DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SOUTH ATLANTIC DIVISION
60 FORSYTH STREET SW, ROOM 10M15
ATLANTA, GA 30303-8801

CESAD-RBT (1165)

05 January 2023

MEMORANDUM FOR Commander, Mobile District, P.O. Box 2288, Mobile, Alabama 36628-0001

SUBJECT: Approval of the Review Plan for Forest Heights Levee Improvements, City of Gulfport, MS

1. References:

a. Mobile District, CESAM-EN-QC memorandum, subject as above, 12 December 2022.

b. Engineering Regulation (ER) 1165-2-217, Civil Works Review Policy, 1 May 2021.

2. The Review Plan (RP) for the Forest Heights Levee Improvements project, submitted via reference 1.a, has been reviewed by the South Atlantic Division (SAD). The RP is hereby approved in accordance with reference 1.b.

3. SAD shall be the Review Management Organization (RMO) for this project.

4. Significant changes to this RP will require new written approval from this office.

5. The SAD point of contact is Michael Wolz, CESAD-RBT, (404) 562-5120.

MCCALLISTER.LARRY.DWAYNE.1144889661
Digitally signed by MCCALLISTER.LARRY.DWAYNE.1144889661
Date: 2023.01.05 15:49:57 -05'00'

Encl

LARRY D. MCCALLISTER, PhD, PE, SES
Director of Programs

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, AL 36628-0001

CESAM-EN-QC

MEMORANDUM FOR Commander, U.S. Army Engineer Division, South Atlantic (CESAD-DE), 60 Forsyth Street, Room 10M15, Atlanta, Georgia 30303

SUBJECT: Approval of the Review Plan for Forest Heights Levee Improvements, City of Gulfport, MS

1. References:

a. ER 1110-2-1150, “Engineering and Design for Civil Works Projects,” dated 31 August 1999.

b. ER 1110-1-12, “Engineering and Design Quality Management,” dated 31 March 2011.

c. ER 1165-2-217, “Civil Works Review Policy,” dated 1 May 2021.

d. ER 415-1-11, “Biddability, Constructability, Operability, Environmental, and Sustainability (BCOES) Review,” dated 1 January 201 sustainability (BCOES) Review,” dated 1 January 2013.

2. I hereby request approval of the enclosed Review Plan for the Forest Heights Levee Improvements project and concurrence with the conclusion that a Safety Assurance Review (SAR) of the subject project is not required. The recommendation not to perform a SAR is based on the ER 1165-2-217 Risk Informed Decision Process as discussed in the Review Plan. The Review Plan complies with applicable policy, provides for Agency Technical Review, and has been coordinated with the SAD. Significant changes to this Review Plan, such as scope or level of review changes, should they become necessary, will require written approval from SAD.

3. POC for this action is Valerie Morrow, Project Technical Lead, (251) 370-8805.

Digitally signed by CHAPMAN.JEREMY.JIGGS.1187181077
Date: 2022.12.07 10:28:08 -06'00'

Encls

JEREMY J. CHAPMAN, P.E.
COL, EN
Commanding

US Army Corps
of Engineers
Mobile District

REVIEW PLAN

Forrest Heights Levee Improvements

City of Gulfport, MS

P2# 321375

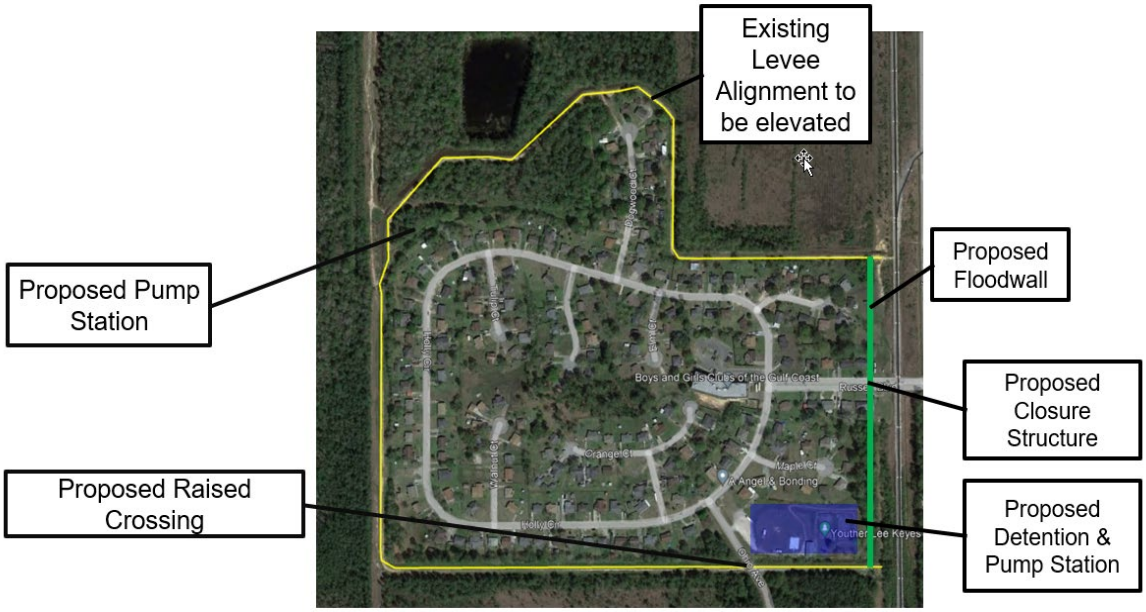
August 11, 2022

PREPARED BY:
U.S. Army Corps of Engineers
Mobile District
South Atlantic Division

Review Plan for Forrest Heights Levee Improvements Implementation Documents

Refer to ER 1165-3-217, *Civil Works Review Policy*, May 2021, regarding the requirements for executing this plan.

1. **Date**: August 11, 2022
2. **Review plan revision, if applicable:** N/A
3. **Project name:** Forrest Heights Levee Improvements
4. **Project location:** Forrest Heights Community, Gulfport, MS
5. **Project P2 number:** 321375
6. **Review Management Organization (RMO):** South Atlantic Division
7. **Review plan POCs:**
   a. **District:** Engineering Technical Lead, [redacted]
   b. **SAD:** Implementation Quality Manager, [redacted]
8. **Expected in-kind contributions/services to be provided by the non-Federal sponsor:** $0
9. **Target construction contract award date(s):** April 25, 2025
10. **Estimated construction contract value(s) (range)**: $15-20M
11. **Project description:** The project includes the features shown below.



12. **Documents to be reviewed:** Construction plans and specifications, Design Documentation Report (DDR), and a Risk Assessment Report

13. **Required reviews:**
- District Quality Control Review
- Agency Technical Review (ATR)
- Biddability, Constructability, Operability, Environmental, and Sustainability Review
- Legal Sufficiency Review

14. **Site visits by review teams**: Not required

15. **Justification to waive ATR, if applicable:** N/A

16. **ATR team disciplines and qualifications:**

Team Member	Expertise Required
Team Lead	Must have experience in preparing Civil Works implementation documents and performing ATR, with the necessary skills to lead a virtual team through the ATR process. May be combined with another team member.
Geotechnical Engineer	Must have expertise in the design and construction of earthen embankments. Must have expertise in potential failure mode analysis. Must be a licensed professional engineer.
Civil Engineer	Must have expertise in the layout, design, and construction of site/civil features. Must be a licensed professional engineer.
Hydrology and Hydraulics Engineer	Must have expertise in inland hydrologic and hydraulics analysis and design, including numerical modeling. Must have experience in potential failure mode analysis. Must be a licensed professional engineer.
Structural Engineer	Must have expertise in the design and construction of floodwalls and hydraulic control structures. Must have experience in potential failure mode analysis. Must be a licensed professional engineer.
Mechanical Engineer	Must have experience with the design and construction of mechanical systems associated with hydraulic control structures. Must be a licensed professional engineer.
Consequence Specialist	Must have experience estimating potential life loss, economic damages, and environmental damages associated with the failure of dams and levees.

17. Considerations regarding the need for a Safety Assurance Review (SAR):

(1) Could project failure result in the loss of human life?
During Hurricane Katrina in 2005, the existing levee was overtopped due to inland flooding along the lower reach of Turkey Creek. Water levels reached a depth of 2-8 feet over the entire community but did not result in life loss. For this project, robust post-construction compliance with TRGs 2,3, and 4 is expected to make the potential for failure-related life loss very unlikely.

(2) What is the population at risk?
Based on census data, the average persons per household from 2016-2020 in Gulfport, MS is 2.48. The Forest Heights community includes approximately 195 households; therefore, the estimated population at risk is approximately 484 people. A more accurate determination of the population at risk will be updated in the 35% submittal.

(3) For water impoundment or training features, will the design deviate from USACE guidance or be based on uncommon analytical methods?
No. The design will comply with USACE guidance and utilize common analytical and design methods routinely used for other similar projects.

(4) If an existing project is to be modified, will construction activities temporarily increase the probability of project failure?
No. The construction contract will include provisions (order of work, etc.) that preclude a temporarily increase the probability of project failure during construction.

18. Determination regarding the need for a SAR:

Based on the information presented above, the District Chief of Engineering, as the Engineer-In-Responsible-Charge, does not recommend a SAR at this time. After a Semi-Quantitative Risk Assessment is completed, the District Chief of Engineering, will reconsider the need to conduct a SAR. If the decision is made to conduct a SAR, the Risk Management Center will become the RMO.

19. Numerical models to be utilized:

Model Name	Version
HEC-RAS	5.0.7 or later
HEC-HMS	4.2 or later
HEC-LifeSim	1.0.1 or later
HEC-FDA	1.4.3
GeoStudio	2019 or later
gINT	V8i
Settle3	5.0 or later
Apile	2019 or later
AllPile	7.23 or later
Lpile	2018 or later
Group	2016 or later
RAMElements	V16 Update 2
AutoCAD Civil 3D	2020 or later
PondPak	V10 or later
StormCAD	10 or later
PCASE	7.0.1 or later

20. Schedule and cost of reviews:

Submittal	Reviews	Cost
35% Submittal	DQC	$ 20,000
65% Submittal	DQC, ATR	$ 80,200
Final	DQC, ATR (completion), BCOES	$ 33,825