



DEPARTMENT OF THE ARMY
SOUTHWESTERN DIVISION, CORPS OF ENGINEERS
1100 COMMERCE STREET
DALLAS TX 75242-0216

REPLY TO
ATTENTION OF

CESWD-RBT

12 APR 2013

MEMORANDUM FOR Commander, Fort Worth District

SUBJECT: Review Plan approval for EB-WB Interceptor Connection Project under the Dallas Floodway System, Dallas, TX

1. Reference: EC 1165-2-214, Civil Works Review, 15 Dec 2012.
2. The attached Review Plan for EB-WD Interceptor Connection Project has been prepared in accordance with EC 1165-2-214. The Plan includes independent external peer review that will be contracted by the City of Dallas.
3. I hereby approve the Review Plan, which is subject to change as circumstances require, for design and construction of the subject project by the City of Dallas. It has been reviewed and coordinated with RMC.
4. The point of contact for this action is Mr. Michael Jordan at Michael.Jordan@usace.army.mil or office phone 469-487-7035.

Encl

Handwritten signature of Thomas W. Kula in black ink.

THOMAS W. KULA
Brigadier General, USA
Commanding

Safety Assurance Review Plan for: EB-WB Interceptor Connection Project

City of Dallas

Fort Worth District

U.S. Army Corps of Engineers

April 3, 2013

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1. PURPOSE AND REQUIREMENTS

a. Purpose.

The purpose of this Review Plan is to define the scope and level of review for the Section 408 Permit for an application by City of Dallas for the EB–WB Interceptor Connection project. City of Dallas, under an approved Nationwide Permit 12, is performing all work associated with the East Bank–West Bank (EB-WB) project consisting of two large sewer mains in two different tunnels. USACE requires a Section 408 permit for the construction of the second tunnel because of the potential to impact levee integrity. All major modifications to levee systems require Section 408 review and approval. HQUSACE is the approval level for major Section 408 modifications.

References.

- EM 1110-2-2901, Engineering and Design Tunnels and Shafts in Rock, 30 May 1997.
- EC 1165-2-214, Civil Works Review 15 Dec 2012.
- ER 1110-2-1150, Engineering and Design for Civil Works Projects, 31 Aug 1999.
- ER 1110-1-12, Engineering and Design Quality Management, 21 Jul 2006.
- WRDA 2007 H. R. 1495 Public Law 110-114, 8 Nov 2007.
- ER 1105-2-100, Planning Guidance Notebook, 22 April 2000 as amended
- Army Regulation 15–1, Committee Management, 27 November 1992 (Federal Advisory Committee Act Requirements).
- National Academy of Sciences, Background Information and Confidential Conflict Of Interest Disclosure, BI/COI FORM 3, May 2003.

b. Requirements.

This Review Plan defines the scope of quality management activities and peer review for the second tunnel of the EB-WB Interceptor Connection Project. Quality management activities consist of: Quality Control Review, District Quality Control, Agency Technical Review, Policy and Legal Compliance Review and Type II Independent External Peer Review. Due to the specialized nature of tunnel work an independent tunnel inspector shall also be used to perform daily inspections of ongoing work and prepare a daily report that will be shared with the City of Dallas and USACE. This is an additional requirement due to the specialized nature of tunneling. Inspectors shall insure compliance with all construction, engineering documents and safety requirements appropriate for the work being performed. Inspectors should have at least 10 years experience in tunnel construction including expertise in ribs and lagging support.

This Review Plan was developed in accordance with EC 1165-2-214, which established the procedures for ensuring the quality and credibility of U.S. Army Corps of Engineers (USACE)

documents through independent review. The EC's outline includes three levels of review: Quality Control, Agency Technical Review, and Independent External Peer Review.

This Review Plan will be reviewed by the PDT and approved by the Southwestern Division Major Subordinate Command. After approval, this Review Plan will be posted on the Fort Worth District website at: www.swf.usace.army.mil.

Key considerations for approval include:

- The project meets the City of Dallas' customer's scope, intent and quality objectives:
 - The design and construction does not adversely impact the integrity and function of the Trinity River levees and does not impact the City's ability to achieve FEMA certification for the Dallas Levee System.
 - It is explicitly stated goal to incorporate the lessons learned from the previous tunnel experience. Ensure that the second tunnel includes plans for corrective or remedial measures to address the contributing factors identified by Lachel & Associates report dated February 14, 2013.
 - The remedial measures plan for the first tunnel is required as part of the submittal package second tunnel. These actions will be reviewed and approved as a single action.
 - Corrective actions will include a foundation remediation plan for any impacts caused by the 1st tunnel collapse.
 - Minimize cost and time impacts to the current construction contract where possible.
 - Minimize changes to the original alignment that will have cost and time impacts on the project.
- The project must demonstrate that the tunnel will not cause adverse impacts to the function or structural integrity of the levee system to meet the Corps of Engineers requirements under 33 USC Section 408.
- 3rd party impacts have been identified and evaluated. Ensure coordination with future projects that may bear within the same footprint of the tunnels.
- Design and proposed construction procedures clearly show that the geotechnical and structural integrity of the levee and flood protection system can be maintained under a full range of loading conditions during and after construction. The section 408 submittal will include an emergency measures plan for sink hole remediation as well as onsite procedures for high water events.

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

Review Team:

A review management team and three separate review teams will be established to review the Section 408 permit for the Project. The three separate review teams will be the Quality Control Team comprised of the City of Dallas Water Utility (DWU) and DWU consultant staff, the District Quality Control (DQC) Team comprised of USACE Fort Worth District Staff, the Agency Technical Review (ATR) Team comprised of other USACE staff, and the Safety Assurance Review (SAR) Team comprised of consultants contracted by the City of Dallas. For this review the DQC and ATR will be conducted concurrently as one review. See Attachment 3 for a listing of designated members for each team.

The RMO shall coordinate the review teams with Communities of Practice, other relevant Centers of Expertise, and other relevant offices to ensure that a review team with appropriate expertise is assembled and a cohesive and comprehensive review is accomplished. The City of Dallas RMO as the design and construction agent and shall provide reviewers with sufficient information, including background information about the project, to enable them to understand the data, analytic procedures, and assumptions. Reviewers shall be informed of applicable access, objectivity, reproducibility and other quality standards under the federal laws governing information access and quality.

The products will be reviewed against published guidance, including Engineering Regulations, Engineering Circulars, Engineering Manuals, Engineering Technical Letters, Engineering Construction Bulletins, Policy Guidance Letters, implementation guidance, project guidance memoranda, and other formal guidance memoranda issued by HQUSACE. Any justified and approved waivers should have been obtained from HQUSACE for any deviations from USACE guidance.

3. PROJECT INFORMATION

(Project Title: EB-WB Interceptor Connection Project)

General Background

The EB-WB project includes the construction of two parallel sewer mains (78-inch and 96-inch) in two separate tunnels to convey raw sewage from the existing Cadiz Pump Station, beneath the East Trinity Levee and the Trinity River, and then to the existing 120-inch sewer main on the west side of the Trinity River. From that point, the sewage flows south to the Central Wastewater Treatment Plant (CWWTTP). Construction of the 96-inch sewer main started in the spring of 2011 and in January 2012 a section of the tunnel collapsed following a flood event. The collapse created a sinkhole in the Trinity River Floodway near the toe of the East Levee. The project location is delineated in Attachment 1. It is explicitly stated goal to incorporate the lessons learned from the previous tunnel experience. Ensure

that the second tunnel includes plans for corrective or remedial measures to address the contributing factors identified by Lachel & Associates report dated February 14, 2013.

The EB–WB Interceptor Connection is required to improve the reliability and functionality for transferring wastewater from Cadiz Pump Station receiving interceptors to the CWWTP. The project has been in the planning since the mid 1990’s. The construction of this project will allow the department to decommission the Cadiz Pump Station, a very large wastewater pump station located near downtown Dallas, and eliminate the risk of raw sewage bypassing to the Trinity River due to pump station malfunction, as it occurred in June 2000. Decommissioning the pump station will also allow an existing 60-inch force main to be converted into a discharge main for the pumping of treated wastewater from Dallas’ CWWTP, upstream to the reverse flow lakes that are part of the Trinity River Corridor Project.

4. QUALITY CONTROL/QUALITY ASSURANCE

Quality Control (QC) and District (Ft Worth District) Quality Control (DQC):

- Purpose: Review of engineering and design of 408 submittal
 - The City of Dallas and Ft Worth District will conduct concurrent QC reviews
- Reviews will be managed by: City of Dallas DWU Staff and Ft. Worth District staff, respectively.
- Performed by: City of Dallas (COD) and COD General Engineering Consultant (GEC) and Ft. Worth District staff, respectively.
- Required for: All work products, reports, evaluations, and assessments
- Documentation: Review Comment/Response Report
 - All reviews will be done in DR Checks format.

5. AGENCY TECHNICAL REVIEW (ATR)

Subject matter experts from within USACE will conduct the ATR. Selections will be based on expertise, experience, and skills, including specialists from multiple disciplines as necessary to ensure comprehensive review. ATR teams will be comprised of senior USACE personnel, preferably recognized subject matter experts with the appropriate technical expertise, and may be supplemented by outside experts as appropriate.

RMO shall ensure that reviewers who are Federal employees (including special government employees) comply with applicable Federal ethics requirements.

DrChecks will be used to document the ATR comments, conduct evaluations, and backcheck comments. Each review comment should be succinct and enable timely resolution of the concern. Comments

should be limited to those that are required to ensure adequacy of the product. In addition to the meeting the key considerations outlined under requirements, the four key parts of a quality review comment normally include:

- The review concern – identify the product's information deficiency or incorrect application of policy, guidance, or procedures;
- The basis for the concern – cite the appropriate law, ASA (CW)/USACE policy, guidance or procedure that has not been properly followed;
- The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
- The probable specific action needed to resolve the concern – identify the action(s) that must be taken to resolve the concern.

The ATR leader shall prepare a Review Report that shall:

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer.
- Include the charge to the reviewers.
- Describe the nature of their review and their findings and conclusions.
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

Written responses to the ATR Review Report will be prepared to explain the agreement or disagreement with the views expressed in the report, the actions undertaken or to be undertaken in response to the report, and the reasons those actions are believed to satisfy the key concerns stated in the report (if applicable). The revised submittal will be provided to the RMO with the USACE response and all other materials related to the review.

When policy and/or legal concerns arise during ATR efforts that are not readily and mutually resolved by the PDT and the reviewers, the district will seek issue resolution support from the MSC and HQUSACE in accordance with the procedures outlined in ER 1105-2-100 (Appendix A). The ATR leader must complete a statement of technical review for all final products and final documents.

USACE personnel shall conduct technical reviews upon receipt of Plans and Specifications and all related design computations from City of Dallas and its design engineer, CP&Y, with estimated time sequencing per the table below:

Submittal Completion Percent	SAR Required?	Estimated Total Review Time (Calendar Days)
90%	No	14
100%	Yes	14

Agency Technical Review:

- Purpose: Ensure the design and proposed construction procedures will maintain the integrity of the levee and flood control system under a full range of loading during and after construction.
- Performed by: Senior Technical Team Members, preferably recognized subject matter experts
- Required for: Plans & Specifications
- Documentation: DrChecks and Review Report
- Review Management Office: USACE Southwestern Division

6. INDEPENDENT EXTERNAL PEER REVIEW TEAM (IEPR)

Type II Independent External Peer Review (IEPR) Safety Assurance Review:

- Purpose: Ensure the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health, safety, and welfare
- Performed by: Independent Technical Experts (External to City of Dallas and USACE)
- Selection of Panel Members: Follow National Academies of Science policy
- Required for: All Flood Risk Management Projects - Plans & Specifications, and Construction Activities
- When: Prior to initiation of physical construction and periodically during construction
- Documentation: Review Report, Microsoft Word
- Risk Management Office: City of Dallas

Type II IEPR SAR:

In accordance with EC 1165-2-214, Para 13, and App G, Para 4, the IEPR will be performed by a panel contracted by the City of Dallas. The City will select the panel and will provide the USACE with the final independent external expert reviewer list, including their credentials. Expert reviewers shall have experience in design and construction of projects similar in scope to the project. Expert reviewers shall be registered professional engineers in the United States. The expert reviewers must have an engineering degree, and hands-on relevant engineering experience in the listed disciplines is also important. Expert reviewers shall have a minimum of 15 years experience and responsible charge of engineering work in one or more of the following disciplines (at a minimum):

(1) Geotechnical Engineer will be a recognized expert in the field of geotechnical engineering analysis, design and construction of levees with extensive experience in subsurface investigations, soil mechanics, seepage and slope stability evaluations, erosion protection design, and construction and earthwork construction.

(2) Civil or Geotechnical Engineer with extensive experience in the design, layout, and construction of flood control structures. The Construction Management Engineer must demonstrate knowledge regarding levees and installation of underground utilities crossing levee systems. The Civil Engineer must be familiar with USACE regulations and building codes.

(3) Civil or Geotechnical Engineer with extensive experience in the design, layout, and construction of tunnels for water/wastewater systems and extensive experience in the construction of tunnels. This expert must demonstrate knowledge regarding installation of primary tunnel support, installation of carrier pipe and grouting of carrier pipe. The Engineer must be familiar with USACE regulations and building codes.

In addition, at least one of the expert reviewers shall have recent and relevant experience on multi-million dollar projects verifying the constructability of the proposed designs.

The City of Dallas, in conjunction with USACE, will approve the panel members selected. The City may disapprove a selected panel member if the member does not meet the objective criteria established in SOW.

The IEPR team shall perform reviews (and site visits, as necessary) at the completion of the plans, specifications, shop drawings for primary liner and carrier pipe and at the midpoint of construction.

When selecting panel members, the National Academy of Sciences' policy for committee selection with respect to evaluating the potential for conflicts (e.g., those arising from investments; agency, employer, and business affiliations; grants, contracts and consulting income) shall be adopted or adapted. Peer reviewers shall not have participated in development of the submittal to be reviewed. External Reviewers will be paid labor and any necessary travel and per diem expenses in accordance with their contract.

Peer reviewers will be advised whether information about them (name, credentials, and affiliation) will be disclosed. The RMO shall notify reviewers in advance regarding the extent of disclosure and attribution planned by USACE. The RMO shall comply with the requirements of the Privacy Act. Review shall be conducted in a manner that respects confidential business information and intellectual property.

The City of Dallas RMO will prepare the charge to the reviewers, containing the instructions regarding the objective of the peer review and the specific advice sought. Reviewers shall be charged with reviewing scientific and technical matters, leaving policy determinations for the City of Dallas and USACE. The charge should specify the structure of the review comments to fully communicate the reviewer's intent by including: the comment, why it is important, any potential consequences of failure to address, and suggestions on how to address the comment. It should include specific technical questions while also directing reviewers to offer a broad evaluation of the overall document. The charge should be determined in advance of the selection of the reviewers.

The RMO shall provide reviewers with sufficient information, including background information about the project, to enable them to understand the data, analytic procedures, and assumptions. Reviewers shall be informed of applicable access, objectivity, reproducibility and other quality standards under the federal laws governing information access and quality. Information distributed for review must include the following disclaimer: "This information is distributed solely for the purpose of pre-dissemination review under applicable information quality guidelines. It has not been formally disseminated by the City of Dallas or USACE. It does not represent and should not be construed to represent any agency determination or policy."

The panel of experts established for a review for a project shall:

- Conduct the review for the subject project in a timely manner in accordance with the study and outlined schedules;
- Follow the "Charge", but when deemed appropriate by the team lead, request other products relevant to the project and the purpose of the review. The charge shall include an assessment of 3rd party impacts that potentially could result from the construction of the tunnel.
- Receive from the City of Dallas and/or USACE any public written and oral comments provided on the project;
- Provide timely written and oral comments throughout the development of the project, as requested;
- Assure the review avoids replicating an ATR and focuses on the questions in the "Charge", but the panel can recommend additional questions for consideration. The IEPR panel may recommend to the RMO additional or alternate questions.

- Offer any lessons learned to improve the review process.
- Submit reports in accordance with the review plan milestones.
- The team panel lead shall be responsible for insuring that comments represent the group, be non-attributable to individuals, and where there is lack of consensus, note the non-concurrence and why.
- Record of Review. The review team will prepare a review report. All review panel comments shall be entered as team comments that represent the group and be non-attributable to individuals. The team lead is to seek consensus, but where there is a lack of consensus, note the non-concurrence and why. A suggested report outline is an introduction, the composition of the review team, a summary of the review during design, a summary of the review during construction, any lessons learned in both the process and/or design and construction, and appendices for conflict of disclosure forms, for comments to include any appendices for supporting analyses and assessments of the adequacy and acceptability of the methods, models, and analyses used. All comments in the report will be finalized by the panel prior to their release to the City of Dallas and/or USACE for each review plan milestone.

The IEPR leader shall prepare a Review Report in Microsoft Word, signed by all members that shall:

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer.
- Include the charge to the reviewers.
- Describe the nature of their review and their findings and conclusions.
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

Written responses to the IEPR Review Report will be prepared to explain the agreement or disagreement with the views expressed in the report, the actions undertaken or to be undertaken in response to the report, and the reasons those actions are believed to satisfy the key concerns stated in the report (if applicable). The revised submittal will be provided to the RMO with the City of Dallas and/or USACE response and all other materials related to the review.

The City of Dallas and Fort Worth District's responses shall be submitted to the District Commander for Approval. After the District Commander's approval, the District will make the report and responses available to the public on the District's website.

7. PROPOSED REVIEW SCHEDULES

After this Review Plan is approved, the COD and Corps (DQC and ATR) and SAR will have 14 days to review and provide comments to CP&Y (City's design engineer) on the 90% submittal. The City/CP&Y will provide responses to the comments within 14 days. A 100% submittal will be provided to reviewers within 30 days of resolution of comments of the 90 % submittal. Cost of design and construction will be responsibility of the City of Dallas. Section 408 ATR reviews will be funded by Dallas Floodway Study.

For EB-WB project documentations requiring SAR, the review time-sequencing and expected project 408 permit are identified as follows:

Activity	Duration (Calendar Days)
Simultaneous Review By QC, DQC,SAR & ATR Teams At 100% Submittal	14
Applicant Resolution of Comments	7
Applicant Finalizes 408 Permission Request	7
USACE Fort Worth District Reviews/Recommends Approval	7
USACE Southwestern Division Reviews/Recommends Approval	7
Civil Works Director Reviews/Approves 408 Permit	30

8. POLICY AND LEGAL COMPLIANCE REVIEW

All decision documents will be reviewed throughout the study process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in ER 1105-2-100, Planning Guidance Notebook, dated 22 April 2000 as amended. These reviews culminate in determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher by the home Major Subordinate Commander (MSC). DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

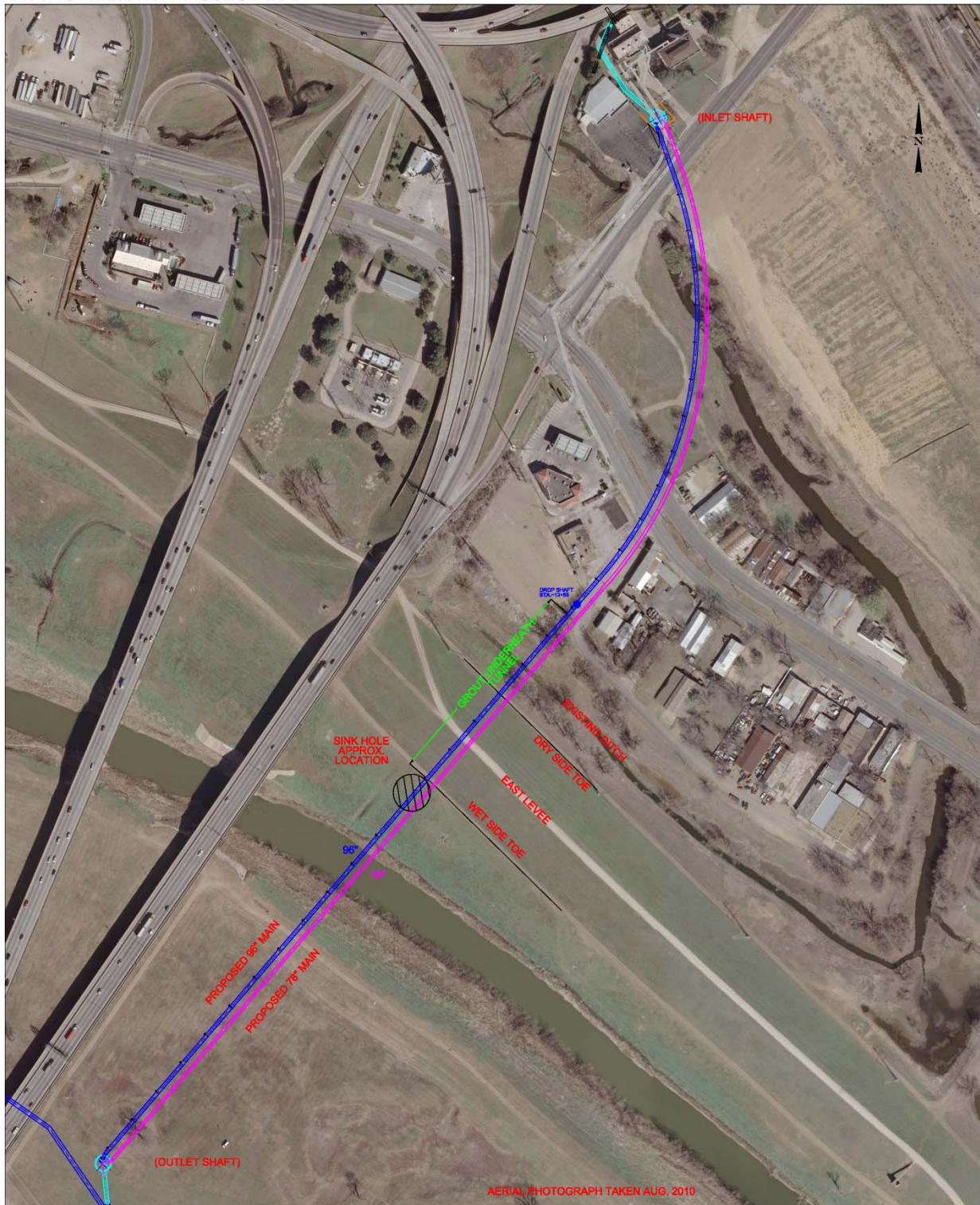
9. REVIEW PLAN APPROVAL AND UPDATES

The Review Plan is a living document that shall be updated as the study progresses. As a result, USACE SWD will provide updates to the plan to reflect team management of the scope and at each level of review throughout the Section 408 Permit process. USACE SWD is responsible for bringing the Review Plan to par with changes to the Review Plan being documented in Attachment 4.

10. REVIEW PLAN POINTS OF CONTACT

USACE Review Plan Points of Contact will be Paul Komoroske (817-565-6241) or Mike Jordan (469-487-7035) Questions and /or comments on the Review Plan shall be directed to them. The point of contact from the City will be James Wellington (214-948-4552).

ATTACHMENT 1: PROJECT MAP



PROPOSED REVIEW SCHEDULE

ATTACHMENT2: SCHEDULE

Activity	Est. Start Date	Est. End Date	Duration (Calendar Days)
Review Plan approved by SWD	April 3, 2013	April 3, 2013	1
Concurrent Review by QC/DQC/ATR of 90% Package	* April 5, 2013	April 19, 2013	14
Applicant Response to comments (90% Submittal)	April 22, 2013	May 6, 2013	14
100 % Final submittal Comments	May 6, 2013	June 7, 2013	30
SAR Report	May 6, 2013	June 7, 2013	30
Concurrent review of 100% Final Submittal	June 10, 2013	June 24, 2013	14
Applicant Response to comments (100% Final Submittal)	June 25, 2013	July 2, 2013	7
Applicant Finalizes 408 Request	July 3, 2013	July 10, 2013	7
SWF Recommends to SWD	July 11, 2013	July 18, 2013	7
SWD Recommends to HQ	July 19, 2013	July 26, 2013	7
USACE approval	July 29, 2013	Aug 30, 2013	30 days
*REMEDIATION PLAN IS REQUIRED TO BE PART OF TUNNEL SUBMITTAL PACKAGE. Section 408 cannot be reviewed or approved without remediation plan.			

ATTACHMENT 4: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page/Paragraph Number