



DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

September 6, 2017

REPLY TO
ATTENTION OF

09-17-2017 12:01:25

Programs & Project Management Division

Raul Rojas
District Engineer
Marin County Flood Control & Water Conservation District
3501 Civic Center Dr., Rm. 304
San Rafael, CA 94903

Dear Mr. Rojas,

Technical and economic analyses have been completed as part of the Phase I Preliminary Assessment for the Las Gallinas Continuing Authorities Program (CAP) Section 205 project. Section 205 is an authority for the U.S. Army Corps of Engineers (USACE) to study and implement projects to reduce flood risk, subject to a finding of federal interest and the availability of funds. Two of the criteria for determining whether or not a project is eligible for implementation under Section 205 in accordance with USACE policies are a) the project must be economically justified (monetary benefits exceed the cost), and b) the total cost of the project must not exceed the allowable maximum as provided by law. The analyses conducted to date indicate that there is a low likelihood of implementing a structural flood risk management project in the study area that meets those two criteria. As such, it has been determined that, based on the current understanding of the nature of the flood risk in the study area, there is no federal interest at this time in constructing a flood risk management project.

The Las Gallinas project area was studied for current and expected future fluvial and tidal flooding over the next fifty years. Fifty years is a standard period of analysis used by the Corps to determine the economically evaluate a project. The study evaluated flood risk at year zero (existing) and at year 50 (future), which considered sea-level change (SLC) impacts at the downstream boundary where the creek meets the bay.

The analysis found that the probability of levee failure along the South Fork of Las Gallinas Creek is 80% for the existing conditions 1% annual chance of exceedance (6.4 ft. NGVD29) event.¹ Because the water surface elevations along the South Fork of Las Gallinas Creek are tidally influenced, the probability of levee failure increases as relative sea level rise (RSLR) increases with more frequent events (20% to 50%) having higher failure probabilities in year 50 of the analysis.²

¹ Page 8 of *Las Gallinas Creek: Hydrologic, Hydraulic and Coastal*, U.S. Army Corps of Engineers San Francisco District Water Resources Section, December 2013.

² Page 10 of *Las Gallinas Creek: Preliminary Flood Damage Analysis*, U.S. Army Corps of Engineers San Francisco District January 2014.

The hydraulic modeling completed for the study area also evaluated the range of plausible future tidal flood risk to the community of Santa Venetia. It is USACE policy³ that, for both existing and proposed projects, planning studies and engineering designs, consider alternatives that are formulated and evaluated across the potential range of SLC over the project life cycle. This range is bracketed by a low and high SLC scenario. At year 50, there is an 80% probability of levee failure during a 20% annual chance of exceedance water level for the low scenario; and the same failure probability occurs during a greater than 50% annual chance of exceedance of water level for the high scenario.

A range of conceptual project alternatives was proposed to address the identified flood risk, however the cost to implement any one of the potentially effective alternatives meeting USACE minimum standards exceeded expected damages for current conditions and the low sea-level rise condition. Thus, the benefit-cost ratio for those scenarios did not meet or exceed the required 1:1 ratio for Federal interest. Only the high sea-level rise scenario had potential projects that met the 1:1 benefit-cost ratio requirement. However, the high sea-level rise scenario alone cannot economically justify a project.³ Additionally, as described below, CAP Section 205 projects have maximum total allowable costs for which there would be a high risk of exceeding for the alternatives considered.

For 205 projects, the non-federal sponsor is responsible for between 35% and 50% of the total project cost (excluding the first federal \$100,000 spent), with the actual percentage depending on the value of land, easements, rights-of-way, relocations and disposal (LERRDs) required for construction and maintenance of projects. The non-federal sponsor is responsible for LERRDs costs. Even if a sponsor chose to not be credited for LERRDs, the value of LERRDs must still be counted in the total project cost used to determine if benefits are greater than costs.

In addition to LERRDs values, the required minimum cash contribution from non-federal sponsor is 5% of total costs. If LERRDs values equal less than 30% of total project costs, the required cash contribution would be greater than 5% of total project costs. For CAP Section 205 projects, the total federal cost is limited to \$10,000,000, including federal funds spent to date. Depending on the LERRDs percentage, the maximum total federal and non-federal cost for a CAP Section 205 project ranges, at this time, from \$15,330,769 to \$19,900,000. This is an increase from the previous CAP Section 205 federal funding limit of \$7,000,000 and corresponding maximum total cost project range of \$10,715,384 to \$13,900,000. There is potential for additional legislative changes to the federal cost limit in the future.

The low end of the very wide range of preliminary cost estimates for alternatives that could potentially be implemented on a cost-shared basis with USACE and the District is approximately \$18,840,000, including federal and non-federal sunk costs to date, but excluding remaining study costs. Considering remaining study costs and the uncertainty associated with

³ ER 1110-2-8162, Incorporating Sea-Level Change in Civil Works Programs, USACE 2013 and ETL 1100-2-1, Procedures to Evaluate Sea Level Change: Impacts, Responses, and Adaptation, USACE 2014.

preliminary construction cost estimates, there is a high risk that all of the preliminary alternatives identified as part of this study would exceed the current maximum total allowable cost under CAP Section 205.

Section 1002(b)(3) of the Water Resources Development Act (WRDA) of 2007 states that "The Secretary shall carry out (this project) if the Secretary determines that the project is feasible and shall allow the non-Federal interest to participate in the financing of the project in accordance with Section 903(c) of the Water Resources Development Act of 1986 (100 Stat. 4184) to the extent that the Secretary's evaluation indicates that applying such section is necessary to implement the project." This provision of WRDA effectively allows a sponsor to buy up the benefit-cost ratio to address the issue of the estimated lack of economic justification. However, Implementation Guidance on this section of WRDA 2007 (allowing application of this provision to Las Gallinas) has yet to be issued by USACE Headquarters. Until USACE Headquarters publishes Implementation Guidance regarding this provision, it cannot be applied to this project.

Given the apparent lack of economic justification and absent the ability to invoke Section 903(c) of the Water Resources Development Act of 1986, there does not appear to be a current federal interest in constructing a flood risk management project. Given these factors, the Corps plans to terminate the CAP 205 study of Las Gallinas. The study may be considered for resumption should any of these factors change:

- Actual sea-level change follows more closely to the high sea-level rise curve.
- Changes to policies such that the high sea-level change curve alone can support economic justification of a project.
- Changes to policies such that donated LERRDs are not considered in project costs.
- Implementation Guidance for Section 1002(b)(3) of WRDA 2007 is issued with favorable implications for Federal participation in a project at Las Gallinas.

Please let us know if you have any concerns regarding this termination of the CAP 205 study of Las Gallinas.

If you have any questions, please contact Neil Hedgecock at (415) 503-6728 or neil.c.hedgecock@usace.army.mil.

Sincerely,



Arijs A. Rakstins, PMP
Deputy for Project Management