

Revenue Bond Oversight Committee

Sewer System Improvement Program Update

January 13, 2014

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**Wastewater Enterprise Capital Program Director,
Infrastructure Division**



Agenda

1. Program-wide Status

- Governance
- Schedule
- Levels of Service
- Capital Costs Components

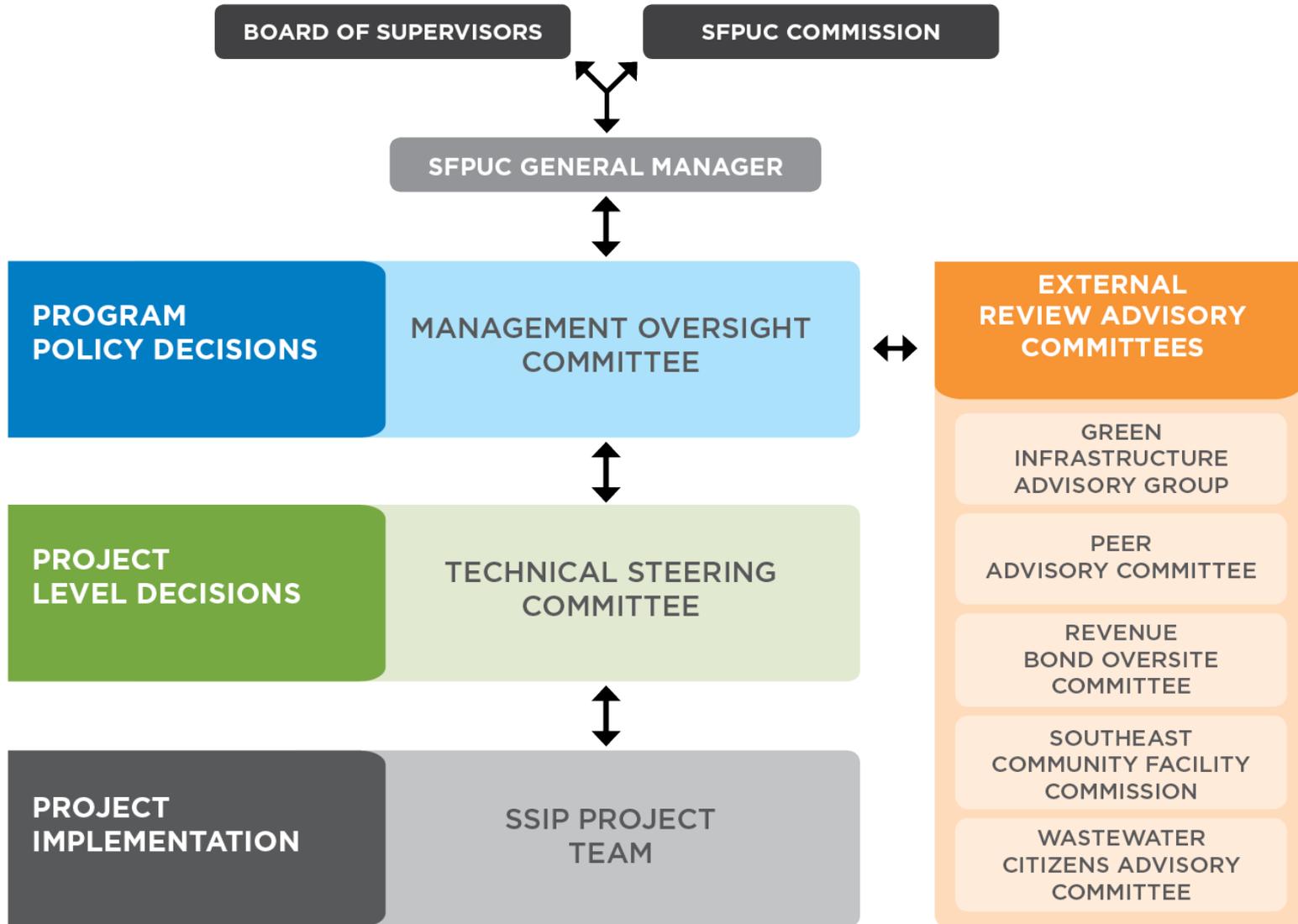
2. Current Construction Projects

3. Planning & Design Projects

4. Early Implementation Projects

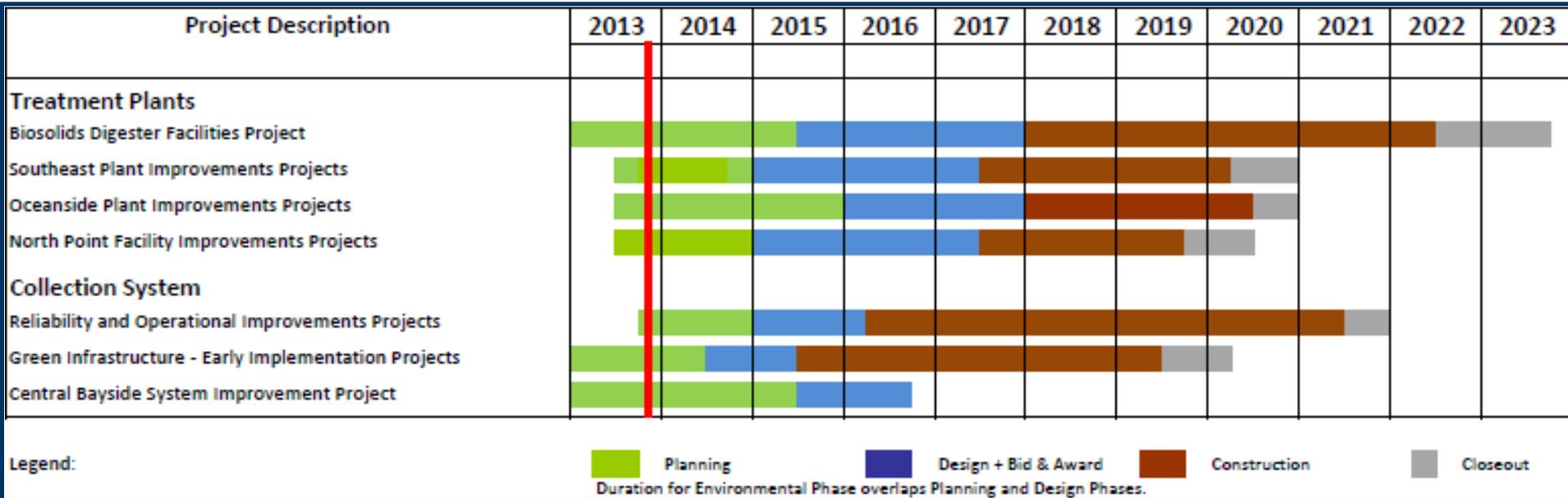
5. Stakeholder Engagement

Program-wide Status: Governance Committees





Program-wide Status: Phase 1 Schedule



Levels of Service Goals

- Provide a Compliant, Reliable, Resilient, & Flexible System that can Respond to Catastrophic Events
- Integrate Green & Grey Infrastructure to Manage Stormwater
- Provide Benefits to Impacted Communities
- Modify the System to Adapt to Climate Change
- Achieve Economic & Environmental Sustainability
- Maintain Ratepayer Affordability

Capital Cost Components

Construction Cost

- 30% Phase contingency
- 10% Change Order Contingency

Project Delivery Costs (Soft Costs)

- 48.15% based on WSIP and other national programs
- 5.25% for Program Management (City and Consultant)

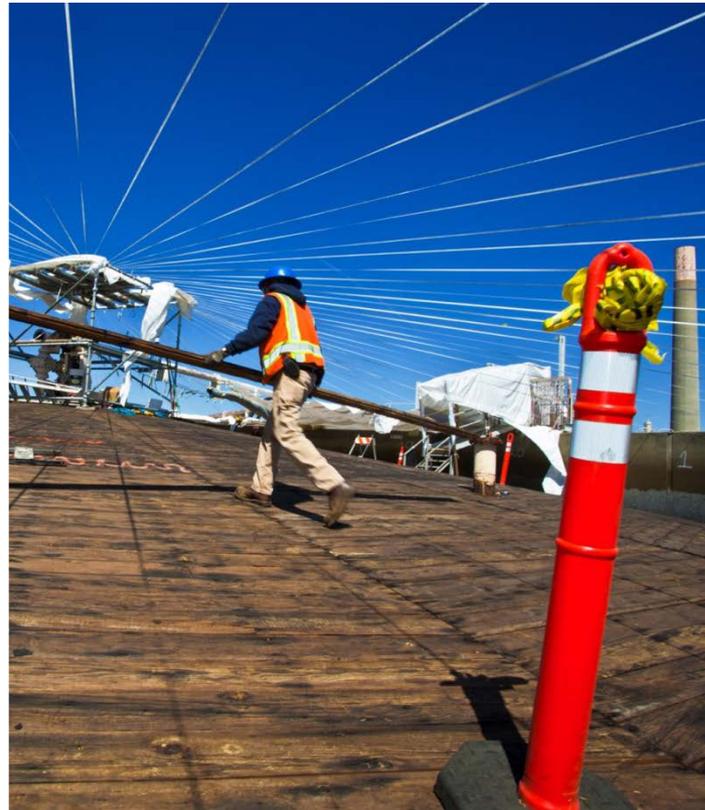
Escalation

- 4% 2013 to 2022
- 5% 2023 to 2032

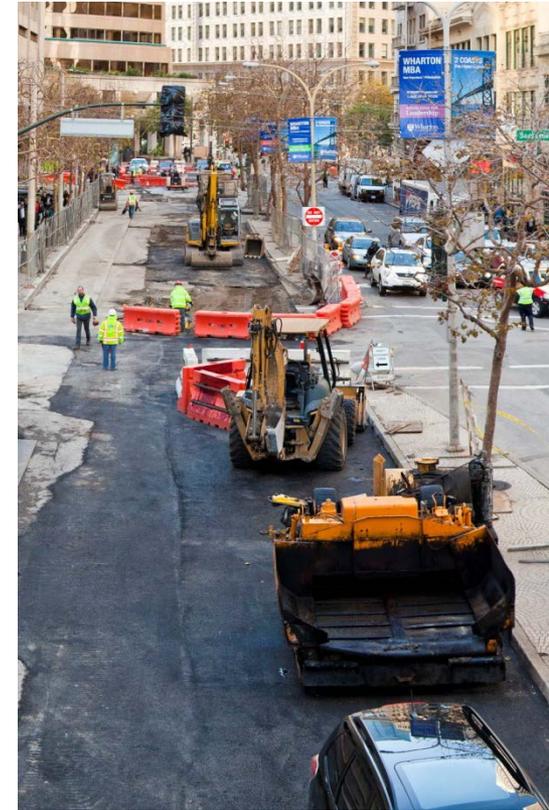
Current Construction Projects



Oxygen Generation
Plant

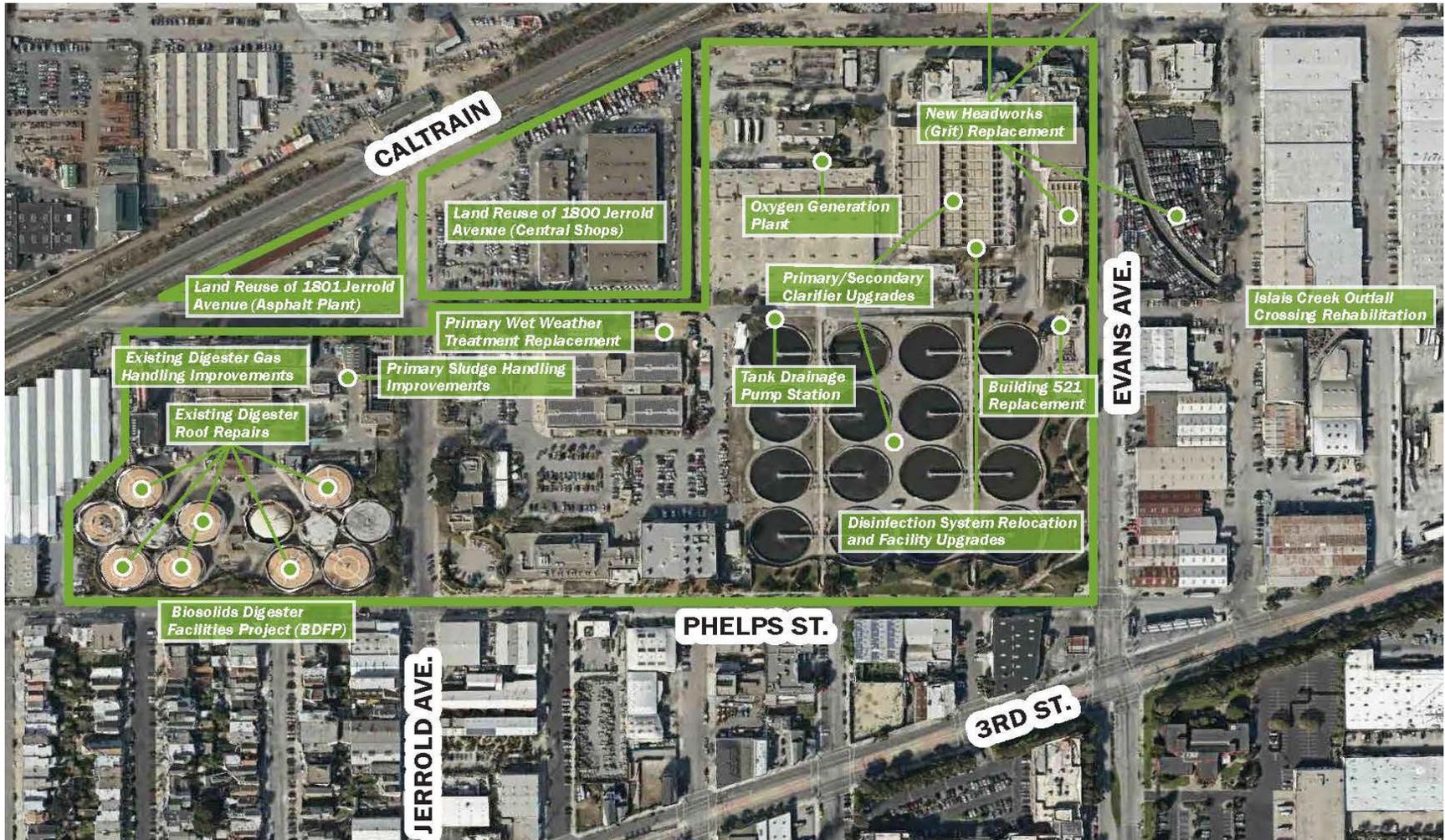


Digester Roof
Repairs



North Shore Force
Main

Planning & Design Projects: Southeast Plant – Phase 1 Projects



Planning & Design Projects: Southeast Plant - Biosolids Digester Facility



JAN '13 – JUN '17

PLANNING/ENVIRONMENTAL

AUG '15 – MAY '18

DESIGN & BID AWARD

JAN '18 – JUN '22

CONSTRUCTION

Planning & Design Projects: Treatment Plants



Oceanside Treatment Plant



North Point Facility

Our Combined Sewer System

Legend

- Pump Stations
- Treatment Facilities
- Deep Water Outfalls
- Transport/Storage Structures
- Tunnels
- Force Mains
- Ridgeline
- Watershed Boundaries

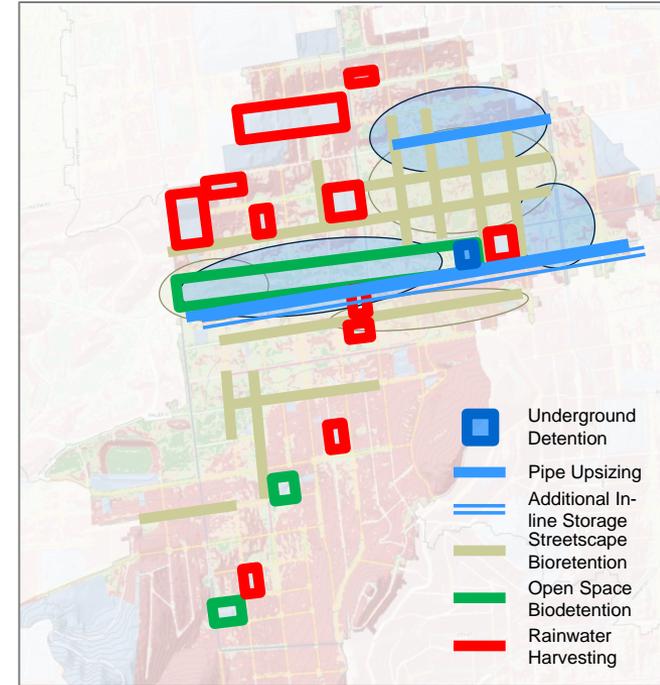
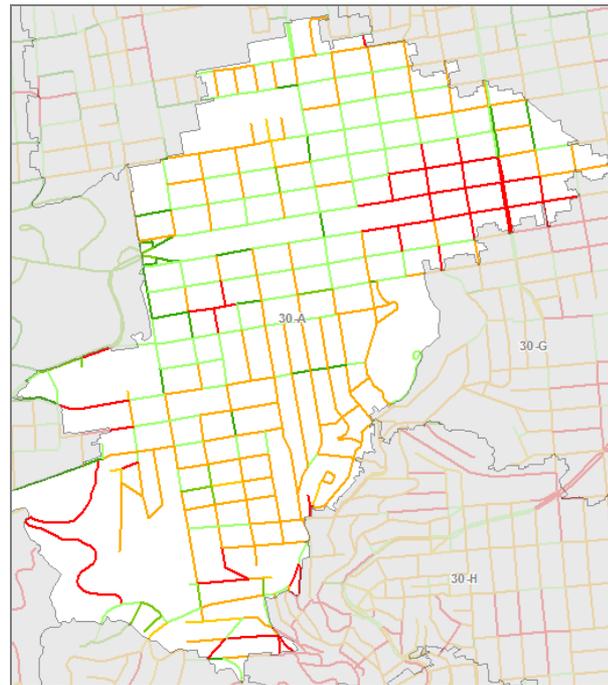
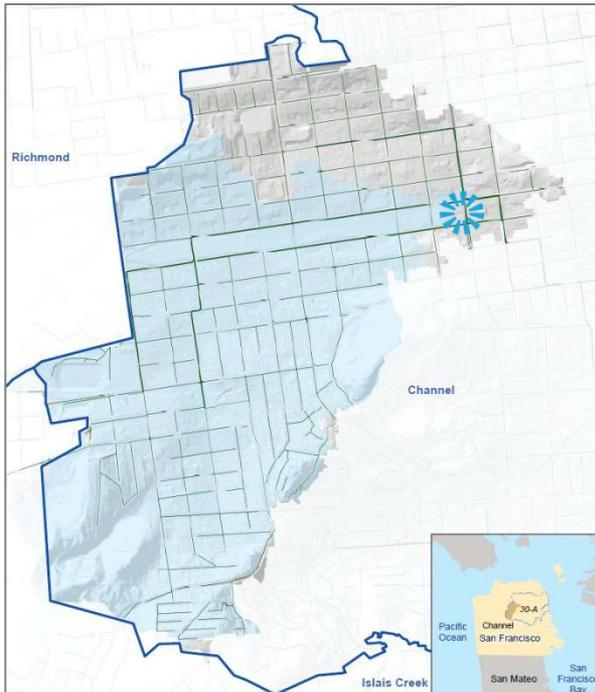


100-year-old system: 1,000 miles of pipes, 3 treatment plants and 27 pump stations

Levels of Service NEEDS

SUITABILITY

CONCEPTS



Planning & Design Projects: Urban Watershed Assessment (UWA)



COMPLETED

- Bayside Watersheds Characterization
- Channel Opportunities Analysis

UPCOMING TECHNICAL WORK *(6 MONTHS)*

- Bayside Project Concepts and Alternatives
- Westside Watersheds Characterization

Planning & Design Projects: Central Bayside System Improvements

Phase I Approved

Budget:

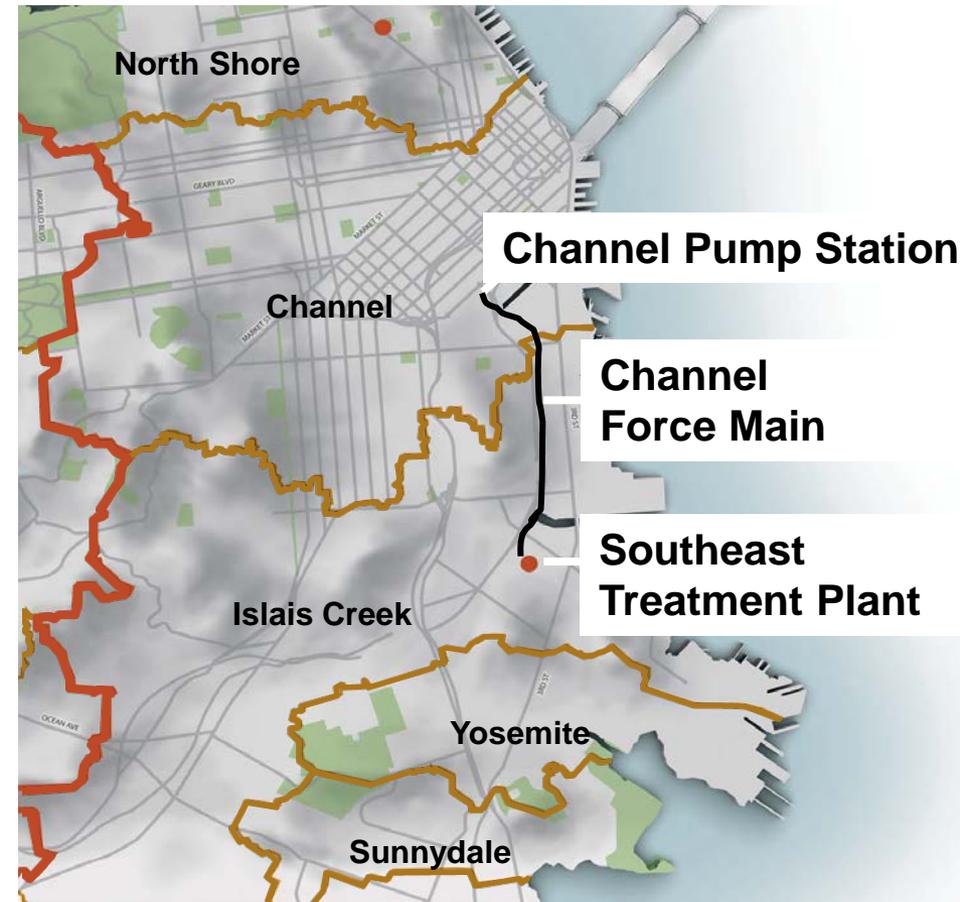
\$70 Million

(Planning & Partial Design)

Highlights:

- Initiated field geotechnical borings
- Completing planning phase needs assessment and alternatives development

Map of the Bayside Watershed



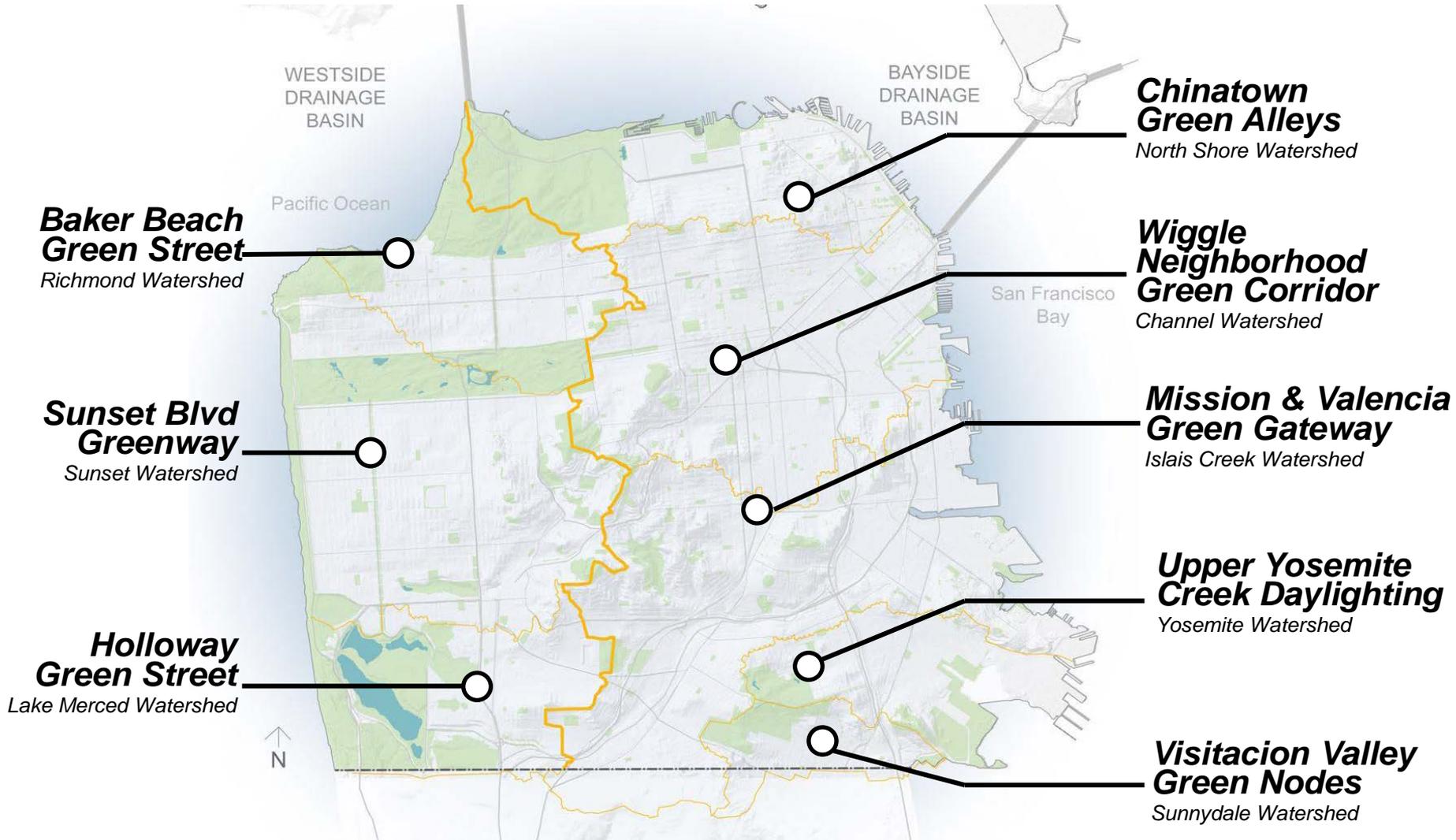
JUL '12 – SEP '16

PLANNING/ENVIRONMENTAL

OCT '15 – SEP '16

DESIGN

Early Implementation Demonstration Projects (EIPs): Project Locations





Early Implementation Demonstration Projects (EIPs): Primary Objectives

1. Demonstrate & Evaluate Performance-Based Technologies
2. Inform Performance and Design Standards
3. Post-Construction Monitoring

Early Implementation Demonstration Projects (EIPs): Triple Bottom Line

Social

- S1 System Resilience
- S2 Ratepayer Affordability
- S3 Bicycle & Pedestrian Environment
- S4 Odors
- S5 Recreation & Open Space Amenities
- S6 Employment
- S7 Cultural Resources
- S8 Noise
- S9 Construction Impacts

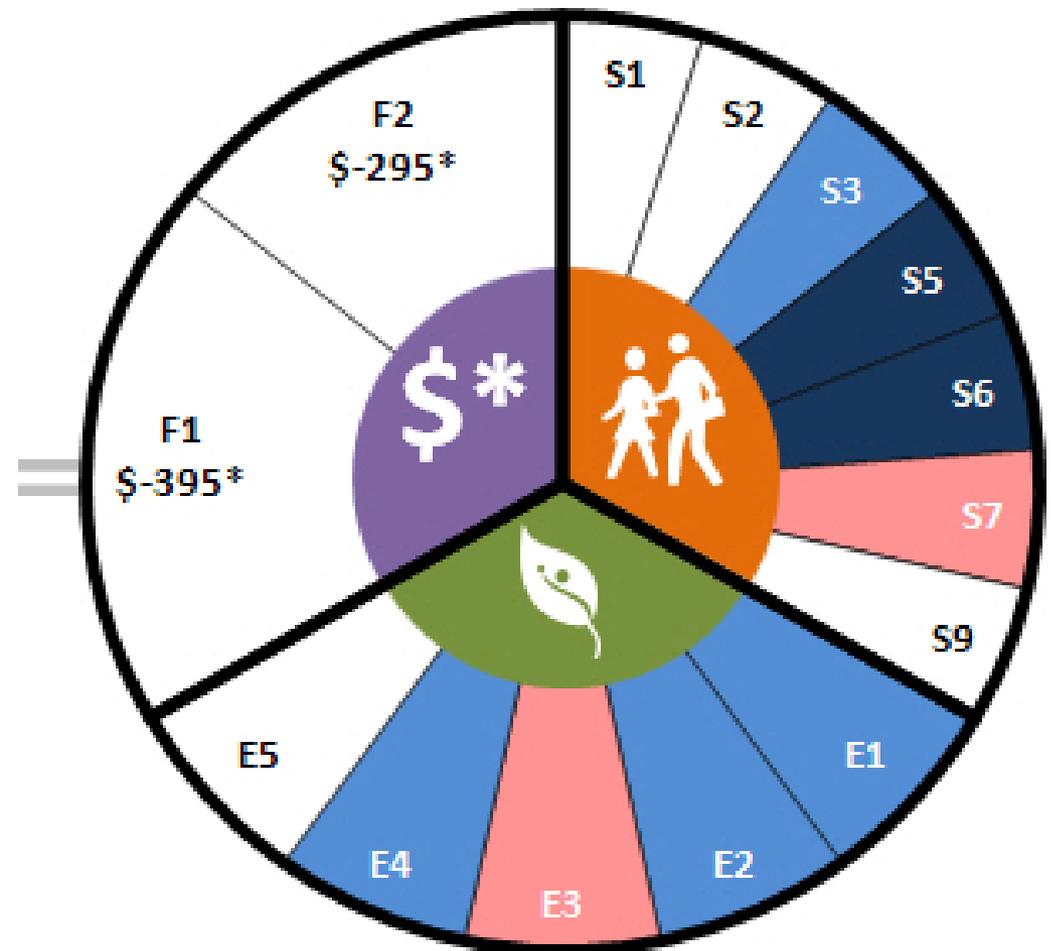
Environmental

- E1 Climate
- E2 Habitat
- E3 Water Use
- E4 Water Quality
- E5 Air Quality
- E6 Natural Resource Inputs

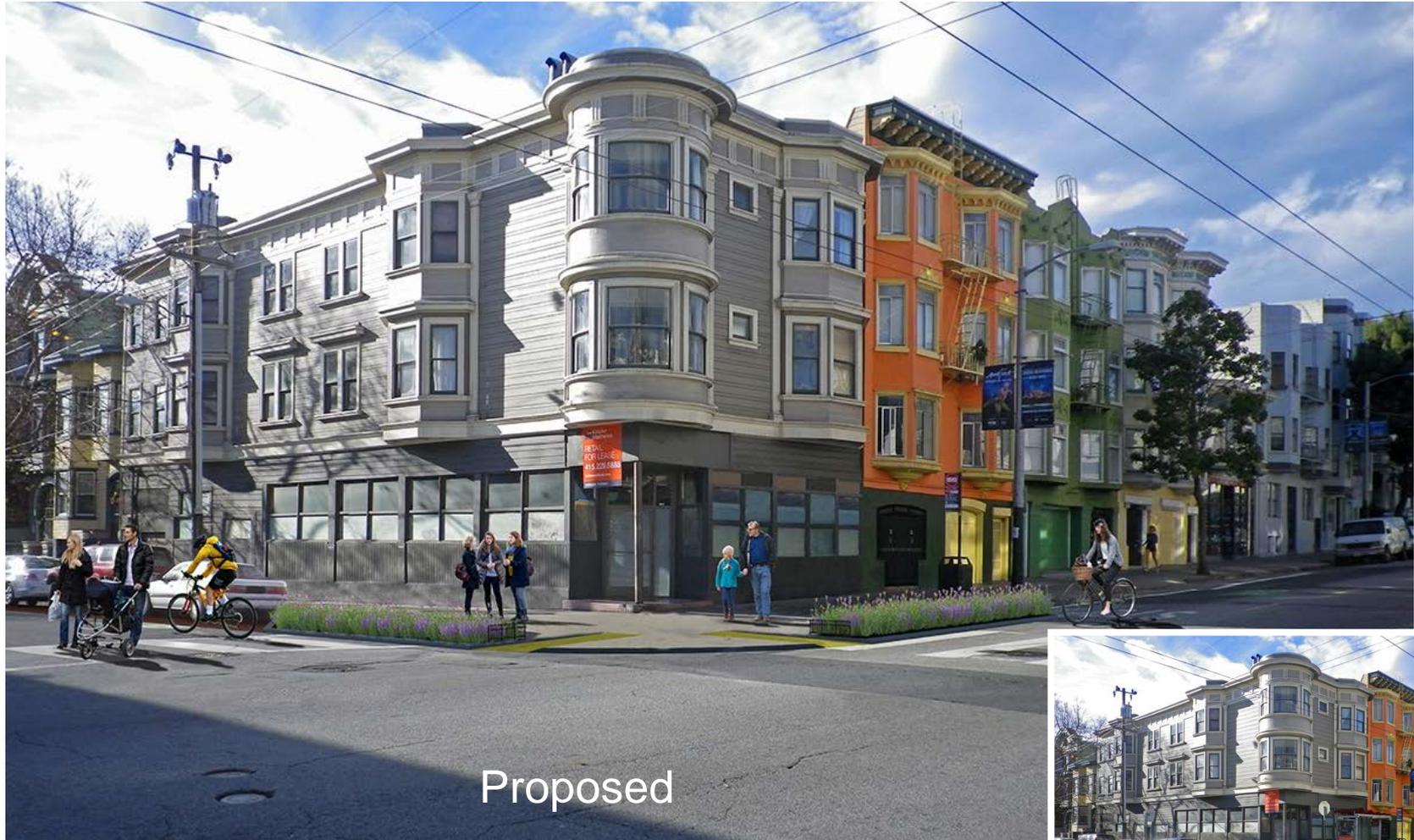
Financial

- F1 Annualized Capital Costs
- F2 Annualized Other Costs

Mission Valencia Green Gateway (Valencia Tiffany and SJ-Duncan)



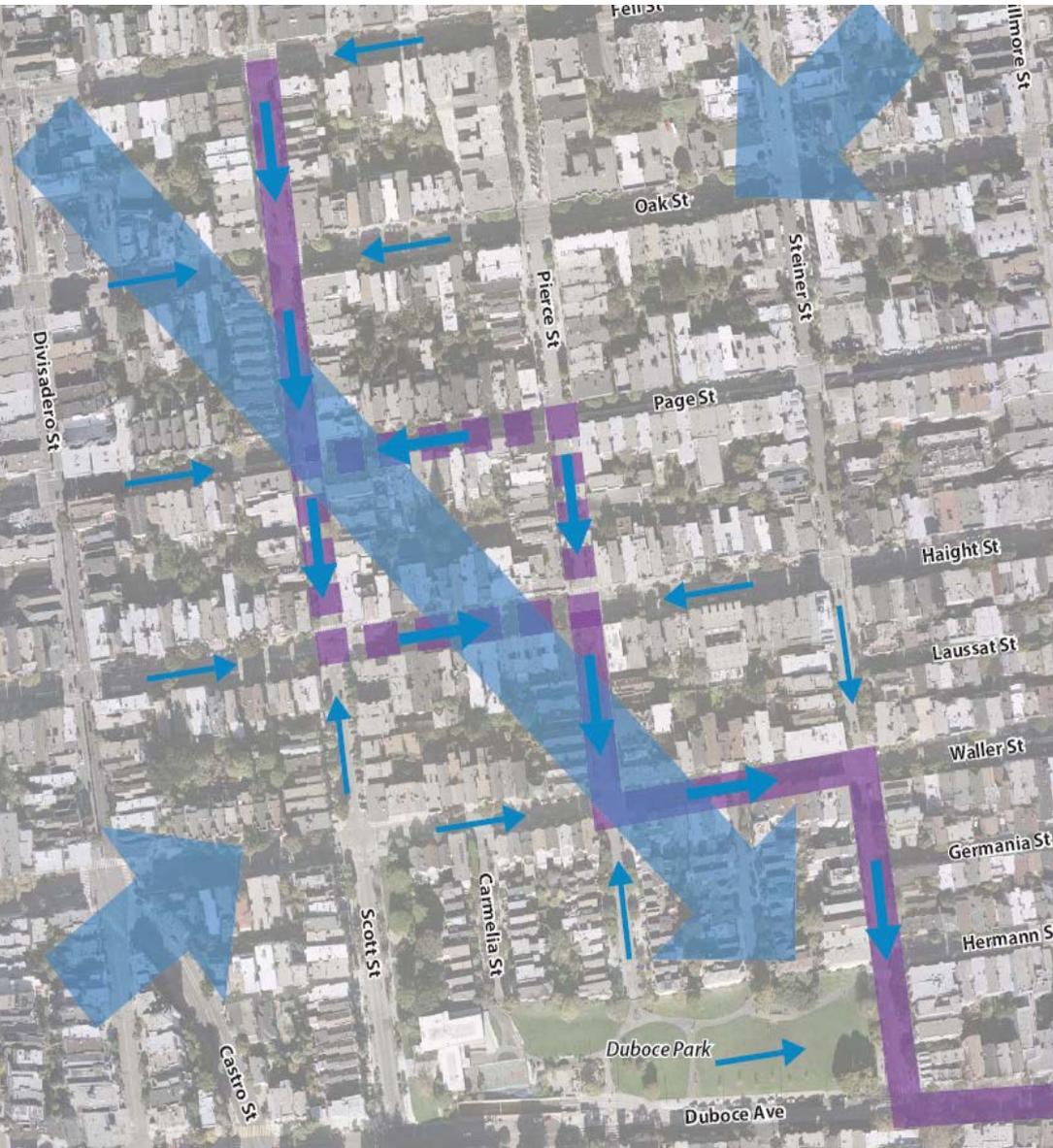
Early Implementation Demonstration Projects (EIPs): Haight and Pierce Intersection



Proposed



Current



Water Movement

- Surface flows are directed into rain gardens.
- Area drains naturally without entering the sewer system.
- Water from surrounding streets is directed via surface or sub-surface drains.



Early Implementation Demonstration Projects (EIPs): Performance Metrics

SCOTT, PAGE, PIERCE AND WALLER STREETS

| Stormwater Managed - Typical Year | | | | Stormwater Managed - LOS Storm (5yr 3hr) | | | |
|-----------------------------------|--------------------|-------------------|--------------------------------------------------------------|------------------------------------------|------------------------------|-------------------|--------------------------------------------------------------|
| Baseline Volume (pre-project) | Volume Removed | Percent Reduction | Cost Effectiveness (Annual Life-cycle Cost / Volume Removed) | Baseline Storm Runoff (pre-project) | Storm Runoff Reduction | Percent Reduction | Cost Effectiveness (Annual Life-cycle Cost / Volume Removed) |
| 1.3 (MG) | 1.3 (MG) | 100% | \$0.22 (\$/gallon) | 86,000 (gal/event) | 86,000 (gal/event) | 100% | \$3.44 (\$/gal/event) |

CONCEPT PLANNING

Total Cost Projection

\$ 4.2 M

Area Managed

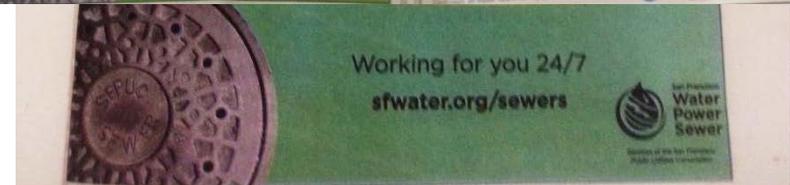
2.75 acres

Annual CSD Volume Reduction

0.441 MG

Muni Metro and Buses

Newspaper Placement



- E-Newsletters
- Urban Watershed Game
- Tours & Workshops
- Public Awareness Campaign
- Social Media



Rakesh Agrawal @rakeshlobster

SF water and sewer department is more twitter savvy than a lot of businesses out there.

05:18 PM - 08 Nov 13

Inc.

“...excellent consumer engagement...driving wild engagement.”

Sewer System Improvement Program

Grey.



**SYSTEM & SEISMIC
RELIABILITY & REDUNDANCY**

Green.



**INNOVATIVE STORMWATER
MANAGEMENT SOLUTIONS**

Clean.



**PROTECTING OUR BAY
& PACIFIC OCEAN**