

November 4, 2015

TO: ALL POTENTIALLY INTERESTED PARTIES:

RE: Angelina and Neches River Authority (CWSRF Project No. 73677) – Redland Estates and Angelina County Fresh Water Supply District No. 1 Sewer Improvements

The attached document is being provided for your information. This is not a permit application. No action is required from your agency.

The attached document is an environmental determination issued by the Texas Water Development Board (TWDB) for a proposed project to be funded through the TWDB. Pursuant to the environmental assessment requirements of 31 Texas Administrative Code (TAC) §375.61 of the TWDB rules, the Executive Administrator of the TWDB has determined that the proposed action described in the attached documents is consistent with the National Environmental Policy Act. Coordination with the appropriate regulatory agencies and a public hearing were part of this determination.

Documentation supporting this decision is on file in the offices of the TWDB, and is available for public scrutiny upon request. After evaluating the comments received, the Executive Administrator will make a final determination. However, no action regarding the provision of federal financial assistance for the project will be taken for at least thirty (30) calendar days after release of this Finding of No Significant Impact. Comments supporting or disagreeing with this preliminary environmental determination may be submitted to the Director, Regional Water Planning and Development, Texas Water Development Board (TWDB), P.O. Box 13231, Austin, Texas 78711-3231.

Environmental Assessment
Angelina and Neches River Authority, Angelina County
CWSRF Project No. 73677
November 4, 2015

November 4, 2015

FINDING OF NO SIGNIFICANT IMPACT

TO ALL INTERESTED AGENCIES AND PUBLIC GROUPS:

As required by the permanent rules of the Texas Water Development Board (TWDB), 31 Texas Administrative Code (TAC) §375.61, an environmental review consistent with the National Environmental Policy Act (NEPA), 42 U.S. Code §4321 et seq., has been performed on the project below. This project is proposed to be funded through the Clean Water State Revolving Fund (CWSRF) Program, which is administered by the TWDB.

Angelina and Neches River Authority, Angelina County
Redland Estates and Angelina Fresh Water Supply District No. 1 Sewer
Improvements
TWDB Project No. 73677
Total CWSRF Loan Amount: \$4,996,250

The Angelina and Neches River Authority (Authority) is proposing to utilize funds from the CWSRF Equivalency Program to conduct wastewater system improvements. The Authority provides general management, operations, and maintenance services for a wastewater collection system owned by the Angelina County Fresh Water Supply District (FWSD) Number 1. In May 2012, the Angelina County FWSD annexed the Redland Estates Subdivision, which includes 41 connections that discharge untreated wastewater into an unnamed tributary entering Segment Number 0610 of the Angelina River/Sam Rayburn Reservoir. The Texas Commission on Environmental Quality and the Angelina County and Cities Health District has determined that the Angelina County FWSD's system constitutes a Public Health Threat. Currently, the Angelina County FWSD's service area encompasses approximately 238 potential wastewater connections, but serves only 80 residents. The remaining connections utilize on-site sanitary sewer facilities, many of which do not meet local and state regulatory requirements.

On January 23, 2014, the Authority obtained a loan (L1000257) in the amount of \$205,000 and a loan with forgiveness (LF1000258) in the amount of \$469,013 from the Clean Water State Revolving Fund (CWSRF) for planning and design for wastewater system improvements. The Authority closed these loans, totaling \$674,013, on June 5, 2014. The loans are intended to implement first-time wastewater collection and treatment service for approximately 105 connections including those in the Redland Estates Subdivision. Planning funds in the amount of \$35,000 were designated for assessing potential environmental effects of the proposed improvements and preparing an Environmental Information Document (EID).

Environmental Assessment
Angelina and Neches River Authority, Angelina County
CWSRF Project No. 73677
November 4, 2015

To complete the project, the Authority has received a commitment for additional funding from the CWSRF in the amount of \$4,996,250. These funds would be used to construct the collection system for 105 connections and to connect the new system to the Authority's existing North Angelina County Regional Wastewater Treatment Facility. All funding for the proposed project is expected to come from the CWSRF loans.

An environmental review of the proposed project consistent with NEPA has been completed following the guidelines provided in 31 TAC §375, Subchapter E. This environmental review is documented by the enclosed Environmental Assessment (EA). The EA contains mitigative conditions that will be applied to the project and are structured so that no significant adverse environmental impacts will result from the proposed project. The Executive Administrator of the TWDB has made a preliminary decision not to require the preparation of an Environmental Impact Statement. In order to ensure that the proposed project will not have a significant impact on floodplains, cultural resources, threatened or endangered species, and protected migratory bird species, loan conditions have been developed which are described in detail in the attached EA. These conditions include the following:

- As per agreement with the U.S. Army Corps of Engineers, the Authority will use directional drilling to avoid waters of the United States, including wetlands (Project Number SWF-2014-00519);
- Standard emergency condition for the discovery of cultural resources; and,
- Standard emergency condition for the discovery of threatened and endangered species.

Documentation supporting this decision is on file in the office of the Regional Water Planning and Development Division, TWDB, and is available for public scrutiny upon request. Comments supporting or disagreeing with this preliminary environmental determination may be submitted to the Director, Regional Water Planning and Development, Texas Water Development Board, P.O. Box 13231, Austin, Texas 78711-3231. After evaluating the comments received, the Executive Administrator will make a final determination. However, no action regarding the provision of federal financial assistance for the project will be taken for at least thirty (30) calendar days after release of this Finding of No Significant Impact.

Sincerely,

Jessica Zuba, Director
Regional Water Planning and Development

Enclosure

**Angelina and Neches River Authority, Angelina County
Clean Water State Revolving Fund Project #73677
Redland Estates and Angelina County FWSD No. 1 Sewer Improvements
Environmental Assessment**

INTRODUCTION/BACKGROUND¹

The Angelina and Neches River Authority (Authority) proposes to conduct wastewater-system improvements to the Redlands Estates and Angelina County Fresh Water Supply District Number 1 (District). On January 23, 2014, the Authority obtained a loan (L1000257) in the amount of \$205,000 and a loan with forgiveness (LF100058) in the amount of \$469,013 from the Clean Water State Revolving Fund (CWSRF) for planning and design for wastewater system improvements. The Authority closed these loans, totaling \$674,013, on June 5, 2014. The loans are intended to implement first-time wastewater collection and treatment service for approximately 105 connections including those in the Redland Estates Subdivision.

To complete the project, the Authority has received a commitment for additional funding from the CWSRF in the amount of \$4,996,250. These funds would be used to construct the collection system for 105 connections and to connect the new system to the Authority's existing North Angelina County Regional Wastewater Treatment Facility. All funding for the proposed project is expected to come from the CWSRF loans.

Purpose and Need

The Authority provides general management services, operation services and maintenance services for the District's current wastewater collection system. In addition, the Authority has agreed to provide wholesale wastewater treatment services to the District via an interlocal agreement. Currently, the District has approximately 238 active connections within its service area. However, only 80 residents are currently served with centralized sanitary sewer services. The remaining connections within the District's service area utilize on-site sewage facilities (OSSF) or are connected to the Redland Estates collection system. Many of the existing OSSF's no longer meet local and state regulatory requirements, while the non-functional wastewater treatment plant serving Redland Estates has degraded beyond repair. In May 2012, the District held an election to annex Redland Estates Subdivision, which currently includes 43 existing sanitary sewer connections that discharge to the non-functional wastewater treatment plant.

The proposed project will address operational problems of the existing WWTP. The Authority has not met certain effluent requirements of their wastewater discharge permit, most likely due to decreased detention caused by sludge accumulation in the existing

¹ Angelina and Neches River Authority (January 2015). *Environmental Information Document for Redland Estates and Angelina County Fresh Water Supply District Number 1 Sewer Improvements* (Prepared by KSA Engineers, Inc.). Received by TWDB August 24, 2015.

ponds. The proposed plant will include a disinfection system to address the *E. coli* effluent requirement the Texas Commission on Environmental Quality (TCEQ) has recently placed on systems.

PROJECT DESCRIPTION

The proposed Redland Estates and Angelina County FWSD No. 1 Sewer Improvements project has been divided into three phases. These three phases will divert wastewater flow from the non-operational Redland Estates Wastewater Treatment Plant (WWTP), connecting approximately 113 residences to first time sewer service, and provide improvements to the current North Angelina County (NAC) WWTP.

Phase I improvements consist of providing first time sanitary sewer service to residents within the District's current service area, and will by necessity also include future connections to residential, commercial and industrial connections outside the District's service area who do not have centralized sanitary sewer. Phase I will be divided into five sub-categories for design analysis. Proposed collection system improvements and installation of first time sanitary sewer service for Phase I, includes providing sanitary sewer collection system facilities within the District's current service area, specifically including wastewater collection system design for County Road 89 (Phil Jackson Road), Service Area Near District Office, Bar-B-Q Road, Ruth Lane, Smallwood Road, Joe Road, and County Barn Road.

Phase II improvements consist of mitigating sanitary sewer overflows from Redland Estates which have continued for the last 20 years due to deficient wastewater treatment facilities. Phase II proposes to eliminate the Redland Estates WWTP via proposed TCEQ closure mitigation measures, and provide regulated sanitary sewer collection or treatment facilities to pump wastewater from the existing 43 connections to the District's collection system which will ultimately be treated at the Authority's North Angelina Regional Wastewater Treatment Facility.

Phase III will modify the Authority's North Angelina County Regional WWTP. The proposed connection for the addition of Redland Estates and all participants in Phase II will require basin modifications which include: construction of plant headworks to replace the existing headworks due to lack of available space to incorporate the proposed connection, install a new mechanical bar screen in the existing manual bar screen structure, and site fencing of the Authority's Wastewater Treatment Facility to include all designated treatment facility land owned by the District.

EVALUATION OF ALTERNATIVES

In addition to the proposed project, the Authority evaluated four reasonable alternatives for the proposed improvements for Phase I, including: 1) gravity sanitary sewer with lift stations/force mains, 2) pressure sewer system, 3) replacement of on-site sanitary sewer facilities (OSSF's), and 4) combination gravity sanitary sewer in conjunction with vacuum system. A description of the four reasonable alternatives is provided in the following section.

Phase I – Project Description

Line A: County Barn Road

Line A would provide first time sanitary sewer service to ten existing residences located on County Barn Road via connections to the District's existing 6" polyvinyl chloride (PVC) gravity sanitary sewer main located on FM 2251. Due to elevation differences along County Barn Road, standard gravity sanitary sewer installation cannot be utilized but must be combined with a pressure sewer system to collect and divert sanitary sewer to the District's collection system.

Alternative 1 for Line A consisted of a conventional open cut installation of proposed sanitary sewer pressure mains. Open trench cuts would be excavated in the existing County right-of-ways (ROWs) for installation of proposed pressure mains to connect to the existing 6" PVC gravity main located at the intersection of County Barn Road and FM 2251. The new pressure main will be installed and tested prior to services being transferred and will require installation of individual 2 horse power (hp) residential grinder lift stations at each connection and abandonment of existing septic tanks in accordance with TCEQ regulations. The proposed pressure system will require approximately 3,415 linear feet of 2" and 3" PVC standard dimension ratio (SDR) 26 sanitary sewer main, including ten individual residential package lift stations, electrical connections and sanitary sewer services from the pressure main to the proposed package lift station. For design and budgeting purposes, the package lift station consists of a 24" by 48" fiberglass basin, 2 HP explosion proof grinder pump and standard control panel with alarms as required in accordance the 30 TAC Chapter 217.

Alternative 2 for Line A consists of installation of a combination pressure and gravity system. Existing connections will be serviced via gravity main down to the low point of County Barn Road, where a lift station is proposed to carry the wastewater to a gravity main located on FM 2251. The new lift station and force main would be installed and tested prior to services being started.

Alternative 3 for Line A consists of installation and replacement of existing OSSF's. The existing residents currently have septic systems in various states of functionality. Aerobic

septic systems as required by Angelina County/Cities Health District will be utilized for Alternative 3, with existing OSSF's being removed and hauled off-site.

Line B: Smallwood Road

Line B would provide first time sanitary sewer service to nine existing residences located on Smallwood Road via connections to the District's proposed sanitary sewer collection main which will be located on Phil Jackson Road. There are five existing residential connections along Joe Road and four along Smallwood Road. There are four alternatives to providing sewer services to connections along Smallwood Road, including: 1) full pressure system which would ultimately connect to a proposed sanitary sewer collection main on Phil Jackson Road, and 2) gravity sanitary sewer collection system with a lift station, which will pump sanitary sewer to a proposed sanitary sewer collection main on Phil Jackson Road, 3) replacement of existing OSSF's and 4) combination gravity sanitary sewer system with lift stations to consolidate Lines B and C.

Alternative 1 for Line B consists of a traditional open cut installation of proposed sanitary sewer pressure mains. Open cut trenches would be excavated in existing County ROWs for installation of proposed pressure mains to connect to the District's proposed sanitary sewer collection main which will be located on Phil Jackson Road. The new pressure main will be installed and tested prior to services being transferred and will require installation of individual 2 hp residential grinder lift stations at each connection and abandonment of existing septic tanks in accordance with TCEQ regulations. The proposed pressure system will require approximately 2,950 linear feet of 2" and 3" PVC SDR 26 sanitary sewer main, including nine individual residential package lift stations, electrical connections and sanitary sewer services from the pressure main to the proposed package lift station. For design and budgeting purposes, the package lift station consists of 24" by 48" fiberglass basin, 2 hp explosion proof grinder pump and standard control panel with alarms as acquired in accordance with 30 TAC Chapter 217.

Alternative 2 for Line B consists of installation of gravity sanitary sewer system to provide first time sanitary sewer to residents along Smallwood Road to Joe Road. Existing connections will be serviced via gravity main along Smallwood Road and Joe Road to a lift station, which is proposed to be installed at the northernmost end of Joe road, which will pump collected wastewater to a proposed collection main on Phil Jackson Road. The new lift station, gravity main and force main would be installed and tested prior to services being started.

Alternative 3 for Line B consists of installation and replacement of existing OSSF's. The existing residents located on Smallwood Road and Joe Road currently have septic systems. Aerobic septic systems, as required by Angelina County/Cities Health District will be utilized for Alternative 3, with existing OSSF's being removed and hauled off-site.

Alternative 4 for Line B consists of installation of a gravity sanitary sewer system to provide first time sanitary sewer to residents along Smallwood Road, Joe Road and Ruth Lane by consolidating proposed Lines B and C. Existing connections will be serviced via gravity main along Smallwood Road and Joe Road to a proposed trunk sewer main which will connect Ruth Lane, Smallwood Road, Joe Road and areas north of an unnamed tributary to FM 2251. Two lift stations are proposed for Alternative 4; one is proposed on Ruth Lane to pump to the proposed gravity main at the northernmost end of Ruth Lane and the other lift station is proposed near FM 2251 to pump collected wastewater from Ruth Lane, Smallwood Road and Joe Road to an existing 6" sanitary sewer main located on FM 2251.

Line C: Ruth Lane

Line C would provide first time sanitary sewer service to 14 existing residences located on Ruth Lane via connections to the District's proposed sanitary sewer collection main which will be located on Phil Jackson Road. There are three alternatives to providing sewer service to connections along Ruth Lane, including: 1) full pressure system which would ultimately connect to a proposed sanitary sewer collection main on Phil Jackson Road, 2) a gravity sanitary sewer system with a lift station, which will pump sanitary sewer to a proposed sanitary sewer collection main on Phil Jackson Road, 3) replacement of existing OSSF's and 4) combination gravity sanitary sewer system with lift stations to consolidate Lines B and C (Alternative 4 is discussed in Line B).

Alternative 1 for Line C consists of a traditional open cut installation of proposed sanitary sewer pressure mains. Open cut trenches would be excavated in existing County ROWs for installation of proposed pressure mains to connect to the District's proposed sanitary sewer collection main which will be located on Phil Jackson Road. The new pressure main will be installed and tested prior to services being transferred and will require installation of individual 2 hp residential grinder lift stations at each connection and abandonment of existing septic tanks in accordance with TCEQ regulations. The proposed pressure system will require approximately 3,760 linear feet of 2" and 3" PVC SDR 26 sanitary sewer main, including 14 individual residential package lift stations, electrical connections and sanitary sewer services from the pressure main to the proposed package lift station. For design and budgeting purposes, the package lift station consists of a 24"x48" fiberglass basin, 2 HP explosion proof grinder pump and standard control panel with alarms as required in accordance with 30 TAC Chapter 217.

Alternative 2 for Line C consists of installation of a gravity sanitary sewer system to provide first time sanitary sewer to residents along Ruth Lane. Existing connections will be serviced via gravity main along Ruth Lane to a lift station, which is proposed to be installed at the lowest point on Ruth Lane, which will pump collected wastewater to a proposed collection main on Phil Jackson Road. The new lift station, gravity main and force main would be installed and tested prior to services being started.

Alternative 3 for Line C consists of installation and replacement of existing OSSF's. The existing residents located on Ruth Lane currently have septic systems. Aerobic septic systems, as required by Angelina County/Cities Health District will be utilized for Option 3, with existing OSSF's being removed and hauled off-site.

Line D: BBQ, Garner Road, and Ethel Lewis Road

Line D would provide first time sanitary sewer service to 23 existing residents located on BBQ Road, Garner Road and Ethel Lewis Road via connections to the District's proposed sanitary sewer collection main which will be located on Phil Jackson Road. There are three alternatives to providing sewer service to existing connections, including: 1) full pressure system which would ultimately connect to a proposed sanitary sewer collection main on Phil Jackson Road, 2) a gravity sanitary sewer system with a lift station, which will pump sanitary sewer to a proposed sanitary sewer collection main on Phil Jackson Road, and 3) replacement of existing OSSF's.

Alternative 1 for Line D consists of a traditional open cut installation of proposed sanitary sewer pressure mains. Open cut trenches would be excavated in existing County ROWs for installation of proposed pressure mains to connect to the District's proposed sanitary sewer collection main which will be located on Phil Jackson Road. The new pressure main will be installed and tested prior to services being transferred and will require installation of individual 2 hp residential grinder lift stations at each connection and abandonment of existing septic tanks in accordance with TCEQ regulations. The proposed pressure system will require approximately 3,330 linear feet of 2" and 3" PVC SDR 26 sanitary sewer main, including 23 individual residential package lift stations, electrical connections and sanitary sewer services from the pressure main to the proposed package lift station. For design and budgeting purposes, the package lift station consists of a 24"x48" fiberglass basin, 2 HP explosion proof grinder pump and standard control panel with alarms as required in accordance with 30 TAC Chapter 217.

Alternative 2 for Line D consists of installation of a gravity sanitary sewer system to provide first time sanitary sewer to residents located on BBQ Road, Garner Road and Ethel Lewis Road. Existing connections will be serviced via gravity main on BBQ Road, Garner Road or Ethel Lewis Road respectively to a lift station, which is proposed to be installed at the intersection of BBQ Road and Ethel Lewis Road, which will pump collected wastewater to a proposed collection main on Phil Jackson Road. The new lift station, gravity main and force main would be installed and tested prior to services being started.

Alternative 3 for Line D consists of installation and replacement of existing OSSF's. The existing residents located on Ruth Lane currently have septic systems. Aerobic septic systems, as required by Angelina County/Cities Health District will be utilized for Option 3, with existing OSSF's being removed and hauled off-site.

Line E: Phil Jackson Road

Line E would provide first time sanitary sewer service to 36 existing residents located on Phil Jackson Road, FM 2251, FM 2680, and Mt Pleasant Road and will also be the collection main for all existing and proposed sanitary sewer for the District's service area. Since Line E will be the trunk main for all existing and proposed District sanitary sewer and will divert wastewater to the Authority's NAC WWTP, there are only two (2) alternatives to providing sewer service to existing connections, including: 1) full pressure system which would ultimately connect to the Authority's NAC WWTP, and 2) a gravity sanitary sewer system with a lift station, which will pump sanitary sewer to the Authority's NAC WWTP. Both Options presented below will also include pump replacement and lift station upgrades to the Jerri Street lift station.

Alternative 1 for Line E consists of a conventional open cut installation of proposed sanitary sewer pressure mains. Open cut trenches would be excavated in existing County ROWs for installation of proposed pressure mains to connect to the District's proposed sanitary sewer collection main which will be located on Phil Jackson Road. The new pressure main will be installed and tested prior to services being transferred and will require installation of individual 2 hp residential grinder lift stations at each connection and abandonment of existing septic tanks in accordance with TCEQ regulations. The proposed pressure system will require approximately 7,440 linear feet of 3" and 4,250 linear feet of 6" PVC SDR 26 sanitary sewer main, including 36 individual residential package lift stations, electrical connections and sanitary sewer services from the pressure main to the proposed package lift station. Also included for Option 1 is the proposed District lift station, located on Phil Jackson Road that will divert flow to the Authority's NAC WWTP. For design and budgeting purposes, the package lift station consists of a 24"x48" fiberglass basin, 2 HP explosion proof grinder pump and standard control panel with alarms as required in accordance with 30 TAC Chapter 217.

Alternative 2 for Line E consists of installation of a gravity sanitary sewer system to provide first time sanitary sewer to residents located on Phil Jackson Road, FM 2251, FM 2680, and Mt. Pleasant Road. The lift stations will ultimately pump collected wastewater to the Authority's NAC WWTP. The new lift stations, gravity mains and force mains will be installed and tested prior to services being started.

Phase I – Impacts Analysis

An impact analysis was conducted for the Phase I reasonable alternatives for Line A: County Barn Road, Line B: Smallwood Road, Line C: Ruth Lane, Line D: BBQ, Garner Road, and Ethel Lewis Road, and Line E: Phil Jackson Road. The Phase I reasonable alternatives were evaluated for impacts to geology, soils, waters of the U.S., floodplains, climactic elements, threatened and endangered species, cultural resources, and social and economic conditions.

Line A: County Barn Road

Geology

Geology would not be adversely impacted by the construction of any of the Line A reasonable alternatives.

Soils

Digital soil survey data provided by the Natural Resource Conservation Service (NRCS)² for Angelina County was used to identify soil units that intersect the proposed project area for the Line A reasonable alternatives. Soils identified within the proposed project area include Kurth fine sandy loam, 0 to 4 percent slopes (KuB). No hydric soils were identified within the proposed project area. Prime farmland exists within the proposed project area; however no conversion of prime farmland is anticipated.

Waters of the U.S.

Hydrex Environmental, Inc. reviewed the proposed project area for the Line A reasonable alternatives for waters of the U.S. The Phase I reasonable alternatives cross one unnamed primary tributary to Mill Creek. Alternative 1 would utilize a conventional open cut method for the installation of proposed sanitary sewer pressure mains. This construction method would result in disturbance of approximately 0.0009 acre of stream. No wetlands were identified within the proposed project area for Alternative 1. Alternative 2 would utilize directional boring for the installation of proposed sanitary sewer pressure mains; therefore, no impacts to waters of the U.S., including wetlands, are anticipated. Alternative 3 consists of the installation and replacement of existing OSSF's. Alternative 3 would utilize either conventional open cut or directional boring for the installation of proposed sanitary sewer pressure mains. If installed via conventional open cut, Alternative 3 would result in disturbance of approximately 0.0009 acre of stream. No wetlands were identified within the proposed project area for Alternative 3.

Floodplains

The Federal Emergency Management Agency (FEMA) 100-year floodplain does not intersect the proposed project area for the Line A reasonable alternatives; therefore, no adverse impacts to floodplains are anticipated.

Climactic Elements

The Line A reasonable alternatives would not affect the existing climate conditions including precipitation, prevailing winds, or air quality, nor would it affect the existing climate patterns. No primary adverse impacts to climate conditions are anticipated.

² Soil Survey Staff, Natural Resource Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at: <http://websoilsurvey.nrcs.usda.gov/>. Accessed October 20, 2015.

Threatened and Endangered Species

No threatened and endangered species or habitat was identified within the proposed project area for the Line A reasonable alternatives. Therefore, no impacts to threatened and endangered species or habitat are anticipated as a result of the Line A reasonable alternatives.

Cultural Resources

A review of the Texas Historic Sites Atlas Online was conducted to determine if National Register of Historic Places (NRHP), Texas Historical Markers, neighborhood historic building survey sites, cemeteries, or historic sawmills lie within the proposed project area for the Line A reasonable alternatives. There are no previously recorded historic properties within the reasonable alternative study areas. There are no known current NRHP or SAL-listed or eligible resources along any of the reasonable alternative corridors.

Social and Economic Conditions

Each Alternative was ranked based on (1) Capital Cost, (2) Technical Soundness, (3) O&M Cost, and (4) Design Life of Proposed Improvement. Alternative 2 has a higher overall capital cost (\$327,500) as compared to Alternative 1 (\$230,500). No primary adverse social or economic impacts are anticipated as a result of the construction of any of the Line A reasonable alternatives.

Preferred Alternative

Alternatives 1, 2, and 3 for Line A have the same or similar impacts to geology, soils, floodplains, climactic elements, threatened and endangered species and habitat, cultural resources, and social and economic conditions. Alternative 1 and Alternative 3 would result in greater impacts to waters of the U.S. Currently, district's system consists of gravity sanitary sewer with lift stations as required. In an effort to keep the District's existing system consistent with the proposed system, Alternative 2 was identified as the preferred alternative to be utilized for Line A to provide first time sanitary sewer services to residents along County Barn Road.

Line B: Smallwood Road

Geology

Geology would not be adversely impacted by the construction of any of the Line B reasonable alternatives.

Soils

Digital soil survey data provided by the Natural Resource Conservation Service (NRCS) for Angelina County was used to identify soil units that intersect the Line B reasonable alternatives. Soils identified within the proposed project area for Line B reasonable alternatives include: KuB; Keltys fine sandy loam, 5 to 15 (KcD); Sacul fine sandy loam, 5 to 15 percent slopes (SaD). Additionally, Line B Alternative 4 intersects two hydric

soils: Alazan very fine sandy loam, 0 to 4 percent slopes (AaB); and Koury loam, occasionally flooded (Ko). Prime farmland exists within the proposed project area for the Line B reasonable alternatives; however no conversion of farmland is anticipated.

Waters of the U.S.

Hydrex Environmental, Inc. reviewed the proposed project area for waters of the U.S. Alternative 1 and Alternative 3 do not intersect any waters of the U.S.; therefore, Alternative 1 and Alternative 3 would not result in any impacts to waters of the U.S., including wetlands. Alternative 2 intersects one ephemeral tributary that drains toward a wetland located outside of the project area. This ephemeral tributary does not appear to have a hydrologic connection to any adjacent tributaries that are connected to Mill Creek. Alternative 2 would either utilize conventional open cut or directional boring for the installation of proposed sanitary sewer pressure mains. If installed via conventional open cut, Alternative 2 would result in disturbance of approximately 0.00007 acre of stream. No wetlands were identified within the proposed project area for Alternative 2; therefore, no impacts to wetland are anticipated as a result of Alternative 2. Alternative 4 would utilize directional boring of proposed sanitary sewer pressure mains; therefore no impacts to waters of the U.S., including wetlands, are anticipated as a result of Alternative 4.

Floodplains

The FEMA 100-year floodplain intersects a portion of Alternative 4. Alternative 4 utilizes directional boring of proposed sanitary sewer pressure mains; therefore, no impacts to floodplains are anticipated. Alternatives 1, 2, and 3 do not intersect the FEMA 100-year floodplain; therefore, no impacts are anticipated.

Climactic Elements

None of the reasonable alternatives for Line B would affect the existing climate conditions including precipitation, prevailing winds, or air quality, nor would it affect the existing climate patterns. No primary adverse impacts to climate conditions are anticipated.

Threatened and Endangered Species

No threatened and endangered species or habitat was identified within the proposed project area for the Line B reasonable alternatives. Therefore, no impacts to threatened and endangered species or habitat are anticipated as a result of the Line B reasonable alternatives.

Cultural Resources

A review of the Texas Historic Sites Atlas Online was conducted to determine if National Register of Historic Places, Texas Historical Markers, neighborhood historic building survey sites, cemeteries, or historic sawmills lie within the proposed project area for Line B reasonable alternatives. One cemetery (AG-C075) was identified within the proposed project area for Alternatives 1, 2, and 3. The graves near the Line B reasonable

alternatives are all from the twentieth and twenty-first century; therefore, the potential for impacting an unmarked grave is minimal.

Social and Economic Conditions

Each alternative was ranked based on (1) Capital Cost, (2) Technical Soundness, (3) O&M Cost, and (4) Design Life of Proposed Improvement. Alternative 4 has the highest overall ranking with the highest projected capital cost (\$688,500). No primary adverse social or economic impacts are anticipated as a result of the construction of any of the Line B proposed reasonable alternatives.

Preferred Alternative

Alternatives 1, 2, 3, and 4 have the same or similar impacts to geology, floodplains, climactic elements, threatened and endangered species and habitat, cultural resources, and social and economic conditions. Alternative 1 would result in greater impacts to waters of the U.S. Alternative 4 provides future gravity sanitary sewer system for proposed development in an area where a subdivision is being proposed, as required, with minimum future cost to connect. Alternative 4 was identified as the preferred alternative for Lines B and C to provide first time sanitary sewer service to residents along Smallwood Road, Joe Road and Ruth Lane.

Line C: Ruth Lane

Geology

Geology would not be adversely impacted by the construction of any of the Line C reasonable alternatives.

Soils

Digital soil survey data provided by the Natural Resource Conservation Service (NRCS) for Angelina County was used to identify soil units that intersect the Line C reasonable alternatives. Soils identified within the proposed project area for Alternatives 1, 2, 3, and 4 include: KuB, AaB, and Sacul fine sandy loam, 1 to 5 percent slopes (SaB). AaB and SaB are identified as hydric soils. Prime farmland exists within the proposed project area for the Line C reasonable alternatives; however no conversion of prime farmland is anticipated.

Waters of the U.S.

Hydrex Environmental, Inc. reviewed the proposed project area for waters of the U.S. The Line C reasonable alternatives cross one primary tributary to Mill Creek and one secondary tributary to Mill Creek. Alternative 1 would utilize conventional open cut for the installation of proposed sanitary sewer pressure mains. This construction method would result in a cumulative disturbance of approximately 0.0008 acre of stream. No wetlands were identified within the proposed project area for Alternative 1; therefore; no impacts to wetlands are anticipated as a result of Alternative 1. Alternative 2 would utilize either conventional open cut or directional boring for the installation of proposed

sanitary sewer pressure mains. If installed via open cut, Alternative 2 would result in a cumulative disturbance of approximately 0.0008 acre of stream. No wetlands were identified within the proposed project area for Alternative 2. Alternative 3 proposes to replace existing OSSFs; therefore, no impacts to waters of the U.S., including wetlands, are anticipated as a result of Alternative 3. No wetlands were identified within the proposed project area for Alternative 3. Alternative 4 would utilize directional boring for the installation of the proposed sanitary sewer pressure mains; therefore, no impacts to waters of the U.S., including wetlands are anticipated as result of Alternative 4.

Floodplains

The FEMA 100-year floodplain does not intersect any of the Line C reasonable alternatives; therefore no adverse impacts to floodplains are anticipated by the construction of any of the Line C reasonable alternatives.

Climactic Elements

None of the reasonable alternatives for Line C would affect the existing climate conditions including precipitation, prevailing winds, or air quality, nor would it affect the existing climate patterns. No primary adverse impacts to climate conditions are anticipated.

Threatened and Endangered Species

No threatened and endangered species or habitat was identified within the proposed project area for the Line C reasonable alternatives. Therefore, no impacts to threatened and endangered species or habitat are anticipated as a result of the Line C reasonable alternatives.

Cultural Resources

A review of the Texas Historic Sites Atlas Online was conducted to determine if National Register of Historic Places, Texas Historical Markers, neighborhood historic building survey sites, cemeteries, or historic sawmills lie within the proposed reasonable Alternative study areas. A desktop analysis revealed one cemetery (AG-C112) adjacent to the proposed project area for the Line C reasonable alternatives. The graves near the proposed project area are all from the twentieth and twenty-first century; therefore, the potential for impacting an unmarked grave is minimal.

Social and Economic Conditions

Each Alternative was ranked based on (1) Capital Cost, (2) Technical Soundness, (3) O&M Cost, and (4) Design Life of Proposed Improvement. Alternative 4 has the highest projected capital cost (\$688,500). No primary adverse social or economic impacts are anticipated as a result of the construction of any of the Line C proposed reasonable alternatives. No further analysis is required.

Preferred Alternative

Alternatives 1, 2, 3, and 4 have the same or similar impacts to geology, floodplains, climactic elements, threatened and endangered species and habitat, cultural resources, and social and economic conditions. Alternative 1 would have a greater impact on waters of the U.S. Alternative 4 provides future gravity sanitary sewer system in an area where a subdivision is being proposed, as required, with minimum future cost to connect. Alternative 4 was identified as the preferred alternative to be utilized for Lines B and C to provide first time sanitary sewer service to residents along Smallwood Road, Joe Road and Ruth Lane.

Line D: BBQ, Garner Road, and Ethel Lewis Road

Geology

Geology would not be adversely impacted by the construction of any of the Line D reasonable alternatives.

Soils

Digital soil survey data provided by the Natural Resource Conservation Service (NRCS) for Angelina County was used to identify soil units that occur within the reasonable Alternatives. Soils identified within the proposed project area for the Line D reasonable Alternatives include: Fuller fine sandy loam, 1 to 4 percent slopes (FfB); SaB; and KuB. FfB is identified as a hydric soil. Prime farmland exists within the proposed project area for the Line D reasonable alternatives; however no conversion of prime farmland is anticipated.

Waters of the U.S.

Hydrex Environmental, Inc. reviewed the proposed project area for the Line D reasonable alternatives for waters of the U.S. The Line D reasonable alternatives do not cross any waters of the U.S., including wetlands; therefore, no impacts to waters of the U.S. are anticipated.

Floodplains

The FEMA 100-year floodplain does not intersect any of the Line D reasonable alternatives; therefore, no adverse impacts to floodplains are anticipated.

Climactic Elements

None of the reasonable alternatives for Line D would affect the existing climate conditions including precipitation, prevailing winds, or air quality, nor would it affect the existing climate patterns. No primary adverse impacts to climate conditions are anticipated.

Threatened and Endangered Species

No threatened and endangered species or habitat was identified within the proposed project area for the Line D reasonable alternatives. Therefore, no impacts to threatened

and endangered species or habitat are anticipated as a result of the Line D reasonable alternatives.

Cultural Resources

A review of the Texas Historic Sites Atlas Online was conducted to determine if National Register of Historic Places, Texas Historical Markers, neighborhood historic building survey sites, cemeteries, or historic sawmills lie within the proposed reasonable Alternative study areas. A desktop analysis identified one cemetery (AG-C112) adjacent to the Line D reasonable alternatives. The graves near the proposed project area are all from the twentieth and twenty-first century; therefore, the potential for impacting an unmarked grave is minimal.

Social and Economic Conditions

Each Alternative was ranked based on (1) Capital Cost, (2) Technical Soundness, (3) O&M Cost, and (4) Design Life of Proposed Improvement. Alternative 2 has the highest overall ranking with the highest projected capital cost (\$347,500). No primary adverse social or economic impacts are anticipated as a result of the construction of any of the Line D reasonable alternatives.

Preferred Alternative

The reasonable Alternatives have the same or similar impacts to geology, soils, waters of the U.S., floodplains, climatic elements, threatened and endangered species, cultural resources, and social and economic conditions. The District's system currently consists of gravity sanitary sewer with lift stations as required. In an effort to keep the District's existing system consistent with the proposed system, Alternative 2 was identified as the preferred alternative to be utilized for Line D.

Line E: Phil Jackson Road

Geology

Geology would not be adversely impacted by the construction of any of the Line E reasonable alternatives.

Soils

Digital soil survey data provided by the Natural Resource Conservation Service (NRCS) for Angelina County was used to identify soil units that intersect the proposed project areas of the Line E reasonable Alternatives. Soils identified within the Line E reasonable alternatives include: KuB; AaB; Keltys fine sandy loam, 1 to 5 percent slopes (KcB); SaB; SaD; and Tenaha loamy fine sand, 5 to 15 percent slopes (TnD). AaB is identified as a hydric soil. Prime farmland exists within the proposed project area for the Line E reasonable alternatives; however no conversion of prime farmland is anticipated.

Waters of the U.S.

Hydrex Environmental, Inc. reviewed the proposed project area for waters of the U.S. The Line E reasonable alternatives would cross one primary tributary to Mill Creek and three secondary tributaries to Mill Creek. Alternative 1 would utilize conventional open cut for the installation of the proposed sanitary sewer pressure mains. This construction method would result in the cumulative disturbance of approximately 0.001 acre of stream. No wetlands were identified within the proposed project area for Alternative 1; therefore, no impacts to wetlands are anticipated as a result of Alternative 1. Alternative 2 would utilize directional boring for the installation of the proposed sanitary sewer pressure mains; therefore, impacts to waters of the U.S., including wetlands, are not anticipated. Alternative 3 proposes to replace existing OSSFs; therefore, impacts to waters of the U.S, including wetlands, are not anticipated.

Floodplains

The FEMA 100-year hazard zone does not intersect the proposed project area for the Line E reasonable alternatives; therefore, no adverse impacts to floodplains are anticipated.

Climactic Elements

None of the reasonable alternatives for Line E would affect the existing climate conditions including precipitation, prevailing winds, or air quality, nor would it affect the existing climate patterns. No primary adverse impacts to climate conditions are anticipated.

Threatened and Endangered Species

No threatened and endangered species or habitat was identified within proposed project area for the Line E reasonable alternatives. Therefore, no impacts to threatened and endangered species or habitat are anticipated as a result of the Line E reasonable alternatives.

Cultural Resources

A review of the Texas Historic Sites Atlas Online was conducted to determine if National Register of Historic Places, Texas Historical Markers, neighborhood historic building survey sites, cemeteries, or historic sawmills lie within the Line E proposed reasonable alternatives. A desktop analysis revealed two cemeteries (AG-C112 and AG-C075) within the proposed project area for the Line E reasonable alternatives. The graves near the proposed project area are all from the twentieth and twenty-first century; therefore, the potential for impacting an unmarked grave is minimal.

Social and Economic Conditions

Each Alternative was ranked based on (1) Capital Cost, (2) Technical Soundness, (3) O&M Cost, and (4) Design Life of Proposed Improvement. Alternative 2 has the highest overall ranking with the lowest projected capital cost (\$972,500). No primary adverse social or economic impacts are anticipated as a result of the construction of any of the Line E reasonable alternatives.

Preferred Alternative

The Line E reasonable alternatives have the same or similar impact on geology, soils, floodplains, cultural resources, threatened and endangered species, and social and economic conditions. Alternative 1 has a greater impact on waters of the U.S. The District's system currently consists of gravity sanitary sewer with lift stations as required. In an effort to keep the District's existing system consistent with the proposed system, Alternative 2 was identified as the preferred alternative to be utilized for Line E.

Phase II – Project Description

Phase II improvements consist of mitigating sanitary sewer overflows from Redland Estates which have continued for the last 20 years due to deficient wastewater treatment facilities. The Redland Estates WWTP has discharged untreated wastewater directly into a primary tributary to Mill Creek, a tertiary tributary of the Angelina River. The Angelina River is considered a Relatively Permanent Water at this point. A Public Health Threat has been issued by TCEQ and the Angelina County Cities and Health District. TCEQ and TWDB have determined that Segment No. 0611 is an Impaired Water Body that has been and will continue to be affected by the direct discharge of untreated wastewater from Redland Estates. Phase II proposes to eliminate the Redland Estates WWTP, via proposed TCEQ closure mitigation measures, and provide regulated sanitary sewer collection or treatment facilities to pump wastewater from the existing 41 connections to the District's collection system which will ultimately be treated at the Authority's North Angelina County Regional Wastewater Treatment Facility, which is described below as Phase II.

Three alternatives were considered for the proposed improvements for Phase II, including: 1) gravity sanitary sewer with lift stations/force mains, 2) installation of a package wastewater treatment plant, and 3) do nothing. As noted above, the District entered into a non-compliance agreement with TCEQ, in regard to Redland Estates and therefore Option 3, cannot be utilized. Alternatives 1 and 2 for Phase II improvements will be discussed further below.

Alternative 1 proposes to provide TCEQ regulated WWTP closure measures and mitigation requirements to abandon and demolish the remainder of Redland Estates WWTP in conjunction with installation of a lift station and a gravity sanitary sewer pipe network along with force mains to divert wastewater from the existing 41 connections within Redland Estates, as well as 21 additional first-time residential sanitary sewer connections located on St. Clair St, Tillman Road, FM 2021, and FM 2251 to the District's existing collection system on FM 2251, ultimately to the Authority's North Angelina County Regional Wastewater Treatment Facility. Infrastructure requirements for Alternative 1 will include two (2) lift stations (one (1) lift station at Redland Estates and one (1) lift station on the west side of State Highway 59 – I69) and approximately 14,810 linear feet of gravity and pressure collection system, which will utilize gravity

mains to lift stations that will pump to the District's existing 6" PVC gravity main on FM 2251.

Alternative 1 consists of a conventional open cut installation of the proposed sanitary sewer mains, including highway / directional bores as required. Open cut trenches are proposed to be excavated in existing County/State ROWs. The proposed mains and lift stations will be installed and tested prior to services being transferred.

Alternative 2 proposes to provide TCEQ regulated WWTP closure measures and mitigation requirements to abandon and demolish the remainder of Redland Estates WWTP in conjunction with installation of a conventional activated sludge package treatment plant to treat wastewater from the existing 41 connections within Redland Estates. Infrastructure requirements for Alternative 2 will include a conventional activated sludge package treatment plant and approximately 3,500 linear feet of 6" PVC gravity sanitary sewer main to replace the existing gravity collection system within Redland Estates.

Based upon TCEQ Chapter 217 design criteria for establishing design flows in conjunction with a total projected 45 connections within Redland Estates and average household size of 2.94, the projected average daily flow for the package WWTP is 20,000 gallons per day with a two-hour peak flow of 80,000 gallons per day. Projected WWTP permit constituents for design of the proposed package treatment plant are 10 mg/l BOD5, 15 mg/l TSS, 3 mg/l NH4N, 4 mg/l (min) DO, 1 mg/l to 4 mg/l chlorine residual and 126 cfu/100 ml E-Coli. Since the existing Redland Estates WWTP permit is no longer an active permit, a new permit will be required for approval by TCEQ to discharge into Segment No. 0611 of the Angelina River.

Phase II – Impacts Analysis

Geology

Geology would not be adversely impacted by the construction of any of the Phase II reasonable alternatives.

Soils

Digital soil survey data provided by the Natural Resource Conservation Service (NRCS) for Angelina County was used to identify soil units that occur within the Phase II reasonable alternatives. Soils identified within the proposed project area for the reasonable Alternatives include: KuB; Kirvin fine sandy loam, 1 to 5 percent slopes (KfB); SaB; Lilbert loamy fine sand, 1 to 5 percent slopes (LtB); SaD; KgB; Bernaldo fine sandy loam, 0 to 3 percent slopes (BaB); and Woodtell very fine sandy loam, 1 to 5 percent slopes (WoB). No hydric soils were identified within the proposed project areas for the Phase II reasonable alternatives. Prime farmland exists within the proposed project area for the Phase II reasonable alternatives; however no conversion of prime farmland is anticipated.

Waters of the U.S.

Hydrex Environmental, Inc. reviewed the proposed project area for the Phase II reasonable alternatives for waters of the U.S. Alternative 1 intersects one primary tributary to Mill Creek and would utilize conventional open cut for the installation of the proposed sanitary sewer pressure mains, including highway or directional bores as required. If installed via conventional open cut method, Alternative 1 would result in the disturbance of approximately 0.0009 acre of stream. No wetlands were identified within the proposed project area for Alternative 1; therefore, no impacts to wetlands are anticipated. Alternative 2 includes a conventional activated sludge package treatment plant and approximately 3,500 linear feet of 6" PVC gravity sanitary sewer main to replace the existing gravity collection system within the Redland Estates. Alternative 2 does not intersect and waters of the U.S., including wetlands; therefore, no impacts are anticipated.

Floodplains

The FEMA 100-year floodplain does not intersect the proposed project area for the Phase II reasonable alternatives; therefore, no adverse impacts to floodplains are anticipated by the construction of any of the Phase II reasonable alternatives.

Climactic Elements

None of the Phase II reasonable alternatives would affect the existing climate conditions including precipitation, prevailing winds, or air quality, nor would it affect the existing climate patterns. No primary adverse impacts to climate conditions are anticipated.

Threatened and Endangered Species

No threatened and endangered species or habitat was identified within the proposed project area for the reasonable Alternatives. Therefore, no impacts to threatened and endangered species or habitat are anticipated as a result of any Phase II reasonable alternative.

Cultural Resources

A review of the Texas Historic Sites Atlas Online was conducted to determine if National Register of Historic Places, Texas Historical Markers, neighborhood historic building survey sites, cemeteries, or historic sawmills lie within the proposed reasonable Alternative study areas. A desktop analysis revealed that one historical marker (#8719) intersects the proposed project area for Alternative 2. Historical Marker #8719 identifies the Redland Baptist Church. Proposed construction near the site of the Redland Baptist Church is in a drainage ditch and adjacent to existing buried utilities; therefore, no impact to cultural resources is anticipated as a result of Alternative 2.

Social and Economic Conditions

Each Alternative was ranked based on (1) Capital Cost, (2) Technical Soundness, (3) O&M Cost, and (4) Design Life of Proposed Improvement. Alternative 1 has the overall

highest ranking with the lowest projected capital cost. No primary adverse social or economic impacts are anticipated as a result of the construction of any of the Phase II proposed reasonable alternatives.

Preferred Alternative

The Phase II reasonable Alternatives have the same or similar impacts to geology, soils, waters of the U.S., floodplains, climatic elements, threatened and endangered species, cultural resources, and social and economic conditions. Alternative 1 provides collection facilities for future residential, commercial and industrial connections as well as existing residential connections located outside the District's service area. Alternative 1 was identified as the preferred alternative to be utilized for Phase II improvements.

Phase III – Project Description

The Authority's North Angelina County Regional Wastewater Treatment Facility (NAC WWTP) currently provides treatment for Central Independent School District, Idlewood Water Control and Improvement District and Department of Aging and Disability Services-Lufkin State Supported Living Center and is permitted to treat and discharge 370,000 gallons per day. The Authority holds a TCEQ permit for discharging treated effluent into waters of the State of Texas. The facility is authorized to discharge into an unnamed tributary; thence to Mill Creek; thence to Paper Mill Creek; thence to Angelina River/Sam Rayburn Reservoir in Segment No. 0615 of the Neches River Basin. The Texas Pollutant Discharge Elimination System (TPDES) permit number for the plant is WQ0011620001. As part of the permit conditions, the TCEQ requires monthly operating reports to be completed in an effort to track the ability of the plant to meet its permitted requirements. The effluent parameters require the plant to treat incoming flows such that the final quality specified by the TCEQ is achieved.

Three alternatives were considered for the proposed improvements for Phase III, including: 1) relocation of bar screen and chlorine contact chamber, 2) replace existing mechanical bar screen, and 3) a no build alternative. In order to achieve regionalization and provide regulated treatment of Redland Estates and District existing / proposed sanitary sewer Option 3, cannot be utilized. In each option discussed below a 15' wide entrance drive will be proposed from Phil Jackson Road to the NAC WWTP (approximately 1,460 linear feet) with a proposed 8" inch Grade A, Type 2 limestone base course for access and egress to the plant.

Alternative 1 would demolish the existing bar screen and chlorine contact chamber and relocate proposed units to provide sufficient room for connection of the proposed 6" PVC sanitary sewer force main from Phase II. Currently there is not sufficient room between the sludge drying beds, chlorine contact chamber and bar screen to provide the connection from Phase II to the existing manhole prior to the bar screen. Additionally, Alternative 1 proposed to install approximately 2,000 linear feet of 6' chain link intruder resistant fence with 3 strand barbed-wire.

Alternative 2 would install a new mechanical bar screen in the existing manual bar screen structure and route the proposed 6" PVC sanitary sewer force main from Phase II around the west side of the plant to connect to an existing manhole prior to entering the plant. The new screen structure would be located in an open space within the property boundary of the facility to the east of the existing chlorine contact chamber and sludge processing facility. Additionally Alternative 2 proposed to install approximately 2,000 linear feet of 6' chain link intruder resistant fence with 3 strand barbed-wire.

Phase III – Impacts analysis

Geology

Geology would not be adversely impacted by the construction of any of the Phase III reasonable alternatives.

Soils

Digital soil survey data provided by the Natural Resource Conservation Service (NRCS) for Angelina County was used to identify soil units that occur within the proposed project area for the Phase III reasonable alternatives. Soils identified within the proposed project area for the Phase III reasonable alternatives include: KuB and KcD. No hydric soils were identified within the proposed project area for the Phase III reasonable Alternatives. Prime farmland exists within the proposed project area for the Phase III reasonable Alternatives; however no conversion of prime farmland is anticipated.

Waters of the U.S.

Hydrex Environmental, Inc. reviewed the Phase III proposed project area for waters of the U.S. The Phase III reasonable alternatives do not intersect any waters of the U.S., including wetlands; therefore, impacts to waters of the U.S. are not anticipated.

Floodplains

The FEMA 100-year floodplain does not intersect the proposed project area for the Phase III reasonable alternatives; therefore, no adverse impacts to floodplains are anticipated by the construction of any of the Phase III reasonable alternatives.

Climactic Elements

None of the Phase III reasonable alternatives would affect the existing climate conditions including precipitation, prevailing winds, or air quality, nor would it affect the existing climate patterns. No primary adverse impacts to climate conditions are anticipated.

Threatened and Endangered Species

No threatened and endangered species or habitat was identified within the proposed project area for the reasonable Alternatives. Therefore, no impacts to threatened and endangered species or habitat are anticipated as a result of the Phase III reasonable alternatives.

Cultural Resources

A review of the Texas Historic Sites Atlas Online was conducted to determine if National Register of Historic Places, Texas Historical Markers, neighborhood historic building survey sites, cemeteries, or historic sawmills lie within the Phase III proposed reasonable alternative project areas. There are no previously recorded historic properties within the Phase III reasonable alternative project areas. There are no known current NRHP or SAL-listed or eligible resources along any of the Phase III reasonable alternative corridors.

Social and Economic Conditions

No primary adverse social or economic impacts are anticipated as a result of the construction of any of the Phase III reasonable alternatives.

Preferred Alternative

The Phase III reasonable alternatives have the same or similar impact on geology, soils, waters of the U.S., floodplains, climactic elements, threatened and endangered species, cultural resources, and social and economic conditions. Based upon projected capital costs and feasibility to connect Phase I and II improvements to The Authority's NAC WWTP, Alternative 2 was identified as the preferred alternative to be utilized for Phase III improvements.

ENVIRONMENTAL SETTING

Location and Landforms

The District serves areas outside current unincorporated limits within Angelina County, just north of the City of Lufkin with some of the project falling in Redland. The service area is more specifically described as north to south from Bar-B-Q Road to FM 2021 and east to west from approximately Allen Gin Road to approximately 1,770 linear feet east of FM 2251.

With the exception of residential development, the topography of the county is undulating, breaking into abrupt, but low hills. The County extends diagonally from the Neches River, which forms the southwest border, to the Angelina River and Sam Rayburn Reservoir, which forms the northeast border. The elevation ranges from 100 to 300 feet above sea level, with the highest elevation being the northern part of the county on the hills near Central.

Social and Economic Conditions

The 2010 census population for the Redland service area is 1,147. The District currently serves approximately 550 people with water and sewer services. By comparing the TWDB population estimates and historical population data from Angelina County, it is

estimated that the population the District serves will increase 115 people from 2010 to 2040. The number of people served can be expected to increase to 665 by the design year 2040.

According to the 2010 Census, the tabulated a median household income for Angelina County is \$40,150, with a per capita yearly income of \$221,280. Approximately 18.9 percent live below the poverty level.

Climate

The Authority is located in East Texas, a relatively humid area, having warm summers and mild winters. The climate is classified as meso-thermal with an average winter temperature of 50 degrees F and an average summer temperature of 82 degrees F, with prevailing winds general from the south-southeast. The average annual total precipitation is about 41 inches. Of this, about 21 inches, or 50 percent, usually falls in April through September.

Geology and Soils

Angelina County is in the east-central part of Texas in the Piney Hills Ecoregion. The service area of the District lies in the northern portion of the County around the intersections of Highway 59 and Farm Road 2021.

According to the United States Department of Agriculture Soil Conservation Service (USDA/SCS) Soil Survey of Angelina County, Texas, the major soils in the project area are Fuller fine sandy loam and Kurth fine sandy loam on uplands. The major soils are in the Alazan, Fuller, Keltys, and Woodtell series. The Alazan series is level to gently sloping, poorly drained with moderate permeability. The Fuller soils are broad, nearly level to very gently sloping and slightly concave interstream divides. Keltys soils are on broad, smooth, slightly convex, and very gently sloping to moderately sloping interstream divides. Woodtell soils are fine, and tend to be located on a slope. These soils are slowly permeable to very slowly permeable. The underlying material is stratified mudstone, clay, shale, and soft sandstone with yellowish brown mottles.

Three hydric soils occur within the proposed project area: Alazan very fine sandy loam, 0 to 4 percent slopes; Fuller fine sandy loam, 1 to 4 percent slopes; and Koury loam, occasionally flooded. Prime farmland exists within the proposed project area; however no conversion of prime farmland is anticipated. The NRCS review response is provided in the agency coordination section below.

Waters of the U.S., Floodplain, and Hydrology

The project area lies within the Neches River Basin. On-site reconnaissance of the proposed project area was performed on October 22, October 23, November 17,

November 18, and December 8 by Hydrex Environmental, Inc. The proposed project area was evaluated for existing site conditions and potential waters of the U.S., which includes potentially jurisdictional wetlands, streams and open waters.

Hydrex Environmental, Inc. identified ten stream locations that will be avoided utilizing horizontal directional drilling. No areas of wetlands were determined to transect the proposed project area. No potential waters of the U.S., including wetlands, were identified within the boundaries of the proposed 1.0-acre facility expansion.

A review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the area indicates that approximately 0.57 miles of the Angelina County proposed sanitary sewer line ROW extends through Zone A, the 100-year floodplain of Mill Creek. Zone A is described as areas within the 100-year floodplain in which base flood elevations have not been determined. The remaining portions of the proposed project area are located in areas mapped as Zone X. Zone X is described as areas outside the 100-year floodplain and by definition, carry a 0.2 percent chance of flooding annually. According to coordination with the Local Floodplain Administrator, no impacts to environmental resources should occur; therefore, no permit is required for the proposed project.

No impacts to groundwater quality are anticipated from the proposed project. TWDB environmental review staff have reviewed the proposed project to ensure there would be no adverse impacts to aquifers designated as sole source aquifers by EPA Region 6. The proposed project and all alternatives are located outside of the Edwards Aquifer Recharge, Transition and Contribution Zones.

Flora and Fauna

The vegetation of Angelina County is comprised of various woody species. Forested areas in the uplands mainly support mixed pine (*Pinus* sp.) and hardwoods, although pine plantations are common, especially on commercial forestlands. The dominant pine species in the uplands are loblolly pine (*Pinus taeda*) and shortleaf pine (*Pinus echinata*), as well as longleaf pine (*Pinus palustris*) on some soils. Hardwood species include red oak (*Quercus buckleyi*), hickory (*Carya* sp.), and sweet gum (*Liquidambar styraciflua*). Wooded areas on bottomlands support water oak (*Quercus nigra*), willow oak (*Quercus phellos*), over cup oak (*Quercus lyrata*), green ash (*Fraxinus pennsylvanica*), and sweet gum.

Major game species within the area include white-tailed deer (*Odocoileus virginianus*), fox squirrel (*Sciurus niger*), grey squirrels (*Sciurus carolinensis*), turkey (*Meleagris* sp.), bobwhite quail (*Colinus virginianus*), and mourning dove (*Zenaidura macroura*). Important furbearers include raccoons (*Procyon lotor*), mink (*Neovison vison*), fox (*Urocyon* sp.), opossum (*Didelphimorphia* sp.), and skunk (*Mephitidae* sp.). Waterfowl are common on ponds, streams, and flooded bottomlands during the fall and winter. Numerous nongame

birds and animals are associated with habitat in this area. The edge effect provided by harvested timber is valuable to nongame wildlife and to quail and rabbit.

Hydrex Environmental, Inc. was retained by KSA Engineers, Inc., on behalf of The Authority, to conduct a threatened and endangered species assessment for the proposed project area. TWDB staff has reviewed the proposed project area for potential effects to threatened and endangered species and habitat. Desktop analysis did not reveal any critical habitat within or adjacent to the proposed project area. Additionally, the District is utilizing directional drilling to install the pipeline; therefore, minimal disturbance to potential habitat will occur. Therefore, the construction activities associated with the proposed project will have “no effect” on federal state or listed threatened or endangered species.

Taxon	Common Name	Scientific Name	Status	
			State	Federal
Bird	American Peregrine Falcon	<i>Falco peregrinus anatum</i>)	T	NL
Bird	Bachman's Sparrow	<i>Aimophila aestivalis</i>	T	NL
Bird	Bald Eagle	<i>Haliaeetus leucocephalus</i>	T	R
Bird	Piping Plover	<i>Charadrius melodus</i>	T	LT
Bird	Red-cockaded Woodpecker	<i>Picoides borealis</i>	T	NL
Bird	Swallow-tailed Kite	<i>Elanoides forficatus</i>	T	NL
Bird	Wood Stork	<i>Mycteria Americana</i>	T	LT
Fish	Creek Chubsucker	<i>Erimyzon oblongus</i>	T	NL
Fish	Paddlefish	<i>Polyodon spathula</i>	T	NL
Fish	Red Knot	<i>Calidris canutus rufa</i>	NL	LT
Mammal	Black Bear	<i>Ursus americanus</i>	T	NL
Mammal	Louisiana Black Bear	<i>Ursus americanus luteolus</i>	T	LT
Mammal	Rafinesue's Big-eared Bat	<i>Corynorhinus rafinesquii</i>	T	NL
Mammal	Red Wolf	<i>Canis rufus</i>	E	LE
Mollusks	Lousiana Pigtoe	<i>Pleurobema riddellii</i>	T	NL
Mollusks	Sandbank Pocketbook	<i>Lampsilis satura</i>	T	NL
Mollusks	Southern Hickorynut	<i>Obovaria jacksoniana</i>	T	NL
Mollusks	Texas Heelsplitter	<i>Potamilus amphichaenus</i>	T	NL
Mollusks	Texas Pigtoe	<i>Fusconaia askewi</i>	T	NL
Reptiles	Alligator Snapping Turtle	<i>Macrochelys temminckii</i>	T	NL
Reptile	Louisiana Pine Snake	<i>Pituophis ruthveni</i>	T	C
Reptile	Timber Rattlesnake	<i>Crotalus horridus</i>	T	NL
Plants	Neches River Rose Mallow	<i>Hibiscus dasycalyx</i>	NL	LT

Status Key:
 LE, LT - Federally Listed Endangered/Threatened
 PE, PT - Federally Proposed Endangered/Threatened
 E/SA, T/SA - Federally Listed Endangered/Threatened by Similarity of Appearance
 C - Federal Candidate for Listing; formerly Category 1 Candidate
 NL - Not Federally Listed
 E, T - State Listed Endangered/Threatened
 NT - Not tracked or no longer tracked by the State
 R - Recovery
 "blank" - Rare, but with no regulatory listing status

Historic Background

Deep East Texas Archaeological Consultants (DETAC) was retained to conduct a review of the proposed project area for potential impacts to cultural resources. The survey was conducted under Texas Antiquities Permit #7116. A visual inspection of the proposed project area did not find any artifacts; therefore, no artifacts were curated. The visual inspection revealed that the proposed project area is adjacent to two modern cemeteries and near the location of the first building in Redland, circa 1850. The graves near the

proposed project area are all from the twentieth and twenty-first century; therefore, the potential for impacting an unmarked grave is minimal. Proposed construction near the site of the building is in a drainage ditch and adjacent to existing buried utilities. THC provided concurrence on February 9, 2015 that the project will have “no effect” to National Register of Historic Places eligible properties or State Antiquities Landmarks for the proposed project.

POTENTIAL IMPACTS AND MITIGATIVE MEASURES

Standard Mitigation and Precautionary Measures

Potential construction-related impacts to daily activities of the community are amenable to standard mitigate and best management practices. The following standard mitigation and best management practices have been proposed for the project. A Stormwater Pollution Prevention Plan (SWPPP) will be prepared based upon the final design plans and all applicable Local, State, and Federal regulations. The SWPPP will be included as part of the contract documents submitted to TWDB for review.

Alterations to Land Forms

Excavations will be made in order to construct below grade structures. Proper construction measures will be implemented to minimize the disturbance and limit stormwater pollution.

Watercourse Siltation and Sedimentation

Standard engineering and construction best management practices will be used to control erosion during and following completion of construction. Practices which can be used to control erosion and sedimentation include:

- Replace vegetative cover as soon as practicable to any area of exposed soils
- Water exposed soils as needed to control wind erosion
- Temporary sediment control measures, such as silt fences and hay bales, should be used on slopes with exposed soils
- Construction areas will be graded and smoothed upon completion of construction to inhibit formation of gullies
- Erosion control matting will be used on steeply sloped embankments

Implementation of the above measures should ensure that siltation and sedimentation would not adversely affect area watercourses.

Trenching

Dredging and tunneling in area watercourses will not be used as part of this project. Where the collection main crosses streams, 100 foot long directional bores will be used to

minimize the impact to the existing water courses. Soil removed from the boring pits will be temporarily stored adjacent to the pit and silt fences will be installed to contain any sediment runoff. Any excess material will be removed from the stream crossing.

Precautions to Avoid Injury to Cover Vegetation

Proper construction methods to prevent permanent damage to cover vegetation will be utilized. Prior to the end of construction, a grass cover will be maintained on all disturbed areas.

Use of Herbicides, Defoliant, Cutting and Burning

Herbicides, defoliant, and burning will not be used as part of this project. Clearing of trees as required will be accomplished using dozers.

Disposal of Soil and Vegetation

Soil excavated during construction will be used as back fill after construction. Disposal of vegetation will conform to all applicable local, state, and federal laws.

Land Acquisition

Preliminary routing investigations anticipate that no structures or houses will be impacted; therefore, no relocation is required.

Construction in waterway

There will be no construction in waterways. Where the collection mains cross streams, directional bores will be used to minimize the impact to the existing watercourses. Soil removed from the boring pits will be temporarily stored adjacent to the pit, and silt fences will be installed to contain any sediment runoff. Any excess material will be removed from the stream crossing.

Dust Control Measures

During construction, dust will be controlled by periodic application of water as specified by the owner's on-site project representative to comply with air quality standards.

Noise Impacts

No significant changes in operational noise levels are expected as a result of the proposed project. While noise levels will increase during construction, there are no known potentially sensitive receptors, which will be impacted.

Blasting

Blasting will not be used during the course of this project.

Effects of Night Work

It is anticipated that night work will not be required for the proposed project.

Obstruction of Scenic Views

The proposed improvements will not obstruct any scenic views in the planning area as the majority of the project will be sub-surface.

Cross-Cutter Compliance and Agency Coordination

The proposed project has been reviewed for potential impacts to the quality of the human environment following the procedures provided in 31 Texas Administrative Code §375, Subchapter E, in order to ensure compliance with CWSRF Equivalency Program requirements and federal and state regulations, including the federal cross-cutting environmental authorities from the EPA listed below.

- (1) National Environmental Policy Act of 1969, PL 91-190;
- (2) Archeological and Historic Preservation Act of 1974, PL 93-291;
- (3) Clean Air Act, 42 USC 7506(c);
- (4) Coastal Barrier Resources Act, 16 USC 3501 et seq;
- (5) Coastal Zone Management Act of 1972, PL 92-583, as amended;
- (6) Endangered Species Act, 16 USC 1531, et seq;
- (7) Executive Order 11593, Protection and Enhancement of the Cultural Environment;
- (8) Executive Order 11988, Floodplain Management;
- (9) Executive Order 11990, Protection of Wetlands;
- (10) Farmland Protection Policy Act, 7 USC 4201 et seq;
- (11) Fish and Wildlife Coordination Act, PL 85-624, as amended;
- (12) National Historic Preservation Act of 1966, PL 89-665, as amended;
- (13) Safe Drinking Water Act, §1424(e), PL 92-523, as amended;
- (14) Wild and Scenic Rivers Act, PL 90-542, as amended;
- (15) The Wilderness Act, 16 USC 1131 et seq.;
- (16) Environmental Justice, Executive Order 12898;
- (17) Flood Insurance Reform Act of 2004, Public Law 108-264;
- (18) National Flood Insurance Reform Act of 1994, Public Law 103-325;
- (19) Flood Disaster Protection Act of 1973, as amended, Public Law 93-234; and;
- (20) Clean Water Act, PL 92-500, as amended.

This environmental review included coordination with various state and federal regulatory agencies and other interested parties including a 30-day public review period

of the planning documents. The following section provides a summary of that coordination and provides a discussion of any concerns, recommendations, or conditions pertaining to methods for avoidance, minimization or mitigation of potential impacts.

U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers (USACE) was given the opportunity to review the project in accordance with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. Under Section 404 the USACE regulates the discharge of dredged and fill material in waters of the United States, including wetlands. USACE responsibility under Section 10 regards regulation of any work in, or affecting, navigable waters of the United States. A review response from the USACE (Project Number SWF-2014-00519), dated December 22, 2014, indicates that since the proposed project will not involve activities subject to the requirements of Section 404 or Section 10, Department of the Army authorization will not be required. The USACE based this decision on a preliminary jurisdictional determination that there are waters of the United States within the project site and information submitted detailing project plans to avoid impacts to those waters through the use of directional boring.

The CWSRF loan is conditioned to read that directional drilling will be utilized to avoid wetlands and waters of the United States. The project will comply with Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. If impacts to wetlands or waters of the United States may result from the proposed project, the Authority agrees to obtain all necessary permits and receive authorization from the Department of the Army.

U.S. Fish and Wildlife Service and Texas Parks and Wildlife Department

The United States Fish and Wildlife Service (USFWS) was given the opportunity to review the proposed project for compliance with the Endangered Species Act. Because the proposed project will not adversely impact federally listed threatened or endangered species, the USFWS provided a no action response dated January 20, 2015.

The TPWD Wildlife Habitat Assessment Program reviewed the proposed project and provided a response dated February 19, 2015. The TPWD response (TPWD project No. 34216) indicates that TPWD does not anticipate significant adverse impacts to rare, threatened or endangered species, or other fish and wildlife resources.

The CWSRF loan is conditioned to read that if threatened or endangered species happen to be encountered during construction, work will cease immediately and the Authority will notify TWDB staff, TPWD, and the USFWS. Subsequent to notification, mitigation measures will be taken in accordance with the Endangered Species Act of 1973, as amended.

Environmental Assessment
Angelina and Neches River Authority, Angelina County
CWSRF Project No. 73677
November 4, 2015

U.S. Forest Service

KSA Engineers contacted the U.S Forest Service on January 22, 2015, on behalf of The Authority, requesting the review of the proposed project. No formal response or adverse comments have been received for the proposed project. The proposed project is not located on any National Forests or Grasslands.

U.S. National Park Service

KSA Engineers contacted the U.S. National Park Service on January 22, 2015, on behalf of The Authority, requesting the review of the proposed project. No formal response or adverse comments have been received for the proposed project. The proposed project is not located within any National Parks.

Federal Emergency Management Agency (FEMA)

FEMA, Region VI, Mitigation Division had an opportunity to review the proposed project. FEMA responded on January 28, 2015 requesting that the communities' floodplain administrators be contacted for the review and possible permit requirements for the proposed project. If federally funded, FEMA requested that the project be in compliance with Executive Order (EO) 11988 and EO 11990.

The Angelina county Emergency Management Coordinator had an opportunity to review the proposed project. The Floodplain Manager responded on April 22, 2105 stating that Angelina County does not have any zoning or inspections requirements outside any incorporated city. Additionally, Angelina County's floodplain program is not federally funded. The Floodplain Manager determined that there will be no environmental impact with respect to the proposed project. Therefore, no permit is required.

U.S. Department of Agriculture, Natural Resources Conservation Service

In accordance with the Farmland Protection Policy Act, the U.S Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) reviewed the EID prepared for this project. In a response dated February 11, 2015, the NRCS stated that the project should have no significant adverse impact on the environment or natural resources in the area. The NRCS will not require any permits, easements, or approvals for activities such as this. The proposed project will not adversely impact prime farmland.

Texas Historical Commission

The Texas Historical Commission provided a review response dated January 12, 2015 indicating a concurrence with the assessment that the project, as proposed, will not likely affect any cultural resources. The proposed project is in compliance with Section 106 of the National Historic Preservation Act as well as the Antiquities Code of Texas. The project will be conducted under Texas Antiquities Permit #7116.

The CWSRF loan is conditioned to read that if archeological sites are discovered during construction, work will cease immediately in that area and the Authority 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.

Texas Commission on Environmental Quality

TWDB staff contacted the Texas Commission on Environmental Quality (TCEQ) regarding the proposed project. TWDB received a letter on October 22, 2013 stating that TCEQ reviewed the proposed project and offered the following comments:

A review of the project for general conformity impact in accordance with 40 CFR part 93 indicates that the proposed action is located in Angelina County, which is currently unclassified or in attainment of the National Ambient Air Quality Standards for all six criteria air pollutants. Therefore, general conformity rules do not apply. The Office of Water has no further comment on this project. Any debris or waste disposal should be at an appropriately authorized disposal facility.

Local Council of Governments

The Council of Governments (COG) was given the opportunity to review the proposed project. No formal response or adverse comments have been received for the proposed project.

Environmental Justice

In accordance with Executive Order 12898 pertaining to Environmental Justice (EJ), potential environmental impacts to low-income and minority communities have been assessed. The U.S. Environmental Protection Agency (EPA) defines environmental justice as conveyed by the Executive Order as the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. The goal of fair treatment is not to shift risks among populations, but to identify potential disproportionately high and adverse human health and environmental effects on minority populations and low-income populations and to identify alternatives to mitigate those impacts.

The U.S. Census Bureau characterizes 'Hispanic Origin' as a minority group, but not a separate race. Racial groups include: White, African-American, Asian/Pacific Islander, American Indian, Other Race, and Multiracial. The calculation for 'Percent Minority' includes all minority groups and races except non-Hispanic, white persons. The terms 'Living Below the Poverty Level' is equivalent to the term 'Economically Stressed' and includes, according to the 2015 U.S. Census, a four-person family with an annual income at or below \$24,230.

EJView, formerly known as Environmental Justice Geographic Assessment Tool, is an online mapping tool that allows users to create maps and generate detailed reports based

on specific project areas. EJView contains data within a community or region, including: demographic, health, environmental, and facility-level data. Utilizing EJView provided by the EPA, demographics for the project area were obtained.

Minority Population (%)	20 – 30%
Per Capita Income (\$/year)	~\$16,000
Percent Below Poverty (%)	~30%

According to the EJ Analysis, the annual per capita income of the project area was \$16,000. A 2010 Census tabulated a median household income for Angelina County of \$40,150, with a per capita yearly income of \$21,280. Approximately 18.9 percent of all people living in Angelina County are below the poverty level. These results show that there is a measurable effect on low-income populations within relatively close proximity to the proposed project area. However, these levels are similar to the county, and the proposed work does not pose a disproportionate risk for impacts to low-income or minority residents. The entire population of this project area would be the recipients of benefits derived from the proposed improvements, primarily through improved quality and reliability of clean water supplied to residents throughout the service area. Because the project will not result in the relocation of households or significant changes in land uses or land values and because the project area income and demography are consistent with this portion of the region, the project will not disproportionately impact low-income populations.

DOCUMENTATION, COORDINATION, AND PUBLIC PARTICIPATION

The proposed project is consistent with local, regional, and statewide planning. Coordination with the appropriate governmental agencies has been made and no adverse comments have been received.

Public participation conducted during facilities planning included a public hearing held on August 4, 2015, which was advertised in *The Lufkin News*, a newspaper of general circulation in the service area. The notice was published on July 3, 2015 and contained information regarding availability of planning documents, including the EID, for public review at the Authority's Office located at 210 E. Lufkin Avenue during normal business hours. State and federal agencies were sent written notice of the hearing and the availability of the document for review.

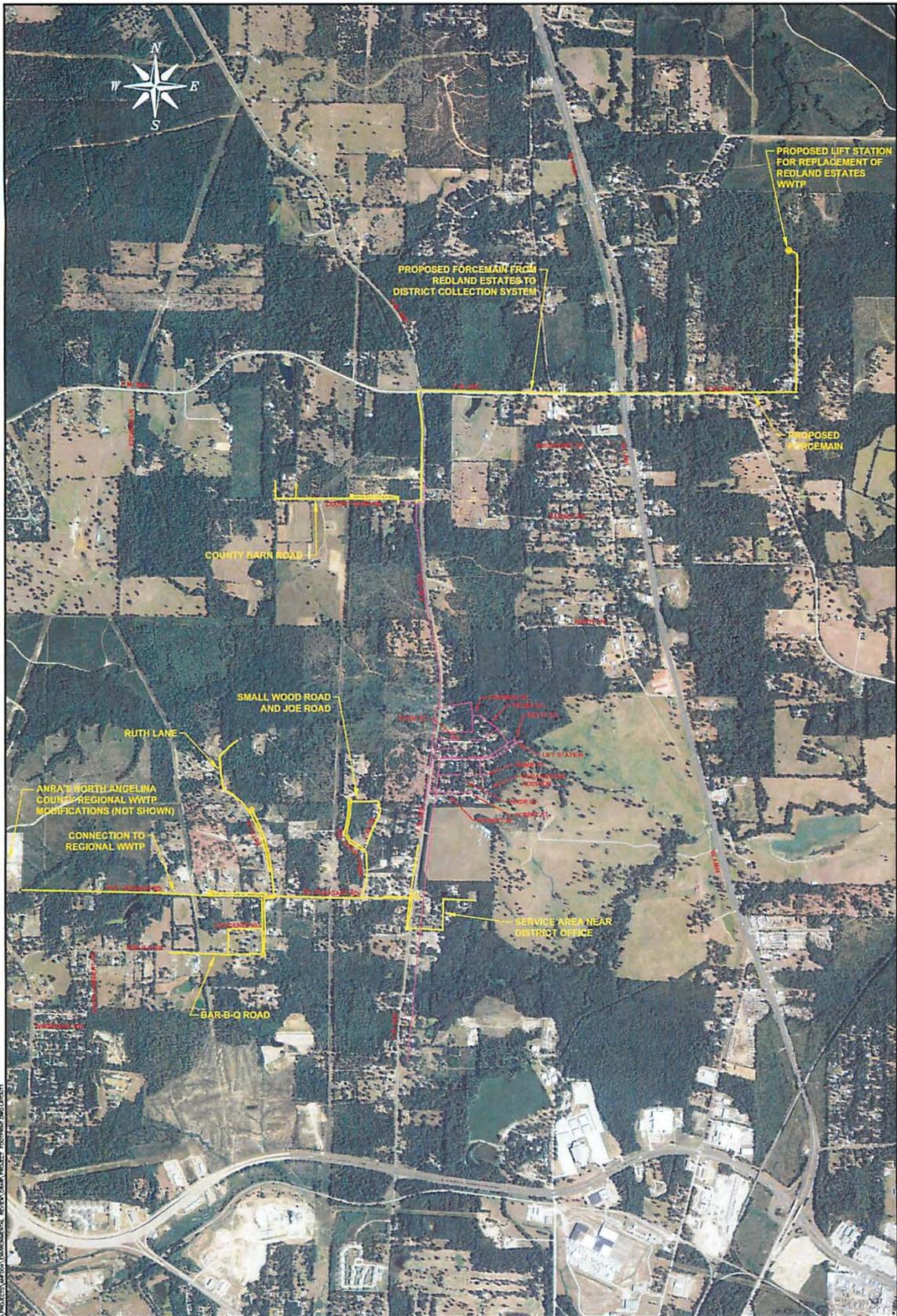
The public hearing was held at 10:00 AM on August 5, 2015 in the meeting room of the Authority's Central Office. No adverse comments were voiced at the public hearing or received during the 30-day public review period.

RECOMMENDATION

Based upon a detailed review of the Clean Water State Revolving Fund planning information, the Environmental Information Document, this Environmental Assessment, and other documentation, the wastewater system improvement project proposed by the Authority is considered to be environmentally sound with the following conditions:

- As per agreement with the U.S. Army Corps of Engineers, the Authority will use directional drilling to avoid waters of the United States, including wetlands (Project Number SWF-2014-00519);
- Standard emergency condition for the discovery of cultural resources; and,
- Standard emergency condition for the discovery of threatened and endangered species.

Therefore, it is recommended that a Finding of No Significant Impact be issued.



KSA
ENGINEERS

107 WOOD LUTHER AVENUE LUBBOCK, TEXAS 79404
T 807 621 6261 F 807 627 6279
www.ksaeng.com

DRAWN BY	HINEMAN
DESIGNED BY	JRT
LATEST REVISION	9/11/2014
KSA JOB NO.	AN 008
TS&P Firm Registration No. F-1534	

**ANGELINA AND NECHES RIVER
AUTHORITY
ANCFWSD NO. 1
2014 CWSRF IUP**

PROJECT NAME:

PROJECT FOOTPRINT

SHEET NAME:

DRAWING SCALE:	SHEET NO.
VERT. N.T.S.	
HORIZ. N.T.S.	
PLOT. N.T.S.	

KSA ENGINEERS & ARCHITECTS, INC. PROJECT: ANCFWSD NO. 1 2014 CWSRF IUP. DRAWING: PROJECT FOOTPRINT.