SFFD | NEW FIREBOAT STATION 35 AT PIER 22 ½
PROJECT INFORMATIONAL MEETING - OCTOBER 24, 2017
PORT, PIER 1, BAYSIDE CONFERENCE ROOM, SAN FRANCISCO, CA 94111

AGENDA
● Introductions
● Project Context and Background
● SFFD Operational Characteristics
● Sea Level Rise and Project Solution
● Design and Construction
● Questions and Answers
● Table Talk
PROJECT CONTEXT AND BACKGROUND
$400M General Obligation Bond authorized in June 2014 with approval by 79% of voters

<table>
<thead>
<tr>
<th>Project</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood Fire Stations</td>
<td>$85M</td>
</tr>
<tr>
<td>- Fireboat Station 35: $39.9M</td>
<td></td>
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<tr>
<td>Emergency Firefighting Water System</td>
<td>$55M</td>
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<tr>
<td>District Police Stations and Infrastructure</td>
<td>$30M</td>
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<tr>
<td>Motorcycle Police and Crime Lab</td>
<td>$165M</td>
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<tr>
<td>Medical Examiner Facility</td>
<td>$65M</td>
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</tbody>
</table>

**ESER 2014 BACKGROUND**

[ESER Program Project Map]
EXISTING SITE
SITE & PROJECT HISTORY

1915
- Pier 22 ½ built
- Fireboat Headquarters Building constructed

1989
- M6.9 Loma Prieta Earthquake
- Marina District Fire

1980s
- Non-historic Fireboat Pier constructed
- 1987: Storage Shed built on the Fireboat Pier 22.5

1999
- Fireboat Headquarters Building designated as San Francisco City Landmark #225

2010
- Pier Strengthening at Pier 22 ½
- Emergency stabilization of the pier structure
- June 2014: ESER 2010 Bond passed

2014
- April 2014: Warriors proposed project site moved away from Piers 30/32
- November 2014: ESER 2014 Bond passed

2017
- Design-Build RFQ/RFP Procurement
- Design-Build entity selected—Swinerton-Power, JV

2012
- November 2012: Warriors presented proposed development project at Piers 30/32 and included a new Fireboat Station #35 at the site

2016
- Introduction of Sea Level Rise (SLR) floating barge solution
- Public Works’ proposed Design-Build project delivery method approved by Fire Administration
SPECIAL CHARACTERISTICS

- National Register-listed Embarcadero Historic District
- San Francisco Bay focused regulatory agencies
- Engine No. 35 to remain operational during construction
- Pier 26 to provide berthing of fireboats during construction
## OVERSIGHT AND REGULATORY APPROVAL

<table>
<thead>
<tr>
<th>City Agency (Approval)</th>
<th>SF Port Building Permit Division</th>
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<tbody>
<tr>
<td></td>
<td>SF City Planning Environmental Planning Division</td>
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<tr>
<td></td>
<td>San Francisco Fire Department (SFFD) Administration</td>
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<tr>
<td>City Agency (Advisory)</td>
<td>San Francisco Fire Commission</td>
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<tr>
<td></td>
<td>San Francisco Port Commission</td>
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<td></td>
<td>Central Waterfront Advisory Group (CWAG)</td>
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<td></td>
<td>Citizen Advisory Committees (CAC)</td>
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<td></td>
<td>Waterfront Design Advisory Committee (WDAC)</td>
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<tr>
<td>Regulatory Agency Approvals</td>
<td>San Francisco Bay Conservation and Development Commission (BCDC)</td>
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<td></td>
<td>US Army Corps of Engineers (USACE)</td>
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<tr>
<td></td>
<td>San Francisco Bay Regional Water Quality Control Board (RWQCB)</td>
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<td></td>
<td>US Coast Guard</td>
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<tr>
<td></td>
<td>US Environmental Protection Agency (EPA)</td>
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<tr>
<td>Regulatory Agency Consultations</td>
<td>US Fish and Wildlife Services (USFWS)</td>
</tr>
<tr>
<td></td>
<td>National Marine Fisheries Service (NMFS)</td>
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<td></td>
<td>CA Department of Fish and Wildlife (CDFW)</td>
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<tr>
<td></td>
<td>CA State Lands Commission</td>
</tr>
<tr>
<td></td>
<td>State Historic Preservation Officer</td>
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</tbody>
</table>

Building Design & Construction Project Management
ENVIRONMENTAL CLEARANCE PROCESS

- The California Environmental Quality Act (CEQA) is a California statute passed in 1970 to institute a statewide policy of environmental protection.¹
- The draft CEQA environmental document is expected to be circulated for public review in early 2018.
  - This informational meeting is not meant to address CEQA requirements.
- The CEQA comment period is the public’s opportunity to submit comments that will formally addressed within the CEQA document. While you may voice support or opposition for a project, the most beneficial comments include the following:
  - Specific alternatives or mitigation measures that would provide better ways to avoid or mitigate any potential environmental effects of the project
  - Concerns that are not addressed in the environmental document
  - Inaccuracies or missing information
  - Statistical data or facts to support your concern

Please let us know if you would like to receive advance notification of document circulation.

¹ California Public Resources Code § 21000 et seq.
SFFD OPERATIONAL CHARACTERISTICS
SAN FRANCISCO FIRE DEPARTMENT MARINE OPERATIONS

1989 Marina District Fire
“The Phoenix was a vital tool in the Marina District during the chaotic aftermath of the 1989 Loma Prieta Earthquake. …the Phoenix delivered critical assistance to the conflagration at Beach and Divisadero Streets, saving countless homes.” [Link](http://www.atlasobscura.com/places/pier-sffd-fire-boats)

Bay Risks
- Water rescue, fire operations, EMS, body recovery, spill containment, Emergency Firefighting Water System (EFWS) and Auxiliary Water Supply System (AWSS).
- Significant maritime traffic and several bridges.
- San Francisco International Airport (SFO) generates 1,500 – 2,000 flights with runway approaches to the Bay.
- Commercial ship traffic brings significant tonnage of freight across the Bay.
- Ferry and cruise companies carry millions of passengers per year around, and in and out of the Bay.
- Oil refineries for Chevron, ARCO and Shell; jet fuel companies such as Kinder Morgan in Bay Area.
LOCATION OF SFFD MARINE OPERATIONS

St. Francis Yacht Club
• (2) Jet skis
• (1) Rescue boat

Fire Station 1
• SCUBA/tank filling

Pier 22 ½ / Fire Station 35
• (3) Fireboats

Fire Station 9
• Oil containment booms

Fire Station 49 / 1415 Evans Ave
• Firefighting foam

Fire Station 33
• Spare firefighting hose
FIRE STATION NO. 35 PERSONNEL

- 21 total members are currently assigned to Fire Station No. 35
  - 7 members on shift at any given time.
  - Engine No. 35 Company
    - (4) firefighters
  - Fireboat Company
    - (1) officer
    - (1) pilot
    - (1) marine engineer

- Staffing of the fireboat was reduced as a cost saving measure.
  - Firefighters from Engine Company 35 staff the fireboat.
SFFD MARINE RESPONSES AND CALL TYPE

- # of Incidents Responded to by SFFD Marine Units (2016)
  - Water Rescue: 162
  - Medical Incident: 40
  - Outside Fire: 66
  - Structure Fire: 38
  - Alarms: 23
  - Other: 12
  - High Angle Rescue: 7
  - Watercraft in Distress: 3
  - Citizen Assist: 1

Based on “SFFD Calls for Service” dataset from DataSF’s Open Data portal: https://data.sfgov.org/Public-Safety/Fire-Department-Calls-for-Service/nuek-vuh3

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SEA LEVEL RISE AND PROJECT SOLUTION
SEA LEVEL RISE

King Tide flooding on The Embarcadero near the Ferry Building
Image Courtesy of Flickr CC User “Dave R”

www.sf-planning.org/sea-level-rise-action-plan
Notes:
1. Current tidal datum information collected from National Geodetic Survey data for Tidal Station ID 9414317, PID# HT0759, VM# 8094.
3. Tidal data above does not include consideration for El Niño events, storm surge, storm waves, and wave run-up which all affect the local water level in addition to sea level rise.
# SEA LEVEL RISE RESPONSE OPTIONS

<table>
<thead>
<tr>
<th>Type of Pier</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FIXED PIER</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Build on site</td>
<td>Building roof will be higher for Planning review</td>
</tr>
<tr>
<td></td>
<td>More contractor participation due to conventional construction</td>
<td>Pier and building will be subjected to high seismic loading</td>
</tr>
<tr>
<td></td>
<td>No dredging and sheet pile required</td>
<td>Need to place pier higher than sea level rise prediction</td>
</tr>
<tr>
<td></td>
<td>Residents in the building not subject to motion</td>
<td>Steel piles and beams require corrosion protection and inspection for life of pier</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Require impact pile driving. Environmental issue, limited</td>
</tr>
<tr>
<td><strong>FLOATING STEEL PIER</strong></td>
<td>Building roof will be lower for planning review</td>
<td>Limited contractors can do the project</td>
</tr>
<tr>
<td></td>
<td>No dredging and sheet pile required</td>
<td>Need special treatment coating and sacrificial steel for corrosion protection for life of the project</td>
</tr>
<tr>
<td></td>
<td>Adaptable to sea level rise</td>
<td>Residents in the building will be subject to motion of the pier</td>
</tr>
<tr>
<td></td>
<td>Limited impact from seismic activity</td>
<td>Utilities to the shore will need flexible joints</td>
</tr>
<tr>
<td></td>
<td>Less environmental impact, fewer piles to drive</td>
<td>Access ramp will need to adjust per tides</td>
</tr>
<tr>
<td></td>
<td>Separate boarding float may not be required</td>
<td>Require periodic dive inspection</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Limited locations in Bay Area where it can be built. Needs to be transported to site</td>
</tr>
<tr>
<td><strong>FLOATING CONCRETE PIER</strong></td>
<td>Building roof will be lower for planning review</td>
<td>Limited contractors can do the project</td>
</tr>
<tr>
<td></td>
<td>More durable against corrosion and deterioration</td>
<td>Need epoxy coated rebar for corrosion protection for life of the project</td>
</tr>
<tr>
<td></td>
<td>Adaptable to sea level rise</td>
<td>Residents in the building will be subject to motion of the pier, less than steel floating pier</td>
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*San Francisco Public Works*

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Marine Engineering: STEEL BARGE

Steel Barge

Steel Barge with Deck Slab

Steel Barge with Guide Piles and Ramp
Gildersleeve School (Ketchikan, Alaska)
The Gildersleeve School in Ketchikan, Alaska was constructed on a 68 ft x 80 ft reinforced concrete barge. The school building has two levels with an apartment on the 2nd level.

Brooke Street Pier (Australia)
4-Story Concrete Barge; Floating Ferry Terminal, Public Space, and Market

Vernon C. Bain Prison Barge (New York, NY)
Built in New Orleans along the Mississippi and brought to New York in 1992. The 625 ft x 125 ft steel barge is equipped with 14 dormitories and 100 cells for inmates.

Barge 225 (Cleveland, OH)
150 ft x 45 ft steel barge was converted to a restaurant and then to an office space in 2013.
DESIGN AND CONSTRUCTION
“The first piers ….beginning in 1908, were built south of the Ferry Building with façade designs drawing on Spanish missions of California and more generally on Mediterranean vernacular architecture.” — National Register of Historic Places
“The fireboat house can be seen as a Renaissance Revival structure for its elegant proportions and perfect axial symmetry and for its appearance as a ‘tightly contained cube’.” — City of SF Landmarks Designation Report
“Maintain the finger pier configuration of the waterfront.”
— BCDC San Francisco Waterfront Special Area Plan
EXISTING CAPACITY

EXISTING FACILITY 6,456 SF

Historic FS #35: 4,736 SF
Shed: 1,720 SF

ASSETS
- Three Fireboats
  - Phoenix
  - Guardian
  - St. Francis
- One Fire Engine

LIABILITIES
- Deteriorated Berthing Areas
- No Environmental Responses Equipment Storage, e.g. Oil Spill Boom
- No capacity for: Small Craft Rescue Equipment, Dive Boat, e.g. Small Watercraft Rescue
- No Storage Areas
- No Decontamination Area
- No Dive Equipment Area
- No Rescue Unloading Area
- No Changing Facilities for Firefighters
NEW FACILITY  20,078 SF

Historic FS #35: 4,736 SF
New Fireboat Station: 15,342 SF

ASSETS
● Three Fire Boats
  ○ Phoenix
  ○ Guardian
  ○ St. Francis
● 1 Rescue Watercraft
● 4 Jet Skis
● 1 Dive Boat
● One Fire Engine

FEATURES
• Consolidates all marine assets at central location for most effective emergency response
• Constructed to Essential Facility standards for immediate operation after a major earthquake
• Ambulance access for mass-casualty and fatality incidents.
• Safe access and deployment of all watercraft.
CONCEPT - 1ST FLOOR PLAN
CONCEPT - VIEW FROM THE EMBARCADERO

NOTE: Tide Level depicted is +6.22' Current 2015 MHHW
CONCEPT - VIEW FROM THE EMBARCADERO

BEFORE

AFTER

NOTE: Tide Level depicted is +6.22' Current 2015 MHHW
CONCEPT - HARRISON STREET VIEW CORRIDOR

NOTE: Tide Level depicted is +6.22' Current 2015 MHHW

BEFORE

AFTER

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DESIGN-BUILDER’S APPROACH

BARGE CONSTRUCTION IN CHINA
- Barge Design and Fabrication team:
  - Power Engineering Construction Co.
  - Liftech Consultants Inc.
  - Shanghai Zhenhua Heavy Industries Co. (ZPMC)

BUILDING CONSTRUCTION IN SAN FRANCISCO
- Once fabrication is complete, dry barged to San Francisco.
- The building will be assembled on top of the barge docked at Pier 1, Treasure Island.
  - Local Hire Requirements
  - LBE Requirements
Project website:  www.sfearthquakesafety.org/fireboatstation35

More information:  Charles Higueras, E.S.E.R. Program Manager
San Francisco Public Works
Charles.Higueras@sfdpw.org
(415) 557-4646
QUESTIONS AND COMMENTS

Please Turn in the Comment Cards Tonight

OR

Mail the Completed Card by November 13th

OR

Fill Out Comment Card Online at:

www.tiny.cc/fireboatstation35