



DEPARTMENT OF THE ARMY  
CHIEF OF ENGINEERS  
2600 ARMY PENTAGON  
WASHINGTON, DC 20310-2600

DAEN

9 JUL 2020

SUBJECT: Westminster, East Garden Grove, California Flood Risk Management

THE SECRETARY OF THE ARMY

1. I submit, for transmission to Congress, my report on flood risk management in the Westminster watershed in Orange County, California to reduce the occurrence of flood flows overtopping existing drainage channel systems during storm events. It is accompanied by the report of the District Commander. The report is an interim response to the resolution adopted by the House of Representatives Committee on Public Works on May 8, 1964 which requested that the U.S. Army Corps of Engineers (USACE) review "the reports on (a) San Gabriel River and Tributaries, published as House Document No. 838, 76<sup>th</sup> Congress, 3d Session; (b) Santa Ana River and Tributaries, published as House Document No. 135, 81<sup>st</sup> Congress, 1<sup>st</sup> Session; and (c) the project authorized by the Flood Control Act of 1936 for the protection of the metropolitan area in Orange County, with a view to determining the advisability of modification of the authorized projects in the interest of flood control and related purposes." Funds from the Bipartisan Budget Act of 2018, Public Law 115-123, were used to complete the study. Preconstruction, engineering, and design activities, if funded, will continue under the study authority cited above.

2. The reporting officers recommend authorizing a Locally Preferred Plan to reduce flood risks to the communities located within the Westminster watershed in Orange County, California. The principal features of the plan include:

a. Modification of approximately 25 miles of existing drainage channels to increase storage capacity and improve conveyance efficiency. This Locally Preferred Plan is designed to contain the one-percent annual exceedance probability (AEP) storm event. For the C02/C04 channel system, the plan includes conversion of approximately 11,600 linear feet of trapezoidal channel to rectangular concrete channel walls with soft bottom maintained in the center of the channel; creation or improvement of 15,000 linear feet of concrete rectangular channels; 5,000 linear feet of paving existing trapezoidal channels; and creation of a 7,500 linear foot diversion channel near the Westminster Mall along an abandoned U.S. Navy rail line and Edwards Street. Additionally, approximately 9,000 linear feet of sheet pile will be installed with subsequent excavation of the existing toe along the south bank of the marine-influenced C02 channel, preserving and expanding soft bottom habitat through this reach. For the C05/C06 channel system, the project includes conversion of approximately 25,000

DAEN

SUBJECT: Westminster, East Garden Grove, California Flood Risk Management

linear feet of trapezoidal channel to rectangular concrete channel; 2,300 linear feet of paving existing trapezoidal channels; installing steel sheet pile channel walls in 14,500 linear feet of channel while preserving soft bottom marine-influenced habitat at the downstream end of the system; and installing up to 40,000 linear feet of one-foot to two-foot floodwalls for reaches that do not contain the one-percent AEP event within the canal after conversion to a concrete rectangular channel. In addition to in-channel work, the Locally Preferred Plan includes replacement of 43 different roadway crossings, and replacement of pedestrian channel crossings. The plan includes removing impediments to flows in the canals to reduce time that water is retained in the canals.

b. Widening the restriction at Warner Avenue Bridge to improve conveyance in Outer Bolsa Bay as well as the hydraulic efficiency of the downstream reaches of the C05 Channel. It will also compensate for increased flow volumes that result from increased conveyance capacity in the channels. Widening of the channel in Outer Bolsa Bay would also require a pedestrian bridge at the Bolsa Chica Conservancy to be replaced.

c. Tide gate removal on the C05 Channel to improve flow conditions through the lower reaches of the channel. The existing tide gates leak and allow saltwater habitat to exist upstream, making replacement of the tide gate structure unnecessary. However, the current tide gate includes vehicle access across it. Therefore a replacement bridge structure will be installed at this location to allow for continued access for pedestrians, maintenance, and emergency response.

3. Orange County and Orange County Flood Control District, as administered by Orange County Public Works, is the non-federal cost-sharing sponsor for all features. Based on Fiscal Year 2020 price levels, the estimated total first cost of the recommended plan is \$1,224,598,000. The federal share of the project first cost is estimated at \$314,506,000, which equates to 65 percent of the first cost of \$483,856,000 of the identified National Economic Development Plan. The non-federal share is estimated at \$910,092,000 which equates to the sum of \$169,350,000 (35 percent of the first cost of the identified National Economic Development Plan) plus \$740,742,000 (100 percent of the additional cost of the recommended Locally Preferred Plan). The non-federal costs include the value of lands, easements, rights-of-way, relocations and dredged or excavated material disposal areas estimated at \$364,065,000. The total costs include \$7,813,000 for compensatory mitigation. Orange County Public Works would be responsible for operation, maintenance, repair, replacement and rehabilitation (OMRR&R) of the project after construction, which includes an incremental increase over current OMRR&R costs estimated at an average annual cost of \$135,000 (2020 price levels). In addition to the above, Orange County Public Works would be fully responsible for performing the investigation, cleanup, and response of hazardous materials on the project sites. Currently, no hazardous material work is anticipated.

DAEN

SUBJECT: Westminster, East Garden Grove, California Flood Risk Management

4. Based on a 2.75 percent discount rate and a 50-year period of analysis, the total equivalent average annual costs of the project are estimated to be \$58,211,000, including OMRR&R. All project costs are allocated to the authorized purpose of flood risk management. The recommended plan reduces expected annual damages by over 99 percent relative to the without project conditions. In addition, the annual probability of flooding in the highest risk areas is reduced from over 50 percent to less than one percent. Average annual benefits are estimated to be \$116,255,000, with net benefits of \$58,044,000 and a benefit-to-cost ratio of approximately 2.0 to 1.

5. An environmental impact statement was prepared in accordance with the National Environmental Policy Act. The Recommended Plan has been designed to minimize environmental impacts while maximizing future safety and economic benefits to the community. Mitigation is required due to unavoidable temporary or permanent environmental impacts to eelgrass, wetlands, and special status species. Mitigation includes a combination of in-kind and out-of-kind eelgrass mitigation, enhancement of the muted tidal pocket at the Bolsa Chica Ecological Reserve, and increasing the resiliency of existing California Least Tern nesting islands located at the Bolsa Chica Ecological Reserve to future sea level rise. A Biological Opinion for potential impacts to green sea turtles and their habitat has been received.

6. The study report fully describes flood risks in the Westminster watershed and describes residual risk. Flood damages from fluvial flooding will not be totally prevented, only reduced. The residual risks have been communicated to the non-federal sponsor, and they understand and agree with the analysis. Several public information meetings were organized to discuss the study and gain feedback that was incorporated into the study.

7. In accordance with the Corps guidance on review of decision documents, all technical, engineering and scientific work underwent an open, dynamic and rigorous review process to ensure technical quality. This process included District Quality Control review, Agency Technical Review, Independent External Peer Review (IEPR) (Type I), and Corps Headquarters policy and legal compliance review. All comments from the above referenced reviews have been addressed and incorporated into the final documents. Overall, the reviews have resulted in improvements to the quality of the feasibility analyses supporting the recommended plan. Incorporation of review recommendations resulted in expanded narratives and plan evaluations in plan formulation. Recommended improvements better support the decision-making process in the plan evaluation and selection. A safety assurance review (Type II IEPR) will be conducted during the implementation phase of the project.

8. Washington-level review indicates that the project recommended by the reporting officers is technically sound, environmentally and socially acceptable, and economically justified. The plan complies with all essential elements of the 1983 U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Land Related Resources Implementation studies and complies with other

DAEN

SUBJECT: Westminster, East Garden Grove, California Flood Risk Management

administrative and legislative policies and guidelines. Also, the views of interested parties, including federal, state, and local agencies have been considered.

9. I concur in the findings, conclusions, and recommendations of the reporting officers. Accordingly, I recommend that the selected plan (the Maximum Channel Modifications Plan) to reduce flood risks in the Westminster watershed, Orange County, California be authorized for implementation, as a federal project, with such modifications thereof as in the discretion of the Chief of Engineers may be advisable. My recommendation is subject to cost sharing, financing, and other applicable requirements of federal laws and policies. The cost of the Locally Preferred Plan recommended in this report will be cost shared in accordance with Section 103 of the Water Resources and Development Act of 1986, as amended (33 U.S.C. 2213), consisting of: a minimum non-federal share of 35 percent, not to exceed 50 percent, of project first costs of the identified National Economic Development Plan; and in addition a non-federal share of 100 percent of the additional cost of the Locally Preferred Plan increment above the identified National Economic Development Plan. Applying these requirements, the federal portion of the estimated total first cost is estimated to be \$314,506,000 and the non-federal portion is \$910,092,000. Federal implementation of the recommended plan would be subject to the non-federal sponsor agreeing to comply with applicable federal laws and policies, including but not limited to:

a. Provide the non-federal share of project costs, including a minimum of 35 percent, but not to exceed 50 percent, of the costs of the identified National Economic Development Plan, and 100 percent of the costs of Locally Preferred Plan increment, as further specified below:

(1) Provide 35 percent of the design costs in accordance with the terms of a design agreement entered into prior to commencement of design work;

(2) Provide, during construction, a cash contribution of funds equal to 5 percent of the National Economic Development Plan costs;

(3) Provide all lands, easements, and rights-of-way, perform or ensure the performance of all relocations, and provide relocation assistance, as determined by the Federal Government to be required for the initial construction or the operation and maintenance of the project, all in compliance with applicable provisions of the Uniform Relocation and Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 U.S.C. 4601-4655) and the regulations contained in 49 C.F.R. Part 24;

(4) Provide, during construction, any additional funds necessary to make its contribution equal to at least 35 percent of the National Economic Development Plan costs;

(5) Provide 100 percent of the costs of the Locally Preferred Plan increment;

DAEN

SUBJECT: Westminster, East Garden Grove, California Flood Risk Management

b. Operate, maintain, repair, rehabilitate, and replace the project, or functional portions of the project at no cost to the Federal Government, in a manner compatible with the project's authorized purposes and in accordance with applicable federal laws and regulations and any specific directions prescribed by the Federal Government;

c. Inform affected interests, at least annually, of the extent of protection afforded by the project; participate in and comply with applicable federal floodplain management and flood insurance programs; comply with Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. 701b-12); and publicize floodplain information in the area concerned and provide this information to zoning and other regulatory agencies for their use in adopting regulations, or taking other actions, to prevent unwise future development and to ensure compatibility with protection levels provided by the project;

d. Prevent obstructions or encroachments on the project (including prescribing and enforcing regulations to prevent such obstructions or encroachments) such as any new developments on project lands, easements, and rights-of-way or the addition of facilities that may reduce the level of protection the project affords, hinder operation and maintenance of the project, or interfere with the project's proper function;

e. Give the Federal Government a right to enter, at reasonable times and in a reasonable manner, upon property that the non-federal sponsor owns or controls for access to the project for the purpose of completing, inspecting, operating, maintaining, repairing, rehabilitating, or replacing the project;

f. Hold and save the United States free from all damages arising from the construction, operation, maintenance, repair, rehabilitation, and replacement of the project, except for damages due to the fault or negligence of the United States or its contractors;

g. Perform, or ensure performance of, any investigations for hazardous substances that are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Public Law 96-510, as amended (42 U.S.C. 9601-9675), that may exist in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be required for construction, operation, or maintenance of the project. However, for lands that the Federal Government determines to be subject to the navigation servitude, only the Federal Government shall perform such investigations unless the Federal Government provides the non-federal sponsor with prior specific written direction, in which case the non-federal sponsor shall perform such investigations in accordance with such written direction;

h. Assume, as between the Federal Government and the non-federal sponsor, complete financial responsibility for all necessary cleanup and response costs of any hazardous substances regulated under CERCLA that are located in, on, or under lands,

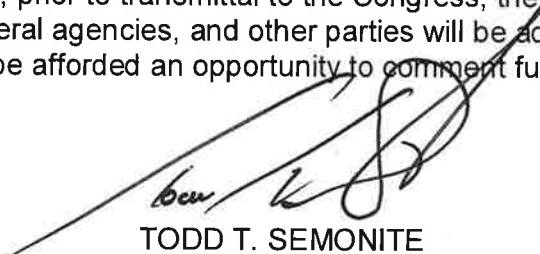
DAEN

SUBJECT: Westminster, East Garden Grove, California Flood Risk Management

easements, or rights-of-way that the Federal Government determines to be required for construction, operation, or maintenance of the project, and;

i. Agree, as between the Federal Government and the non-federal sponsor, that the non-federal sponsor shall be considered the operator of the project for the purpose of CERCLA liability, and to the maximum extent practicable, operate, maintain, repair, rehabilitate, and replace the project in a manner that will not cause liability to arise under CERCLA.

10. The recommendations contained herein reflect the information available at this time and current departmental policies governing formulation of individual projects. These recommendations do not reflect program and budgeting priorities inherent in the formulation of a national Civil Works construction program nor the perspective of higher review levels within the Executive Branch. Consequently, the recommendations may be modified before they are transmitted to the Congress as proposals for authorization and implementation funding. However, prior to transmittal to the Congress, the non-federal sponsor, the state, interested federal agencies, and other parties will be advised of any significant modifications and will be afforded an opportunity to comment further.

A handwritten signature in black ink, appearing to read 'T. Semonite', is written over a diagonal line that extends from the bottom left towards the top right of the page.

TODD T. SEMONITE  
Lieutenant General, USA  
Chief of Engineers