

## Environmental Determination

### MEMORANDUM

**TO:** File

**FROM:** Jessica Zuba, Director, Regional Water Planning and Development

**DATE:** December 16, 2015

**SUBJECT:** West Harris County Regional Water Authority,  
Harris and Fort Bend Counties  
Environmental Determination  
Second Source Project – East-West Second Source Line  
Water Infrastructure Fund: Project 21700 (L120010)

The attached memorandum contains the staff's views regarding the environmental soundness of the Second Source Project proposed by West Harris County Regional Water Authority (WHCRWA), Harris and Fort Bend Counties, Texas. This project will utilize planning and acquisition funds from loan L120010 from the Water Infrastructure Fund (WIF). The Texas Water Development Board (TWDB) committed this loan on December 15, 2011, in the amount of \$41,965,000. WHCRWA closed the loan on March 29, 2012.

The Second Source Project will construct a 40-mile water transmission pipeline across north Houston, to bring 150 million gallons of treated water per day to approximately 880,000 people in West Harris and Fort Bend Counties. As part of the Second-Source Project, WHCRWA is proposing to construct the East-West Second Source Line, which includes approximately 29.5 miles of a 96-inch diameter water line. This Environmental Determination pertains to the East-West Second Source Line.

Based on staff's environmental review, I have determined that no significant adverse environmental impacts should result from the proposed project discussed in the attached Environmental Determination. As required by 31 Texas Administrative Code §363.14, full consideration has been given to the views and comments of the requisite regulatory agencies and affected persons. Based on this review, the following conditions have been developed in order to ensure that this TWDB funded project is environmentally sound and will not have any adverse impacts on the quality of the human environment:

- As per agreement with the United States Army Corps of Engineers, the West Harris County Regional Water Authority agrees to comply with the terms and conditions of the U.S. Army Corps of Engineers Nationwide Permit 12 for Utility Line Activities (USACE Project No. SWG-2012-00388);
- For any construction within the 100-year floodplain, a floodplain permit or documentation from the local floodplain administrator (National Flood

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Second Source Project – East-West Second Source Line (WIF #21700)

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Insurance Program) that no permit is required must be obtained prior to construction or clearing activities;

- As per agreement with the Texas Parks and Wildlife Department (TPWD Project No. 35427), and in order to ensure compliance with the Migratory Bird Treaty Act, clearing and construction activities will be avoided during the April 1 – July 15 migratory bird nesting season. If it is necessary to conduct these activities during this time period, a survey will be conducted by a qualified biologist prior to vegetation removal. All construction activities as identified above will be excluded from a minimum zone of 100 meters around any raptor nest during the period of February 1 – July 15;
- Standard emergency condition for the discovery of cultural resources; and,
- Standard emergency condition for the discovery of threatened and endangered species.

With the addition of these conditions, the specified project elements above are environmentally sound and design funds may be released once all other requirements are satisfied.

Enclosure

**TO:** Jessica Zuba, Director, Regional Water Planning and Development

**THROUGH:** Nancy Richards, Manager, Team 4 (Regions H and I)

**FROM:** Jean Devlin, Environmental Reviewer

**DATE:** December 16, 2015

**SUBJECT:** West Harris County Regional Water Authority,  
Harris and Fort Bend Counties  
Environmental Determination  
Second Source Project – East-West Second Source Line  
Water Infrastructure Fund: Project 21700 (L120010)

Pursuant to the environmental assessment requirements of Section §363.14 of the Texas Water Development Board (TWDB) rules, I have conducted a review of the Second Source Project proposed by the West Harris County Regional Water Authority (WHCRWA), Harris and Fort Bend Counties. This project will utilize planning and acquisition funds from loan L120010 from the Water Infrastructure Fund (WIF). The Texas Water Development Board (TWDB) committed this loan on December 15, 2011, in the amount of \$41,965,000. WHCRWA closed on the loan on March 29, 2012.

The following project information can be found in the Environmental Assessment (EA) completed for the East-West Second Source Line<sup>1</sup>.

#### Purpose and Need

The purpose of the proposed project is to meet the requirements of the Harris-Galveston and Fort Bend Subsidence District's mandate to reduce subsidence through the reduction of ground water demands in the area. The proposed system will help WHCRWA meet their mandates by limiting ground water production throughout northwest Harris County.

#### Background

The WHCRWA Second Source Project includes the construction of 40 miles of transmission pipeline through the City of Houston and other parts of Harris County. Two pump stations will be built along the pipeline, which will convey potable water from the City of Houston's Northeast Water Purification Plant (NEWPP) to the distribution systems of the WHCRWA and North Fort Bend Water Authority (NFBWA). Projected capacity of the line is 150 million gallons per day (MGD). Initially, WHCRWA will purchase treated water from the City of Houston. Later, the Coastal Water Authority's Luce Bayou Interbasin Water Transfer Project (LBIWTP) will replace the water purchased from the City of Houston by providing surface water that would be treated in the NEWPP. The LBIWTP is considered an essential related project integral to the long-

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<sup>1</sup> West Harris County Regional Water Authority (February 2012). *Draft Environmental Assessment: WHCRWA East-West Second Source Project* (Prepared by Terracon Consultants, Inc. Consultants, Inc., for West Harris County Regional Water Authority). Received by TWDB on February 15, 2012.

term viability of WHCRWA's Second Source Project. The Second Source Project is divided into four project components: East Re-Pump Station, Second Source Central Pump Station, East-West Second Source Line, and North-South Second Source Line. This EA pertains to the East-West Second Source Line.

### Project Description

The proposed pipeline easement for the East-West Second Source Line consists of an existing ExxonMobil Pipeline easement that is approximately 50 feet wide. This existing easement was previously established in 1946 and was removed from service in 1995. WHCRWA purchased this easement in 1996 and has since continued to maintain the easement.

WHCRWA is proposing to construct approximately 29.5 miles of a 96-inch diameter water line. The proposed water line would be installed inside the existing pipeline easement within existing right-of-way limits utilizing open cut trench excavation or bore-and-jack excavation and construction methods. The width of proposed excavated trenches will be no more than 15 feet.

### Reviews by Regulatory Agencies and Resulting Conditions

Terracon Consultants, Inc., on behalf of WHCRWA, coordinated with the following federal and state regulatory agencies and entities for the East-West Second Source Line: Texas Parks and Wildlife Department (TPWD); U.S. Army Corps of Engineers, Galveston District (USACE); Texas Historical Commission (THC); U.S. Fish and Wildlife – Clear Lake Ecological Services Field Office (USFWS); City of Houston, North Fort Bend Water Authority; Harris County; the Harris-Galveston Subsidence District, and the Local Floodplain Administrator for Harris County. A summary of the correspondence has been provided in this report.

#### Texas Parks and Wildlife Department, Sand and Gravel Permitting Coordinator

Terracon Consultants, Inc. initiated contact with the TPWD on January 30, 2012 and requested the review and submission of comments or recommendations for the East-West Second Source Line. No adverse comments or recommendations have been received as of the date of this report. Under Section §86.0191 of the Parks and Wildlife Code, the proposed project is exempt from a Sand and Gravel Permit due to the fact that the new utility line is being constructed by a public utility.

#### Texas Parks and Wildlife Department, Wildlife Division, Wildlife Habitat Assessment Program

Terracon Consultants, Inc. initiated contact with the TPWD on January 30, 2012 and requested the review and submission of comments or recommendations for the East-West Second Source Line. TPWD provided a response for the project on October 15, 2015.

Terracon Consultants, Inc. provided a response to TPWD's list of recommendations for the project on October 28, 2015. WHCRWA agrees to the following conditions based on TPWD recommendations:

- Sediment control fences will be used as specified by TPWD in all areas where such use is practicable. Construction personnel will be trained to examine the inside of the exclusion area and within trenches or excavations before construction activities begin each morning. Construction personnel will also be trained to provide safe egress opportunities to wildlife that may have entered the exclusion area.
- The loss of vegetation, during the construction of projects such as the East-West Second Source Surface Water Transmission Main Project, is usually unavoidable. WHCRWA strives to avoid impacts to mature vegetation where practicable. The clearing of trees is not anticipated during construction because construction activities will take place within an existing easement that was previously used as a gas pipeline corridor. Segments of the existing East-West easement alignment date back to the mid-1940s. The easement has been mowed and maintained through the years. Revegetation of native species will occur after construction. TPWD's Monarch State Response Plan will be reviewed during the design phase of the project. Additionally, the WHCRWA would prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to construction to address Sediment and Erosion Controls. The SWPPP would address implementation of Best Management Practices to minimize construction impacts until ground cover and/or plants have reestablished. Best Management Practices would include, but would not be limited to: installing reinforced fabric barriers along the site boundary for sediment control; leaving a vegetated filter strip comprised of natural vegetation undisturbed where the ground is flat and runoff is expected to be minimal; and directing all wash water from the site to a sediment pit prior to release into a drainage ditch or storm sewer. Following construction, disturbed areas would be reestablished with a seed mixture following the Harris County Public Infrastructure Department Standard Engineering Design Specification. The seed mixes and any trees replanted/replaced would be irrigated during the construction phase of the project, and no permanent irrigation is anticipated to be installed at the site.
- WHCWRA has coordinated with the USACE to obtain a Nationwide Permit. This coordination insures that impacts to aquatic resources will be minimal. Compensatory mitigation will be used for any unavoidable impacts. No navigable stream beds will be impacted by the proposed project. Construction of the pipeline across many of the stream beds is expected to be done using tunneling or some method of trenchless technology so that there are no impacts to the streams. In situations where it is not practicable to tunnel under the streams other construction methods and/or Best Management Practices would be used to minimize impacts to the streambed and wildlife habitat within the stream.
- In accordance with the Migratory Bird Treaty Act (MBTA), measures such as additional surveys prior to construction to ensure active nests are not present

would be taken prior to vegetation clearing. If construction activities identified above must occur during the period between April 1 and July 15, no vegetation containing active nests, eggs, or young will be removed should they occur on the project site. Construction activities will be excluded from a minimum zone of 100 meters around any raptor nest during the nesting season as requested.

- TPWD's list of rare species was consulted and field surveys were conducted to determine if habitat for any listed threatened or endangered species (or species of greatest conservation need) would occur. No habitat was identified, and impacts to threatened and endangered species are not anticipated. However, if rare species or their habitats are found during construction, the WHCRWA would coordinate with TPWD and USFWS as appropriate. Construction crews would be informed of the rare species that have potential to occur within the vicinity of the project and would be directed to avoid disturbance to sensitive species if encountered during construction.

The WIF loan is conditioned to read the following: As per agreement with the Texas Parks and Wildlife Department, and in order to ensure compliance with the MBTA, clearing and construction activities will be avoided during the April 1 – July 15 migratory bird nesting season. If it is necessary to conduct these activities during this time period, a survey will be conducted by a qualified biologist prior to vegetation removal. All construction activities as identified above will be excluded from a minimum zone of 100 meters around any raptor nest during the period of February 1 – July 15.

#### U.S Army Corps of Engineers, Galveston District

The USACE provided a response letter dated June 6, 2013 (Project Number SWF-2012-00388) stating that the proposed project will involve activities subject to the requirements of Section 404 of the Clean Water Act and that the project appears to qualify for a Nationwide Permit (NWP) 12 for Utility Line Activities. This letter was provided in reference to a request dated April 15, 2013, submitted by Terracon Consultants, Inc. on behalf of WHCRWA.

The following special condition was applied to this authorization:

- When structures or work authorized by this permit are determined by the Corps of Engineers (Corps) to have become abandoned, obstructive to navigation, or cease to be used for the purpose for which they were permitted, such structures or the work must be removed, the area cleared of all obstructions, and written notice given to the Chief of Compliance, Galveston District, Regulatory Branch, within 30 calendar days of removal.

The WIF loan is conditioned to read that WHCRWA agrees to comply with the terms and conditions of the USACE NWP 12 for Utility Line Activities (USACE Project No. SWG-2012-00388).

Texas Historical Commission

Terracon Consultants, Inc. conducted a field review of the Texas Archaeological Site Atlas (TASA) to identify any archaeological sites within the proposed pipeline easement and within 500-feet of the pipeline easement. According to their review, no known archaeological resources are located within the pipeline easement; however one archaeological resource site (41HR280) occurs within the 500-foot buffer near Whiteoak Bayou.

In addition, Terracon Consultants, Inc. reviewed the TASA to determine if any historic sites were present within the proposed pipeline easement or within 500 feet of the proposed pipeline easement. According to their file review, no National Register listed historic sites occur within the proposed pipeline easement or within 500 feet of the easement. One state surveyed site, North Paradise Cemetery, occurs within 500 feet of the proposed pipeline easement. Approximately 1,000 interments are located within the North Paradise Cemetery grounds. Preliminary construction plans for the proposed pipeline easement indicate that the pipeline will be directed south of the cemetery and will not affect cemetery property. The North Paradise Cemetery will be avoided.

Terracon initiated contact with the THC regarding the East-West Second Source Line on February 8, 2012. The THC provided concurrence on March 19, 2012 that the project is not likely to affect cultural resources.

The WIF loan is conditioned to read that if archeological sites are discovered during construction, work will cease immediately in that area and WHCRWA will notify the THC and the TWDB of the discovery. The THC and the TWDB will then proceed in accordance with the regulations of the Advisory Council on Historic Preservation (36 CFR Part 800) prior to taking any action which would affect the cultural resources.

U.S. Fish and Wildlife Service, Clear Lake Ecological Services Field Office

Terracon Consultants, Inc. conducted a review of the USFWS Endangered Species List for Harris County and the TPWD's Annotated County List of Rare Species for Harris County, revised October 14, 2010. A review of critical habitat data did not reveal the presence of critical habitat within the pipeline easement. A review of the TPWD TXNDD was performed for known occurrences of listed species within the pipeline easement. Numerous occurrences of the Texas prairie dawn have been documented near the site. There is a relatively large population located within Addicks Reservoir. A pedestrian survey conducted by Terracon Consultants, Inc. on March 21 through April 5, 2011 did not reveal the presence of threatened or endangered species or habitat within the pipeline easement.

Terracon Consultants, Inc. initiated contact with USFWS, Clear Lake Ecological Services Field Office on January 30, 2012 and requested the review and submission of comments or recommendations for the East-West Second Source Line. No adverse comments or

recommendations have been received as of the date of this report. Terracon Consultants, Inc. completed coordination with TPWD and have adopted their recommendations for the protection of wildlife habitat and endangered and threatened species.

TWDB Staff conducted a review of the most current version of the TPWD's Annotated County List of Rare Species for Harris County on December 3, 2015. The review concluded that two additional species have been added to the TPWD's Annotated County List of Rare Species since the revised list published on October 14, 2010. These two species include the Artic Peregrine Falcon (*Falco peregrinus tundrius*) and Red Knot (*Calidris canutus rufa*). The proposed project area does not contain suitable habitat for either the Artic Peregrine Falcon or the Red Knot; therefore, no impacts to these species are anticipated as a result of the proposed project.

The WIF loan has been conditioned to read that if threatened or endangered species are encountered during construction, the Contractor shall immediately cease work in the area of the encounter and notify the Owner, who will immediately implement actions in accordance with the Endangered Species Act and applicable State statutes. These actions shall include reporting the encounter to the TWDB, the U.S. Fish and Wildlife Service, and the Texas Parks and Wildlife Department, obtaining any necessary approvals or permits to enable the work to continue, or implement mitigation actions. The Contractor shall not resume construction in the area of the encounter under authorized to do so by the Owner.

#### City of Houston

Terracon Consultants, Inc. initiated contact with the City of Houston on January 30, 2012 and requested the review and submission of comments or recommendations for the East-West Second Source Line. No adverse comments or recommendations have been received as of the date of this report.

#### North Fort Bend Water Authority

Terracon Consultants Inc. initiated contact with NFBWA on January 30, 2012 and requested the review and submission of comments or recommendations for the East-West Second Source Line. No adverse comments or recommendations have been received as of the date of this report.

#### Harris County

Terracon Consultants, Inc. initiated contact with Harris County on January 30, 2012 and requested the review and submission of comments or recommendations for the East-West Second Source Line. No adverse comments or recommendations have been received as of the date of this report.

### Harris-Galveston Subsidence District

Terracon Consultants, Inc. initiated contact with the Harris-Galveston Subsidence District on January 30, 2012 and requested the review and submission of comments or recommendations for the East-West Second Source Line. No adverse comments or recommendations have been received as of the date of this report.

### Floodplain Administrator

According to the FEMA Floodplain map, the East-West Second Source Line intersects the FEMA 100-year floodplain. Terracon Consultants, Inc. contacted the Harris County and City of Houston Floodplain Administrators for review and submission of comments or recommendations for the East-West Second Source Line on October 26, 2015 via certified mail. WHCRWA is currently awaiting a response from the Local Floodplain Administrator. For any construction with a 100-year floodplain, a floodplain permit or documentation from the local floodplain administrator that no permit is required must be obtained prior to construction or clearing activities.

### Conditions and Recommendation

Full consideration has been given to the views and comments of the requisite regulatory agencies and affected persons. Based on a detailed environmental review consistent with 31 TAC §363.14, the following conditions have been developed in order to ensure that this TWDB funded project is environmentally sound and will not have any adverse impacts on the quality of the human environment:

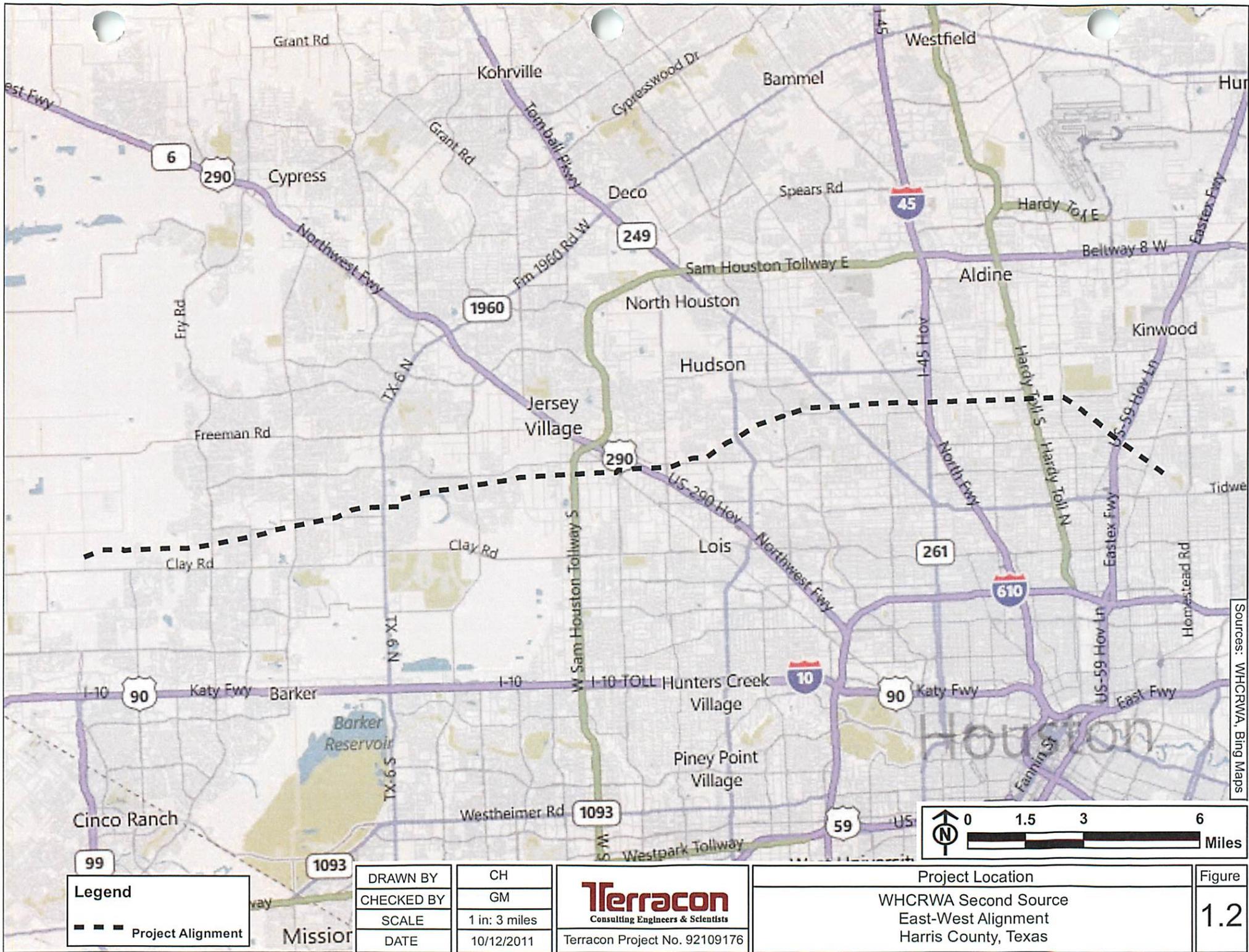
- As per agreement with the United States Army Corps of Engineers, the West Harris County Regional Water Authority agrees to comply with the terms and conditions of the U.S. Army Corps of Engineers Nationwide Permit 12 for Utility Line Activities (USACE Project No. SWG-2012-00388);
- For any construction within the 100-year floodplain, a floodplain permit or documentation from the local floodplain administrator (National Flood Insurance Program) that no permit is required must be obtained prior to construction or clearing activities;
- As per agreement with the Texas Parks and Wildlife Department (TPWD Project No. 35427), and in order to ensure compliance with the Migratory Bird Treaty Act, clearing and construction activities will be avoided during the April 1 – July 15 migratory bird nesting season. If it is necessary to conduct these activities during this time period, a survey will be conducted by a qualified biologist prior to vegetation removal. All construction activities as identified above will be excluded from a minimum zone of 100 meters around any raptor nest during the period of February 1 – July 15;
- Standard emergency condition for the discovery of cultural resources; and,
- Standard emergency condition for the discovery of threatened and endangered species.

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Second Source Project – East-West Second Source Line (WIF #21700)

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With the addition of these conditions, I recommend that the Executive Administrator find the specified project elements above to be environmentally sound and that design funds be released once other requirements are satisfied.



Sources: WHCRWA, Bing Maps

<b>Legend</b>	
	Project Alignment

DRAWN BY	CH
CHECKED BY	GM
SCALE	1 in: 3 miles
DATE	10/12/2011

**Terracon**  
Consulting Engineers & Scientists  
Terracon Project No. 92109176

Project Location	Figure
WHCRWA Second Source East-West Alignment Harris County, Texas	1.2