



DATE: July 27, 2015

TO: Mayor and Members of the City Council

VIA: Kevin M. Miller, City Manager

FROM: Jeff C. Moneda, Public Works Director/City Engineer

SUBJECT: REPORT ON FEMA COASTAL FLOOD HAZARD STUDY AND LEVEE PROTECTION PLANNING FOR FOSTER CITY

RECOMMENDATION

It is recommended that the City Council:

1. Accept this report on the status of the Federal Emergency Management Agency (FEMA) coastal flood hazard study and its impact on Foster City;
2. Consider levee improvement alternatives and authorize staff to design the levee improvements based on the hybrid design concept;
3. Finalize the Frequently Asked Questions (FAQ) sheet for public distribution; and
4. Update and maintain the City's website to include general information and timely updates on the Levee Protection Project

EXECUTIVE SUMMARY

Based on the FEMA coastal flood hazard study, roughly 85 percent of Foster City's levee system does not meet the required freeboard elevation per Title 44 of the Code of Federal Regulations (CFR), section 65.10 and therefore, the levee will not retain accreditation status when the Flood Insurance Rate Map (FIRM) is updated in mid-2016. Currently, land within Foster City limits is classified as Zone X (protected by levee), meaning mandatory flood insurance is not required. While flood insurance is not mandatory, homeowners in Zone X can still purchase flood insurance through the National Flood Insurance Program (NFIP) at a lower rate for a moderate-risk area. However, when the new maps become effective in 2016, Foster City will be designated as a high-risk Special Flood Hazard area and property owners with federally-backed loans will be required to purchase annual flood insurance and pay higher rates, unless progress is made to the satisfaction of FEMA through the Seclusion Mapping Process.

BACKGROUND/ANALYSIS

The current levee system in Foster City was recertified and accredited by FEMA in 2007, designating land within Foster City as Zone X (moderate-risk area), and exempting residents from having to purchase mandatory flood insurance. In 2012, San Mateo's Bayfront levee between the Foster City limit and San Mateo Creek, along East Third Avenue, was accredited by FEMA, which means all of Foster City and a portion of San Mateo were mapped as Zone X in the FIRM effective October 16, 2012.

In July 2014, FEMA completed the San Francisco Bay Coastal Flood Hazard Study as part of the California Coastal Analysis and Mapping Program (CCAMP). Results of the study will be used by FEMA to remap FIRMs for San Francisco Bay communities including Foster City, and it is anticipated that a new FIRM covering Foster City will become effective in mid-2016. The Coastal Flood Hazard Study indicates that the Foster City levee is deficient and will not retain accreditation.

In December 2014, the City hired Schaaf & Wheeler to prepare a Levee Protection Planning report to identify the City's flood risk and determine potential levee improvement alternatives that may be necessary to restore levee accreditation. Schaaf & Wheeler has prepared the draft report and a copy is attached. The Schaaf & Wheeler report concluded that the levee surrounding Foster City will have to be raised by up to 4 feet, depending on the location, to meet the accreditation requirements. Levee improvement plans currently include an additional allowance of 2 feet in height to meet sea level rise freeboard projections (11 inches by 2050), accommodate future settlement, and provide a margin of safety regarding future FEMA restudies.

DESIGN ALTERNATIVES

Project considerations for design alternatives include the following:

- Access to Recreational Amenities
- Available Right-of-Way
- Environmental Impact and Avoidance
- Views and Aesthetics
- Construction Impacts
- Adaptation to Future Sea Level Rise
- Cost and Schedule

Schaaf & Wheeler analyzed three (3) levee improvement alternatives and prepared preliminary rough cost estimates.

1. Construction of Earthen Levee (\$50 – \$75 million)
2. Construction of Flood Walls and Earthen Backfill (\$40 – \$65 million)
3. Hybrid Construction using Sheet Piles and Earthen Backfill (\$35 – \$65 million)

Earthen Levee Alternative: The earthen levee alternative consists of raising the existing levee by importing fill to meet levee height requirements. Based on this

alternative, additional footprint would be required along public streets and private property. The cost estimate for this alternative is \$50 to \$75 million exclusive of right-of-way acquisition.

Flood Wall Alternative: The flood wall alternative consists of installation of temporary sheet piles for flood protection purposes during construction of the permanent wall. The flood wall could be designed for a future increase in height to meet sea level rise. The landward side of the wall would be backfilled with earthen soil to minimize the height of the interior side of the wall relative to the adjacent Bay Trail. The temporary sheet piles will need to be removed at the completion of construction. The Bay side and/or landward side of the flood wall could have a treatment applied for aesthetic purposes. The estimated cost for this alternative is \$40 to \$65 million.

Hybrid Construction using Sheet Piles and Earthen Backfill Alternative: The hybrid construction alternative consists of using sheet piles at the ultimate location for raising the levee. Sheet piles would be driven for flood protection purposes as a permanent structure. The sheet piles would allow for future increase in height to meet sea level rise. The Bay side and/or landward side of the sheet pile wall could have a treatment applied for aesthetic purposes.

The cost estimates are meant to serve as the order-of-magnitude numbers to gauge the potential scale of the projects. Costs for design, construction, construction management, environmental regulatory permitting and mitigation, miscellaneous overhead, and project contingency are included in the estimates. The costs are based on using one alternative for the entire levee system. However, in reality, a combination of improvements will be necessary depending on the localized site constraints. The project scope and cost estimates will be further defined based on the direction provided by the City Council.

For Foster City to be able to retain a Zone X designation while the levee modifications are being conducted, the City has accepted "Seclusion Mapping" for the FIRM scheduled to become effective in mid-2016. The new map will note that the Foster City levee does not currently meet the requirements of 44CFR65.10 and a boundary will be added to the FIRM that depicts the area secluded from the FIRM update, which will include all of Foster City and a portion of San Mateo. FEMA has agreed to use Seclusion Mapping for Foster City as a temporary measure to not require mandatory flood insurance for Foster City residents, while the City moves forward with planning, design and funding to complete the necessary levee improvements to regain accreditation. The City must make progress with levee improvements, to the satisfaction of FEMA, in order to maintain Seclusion Mapping status. FEMA reserves the right to remap the area bound by the seclusion in the future as additional study warrants. Based on an aggressive project schedule, it is anticipated that the levee improvement project could be completed by mid-2020.

PUBLIC OUTREACH

Public Outreach consists of a variety of methods to reach out to the property owners. Methods of public outreach include: setting up the City website for a project specific webpage, direct mailers to the property owners, and a series of public meetings. The public meetings are necessary to involve the property owners and public in the design process. The public will be asked to provide input regarding a variety of items such as: recreational amenities, design aesthetics, and miscellaneous design alternatives.

FINANCING ALTERNATIVES

The City will be hiring a consultant to recommend financing alternatives for consideration by the City Council. One of the alternatives is the formation of an Assessment District, where property owners pay a fair share of the costs over a period of years (typically 20 years). Costs would be spread to all property owners in Foster City. It is estimated that based on the project schedule, construction would be completed by 2020 and any assessments would be placed on the property owner's tax roll in Fall 2020.

POLICY DECISIONS

A number of policy decisions will be required throughout the entire project process, from permitting to construction. The following are the initial policy decisions that will be required: financing (federal grants, cost sharing, assessment district formation, etc.); design considerations (type of levee, maximum allowable wall height, sea level rise adaptation, public access, recreational amenities, aesthetic enhancements, etc.); and construction considerations (phasing of construction, closure of the trail, method of construction, etc.).

It should be noted that the aforementioned items are a preliminary list of policy decision items and will be taken to City Council for their consideration.

STAFF RECOMMENDATION

It is recommended that the City Council authorize staff to conduct the following:

- Design of the levee based on the hybrid design concept.
- Finalization of the Frequently Asked Questions (FAQ) sheet for public distribution
- Update the City website with the update of the Levee project

NEXT STEPS

Brian Perkins, Special Assistant to Congresswoman Jackie Speier, has scheduled a kickoff meeting with the regulatory agencies and FEMA regarding the Levee project, scheduled for August 28, 2015. The purpose of this meeting is to discuss the scope of work for the project, schedule, and for the regulatory agencies to present any immediate concerns associated with the design and process.

In addition, staff is progressing with the selection process of the professional, technical and legal advisors that will assist the City with the various aspects of this very important project. Funding of \$1,000,000 is approved in the fiscal year 2015/16 Capital Improvement Program budget.

Attachment: Draft Levee Protection Planning Study