



US Army Corps  
of Engineers®

Prepared by:  
**Fort Worth District**  
**Southwestern Division**

## Review Plan for the Dallas to Houston High Speed Rail, Dallas Floodway and Dallas Floodway Extension, SWF-2011-00483, Pursuant to 33 USC §408

PREPARED BY:

STORY.JASON.E  
ARL.1239553520

Digitally signed by  
STORY.JASON.EARL.1239553520  
Date: 2020.01.27 12:34:56 -06'00'

Jason E. Story  
Section 408 Coordinator  
Fort Worth District

DATE

ENDORSED BY:

Digitally signed by  
CARLSON.DAVID.ERIC.1228954302  
Reason: RMO Review Plan Endorsement  
Location: CEIWR-RMC-E  
Date: 2020.02.11 09:38:00 -05'00'

David E. Carlson, P.E.  
Chief, Eastern Division  
USACE, Risk Management Center

DATE

APPROVED BY:

PEREZ.PETE.G.11  
32012314

Digitally signed by  
PEREZ.PETE.G.1132012314  
Date: 2020.03.02 16:40:56 -06'00'

Pete G. Perez, P.E.  
Director, Programs Directorate

DATE

MSC Approval Date: Pending

Last Revision Date:

Product Type: Section 408 Alteration Request

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DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS, SOUTHWESTERN DIVISION  
1100 COMMERCE STREET  
DALLAS, TX 75242-1317

CESWD-RBT

25 February 2020

MEMORANDUM FOR Commander, Fort Worth District

SUBJECT: Review Plan for High Speed Rail Section 408

1. References:

- a. CESWF-PM memorandum, subject as above, 12 February 2018.
  - b. EC 1165-2-220, Policies and Procedural Guidance for Processing Requests to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408, 10 September 2018.
  - c. CESWD-RBT memorandum, subject: Delegation of Authority for Section 408 Requests that require Division Commander Approval, 4 March 2019.
2. In accordance with references 1.b. and 1.c., I hereby approve the enclosed Review Plan (RP) for the subject project.
3. Please post the final approved RP with a copy of this memorandum to the District's public internet website. Prior to posting to the District website, the names of USACE employees should be removed.
4. The SWD point of contact for this action is Mr. Paul Komoroske, CESWD-RBT, at 817-565-6241.

Encl

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PEREZ.PETE.G.1132012314  
Date: 2020.02.26 15:26:47  
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PETE G. PEREZ, P.E.  
Director, Programs Directorate



# Section 1

## Introduction

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### 1.1 Purpose

This Alteration-Specific Review Plan (RP) is intended to ensure the quality of the Fort Worth District (SWF) review of the request to alter two U.S. Army Corps of Engineers (USACE) Civil Works projects, the Dallas Floodway (DF) and the Dallas Floodway Extension (DFE), located within the SWF area of responsibility. This RP was prepared in accordance with Engineer Circular (EC) 1165-2-220, "Policy and Procedural Guidance for Processing Requests to Alter U.S. Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408". Texas Central Railroad, LLC (TCRR) is the Requester for the Dallas to Houston High Speed Rail (HSR) Section 408 Request. TCRR has submitted five draft Section 408 Requests, beginning in 2016. Version five was received by SWF on September 20, 2019. The initial Section 408 Request letter from TCRR (previously named Texas Central Partners) to SWF to initiate the Section 408 process was dated March 7, 2016. The Regulatory Project number is 408-SWF-2011-00483. The HSR Section 408 Request pre-dated issuance of EC 1165-2-220, and the Fort Worth District is reviewing the alteration using the previous policy, EC 1165-2-216.

### 1.2 References

The technical references applicable to determine the impacts to the operation and maintenance functions of the flood risk management (FRM) projects include the following: Engineer Regulations, Engineer Circulars, Engineer Manuals, Engineer Technical Letters, Engineering Construction Bulletins, Policy Guidance Letters, implementation guidance, project guidance memoranda and other formal guidance memoranda issued by HQUSACE. An example of these are as follows:

- EC 1165-2-217, Review Policy For Civil Works, 20 February 2018
- EC 1165-2-216, Policy and Procedural Guidance for Processing Requests to Alter U.S. Army Corps of Engineers Civil Works Projects Pursuant to 33 USC § 408, 21 June 2016
- EC 1165-2-220, Policy and Procedural Guidance for Processing Requests to Alter U.S. Army Corps of Engineers Civil Works Projects Pursuant to 33 USC § 408, 10 September 2018
- EM 1110-2-1913, Design, Construction, and Evaluation of Levees, 30 April 2000
- EM 1110-2-2502, Retaining and Flood Walls, 29 September 1989
- ER 415-1-11, Biddability, Constructability, Operability, Environmental and Sustainability (BCOES) Reviews, 1 January, 2013
- ER 1110-1-12, Quality Management, 31 March 2011
- ER 1110-1-1807, Drilling in Earth Embankment Dams and Levees, 31 December 2014
- ER 1110-2-1150, Engineering and Design for Civil Works Projects
- ER 1110-2-1156, Safety of Dams – Policy and Procedure, 31 March 2014

- ER 1165-2-132, Hazardous, Toxic and Radioactive Waste (HTRW) Guidance for Civil Works Projects, 26 June 1992
- Fort Worth District Regulatory Division Coordination Standard Operating Procedure (SOP) for Activities Involving 408 Review and/or Permits, 10 April 2019
- National Academy of Sciences, Background Information and Confidential Conflict of Interest Disclosure, BI/COI Form 3, May 2003
- SWFP 1150-2-1, Criteria for Design and Construction Within the Limits of Existing Federal Projects, 1 October 2013
- Delegation of Authority for Review Plans for Section 408 Requests that require Division Commander Approval, Southwestern Division, 4 March 2019
- 44 CFR 65.10, Mapping of areas protected by levee systems
- 33 CFR 208.10, Local flood protection works; maintenance and operation of structures and facilities
- 33 USC 408, Taking possession of, use of, or injury to harbor or river improvements
- USACE ECB 2019-15, Interim Approach for Risk Informed Designs for Dam and Levee Projects

## 1.3 Review Management Organization

The USACE Risk Management Center (RMC) is the Review Management Organization (RMO) for this project.

## 1.4 SAR Determination

The SWF Levee Safety Officer (LSO) has made a risk-informed decision that the proposed alteration poses a significant threat to human life (public safety) since FRM is the primary purpose of this system. Therefore a Safety Assurance Review (SAR) will be performed. The primary area of concern is the associated uplift and seepage potential of the HSR viaduct pier foundations, which are in close proximity to the future Lamar Levee and the existing Central Wastewater Treatment Plant (CWWTP) Levee. The future Lamar Levee and the CWWTP Levee are FRM features of the DFE Project. The SAR requirement was based on the potential impacts to the federal project, complexity of the project, and potential threat to public safety.

## 1.5 Project Sponsor

The City of Dallas (City) is the non-federal sponsor for the DF and DFE Projects. Dallas Water Utilities (DWU) is the City department responsible for operation and maintenance of the DF and DFE projects.

## 1.6 Decision Authority

Pursuant to EC 1165-2-220, the USACE Southwestern Division (SWD) Commander will be the Deciding Official for the Section 408 decision since a SAR is required. This decision cannot be delegated. The SWF Review Team will conduct the review with oversight from the RMC and the SWD Section 408 Coordinator. Upon completion of the review, the SWF Review Team will prepare the Section 408 Decision Package to include a Summary of Findings, Section 408 Decision Letter, Standard Terms and Conditions, Special Conditions, and the internal Staff Coordination and Router Sheet. The SWF Review Team will prepare a transmittal memorandum for the Fort Worth District Commander to endorse and transmit the Section 408 Decision Package to SWD.

## Section 2

# Project Description

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### 2.1 Project Description

#### USACE Project Descriptions

The DF Project includes existing FRM features consisting of the West Levee, East Levee, floodway, channel improvements, and interior drainage components. The original authorization for the DF Project was approved in 1945, and was modified by Section 5141 of the Water Resources Development Act (WRDA) of 2007, and amended by the Water Resources Reform and Development Act of 2014. The USACE is currently executing Pre-Construction Engineering and Design of additional FRM elements of the Modified Dallas Floodway Project (MDFP) as approved under the 2014 Final Environmental Impact Statement (EIS) and Final Feasibility Report, and funded by the Supplemental Appropriations in the Bipartisan Budget Act (BBA) of 2018. These new FRM features include increasing the floodway capacity to accommodate the water surface profile corresponding to a flow of 277,000 cubic feet per second, flattening the existing levee side slopes to 4:1 river side, modification of the AT&SF Railroad Bridge to increase conveyance efficiency, and constructing and/or renovating five interior drainage pump stations.

The DFE Project generally begins downstream of the AT&SF Railroad Bridge, and downstream of the DF Project. The DFE authorization is contained in Section 301 of the River and Harbor Act of 1965 (for flood control), and modified by Section 351 of WRDA 1996 (authorizing inclusion of non-federal levees into the project), and was further modified to add ecosystem restoration and recreation as project purposes by Section 356 of WRDA 1999. The DFE Project has features that are currently under construction (recreation and mitigation features) and additional elements funded under the Supplemental Appropriations in the 2018 BBA for the future Lamar Levee and Cadillac Heights Levees. Major flood risk management elements of DFE include: future Lamar Levee, future Cadillac Heights Levee, CWWTP Levee, Rochester Park Levee, Trinity River at Interstate Highway (IH) 45 realignment, and the Chain of Wetlands. Recreation features include trails, trailhead access areas, bridges, and associated facilities. Ecosystem restoration features are integrated into the Chain of Wetlands. DFE also includes extensive on-site mitigation areas. After the Lamar Levee and Cadillac Heights Levees are completed, the two projects (DF and DFE) will combine as the Dallas Floodway System. The feasibility report and National Environmental Policy Act (NEPA) documents for DFE are the 1999 General Reevaluation Report (GRR) and the Integrated EIS and 2003 Supplement Number One to the EIS.

The USACE is applying Section 408 jurisdiction and policy to the real estate that has been acquired for both the DF and DFE Projects. The DF and DFE recently have new agreements in place for execution of the Supplemental Appropriations in the 2018 BBA: the Project Partnership Agreement for the Dallas Floodway Project signed in June 2019, and Amendment Number One to the Project Cooperation

Agreement for the Dallas Floodway Extension Project signed in August 2019. For DFE, the City has acquired most of the real estate parcels needed for the future Lamar Levee, including the crossing of the HSR. Some remaining real estate acquisition is required for both the Lamar Levee and Cadillac Heights Levee.

#### Proposed Alteration Description

TCRR is proposing to develop a passenger rail transportation system between Houston and Dallas, Texas using Japanese HSR technology. The proposed action is intended to provide an alternative to automobile travel on IH-45 or air travel between the two major metropolitan areas and introduces rail capacity in the vicinity of the corridor. The Federal Railroad Administration (FRA) is the lead federal agency in preparing an EIS and USACE is a cooperating agency.

This RP covers the proposed alterations to the DF and DFE Projects which includes construction of a HSR viaduct, supporting infrastructure, and operation and maintenance facilities. The HSR alignment is located adjacent to the Able Sump, crosses the East Levee floodwall, traverses across the DFE Floodway, overlaps with a segment of the future Lamar Levee, crosses the Trinity River upstream of IH-45, and is located within the extended levee template of the CWWTP levee.

The HSR proposed alignment intersects with three USACE Civil Works Projects – Bardwell Lake, DF and DFE within the SWF. The proposed HSR alignment crosses the flowage easement of Bardwell Lake and is to be processed as a real estate action outside of the Section 408 review process. Both DF and DFE are federally authorized Civil Works projects within the City of Dallas in Dallas County. The HSR alignment crosses both DFE and DF. DFE features impacted include DFE floodway and Chain of Wetlands, future Lamar Levee, CWWTP Levee and the Trinity River at IH-45 realignment. DF features impacted include the East Levee and the Able Sump. The City of Dallas is the non-federal sponsor and cost share partner and responsible for operation and maintenance for both the DF and DFE. Figure 2-1 provides an overview of the HSR proposal in relation to DF and DFE.

TCRR has been working on an agreement to provide funding to the City for an extension of the future Lamar Levee floodwall. Currently, the Lamar Levee design includes a floodwall under IH-45. This proposed floodwall extension would continue the floodwall to the north and west (upstream) for approximately 890 feet. Additionally, a cutoff wall feature may be necessary in combination with the floodwall extension depending on the results of the geotechnical analyses. The City would need to request the floodwall extension as a betterment, in order for it to be included in the pending Pre-Construction Engineering and Design work funded under the Supplemental Appropriations in the 2018 BBA.

Any future Section 408 permission issued by the USACE does not obviate the need to obtain other federal, state, or local authorizations required by law. Any future Section 408 permission issued by the USACE does not grant any property rights or exclusive privileges, and the Requester would need to have appropriate real estate instruments in place prior to construction.

Specific proposed alterations included:

- Construction of reinforced concrete drilled shafts and foundation caps that will support piers of the HSR viaduct for the total length of the alignment within DF and DFE federal project footprints.
- Construction of reinforced concrete drilled shafts and foundation caps that will support piers of the HSR viaduct adjacent to the floodwall segment for the future Lamar Levee.
- Placement of riprap or articulated concrete blocks (ACB) around the rail viaduct piers at the Trinity River for scour protection.

- Placement of approximately 410 feet of ACB along the toe of the CWWTP Levee for scour protection.
- Concrete lining of approximately 385 feet of the CWWTP effluent channel.
- Temporary closure of portions of the CWWTP Levee maintenance road during construction of adjacent piers.
- Permanent realignment of approximately 400 feet of the CWWTP Levee maintenance road.
- Temporary shoring, which includes tangent pile walls at the East Levee Floodwall (at the Dallas Area Rapid Transit [DART] crossing) and the CWWTP Levee and sheet pile walls at the Trinity River crossing.
- Construction of an inverted filter berm around the viaduct column on the protected side of the East Levee Floodwall (at the DART crossing).
- Construction of temporary and permanent erosion control measures along the CWWTP discharge channel.
- Temporary construction staging areas.

The Section 408 Submittal shall include:

- Summary Report: Executive Summary, Introduction, Purpose and Need, Description of Alteration, Non-Federal Request for Alteration Authorization NEPA Documentation, Real Estate Plan, to include City of Dallas parcels and instrument of conveyance, Discussion of Executive Order 11988, Technical Analysis and Adequacy of Design, Discussion of Residual Risk, Administrative Record.
- Appendix A – Section 408 Pre-Coordination Meeting Minutes
- Appendix B – Review Management Plan
- Appendix C – City of Dallas Statement of No Objection
- Appendix D – Safety Assurance Review
- Appendix E – Environmental Impact Statement References
- Appendix F – Real Estate Plan
- Appendix G – Drawings
  - General: Cover Sheet, Drawing List, Site Plan, Key Map and Location Detail.
  - Civil Sheets: Plan and Profile, General Notes, Loading Diagrams, Foundation Details, Tangent and Sheet Pile Walls, Typical Foundation Excavation, Slurry Trench Cutoff Details.
  - Hydraulic Sheets: Hydraulic Cross-section Site Map, Hydraulic Profiles, Hydraulic Cross-sections, Scour Protection, Effluent Channel Improvements, Grading Plan.
  - Structural Sheets: Viaduct Span Details, Construction Sequence, Pier Types.
  - Utilities: Utility Plan View, Utility Adjustments.
- Appendix H – Geotechnical Analysis and Report: Results of Subsurface Investigation, Seepage Analysis, Slope Stability Analysis.
- Appendix I – H&H System Performance Analysis: Hydraulic Cross-section Sheets, Valley Storage Mitigation, Draft Corridor Development Certificate Application.
- Appendix J – Temporary Construction Facilities.



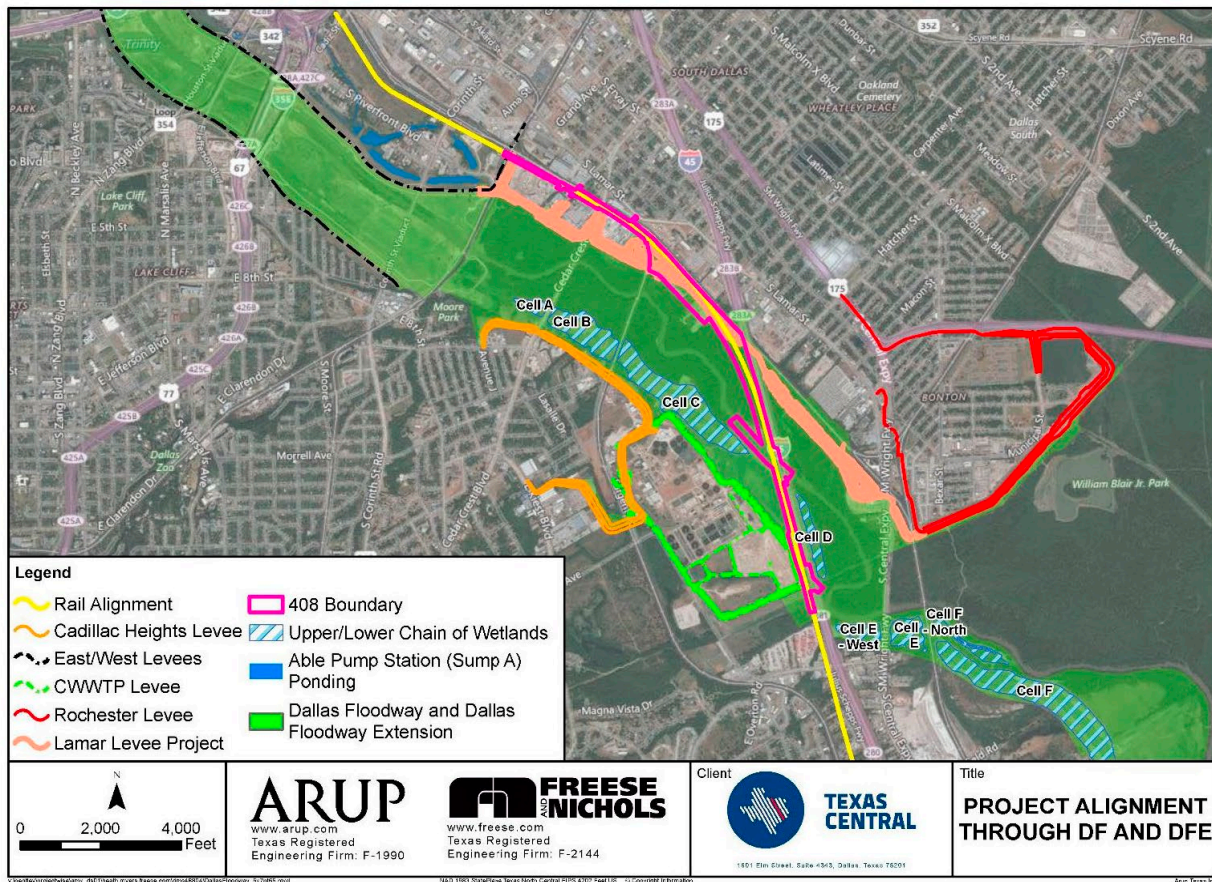


Figure 2-1. HSR overview.

## 2.2 Phased Review

The Requester is seeking an initial Section 408 Permission, with future Section 408 submittals planned for construction approval for separate elements of the HSR. These future submittals are expected because the Requester intends to use a design-build delivery system. Any initial Section 408 Permission will not grant construction approval. Construction approvals will be requested through submittal of future packages which the USACE will review for technical and environmental adequacy. For example, the Dallas Terminal Station is proposed for an area adjacent to the DF East Levee and Able Sump. The Requester will not have detailed designs for this feature for submittal during the initial Section 408 Request.

## 2.3 Project Coordination

- The USACE and the City/DWU have been in close coordination since 2016. The City has a dedicated HSR liaison assigned to work with the USACE and the Requester.

- Subsequent Section 408 Request submittals will be routed through the City for their review and approval.
- The Statement of No Objection from the City dated December 17, 2017, may have to be amended or a new letter sent to SWF. In the 2017 letter to SWF, the City stated that the City Council may need to render a final decision on supporting the project after additional review and recommendations from USACE.
- The SWF Dallas Floodway Program Manager will be primarily responsible for coordination with the City.
- The Requester, TCRR, is also an applicant for Regulatory Program permits under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. The HSR crosses both the SWF and SWG Civil Works boundaries. The USACE Projects requiring a Section 408 review are limited to DF and DFE. The HSR would not cross USACE Projects within SWG.
- The SWF Regulatory Project Number is SWF-2011-00483. The Galveston District (SWG) Regulatory Project Number is SWG-2014-00412. The SWF Section 408 Coordinator and SWF Review Team have been in close coordination with SWF and SWG Regulatory since 2016.
- The HSR 408 was not issued a Section 408 Request ID since it was not entered into the Section 408 Tracking Database because the initial draft Request was received prior to issuance of EC 1165-2-220. Therefore, SWF is primarily reviewing the alteration using the previous policy, EC 1165-2-216. SWF is using the Regulatory Project Number, SWF-2011-00483, as the project number for both Section 408 and Regulatory for tracking purposes.
- In May 2018, a determination was made by the SWF LSO that a SAR was not required, since the Lamar Levee was conceptual. When the proposed Lamar Levee project was funded under Supplemental Appropriations, the LSO determined a SAR would be required.
- In 2016-2018, SWF developed a non-SAR RP, which was coordinated with the RMC and SWD. This current RP includes revisions from the RMC and SWD from that period. The previous SWF Commander, Colonel Calvin Hudson, signed a memorandum transmitting the non-SAR RP to SWD on 12 February 2018. This previous non-SAR RP was never formerly endorsed by the RMC nor approved by SWD.
- The previous non-SAR RP utilized an older template. This current RP (with a SAR) is utilizing the latest RMC RP recommended template for Section 408 requests requiring a SAR.
- The last comments and edits to the previous non-SAR RP were from an edited Word document titled HSR 408 RP Template RMC 19 NOV 2018 (SWD SUBMITTAL).docx. The SWF has incorporated this edited version into the current draft of the RP (with a SAR).
- The City convened a SAR panel at their own discretion.
  - City SAR panel members were reviewed by SWF, RMC, and SWD in the previous RP and SAR Review Plan.
  - SAR panel initial meeting held 13-15 November 2017.
  - SAR panel issued a first letter to the City dated 11 January 2018, describing the 13-15 November 2017 activities, and preliminary recommendations.

- SAR panel issued a second letter to the City dated 6 April 2018, with the panel's detailed results and findings.
- TCRR submitted responses to the SAR panel comments on 27 June 2019.
- SAR panel issued a letter to the City on 2 August 2019 with a summary of its evaluation of TCRR's response to the SAR panel comments.
- TCRR provided a SAR Review Plan in the Draft Section 408 Request in February 2018 (a copy of this SAR Review Plan is included in Attachment 1).
- Copies of above SAR panel letters and documents are provided in Attachment 2.
- TCRR has submitted five versions of the Section 408 request. Versions one through three were formally submitted to and reviewed by the City. Version four was updated based on the City review, prior to submittal to SWF.
  - Version one was dated November 2016.
  - Version two was dated August 2017.
  - Version three was dated November 2017.
  - Version four was dated December 2017, and was received by SWF in February 2018. SWF formally reviewed and commented on version four and utilized DrChecks for the review and comment resolution. The comments were closed for this review in July 2019.
  - Version five was dated September 2019, and was received by SWF on September 20, 2019. The Requester has amended version five based on SWF comments and SWF direction during the version four review.
- The SWF is primarily utilizing the FRA EIS process for NEPA and environmental compliance for this Section 408 Request. SWF has been coordinating with the FRA during the EIS process to ensure impacts to DF, DFE, and Bardwell Lake are adequately disclosed in the EIS. SWF has provided formal comments to FRA on both the Administrative Draft EIS and the Draft EIS, as well as the Programmatic Agreement (under Section 106 of the National Historic Preservation Act). SWF cannot finalize the environmental compliance until the FRA EIS is complete. Once the FRA publishes the Final EIS, and the EIS fully incorporates changes requested by SWF, and the FRA signs its Record of Decision (ROD), the USACE can proceed with the Section 408 environmental compliance. After the FRA ROD is signed, the USACE intends to develop an Environmental Assessment, incorporating by reference the FRA EIS, and prepare a Finding of No Significant Impact (FONSI), if appropriate. This FONSI would be a component of the Section 408 Decision Package or be incorporated into the Section 408 Summary of Findings to present to the Deciding Official.

## Section 3

# Review Requirements

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### 3.1 District and USACE Review Requirements

#### 3.1.1 Technical Review

The review of this alteration Request shall include a Technical Review, conducted by SWF.

#### 3.1.2 Purpose

The review of all work products will be in accordance with the guidelines established within this RP. In general, the purpose of this review is to ensure the proper application of established criteria, regulations, laws, codes, principles and professional practices.

For the purposes of Section 408, the SWF Review Team, SWD, and RMC will make the following determinations:

- Impair the Usefulness of the Project Determination. The objective of this determination is to ensure that the proposed alteration will not limit the ability of the USACE Project to function as authorized and will not compromise or change any authorized project conditions, purposes or outputs.
- Injurious to the Public Interest Determination. Proposed alterations will be reviewed to determine the probable impacts, including cumulative impacts, on the public interest. The decision whether to approve an alteration will be determined by the consideration of whether benefits are commensurate with risks.
- Legal and Policy Compliance Determination. A determination will be made by the appropriate Office of Counsel as to whether the proposed alteration meets all legal and policy requirements.

##### 3.1.2.1 Review Procedures and Documentation of Review

Reviews will be conducted in a fashion which promotes dialogue regarding the quality and adequacy of the required documentation. The SWF Review Team will review the documents provided by the Requester. DrChecks will be used as a review and comment tool.

Once SWF review has been completed, SWF will develop a Summary of Findings package in accordance with paragraph 15 b) of EC 1165-2-220, to serve as the basis for the final recommendation on the proposed alteration.

Final Review and Decision Procedures:

- Review findings will be documented in the Summary of Findings for the Section 408 Request
- SWF Review Team will add statements summarizing their review in the applicable Summary of Findings paragraphs
- Lead for preparing the Summary of Findings will be the SWF Section 408 Coordinator
- Summary of findings will be circulated informally amongst the SWF Review Team for input and documentation of the review findings
- SWF Review Team will add and tailor the Standard Terms and Conditions, Appendix K, for the Section 408 Request



- SWF Review Team will determine if any Special Conditions are required, and add these to the Summary of Findings and Section 408 Decision Letter
- SWF Section 408 Coordinator will prepare the Section 408 Decision Package to include the Summary of Findings, Section 408 Decision Letter, Standard Terms and Conditions, any Special Conditions, and internal Staff Coordination and Router Sheet
- Staff Coordination and Router Sheet will list district division chiefs at a minimum including: Operations, Engineering and Construction, Regulatory, Regional Planning and Environmental Center, Real Estate, and Office of Counsel
- Section 408 Decision Package will be routed to each of the district divisions for review and approval
- After approval of each division within the district, the Section 408 Decision Package will be presented to the SWF Commander for endorsement and transmittal of the package to SWD
- SWF Section 408 Coordinator will send SWF endorsed Section 408 Decision Package to SWD
- SWD will review and SWD Commander will render Section 408 decision
- SWD will send Section 408 Decision Package back to SWF
- SWF Section 408 Coordinator will scan and save the Section 408 Decision Package for the administrative record
- SWF Section 408 Coordinator will obtain a copy of any Regulatory Division permit decision letters, and send these, along with the Section 408 decision letter, and a transmittal letter, to the Requester/Applicant
- SWF Section 408 Coordinator will fulfill requirements for tracking Section 408 Requests throughout the process in the USACE enterprise Section 408 Tracking Database

### 3.1.3 Products to Undergo Review

The Section 408 Submittal the SWF Review Team shall review:

- Summary Report: Executive Summary, Introduction, Purpose and Need, Description of Alteration, Non-Federal Request for Alteration Authorization, NEPA, Real Estate Plan, to include City of Dallas parcels and instrument of conveyance, Discussion of Executive Order 11988, Technical Analysis and Adequacy of Design, Discussion of Residual Risk, Administrative Record.
- Appendix A – Section 408 Pre-Coordination Meeting Minutes
- Appendix B – Review Management Plan
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- Appendix D – Safety Assurance Review
- Appendix E – Environmental Impact Statement References
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  - General: Cover Sheet, Drawing List, Site Plan, Key Map and Location Detail.
  - Civil Sheets: Plan and Profile, General Notes, Loading Diagrams, Foundation Details, Tangent and Sheet Pile Walls, Typical Foundation Excavation, Slurry Trench Cutoff Details.
  - Hydraulic Sheets: Hydraulic Section Site Map, Hydraulic Profiles, Hydraulic Cross-sections, Scour Protection, Effluent Channel Improvements, Grading Plan.
  - Structural Sheets: Viaduct Span Details, Construction Sequence, Pier Types.
  - Utilities: Utility Plan View, Utility Adjustments.
- Appendix H – Geotechnical Analysis and Report: Results of Subsurface Investigation, Seepage Analysis, Slope Stability Analysis.

- Appendix I – H&H System Performance Analysis: Hydraulic Cross-section Sheets, Valley Storage Mitigation, Draft Corridor Development Certificate Application.
- Appendix J – Temporary Construction Facilities.

### 3.1.4 Required Review Team Expertise and Requirements

The SWF Review Team is comprised of reviewers with the appropriate independence and expertise to conduct a comprehensive review in a manner commensurate with the type of alteration described in this RP.

The SWF Review Team will be comprised of the following disciplines:

**Table 3-1. SWF Review Team expertise required.**

<b>District-Led Review Team</b>	<b>Expertise Required</b>
District Review Team Lead	The District Review Team Lead should be a senior professional with extensive experience in preparing Civil Works decision documents and conducting technical reviews. The lead should also have the necessary skills and experience to lead a virtual team through the district review process. The District Review Team Lead may also serve as a reviewer for a specific discipline.
Hydrology and Hydraulics	Team member should be a subject matter expert, with demonstrated experience in the field of urban hydrology and hydraulics and have a thorough understanding of levee systems, the effects of management practices, high impact of urban development on hydrology, the use of levees and floodwalls within the space constraints of an urban environments, the use of non-structural systems as they apply to flood proofing, warning systems, and evacuation and the use of HEC computer modeling systems. The individual should be a licensed professional engineer.
Geotechnical Engineering	Team member should be a geotechnical subject matter expert and have extensive experience in levee and floodwall design, geotechnical drilling procedures in earth embankments and foundations, seepage and uplift analyses and evaluation, slope stability, pre- and post-construction. The individual shall be a licensed professional engineer or geologist.
Construction/Operations	Team member should be a construction/operations subject matter expert and should have extensive experience in levee and floodwall operations, pre- and post-construction evaluation and rehabilitation. The individual should be a licensed professional engineer.
Regulatory Division <sup>1</sup>	Regulatory Division Project Manager, if necessary.
Real Estate <sup>2</sup>	Team member should have experience developing real estate plans for modifications to existing federal projects. The real estate reviewer will be a senior real estate professional.
Environmental and NEPA	Team member should have expertise with applicable environmental laws, regulations, and policies for civil works projects. Team member should be an environmental subject matter expert and be familiar with preparing, processing, and reviewing NEPA, and environmental compliance documentation.
HTRW	Team member should have expertise with applicable hazardous waste laws, regulations, and policies for civil works projects. Team member should be an "environmental professional" as defined by 40 CFR 312.10(b), and should have experience conducting Phase 1 environmental assessments in accordance with ASTM E1527-13.
Cultural Resources	Team member should have expertise with applicable cultural resources laws, regulations, and policies for civil works projects. Team member should be an archeologist or historical architect, with experience in applying Section 106 of the National Historic Preservation Act to civil works projects.

Geospatial	Team member should have expertise with applicable geospatial software and mapping applications for civil works projects, including Corps Project Notebook.
Office of Counsel	Attorneys from both the SWF and SWD Office of Counsel with expertise in for legal and policy compliance for Section 408.

<sup>1</sup>The SWF Regulatory Division is responsible for executing Regulatory authorities under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. The SWF Regulatory Division has developed a document titled, *Regulatory Division Coordination Standard Operating Procedure (SOP) for Activities Involving 408 Review and/or Permits*, approved 10 April 2019. This SOP outlines work flow and coordination procedures between the SWF Regulatory Division and the SWF 408 Coordinator. This SOP was developed pursuant to requirements in the Director's Policy Memorandum, Civil Works Programs, Number DPM CW 2018-10, Strategy for Synchronization of the Regulatory and 408 Program, dated 17 August 2018.

<sup>2</sup>The SWF Real Estate Division Chief will review the Summary of Findings for each Section 408 decision, and certify that the alteration meets the requirements, reference paragraph 15.b. in EC 1165-2-220. For alterations which occur on real property of the United States or USACE reservoirs, different review processes may be required, reference paragraph 9.e. in EC 1165-2-220.

**Table 3-3. Projected Review Schedule.**

<b>Project Phase/Submittal</b>	<b>Review Phase Duration</b>	<b>Phase Start Date</b>	<b>Phase End Date</b>
Coordination Efforts	Ongoing	1 Jan 2016	
Draft 408 Request review (v4)	60 days	1 Feb 2018	1 April 2018
BackCheck and Closure Draft 408 Request (v4)		1 April 2018	15 July 2019
Revised 408 Request review (v5)	60 days	1 Mar 2020	1 Apr 2020
BackCheck and Closure Draft 408 Request (v5)	30 days	1 Apr 2020	1 May 2020
Construction approval review #1	60 days	1 Oct 2021	1 Dec 2021
BackCheck and Closure for construction review #1	30 days	1 Dec 2021	1 Jan 2022
*additional durations/for construction #s added as needed*			

### 3.1.5 Senior Oversight Group Review

As the RMO the RMC will determine if the proposed alteration is to be presented to the Levee Senior Oversight Group (LSOG). The proposed alteration entails constructing the HSR elevated viaduct across the DF East Levee Floodwall, over the proposed DFE Lamar Levee and adjacent to the CWWTP Levee. The elevated viaduct will be supported by deep pier foundations.

### 3.1.6 Drilling Program Plan Review

A drilling plan, in accordance with ER 1110-1-1807, is required for drilling requests on or near a federally authorized dam or levee (including drilling for power poles, instrumentation, third party utilities, relief wells, and geotechnical drilling) and are subject to review and approval by the appropriate District authority.

### 3.1.7 Potential Failure Modes Analysis

A potential failure mode analysis (PFMA) is not required. The recently completed risk informed design Semi Quantitative Risk Assessment for Lamar Levee considered the proposed HSR project and did not consider it a risk driving failure mode.

## 3.2 Requester Review Requirements

### 3.2.1 Quality Control

The quality control reviews of all Section 408 alteration documents is the responsibility of the Requester. For alterations involving professional design services, the Requester will be required to submit a certification that the design underwent an effective quality control process, see Appendix 3.



### 3.2.2 Requester-Led Safety Assurance Review

As stated in Section 2.3 Project Coordination, the City elected to convene a SAR panel at their own discretion, prior to the current SWF LSO requirement for a SAR. The USACE intends to use the previous City initiated SAR to fulfill the SAR requirements. The SWF Review Team, SWD, and RMC have reviewed the SAR panel findings and found that the scope of the review meets the USACE requirements.

## Section 4

# Review Plan Approval and Updates

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Pursuant to EC 1165-2-220, paragraph 12.c.4, the RMC must endorse, and the Division Commander or Division Commander's designee must approve, this alteration-specific RP because a SAR is required. The SWD Commander has delegated authority for review plans for Section 408 Requests that require Division Commander's approval to the SWD Regional Business Director. The Commander's approval reflects vertical team input (involving the District, MSC, and RMC) as to the appropriate scope, level of review, and endorsement by the RMC. The RP is a living document and should be updated in accordance with EC 1165-2-220. All changes made to the approved RP will be documented in Appendix 5 Review Plan Revisions. The latest version of the RP, along with the Commanders' approval memorandum, will be provided to the RMO.

## **APPENDIX 3**

# **Requester QC Certification**

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The Requester will provide a QC certification similar to Figure A-3-1. Larger products will usually have multiple certification sheets (separate sheets for components/sub-components of the reviewed work product). Smaller reports may have only a single certification sheet. Cross checking among the narrative documentation (the “write-up”), computations, and plans and specifications is critical for the QC process. The reviewer/checker will then sign to certify that appropriate and effective QC has been performed.

Project Name Document Name 100% Review			
QC Certification of PRODUCT/FEATURE NAME Project Team			
<p>As the (lead designer/architect/geologists, etc.) for the PRODUCT/ FEATURE NAME, I certify the following work shown herein was completed using the appropriate USACE guidance or industry standard if applicable. I certify the work is based on:</p> <ul style="list-style-type: none"> <li>• Appropriate assumptions, methods, procedures, computations (including quantities) and materials used in the analyses</li> <li>• Evaluation of alternative designs, if applicable</li> <li>• Appropriate data and level of data</li> <li>• Reasonable results that meet the customer's needs consistent with law and existing USACE policy.</li> </ul> <p>I certify that the write-up (page 1-xx), computations (page 1-xx), drawings, (page 1-xx) and specifications (sec no.) meet the customer requirements shown herein. For items previously designed by others and included as the design basis shown herein, I certify that I have verified the work for adequacy, completeness, and accuracy.</p>			
Name	Title	Office Symbol	<u>(Signature)</u>
Project Team: (optional)			
Name	Title	Office Symbol	<u>(Initials)</u>
Name	Title	Office Symbol	<u>(Initials)</u>
Name	Title	Office Symbol	<u>(Initials)</u>
<p>As the Reviewer/Checker I have performed QC (a detailed peer review/checking of the documents, computations, and graphics, etc.) and highlighted (e.g., placed a “red dot”) on each annotation and number on a computation sheet indicating concurrence with the correctness of the information shown and then initialed and dated each and every computation sheet and drawing being reviewed/checked for the PRODUCT/FEATURE NAME.</p>			
Name	Title	Office Symbol	<u>(Signature)</u>
QC Review Lead			
Name	Title	Office Symbol	<u>(Signature)</u>

**Figure A-3-1. Sample QC Certification form**

## **APPENDIX 4**

# **SAR Plan**

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See the following attachments:

Attachment 1. SAR Review Plan from the Draft Section 408 Request in February 2018.

Attachment 2. SAR panel letters and documents.

## APPENDIX 5

# Review Plan Revisions

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**Table A-5-1. Review Plan Revisions**

Revision Date	Description of Change	Page/Paragraph Number