Revenue Bond Oversight Committee

Sewer System Improvement Program Update

January 13, 2014
Karen Kubick, P.E.
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

- **BOARD OF SUPERVISORS**
- **SFPUC COMMISSION**

- **SFPUC GENERAL MANAGER**

- **PROGRAM POLICY DECISIONS**
- **MANAGEMENT OVERSIGHT COMMITTEE**

- **PROJECT LEVEL DECISIONS**
- **TECHNICAL STEERING COMMITTEE**

- **PROJECT IMPLEMENTATION**
- **SSIP PROJECT TEAM**

- **EXTERNAL REVIEW ADVISORY COMMITTEES**
  - Green Infrastructure Advisory Group
  - Peer Advisory Committee
  - Revenue Bond Oversight Committee
  - Southeast Community Facility Commission
  - Wastewater Citizens Advisory Committee
# Program-wide Status: Phase 1 Schedule

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**Legend:**
- **Planning**
- **Design + Bid & Award**
- **Construction**
- **Closeout**

Duration for Environmental Phase overlaps Planning and Design Phases.
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

AUG '15 – MAY '18
DESIGN & BID AWARD

JAN ‘13 – JUN ‘17
PLANNING/ENVIRONMENTAL

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
Planning & Design Projects: UWA Process for Concept Generation

Levels of Service

NEEDS

SUITABILITY

CONCEPTS

- Streetscape
- Bioretention
- Open Space
- Biodetention
- Rainwater Harvesting
- Pipe Upsizing
- Underground Detention
- Additional In-line Storage
- Stormwater Management
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  OCT ‘15 – SEP ’16
PLANNING/ENVIRONMENTAL  DESIGN
Early Implementation Demonstration Projects (EIPs): Project Locations

- Chinatown Green Alleys
  - North Shore Watershed
- Wiggle Neighborhood Green Corridor
  - Channel Watershed
- Mission & Valencia Green Gateway
  - Islais Creek Watershed
- Upper Yosemite Creek Daylighting
  - Yosemite Watershed
- Visitacion Valley Green Nodes
  - Sunnydale Watershed

- Baker Beach Green Street
  - Richmond Watershed
- Sunset Blvd Greenway
  - Sunset Watershed
- Holloway Green Street
  - Lake Merced Watershed
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
Early Implementation Demonstration Projects (EIPs): Performance Metrics

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

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<tr>
<th>Stormwater Managed - Typical Year</th>
<th>Stormwater Managed - LOS Storm (5yr 3hr)</th>
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<tr>
<td><strong>Baseline Volume (pre-project)</strong></td>
<td><strong>Baseline Storm Runoff (pre-project)</strong></td>
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<tr>
<td>1.3 (MG)</td>
<td>86,000 (gal/event)</td>
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<tr>
<td><strong>Volume Removed</strong></td>
<td><strong>Storm Runoff Reduction</strong></td>
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<td>1.3 (MG)</td>
<td>86,000 (gal/event)</td>
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<tr>
<td><strong>Percent Reduction</strong></td>
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<td>100%</td>
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<td><strong>Cost Effectiveness</strong></td>
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<td>$0.22 ($/gallon)</td>
<td>$3.44 ($/gal/event)</td>
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**CONCEPT PLANNING**

- **Total Cost Projection**: $4.2 M
- **Area Managed**: 2.75 acres
- **Annual CSD Volume Reduction**: 0.441 MG
Stakeholder Engagement: Public Awareness Campaign

Muni Metro and Buses

Newspaper Placement
Stakeholder Engagement

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

“...excellent consumer engagement...driving wild engagement.”
Sewer System Improvement Program


SYSTEM & SEISMIC RELIABILITY & REDUNDANCY

INNOVATIVE STORMWATER MANAGEMENT SOLUTIONS

PROTECTING OUR BAY & PACIFIC OCEAN