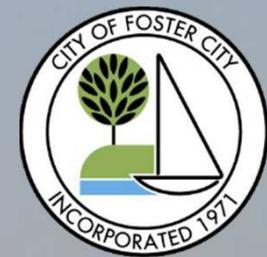


City Council Study Session on Levee Project August 28, 2015

- **Purpose – Provide overview of Levee Project to the Regulatory Agencies**
- **Project Goals**
- **Schaaf & Wheeler – Levee Planning Study Update with Alternatives, Costs, and Timeline**
- **Funding mechanism**
- **FAQ Sheet**
- **Project Schedule**
- **Regulatory Agencies Involved**
- **Questions**



Goals for the Levee Project

- **FEMA Accreditation of the Levee**
- **Satisfaction to the majority of the public**
- **Keep the public informed during the entire process**
- **Project completion in 2020**
- **Provide recreational amenities based on public input**
- **Keep project costs at a minimum – Most likely public funded (Assessment District)**
- **Minimize impacts during construction**



Levee Planning Update



August 28, 2015



Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS



Overview

- FEMA Timeline
- Levee System Overview
- Coastal Flood Hazard Study
- Evaluation of Existing Levees
- Sea Level Rise
- Project Considerations
- Alternatives and Estimated Costs
- Milestone Schedule
- Next Steps



FEMA Timeline

- ❑ California Coastal Analysis and Mapping Project (CCAMP)
- ❑ Preliminary maps showing revised coastal flood hazards (San Francisco Bay) were released August 13, 2015.

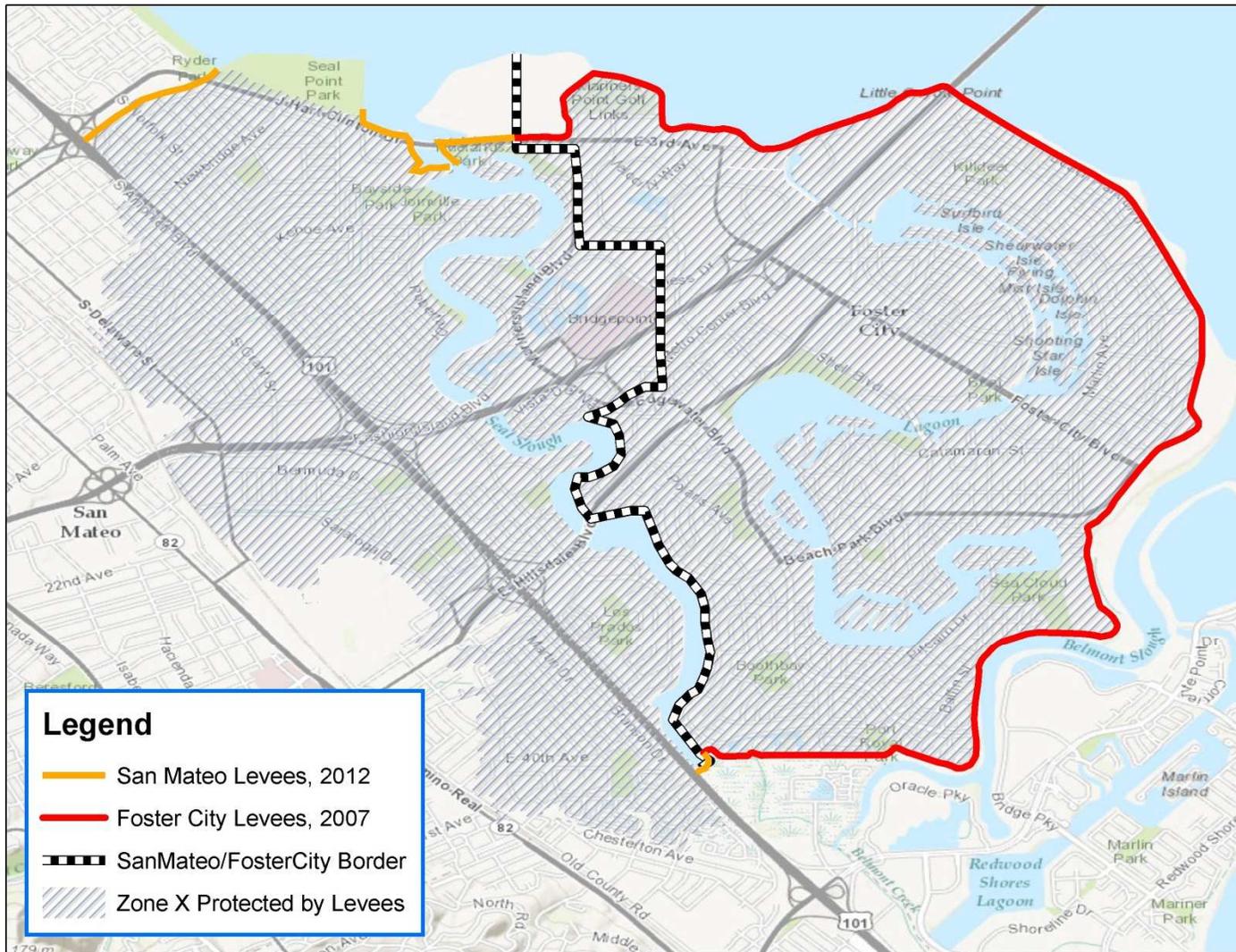


FEMA Timeline

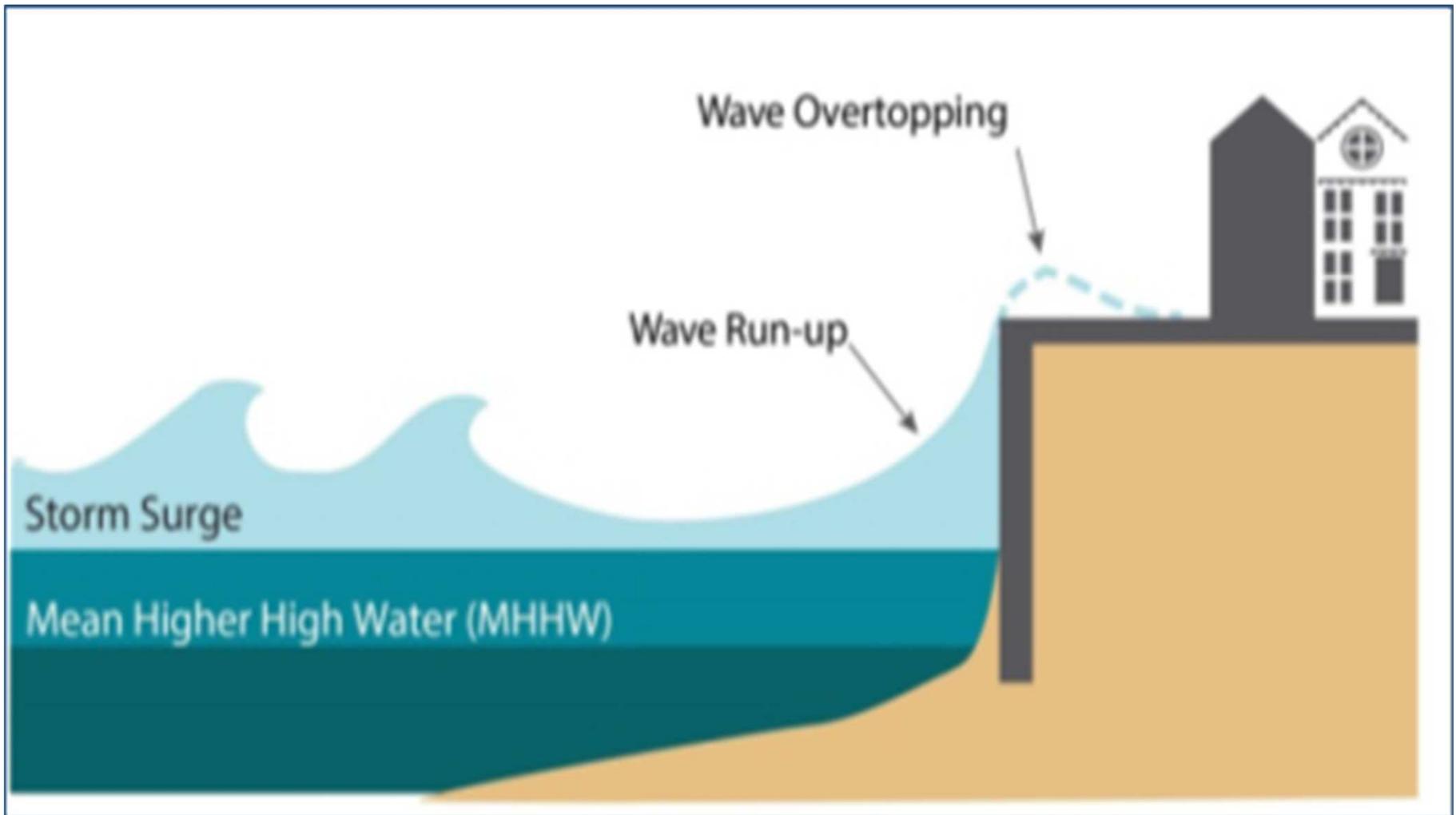
- ❑ FEMA has agreed to use **Seclusion Mapping** for Foster City and those areas in San Mateo protected by Foster City levees.
- ❑ The purpose of seclusion mapping is to recognize that the Foster City levees are no longer accredited by FEMA and while there are no immediate changes to mapped flood hazards in Foster City and San Mateo, and no change in the need for mandatory flood insurance, FEMA reserves the right to remap the area bound by the seclusion in the future as additional study warrants.



Levee System Overview



Coastal Flood Hazard Study



Typical Levee



Typical Levee



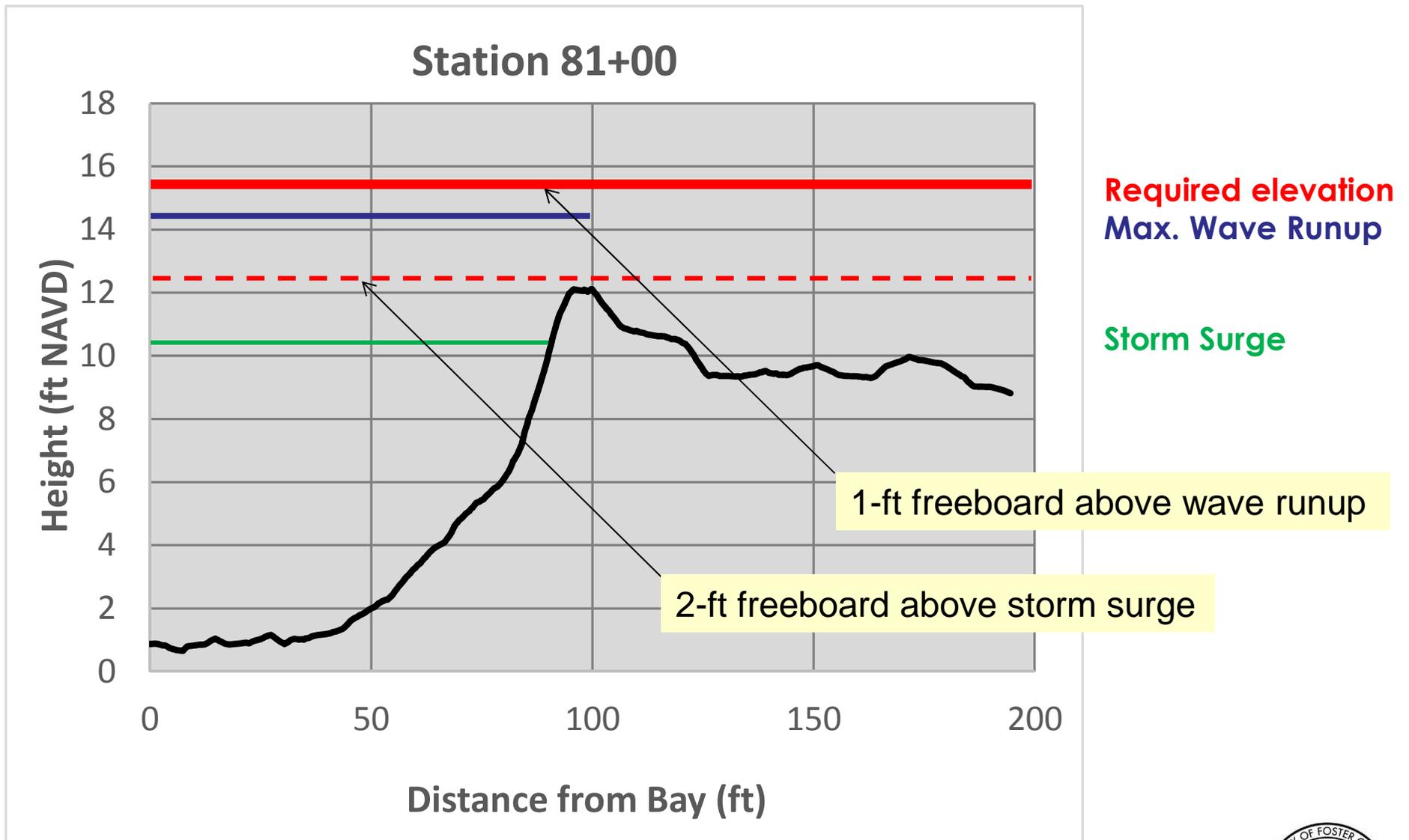
Levee Wear and Tear



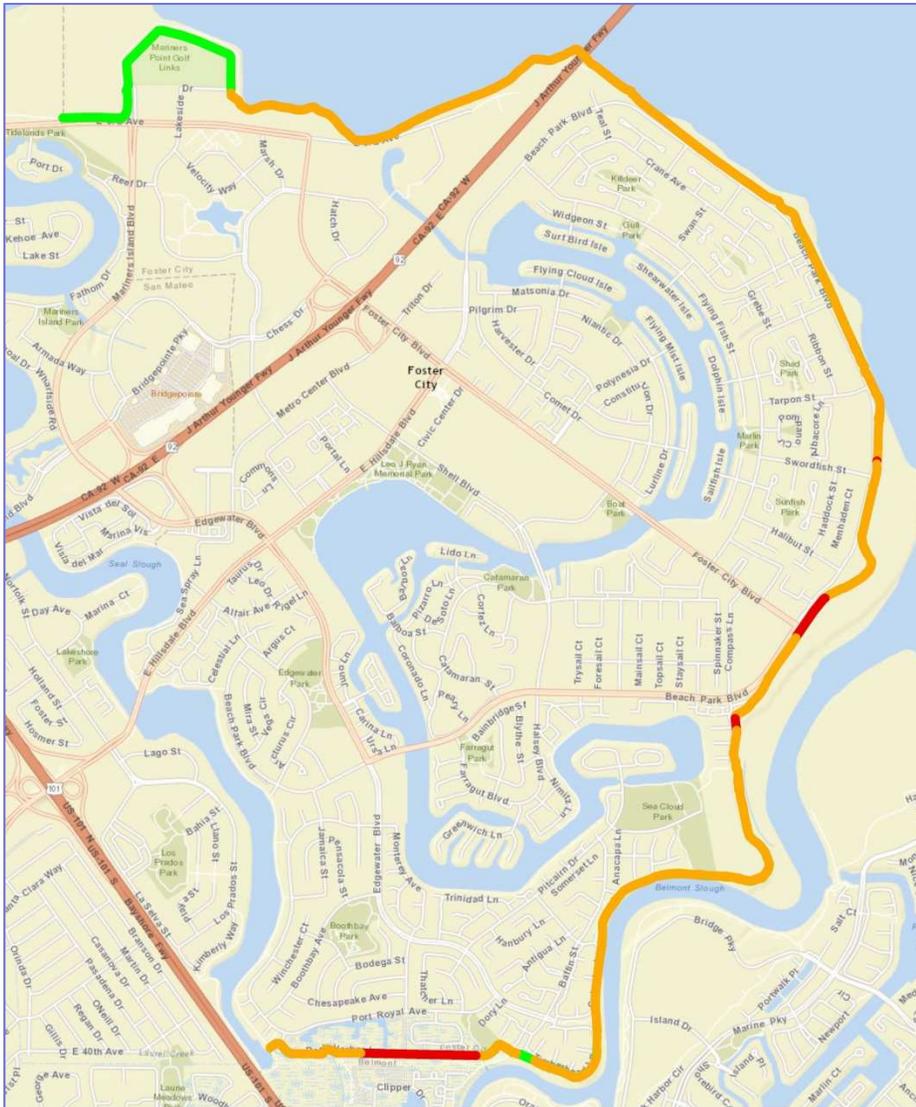
Flood Wall



Evaluation of Existing Levees



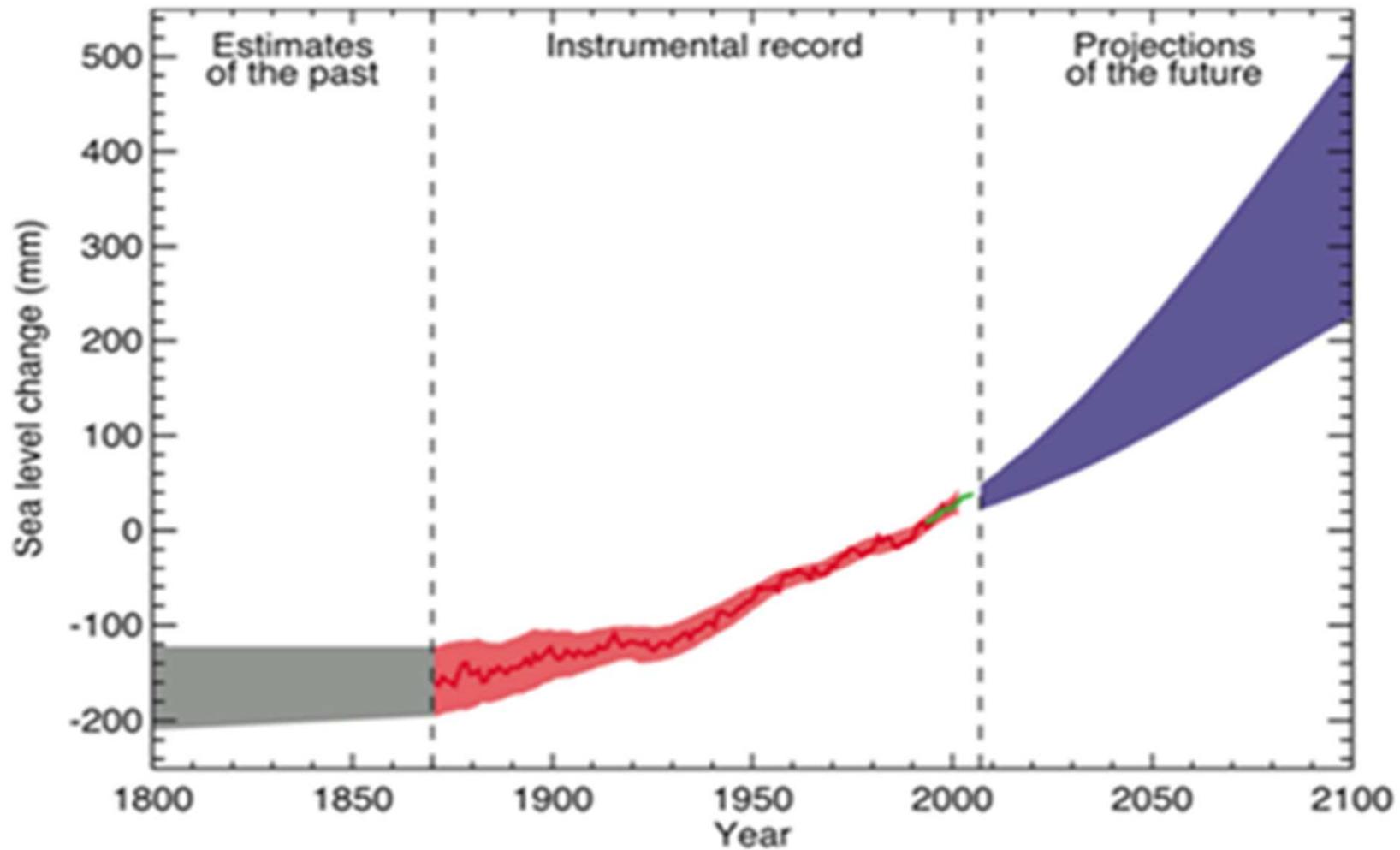
Levee Freeboard



- No Deficiency
- Freeboard Deficient
- Stillwater Overtopping



Sea Level Rise



Sea Level Rise

Time Period	Projection (inches)	Range (inches)
2000 – 2030	6±2	2 to 12
2000 – 2050	11±4	5 to 24
2000 – 2100	36±10	17 to 66

(Source: City and County of San Francisco)

Plan for initial SLR and settlement allowance, with ability to adaptively increase elevation in future. [Policy Decision]



Project Considerations

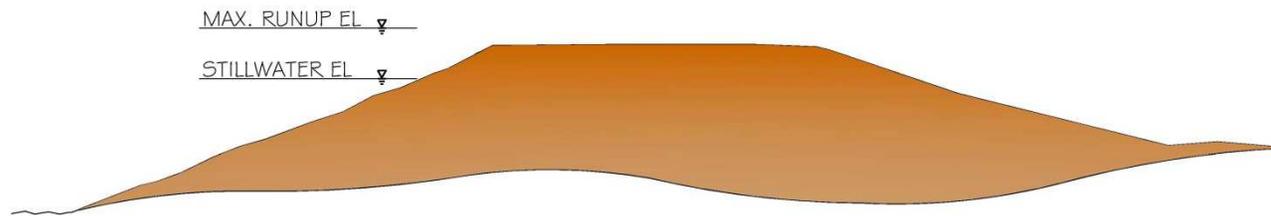
- ❑ Foster City's Most Important Asset
 - ❑ protects city from flooding
 - ❑ access to recreational amenity
- ❑ Available Space
- ❑ Environmental Impact and Avoidance
- ❑ Views and Aesthetics
- ❑ Construction Impacts
- ❑ Adaptation to Future Sea Level Rise
- ❑ Cost and Schedule
- ❑ **FEMA Accreditation**



Levee Improvement Alternatives

Raise Earthen Levee

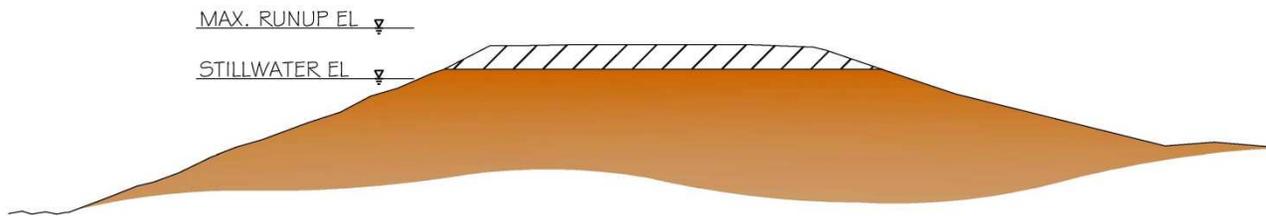
Estimated Cost= \$50M - \$75M



Levee Improvement Alternatives

Raise Earthen Levee

Estimated Cost= \$50M - \$75M

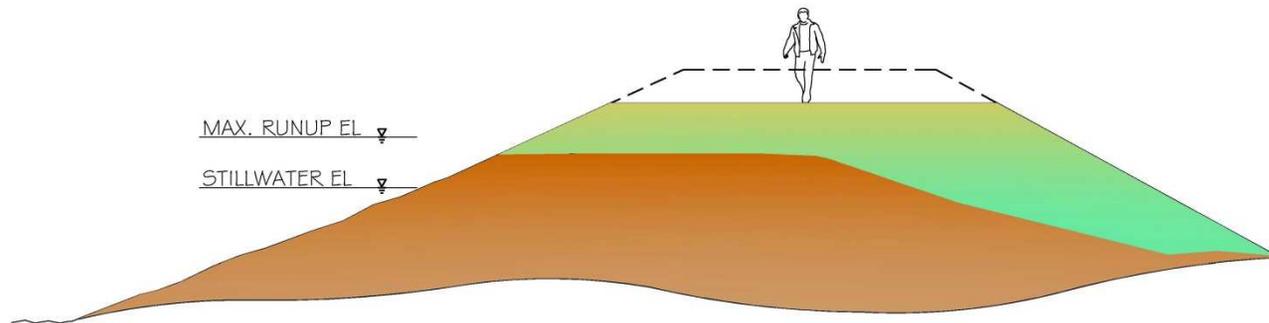


Top foot of soil (plus or minus) is removed.

Levee Improvement Alternatives

Raise Earthen Levee

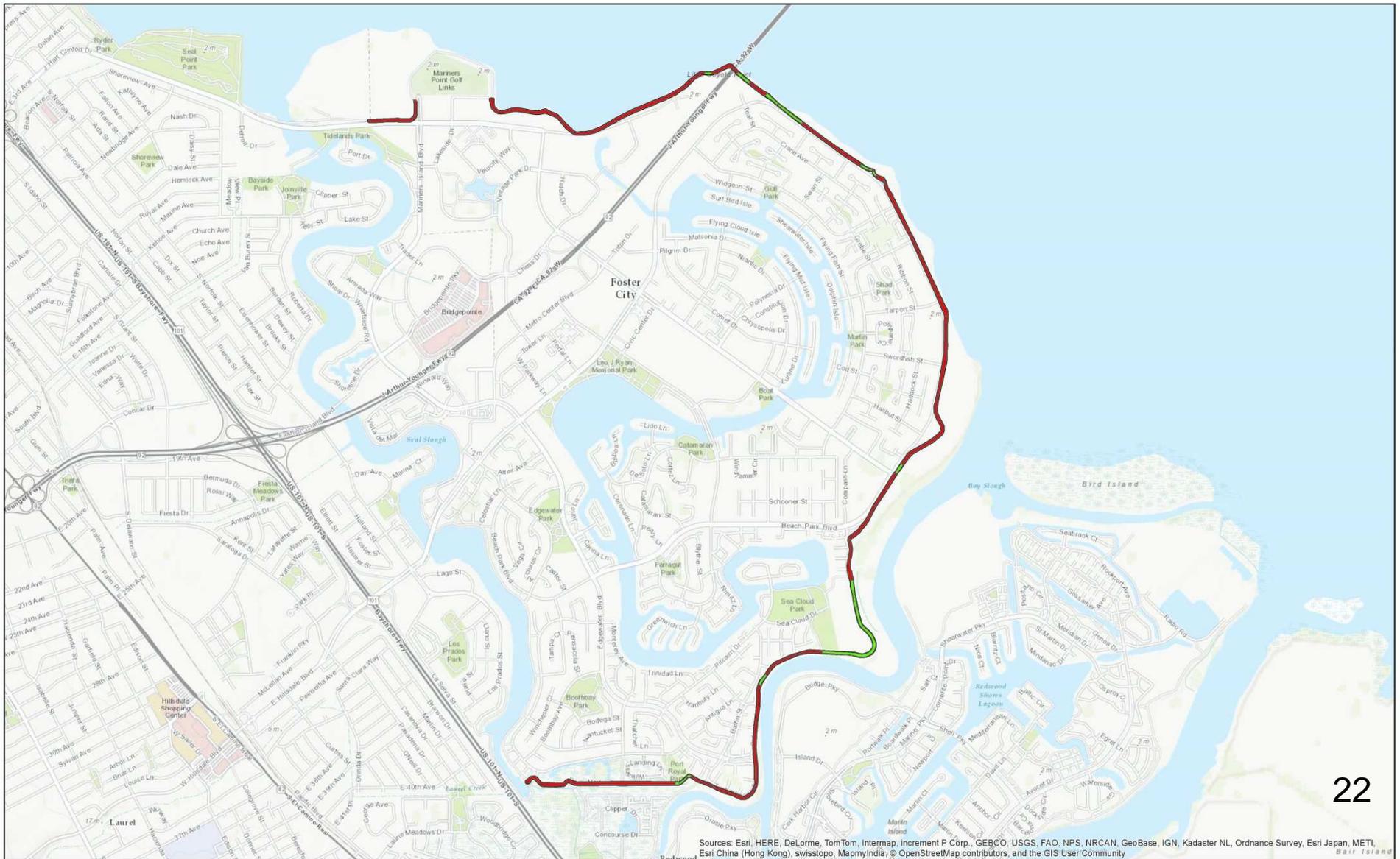
Estimated Cost= \$50M - \$75M



Build base needed for ultimate levee height now.

Top of improved levee set to meet FEMA requirements plus allowance for settlement and sea level rise.

Levee Improvement Alternatives



22

Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

- Legend**
- █ Footprint within Boundaries
 - █ Property or Street Intersecting Footprint
 - Estimated Earthen Levee Footprint



Areas of Levee Footprint Intersection with Property Lines or Streets



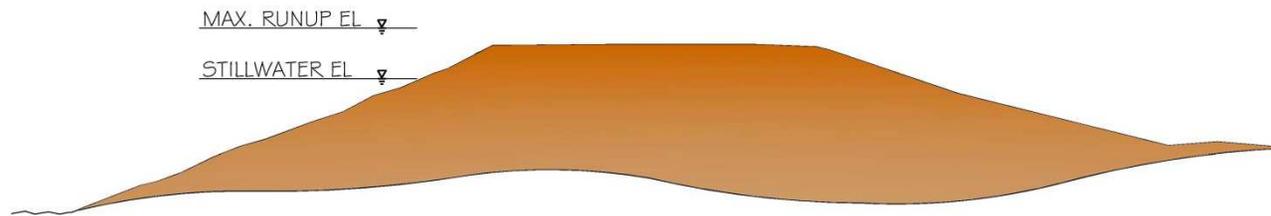
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Foster City Levee Coordination

Levee Improvement Alternatives

Flood Walls

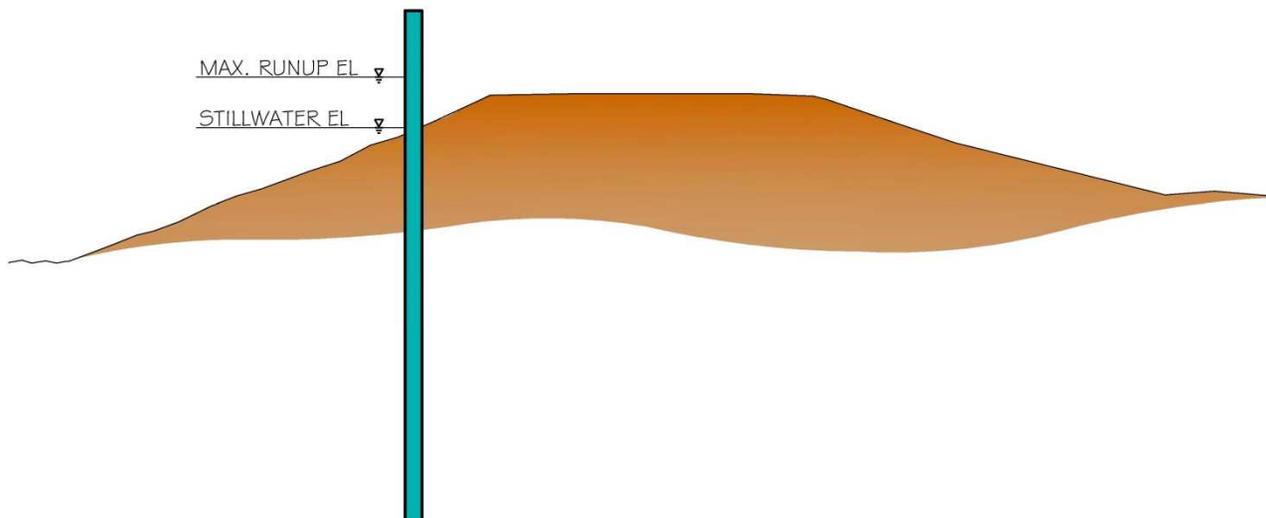
Estimated Cost= \$40M - \$65M



Levee Improvement Alternatives

Flood Walls

Estimated Cost= \$40M - \$65M

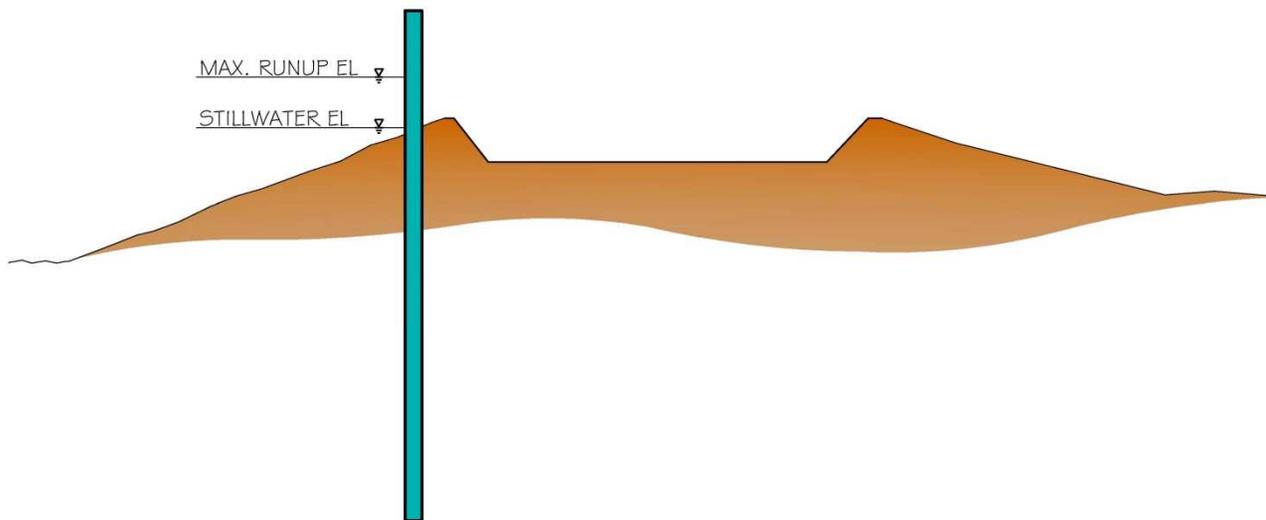


Provide temporary flood protection during construction.

Levee Improvement Alternatives

Flood Walls

Estimated Cost= \$40M - \$65M

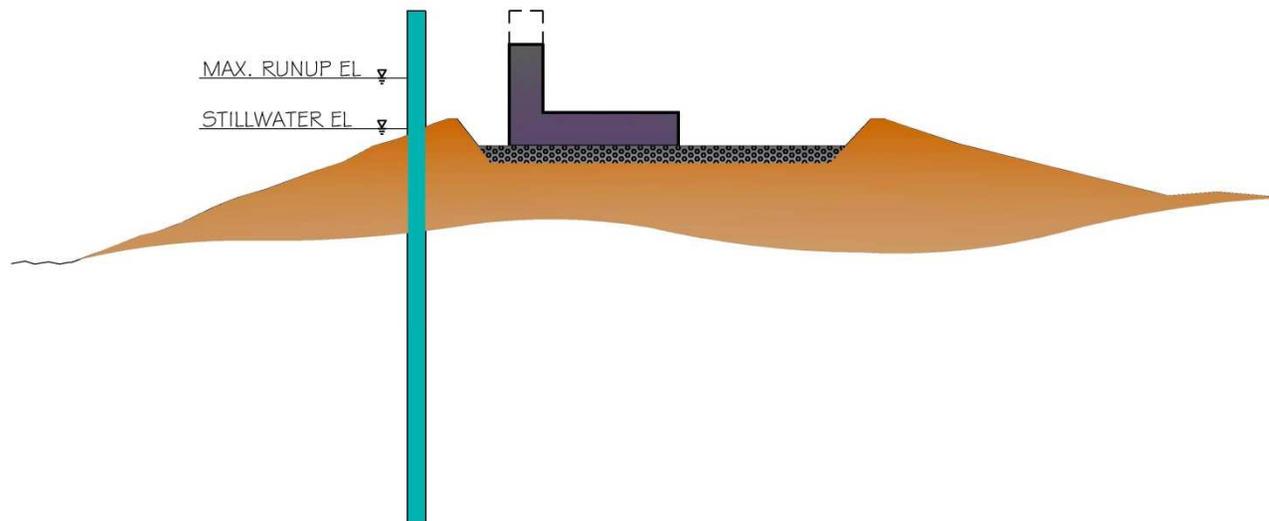


Provide temporary flood protection during construction.

Levee Improvement Alternatives

Flood Walls

Estimated Cost= \$40M - \$65M

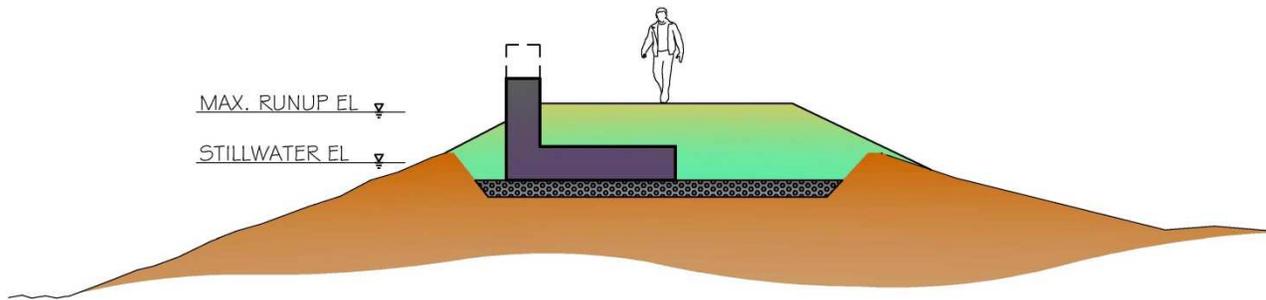


Provide temporary flood protection during construction.

Levee Improvement Alternatives

Flood Walls

Estimated Cost= \$40M - \$65M

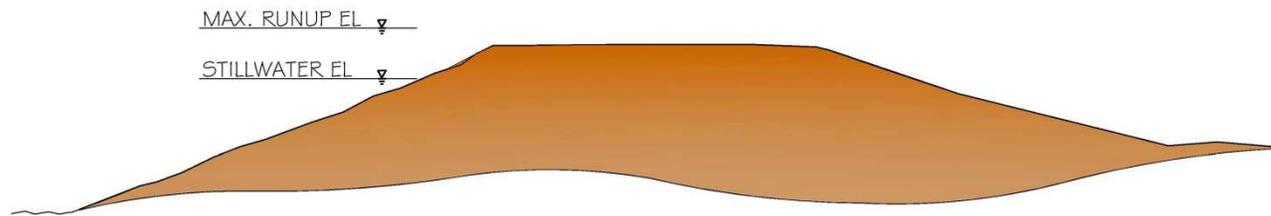


Place fill for Bay Trail to avoid excessively high flood wall.

Levee Improvement Alternatives

Hybrid Design

Estimated Cost = \$35M - \$65M

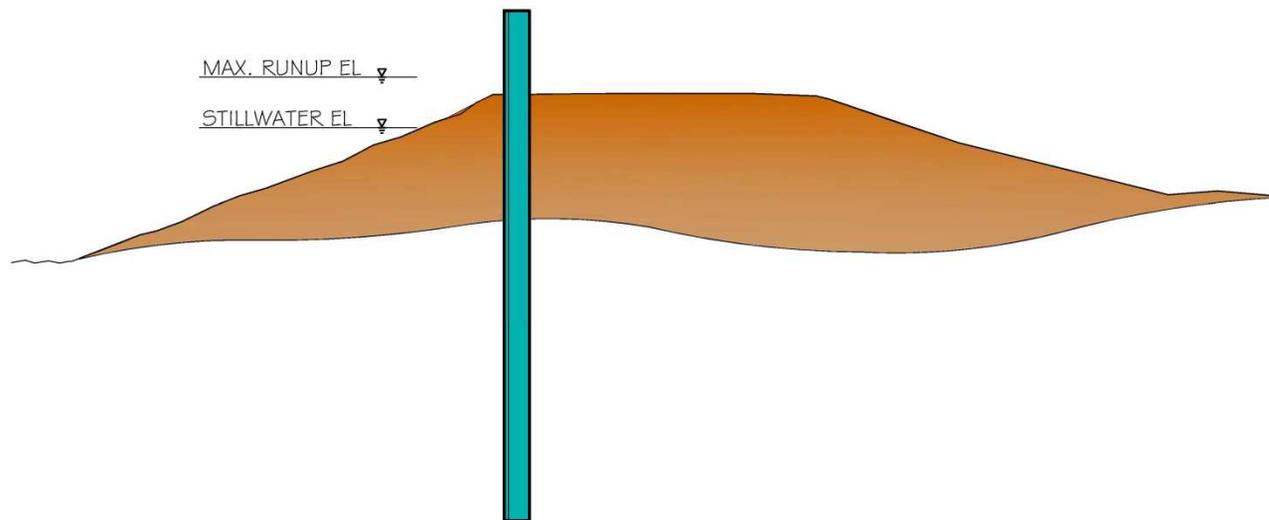


Levee Improvement Alternatives

Hybrid Design

Estimated Cost = \$35M - \$65M

Recommended based on available data



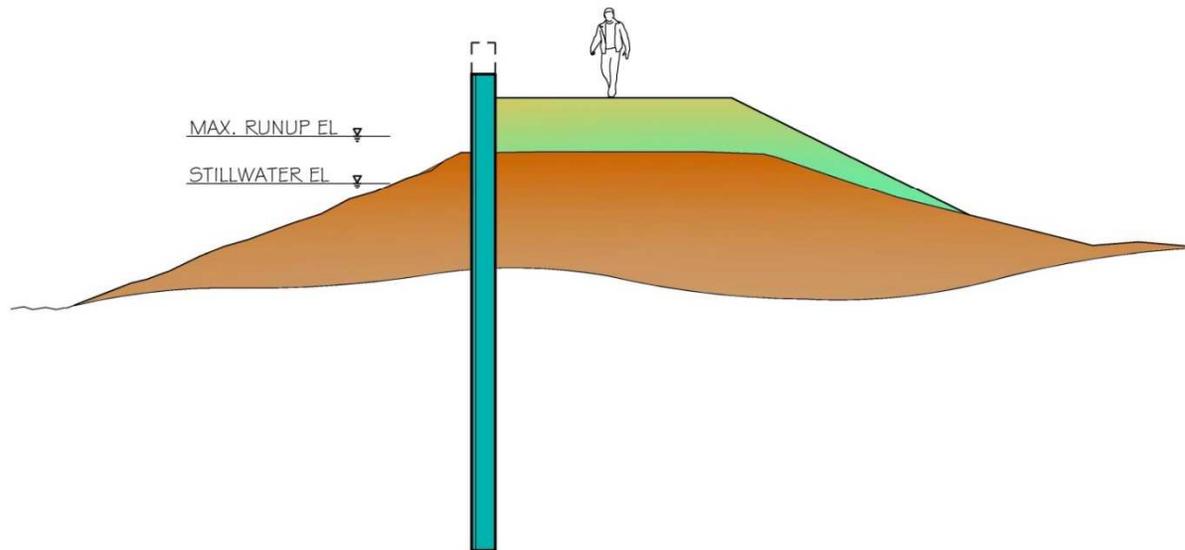
Provide permanent flood protection during construction.

Levee Improvement Alternatives

Hybrid Design

Estimated Cost = \$35M - \$65M

Recommended based on: available data, cost, and minimal impacts during construction. Alternative treatments and finishing of the interior walls could increase costs accordingly

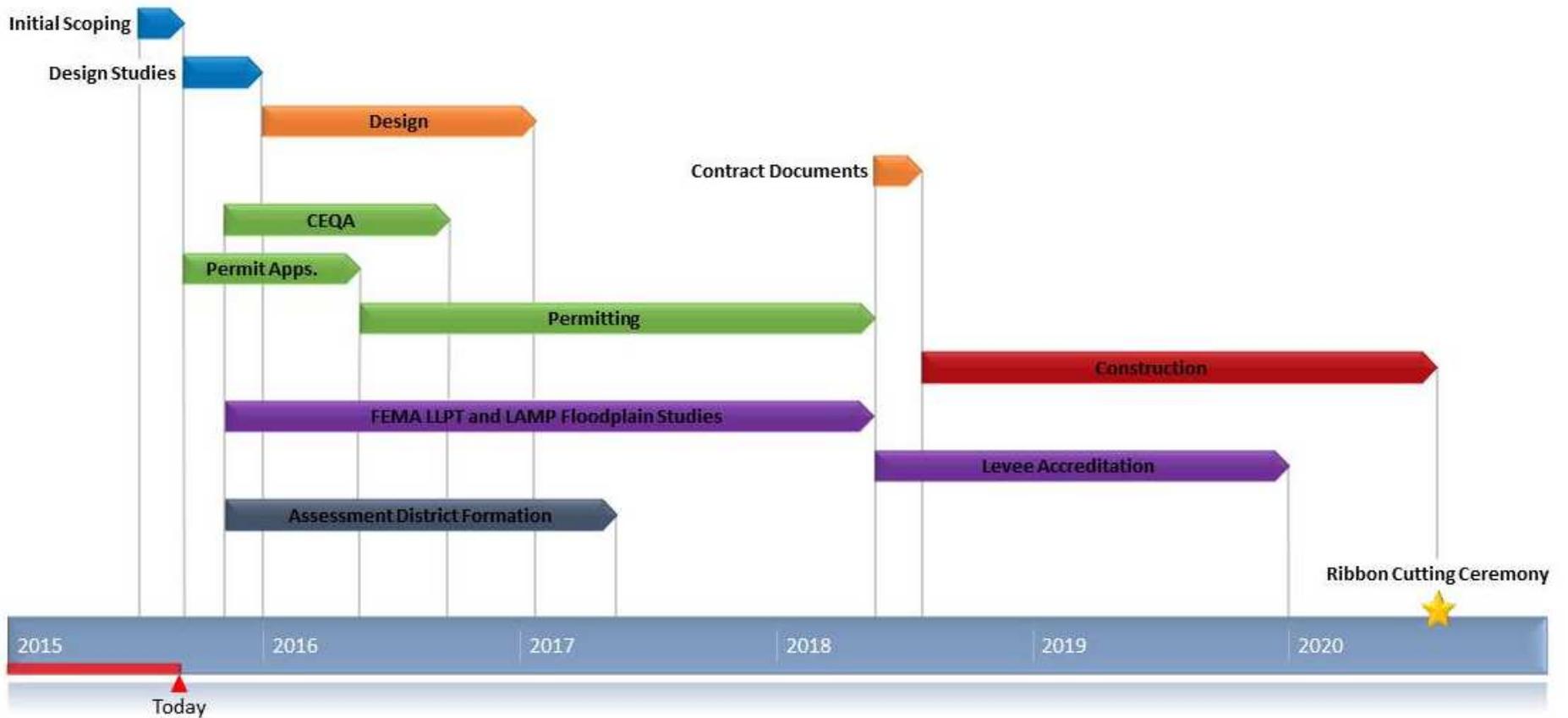


Place fill for Bay Trail to avoid excessively high flood wall.

Potential Wall Treatments

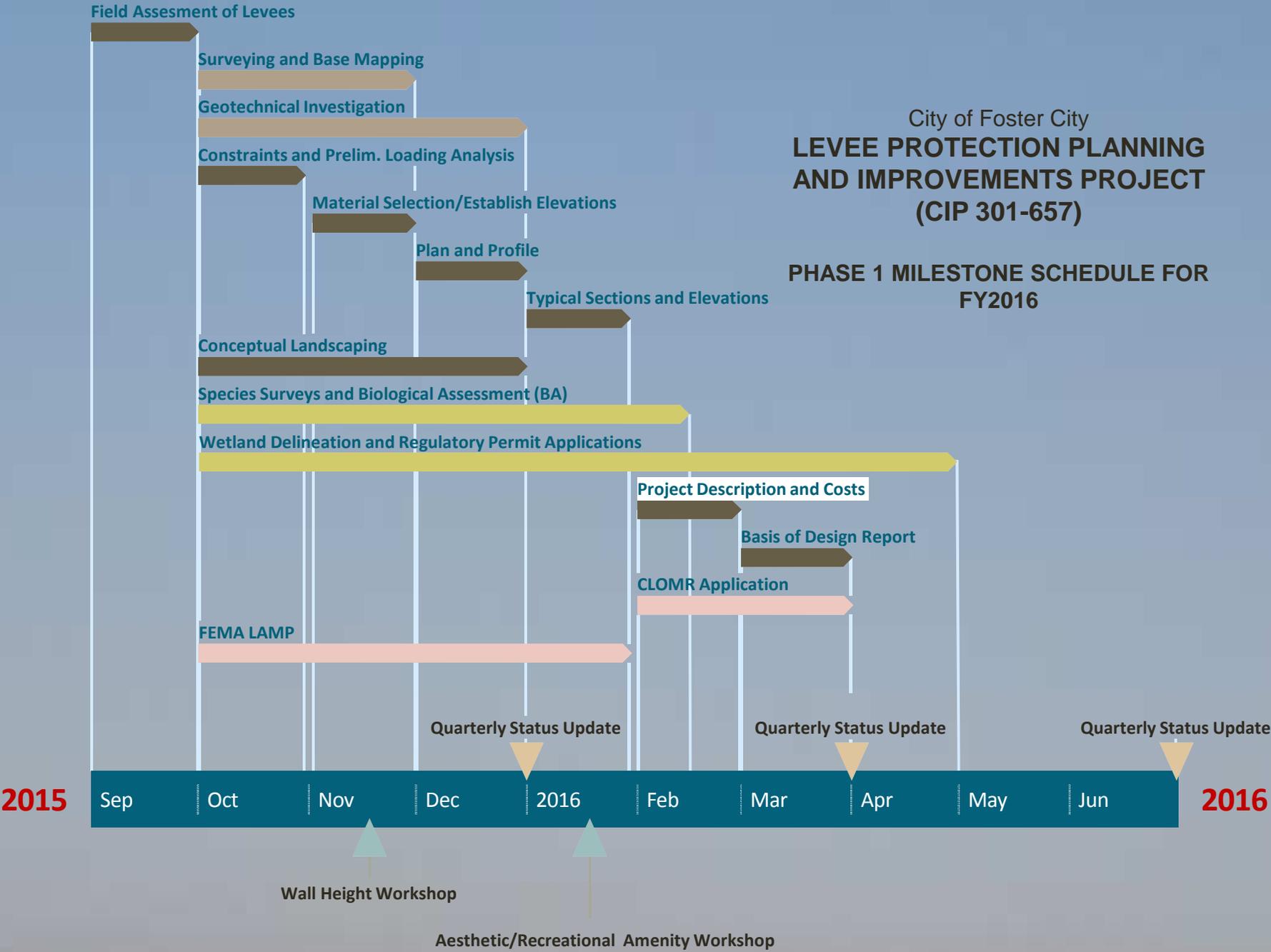


Milestone Schedule



City of Foster City
**LEEVE PROTECTION PLANNING
 AND IMPROVEMENTS PROJECT
 (CIP 301-657)**

**PHASE 1 MILESTONE SCHEDULE FOR
 FY2016**



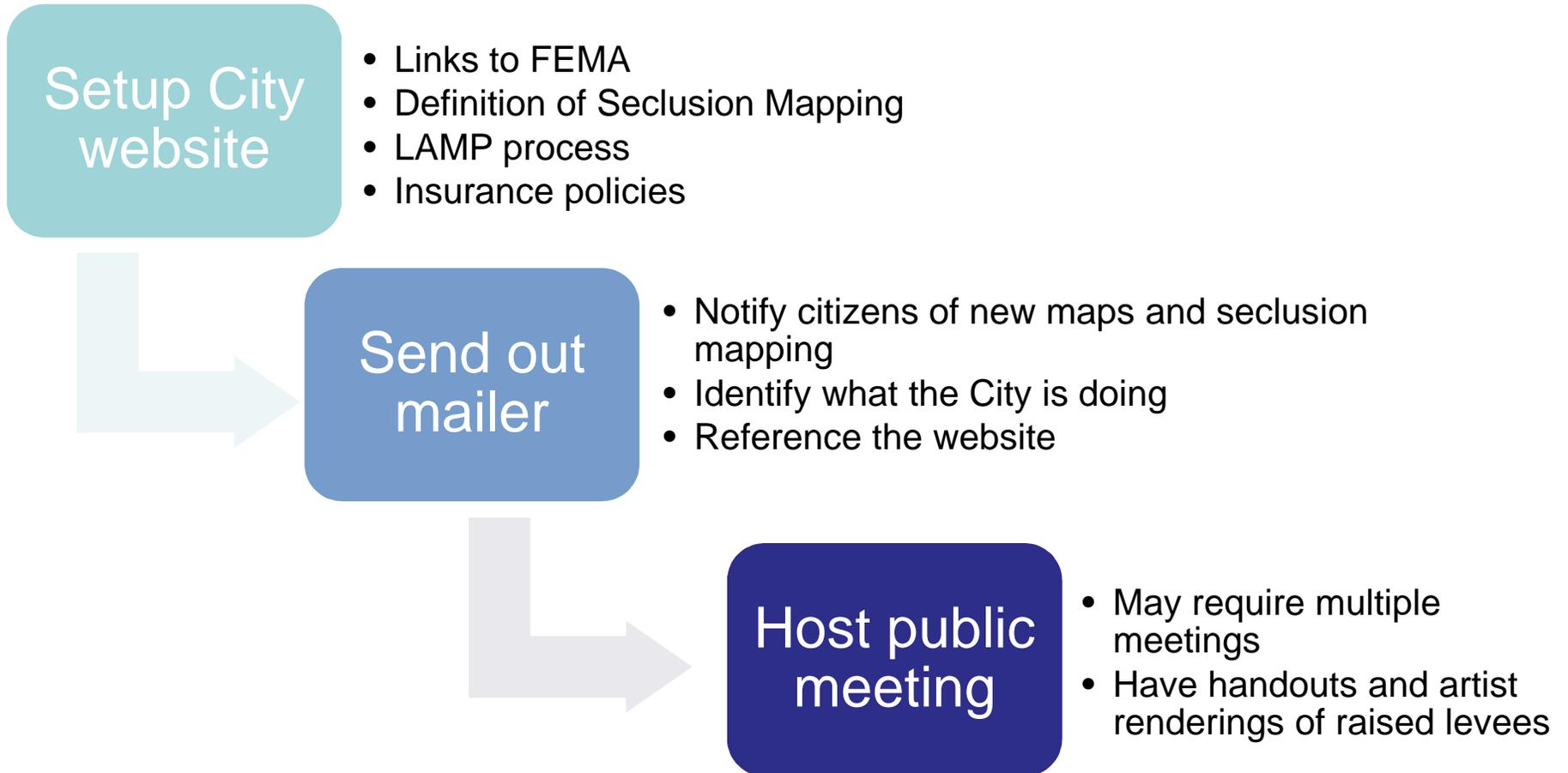
Next Steps

- ❑ Public Outreach
- ❑ Foundational Design Work
 - ❑ Detailed survey and base map
 - ❑ Geotechnical investigation
 - ❑ Jurisdictional wetland delineation
- ❑ Preliminary Regulatory Agency Consultation
 - ❑ Understand permit requirements
 - ❑ Avoid lengthy and costly delays
- ❑ Form Local Levee Partnership Team

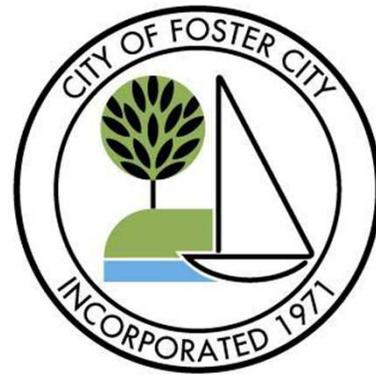


Public Outreach

Need game plan for public outreach – Preliminary maps released August 2015



Levee Planning Update



August 28, 2015



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City Council Policy Decisions

□ **Financing**

- Federal grants
- Cost sharing

□ **Design**

- At 7/27/15 City Council Study Session – Proceed with Hybrid Design
- Maximum allowable wall height
- Sea level rise adaptation
- Public access
- Recreational enhancements
- Aesthetic enhancements

□ **Construction**

- Bay trail closure



FAQ Sheet

Foster City Levee Protection Planning and Improvements Project



<<< frequently asked questions

What is a levee and how does it work?

A levee is an embankment or a raised ridge designed for flood protection. In Foster City, the levee is the raised trail surrounding the outer perimeter of the City, which separates the City from the Bay. The Foster City levee system also provides recreational uses for the community. Residents enjoy walking, running, biking and skating on the levee pathway.

Why does Foster City need to improve its levee system and why now? What would happen if we did nothing?

Foster City maintains the levee along the Bayfront, surrounding the majority of the outer perimeter of the City. Foster City's Levee system is primarily designed for flood protection. The Federal Emergency Management Agency (FEMA) had previously certified (accredited) Foster City's levee in 2007 as providing protection from the 1-percent annual chance (base) flood. This means that most land within Foster City is classified as Zone X, where mandatory flood insurance is not required. FEMA has recently conducted a coastal flood hazard study which has determined that roughly 85% of Foster City's levee system does not meet FEMA requirements. Therefore, the levee will not retain accreditation status when the Flood Insurance Rate Map is updated in mid-2016. Unless changes are made to the levee system, the entire city will be placed in a flood zone designation that will require that property owners with Federally-backed loans obtain flood insurance and owners selling property in Foster City will be required to disclose the flood zone designation as part of the sale. The estimated cost for flood insurance is several thousand dollars per year per property.

What has been done so far? What is seclusion mapping?

In order to regain accreditation of the levee, the City is currently working on a Levee Improvement Project. In the FY 2015-16 Capital Improvement budget, the City Council approved an initial funding of \$1 million for the Levee Protection Planning and Improvements Project. Included in this project will be the incorporation of design parameters to address future sea level rise. The City has been working closely with FEMA so that the 2016 maps will show Foster City inside a levee seclusion zone, which means that flood insurance will not be mandatory until FEMA remaps the levees.

What project alternatives are being considered?

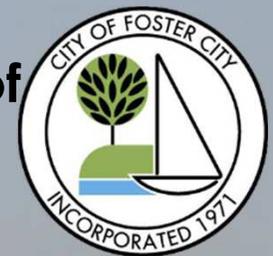
The project alternatives include construction of flood walls, raising the earthen levee, or a combination of the two alternatives.

"STORY IN A NUTSHELL"

- Foster City's Levee system is primarily designed for flood protection but also serves as a main link in the Bay trail that is used for many recreational purposes.
- FEMA re-studied the hazards in San Francisco Bay in 2014 and will be producing new maps in 2016.
- The 2016 flood mapping projections indicate that approximately 85% of Foster City's levee protection system do not meet FEMA standards for levee accreditation.
- If levee elevations remain unchanged, Foster City will be declared as a high-risk Special Flood Hazard Area (SFHA).
- If the City is determined to be within a high-risk Special Flood Hazard area, all property owners with federally backed loans will be required to purchase annual flood insurance.
- The 2016 maps will show Foster City and San Mateo City inside a "Levee Secluded Area." Flood hazard determinations and the applicable flood insurance purchase requirements and building requirements will not change from what was in the current map. FEMA will re-study the levees and update the maps based on a new analysis. During this time, mandatory flood insurance will not be required.

Project Schedule for Public/Property Owners

- ❑ **July 27, 2015 – Provide information about the project and receive initial input**
- ❑ **January 2016 – Design alternatives and project costs to be presented to the neighborhoods and other community groups in a public workshop**
- ❑ **March 2016 – Meetings/workshops with property owners and businesses affected**
- ❑ **September 2016 – Planning Commission briefing, public hearing, and recommendation to City Council**
- ❑ **October 2016 – City Council Briefing, Public Meeting, and Decision on ultimate design**
- ❑ **November 2016 – City Council consideration of formation of Assessment District**
- ❑ **Fall 2018 or Fall 2020 – Assessment placed on tax roll**



Agencies From Which Regulatory Authorizations or Concurrences are Required

- ❑ SFB Regional Water Quality Control Board (RWQCB)
- ❑ SFB Conservation and Development Commission (BCDC)
- ❑ California Department of Fish and Wildlife (CDFW)
- ❑ Caltrans (work near the bridge)
- ❑ State Historic Preservation Office (SHPO)
- ❑ State Lands Commission (SLC)
- ❑ FEMA
- ❑ US Army Corps of Engineers (USACE)
- ❑ US Fish and Wildlife Service (USFWS)
- ❑ NOAA Fisheries
- ❑ US Coast Guard



General Summary of the Environmental Authorizations Needed for the Foster City Levee Project

CEQA Process

- ✓ EIR
- ✓ Notice of Determination

Required State Environmental Regulatory Authorizations:

- San Francisco Regional Water Quality Control Board: (RWQCB): 401 Water Quality Certification and Porter Cologne Act Waste Discharge Permit
- San Francisco Bay Development and Conservation (BCDC): Development Permit
- California Department of Fish and Wildlife (CDFW): Lake and Streambed Alteration Agreement

❖ Project Authorization cannot be obtained without:

- ✓ A determination from the lead agency that the project complies with CEQA
- ✓ Allowing for adequate public access
- ✓ Selecting the Least Environmentally Damaging Practicable Alternative
- ✓ Providing adequate mitigation for unavoidable impacts

Required Federal Environmental Regulatory Authorization:

- US Army Corps of Engineers (USACE): Clean Water Act Section 404 and Section 10 Rivers and Harbors Act Permits

❖ Project authorization cannot be obtained without:

- ✓ Selecting the Least Environmentally Damaging Practicable Alternative
- ✓ Providing adequate mitigation for unavoidable impacts
- ✓ 401 Water Quality Certification from RWQCB
- ✓ Compliance with the Coastal Zone Management Act (BCDC)
- ✓ Endangered Species Act Section 7 Biological Opinion from the US Fish and Wildlife Service
- ✓ Endangered Species Act Section 7 Biological Opinion from NOAA Fisheries
- ✓ Compliance with Magnuson-Steven Fisheries Management and Conservation Act
- ✓ Compliance with Section 106 of the National Historic Preservation Act (SHPO)

Requests to Regulatory Agencies

- ❑ **Respect regulatory agencies roles**
- ❑ **Provide any needs that regulatory agencies may have while keeping in mind the need to minimize residents costs**
- ❑ **Preliminary response from regulatory agencies is the most important**
 - ❑ Design progress is based on the preliminary comments
- ❑ **Provide Input:**
 - ❑ Understand permit requirements
 - ❑ Avoid Lengthy Delays
 - ❑ Immediate Concerns regarding the proposed Hybrid Design
 - ❑ Design and Construction Concerns
 - ❑ Concerns meeting the Proposed Project Schedule



Next Steps

- ❑ Schaaf & Wheeler Contract, Assessment District Consultant, and Financial Consultants 9/8/15
- ❑ Quarterly updates to City Council
 - ❑ After CC update, quarterly regulatory agency update via 1- hour conference call



Closing

- ❑ Funding is not unlimited and not yet secure
 - ❑ Most likely scenario is public funding and Assessment District formation
 - ❑ Minimize costs for the residents
- ❑ We are hoping that institutional knowledge remains with the project team for continuity
- ❑ We are willing to travel to each agency
- ❑ United Council in addressing this matter

Questions and Answers

