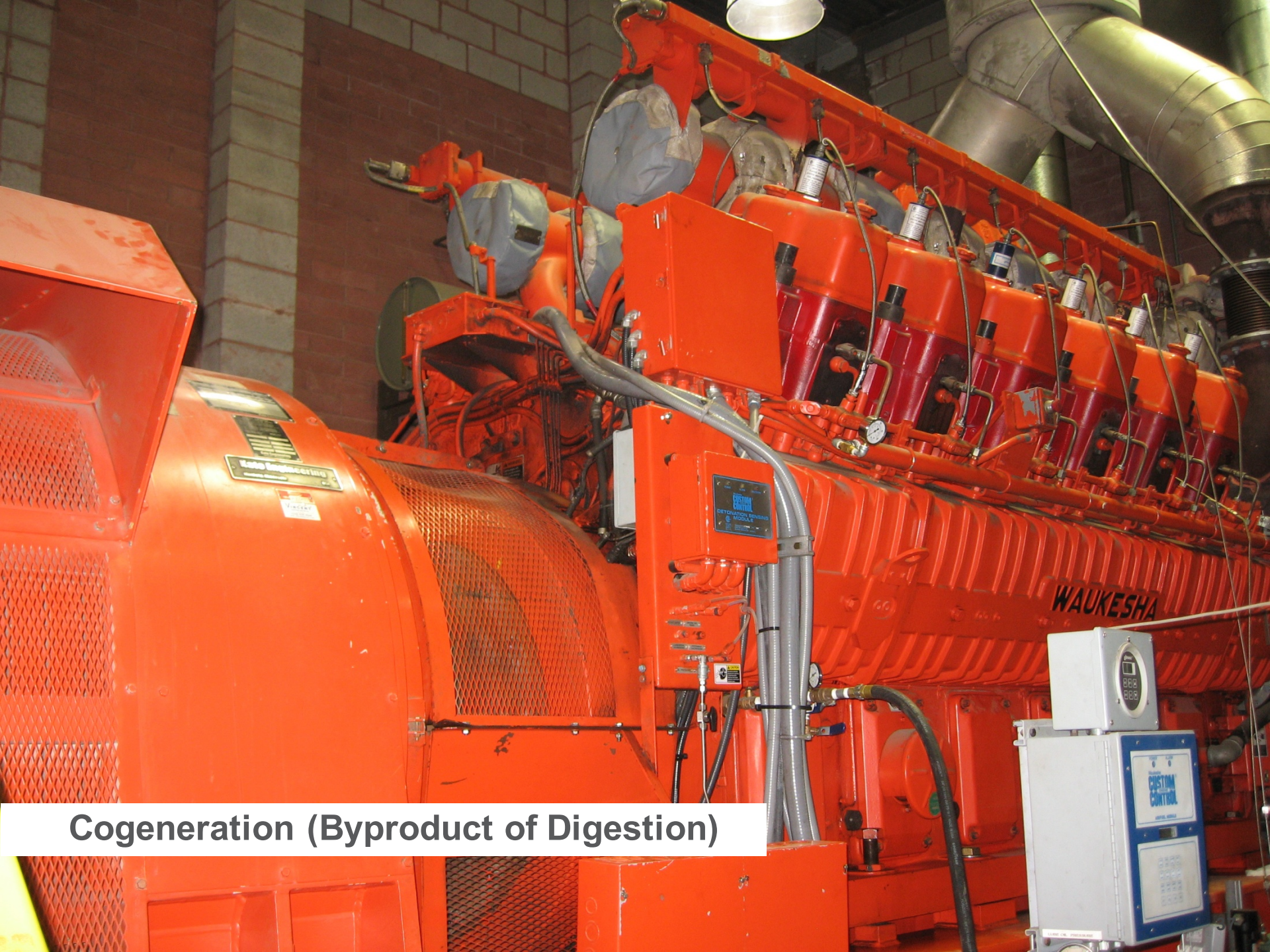
Biosolids (Byproduct of Digestion)

Biosolids for Beneficial Reuse



Biosolids used for land application and non-food crops





Cogeneration (Byproduct of Digestion)



Southeast Plant - a Work-Horse for the City is Vulnerable to Failure



Our Sewer System is Aging and Failing: Waller St. at Divisadero St.



May 6, 2013: Sinkhole Lake St. at 2nd Ave.

Sewer System Improvement Program (SSIP)

Grey

Green

Clean



SYSTEM & SEISMIC
RELIABILITY & REDUNDANCY



INNOVATIVE STORMWATER
MANAGEMENT SOLUTIONS



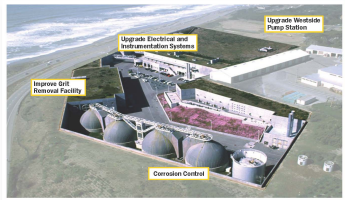
PROTECTING PUBLIC HEALTH
& THE ENVIRONMENT

Sewer System Improvement Program: Phase 1 Projects \$2.7B

Citywide Collection System Projects

- Advanced Rainfall Prediction
- Collection System Interceptors and Odor Control
- Pump Station Upgrades and Force Main Improvements
- Combined Sewer Discharge Structure (CSD) Improvements

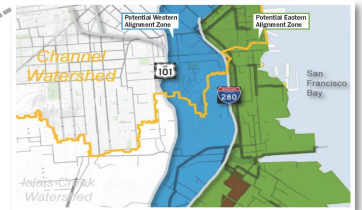
Oceanside Treatment Plant Upgrades



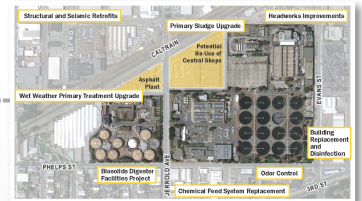
North Point Wet Weather Facility Upgrades



Central Bayside System Improvement Project



Southeast Treatment Plant Upgrades



WESTSIDE

BAYSIDE



LEGEND

(map not to scale)

- | | | | | |
|---|--|---|--|--|
| ■ Treatment Facilities | ● Major Pump Stations | ■ Transport/Storage Structures | — Tunnels | — Major Force Mains |
| — Ridgeline | — Watershed Boundaries | — Deep Water Outfalls | ● Green Infrastructure Projects | |

ACRONYMS

- BFS Bruce Flynn Pump Station
CHS Channel Pump Station

- GFS Griffith Pump Station
MPS Marinella Pump Station
NPO North Point Bay Outfalls
NSS North Shore Pump Station

- SDS Sunnydale Pump Station
SEO Southeast Bay Outfall
SWOO Southwest Ocean Outfall
WSS Westside Pump Station

Southeast Treatment Plant Upgrades \$1,750M



Structural and Seismic Retrofits

Headworks Improvements

Primary Sludge Upgrade

Potential
Re-Use of
Central Shops

Asphalt
Plant

Wet Weather Primary Treatment Upgrade

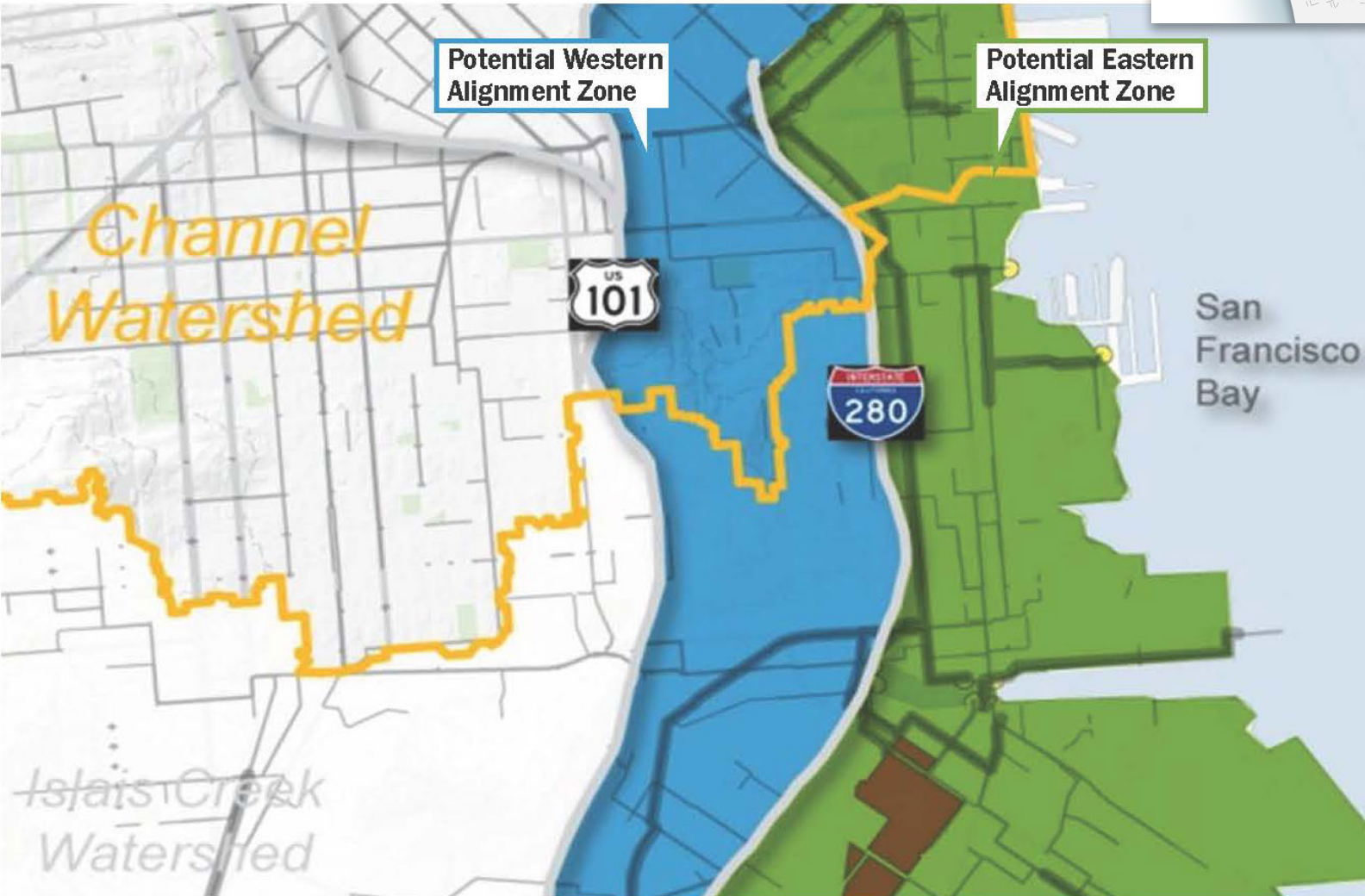
Building
Replacement
and
Disinfection

Biosolids Digester
Facilities Project

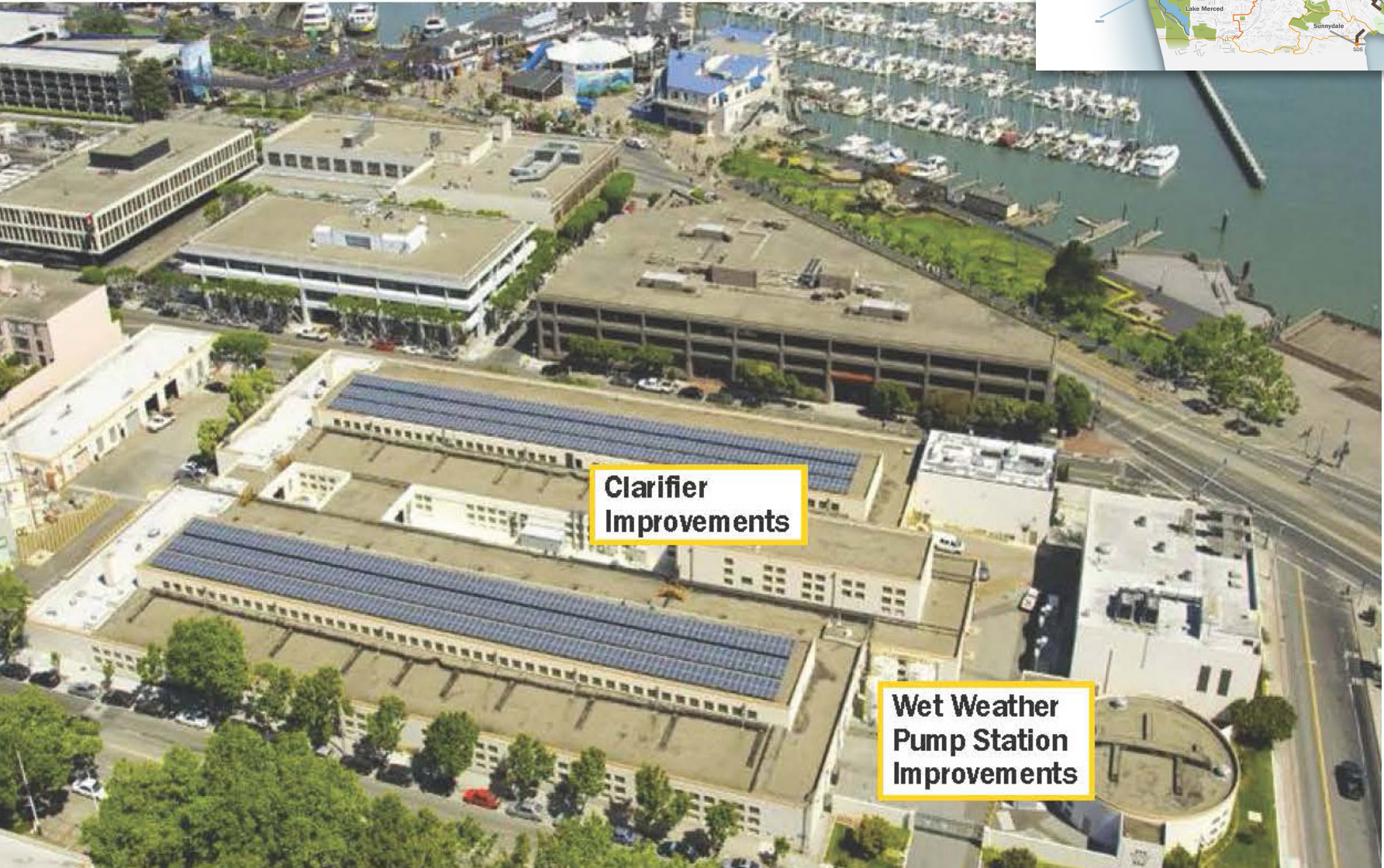
Odor Control

Chemical Feed System Replacement

Central Bayside System Improvement Project \$70M



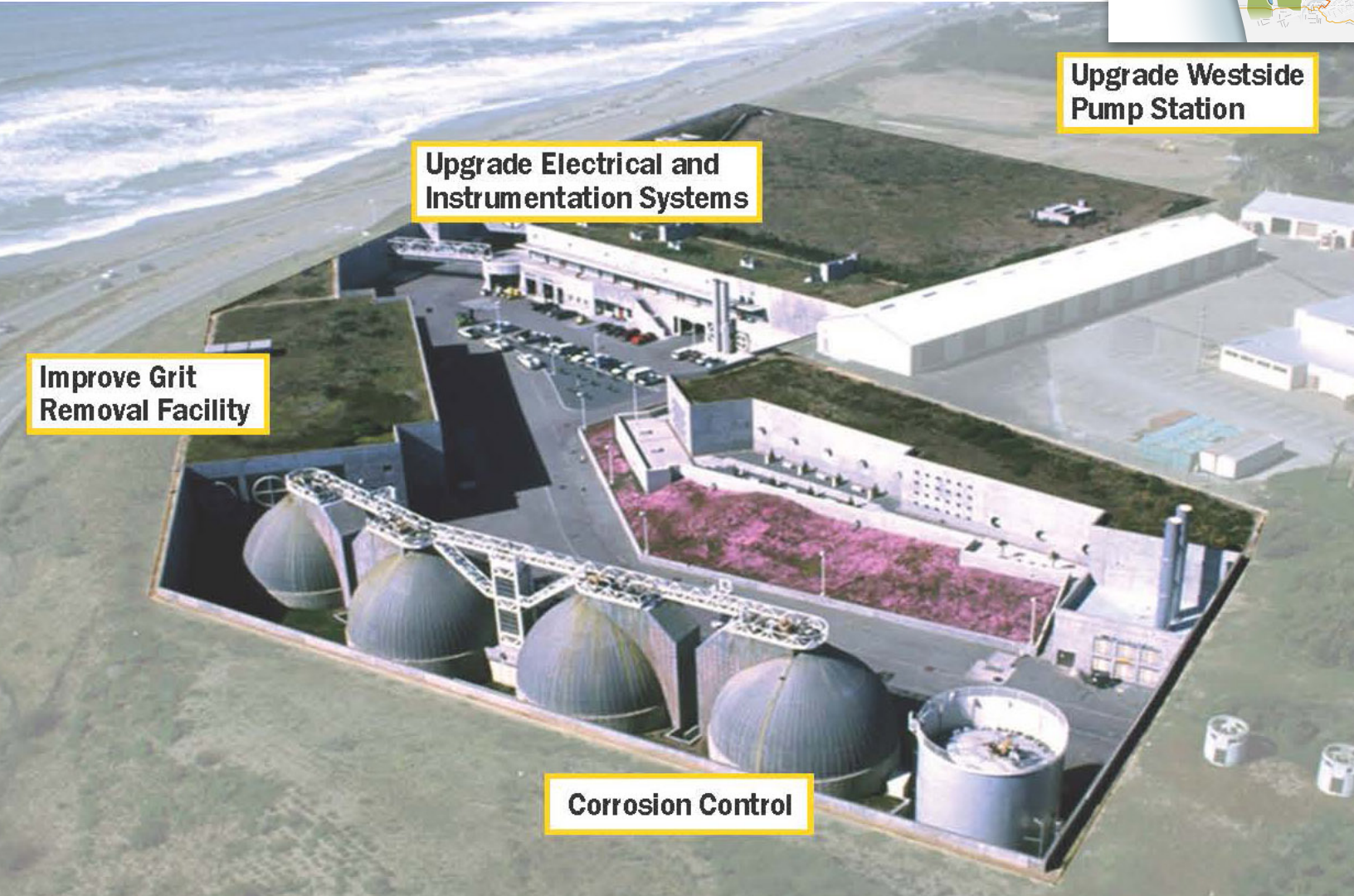
North Point Wet Weather Facility Upgrades **\$113M**



**Clarifier
Improvements**

**Wet Weather
Pump Station
Improvements**

Oceanside Treatment Plant Upgrades **\$183M**



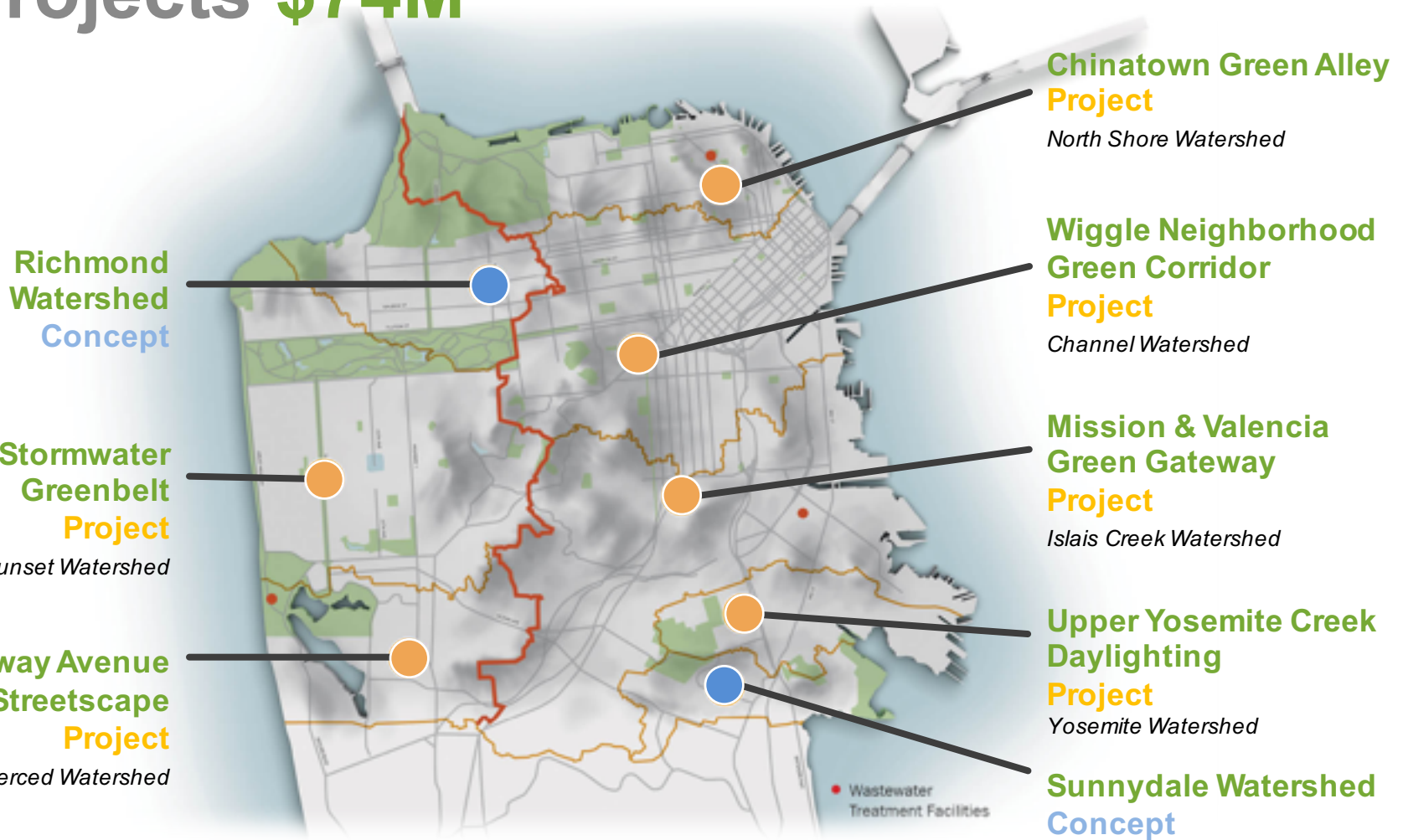
**Upgrade Electrical and
Instrumentation Systems**

**Upgrade Westside
Pump Station**

**Improve Grit
Removal Facility**

Corrosion Control

Green Infrastructure Projects \$74M



17th & Folsom Wet Weather Storage Citywide Planning



TODAY: Mission & Valencia Streets



FUTURE: Mission & Valencia Green Gateway Concept

Community Outreach



iPad Surveys



Walking Plant Tours

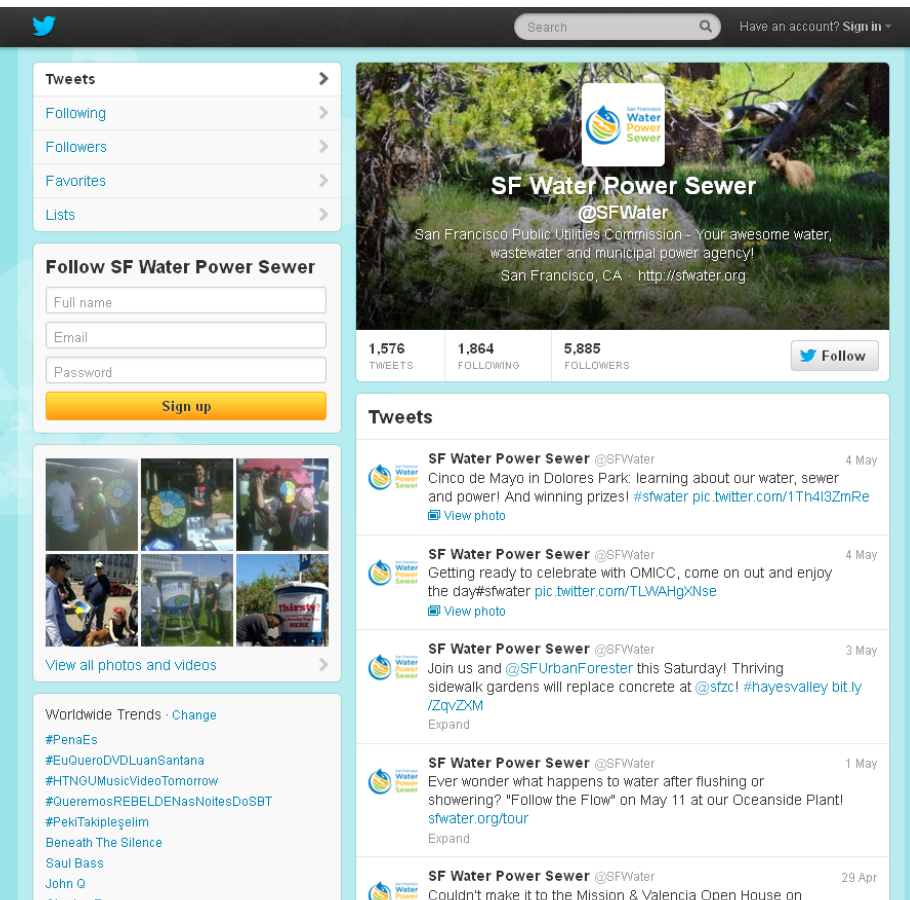


Public Events Education



Bike Tours

Community Outreach



The image shows the Twitter profile page for SF Water Power Sewer (@SFWater). The header includes the Twitter logo, a search bar, and a link to sign in. The profile banner features a photo of a park with the text "SF Water Power Sewer @SFWater" and "San Francisco Public Utilities Commission - Your awesome water, wastewater and municipal power agency! San Francisco, CA - http://sfwater.org". Below the banner, statistics show 1,576 tweets, 1,864 following, and 5,885 followers. A "Follow" button is present. The "Tweets" section displays four recent tweets from May 1-4, 2013, including announcements about Cinco de Mayo events, OMICC celebrations, and a sidewalk garden project. A sidebar on the left contains navigation links (Tweets, Following, Followers, Favorites, Lists) and a "Follow SF Water Power Sewer" section with fields for name, email, and password, and a "Sign up" button. At the bottom, there are "Worldwide Trends" and a list of related hashtags and accounts.

Twitter



The image shows the Facebook profile page for SF Water, Power, Sewer (SFPUC). The header includes the Facebook logo, login fields for email/phone and password, and a "Log In" button. The profile banner features a photo of a park with the text "SF Water, Power, Sewer (SFPUC) is on Facebook." and "To connect with SF Water, Power, Sewer (SFPUC), sign up for Facebook today." Below the banner, statistics show 4,106 likes and 82 talking about this. The "About" section describes the organization as the San Francisco Public Utilities Commission. The "Photos" section shows a photo of a sidewalk garden. The "Highlights" section shows a post from 18 hours ago about the Sunol Valley area. The "Recent Posts by Others on SF Water, Power, Sewer (SFPUC)" section shows three posts from other users.

Facebook

Community Outreach

Mission and Valencia Green Gateway

Progress:



Compare Yourself



Project Overview: Help us plan the Mission & Valencia Green Gateway!

INTRODUCTION



Photo Credit: Isaac Hepworth / twitter @isaach

The San Francisco Public Utilities Commission (SFPUC) invites you to help us plan and design a new stormwater management project in the Mission District. The Mission & Valencia Green Gateway builds off the exciting concept introduced by the community and the SF Planning Department in the Mission District Streetscape Plan. We now need your help to bring this project to life!

En Español

Click here to begin

The Mission & Valencia Green Gateway is one of eight green infrastructure projects that the SFPUC will construct, monitor and evaluate as part of the Sewer System Improvement Program. Located along Valencia between Cesar Chavez and Mission, this project will feature green infrastructure technologies to naturally capture stormwater before it enters our combined sewer system.



help

2

PRIORITIES

3

SITE IMPROVEMENTS

4

STREET IMAGE

5

STAY INVOLVED

Share

MetroQuest for Green Infrastructure Projects

<http://valencia.metroquest.com/>

THANK YOU.

SSIP@SFWATER.ORG

SFWATER.ORG/SSIP

 @SFWATER

 FACEBOOK.COM/SFWATER

