Stormwater Management

17th/Folsom Neighborhood

San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission
1. Background

2. Capital Improvement Considerations
   a) Long Term
   b) Immediate Project for this Rainy Season

3. What You Can Do to Prepare

4. Citywide Flood Resilience
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BACKGROUND
San Francisco’s Combined Sewer System

Legend
- Pump Stations
- Treatment Facilities
- Deep Water Outfalls
- Transport /Storage Boxes

NORTH POINT FACILITY (NPF)

SOUTHEAST TREATMENT PLANT (SEP)

OCEANSIDE TREATMENT PLANT (OSP)
Large Drainage Basin Flows Under 17/Folsom Neighborhood

Drainage Map

- Division St Outfall
- Contributing Area
- Immediately Upstream of 17th & Folsom
Sewer main profile along 17th Street

MH at 17th & Folsom

17th & Folsom
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CAPITAL IMPROVEMENT CONSIDERATIONS
• Extensive list: dozens of ideas brainstormed

• SFPUC narrowed to 3 top project concepts

• Preliminary cost range: $110 - $260 million
Limitations of Capital Improvements

• Each option would help manage/reduce floodwater, but *no capital improvement would eliminate flooding in all storms*

• After any of these projects are implemented, the large storms that caused flooding last December would still cause flooding, but it would not be as severe.

• After any of these projects are implemented, small/moderate storms would be less likely to cause flooding
Description:
17’ diameter tunnel that conveys water from 17/F vicinity to operational Channel Tunnel. Tunnel drilled between two vertical shafts

Key Considerations:
• ~2024 timeline for completion
• Construction must be completed in one phase
• Relies on Channel Tunnel Project

Cost:
~$260M. Also relies on Channel Tunnel & Dewatering Pumps (additional $800M, unescalated)
Option 2 Under Evaluation: Expand Existing Sewers

Description:
- Upsize sewer mains on 17th & 18th Streets
- Expand sewer box from 18/Treat to Division/Potrero (~4’ deeper)
- Expand sewer box under Division Street to outfall (~8’ deeper)

Key Considerations:
- ~2022 timeline for completion
- Major construction disruption
- Utility conflicts/feasibility

Cost:
$200M
Description:
Acquire easements/properties and develop 2.5 MG storage
• Future park @17/F
• Other nearby parking lots

Key Considerations:
• ~2020 timeline for completion
• Requires use of nearby parcel
• Sits empty and must be cleaned after use

Cost:
$110M
Depends upon location
Excludes real estate costs
## Capital Improvement Options – Summary of Key Considerations

<table>
<thead>
<tr>
<th>Cost</th>
<th>$260M</th>
<th>$200M</th>
<th>$110M (excludes real estate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earliest implementation</td>
<td>2024</td>
<td>2022</td>
<td>2020</td>
</tr>
<tr>
<td>Interdependence on other projects</td>
<td>Relies on Channel Tunnel Project ($800M)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction Phasing</td>
<td>1 phase</td>
<td>1-2 phases</td>
<td>Multiple options</td>
</tr>
<tr>
<td>Construction disruption</td>
<td>Primarily at tunnel shafts</td>
<td>1.5 mile open cut, 42 months (includes half the width of Division Street for 12 months)</td>
<td>Generally on parcels, with some ROW work</td>
</tr>
<tr>
<td>Potential for utility conflicts</td>
<td>Primarily at tunnel shafts</td>
<td>Utility conflicts likely to be significant (open cut)</td>
<td>Diversion piping in ROW; unknown in parking lots</td>
</tr>
<tr>
<td>Benefits/performance</td>
<td>Potential for flood reduction in a wider area</td>
<td>Potential for flood reduction in a wider area</td>
<td>Local flood reduction only; limited ability to have safety buffer.</td>
</tr>
<tr>
<td>Operations</td>
<td>Sits empty, and must be cleaned after use.</td>
<td></td>
<td></td>
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<tr>
<td>Real estate uncertainties</td>
<td>RPD (Jackson Playground)</td>
<td></td>
<td>RPD (17/F Park), Comcast, PG&amp;E, and/or other</td>
</tr>
<tr>
<td>Public perception issues</td>
<td>Brings focus to SFPUC’s Mission Creek discharges</td>
<td></td>
<td>Flooding will occur in slightly larger storm (limited ability to have buffer)</td>
</tr>
</tbody>
</table>
Planning/Evaluation for Long-Term Capital Project Options

- Concept development and feasibility evaluation
  - Estimation of project costs
  - Comparison of options (Triple Bottom Line analysis)
  - Real estate / inter-agency discussions

- Environmental review

- Design

- Bid/Award
  - Contract preparation
  - Contract advertisement / bid
  - Contract award / Commission approval

- Construction

- Lengthy process (*earliest implementation: 2020-2024*)
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IMMEDIATE PROJECT FOR THIS RAINY SEASON
Interim Project: Temporary Flood Barriers

- 500 feet
- Deployed on sidewalk
- Only protects certain properties
- ADA/access considerations
- Parking considerations
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WHAT YOU CAN DO TO PREPARE
New Opportunities

• Modified **Floodwater Grant** – includes special projects

• Worked w/ Sup Campos on **Legislation** to waive encroachment fees

• **Flood Insurance** – provided training to insurance brokers on 10/28
Don't have ideas what projects might work for you?

- We developed “project concepts” to get you started

### SFPUC Floodwater Grant Program

**Example Concepts for Special Projects**

**Summer 2015**

<table>
<thead>
<tr>
<th>If flooding concern is related to</th>
<th>Item</th>
<th>Availability</th>
<th>Photo</th>
<th>Advantages and Limitations</th>
<th>Installed by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overland flow onto a property/parcel from sidewalk or public right of way.</td>
<td>Walls</td>
<td>Work with your engineer and/or general contractor</td>
<td><img src="" alt="Walls Image" /></td>
<td><strong>ADVANTAGES:</strong> Continuous protection</td>
<td>General Contractor</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>LIMITATIONS:</strong> Grant only covers walls facing public right of way (not facing an adjacent property)</td>
<td></td>
</tr>
<tr>
<td>Low overland flow through pedestrian or garage door</td>
<td>Raised Floors</td>
<td>Work with your engineer and/or general contractor</td>
<td><img src="" alt="Raised Floors Image" /></td>
<td><strong>ADVANTAGES:</strong> Continuous protection</td>
<td>General Contractor</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>LIMITATIONS:</strong> Limited height, reduces headspace, construction may be difficult and/or costly</td>
<td></td>
</tr>
<tr>
<td>Low overland flow through a pedestrian door</td>
<td>Raised Sidewalk/Berry/Threshold</td>
<td>Work with your general contractor</td>
<td><img src="" alt="Raised Sidewalk Image" /></td>
<td><strong>ADVANTAGES:</strong> Continuous protection</td>
<td>General Contractor</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>LIMITATIONS:</strong> Limited height, commercial Americans with Disabilities Act (ADA) restrictions</td>
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</table>
Plan, Protect, Prepare

- Elevate your belongings
- Maintain your sewer pipes/laterals
- Help Keep Catch Basins Clean – call 311
- Maintain roof drains and downspouts
- Sandbag delivery prior to major rain events
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CITYWIDE FLOOD RESILIENCE
What is Flood Resilience?

The capacity to anticipate risk, limit impact, and recover quickly when damage occurs from flooding events.

Flood Resilience Program Goals

- **Infrastructure**: develop a risk-based framework to identify and prioritize capital investments
- **Other flood risk reduction measures**: engage all stakeholders including residents, businesses, other City Departments; provide “safety net” beyond the capacity of the collection system.
THANK YOU!

QUESTIONS?