



DATE: May 25, 2021

TO: Mayor and Members of the City Council

VIA: Peter Pirnejad, City Manager

FROM: Paul Nagengast, Project Advisor, Regional Government Services

SUBJECT: CONTRACT CHANGE ORDER NO. EIGHT (8) TO SHIMMICK CONSTRUCTION CO., IN THE AMOUNT OF \$439,963.41 FOR INSTALLATION AND REMOVAL OF TWO (2) COFFER DAMS RELATED TO FLOOD PROTECTION DURING FLOOD WALL 19 CONSTRUCTION FOR THE LEVEE PROTECTION PLANNING AND IMPROVEMENTS PROJECT (CIP 327-657)

RECOMMENDATION

It is recommended that the City Council adopt the attached resolution authorizing the Mayor to execute Contract Change Order No. Eight (8) to Shimmick Construction Co., in the amount of \$439,963.41 for installation and removal of two (2) coffer dams related to flood protection during construction for Flood Wall 19 for the Levee Protection Planning and Improvements Project (CIP 327-657).

Funding is available in approved construction contingencies in the amount of \$9M from the budget established for the Levee Protection Planning and Improvements Project (CIP 327-657).

EXECUTIVE SUMMARY

Due to cost concerns during the bidding process for the Foster City Levee Improvements Project, the City initiated a sheet pile wall bid alternative for contractors to bid for a section of levee in Phase 1 adjacent to O'Neil Slough, designated as 'Flood Wall 19 on the construction documents. However, after award of the bid and initiation of construction it was determined the alternate sheet pile wall cannot be constructed as indicated in the alternate bid addendum. Furthermore, after value engineering the

sheet pile wall alternative, the original designed concrete wall is the best overall solution for Flood Wall 19.

In order to construct Flood Wall 19 a temporary water protection barrier is necessary to protect the constructed work from flood damage. Value engineering identified the most economical method to provide flood protection during the construction of the flood wall is to install coffer dams at either end of O'Neil Slough preventing tidal action or other waters from entering the work area and damaging work, compromising safety or potentially flooding adjacent properties.

On May 6, 2021, the City Council authorized the purchase of the steel plates to be used to construct the coffer dams. The cost to purchase the steel, install and remove the coffer dams is \$439,963.41.

BACKGROUND

During the design and BCDC permitting process, for the length of levee wall along O'Neil Slough and the work area in close proximity to residential properties, it was determined a concrete wall would be the least problematic during construction and the best type of wall for the low soil bearing capacity at this location.

Prior to advertising for bids, the estimated cost to construct the Levee Improvement Project was \$85M with contingencies. Since the bonding for the project was for \$90M, there was extreme concern the cost to construct the Project would exceed the amount of bonds available for the Project. During the bid period, the City requested a bid alternative be added through an addendum to reduce the cost of construction. The bid alternative was to install permanent steel piles, like the adjacent floodwalls on both sides of Flood Wall 19 along this portion adjacent to O'Neil Slough in lieu of the concrete wall.

Without the benefit of complete value engineering to utilize sheet piles at this location, the low bidder for the Project, Shimmick Construction, Co., (Shimmick) bid included the sheet pile alternative in its bid. However, after reviewing actual ground elevations along the field-staked alignment for Flood Wall 19, a thorough geotechnical and structural engineering evaluation of the sheet pile alternative was completed out of an abundance of caution. Subsequently, it was determined the sheet piles could not provide the required flood protection without greater sheet pile length and unanticipated ground improvement measures needed to provide seismic stability. The necessary modifications are affected by the recent price increases in steel and potential delays related to the procurement of steel. Timing is of the essence in acceleration work within Phase 1 as explained below.

The detailed explanation of the preference to construct the originally designed concrete

flood wall will be provided in the staff report for City Council action related to the construction of Flood Wall 19 at the June 21, 2021 City Council meeting.

In order to construct the concrete flood wall, flood protection must be in place to prevent tidal action or other waters from entering the work area and damaging the work, compromising safety or potentially flooding adjacent properties. Installing steel sheet piles does not require additional flood protection measures, which is why this technique is used for most Project improvements. The alternatives to provide flood protection would either be a steel plated wall along the length of O'Neil Slough (approximately 2000 linear feet) or two (2) steel plated coffer dams at either end of O'Neil Slough (approximately 200 linear feet).

On May 6, 2021, City Council adopted Resolution No. 2021-55, authorizing Shimmick to purchase the steel necessary for the coffer dams because of the dams being a more cost-effective solution to protecting the work area from water intrusion. This action was necessary on May 6 due to the price of steel escalating weekly. In addition, City Council was advised the cost for the installation and removal of the coffer dams and the steel would be provided as part of the Flood Wall 19 Agenda Item at the June 21, 2021 City Council meeting.

Shimmick has informed the City, their steel pile installation efficiencies in Phase 2 and projected completion of installation in Phase 3 by mid-June 2021 has provided opportunities to complete items of work in Phase 1. Early Project construction scheduling by the contractor did not project completion of the sheet pile installation in Phase 3 until late Summer/Early Fall 2021. Updated scheduling indicated completion of sheet pile installation in Phase 3 by August and the latest projection indicates the contractor will complete installation by mid-June. Any work completed in other Phases that provides the contractor the ability to shift resources to Phase 1 can greatly accelerate the Project completion date.

Phase 1 has the most restrictive work windows due to environmental concerns regarding nesting rails and other animal species. The permits for the Project indicated the contractor could not operate within Phase 1 between January 31 and September 1 of each calendar year of the Project unless rail nesting surveys are completed to determine if there are nesting rails. These surveys would need to be reviewed and approved by the appropriate permitting agencies.

The rail surveys have been completed by Huffman-Broadway Group and provided to the permitting agencies for their review. Recently, the agencies have agreed with the survey findings and the contractor will be allowed access to areas including Flood Wall 19 location prior to September 1.

Since the critical path of this Project is directly linked to the ability to work around the

permitted restrictions, any work able to be completed prior to September 1 is a benefit to completing the Project on time and within budget.

After the May 6, 2021, City Council meeting authorizing the purchase of steel plates and the realization of the sheet pile installation efficiencies in Phase 3, Shimmick approached the City about installing the coffer dams prior to the Baffin Street switch over to the egress to Port Royal Avenue (path from Foster City to Belmont Sports Complex) scheduled on June 7. This switch over refers to the points of access to Belmont/Redwood Shores at the southern end of Phase 1 of the Project. (See Attachment 3: Aerial Map of Flood Wall 19 and Cofferdam Location.)

The ability to install the coffer dams prior to closing Baffin Street and opening the egress access to Belmont/Redwood Shores on June 7, 2021 would provide 3 additional weeks to complete the coffer dams for water protection of Flood Wall 19 work if approved by City Council on June 21, 2021. Waiting to work on the coffer dams until after June 21, 2021 and the switch over would complicate other agency permitting requirements due to the requirement to always keep one point of access to the south open. Shimmick has advised the City in order to install the coffer dam adjacent to the egress path, the path would need to be closed for a period of time. Since Baffin Street would be closed for bridge construction (another item of work critical to the schedule), the egress path cannot be closed to install the coffer dam. Consequently, a very possible outcome would be the contractor would need to return to Phase 1 to construct Flood Wall 19 or other items of work in 2022, providing a greater risk to the overall schedule or a more costly method of temporary flood protection to construct Flood Wall 19.

Put very simply, any work Shimmick can complete in Phase 1, should be facilitated as much as possible to increase the probability of the Project being completed on time and within budget. Any construction related work opportunities due to an environmental survey completed in 2021, is not a guarantee of similar results in 2022 or later years.

ANALYSIS

The Project's construction critical path runs through Phase 1 due to the restrictions in place required by the various permitting agencies. Due to Shimmicks' efficiencies with the sheet pile installation in Phases 2 and 3 and the recent notification for the ability to work in Phase 1 restricted areas prior to September 1, Shimmick has requested to install the coffer dams protecting the work to construct Flood Wall 19 prior to the June 7, 2021, switch over of the southern access points and prior to City Council action for the construction of Flood Wall 19 on June 21, 2021.

On May 6, 2021, City Council adopted Resolution No. 2021-55, authorizing the

purchase of steel necessary for the 2 coffer dams. Tanner Pacific, Inc., has reviewed the cost in the amount of \$439,963.41 to purchase the steel, and to install and remove the steel coffer dams in O'Neil Slough and finds it reasonable for the work to be completed.

Huffman-Broadway Group has reviewed the work to install the coffer dams and has indicated the coffer dams can be constructed within current permitting requirements.

Staff recommends City Council approve Contract Change Order #8 to install the coffer dams for the flood protection to construct Flood Wall 19. Staff will provide to City Council a detailed report for the construction of Flood Wall 19 at the June 21, 2021 City Council meeting.

FISCAL IMPACT

With the execution of Contract Change Order No. Eight (8), the total contract change orders costs to date are summarized below:

Construction Contingency	\$ 9,000,000
CCO 1-7 (CCO #2 was a \$585K credit)	\$ - 440,473.99
Contract Change Order #8	\$ 439,963.41
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Total Available Construction Contingency	\$ 9,000,510.58

Adequate funding has been provided as construction contingencies for this Project from the Project budget (CIP 327-657).

CITY COUNCIL VISION, MISSION, AND VALUE/PRIORITY AREA

The Levee Improvements Project is in alignment to the City Council's adopted Vision and Mission statements, in that it seeks to create a sustainable environment through infrastructure improvements for current and future generations to come. This item is also it directly related to the "Facilities and Infrastructure" Value/Priority Area. The key outcome is to make substantial progress toward an improved levee on time and budget to protect the community and critical infrastructure from storms and high tide.

Attachments:

- Attachment 1 – Resolution
- Attachment 2 – Contract Change Order No. 8
- Attachment 3 – Aerial Map of Flood Wall 19 and Cofferd Dam Location