SFFD | NEW FIRE BOAT STATION 35 AT PIER 22.5

PRESENTATION TO CENTRAL WATERFRONT ADVISORY GROUP – JULY 19, 2017

BAYSIDE CONFERENCE ROOM, PIER 1, THE EMBARCADERO, SAN FRANCISCO, CA 94105

AGENDA:

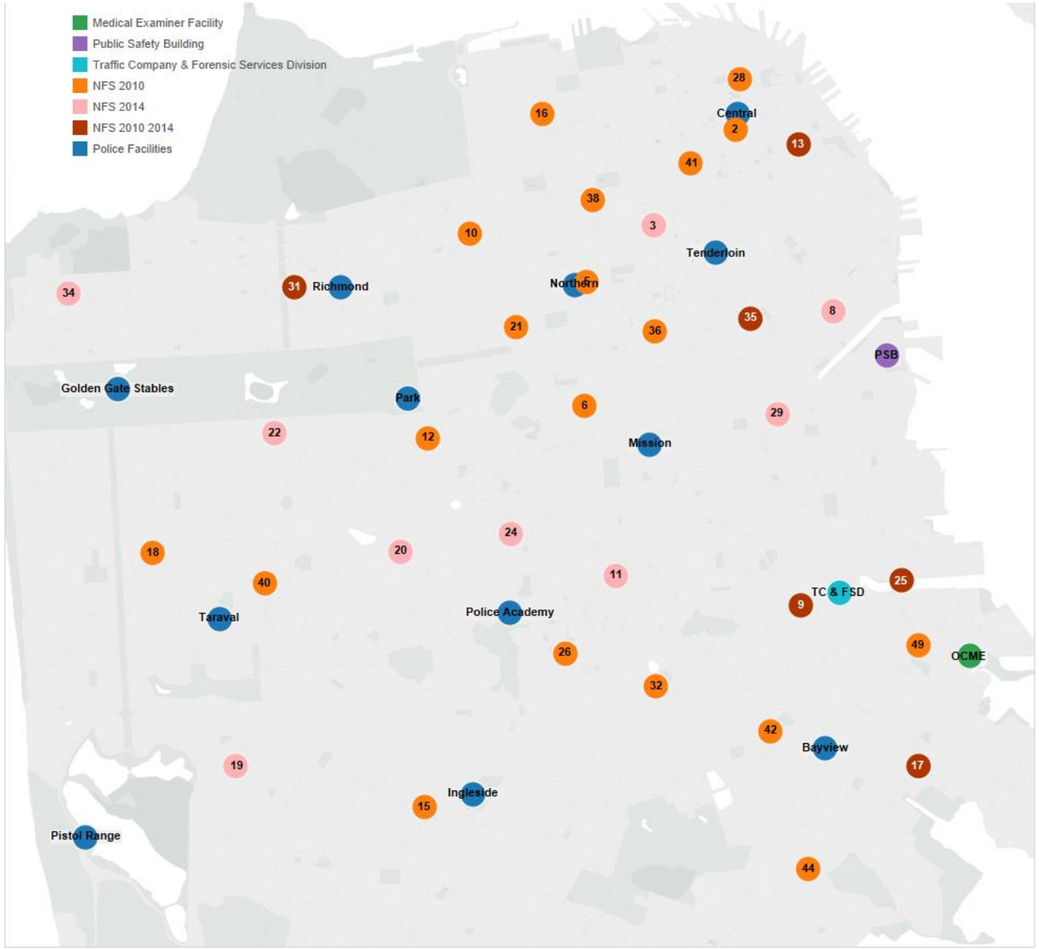
- ESER 2014 Background
- Site and Project History
- Design-Build Procurement
- Project Approach

ESER 2014 BACKGROUND

$400M General Obligation Bond authorized in June 2014 with approval by 79% of voters

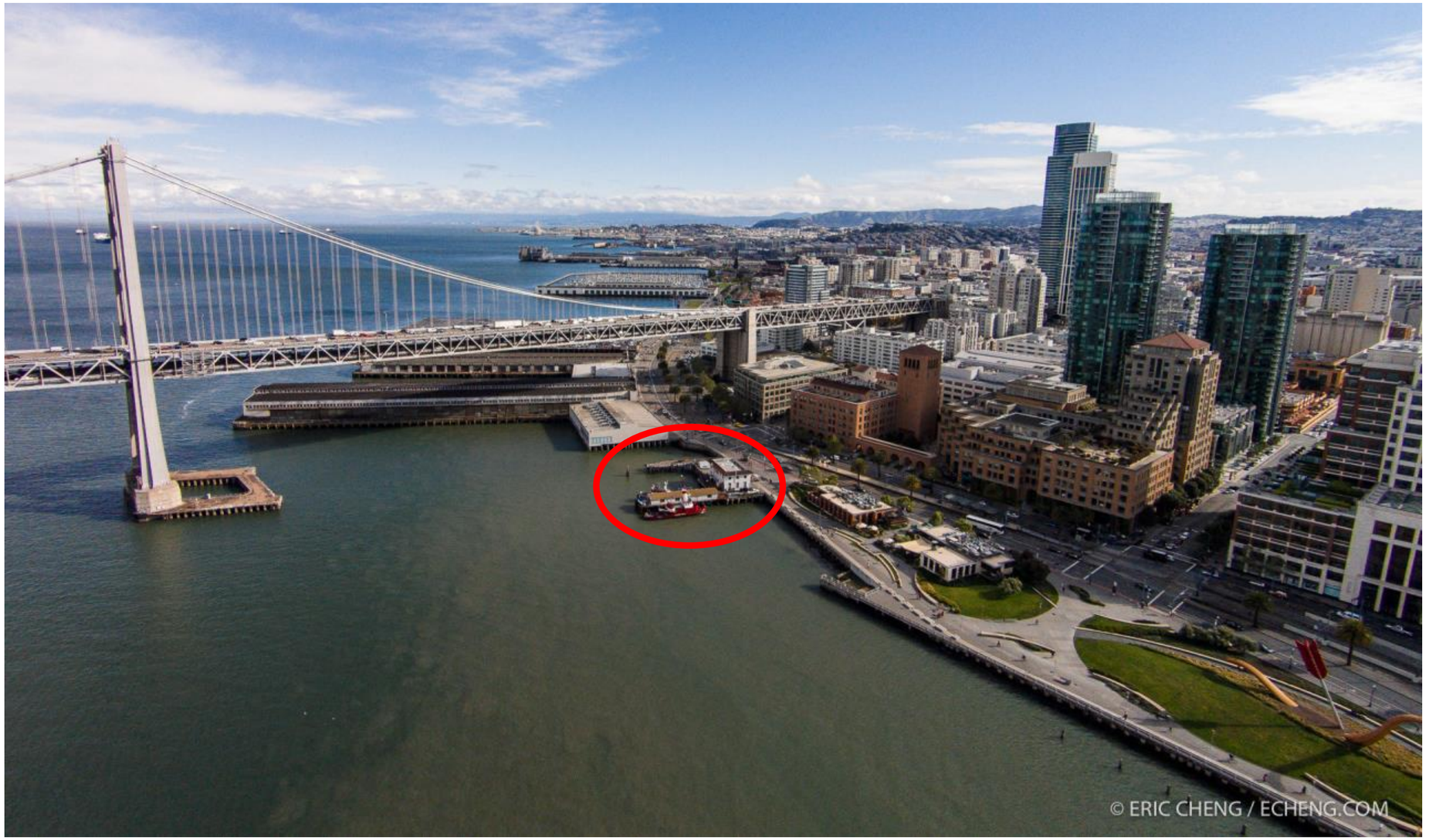
- Neighborhood Fire Stations $85M
- Emergency Firefighting Water System $55M
- District Police Stations and Infrastructure $30M
- Motorcycle Police and Crime Lab $165M
- Medical Examiner Facility $65M

ESER Program Project Map



San Francisco Water Power Sewer
Services of the San Francisco Public Utilities Commission

AERIAL PHOTO OF EXISTING SITE



SITE HISTORY

1915

- Pier 22 ½ built
- Fire Boat Headquarters Building constructed

1980s

- Non-historic Fireboat Pier constructed

1987

- Storage Shed on the Fireboat Pier constructed by San Francisco Port Commission Department of Engineering
- 2 parking lots constructed
- Wood decking at east side of the Fire Boat HQ Building was replaced
- Pier substructure was strengthened with installation of concrete drums at the pilings
- Electrical wiring for the building was reconfigured and electrical equipment was installed at the rear of the building

1999

- Fire Boat Headquarters Building designated as San Francisco City Landmark #225

2006

- Fireboat Headquarters Building listed as contributing resource of the POSF Embarcadero National Register Historic District
- Bulkhead Wharf is not listed (non-contributing resource)
- Important feature of Pier 22 ½ is its connection to the bulkhead wharf and the seawall.

2010

- Pier Strengthening at Pier 22 ½
  - Emergency stabilization of the pier structure
  - AWSS Hydrant Removed
  - $2.3M
  - Cowhey Pacific Drilling; Vortex Marine
- ESER 2010 Bond passed
  - Doesn't include Fire Boat Station project

PROJECT HISTORY

2011

- June 23: Fire Commission approved concept of new concrete pier and boathouse structure
  - Preliminary Budget: $20M

2012

- February 29: Fire Commission approved ESER 2010 NFS project portfolio
- Slab replacement project completed in June 2012
  - $437K (non-ESER funds)
  - Modification to (E) gas line completed in April 2013
- November 2012: Warriors presented proposed development project at Piers 30/32 included a new Fire Boat Station #35 at the site

2014

- April 2014: Warriors proposed project site moved away from Piers 30/32
- June 2014: SFFD directed Public Works to resume project planning at Pier 22 ½
- November 2014: ESER 2014 Bond passed

2015

- June 2015: Project moved to ESER 2014
- Presentation to Capital Planning Committee in October

2016

- Introduction of Sea Level Rise (SLR) floating barge solution
- Budget: $39.9M
- Public Works' proposed Design-Build project delivery method approved by Fire Administration
- RFQ for Design-Build Services advertised in August

2017

- RFP for Design-Build Services advertised in February to RFQ successful respondents
  - RFP Step 1 submissions received in March
  - RFP Step 2 submissions due in May
  - Selection of Design-Builder in June
  - Target NTP August 1

LIKE-JURISDICTION COMPARISON

	Operations	Daily Staffing	Approx. SF	Marine Assets	Special Elements
City of San Francisco	Fire Station 35				
	Fire Boat	3	16,339	88' St. Francis	Historic Station to Remain
	Engine Company	4		90' Guardian	
	Future Engine/Rescue	4		90' Phoenix	Only water Rescue unit in the City with direct water access
	Commander	1			Current staffing is 7 per shift
	Totals:	**12**	**16,800**		**Population served – 900K (Residents only). The fireboats provide protection for the entire bay area waterfront from the South Bay to Vallejo**
City of Long Beach	**Totals:**	**16**	**44,000**		**Population served – 500K (Residents only). Serves the Port of Long Beach and adjacent beach areas of the city. The Port provides a marine-based EOC.**
City of Los Angeles	**Totals:**	**22**	**42,000**		**Population served – 13M Greater LA Basin (Residents only). Serves the Port of Los Angeles and adjacent beach cities. The Port provides a marine-based EOC.**
City of Portland	**Totals:**	**12**	**26,000**		**Population served – 800K (Residents only). Serves Port of Portland. The Port provides a marine EOC.**
City of Seattle	**Totals:**	**12**	**16,000**		**Population served – 662K (Residents only).**
New York City	**Totals:**	**96**	**90,000**		**Population served – 8M**

FIRE STATION EXISTING CONDITIONS

EXISTING CONDITIONS:

- Current facilities are over 100 years old – costly repairs continue to mount
- Two piers, both deteriorating
  - One is completely unusable, the other is in poor condition
- Fire Station not seismically retrofitted
- Storage offsite, so equipment is out of reach in emergency situations
- Spill response containment booms stored in trailers away from water
- Split operations

EXISTING FACILITY DEFICIENCIES:

- Current facility space is grossly undersized for the operation program
- Locker facilities and restrooms are inadequate
  - Only station with no equal accommodations for female firefighters
- Ongoing fireboat maintenance including welding and other metal work currently done in the existing (unsuitable) wood framed shed structure
- No ambulance access to back of fire station for transfer of injured
- No decontamination space for firefighters and equipment

EXISTING CAPACITY

EXISTING STATION 6,100 GSF

ASSETS

- Two Fire Boats
- One Fire Engine

LIABILITIES

- Deteriorated Berthing Areas
- No Environmental Responses Equipment Storage, e.g. Oil Spill Boom
- No capacity for: Jet Skis, Small Craft Rescue Equipment, Dive Boat, e.g. Small Rescue Watercraft
- No Storage Areas
- No Decon Area and No Dive Equipment Area
- No Rescue Unloading Area
- No Changing Facilities for Firefighters

Historic FS #35 is 4,736 GSF
Shed is 1,720 GSF
Existing Pier/Dock/Parking Lot: 14,820 GSF

ESER SFFD DESIGN GUIDELINES

Fixtures and Furnishings Chart

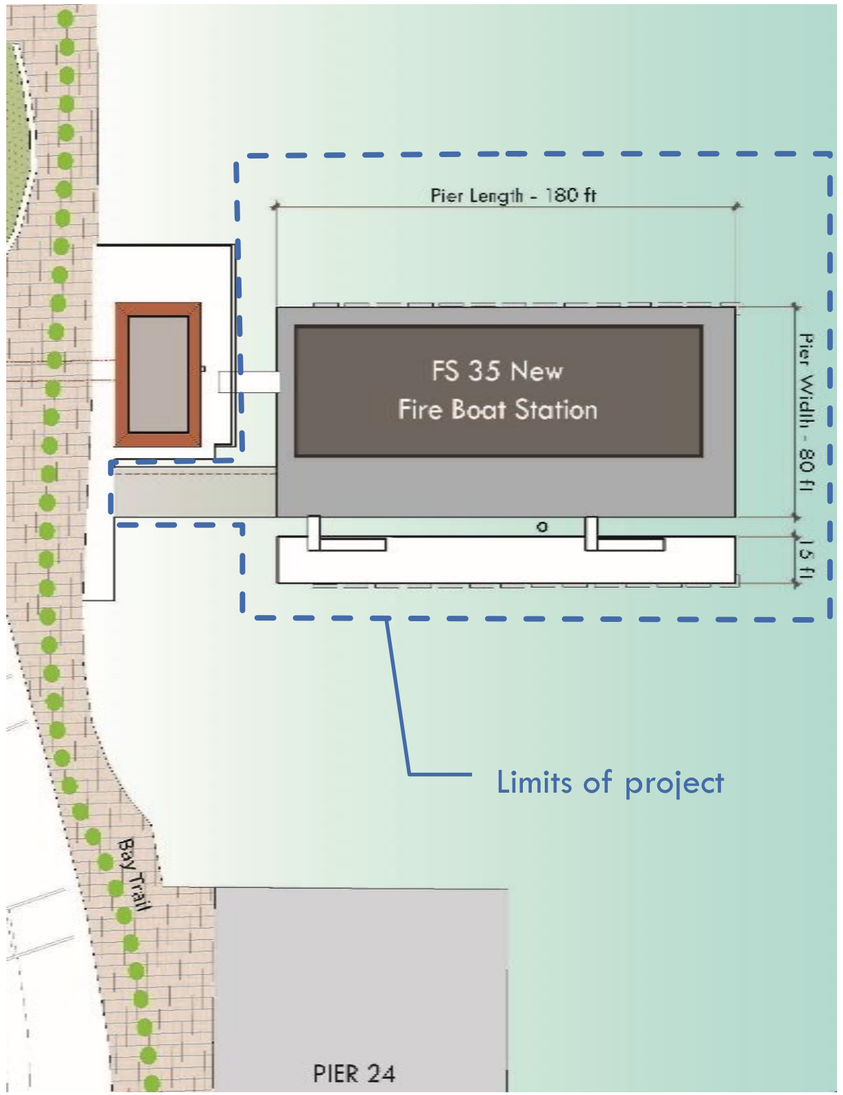
Space	Component	1 Company	2 Companies	3 Companies	ADD per Battalion Chief or Rescue Captain	ADD per Incident Command Specialist
Dormitory	Assigned beds	13	26	36		4
	Unassigned beds	3	3	5		
Officers Quarters	Bedroom with Restroom	1	2	3	1	
	Lockers	4	8	12	4	
	Assigned beds	4	8	12	4	
Firefighter Lockers Locker quantities are a minimum. Additional lockers are desired if space allows	Male	14	28	42		3
	Female	3	5	7		2
Male Firefighter Restroom-see Note below	Toilets	2	3	3		
	Urinals	1	2	2		
	Lavatories	2	3	4		
	Showers	2	3	4		
Female Firefighter Restroom-see Note below	Toilets	2	2	2		
	Lavatories	2	2	2		
	Showers	2	2	2		
Dining Room and Day Room	Dining Chairs	8	13	17	1	1
	Day Room Seating	4	9	13	1	1
Turnouts	Turnout Lockers: 36-inch wide	20	40	60	4	4
	Drying Hooks	10	20	30	1	1
Specialty Gear Bags	Above Each Turnout Locker: (2) bags on 36" deep open rack	40	80	120	8	8
	In Storage Room: (2) bags on 36" deep x 24" tall open racks	40	80	120	8	8

Note: in addition to these restroom guidelines: each fire station, regardless of size, will have one all-gender ADA-compliant full restroom with toilet, lav and shower.

	SAN FRANCISCO FIRE DEPARTMENT APPROVED BY:	San Francisco ESER Fire Station Bond Design Guidelines BROWN REYNOLDS WATFORD BRW ARCHITECTS	DATE ISSUED 11.03.16

Prepared 2012; Rev. 1, Feb 2017

PROPOSED CAPACITY



NEW STATION 16,339 GSF

ASSETS

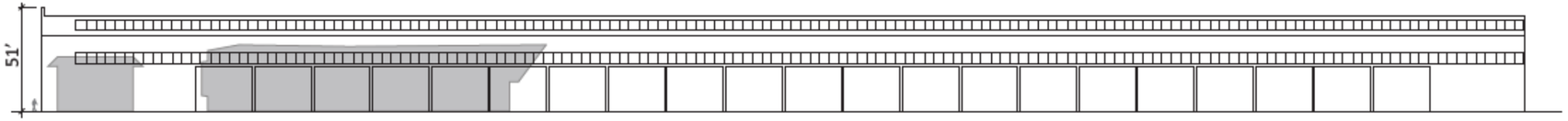
- Three Fire Boats
- Rescue Watercraft
- Jet Skis
- Dive Boat
- One Fire Engine

FEATURES

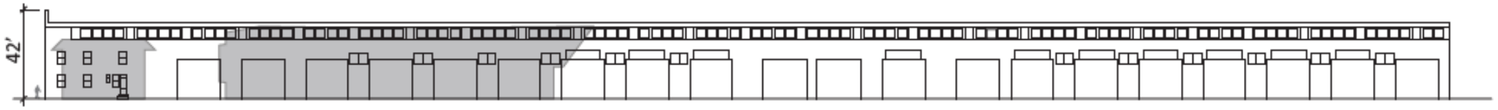
- Addresses all liabilities of existing facility
- Construction to Essential Facility Standards
- Storage Areas Consolidated for Emergency Response Equipment
- Ambulance Access
- Equipment for Boat Access, Rescue, and Loading and Unloading

Historic FS #35: 4,736 GSF
Existing Pier to remain: 7,000 GSF
Proposed New Barge*: 19,400 GSF
Total Shadow (Remaining + New): 26,400 GSF
*includes: Barge = 14,400 sf; Ramp = 2,000 sf; Float (200'x15') = 3000 sf
for total shadow of all three NEW components on the Bay

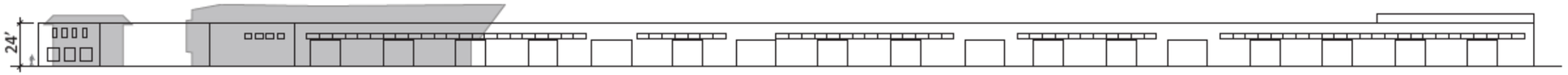
RELATIVE SCALE



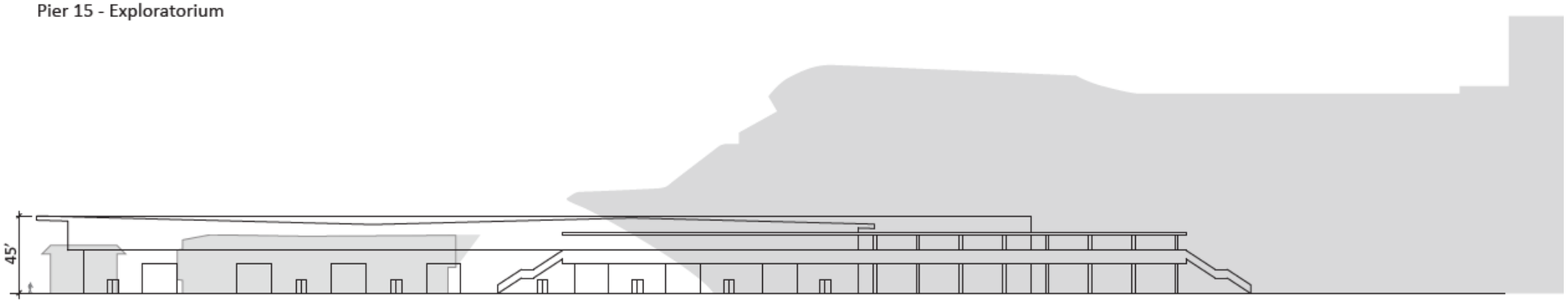
Pier 26 - Adjacent Pier



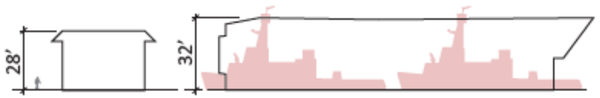
Pier 28



Pier 15 - Exploratorium

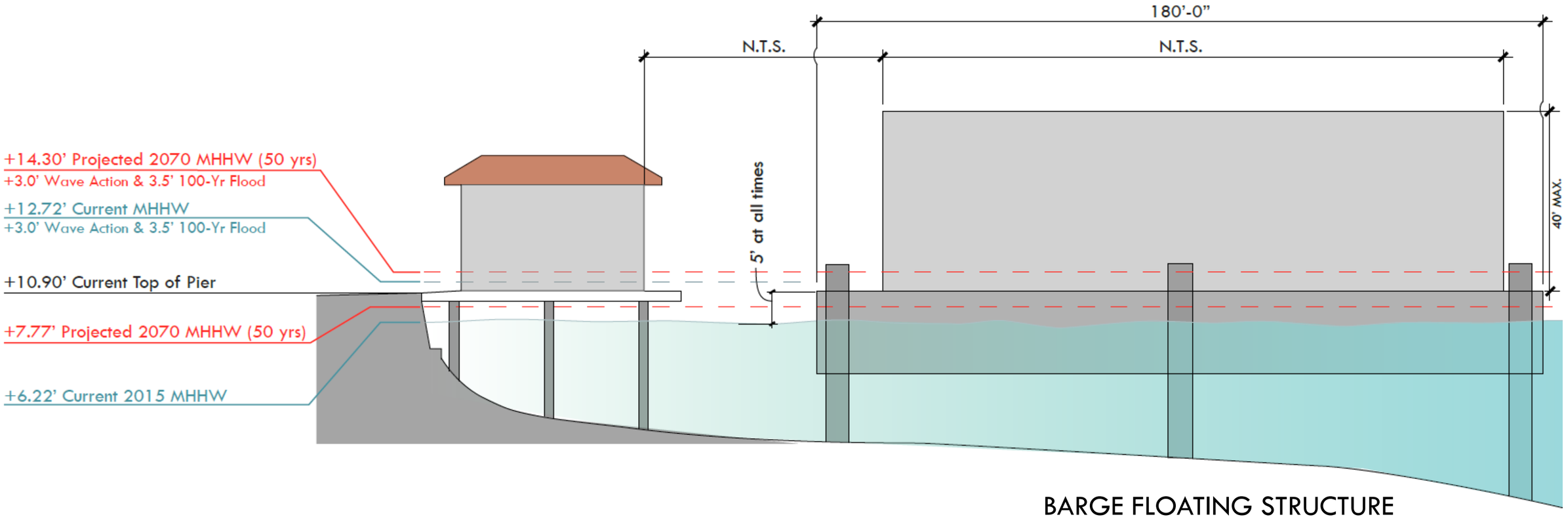


Pier 27 - Cruise Ship Terminal



Pier 22.5 - Fire Station 35

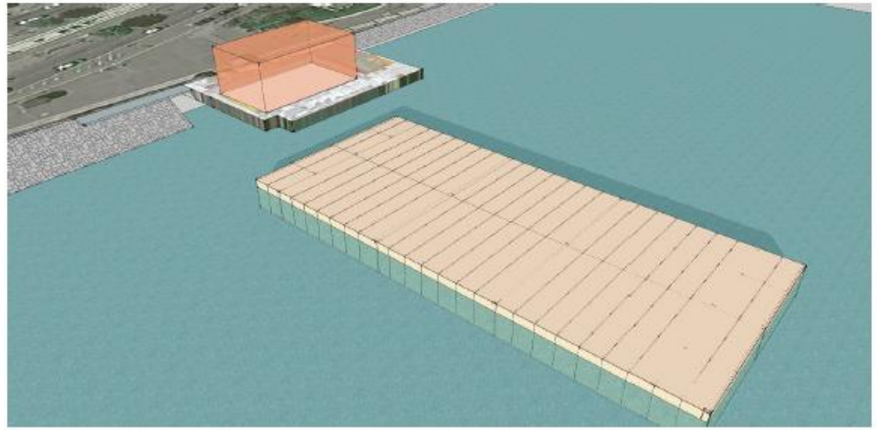
SEA LEVEL RISE



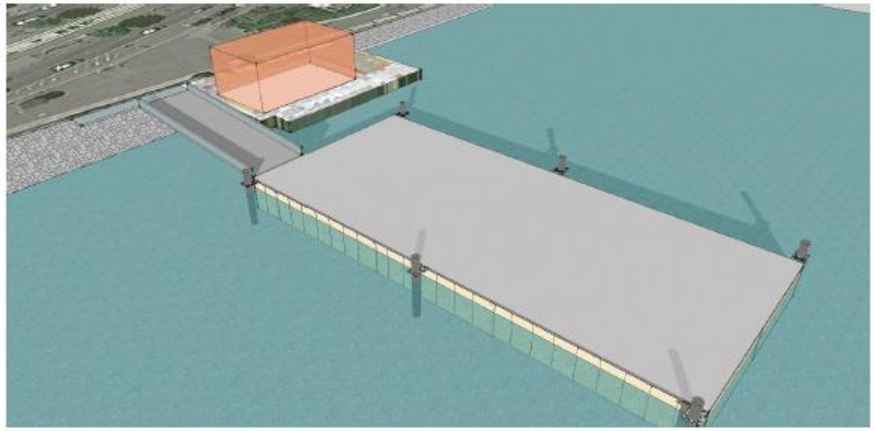
Marine Engineering: STEEL BARGE

Steel Barge

Steel Barge with Deck Slab



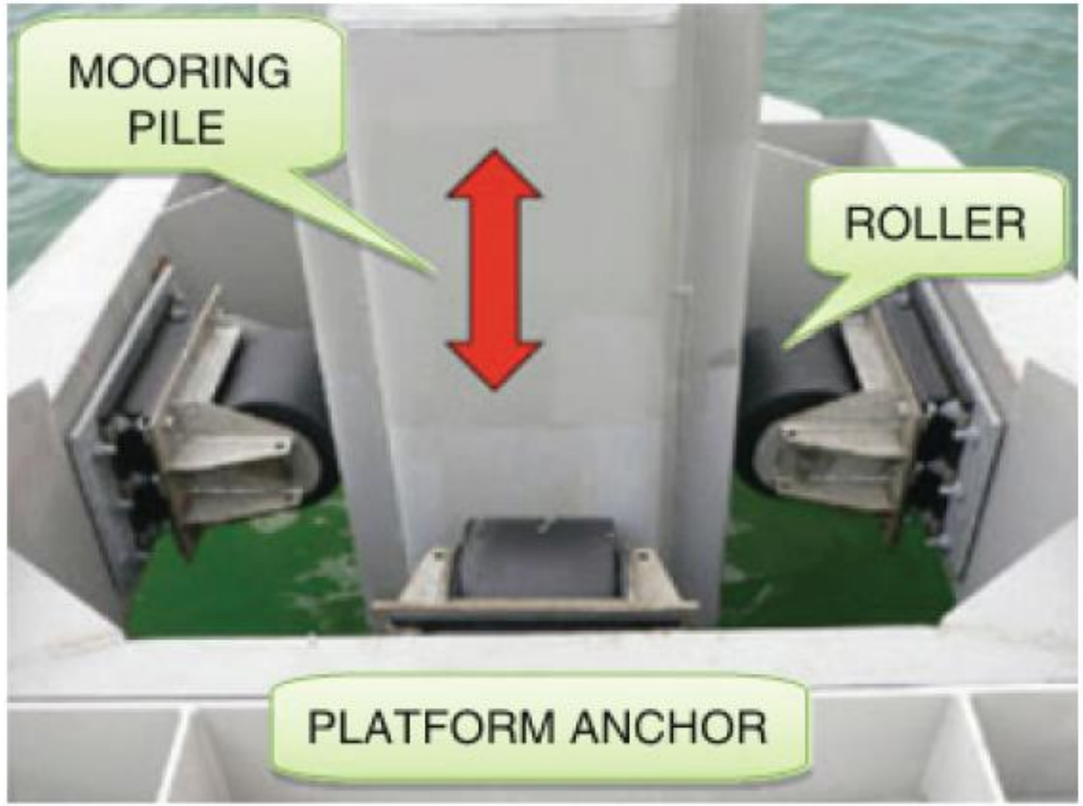
Steel Barge with Guide Piles and Ramp



Marine Engineering: COMFORT CRITERIA

Movement	Comfort criteria, RMS value
Roll	2°
Vertical acceleration	0.02 g or 0.66 ft/s^2
Lateral acceleration	0.03 g or 0.98 ft/s^2

- Limit of comfort values for roll, vertical and horizontal accelerations in cruise liners (Faltinsen, 1990).
- Criteria to be satisfied under operational conditions.
- During episodes of extreme weather conditions (design conditions), some people will feel uncomfortable.



Marine Engineering: EXAMPLES OF BARGE SUPPORTED STRUCTURES

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 2nd level.

Vernon C. Bain Prison Barge (New York, NY)

Built in New Orleans along the Mississippi River brought to New York in 1992. The 625 ft x 125 ft steel barge is equipped with 14 dormitories and 100 cells for inmates.

Brook St. Pier Ferry Terminal (Australia)

Concrete Barge, Ferry Berth, mark and Restaurants.

Barge 225 Floating Offices (Cleveland, OH)

150 ft x 45 ft Steel barge was converted to a restaurant and then in 2013 to an office space.

DESIGN-BUILD PROCUREMENT

Panel 1: 4 members (1 SFFD & 1 Port)

Step **1** — RFQ

Minimum Qualification Application (MQA) Technical Submittal — Panel 1

Panel 2: 5 members (1 SFFD)

Step **2** — RFP - Step 1

Creative Interpretation Exercise (Design Competition) — Panel 2

Panel 1: 4 members (1 SFFD)

Step **3** — RFP - Step 2

Price Proposal (35%)
to be responsive price proposal must be <= $29.9M FBL

Schedule, Project Approach Technical Level Design, Oral Interview (65%) — Panel 1

RFQ

5 teams submitted and 5 shortlisted:

- **Overaa/Dutra, JV**
- **Nibbi Brothers**
- **Plant Construction and TEF/KRA, JV**
- **Swinerton/Power, JV**
- **Turner/Pfau Long, JV**

RFP Step 1

3 teams submitted and 2 shortlisted:

- **Overaa/Dutra, JV**
- Plant Construction and TEF/KRA, JV
- **Swinerton/Power, JV**

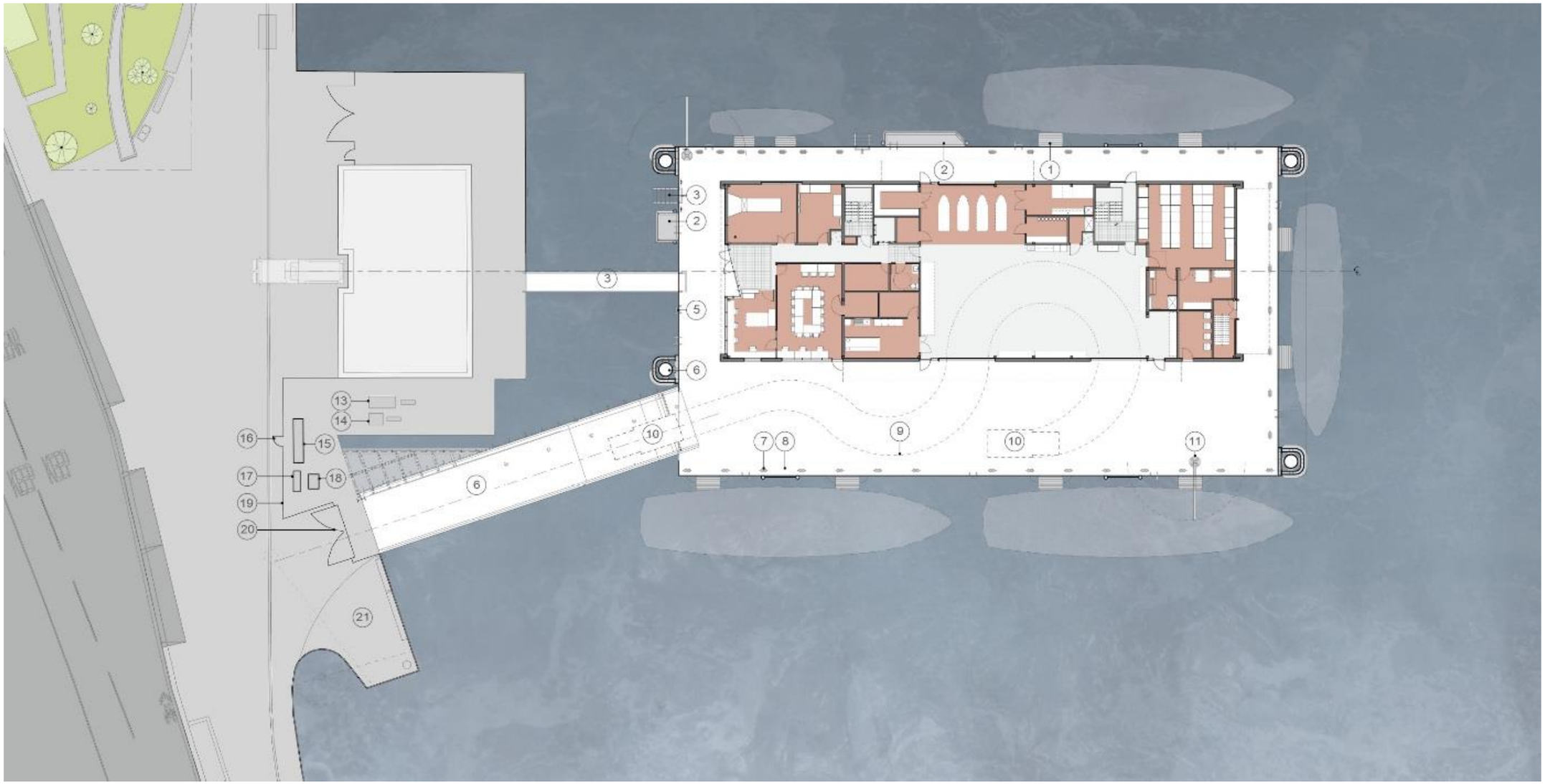
RFP Step 2

1 responsive proposal submitted:

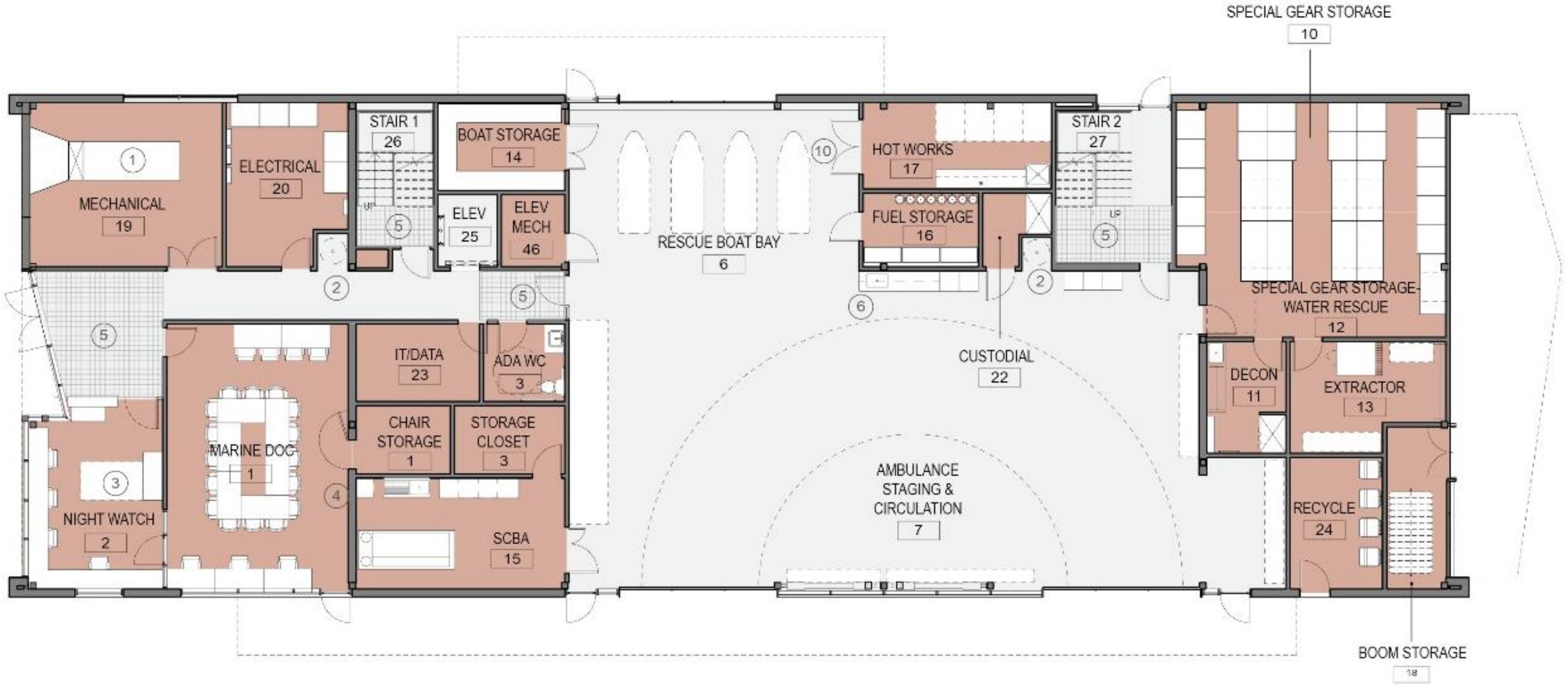
- Overaa/Dutra, JV
- **Swinerton/Power, JV**

Total Project Budget:	$39.9M
Design-Build Budget:	$29.9M
Design-Build Proposal:	$29.82M

CONCEPT SITE PLAN



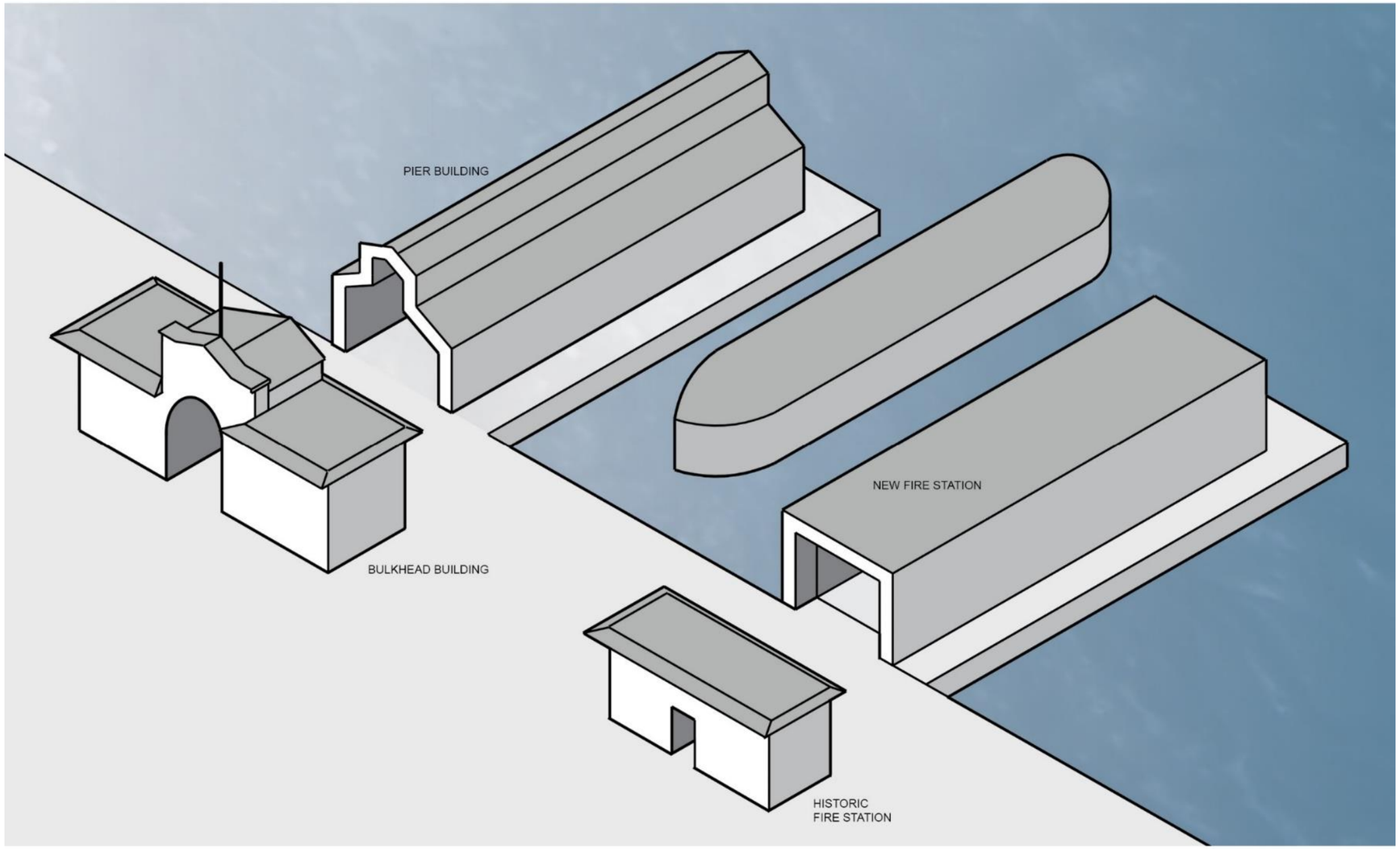
CONCEPT 1ST FLOOR PLAN



CONCEPT 2ND FLOOR PLAN

"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 BAY
REMOVED PIERS
BART
PIER 26
BAY BRIDGE
PIER 22 1/2
FIRE STATION 35
PIER 28
PIER 14
RINCON PARK
TROLLY
FERRY TERMINAL
RINCON HILL

CONCEPT ELEVATION - SOUTH

CONCEPT HARRISON STREET VIEW CORRIDOR

CONCEPT SOUTHWEST VIEW FROM THE EMBARCADERO

CONCEPT NORTHWEST VIEW FROM THE EMBARCADERO

CONCEPT VIEW FROM THE BAY

BOAT STATIONS IN OTHER CITIES – MATERIALITY

NYFD Fireboat station

NYFD Fireboat station

Portland Fireboat Station

Los Angeles Fire Boat House

Boston Contemporary Museum on the water

Boston - Rowes Wharf

Boston - Cambridge Yacht Club

Boston - Harvard Boat House

PROPOSER'S METHODOLOGY

APPROACH

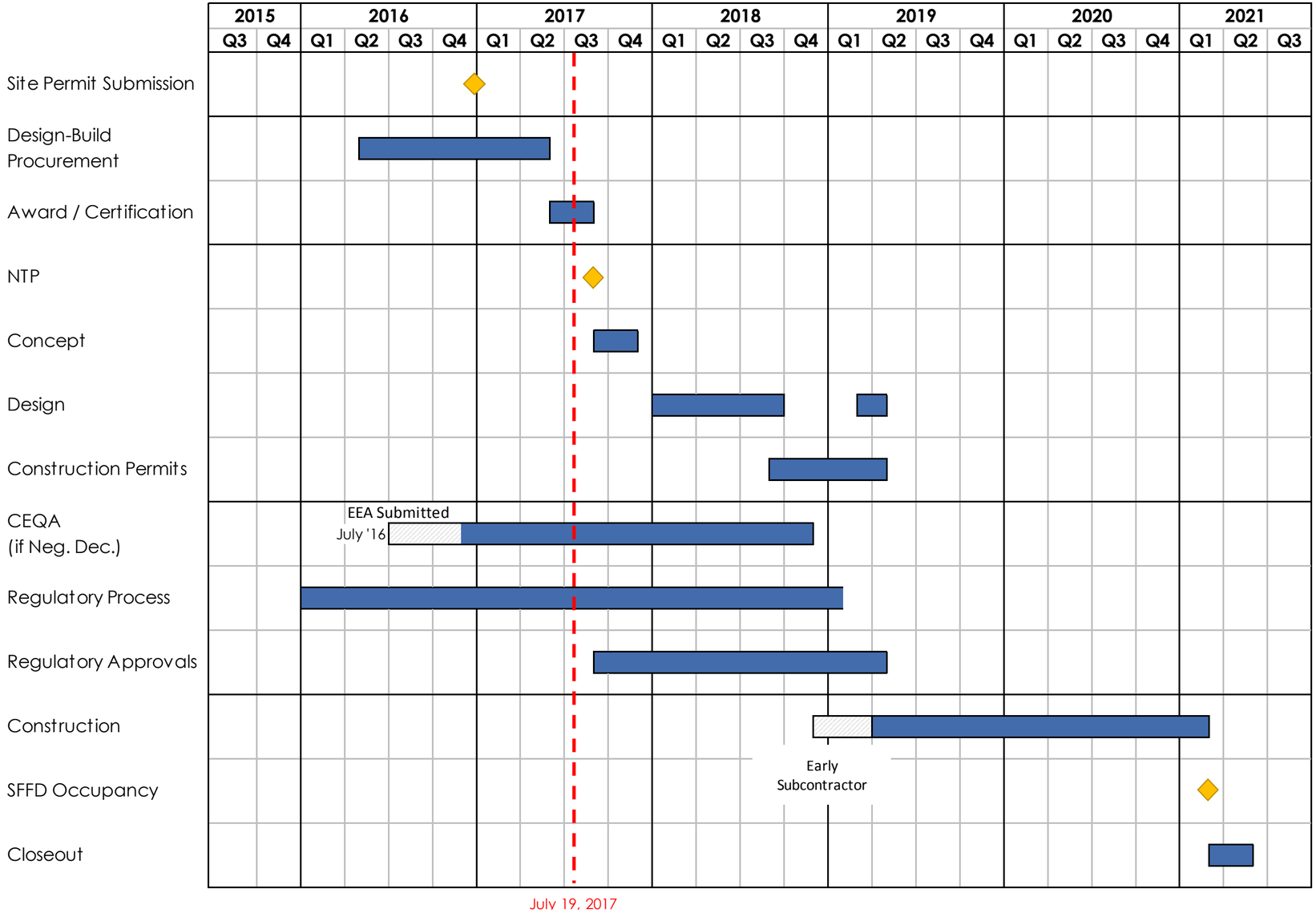
- Barge Design and Fabrication team:
  - Power Engineering
  - Liftech Consultants Inc.
  - Shanghai Zhenhua Heavy Industries Co. (ZPMC)

BUILDING CONSTRUCTION IN SAN FRANCISCO

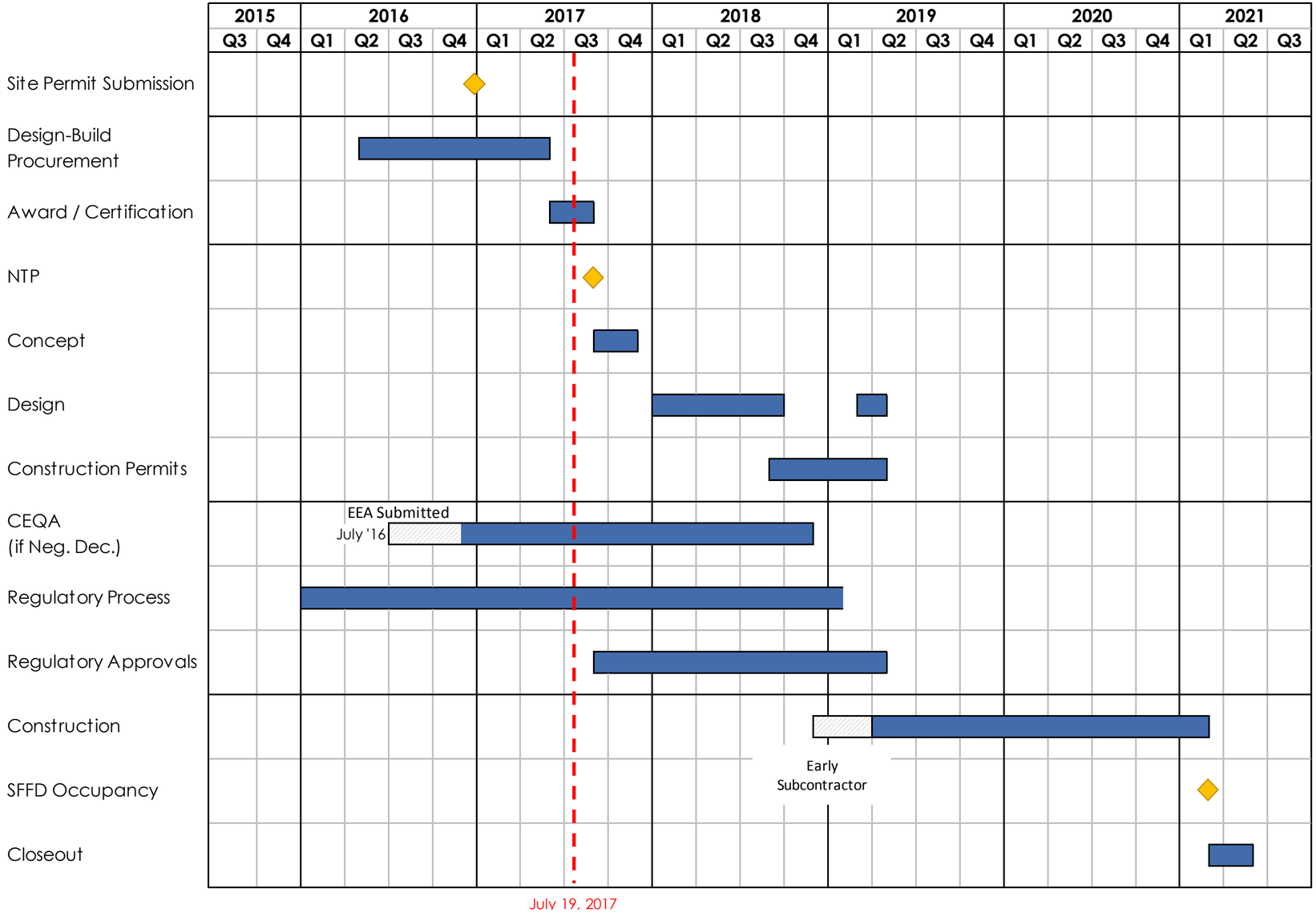
- Once fabrication is complete, dry barged to San Francisco.

- The building will be assembled on top of the barge docked at Pier 1, Treasure Island.

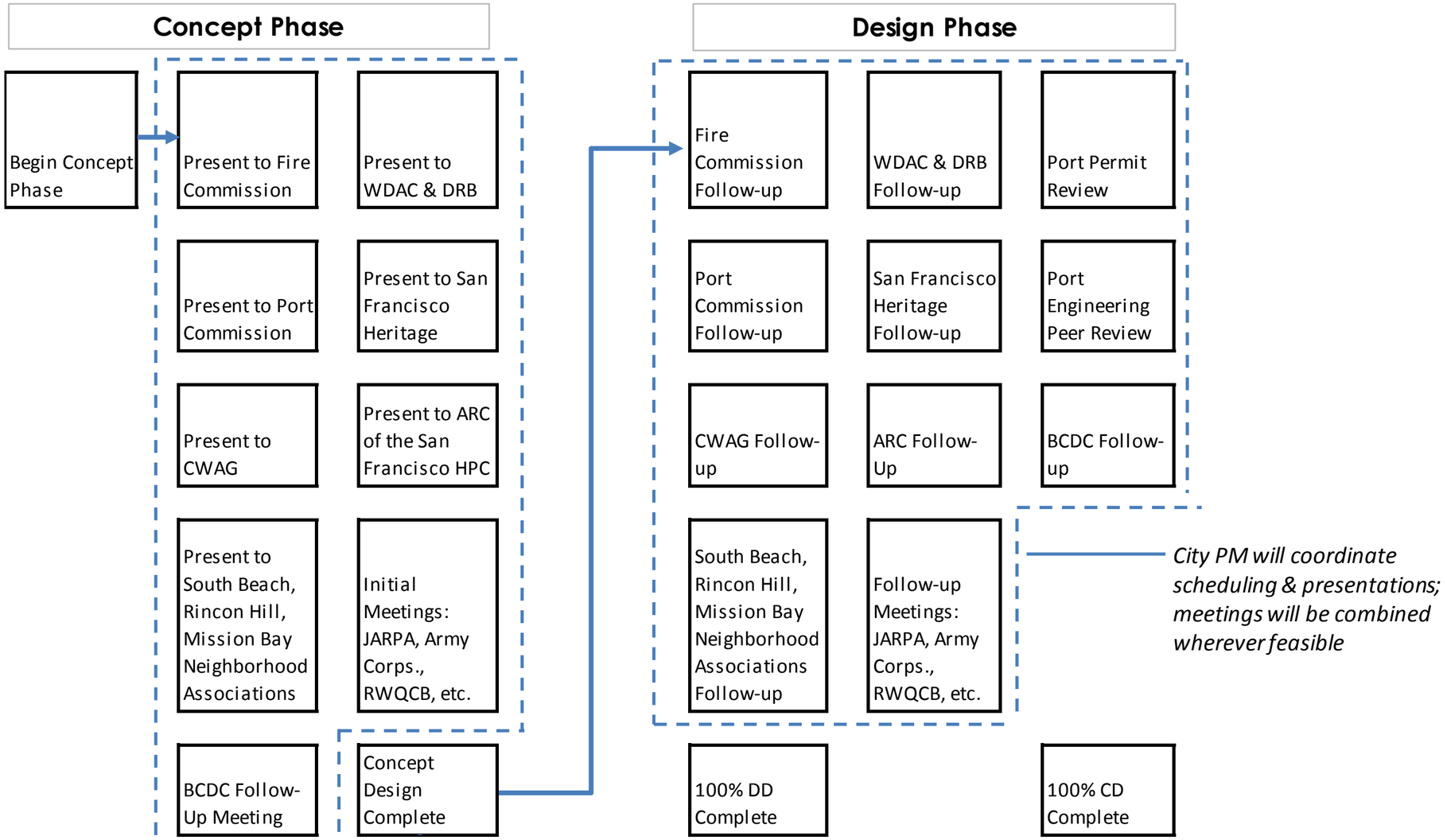
PRELIMINARY SCHEDULE



PROPOSER'S SCHEDULE



CONCEPTUAL PLANNING PROCESS FLOWCHART



PERMITTING AGENCIES

	Agency	Type of Application
City Agency (Approval)	SF Port Building Permit Division	Port Building Permit
	SF City Planning Environmental Planning Division	CEQA Review and Determination including procedures for historical resources
	San Francisco Fire Department (SFFD) Administration	Design Review
City Agency (Advisory)	San Francisco Fire Commission	
	San Francisco Port Commission	
	Central Waterfront Advisory Group (CWAG)	
	Citizen Advisory Committees (CAC)	Public Design Review
	Waterfront Design Advisory Committee (WDAC)	Public Design Review
Regulatory Agency Approvals	San Francisco Bay Conservation and Development Commission (BCDC)	1) BCDC Permit; Design-Build team to confirm whether Major or Administrative 2) Engineering Criteria Review Board (ECRB) 3) Design Review Board (DRB)
	US Army Corps of Engineers (USACE)	Sec. 10 (RHA) / Sec. 404 (CWA) Permit for discharge of dredged or fill material (33 CFR 323)
	National Marine Fisheries Service (NMFS)	1) Consultation under Sec. 7 (FESA) 2) Incidental Take Authorization under Marine Mammal Protection Act (MMPA)
	San Francisco Bay Regional Water Quality Control Board (RWQCB)	Sec. 401 (CWA) Water Quality Certification
	CA Department of Fish and Wildlife (CDFW)	Incidental Take Permit Sec. 2081 (FGC)
	US Coast Guard	Maritime Transportation Security Act of 2002 (33 CFR)
Regulatory Agency Consultation	US Fish and Wildlife Services (FWS)	Consultation under Sec. 7 (FESA)
	CA State Lands Commission	Use plan consultation
	State Historic Preservation Officer	Sec. 106 (NHPA) consultation

Project website: www.sfearthquakesafety.org/fireboatstation35

More information: Gabriella Judd Cirelli, Project Manager
Gabriella.Cirelli@sfdpw.org
(415) 557-4707

Type of Pier	Pros	Cons
FIXED PIER Pier Construction = $6.4M Total Site and Building = $14.3M Total Construction Cost = $23.3M **TOTAL PROJECT COST = $36.7M**	Build on site	Building roof will be higher for Planning review
	More contractor participation due to conventional construction	Pier and building will be subjected to high seismic loading
	No dredging and sheet pile required	Need to place pier higher than sea level rise prediction
	Residents in the building not subject to motion	Steel piles and beams require corrosion protection and inspection for life of pier
		Require impact pile driving. Environmental issue, limited
FLOATING STEEL PIER Pier Construction = $6.3M Total Site and Building = $14.0M Total Construction Cost = $23.1M **TOTAL PROJECT COST = $36.6M**	Building roof will be lower for planning review	Limited contractors could do the project
	No dredging and sheet pile required	Need special treatment coating and sacrificial steel for corrosion protection for life of the project
	Adaptable to sea level rise	Residents in the building will be subject to motion of the pier
	Limited impact from Seismic activity	Utilities to the shore will need flexible joints
	Less environmental impact, fewer piles to drive	Access ramp will need to adjust per tides
	Separate boarding float may not be required	Require periodic dive inspection
		Limited locations in Bay Area where it can be built. Need to be transported to site
FLOATING CONCRETE PIER Pier Construction = $8.6M Total Site and Building = $16.3M Total Construction Cost = $27.0M **TOTAL PROJECT COST = $42.4M**	Building roof will be lower for planning review	Limited contractors could do the project
	More durable against corrosion and deterioration	Need epoxy coated rebar for corrosion protection for life of the project
	Adaptable to sea level rise	Residents in the building will be subject to motion of the pier, less than steel floating pier
	Limited impact from Seismic activity	Utilities to the shore will need flexible joints
	Less environmental impact, fewer piles to drive	Access ramp will need to adjust per tides
	Separate boarding float may not be required	Require dredging and sheet pile
		Limited locations in Bay Area where it can be built. Need to be transported to site