SFPUC’s Citywide Green Infrastructure Strategy

Sarah Minick | Wastewater Enterprise | Program Manager
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OUTLINE

- San Francisco context
- Why Build Green Infrastructure?
- Green Infrastructure Citywide Strategy
- Green Infrastructure Long Term Vision
SAN FRANCISCO’S SEWER SYSTEM

Serves 800,000 residents and a daytime population of 1.5 million

+ 1,000 miles of Sewers
+ 2 All-Weather Wastewater Treatment Plants
+ 1 Wet-Weather Wastewater Treatment Plant
+ 8 Transport/Storage Structures
+ 19 Pump Stations
+ 25,000 Catch Basins
+ Green Infrastructure
Green Infrastructure Definition

Green Infrastructure is a set of engineered, sustainable stormwater management tools that slow down, clean, and route stormwater to keep it from overwhelming the City's sewer system.
WHY BUILD GREEN INFRASTRUCTURE?
SYSTEM CAPACITY & RESILIENCY

• Green infrastructure permanently removes stormwater from the CSS
• Increases system capacity to better treat more contaminated flows
• Reduces pumping, treatment, and chemical cost of managing stormwater
• Buffers the CSS against future regulatory requirements
• Buffers the CSS against larger storms and climate change impacts
WHY BUILD GREEN INFRASTRUCTURE?

MULTIPLE BENEFITS & PLACE MAKING

• Visible infrastructure
• Improves neighborhood, open spaces, & streets
• Ecosystem services (groundwater recharge, urban habitat)
• Green infrastructure jobs (planning, design, construction, inspection, maintenance)
WHY BUILD GREEN INFRASTRUCTURE?
WATER SUPPLY + INNOVATION

- Diversify our water supply portfolio – OneWaterSF
- Upstream, modular, nimble technology that can help to future proof our system
- Industry standard
GREEN INFRASTRUCTURE CITYWIDE STRATEGY

To manage stormwater runoff from:
• Private Parcels (55%)
• Public Parcels (10%)
• Streets (35%)

Use:
• Regulation
• Projects
• Grants
GREEN INFRASTRUCTURE CITYWIDE STRATEGY

Projects
1. Regional Stormwater Capture and Reuse at Schools + Parks
2. Stormwater Management on SFPUC Parcels
3. Creek Daylighting + Floodable Spaces
4. Streetscape Synergy Program

Grants
5. Stormwater Management Agreements (Grants)

Regulation
6. Stormwater Management Ordinance

Training and Technical Assistance
Example School Project: Cambria Elementary School, Cambria CA
Example Park Project: Historic 4th Ward Park, Atlanta GA
Example “Walk the Walk” Project: Fort Reno Reservoir, District of Columbia
Example Creek Daylighting Project: urban application, Zurich
Example Floodable Spaces Project: South Jamaica Houses, New York City
Example Streetscape Synergy Project: Cesar Chavez LID Streetscape Project, SF
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Training and Technical Assistance
Example School Project: RL Stevenson Elementary Stormwater Schoolyard, SF
Example Park Project: Tanner Springs Park, Portland
Example Private Project: Brooklyn Grange Rooftop Farm, New York City
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Training and Technical Assistance
6. **Stormwater Management Ordinance (SMO)**

- New + redevelopment, public + private
- Threshold: 5,000sf
- Detention and retention requirements
- Property owner required to maintain facilities in perpetuity
- SFPUC has inspection oversight
SAN FRANCISCO GREEN INFRASTRUCTURE

SMO Projects
- 149 Final Approved
- 156 In Progress

EIPs (8)
GREEN INFRASTRUCTURE CITYWIDE STRATEGY

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Training and Technical Assistance
Stormwater Training and Technical Assistance

- Services that foster excellence in GI planning, design, construction, inspection and maintenance
- Services will merge engineering and design with urban place-making using GI Trainings, Technical Talks, and a Technical Assistance Team
let the rain soak in
creating rain-friendly sidewalk landscaping

Stormwater landscaping is an excellent way for you to help make the city more green and allow stormwaters to soak into the ground.

Trading grey stormwater for green landscaping not only reduces the volume and rate of water delivered to the sewer system, it also filters the stormwater, recharges the groundwater, and contributes to a livable neighborhood.

By designing for the rain, you’re doing your part to @steward our shared water resource, and keep our fish and trees clean.

San Francisco Stormwater Design Guidelines

San Francisco Better Streets Plan Final Plan

San Francisco’s Non-Potable Water Program

San Francisco Urban Watershed Management Program

Watershed Stewardship Curriculum for San Francisco Grades

San Francisco Rainwater Harvesting Manual for Non-Potable Residential Uses

San Francisco Graywater Design Manual
Stormwater Training and Technical Assistance
If we deploy these tools citywide, what will we get?
GREEN INFRASTRUCTURE LONG TERM VISION

By 2032 we could get... 500M Gallons removed each year through GI
GREEN INFRASTRUCTURE LONG TERM VISION

By 2050 we could get...**1 Billion Gallons** removed each year through GI
1 BILLION GALLONS BY 2050

By 2050 we could have...

- about **200 blocks** of green streets
- about **8 miles** of daylighted creeks
- about **50** stormwater schools
- about **50** stormwater parks

Tabor Middle School, Portland
Thornton Creek, Seattle
Oak Street, SF
THANK YOU!

Sarah Minick
sminick@sfwater.org
GREEN INFRASTRUCTURE CITYWIDE STRATEGY

- Private Parcels
- Public Parcels
- Streets
GREEN INFRASTRUCTURE CITYWIDE STRATEGY

- Private Parcels (54%)
GREEN INFRASTRUCTURE CITYWIDE STRATEGY

- Public Parcels (10%)
GREEN INFRASTRUCTURE CITYWIDE STRATEGY

• Streets (35%)
Integrated Performance in SSIP

Manage Flood Challenges in LOS Storm (est. peak flow)

<table>
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<tr>
<th>Flood Resilience</th>
<th>12 MG/storm</th>
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<tbody>
<tr>
<td>Capital GI</td>
<td>3 MG/storm</td>
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Manage Annual Stormwater (est. average wet year)

<table>
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<tr>
<th>Capital GI</th>
<th>140 MG/year</th>
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<tbody>
<tr>
<td>GI Grants</td>
<td>30 MG/year</td>
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<tr>
<td>SMO</td>
<td>330 MG/year</td>
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500 MG/year