DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

April 27, 2011

Planning, Environmental, and Regulatory Division
Regulatory Branch

SUBJECT: Project Number SWF-1987-00524 Lake Columbia

Mr. Kelley Holcomb
General Manager
Angelina and Neches River Authority
210 Lufkin Avenue
Lufkin, Texas 75902

Dear Mr. Holcomb:

This letter is written with regard to the Scope of Work (SOW) for the new Lake Columbia Environmental Impact Statement (EIS). This SOW outlines procedures to be followed, provides a summary of required tasks, and includes an initial Draft EIS table of contents. The enclosed SOW was developed by the U.S. Army Corps of Engineers (Corps), lead federal agency for this action, and our third party EIS contractor, TRC Environmental Corporation. Additionally, in an effort to prepare a comprehensive document, those federal and state agencies with cooperating agency status were afforded the opportunity to review and comment on this SOW. The attached document reflects full consideration of all cooperating agency comments, as well as comments suggested by your organization.

We appreciate your participation in development of this SOW and look forward to proceeding with preparation of the new Draft EIS for this project.

Sincerely,

for Stephen L Brooks
Chief, Regulatory Branch

Copy Furnished:

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AMENDED SCOPE OF WORK

THIRD PARTY PREPARATION OF ENVIRONMENTAL IMPACT STATEMENT

For The

Lake Columbia Water Supply Project

Prepared for:

U. S. Army Corps of Engineers, Ft. Worth District

Prepared by:

TRC Environmental Corporation
URS Corporation
Harvey Economics
Canter Associates
Wetland Science Applications, Inc.

April 26, 2011

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OVERVIEW

The U. S. Army Corps of Engineers (USACE), Fort Worth District, as the Lead Federal Agency for the preparation of the EIS, and the Angelina & Neches River Authority (ANRA), as the permit applicant, are preparing a third party EIS pursuant to 40 CFR 6.604. An independent third party contractor was approved by the USACE and hired by ANRA in 2005 to prepare the EIS. The Third Party EIS Contractor, TRC, prepared a draft EIS in 2010 (DEIS 2010), and following significant comment by cooperating agencies and the public, the USACE determined that a new draft EIS (New DEIS) was necessary in order to comply with the requirements of 40 CFR Part 6, including the preparation of this Amended Scope of Work. This document establishes an understanding among the USACE, ANRA and TRC regarding the scope of the New DEIS, the work required, and the procedures to be followed in preparation of the New EIS, beginning with the preparation of a New DEIS. While ANRA will fund the Third Party EIS preparation, the regulatory and technical aspects of the work will be directed by the USACE.

The Third Party EIS Contractor, defined herein as TRC and its sub consultants (URS, Harvey Economics, Canter Associates, and Wetland Science Applications, Inc.), will closely coordinate preparation of the EIS with the USACE. The Third Party EIS Contractor has executed Conflict of Interest and Objectivity Certifications for this assignment. The USACE will be responsible for ensuring that cooperating agencies (TCEQ, TPWD, USFWS, USEPA, TWDB are identified, and formally incorporated into the process of preparing, reviewing, and commenting on the New DEIS and FEIS. It is also anticipated that at least several agency working groups will be established on specific technical areas, (currently envisioned is one on downstream habitat characterization, one on effects on downstream users, and one on mitigation) and that through this process, methodological and data quantity and quality concerns will be addressed during development of the New EIS.

As part of the Sections 404/10 permit application process, initiated with a Public Notice on Permit Application No. SWF-1987-00524 on September 5, 2003, ANRA has provided a substantial amount of information about the proposed Project and the proposed Project setting that may be utilized for preparing the New DEIS. This information has been provided over an approximate 6.5-year timeframe, and while some of it may remain valid and/or accurate into the present, others of it may no longer be valid and/or accurate. As this material is used for preparation of the New DEIS, if necessary information is found to be missing, inadequate, incomplete, or inaccurate, the Third Party EIS Contractor may request information, analyses, or evaluations from ANRA rather than undertaking necessary work directly. Alternatively, the Third Party EIS Contractor may, upon direction of the USACE, conduct the work directly. Specifically, if it is determined that additional information is required directly from ANRA and the Third Party EIS Contractor has not been directed by the USACE to obtain the additional information through its direct work, the Third Party EIS Contractor will draft data requests for USACE review. Once approved, the Third Party Contractor will provide formal written information requests to ANRA for information and or studies required to complete the New DEIS or FEIS. The Third Party EIS Contractor will review the responses to information requests provided by ANRA and provide a technical memo to the USACE assessing whether the particular set of responses to information requests is adequate. If necessary, the Third Party EIS Contractor will draft additional information requests and technical review memos until the provided information is deemed satisfactory.

The information below provides a listing of the major tasks (Nos. 1 - 6) in the EIS outline followed by information on the scope of the tasks and a description of how each task will be completed. A Table of Contents of the EIS is attached as well. Based on past experience, the EIS TOC may continue to evolve depending on the nature of existing available information, new information that may become available,

coordination with agency and stakeholder groups, and comments received on the DEIS 2010 and the New DEIS, and the Third Party EIS Contractor will remain flexible to address this issue. In addition, a second set of tasks to scope out work that will take place after the New DEIS is published is provided (task nos. 7-12 below). Some of the tasks identified below represent tasks that were addressed in DEIS 2010 but due to a variety of factors need to be reevaluated with additional information, methods, and considerations in the New DEIS (Revision Task), others represent new tasks that were either not known or addressed in DEIS 2010 for a variety of reasons (New Task), while others represent tasks that were substantially completed in DEIS 2010 and are likely to largely remain adequate (Completed Task), as noted in each task.

The Third Party EIS Contractor proposes to perform the work under a phased authorization process. In the first phase it is anticipated that the Purpose and Need would be developed and the identification and screening of alternatives completed. The second phase would involve preparation of the New DEIS. The third phase would involve addressing the comments on the New DEIS and preparing the FEIS. Alternative phasing can be accommodated, depending on the needs of ANRA or the USACE.

Roles and Responsibilities

Specific communication strategies and protocols must be followed to protect against conflicts of interest during development of the EIS. The preparation of the EIS is governed by the following regulations:

- 40 CFR Parts 1500 – 1508: requires disclosure and analysis of significant environmental impacts of the proposed action.

- 33 CFR Parts 320 – 330 (including 33 CFR Part 325 Appendix B) and 40 CFR Part 230.21 – 230.77: requirements for USACE public interest review.

The entities involved in this EIS project and their roles and responsibilities include the following:

- USACE: Lead agency and decision maker in accordance with 40 CFR 1501.5(C). The USACE shall supervise the preparation of the EIS and shall decide whether or not to grant authorization pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344). The USACE and the Third Party EIS Contractor are solely responsible for preparation of the EIS, impact assessments, data interpretation and conclusions.

- Third Party EIS Contractor: New DEIS and FEIS preparer. Responsible only to the USACE on all aspects of New DEIS and FEIS preparation. May neither take nor request direction from ANRA on any aspect of the New DEIS and FEIS preparation. Contract is with ANRA, and Third Party EIS Contractor services to be paid for by ANRA.

- ANRA: Section 404 permit applicant and its consultants (other than Third Party EIS Contractor). ANRA is responsible for compensating the Third Party EIS Contractor for preparation of the EIS. ANRA is also responsible for providing relevant documents, reports, and other information to the Third Party EIS Contractor as well as assisting with logistical support (providing a meeting place, security, court reporter, etc.) that may be necessary for public hearings during New DEIS development.

- Cooperating Agencies: The USACE has identified several agencies to participate during preparation of the New DEIS as cooperating agencies, including the U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (USFWS), Texas Commission on

Environmental Quality (TCEQ), Texas Parks and Wildlife Department (TPWD), and Texas Water Development Board (TWDB), in accordance with 40 CFR Part 1500.6. These agencies will be afforded opportunity by the USACE to provide input and comments at specific points during the New DEIS preparation. They will also be expected by the USACE to participate in Agency Work Groups that are organized by the USACE to address specific issues relative to the New DEIS. Other agencies may be invited to participate as Cooperating Agencies at the discretion of the USACE. Any agency which agrees to be a cooperating agency will provide comments in a timely manner at the first opportunity presented and not withhold comments until a date later in the review process.

- If data gaps are identified by the Third Party EIS Contractor in the material prepared and provided by ANRA, the Third Party EIS Contractor will describe those and request the data or information from ANRA. Data Requests may also be generated based on input from cooperating agencies, as well as from project scoping or comment meetings. ANRA will determine how to meet the information needs. If ANRA's information collection or analysis methods and the resulting supplied information are deemed inadequate, the Third Party EIS Contractor will either suggest alternate approaches or methods to ANRA or an option for the Third Party EIS Contractor to complete the work will be discussed with the USACE and ANRA, including any necessary contract or budget modifications. If approved the Third Party EIS Contractor will then proceed to modify the information collection methods or analysis and incorporate the results. Alternatively, a multiple iteration data request process, whereby ANRA always collects data and provides it, can be undertaken, but the Third Party EIS Contractor is likely to also require budget increases under this approach due to the multiple review and comment cycles.

The following communication protocols will be followed by the entities involved in the EIS preparation process:

- The USACE shall be the sole provider of instructions and guidance to the Third Party EIS Contractor relative to preparation of the EIS, development of Purpose and Need, alternatives, additional data collection, impact assessments, data interpretation and conclusions.

- Direct contact between the Third Party EIS Contractor and the applicant shall be limited to contractual matters and to consultation and clarification of applicant-prepared information, technical reports, responses to comments that are directly related to ANRA's area of expertise, and/or responses from ANRA to the Third Party EIS Contractor in relation to technical reports, analysis, and other work items. ANRA may not direct the Third Party EIS Contractor relative to preparation of any part of the EIS.

- Any documents, reviews, discussions, and decisions that involve scope of work, schedule, process and/or budget must involve the USACE, Third Party EIS Contractor, and ANRA.

- Any communication, contact, coordination, meetings, document review or consultation between the Third Party EIS Contractor and ANRA must be documented through email, memoranda, internal web site, conversation records, or other notes as appropriate. This documentation is the responsibility of the Third Party EIS Contractor and is to be compiled in the project file with dated copies provided to the USACE and ANRA. To the extent necessary, ANRA will support this documentation process and timely provided any applicant prepared documentation to the Third Party EIS Contractor. Prior to initial contacts between Third Party EIS Contractor and ANRA, the project managers must be notified.

- Work products prepared by the Third Party EIS Contractor will be submitted directly to the USACE. In the interest of efficiency and expediency, copies of documents appropriate for ANRA to receive will be forwarded to ANRA at or near the time they are provided to the USACE. ANRA will supply various work products for the preparation of the EIS as described in the scope of work for the Third Party EIS Contractor. ANRA prepared work products must be submitted directly to the USACE with copies being forwarded to the Third Party EIS Contractor at the same time.

Format

The content of the New DEIS document (i.e., Table of Contents, Text, Figures, and Tables) will follow the USACE-specified format. The Table of Contents attached will be followed in the New DEIS but may be modified with concurrence of the USACE. Numbering of document subsections will not be carried beyond six digits (e.g., 4.1.2.3.2.1), and pages, figures, and tables will be numbered according to either the primary section (e.g., 1-1, 2-3, etc.) or secondary section (e.g., 1.1-1, 2.2-3, etc.). Furthermore, figures and tables will be assembled either at the end of each primary section, or in an Appendix, and, where practical, all figures and tables will be kept to a standard page size (8 1/2 x 11 inches) for ease of publication and binding.

The Third Party EIS Contractor anticipates that for both the New DEIS and the FEIS, it will be necessary to prepare an advanced preliminary version that is for USACE and ANRA review, a preliminary version that will be provided to cooperating agencies for review, and then the final version that will get noticed in the Federal Register, and distributed as necessary.

Publication

The Third Party EIS Contractor will print and distribute review copies of the New DEIS and FEIS for review and comment by the USACE, ANRA and others (cooperating agencies) as deemed appropriate, up to the number specified in Section 10 of this SOW by the USACE prior to releasing these documents for public review. The Third Party EIS Contractor will publish copies of the final New DEIS and the FEIS and provide them to the USACE to distribute to the public, appropriate federal, state, and local agencies, and other interested parties for review and comment.

Amendments to the Scope of Work

It is difficult to envision all issues associated with the New DEIS development at this time and therefore amendments to this Scope of Work and associated cost estimates may be required. The Third Party EIS Contractor will provide the USACE updates when the Third Party EIS Contractor encounters specific work that is outside this scope and or when required levels of analysis on scoped issues that are more intensive and exceeded our initial cost estimates for that task. The Third Party EIS Contractor can work with the USACE to develop an appropriate protocol for reporting such issues to both ANRA and the USACE and an approach for addressing the need for any change orders to the contract and/or authorized budget.

1.0 TASK 1 - INTRODUCTION

1.1 PUBLIC REVIEW AND COMMENT

An important first step in the preparation of the New DEIS is identification of the relevant issues to be addressed in the EIS and the development of the scope of the EIS through evaluation of information already received from the applicant, the public and the various federal, state, and local agencies with an interest in the action. The proposed Project has already received one round of detailed comments from agencies and stakeholders associated with DEIS 2010 (including the agency scoping meeting held on September 30, 2010). These comments and associated responses will be formally incorporated into the New DEIS as scoping comments and therefore, no additional scoping activities are anticipated. The Third Party EIS Contractor will work with the USACE to modify the Scope of Work for preparation of the New DEIS to the extent substantial new issues are identified during review of prior submittals from the applicant, the DEIS 2010, and any new scoping input received.

1.2 APPLICANTS STATEMENT OF THE PURPOSE AND NEED FOR THE PROJECT

The Third Party EIS Contractor will work with ANRA and USACE to produce a revised Purpose and Need statement for the proposed Project. The Purpose and Need statement will explain the demand for water and how the proposed Project can address that need. Since the USACE asserts its position to make the final determination on what is the purpose and need for any project requiring DOA authorization, the Purpose and Need statement will be submitted to the USACE for approval. The USACE approved Purpose and Need statement will then be supported by detailed data in the following subsections of the introduction:

- 1.2.0 Description of the Lake Columbia Service Area (including the five-county region and the Texas Region C Water Supply Planning Region) and which will include a description of the relationship between the five county region and the project participants.
- 1.2.1 Overview of Current Water Supplies and Demand
- 1.2.2 Future Water Requirements
- 1.2.3 Comparison of Future Demand with Current Supply
- 1.2.4 Need for ANRA to develop future water supply to meet future demand

The Third Party EIS Contractor will obtain, review and evaluate the existing water supply and demand information available from ANRA. The Third Party EIS Contractor will describe the basis for water demand and demographic projections, summarize historic, present and projected future water demand and demographics as they relate to the proposed Project. A forecasting horizon of year 2050 is suggested. In addition, the Third Party EIS Contractor will evaluate the techniques and assumptions utilized in developing the demographic and water demand projections, including conservation measures and conservation potential and reach conclusions as to their reasonableness and suitability for application in the EIS Purpose and Need Determination. Conservation and water use patterns will be explicitly examined in the New DEIS. Existing programs, level of conservation achieved, potential for future conservation and adjustments to the water demand projections, as needed, will be addressed. Reasonableness of water use patterns will be considered.

If data gaps are identified, the Third Party EIS Contractor will describe those and request that data or information from ANRA for them (ANRA) to determine how those information needs are met. If methods are deemed inadequate, the Third Party EIS Contractor will suggest alternate approaches and

apply those methods. If assumptions deserve modification in the opinion of the Third Party EIS Contractor, those modifications will be made and the Third Party EIS Contractor will proceed to modify the analysis and the results.

1.3 SUMMARY

An executive summary overview of the entire New DEIS will be prepared that captures the salient and important features of the major sections of the New DEIS. The proposed Project characteristics, including the proposed Project setting and the proposed project facilities will be presented. The alternatives analysis will be summarized along with the environmental setting of the proposed Project. The impact characterization will include activities associated with both construction and operation of the facilities, and include both direct and indirect along with cumulative impacts. The applicant's proposed impact minimization and mitigation measures will be summarized along with any others under consideration by the USACE. The Executive Summary will then be further synthesized and reduced to the number of pages required to adequately abstract the EIS.

1.4 PERMITS AND APPROVALS

The Third Party EIS Contractor will review the existing list and description of local, state and federal approvals required for the proposed Project from the DEIS 2010 and confirm this is accurate and or add additional permit/approval descriptions.

1.5 EIS ORGANIZATION

A narrative presentation of the New DEIS organization will be provided so that the reader has an understanding of the structure of the document and where certain information is to be found.

1.6 ACRONYMS AND ABBREVIATIONS

A list of acronyms and abbreviations found in the New DEIS will be provided within the introductory section of the New DEIS.

2.0 TASK 2 - DESCRIPTION OF PROPOSED ACTION

The Third Party EIS Contractor will provide a detailed but concise description of the proposed action including: the various components/water supply facilities of the proposed Project, the size of proposed Project footprint, a description of how construction would take place, and activities associated with its operation including recreational facilities. Maps and figures showing the layout and design of the proposed Project facilities, as well as relevant features of the proposed Project setting, such as other existing infrastructure including roads, railroads, pipelines, transmission lines, existing structures and features of the proposed Project area such as residences, recreational facilities, retail and commercial establishments, churches, schools, hospitals and other public buildings, and the proposed Project location within the context of the eastern region of Texas will be provided, in addition to details on relocations of effects to any and all of these features and associated costs. Information on structure relocations and their associated costs will be identified and evaluated for all alternatives, as appropriate.

We note that comments received on DEIS 2010 requested that ancillary facilities be considered in the proposed action (i.e., impacts from pipeline, pumping stations, and assorted facilities required to deliver water). The Third Party EIS Contractor will confer with the USACE to confirm this requirement and

expand the project description section (as well as impact section below) to accommodate any increase in scope, as appropriate. Information would be required from ANRA on ancillary facilities.

3.0 TASK 3 - ALTERNATIVES

The DEIS 2010 received significant comments regarding the need for a more detailed alternatives screening analysis. Accordingly, the New DEIS will include a rigorous alternatives screening analysis to discuss the additional alternatives provided by the commenting agencies, as well as those to be developed by the Third Party EIS Contractor. In addition, a more detailed analysis of those alternatives already presented will be provided. The alternative screening process will occur in a tiered manner, and the methods associated with definition of the tiers, and the review criteria associated with each tier will be presented in this section. It is anticipated that an Agency Work Group will be formed to review the list of alternatives developed by the Third Party EIS Contractor and to advise if the list is sufficient. The Agency Work Group will also review the list of alternatives to be screened and advise if the screening criteria to be employed is sufficient. It is anticipated that the Agency Working Group may provide alternative options to be considered and screened, but the final list of alternatives and screening criteria to be employed will be at the direction of the USACE. The alternative screening will follow NEPA requirements for considering *reasonable* alternatives and the Corps' Section 404(b)(1) Guideline requirement.

Key concerns which will be addressed include assessing other alternatives (e.g., smaller reservoir with water from either Toledo Bend, groundwater extraction, and no reservoir with a combination of groundwater blended with water from Toledo Bend). In addition, in response to questions raised on the detail in which water conservation was assessed as an alternative, the Third Party EIS Contractor will provide a thorough analysis of this subject. Water conservation can be considered as demand attenuation or as a component of present and future supply. Finally, the analysis between Toledo Bend and Lake Columbia reservoirs will be made substantially more detailed to address questions on comparative environmental and cost impacts based on 50-year life cycles and ANRA's O&M costs (including issues of secondary costs resulting from other infrastructure improvements that would be required as a result of the proposed Project), and to address issues associated with downstream impacts. Refer to EIS Table of Contents attached which includes a preliminary listing of Alternatives to be addressed in the EIS.

A final list of alternatives which meet the Project's Purpose and Need and the USACEs' and NEPA requirements for reasonable and practicable alternatives will be justified and carried forward in the New DEIS for full analysis with respect to the following resources: Geology and Mineral Resources; Water Resources; Soils; Vegetation; Wildlife; Fish and Aquatic Species; Wetlands; Threatened and Endangered Species; Cultural Resources; Air Quality; Land Use and Recreation; Public Lands; Social and Economic Values; Transportation; Noise and Visual Resources; Hazardous Materials; Public Health; and Environmental Justice. The Third Party EIS Contractor has assumed that up to 5 action alternatives will be carried forward for full analysis in the New DEIS.

Alternatives to be addressed under the Section 404(b)(1) Guidelines are ones that are practicable and would meet the overall Project Purpose and Need and consider the following:

- The Proposed Action alternative.
- Practicable alternatives that would involve no discharges of dredged or fill material into waters of the U.S., including wetlands (no-action, off-site, on-site).
- Practicable alternatives that would involve discharges that would have less adverse impact to waters of the U.S., including wetlands (on-site, off-site).

- Practicable alternatives that would involve discharges that would have greater adverse impact to waters of the U.S., including wetlands (on-site, off-site).

Practicable alternatives that would involve both smaller and larger areal coverage as well as practicable alternatives that would be sited in different locations will also be included in the analysis. The analysis will be focused on potential alternatives that might have less adverse impact on the aquatic ecosystem, but alternatives that would have more impact on the aquatic ecosystem but less adverse impact on the environment overall will be considered as well.

The practicability of each of the alternatives developed based on the guidelines above will be included. Practicability depends on cost, technical, and logistic factors. A practicable alternative must be available and capable of being completed after taking into consideration cost, existing technology, and logistics in light of overall purposes. An alternative determined to be practicable even if it is or involves an area that is not presently owned by the applicant but could be reasonably obtained, utilized, expanded, or managed in order to fulfill the overall purpose of the proposed Project will be considered. Technical and logistic factors will include, but not necessarily be limited to, temporary construction access to work areas, transportation needs, utilities, topography, and available construction techniques. The consequences on ANRA and the public in the event that the proposed Project is not implemented will also be included in the analysis.

The impact (both adverse and beneficial) on the aquatic ecosystem (waters of the U.S.) and the environment overall of each practicable alternative will be assessed. This assessment will be performed and presented so that the USACE can present the least environmentally damaging practicable alternative in the Record of Decision.

4.0 TASK 4 - AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

For purposes of documenting existing site-specific environmental features, a proposed Project boundary was delineated in DEIS 2010 that depicts the maximum land surface area to be potentially affected by the proposed Project. New alternatives may occur outside of the Project boundary defined in the DEIS 2010 and if so, the Project boundary will need to be revised accordingly. This boundary is referred to as the "proposed Project area" (which includes the flood pool and the downstream area potentially affected by altered flows). The extent, frequency, and duration of the downstream effects will be determined by comparison to other similar projects in the region as well as the combined Agency and Applicant review and advisory group to be established. Environmental features outside of the proposed Project area having the potential of being indirectly affected may be either referenced with respect to their proximity to the proposed Project area or referenced in a regional context. The indirectly affected areas would include adjacent land that will likely be developed as lake front land and will be defined and fully evaluated in the new DEIS. Existing applicable reservoirs will be used to predict the typical development patterns, which in turn, can be evaluated. Some technical discussions (e.g., socioeconomics) may include existing environmental conditions descriptions and effects for both site-specific and regional features. Wherever discussions are presented in a regional context, the particular area discussed (e.g., surrounding counties, etc.) will be identified based on the perceived areal extent of proposed Project effects.

Impact Producing Factors

The Third Party EIS Contractor will begin Section 4 with the identification and description of impact producing factors. These are activities, equipment, materials, and processes that have the potential to create impacts on natural and human resources in areas proposed for use by the proposed Project. Some

examples include grading and filling operations and their impacts on water bodies via sedimentation and erosion, the loss of vegetated wetlands and resulting effects on wildlife or water quality, changes in hydrology downstream of the dam and effects on aquatic resources. A general description of these impact-producing factors helps in understanding the overall context of the impact sections that follow. A general description of each of these impact-producing factors relative to each of the alternatives evaluated will also be provided.

Impact Assessment Definitions

The Third Party EIS Contractor will work with the USACE to develop a uniform set of impact definitions to be used throughout the EIS. This will add consistency with respect to how issues are assessed and how impacts are defined, and will allow easier summarization of impacts (e.g., negligible, minor, moderate, and major).

The Third Party EIS Contractor will use the EPA Region VI Guidelines on Water Efficiency Measures for Water Supply Projects to determine how guidelines are applicable to the proposed Project and how they should be addressed in the New DEIS. The Third Party EIS Contractor will prepare a list of the information required from ANRA or their consultant to allow the Third Party EIS Contractor to address each of the applicable guidelines in the EIS.

Affected Environment and Environmental Consequences

For each environmental resource category to be discussed in the New DEIS, a description of the affected environment and an impact assessment will be presented for the proposed action, the no action alternative, and other alternatives under consideration utilizing existing information and information gathered by the applicant and/or others. For each resource category, the Third Party EIS Contractor will thoroughly address issues raised in the comments to DEIS 2010, and from the agency scoping workshop conducted in September 2010. Previous environmental studies and EIS text developed will be updated and developed for the New DEIS. At this point in time, the Third Party EIS Contractor expects that some targeted new field work will need to be performed by ANRA or its consultants, and as noted above, expects new analyses to be provided via ANRA through the information request/evaluation process discussed above. In each technical analysis, construction and operation effects of the proposed Project will be assessed and conclusions will be reached with regard to short- and long-term effects as well as direct and indirect impacts.

Cumulative Impacts

Cumulative impacts are the impact on the environment, which results from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions [40 CFR §1508.7]. Climate change (e.g., greenhouse gas and carbon footprint) will be addressed qualitatively as a reasonably foreseeable future action as part of the cumulative impact analysis. The geographical and temporal boundaries for each resource from definition of past, present, and reasonable foreseeable future actions will be depicted and the rationale for selection of these boundaries will be presented in the New DEIS. Following each environmental consequences section, each resource section will include an evaluation of cumulative impacts for that specific issue. The Third Party EIS Contractor will follow the principles described in CEQ's Considering Cumulative Effects under the National Environmental Policy Act and CEQ's Memorandum Guidance on the Consideration of Past Actions in Cumulative Effects Analysis. Other CEQ guidance will be incorporated as required or needed, such as the addressing Green House Gas emissions and associated effects on global climate change. Additionally, the Third Party EIS Contractor will follow the Section404(b)(1) Guidelines that state "cumulative impacts are the changes in an aquatic ecosystem

that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Although the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of existing aquatic ecosystems" (40 CFR 230.11[g][1].

The Third Party EIS Contractor will identify relevant past actions that have affected resources that would be impacted by the proposed Project and alternatives; identify relevant present actions affecting resources that would be impacted by the proposed Project and alternatives; and identify relevant, reasonably foreseeable (i.e., not speculative) future actions that could affect resources that would be affected by the proposed Project and alternatives. It is important to note that CEQ guidance indicates that future actions can be excluded from cumulative effects analysis if the action: 1) is outside the geographic or temporal boundaries established for the cumulative effects analysis; 2) will not affect resources that are subject to the proposed Project and alternatives.

Comments on DEIS 2010 noted that additional wetland impacts could result from reasonably foreseeable changes in land use, construction and development caused by the proposed Project (i.e., induced changes) and that these should be evaluated and disclosed as cumulative impacts.

Sources of information for existing or planned projects within this Proposed Project Area will include the Public Utilities Commission of Texas (PUCT), the Railroad Commission of Texas, TxDOT and available agency (e.g., USACE, TCEQ, and TWDB) publications, in addition to information from other relevant sources, to include, but not limited to, such as Councils of Government, Cities, Counties, Zoning – Planning Commissions, Regional Planning Organizations, Economic Development Organizations. The cumulative impacts assessment will largely be qualitative. The cumulative effects on the various resources that may occur (if any) and their potential significance will be identified. The effects of cumulative impacts on wetlands could require a specific study, the need for which will be evaluated, and the most appropriate means to accomplish this will be determined between the USACE, ANRA, and the Third Party EIS Contractor.

Monitoring and Mitigation

Following the cumulative impact analysis in each resource section, the Third Party EIS Contractor will discuss proposed monitoring and mitigation. The Third Party EIS Contractor will work with the USACE and ANRA to develop monitoring procedures and mitigation that best addresses the impacts that cannot be avoided as well as concerns identified by the agencies. The issue of mitigation is of particular concern to the agencies in their comments on DEIS 2010 in regards to the loss or alteration of approximately 5,700 acres of wetlands. Some comments with respect to mitigation included:

- how mitigation of stream impacts will be achieved;
- details on how stream buffer preservation works;
- concerns that out-of kind preservation acreage in another watershed does not compensate for loss of waters of the United States and thus further focus on onsite mitigation is needed;
- concern that mitigation lands may be fragmented; and
- issues regarding the use of newly created reservoir shoreline as compensation.

The Third Party EIS Contractor will address these mitigation concerns and others stated by the agencies or identified by the Third Party EIS Contractor as applicable in each resource topic section of Section 4 as well as by Alternative.

Residual Impacts and Conclusions

Following the discussion of mitigation, each section will discuss any residual adverse affects and make a general conclusion as to the extent of impact (inclusive of mitigation) using the impact definitions discussed in Section 4.

Subsections of Affected Environment and Environmental Consequences

The following are the subsections to be assessed within Section 4, and a description of information proposed for inclusion in the EIS. To the extent this information was developed previously, the Third Party EIS Contractor will perform a rigorous review of existing studies and text and update the work to reflect the comments received on DEIS 2010 and address any comments received on the New DEIS. In addition, the Third Party EIS Contractor will issue information requests to ANRA to address information gaps or provide studies to address specific comments, and then the Third Party EIS Contractor will critically review such information and incorporate it into the EIS. Alternatively, the Third Party EIS Contractor may, upon direction of the USACE, conduct the necessary activities directly to address informational gaps.

4.1 GEOLOGY

Based on the lack of comments on this resource as presented in DEIS 2010, this section will likely require only review as to the relevance and timeliness of the data and information presented in DEIS 2010 and if determined to be acceptable, this section would only require reformatting for incorporation into the New DEIS. If past information presented by ANRA or found within DEIS 2010 is outdated or is deemed to require revision or supplementation, data request(s) to ANRA would be issued. Any new information would be reviewed and incorporated as appropriate into the EIS.

Affected Environment

The discussion of existing geologic conditions will include a general description of the regional and local geology and formations occurring within the proposed Project area. Factors discussed in the site-specific description include stratigraphic locations and relationships of significant formations, descriptions of physical aspects of these formations, and utilization of other geologic resources in the proposed Project area (e.g., oil and gas wells, and lignite and mineral resources in general). Unique features (e.g., water-bearing units, recharge areas, faults, etc.) will be described. Resources to be utilized in the preparation of the existing conditions description of proposed Project area geology will include existing literature describing regional geology, Bureau of Economic Geology (BEG) maps and publications, and site-specific data accumulated during planning and engineering design of the proposed Project.

4.1.1 Environmental Consequences

The potential effects of the proposed Project on future oil and gas exploration and development, exploitation of other mineral resources, and unique geologic features (as applicable) will be discussed.

4.2 WATER RESOURCES

4.2.1 Ground Water

Affected Environment

The description of existing groundwater conditions will include local and site-specific information on water-bearing geologic units. Physical and chemical characteristics of aquifers, groundwater recharge zones, and existing water well development and groundwater use within and in proximity to the proposed Project area and the proposed Project's 5-county service area will be discussed, with supplemental data presented as appropriate. Primary sources of information for the description of existing groundwater conditions (quantity and quality) will consist of existing literature concerning groundwater resources of the region and available local data.

Environmental Consequences

An assessment of the effects of the proposed Project and alternatives on existing groundwater conditions within, and in proximity to, the proposed Project area will be presented. The assessment will focus on potential alterations to the groundwater regime resulting from proposed reservoir development.

Effects of the proposed Project and alternatives on existing water quantity and quality will be presented primarily by evaluation of existing data and the reduction of demand on groundwater resources attributable to the conversion from groundwater supplies to surface-water supplies. The potential alteration to ground water recharge (both reduction of surface area available for recharge or the increase in recharge due to increase in hydraulic head) as a result of impoundment will be discussed.

4.2.2 Surface Water

Affected Environment

Surface-water resources including streams and ponds within the proposed Project area, downstream wetlands, streams, floodplains, and downstream water rights, and drainage areas will be described based on existing information and site-specific investigations developed for engineering design of the proposed Project and the water rights permit application. The records of USGS streamflow gauging and water quality stations existing near the proposed Project area will be described and analyzed, and studies available from the proposed Project engineering design will be utilized to document the existing surface-water runoff from the proposed Project area. The discussion of existing surface-water hydrology will include the classification of streams within the proposed Project area (i.e., perennial, intermittent, or ephemeral), as verified previously by the USACE.

Existing surface-water quality for the streams within the proposed Project area will be characterized from available existing data. Baseline water quality in Mud Creek and tributary streams within the proposed Project boundaries will be derived primarily from sources such as USGS and TCEQ Clean Rivers Program data.

Should the transfer of water from one basin to another be determined as a viable alternative or to be part of the proposed Project, the affected environment section will include a discussion of the water quality of the basin from which the water would be obtained.

Environmental Consequences

The effects of the impoundment created by the proposed or alternative Project on the surface waters of the proposed Project area will be evaluated. The temporal and spatial extent of the downstream area affected by reservoir operation (Mud Creek including tributary areas within the flood plain to its confluence with the Angelina River) in addition to downstream floodplains and wetlands will also be addressed.

The effects upon the surface water hydrology, water quantity, and quality of streams within the proposed Project area will be characterized. The effects of proposed Project-related disturbance relative to the proposed loss of significant reaches of stream and change in stream dynamics, including sediment dynamics, habitat structure and availability, baseflow alterations, and flood flows effects downstream of the proposed or alternative dam site(s) will also be discussed. The effects of the proposed Project and alternatives on water quantity and quality will be evaluated, including consideration of pass-through flows from the proposed reservoir, as well as the effects of any proposed stream mitigation.

Effects on downstream water rights holders and the water levels downstream in Lake Sam Rayburn will be determined based on appropriate hydrologic modeling (e.g., RiverWare or SUPER) for the Neches Basin. Issues pertaining to hydropower generation at Lake Sam Rayburn will also be addressed.

The EIS will cover issues raised by the agencies on the previous DEIS with respect to downstream impacts on existing mitigation areas due to changes in flow. The Third Party EIS Contractor assumes information for this analysis and other water related issues in this section will come from existing studies and/or studies performed by ANRA, and then the Third Party EIS Contractor will critically review the studies and if appropriate, incorporate them into the EIS to address relevant issues.

The potential effects on water quality due to inter basin transfer will be addressed if it is determined to be a viable alternative or to be part of the proposed Project.

4.2.3 Wetlands

Affected Environment

The New DEIS will describe the wetlands (waters of the US) in the proposed Project area, their size, functions and services both upstream (to the geographical extent that the proposed Project may affect upstream resources) and downstream of the site. The functional assessment of wetland resource areas, as determined based on agency workgroup, including the Cooperating Agencies and Third Party EIS Contractor, will be described, as this is the basis for discussion of mitigation requirements. Based on comments on DEIS 2010, the section will likely require substantial revision, in terms of presenting the functional characteristics of existing wetland resources.

Environmental Consequences

Impacts on wetlands will be assessed as a result of dam construction and loss of wetlands associated with the establishment of the proposed conservation pool, as well as adverse effects to wetlands associated with alteration of downstream hydrology. The effects of the proposed Project-related disturbance and change in wetland size and function will be assessed. Based on comments on the DEIS 2010, the section will likely require substantial revision, in terms of presenting the assessment of mitigation credits, as well as incorporation of additional and more thorough presentation of information on necessary and proposed mitigation actions.

ANRA's proposed mitigation plan for adversely affected wetlands, and its proposed wildlife habitat mitigation based on the Habitat Evaluation Procedure (HEP), will be described. ANRA's proposed mitigation plans will be appended to the New DEIS, upon review by the USACE. Detailed discussion on the relevance of HEP to HGM, as well as any other methods deemed necessary, will be included as a preface to the analysis. The HGM Texas Riverine Guidebook will be included in the discussion and in terms of conducting the assessment. Both functional and conditional assessment approaches will be evaluated.

4.3 SOILS

Based on the lack of comments on this resource as presented in DEIS 2010, this section will likely require only review as to the relevance and timeliness of the data and information presented in the DEIS 2010 and if determined to be acceptable, this section would only require reformatting for incorporation into the New DEIS. If past information presented by ANRA or found within DEIS 2010 is outdated or is deemed to require revision or supplementation, data request(s) to ANRA would be issued. Any new information would be reviewed and incorporated as appropriate into the New DEIS.

Affected Environment

Soils of the proposed Project area will be described on a site-specific basis, and the areal extent of each mapped soil series will be quantified based on Natural Resources Conservation Service (NRCS) web-based soil survey information. Soils classified as prime farmland soils and hydric soils by the NRCS and the areal extent of these soils within the proposed Project area will be quantified. The NRCS map of the soils series will be included as a figure in the EIS. Information concerning soil properties will be presented.

Environmental Consequences

The extent of effects to soils in the proposed Project area will be discussed, particularly potential adverse effects upon prime farmland soils. The effects of proposed Project and alternatives construction and operation procedures upon the proposed Project area will be discussed in terms of erosion potential and control of surface water flows from disturbed areas and reclamation potential. ANRA's adopted Water Quality Regulations will also provide a basis for this discussion. Soils along the proposed shoreline will be evaluated in terms of stability as water levels within the proposed reservoir fluctuate.

4.4 VEGETATION

Affected Environment

The description of existing vegetation will be both qualitative and quantitative and will address the vegetation region within which the proposed Project area lies. On a site-specific level, the vegetation community types (e.g., upland forest, bottomland forest, grasslands, etc.) that occur within the proposed Project area will be characterized, with emphasis placed on dominant species and existing disturbance factors. The areal extent of each vegetation community type will be quantified in terms of acres and percentage of the total proposed Project area. A map delineating the vegetation types that occur within the proposed Project area will be included. Ecologically sensitive habitats (e.g., wetlands) identified within the proposed Project area will be described in terms of their function, specific ecological features, and relative abundance in the region. Based on the minimal issues raised by comments on DEIS 2010, this section will likely require review by the Third Party EIS Contractor as to the relevance and timeliness of the information presented in DEIS 2010 and if found to be acceptable, this section would possibly require only minimal revision of the existing vegetation characterization prepared previously.

Environmental Consequences

The impacts to vegetation resulting from the construction and operation of the proposed Project and alternatives will be addressed within the proposed Project area. Particular emphasis will be placed on high quality existing vegetation communities (i.e., wildlife habitat) affected along with potential effects on unique areas and/or T&E candidate and state-listed plant species and a functional assessment of wetlands. The direct effects of construction and operation activities of the proposed Project and alternatives will be addressed by overlaying proposed Project disturbance areas onto the vegetation map of the proposed Project area and determining the acreage of vegetation community types affected, including wetland areas and other sensitive plant communities. The historical effects of local forestry activities, as apparent from existing aerial mapping, on vegetation resources within the proposed Project area will be considered in addressing the direct effects of the proposed Project and alternatives. The potential indirect effects of construction-related fugitive air emissions on local vegetation within and in proximity to the proposed Project area will also be addressed.

The effects of proposed Project construction and operation procedures upon the proposed Project area will also be discussed in terms of erosion potential and control of surface-water flows from disturbed areas. ANRA's adopted Water Quality Regulations will also provide a basis for this discussion.

4.5 WILDLIFE

Based on the lack of comments on this resource as presented in DEIS 2010, this section will likely require only review as to the relevance and timeliness of the data and information presented in the DEIS 2010 and if determined to be acceptable, this section would only require reformatting for incorporation into the New DEIS. If past information presented by ANRA or found within DEIS 2010 is outdated or is deemed to require revision or supplementation, data request(s) to ANRA would be issued. Any new information would be reviewed and incorporated as appropriate into the EIS.

Affected Environment

A description of existing terrestrial wildlife species in the proposed Project area based on available existing literature and recent site-specific investigations will be provided. The existing conditions description will identify wildlife habitats and associated species that occur in the proposed Project area. The location of the proposed Project area with respect to Texas biotic provinces will also be described.

The areal extent of wildlife habitats and their characteristic species will be described. Habitat descriptions will provide information on the relative quality of various habitats in the proposed Project area.

Commercially and recreationally valuable species that occur in the proposed Project area will be individually discussed. Local benefits derived from non-consumptive (e.g., photographing wildlife, birding, etc.) and consumptive uses (e.g., hunting, trapping, etc.) will also be discussed. Discussions of individual species will include uses by locals and relative abundance in the proposed Project area and in the proposed Project region, and be based on available area-specific investigations and surveys, including those performed by the Texas Parks and Wildlife Department (TPWD) and requests to ANRA for additional surveys or information as needed.

Ecologically sensitive habitats (e.g., bottomland forests, hydric communities) that occur in the proposed Project area will also be individually discussed. The use of these habitats by wildlife species and the current quality of these habitats will be discussed.

Environmental Consequences

The effects to wildlife species and habitats resulting from the proposed Project and alternatives construction and operation activities will be assessed based upon existing studies including the interagency HEP study sponsored by ANRA, and then critically evaluated and incorporated, as appropriate, into the EIS by the Third Party EIS Contractor. Particular emphasis will be placed on high quality existing wildlife habitats affected and recreationally or commercially important species of wildlife. The effects of construction and operation activities associated with the proposed Project and alternatives on wildlife habitats within the proposed Project area will be quantified. Discussions of wildlife habitat modification and/or preemption will include direct effects related to modification of wildlife activity patterns as well as indirect effects related to the modification of wildlife activity patterns. The additional types of habitat created by the proposed Project, deep and shallow water habitat will also be included in the discussions.

The effects of proposed Project and alternatives construction and operation activities upon the proposed Project area will be discussed in terms of erosion potential and control of surface water flows from disturbed areas. ANRA's adopted Water Quality Regulations will also provide a basis for this discussion.

4.6 FISH AND AQUATIC SPECIES

Affected Environment

Characteristic species assemblages and their aquatic habitats potentially affected within the proposed Project area will be described based on downstream field information (as well as any information from within the proposed Project area) collected previously by TRC, existing reports, the scientific literature, and information requests to ANRA, as needed. Emphasis will be placed on the occurrence of aquatic species in various habitats, their relative abundance between habitat types, their sensitivity to variations in water quality and stream flow, and their uniqueness to the proposed Project area and/or region. Descriptions of various aquatic habitats within the proposed Project area will include general morphometry, habitat diversity, aquatic vegetation, *in situ* physicochemical parameters, and existing stream gage data, as available. Additional data may be required to characterize baseline habitats relative to mussel species. Other water quality data reported in the surface-water hydrology existing conditions section of the EIS will be integrated into the discussion of aquatic habitats.

Threatened and endangered species of aquatic biota, with emphasis on any federally or state listed species (five state-listed mussel species have historic ranges that encompass the Mud creek watershed) that have the potential of occurring in the proposed Project area, will be identified. It is not intended to conduct field surveys for these mussels unless they have federal status. The potential of these species occurring in the proposed location of the reservoir pool area or in aquatic habitats receiving downstream flows from the proposed Project will be addressed.

Commercially or recreationally valuable species of aquatic biota (e.g., game fish) and their occurrence in the proposed Project area as a function of habitat availability within the proposed Project area will be described. Emphasis will be placed on the potential effects of the proposed Project and alternatives on use of streams by such species (e.g., spawning, nursery areas) and commercial/recreational opportunities that these species afford the general public.

Comments on DEIS 2010 suggest that inadequate information was presented on downstream aquatic resources, and the extent of effects downstream needs to be considered relative to assessing the extent of the proposed Project area. The Third Party EIS Contractor assumes information for this analysis will come from existing studies/information and or studies to be performed by Third Party EIS Contractor or

ANRA and the Third Party EIS Contractor will then critically review the information and incorporate it into the EIS to address this issue.

A description of the occurrence of potentially invasive species within specific basins in the proposed Project area, specifically as there might be some potential for species from an affected basin to be transferred to another basin as part of the proposed Project or as part of a viable alternative, will be provided.

Environmental Consequences

The effects on aquatic biota within downstream of the proposed Project area resulting from the proposed Project and alternatives construction and operation activities will be discussed. The downstream extent, frequency and duration of potential effects will be collectively developed with the experience of the Third Party EIS contractor and the direct participation of the agency working group. Particular emphasis will be placed on the quality of existing aquatic habitats affected and effects on critical habitats, including mussel beds, and/or T&E species, and recreationally or commercially important species of aquatic biota. The potential for water quality impacts (e.g., increased sediment loading, leaching of toxic metals, algae proliferation, including potential establishment of golden algae or other invasive plant or animal species, etc.) presented in the surface water and groundwater impact sections of the EIS will also be considered. The findings of scientific investigations related to similar projects in the region by USFWS, TPWD, and academic institutions will also be used in this assessment.

The effects of the proposed Project and alternatives on existing reaches of Mud Creek and its tributaries will be assessed. This assessment will include the effects upon existing local aquatic assemblages brought about by changing from a riverine to reservoir environment with the proposed Project.

Based on comments on the previous DEIS, it is likely that additional field work by ANRA will be necessary to generate better information characterizing the aquatic resources downstream of the proposed Project. A working group consisting of state and federal agency personnel has been suggested to assist in defining the potential impacts of concern and whether or not existing data are sufficient to address concerns.

The proposed Project and alternative's effects on instream flow effects will be assessed with respect to potential effects to downstream aquatic habitats and species assemblages. The EIS will cover issues raised by the agencies on the DEIS 2010 with respect to downstream impacts on fish communities and ecosystem diversity due to changes in flow. The findings of existing reports and scientific investigations related to similar projects in the region by USFWS, TPWD, TCEQ, and other available sources will be used in this assessment.

4.7 THREATENED AND ENDANGERED SPECIES

Affected Environment

The Third Party EIS Contractor will review and incorporate into the New DEIS information on T&E species surveys provided by ANRA or other data sources. This information will include information on T&E species presence in the study area, species types, and estimated populations. Particular emphasis will be placed on federally listed threatened or endangered species (T&E species) and other important species (e.g., candidate and state-listed T&E species) that occur, or potentially occur, within the proposed Project area. Because of potential occurrences in the presence of listed species or changes in habitat over time, renewed consultation with the USFWS will be required.

Environmental Consequences

The Third Party EIS Contractor will assess the loss of T&E candidate and state-listed species habitat and impacts to such species both from impacts resulting from the footprint of the proposed Project work, and impacts from changes in hydrology and flow both upstream and downstream of the work.

A Biological Assessment (BA) will be required as part of the NEPA process if there are any T&E species affected by the proposed Project that cannot be dealt with through the informal consultation process. The preparation of a BA is not included as part of this Scope of Work and if required, can be addressed at a future time.

4.8 CULTURAL RESOURCES (PREHISTORIC AND HISTORIC)

Affected Environment

The Third Party EIS Contractor will review and update cultural resource work and reports previously completed to address any outstanding comments. This section will include a description of previously recorded cultural resources sites occurring in the proposed Project area and a listing and summary description of pre-historical and historical resources, including State Archeological Land Marks and/or sites included on the National Register of Historic Places (NRHP) that have been reported within the proposed Project area will be provided. Sources of information will include the Texas Archeological Research Laboratory, State Historic Preservation Office (SHPO), the NRHP, and any applicable Native American Tribes.

This summary will also include a description of the field survey work efforts conducted to date leading to a Memorandum of Agreement (MOA) for the proposed Project. A description of prehistorical and historical sites encountered during field survey within the proposed Project area will be provided. The field survey report will be produced under separate cover, and will be included in the EIS by reference.

Environmental Consequences

Impacts to cultural resources in the proposed Project area that have been revealed through the public record and/or the permit-specific area field survey and consultation under Section 106 of the National Historic Preservation Act (NHPA) will be described. Recommended mitigative measures will also be summarized, as applicable to known sites.

The MOA to be executed as part of the New DEIS work effort in compliance with the Section 106 Consultation process will also be summarized. This summary description includes a discussion of past and future coordination efforts with federal, state, and/or local interested parties in developing the MOA. The MOA will be appended to the FEIS. The Third Party EIS Contractor assumes any further field surveys and or analytical reports would be prepared by ANRA, and then reviewed critically and incorporated in to the new DEIS by the Third Party EIS Contractor.

4.9 CLIMATOLOGY/AIR QUALITY

Based on the lack of comments on this resource as presented in DEIS 2010, this section will likely require only review as to the relevance and timeliness of the data and information presented in the DEIS 2010 and if determined to be acceptable, this section would only require reformatting for incorporation into the New DEIS. If past information presented by ANRA or found within DEIS 2010 is outdated or is deemed to require revision or supplementation, data request(s) to ANRA would be issued. Any new information would be reviewed and incorporated as appropriate into the New DEIS.

Affected Environment

The climatological and air quality existing conditions will be addressed for the general characteristics of the proposed Project area and the major regional influences on the local weather. Information used in the climatological existing conditions will be drawn primarily from publications of the National Weather Service and the National Climatic Data Center (NCDC). Air quality information will be obtained primarily from TCEQ. Nearby sensitive receptors in the proposed Project area will be identified based upon available information.

Environmental Consequences

The effects of future construction and operation of the proposed Project and alternatives upon ambient air quality and local climate (for example, a large body of water oriented in the prevailing wind direction is liable to alter downwind temperatures and potentially precipitation patterns) will be evaluated. The potential for fugitive particulate emissions during construction activities will be addressed along with control technologies proposed to reduce their occurrence. Secondary impacts from additional development and additional power to be generated from other sources in the event of a major reduction of hydropower will be addressed.

4.10 LAND USE AND RECREATION

Based on the lack of comments on these resources as presented in DEIS 2010, this section will likely require only review as to the relevance and timeliness of the data and information presented in the DEIS 2010 and if determined to be acceptable, this section would only require reformatting for incorporation into the New DEIS. If past information presented by ANRA or found within DEIS 2010 is outdated or is deemed to require revision or supplementation, data request(s) to ANRA would be issued. New alternatives could require a re-examination of land use or recreational effects. Any new information would be reviewed and incorporated as appropriate into the EIS.

Affected Environment

Baseline land use is inherent in many of the demographic and economic statistics that will be reported in the existing conditions socioeconomic analysis. Businesses that are land intensive, such as forestry and agricultural production, will be analyzed in the existing conditions analysis. Some discussion of socioeconomic changes will be discussed in terms of land use.

Land ownership classifications will be identified and quantified as to private, federal, and state.

Land use categories for the region of the proposed Project area will be based upon those defined by the NRCS and will serve as the basis of delineation by percent of prevalent regional land uses. County data for the proposed Project location produced by reliable sources, such as the Texas Department of Agriculture (TDA), will provide information on major crop and farm marketing. The nature of the land directly affected by the proposed Project and alternatives, within and in immediate proximity to the proposed Project, will be documented. Anticipated future land use changes (or scenarios associated therewith) will be addressed, with the information used to support the cumulative impact analysis.

Existing recreational opportunities in the proposed Project area will be identified from available information publically available from internet sources as well as from consultation with agencies and organizations with a mandate or focus on land use or recreation.

Environmental Consequences

Unless there are downstream effects associated with impacted stream-flows, land use analysis will be confined to areas directly affected by the reservoir, including the conversion of land to the base of a reservoir. Inundated or take areas will be the focus. Other land use issues of interest, such as anticipated development patterns directly adjacent to the reservoir, if constructed, will also be evaluated. Recreational land uses or land development potential will be considered. The recreational opportunities afforded by the proposed Project will be factored into potential usage in the future and if possible the benefit to the area in revenue will be determined.

In a broader context, other potential land use and recreational opportunity changes over time in the five-county area attributable to other economic forces will be looked at to the extent that they could be made possible by the availability of water from the reservoir. Land use in the immediate area of the reservoir will be discussed in terms of the information in existing reports, ANRA's adopted Water Quality Regulations, interagency HEP team 100-year land use predictions, and other relevant publicly available sources.

4.11 SOCIOECONOMICS/DEMOGRAPHICS

Affected Environment

The definition of socioeconomic impact areas will be based upon the characteristics of the alternatives. Construction and operational data from ANRA consultants will be sought. For instance, the commuting location of construction workers, the jurisdictions that will incur fiscal impacts, and areas where recreational dollars will be spent will be included in the secondary impact area beyond the proposed Project area.

Baseline data development will include the compilation of county-specific information, including historical demographic data such as population growth, economic data such as income and employment, property values, taxes, business data, and fiscal data for affected jurisdictions, and water rates and fees from ANRA members. The information will be presented in tabular form for the secondary impact area which might be composed of the five counties and the Region C Water Supply Planning Region that constitutes ANRA's service area for the proposed Project. The most reliable data in existing sources will be used, including local, state and federal publications such as TWDB and US Census Bureau data. The existing conditions data provide a description of the area affected, as it is presented prior to implementation of the proposed Project.

Environmental Consequences

With respect to potential socioeconomic effects, the Socioeconomic/Demographic analyses will be conducted on a county level plus any municipalities that might be significantly affected by one or more of the alternatives. Potential substantive changes in economic and demographic conditions, such as local populations, property taxes, loss of private residences, effects to school districts, and loss of private property as a result of the proposed Project's construction or operation work force will be identified. The significance of the construction phase is to convert land usage and to increase area expenditures, generating regional direct and indirect multiplier effects on businesses and incomes in the proposed Project area. The analysis will focus upon those effects related to expenditures during construction and operation activities. Any potential adverse effects brought about by increased demands upon existing community infrastructure from any increase in the work will be identified. Impacts on property values, tax revenues or public sector costs will be identified. Impacts on new customer fees or rates for ANRA members will be addressed as a group but not individually.

The analysis of effects will have a few principal parts. One consists of documenting some of the key expenditure effects, such as impacts on production and employment, as a result of the building phase of the proposed Project. These effects will be analyzed for the five-county service area and Region C service area. The other focus might be the potential longer run effects, such as those resulting from area population growth made possible by the increased water availability, as applicable. The extent of assessment of longer run impacts will depend upon information available in existing publicly available documents. As relevant, some information will be obtained from other reservoirs that can be considered similar to the proposed Project.

If deemed to be the most appropriate forecasting tool for this impact area, the IMPLAN input-output model will be used to assess economic impacts of spending changes related to the proposed Project. The IMPLAN model is one model for assessing the array of effects arising from regional change. Should the review of the Third Party EIS Contractor determine that the information used in the DEIS 2010 is still appropriate and timely, this section will likely require only administrative review and reformatting for incorporation into the New DEIS.

The short run effects will be assessed using the proposed expenditure information for the proposed Project. The analysis of future conditions will rely heavily upon the existing conditions data development findings about what has actually occurred in the region, in conjunction with reference data associated with other non-USACE-owned/operated lakes, coupled with the economic analysis of the proposed changes in expenditures. Longer run impacts near the reservoir will depend upon recreation that occurs as a result of the reservoir, as well as potential housing developments along the reservoir site. Some qualitative assessments will be made using information generated by others related to the proposed Project.

4.12 TRANSPORTATION

Affected Environment

The Third Party EIS Contractor will require information on traffic patterns and volumes from existing available sources for the road or roads that are potentially affected by the proposed Project, such as roads that are inundated or have to be rerouted. Unless provided by ANRA or their contractor, there is no intention of the Third Party EIS Contractor to collect actual traffic count data for each of the roads potentially affected.

Information on the location of rail lines that potentially would be inundated or would require rerouting by the proposed Project or by one of the viable alternatives will be included.

Environmental Consequences

The Third Party EIS Contractor will discuss transportation impacts associated with the proposed Project and its alternatives. This will include traffic impacts during construction and operation, and measures proposed to minimize traffic impacts. In addition, the proposed action requires the relocation of some transportation facilities which will need to be addressed. As a related activity, this work needs to be included in the assessment of proposed Project impacts along with the economics of the proposed Project. Potential impacts on rail line traffic will be discussed for those rail road lines that would be required to be relocated as a result of development of the proposed Project or the viable alternatives.

4.13 NOISE AND VISUAL RESOURCES

Based on the lack of comments on these resources as presented in DEIS 2010, this section will likely require only review as to the relevance and timeliness of the data and information presented in the DEIS 2010 and if determined to be acceptable, this section would only require reformatting for incorporation into the New DEIS. If past information presented by ANRA or found within DEIS 2010 is outdated or is deemed to require revision or supplementation, data request(s) to ANRA would be issued. Any new information would be reviewed and incorporated as appropriate into the EIS.

4.13.1 Noise

Affected Environment

Ambient sound levels representing rural locations comprising various land uses within and surrounding the proposed Project area will be identified via sources of existing information. Nearby sensitive receptors in the proposed Project area will also be identified based upon available information.

Environmental Consequences

Potential effects on noise levels due to increased activities in or near the proposed Project area during construction of the proposed Project and alternatives will be assessed. Sound-producing site preparation, construction, and operational activities will be estimated by calculating the sound levels emitted by major equipment that will be used during construction and operation of the proposed Project and alternatives.

4.13.2 Visual

Affected Environment

The aesthetics of existing conditions will include the identification/mapping of existing viewsheds or scenic vistas of the proposed Project area. Sources of information include the results of the socioeconomic, land use, and cultural resources data development. A viewshed analysis can be performed to determine the extent of area that could be affected by development of the proposed Project or an alternative.

Environmental Consequences

Impacts on existing viewsheds and scenic areas and for the general public affected by the proposed Project and alternatives will be described. The viewshed analysis will include typical views at existing high impact view points around the proposed Project.

4.14 HAZARDOUS MATERIALS

The Third Party EIS Contractor will work with information provided by ANRA to characterize and discuss hazardous materials and/or wastes potentially present within the proposed Project area. At a minimum we anticipate receiving from ANRA an environmental records review per ASTM E 1527-05 and map locations with identified concerns, and discussion of any applicable work procedures to minimize spread of contamination.

4.15 PUBLIC HEALTH

The Third Party EIS Contractor will work with information provided by ANRA to evaluate any potential public health concerns as a result of the proposed Project and alternatives including any potential issues with drinking water quality from the proposed water supply.

4.16 ENVIRONMENTAL JUSTICE AND OTHER EXECUTIVE ORDERS

Based on the lack of comments on DEIS 2010, this section will likely require only review as to the relevance and timeliness of the data and information presented in the DEIS 2010 and if determined to be acceptable, this section would only require reformatting for incorporation into the New DEIS. If past information presented by ANRA or found within DEIS 2010 is outdated or is deemed to require revision or supplementation, data request(s) to ANRA would be issued. Any new information would be reviewed and incorporated as appropriate into the New DEIS.

Environmental Justice (EJ) is defined by the US Environmental Protection Agency (USEPA) as the fair 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, regulation, and policies. This goal of "fair treatment" is not to shift risks among populations, but to identify potential disproportionably high adverse impacts on minority and low-income communities and identify alternatives to mitigate to any adverse impacts.

The EJ Index Methodology defines demographic criteria, applies basic principles of science, and requires environmental managers to use area-specific data to identify communities of most concern in the area of the proposed Project. While this methodology is useful in many contexts, its main applicability is in situations of hazard. For instance, if one is going to put a potentially hazardous chemical disposal site in some location, the Index can be used to assess the risks of this hazard to various racial or income level groups.

In addition to Environmental Justice, there have been other Executive Orders that have been issued that have relevance to the NEPA EIS preparation process. The Third Party EIS Contractor will evaluate them and determine which ones are relevant, and then undertake the necessary assessments in order to appropriately and adequately address them within the EIS. For example, EO 11988-Floodplain Management, EO 11990-Protection of Wetlands, EO12962-Recreational Fisheries, and EO 13186-Responsibilities of Federal Agencies to Protect Migratory Birds (and the much earlier promulgated MBTA, and its amendments) are Executive Orders that have relevance to the NEPA review of the proposed action given the nature of the facilities to be constructed and operated.

4.17 ENERGY REQUIREMENTS AND CONSERVATION POTENTIAL

The Third Party EIS Contractor will work with information provided by ANRA to characterize the energy requirements required to operate the facilities and discuss any methods for energy conservation that may be considered to reduce electricity use.

4.18 RELATIONSHIP BETWEEN SHORT-TERM USES OF THE HUMAN ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG TERM PRODUCTIVITY

The Third Party EIS Contractor will provide a discussion of short term use of the environment and measures that can be taken to enhance long term productivity of the area. The Third Party EIS Contractor will work with the USACE to further scope out and provide a discussion on this issue as required.

5.0 TASK 5 - IMPACT MINIMIZATION AND MITIGATION MEASURES

While Section 4 will involve the presentation and discussion of impact minimization and mitigation measures under each of the resource categories, those items will be spread through many pages of text and will not be easily understood within the full context of what ANRA's obligations might be. Therefore, this section of the EIS will pull together for itemization and summarization the proposed Project impact minimization and mitigation measures that would be associated with the proposed Project.

6.0 TASK 6 - REMAINING EIS SECTIONS

The level of effort necessary to prepare the remaining EIS sections does not warrant specifying them all as individual tasks, and so they have been lumped together under Task 6. There will be 6 components to this task, as outlined in the following subsections.

6.1 CONSULTATION AND COORDINATION

The Third Party EIS Contractor will summarize public participation and scoping efforts and will also include a list of Federal, State and local agencies contacted regarding the New DEIS and the proposed Project. The New DEIS will also include a list of agencies, organizations and companies that will receive the New DEIS. That list includes:

- Tribes
- Federal Agencies
- State Agencies
- County and Local Agencies
- Newspaper, Libraries and local Repositories
- Other Organizations
- Industry/Businesses and
- Elected officials

Section 106 Consultation of the National Historic Preservation Act

Section 106 Consultation for the proposed Project will be the consummation of an MOA among all parties. The MOA will be appended to the New DEIS.

Lead Federal Agency Coordination

The USACE is the lead federal agency. Close coordination with the USACE and ANRA will be maintained throughout the NEPA process. Other federal agencies may be designated as Cooperating Agencies. The following information will be reviewed regularly with the USACE:

1. Task work progress, including activities started, ongoing activities, and activities completed;
2. Identification of problem areas that could adversely affect the work schedule;
3. New scope of work items that may arise during the course of EIS preparation;
4. Contractual issues or concerns with ANRA, to the extent they could affect EIS quality or schedule; and
5. Identification and discussion of issues that remain unresolved.

Other Consultations

As necessary, the Third Party EIS Contractor will work with the USACE to make sure that other required consultations occur. For instance, the proposed Project is subject to the Fish and Wildlife Coordination Act (16 U.S.C. 661-667e and amendments) and the Migratory Bird Treaty Act (16 U.S.C. 703-712; Ch. 128 and amendments). On the basis of information collected in support of the 2010 DEIS, no threatened or endangered species would be affected by the Project. Accordingly, a Biological Assessment (BA) would not be required. Consultation between the USACE and USFWS will still occur. As part of the New DEIS, the current status of threatened and endangered species relative to the Project area will be determined and if any threatened or endangered species are affected, a BA will be prepared.

6.2 EIS PREPARERS AND REVIEWERS

The Third Party EIS Contractor will make a list for publication in the New DEIS of those who prepared the New DEIS and associated reviewers including members of the Third Party EIS Contractor and the USACE.

6.3 REFERENCES

The Third Party EIS Contractor will prepare a complete list of the references for technical reports, papers, etcetera, cited in the New DEIS. References will be cited and formatted according to American Psychological Association (APA) reference standards.

6.4 GLOSSARY

The New DEIS will include a glossary of technical terms used in the document. Terms included in the glossary will be those of a technical nature that a layman may not be familiar with or understand**.**

6.5 APPENDICES

The Third Party EIS Contractor will work with the USACE to develop an appropriate set of appendices. Some of these could include:

- Figures, Tables, Maps;
- ANRA Water Right Permit;
- Mitigation Plans;
- Memorandum of Agreement (Section 106);

- Copies of Consultation Letters; and
- For the FEIS, Copies of the New DEIS Comment Letters and Comment Responses.

Other Tasks after Publication of the DEIS

7.0 TASK 7 - DEIS COMMENT HEARINGS

Members of the Third Party EIS Contractor will attend agency meetings, a public information meeting and the public hearing on the New DEIS. The Third Party EIS Contractor will assist the USACE with the preparation of handout materials, illustrations, maps and or boards for use at the public information meeting and the agency and public hearing. Further, the Third Party EIS Contractor will assist the USACE with meeting hearing logistics and planning, publishing notices in newspapers, etc, but at this time these items of support are not included in the budget nor does the Third Party EIS Contractor consider it included in this scope of work. The Third Party EIS Contractor will prepare a summary of the meeting and hearing that includes the public notices, agendas, list of attendees and comments received. A comments database will be prepared to catalog each of the comments received. It should be noted that a scope of work and cost can not be developed for the comment data base and response to comments as it is not possible to determine the number of comments that will be received.

8.0 TASK 8 - COMMENT RESPONSES

At the direction of the USACE, the Third Party EIS Contractor will prepare responses to the comments made by various agencies and interested parties during the New DEIS public hearing and New DEIS comment period. All response preparation will be closely coordinated with the USACE, and as appropriate, ANRA, and submitted to the USACE for review prior to finalization. A comments database will be prepared to catalog each of the comments received. It should be noted that a scope of work and cost can not be developed for the comment data base and response to comments as it is not possible to determine the number of comments that will be received.

9.0 TASK 9 - FEIS PREPARATION

The Third Party EIS Contractor will prepare a FEIS. This includes development of a new scope/TOC to address comments received on the New DEIS, as well as a separate comment and response section described above in Task 12. As part of the FEIS processes, the Third Party EIS Contractor may make further data requests to ANRA to obtain data and analysis to address outstanding issues, and then prepare a USACE and ANRA review draft, a cooperating agency review draft, and a final version of the EIS. A comments database will be prepared to catalog each of the comments received. It should be noted that a scope of work and cost can not be developed for the comment data base and response to comments as it is not possible to determine the number of comments that will be received.

10.0 TASK 10 - DEVELOPMENT OF THE ADMINISTRATIVE RECORD

The Third Party EIS Contractor will work to develop the Administrative Record as needed during the EIS process and can assist in completion of this work to coincide with completion of the FEIS. The Third Party EIS Contractor will archive copies of studies, consultations, and correspondence to support the Administrative Record, in the media format in which they are received.

11.0 TASK 11 - 404(b)(1) ANALYSIS

The Third Party EIS Contractor will assist the USACE in the preparation of the 404(b)(1) analysis, as required for the USACE to make a Least Environmental Damaging Practicable Alternative (LEDPA) determination. The analysis will draw heavily on the analysis of alternatives under preparation for the EIS, and will include the understanding of the proposed Project effects on waters of the U.S., including wetlands, that would be impacted as a result of the discharge of dredged or fill material. An important consideration in the analysis is the determination of practicability, which consists of cost, technical, and logistical factors. Another important component of this analysis of alternatives is the consideration of impact minimization and mitigation measures that are available for consideration. The analysis will include the quantification of the extent and nature of impacts to wetlands and waters of the U.S. for the various alternatives under consideration.

12.0 TASK 12 - PROJECT MANAGEMENT

The Third Party EIS Contractor will be responsible for managing the work efforts necessary to complete this scope of work. This management effort includes appropriate monitoring and reporting of monthly labor and other costs, management of the work and budgets of subcontractors, and undertaking the necessary efforts to ensure that work is undertaken in a timely and accurate manner, with a high level of quality.

13.0 DELIVERABLES

The type and number of deliverables is identified below and will be prepared and submitted to USACE – Fort Worth and ANRA by the Third Party EIS Contractor.

Deliverable 1 – Purpose and Need Section

- Draft - 10 paper copies and 3 electronic copies on CD in .pdf format
- Final - 10 paper copies and 3 electronic copies on CD in .pdf format

Deliverable 2 – Alternatives Analysis Outline and Alternatives Screening Report

- Draft - 10 paper copies and 3 electronic copies on CD in .pdf format
- Final - 10 paper copies and 3 electronic copies on CD in .pdf format

Deliverable 3 – Downstream Users Working Group Report

- Draft - 10 paper copies and 3 electronic copies on CD in .pdf format
- Final - 10 paper copies and 3 electronic copies on CD in .pdf format

Deliverable 4 – Downstream Habitat Working Group Report

- Draft - 10 paper copies and 3 electronic copies on CD in .pdf format
- Final - 10 paper copies and 3 electronic copies on CD in .pdf format

Deliverable 5 – Mitigation Measures Working Group Report

- Draft - 10 paper copies and 3 electronic copies on CD in .pdf format
- Final - 10 paper copies and 3 electronic copies on CD in .pdf format

Deliverable 6 – New DEIS

- Advanced Preliminary Draft EIS – 15 paper copies and 10 electronic copies on CD in .pdf format
- Preliminary Draft EIS – 15 paper copies and 10 electronic copies on CD in .pdf format
- Final Draft EIS – Third Party EIS Contractor to produce

Deliverable 7 – DEIS Comment Public Meeting and Hearing Summary Report

- Draft - 10 paper copies and 3 electronic copies on CD in .pdf format
- Final - 10 paper copies and 3 electronic copies on CD in .pdf format

Deliverable 8 – FEIS

- Advanced Preliminary Final EIS – 15 paper copies and 10 electronic copies on CD in .pdf format
- Preliminary Final EIS – 15 paper copies and 10 electronic copies on CD in .pdf format
- Final Final EIS – Third Party EIS Contractor to produce

14.0 GOVERNMENT FURNISHED MATERIALS

The Third Party EIS Contractor assumes that ANRA and/or USACE – Fort Worth will provide all documents and data necessary to prepare the New DEIS, unless otherwise noted in specific tasks. All documents, data, and other material furnished by USACE – Fort Worth and/or ANRA under this contract will remain the property of USACE – Fort Worth and/or ANRA and will be returned upon request.

15.0 SPECIAL CONSIDERATIONS

No one on the Third Party EIS Contractor, nor their representatives will release or publish any sketch, photograph, report or other material of any nature derived or prepared under this delivery order without specific written permission of the USACE – Fort Worth and ANRA, except as provided in the scope of work**,** unless it pre-existed this contract within the public domain or in their personal possession. This consideration is in effect during the period of performance of work under this contract.

Copyright will not be claimed by the Third Party EIS Contractor for any materials produced under this contract. All such materials are to remain within the public domain.

The Third Party EIS Contractor and those under their employ may, during the term of this contract, present reports of research from this project to various professional societies and publications. Abstracts and copies of these reports, presentations or articles utilizing work sponsored under this contract will be provided to the Point of Contact (POC) for approval prior to publication or presentation.

One copy of every document will be provided to the USACE.

16.0 PERFORMANCE PERIOD

This task order has a period of performance beginning from the delivery date of the signed Task Order authorization and ending with the preparation of the Final ROD by the USACE.

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5.12.5 No Action Alternative

5.12.6 Mitigation and Monitoring

5.12.6.1Land Use
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5.14.5 No Action Alternative

5.14.6 Mitigation and Monitoring

5.14.6.1 Regional Transportation

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5.15.6 Mitigation and Monitoring

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