WELCOME

HOLLOWAY GREEN STREET COMMUNITY OPEN HOUSE

Learn About:
• Green Infrastructure and the Sewer System Improvement Program
• The Holloway Green Street project and design concepts

Provide Input:
• Tell us how you want to use the project site
• Help us prioritize the project’s “look + feel”

You are welcome to attend anytime during this timeframe and stay for as long as you wish. The planning team will be available to you for the duration of the Open House. Invite your friends!
WELCOME

HOLLOWAY GREEN STREET COMMUNITY OPEN HOUSE

Participate Today:

• Take the stations tour & share ideas with the planning team
• Fill out a questionnaire to provide additional input and comments
• Show us how you travel along Holloway and how you would use the space if improvements are made to the street
• Participate in an interactive green infrastructure demonstration
• Share this project with your networks to gather more input through our interactive online survey: www.holloway.metroquest.com
Understanding Challenges to the Combined Sewer System

Aging Infrastructure
Our pipes, treatment plants, and tunnels need ongoing repair, replacement, and vital upgrades.

Climate Change
Sea level rise could cause saltwater to flow back into our system, causing flooding and endangering our treatment plants.

Seismic Reliability
Requirements must be met to ensure public health and safety in the case of an earthquake.

Water Quality
Requirements may become more stringent in the future, and we must continue to protect the health of our coastal waters and marine life.

Localized Flooding
Stormwater runoff can overwhelm our system during heavy rains and lead to neighborhood flooding and partially treated wastewater discharging into the SF Bay and Pacific Ocean.

Odor Control
Odors can be a problem during dry weather in flat areas when there is minimal flow to push wastewater to treatment plants.
San Francisco’s Combined Sewer System

Our combined sewer system collects and treats wastewater from sinks, showers and toilets, as well as the stormwater that runs off roofs and streets – and the pollution and debris it picks up along the way.

A. RAIN GARDENS: collect and infiltrate stormwater
B. CATCH BASIN: collects stormwater runoff
C. PERMEABLE PAVING: infiltrates stormwater to reduce runoff
D. SEWAGE: wastewater from residences and businesses flow into the combined sewer system
E. SEWER PIPELINE: wastewater pumped to treatment plant
F. TRANSPORT BOX: holds stormwater runoff and wastewater
G. OUTFALL: primary treated wastewater discharges to Bay or Pacific Ocean
Explore the Lake Merced Watershed

FUN FACTS!

4.3 square miles  
42,800 population  
27,300 daily water users  
45% covered in impervious surfaces

15% covered with rooftops  
15% covered by streets  
51% made up of parks and lakes

*Please note these numbers are approximate.
Green Infrastructure Improvements

“Green” solutions, also called “green infrastructure” projects, are a stormwater management tool that reduces the burden on the City’s grey infrastructure. Green infrastructure can help manage and treat stormwater on site before it enters the combined sewer system. These projects also provide livable city benefits like neighborhood beautification and traffic calming.

Examples of GREEN infrastructure improvements include:

**Permeable Pavement**
Permeable paving allows stormwater to soak into the ground in contrast to hard surfaces (concrete or asphalt) where stormwater rapidly flows into the sewer system. **Planning Tip:** Best used in alleyways, parking spaces, and sidewalks.

**Rain Gardens**
Rain Gardens capture stormwater that runs off streets, roofs, and parking lots. Plants and soil absorb that water, reducing the amount of runoff entering our sewer system. **Planning Tip:** Best along sidewalks (by streets) or bulb outs. You can also disconnect your downspout, and run your rainwater to a rain garden in your backyard!

**Bulb Outs**
Bulb Outs are a traffic calming method that extends the sidewalk, reducing the distance to cross the street and increasing pedestrian visibility and safety. These can also include various green technologies to capture and treat stormwater. **Planning Tip:** Implement along streets and at intersections.

**Rainwater Harvesting**
Rainwater harvesting collects and diverts stormwater from hard surfaces such as roofs that would otherwise be going into the combined sewer system, making it available for use. **Planning Tip:** Best for buildings and other structures with large, relatively clean, rainwater catchment areas – such as roofs – and sufficient space for above or below ground cisterns.
Grey Infrastructure Improvements

“Grey” solutions, such as larger sewer pipes or upgraded pump stations, can improve the sewer system by providing additional capacity to store and convey wastewater. Repairing existing and constructing new grey infrastructure through the SSIP will upgrade our aging infrastructure to provide a reliable, sustainable, and systemically safe system now and for generations to come.

Examples of GREY infrastructure improvements include:

**Pump Station Repairs**
Upgrading and repairing our pump stations helps to ensure that the combined sewer system continues to operate reliably and efficiently.

**Pipe Replacements**
73% of our 1,000 miles of sewer pipes are over 100 years-old and parts of the system still has brick sewers built over 100 years ago! New and larger pipes provide more capacity to store and convey wastewater.

**Treatment Plant Upgrades**
All three wastewater treatment plants need vital updates. Our largest plant, the Southeast Treatment Plant in Bayview/Hunters Point, was built over 60 years ago and handles 80% of our wastewater – and is in need of major repairs and upgrades.
What is the Project Area?

The Holloway Green Street project is located on nine blocks of Holloway Avenue between Ashton and Harold Avenues. We are considering extending the project area an additional block on Harold Avenue to Ocean Avenue.

Project Timeline

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<thead>
<tr>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>WINTER - SPRING</td>
<td>Planning</td>
<td>SPRING - SUMMER</td>
<td>Design</td>
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Existing conditions.
Existing Connections

The San Francisco bike route follows Holloway along six blocks of the project site, and Muni routes and stations connect at the potential project terminus on Ocean Avenue. The Holloway Green Street project connects San Francisco State University and Lake Merced to City College of San Francisco and Balboa Park BART Station.
What is Driving This Project?

This project is an innovative stormwater management project that will include additional improvements for the street and neighborhood.

STORMWATER MANAGEMENT

Improvements developed for this project will manage stormwater, and may include rain gardens and permeable pavement.

The five (5) categories illustrated on the board to the right summarize the additional components that this project will bring to the neighborhood. Help us understand what is MOST IMPORTANT to you!
What is Important to You on This Street?

Select the **top three** additional components that you consider **MOST IMPORTANT**.

**COMMUNITY SPACES**
Create areas on the street for small gatherings, seating, and public art.

**NATURE SPACE**
Provide planted areas on the street.

**ON-STREET PARKING**
On-street parking along the project site.

**BICYCLE IMPROVEMENTS**
Provide facilities to improve cyclist safety and convenience.

**TRAFFIC CALMING & PEDESTRIAN IMPROVEMENTS**
Provide facilities to improve pedestrian safety and convenience.
How Do You Think This Street Should “Look and Feel?”

Using the color dots provided and your questionnaire, select images that you consider the MOST and LEAST APPROPRIATE “LOOK & FEEL.”

PLANTING

CURBS & EDGE TREATMENTS

BULBOUTS
How Do You Think This Street Should “Look and Feel?”

Using the color dots provided and your questionnaire, select images that you consider the MOST and LEAST APPROPRIATE “LOOK & FEEL.”

TREES

PAVING (SIDEWALK)

PAVING (STREET)
Green Street Concept A: Typical Block

Bulbouts would improve pedestrian safety and provide public space at neighborhood intersections, in addition to functioning as a component of the stormwater management system.

Project Site
- Nine blocks of Holloway Avenue
- Potential Harold Avenue connection to Ocean Avenue
- Bulb outs would potentially eliminate some parking along Holloway

Stormwater Management Opportunities
- Rain gardens within new bulb outs
- Bulb outs, typically on all four corners of Holloway blocks, maximize green space opportunities
- Linear roadside planters adjacent to parallel parking

CONCEPT A: TYPICAL BLOCK ILLUSTRATIVE PLAN

HOLLOWAY AVENUE RENDERED PERSPECTIVE
Green Street Concept B: Typical Block

Roadside planters would be integrated adjacent to parallel parking along Holloway Avenue and permeable pavement in the parking lanes would improve stormwater management.

**Project Site**
- Nine blocks of Holloway Avenue
- No connection to Ocean Avenue along Harold Avenue

**Stormwater Management Opportunities**
- Linear roadside planters adjacent to parallel parking on all nine blocks
- Less greenery opportunities and no bulb outs
- Permeable pavement within parking lanes of nine blocks

**CONCEPT B: TYPICAL BLOCK ILLUSTRATIVE PLAN**

**HOLLOWAY AVENUE RENDERING PERSPECTIVE**
Site Sections

The sections below illustrate some of the sub-surface changes that would be made alongside the surface improvements shown in the plan. The green infrastructure shown in these sections will help infiltrate stormwater runoff in both Design Concepts (A and B).

**TYPICAL SECTION AT BULBOUT RAIN GARDEN: CONCEPT A**

- New Bulboult with Rain Garden
- New Curb (and Gutter) with Curb Cuts
- New Dry and Wet Tolerant Tree
- New Curb with Drainage Notches
- Amended Soil (18”)
- Drain Rock

**TYPICAL SECTION AT LINEAR RAIN GARDEN: CONCEPT B**

- New Curb with Drainage Notches
- New Rain Garden in Planter
- New Curb with Drainage Notches
- New Courtesy Strip where Adjacent to Parking
- New Pervious Paving within Parallel Parking Area
- Amended Soil (18”)
- Excavation Line
- Drain Rock

**Dimensions:**
- 6’ min
- 4’
- 2’
- 7’
- Existing Sidewalk
- Planter
- Courtesy Strip
- Parallel Parking
- Existing Travel Lane
Surface Water Movement Diagram

This diagram illustrates the movement of stormwater in the project area as proposed in Concepts A and B. Surface flow would be directed into rain gardens where it can drain naturally without entering the City’s sewer system. Water from surrounding streets is directed to these areas as well.

CONCEPT A: TYPICAL BLOCK WATER MOVEMENT DIAGRAM

CONCEPT B: TYPICAL BLOCK WATER MOVEMENT DIAGRAM
Get Involved!

There are things you can do to help reduce the amount of stormwater going into the combined sewer system.

Help Build Green Infrastructure Projects Near You!

Join the SFPUC as we plan, design and build Green Infrastructure projects in the city: www.sfwater.org/greeninfrastructure.

Get a Sidewalk Garden on Your Block!

Gather your neighbors and get a free Sidewalk Garden. Apply with our partners at Friends of the Urban Forest: www.fuf.net/sidewalk.

Use Green Technologies at Home

Learn how to capture and reuse your rainwater at home for irrigation and help keep stormwater out of the combined sewer system: www.sfwater.org/rainwater.

Laundry to Landscape Subsidy Program

Don’t let good water go to waste. Irrigate your backyard with “graywater” from your laundry machine: www.sfwater.org/graywater.

Protect Our Grey Infrastructure

Keep fats, oils, and grease out of your sinks and drains, and recycle at convenient drop off points: www.sfGreasecycle.org.

Make a Lasting Impact!

Be a part of San Francisco’s long-term planning process of sewer system improvements for the next twenty years. To get involved, visit: sfwater.org/urbanwatersheds.

Connect with the SFPUC to help improve local stormwater management and assist the SSIP.

SSIP@sfwater.org   www.sfwater.org/SSIP   www.facebook/sfwater   @sfwater