

**ENGINEERING AND RELATED SERVICES
APRIL 4, 2008**

**STATE PROJECT NO. 502-99-0001
RETAINER CONTRACT FOR DEVELOPMENT OF STATE RESERVOIR
PRIORITY AND DEVELOPMENT PROGRAM
STATEWIDE**

Under Authority granted by Title 48 of Louisiana Revised Statutes, the Louisiana Department of Transportation and Development (DOTD) hereby issues a Request for Qualification Statements (RFQ) on Standard Form 24-102 (SF 24-102), "Professional Engineering and Related Services", revised January 2003, from Consulting Firms (Consultant) to provide engineering and related services. **All requirements of Louisiana Professional Engineering and Land Surveying (LAPELS) Board must be met at the time of submittal.** One Prime-Consultant/Sub-Consultant(s) (Consultant/Team) will be selected for this Contract.

Project Manager – Mr. Zahir "Bo" Bolourchi may be reached at (225) 274-4172.

PROJECT DESCRIPTION

The selected Consultant will perform engineering and related services for statewide projects covered by a Retainer Contract under separate Task Orders. The Consultant will be required to execute a Task Order which will specify the scope of services, contract time, and compensation. Each Task Order will become a part of the Retainer Contract.

DOTD Public Works and Water Resources Section is responsible for regulating and permitting dams throughout the state to preserve and protect our most important natural resource, water. The DOTD has been tasked with producing a Reservoir Priority and Development Plan (RPDP) for all proposed state-owned dams. The RPDP will differ greatly from the Louisiana Water Resources Study Commission's Report to the 1984 Legislature and the Statewide Water Management Plan completed for the Office of Conservation of the Department of Natural Resources (DNR) in 2002. Previous water planning reports emphasized water policy and water rights issues in Louisiana. The RPDP will provide surface water management criteria to prioritize all proposed state-owned reservoirs using a combination of in-house expertise and outside specialty services. The RPDP will be the master plan for the development of all proposed state-owned reservoirs. A focused, thoroughly organized comprehensive RPDP will enable Louisiana to attract new industry and commerce that will benefit our citizens for years to come.

SCOPE OF SERVICES

The services to be rendered for this Project shall consist of the following Tasks anticipated as being needed to develop the overall RPDP:

- Task 1-Identification of RPDP Elements and Work Plan Development
- Task 2-Basin Conditions and Water Resource Demands Element
- Task 3-Statewide Perspectives on Water Resource Supply and Demand Element
- Task 4-Sustainable Yield of Streams, Reservoirs, and Lakes Element
- Task 5-Quantification of Stream Flood Characteristics Element
- Task 6-Development of High Resolution Ground and Surface Water Models Element
- Task 7-Development of Reservoir Prioritization Model and Plan

The following outlines each task in detail.

Task 1: Identification of RPDP Elements and Work Plan Development

The purpose of this task is to identify the key elements of a RPDP which can be used to effectively plan and implement management procedures for overseeing and regulating new reservoir and dam structures throughout the state. The planning process should include the development of a work plan which specifies the actual procedures required to identify reservoir need, selection criteria utilized, priority system used and any other relevant information of important to the request. As a minimum, the work plan should address the following evaluation and implementation criteria.

A) Evaluation Process

- 1. Goals and Objectives.** The evaluation process is critical in determining whether constructing a new reservoir is needed and warranted. A supply and demand analysis should be performed for every proposed reservoir project. If a certain population or activity requires increased water supply and the need cannot be met by existing sources, a demand occurs. The supply and demand analysis can also be viewed as a “needs assessment” or as establishing the primary purpose and function of the proposed reservoir. The water demand need must be clearly identified i.e. for potable water, recreation, agriculture, industrial, power generation use and/or other purposes including auxiliary benefits anticipated. Water supply should consider all existing sources in the project area vicinity and should also consider the feasibility of other potential sources, such as groundwater and the feasibility of using other water resources from adjacent drainage basins.
- 2. Location.** The location of new reservoirs is critical. A site selection evaluation should be performed in order to identify the most advantageous location for meeting the demand of the project. The site selection evaluation should consider the impacts to the area of reservoir inundation based on the proposed surface water footprint during normal and maximum pool levels. Investigation and evaluation of property affected by the final storage area-feet, their property values, soil conditions, recharge zone and aquifer characteristics, hydrogeological conditions and settling characteristics, rainfall data, roads and infrastructure that would be lost and or need to be relocated, and water conservation issues must be addressed. In addition, the site selection evaluation should consider conflicts such as environmental impacts, community impacts. Cost of construction at a specific site and the related impact costs of its construction on the existing environment

- must also be compiled. Environmental considerations include environmental regulations, existing conditions, priority, threatened and endangered species, cultural resources including archaeological sites, and protected state and federal wildlife management areas. An Environmental Impact Study may be required.
3. **Site Improvements and Amenities.** This includes the specific site improvements needed to successfully complete the proposed project's intended function. This could include land development, roads and pipelines, and other infrastructure features that are required to meet the goals and objectives of the project.
 4. **Technical Feasibility.** The technical feasibility will be evaluated to determine the technical appropriateness of the project, completeness of the preliminary project design, and compatibility with the RPDP and local plans. Technical feasibility will address constructability and review the hydraulics and hydrology of the reservoirs projected acre-feet of storage, and examine subsurface materials into which the dam structure will be anchored.
 5. **Economic Feasibility.** The economic feasibility will be evaluated by conducting a cost-benefit analysis. The cost evaluation would include the proposed project costs including land, ROW, engineering, legal and administration and the related construction costs of the reservoir. Also included in costs would be the costs of impacts of the project, such as the value of the infrastructure lost, farmland, forestry and ecological features lost. Benefits would include the number of temporary and permanent jobs created, amount of revenue generated, amount of sales tax generated, projected increase in property values, quality of life assessment and in-place equity of the constructed reservoir. Benefits of the project can include meeting the need for additional water supply to sustain the area's existing and future population and the projected water revenues over the life of reservoir.
 6. **Construction Specification/guidelines.** The construction specifications are an important element of the proposed project, in order to fully understand the detail of a project. This includes the design criteria, design calculations, preliminary construction plans, cost estimate, and schedule. The RPDP should list any specific construction guidelines, in an effort to standardize and ensure success of a new reservoir and dam.
 7. **Community Benefit Assessment.** An evaluation of benefits to the community is an important element of the proposed project in order to confirm that the benefits of the purpose and need section are greater than the impacts of the proposed project. Existing environmental and socioeconomic conditions need to be assessed, as well as the impacts from the proposed project on the existing setting.
 8. **Recreational Uses.** Recreational activities and facilities maybe one of the primary intents of the proposed project and need to be evaluated closely for their benefits due to their costs. Public and private recreational facilities can be developed on, or adjacent to, reservoirs such as boat ramps and docks, camping and picnic sites, and commercial support services, all of which can provide for economic growth in the proposed area.

B) Implementation Process

- 1. Project Evaluation Methodology.** Procedures for reviewing and evaluating proposed projects will be developed. An application should consist of a description of the project, location, nature and goals of the project, cost, alternatives, adequacy of technical components and project feasibility. A complete demonstration of immediate purpose and need of a project, including a market analysis and a cost-benefit analysis, should be completed. In addition, the preliminary design, plans, cost estimate, and schedule should be submitted.
- 2. Budget.** Determination of the cost of a project is necessary to assess its feasibility. This includes the cost to conduct studies, prepare the preliminary design, obtaining the land, required ROW, infrastructure relocation costs, reservoir construction costs, and cost of maintenance and operation of the facility.
- 3. Schedule.** The development of a project schedule is necessary to adequately plan and secure funds for a project.
- 4. Funding Sources.** Identification of the appropriate public or private funding sources for a project is necessary.
- 5. Permits and Mitigation.** Identification of construction and environmental permits is necessary to ensure that a proposed project is viable. Permitting can sometimes delay projects, whereby essential components such as cost and schedule can be impacted. Mitigation may be required for impacts to wetlands.
- 6. Maintenance and Management.** A proposed project must have specific responsibility and funding after completion to ensure that its long-term success is achieved. Maintenance and proper management of reservoirs and facilities are important components of a master plan. Procedures should be developed to ensure that maintenance is conducted, so that the original purpose of the project is met.
- 7. Community Involvement and Stewardship.** It is important to identify and engage stakeholders early in a project because the purpose of a proposed project is ultimately to enhance the quality of life for the community in which the project is located. Stewardship is important to ensure long-term success of a project. A public participation plan must be created as part of the RPDP.

Task 2: Basin Conditions and Water Resource Demands Element

There are nine basins located in the state of Louisiana: Atchafalaya–Teche–Vermillion River Basin, Calcasieu–Mermentau River Basin, Mississippi/Lake Maurepas Basin, Mississippi River Delta, Ouachita Basin, Pearl River Basin, Red River Basin, Sabine River Basin, and the Tensas/Mississippi River Basin. This task will identify the conditions and water resource demands for each basin including, but not limited to, the following:

- A) Water Resource Availability**
 - 1) Surface Water including, but not limited to:
 - Safe Yields
 - Critical Water Areas
 - Large Withdrawals

- Large Diversions
 - Consumption Use
 - Saltwater Intrusion
- 2) Ground Water including, but not limited to:
- Safe Yields
 - Critical Water Areas
 - Large Withdrawals
 - Consumption Use
 - Ground Water Depletion
 - Saltwater Intrusion
- B) Current and Projected Water Demands**
- 1) Municipal and Industrial Water Use including, but not limited to:
- Trends in Municipal Water Use
 - Water Use, by Major Industry
 - Economic Importance, by Major Industry
 - Trends in Industrial Water Use
- 2) Agriculture and Aquaculture Water Use including, but not limited to:
- Water Use by Major Crop Category
 - Economic Importance, by Major Crop Category
 - Trends in Agricultural Water Use
 - Aquaculture Water Use
 - Economic Importance of Aquaculture
 - Trends in Aquaculture Water Use
- 3) Environmental Water Needs including, but not limited to:
- Minimum In-stream Flow Requirements for Scenic Rivers and Streams Program, Wildlife and Waterfowl, and Threatened and Endangered Species
 - Freshwater Requirements for Wetlands, Estuaries, Fisheries and Coastal Restoration/Land Loss
- 4) Commercial Navigation Water Needs including, but not limited to:
- Deep and Shallow Draft Ports
 - Mississippi River
 - Red River
 - Ouachita River
 - Atchafalaya River
 - Gulf Intracoastal Waterway
 - Other Waterways
- 5) Minimum Flows to Maintain Inland Navigation
- 6) Recreation Water Needs including, but not limited to:
- Recreational Water Use
 - Economic Importance of Recreational Water Use
 - Impact of Water Shortages on Recreational Use

C) Water Balance/Comparison of Water Availability and Demands

Task 3: Statewide Perspective on Water Resource Supply and Demands Element

A) Adequacy of Existing Programs to Solve Water Resource Problems

- 1) Federal Programs to Assist Municipalities
- 2) State Programs to Assist Municipalities
- 3) Federal Programs to Assist Rural Conservation Districts
- 4) State Program to Assist Rural Conservation Districts

B) How State Programs Affect Water Resource Solutions

- 1) Wetlands Protection
- 2) Endangered Species
- 3) Floodplain Management including, but not limited to:
 - State Role in Flood Control
 - Flood Disaster Preparation and Response
 - Impact of Reservoir Management on Flood Control
 - Impact of Flood Control Projects on Water Supply
 - Cultural Resources
 - Unique and Prime Farmlands
 - Hazardous, Toxic, and Radiological Wastes
 - Coastal Zone Management
 - Wild and Scenic Rivers
 - Fish and Wildlife Protection

Task 4: Sustainable Yield of Streams, Reservoirs, and Lakes Element

This task will include an estimation of the sustainable yield that specific lakes, streams, and reservoirs in Louisiana are capable of sustaining over both a short and long-term basis without causing adverse environmental, economic, or social consequences. Decisions with respect to the selection of specific water bodies to be included in this task will be based upon location, size, and data availability and will be made in consultation with appropriate water resources staff from DOTD. Streams with control structures such as dams and weirs, and streams that feed reservoirs will be considered as controlled streams and evaluated separately from streams with no control structures.

Task specifics with respect to uncontrolled streams include: 1) Potential indicators of sustainable yields will be computed from stream-flow data from gauged stream sites; 2) Statistics from gauged stream sites will be computed for periods of record long enough to enable meaningful stochastic analysis; 3) 7Q10 data will be computed at gauged sites; 4) Minimum daily flow values will be provided for each stream selected; and 5) Develop a suitable indicator for sustainable yield on un-regulated gauged streams if possible.

Task specifics with respect to controlled streams include: 1) Storage will be estimated from available bathymetry or construction records; 2) Stream flow records will be

utilized to determine flow into a controlled reach or impoundment; 3) inflow will be estimated from similar gauged sites and adjusted on a drainage-area basis if records are unavailable in Item 2 above; 4) Losses due to evaporation will be estimated based on pan evaporation data; and 5) Sustainable yield will be calculated based on inflow, outflow, evaporation, and available storage.

Task 5: Quantification of Stream Flood Characteristics Element

This task is designed to understand the limits of flood inundation along reaches of specific Louisiana streams. Such an understanding is essential for the effective management and protection of resources in inundated areas during flood events. The Federal Emergency Management Agency (FEMA) has documented the inundation expected for 100-year flood events, but the areas of inundation caused by the more frequent 10 and 25-year events are not generally available. This element will include production of detailed inundation maps of the 10 and 25 year floods along selected stream reaches.

Task 6: Development of High Resolution Ground and Surface Water Models Element

The purpose of this element is to develop high-resolution ground and surface water models. Groundwater models will be developed for each of the major aquifers in Louisiana that will simulate local/parish-scale flow dynamics at any location throughout an aquifer on a township by township basis. The model will use a modular, three-dimensional finite-difference approach that simulates steady and transient flow in an irregularly shaped flow system. The model used should be able to incorporate data regarding flow to wells, area recharge, evapotranspiration, flow to drains, and flow through riverbeds. Calibration should use the latest information available from both published and unpublished (municipal, industrial) sources. Software will be the off-the-shelf variety that is readily available such as the latest version of MODFLOW, developed by the USGS.

Surface water models will be developed using HEC-HMS and HEC-RAS, as developed by the USACE. Use of model data already obtained by DOTD will be made available.

Task 7: Development of Reservoir Prioritization Model and Plan

A reservoir ranking model will be developed which takes into account all the data and information obtained from each element. The model will generate a high score for proposed reservoirs which achieve the best overall results for the state based on sound scientific and economic principles. Model documentation and manual, along with the results of the model will be submitted in a written RPDP.

Deliverables

Deliverables for each Task will include a final report that details the project and will include sections devoted to Introduction, Background, Methodology, Data Analysis, Interpretation, Conclusions, and References. Metadata will be included for all map products produced. Each final report will be submitted in draft form to DOTD for review prior to final preparation. Three paper copies of each report will be provided along with ten CDs containing report text and accompanying data and map products. Quarterly status reports will be required.

REFERENCES

All services and documents will meet the standard requirements as to format and content of the DOTD; and will be prepared in accordance with the latest applicable editions, supplements and revisions of the following:

1. AASHTO Standards, ASTM Standards or DOTD Test Procedures
2. DOTD Location and Survey Manual
3. DOTD Roadway Design Procedures and Details
4. DOTD Hydraulics Manual
5. DOTD Standard Specifications for Roads and Bridges
6. Manual of Uniform Traffic Control Devices
7. DOTD Traffic Signal Design Manual
8. National Environmental Policy Act (NEPA)
9. National Electric Safety Code
10. National Electric Code (NFPA 70)
11. DOTD Environmental Impact Procedures (Vols. I-III)
12. Policy on Geometric Design of Highways and Streets
13. Construction Contract Administration Manual
14. Materials Sampling Manual
15. DOTD Bridge Design Manual
16. Consultant Contract Services Manual
17. Geotechnical Engineering Services Document
18. Bridge Inspectors Reference Manual
19. DOTD Stage 1 Manual of Standard Practice

COMPENSATION

Compensation to the Consultant for services rendered in connection with each TO shall be based on negotiated work-hours and billable rates for the actual work performed on the Task Order.

All travel related expenses will be compensated under direct expenses, and will be in accordance with Louisiana Office of State Travel regulations found at: <http://www.doa.louisiana.gov/osp/travel/travelpolicy/travelguide.pdf>. Vehicle rental rates will require prior approval from the DOTD Project Manager.

The total amount payable under this Retainer Contract for services to be performed under the various TO's shall not exceed a maximum of **\$1,750,000**. Each TO shall be payable under the respective TO project number which shall be obtained by the Project Manager.

CONTRACT TIME

This Retainer Contract shall be in effect for the duration of **two years**. The services to be performed for each TO will be determined upon activation of the TO. The Consultant will proceed with the services required in the TO upon issuance of the Notice to Proceed from the DOTD. The contract time for each TO will be specified in the executed TO. Upon expiration of the two year contract time, no new TOs will be executed; however, the Consultant will complete any work in progress.

MINIMUM PERSONNEL REQUIREMENTS

The following requirements must be met by the Prime-Consultant at the time of submittal:

1. At least one Principal of the Prime-Consultant must be a Professional Engineer registered in the State of Louisiana.
2. At least one Principal or other Responsible Member of the Prime-Consultant must be a Professional Civil Engineer, registered in the State of Louisiana.
3. The Prime-Consultant must also employ on a full time basis, a minimum of two Professional Civil Engineers, registered in the State of Louisiana, with at least five years experience in water resources, water use, groundwater management, surface water management, water yield, and preparation of water planning reports, and a corresponding support staff.
4. The Prime-Consultant must also employ on a full-time basis, or through the use of a Sub-Consultant(s):
 - a. One Professional Engineer, registered in the State of Louisiana, with at least five years experience in surface water and groundwater modeling, and preparation of flood inundation maps.

Certifications of Compliance must be submitted with and made part of the Consultants Standard Form 24-102 for all Personnel Requirements listed herein.

EVALUATION CRITERIA

The general criteria to be used by DOTD (when applicable) in evaluating responses for the selection of a Consultant to perform these services are:

1. Consultant's firm experience on similar projects, weighting factor of 3;
2. Consultant's personnel experience on similar projects, weighting factor of 4;
3. Consultant's firm size as related to the estimated project cost, weighting factor of 3;
4. Consultant's past performance on similar DOTD projects, weighting factor of 6;
5. Consultant's current work load with DOTD, weighting factor of 5;

6. Location where the work will be performed, weighting factor of 4; *
7. Consultant's proposed unit costs, weighting factor of 5.

* All respondents will receive a 4 in this category

The complexity level of this project is Specialty/Complex

Consultants will be evaluated as indicated in Items 1- 6. The evaluation will be by means of a point-based rating system. Each of the above criteria will receive a rating on a scale of 0-4. The rating will then be multiplied by the corresponding weighting factor. The firm's rating in each category will then be added to arrive at the Consultant's final rating.

If Sub-Consultants are used, each member of the Consultant/Team will be evaluated on their part of the contract, proportional to the amount of their work. The individual team member ratings will then be added to arrive at the Consultant/Team rating.

DOTD's Consultant Evaluation Committee will be responsible for performing the above described evaluation, and will present a short list of the three (if three are qualified) highest rated Consultants to the Secretary of the DOTD. The Secretary will make the final selection.

CONTRACT REQUIREMENTS

The selected Consultant will be required to execute the contract within 10 days after receipt of the contract.

INSURANCE - During the term of this contract, the Consultant will carry professional liability insurance in the amount of \$1,000,000. The Prime-Consultant may require the Sub-Consultant(s) to carry professional liability insurance. This insurance will be written on a "claims-made" basis. Prior to executing the contract, the Consultant will provide a Certificate of Insurance to DOTD showing evidence of such professional liability insurance.

AUDIT - The selected Consultant/Team will allow the DOTD Audit Section to perform an annual overhead audit of their books, or provide an *independent* Certified Public Accountant (CPA) audited overhead rate. This rate must be developed using Federal Acquisition Regulations (FAR) and guidelines provided by the DOTD Audit Section. In addition, the Consultant/Team will submit semi-annual labor rate information, when requested by DOTD.

The selected Consultant/Team will maintain an approved Project Cost System, and segregate direct from indirect cost in their General Ledger. Pre-award and post audits, as well as interim audits, may be required. For audit purposes, the selected Consultant/Team will maintain accounting records for a minimum of five years after final contract payment.

Any Consultant currently under contract with the DOTD and who has not met all the audit requirements documented in the manual and/or notices posted on the DOTD Consultant Contract Services Website (www.dotd.louisiana.gov), will not be considered for this project.

SUBMITTAL REQUIREMENTS

One original (**stamped original**) and four copies of the SF 24-102 must be submitted to DOTD. All submittals must be in accordance with the requirements of this advertisement and the Consultant Contract Services Manual. Any Consultant/Team failing to submit any of the information required on the SF 24-102, or providing inaccurate information on the SF 24-102, will be considered non-responsive.

Any Sub-Consultants to be used, including Disadvantaged Business Enterprises (DBE), in performance of this Contract, must also submit a SF 24-102, which is completely filled out and contains all information pertinent to the work to be performed.

The Sub-Consultant's SF 24-102 must be firmly bound to the Consultant's SF 24-102. In Section 9, the Consultant's SF 24-102 must describe the **work elements** to be performed by the Sub-Consultant(s), and state the approximate **percentage** of each work element to be subcontracted to each Sub-Consultant.

Name(s) of the Consultant/Team listed on the SF 24-102, must precisely match the name(s) filed with the Louisiana Secretary of State, Corporation Division, and the Louisiana State Board of Registration for Professional Engineers and Land Surveyors.

The SF 24-102 will be identified with State Project No. **502-99-0001**, and will be submitted **prior to 3:00 p.m. CST on Monday, April 28, 2008**, by hand delivery or mail, addressed to:

Department of Transportation and Development
Attn.: Mr. Edward R. Wedge, P.E.
Consultant Contract Services Administrator
1201 Capitol Access Road, **Room 405-T**
Baton Rouge, LA 70802-4438 or
Post Office Box 94245
Baton Rouge, Louisiana 70804-9245
Telephone: (225) 379-1989

REVISIONS TO THE RFQ

DOTD reserves the right to revise any part of the RFQ by issuing an addendum to the RFQ at any time. Issuance of this RFQ in no way constitutes a commitment by DOTD to award a contract. DOTD reserves the right to accept or reject, in whole or part, all Qualification Statements submitted, and/or cancel this announcement if it is determined to be in DOTD's best interest. All materials submitted in response to this announcement become the property of DOTD, and selection or rejection of a submittal does not affect this right. DOTD also reserves the right, at its sole discretion, to waive administrative informalities contained in the RFQ.