



SCOPE OF SERVICES

Solicitation Number: CLMP126

Project Name: South Austin Regional Wastewater Treatment Plant – Electrical
Substation No. 1 Replacement

PROJECT FOR:

CITY OF AUSTIN, AUSTIN WATER UTILITY, THROUGH ITS CONTRACT MANAGEMENT
DEPARTMENT

PROJECT TITLE:

SOUTH AUSTIN REGIONAL WASTEWATER TREATMENT PLANT - ELECTRICAL SUBSTATION NO. 1
REPLACEMENT

OBJECTIVES OF THE PROJECT:

The City of Austin, through its Contract Management Department, Public Works Department, and Austin Water Utility, seeks Statements of Qualifications from qualified firms interested in providing Engineering design services for the replacement of Electrical Substation No.1 at the South Austin Regional Wastewater Treatment Plant (SARWWTP). The primary product of this project will be a new Electrical Substation No.1 that is similar to Electrical Substation No.2 at SARWWTP. The consulting firm selected for this project will provide services for all phases of this project including: preliminary engineering, detail design, bid phase services, construction phase services, and warranty services as needed.

BACKGROUND:

SARWWTP is currently permitted to treat 75 MGD. The first treatment train, Train A, was constructed between 1984 and 1986. Subsequent to that, treatment Train B and the tertiary filtration process were constructed between 1986 and 1988. Electrical Substation No.1 was built and commissioned with the start-up of treatment Train A in April of 1986, hence the substation is 26 years old. Basically, Electrical Substation No.1 energizes treatment trains A and B, the influent lift station no.1, tertiary filtration, de-chlorination facilities, and miscellaneous buildings. Currently, the substation and associated switch gear is antiquated, unreliable, and a safety hazard.

The treatment plant was expanded to 75 MGD capacity with the construction completion of treatment Train C in 2005. As part of the plant expansion, the construction of Train C also included a new electrical substation (Electrical Substation No.2). This substation distributes power to Train C facilities and other miscellaneous structures and buildings.

The Electrical Substation No.1 includes two switchgears; each consists of independent 1200A buses (Bus 1 & Bus 2) at 12.47 kV with a tie between the two gears so that the load can be transferred. Each bus is served by a main breaker rated 1200A frame which is energized by a feeder from Austin Energy's Onion Creek Substation. All loads are common to both buses. In

the event of a fault in the upstream power distribution to any single bus, this tie breaker will divert power from one bus to the other. The main-tie-main switchgear arrangement (open transition type) and the dual feed incoming feeders from the Onion Creek Substation are critical to the plant's electrical power reliability and fault tolerance. These features ensure that the plant operates with redundant sources available to its loads.

ANTICIPATED SERVICES:

During the course of this project, the work must be sequenced such that the existing substation can remain in service so that the plant can continue to treat wastewater. New incoming feeders from Austin Energy will need to be provided, therefore, the consulting firm selected for this project will need to coordinate activities and work closely with Austin Energy throughout the duration of this project. Activation of the new substation and tie-in to the existing electrical distribution system will need to be planned, coordinated with Plant Operations and conducted in such a way that minimizes the number and duration of plant outages. Other design considerations to be incorporated into this project include corrosion protection, maximum reliability, energy efficiency, safety and related asset condition assessment.

Preliminary Engineering - It is anticipated that the consulting firm selected for this project will perform preliminary engineering and produce a preliminary engineering report (PER) which delineates key aspects/features of the new Electrical Substation No.1 replacement and other associated improvements required, and provide the engineer's estimate of the probable construction cost. The engineer shall present improvement options and recommendations with associated life cycle costs. Pertinent calculations which serve as the basis of recommendations will be provided. Factors to be considered include an assessment of potential future power loads and electrical distribution requirements for the new substation. Additionally, the status and condition of the conductors emanating out from Substation No.1 need to be evaluated to determine adequacy for continued use into the future. It is anticipated that the initial leg of the distribution system may have to be replaced to eliminate the need for splicing. Consultant shall develop demolition and construction phasing plans sufficient to maintaining plant operations during construction.

Deliverables:

1. Draft Preliminary Reports and a final Preliminary Engineering Report (PER) that presents recommended improvements complete with supporting data such as calculations, condition assessment, hydraulic analysis, monetary and non-monetary evaluations performed for estimated life cycle and construction costs.

Detail Design - Subsequent to the completion and approval of the PER, the selected consulting firm will perform detailed design. The design phase will consist of milestones at 30%, 60% and 90% completion. At each of these milestones, the plans, specifications and calculations (if requested) that have been completed shall be submitted to the City for review and a project review meeting will be scheduled. The product of the detail design effort will be engineering

drawings, contract documents, and specifications to be used for bidding purposes. Also, at the completion of this phase, the engineer will prepare an updated estimate of probable construction costs.

Deliverables:

1. Complete detailed engineering documents and associated services required for the bidding and construction of the proposed improvements. Engineering documents shall be delivered for City review at 30%, 60%, 90% and 100% stages of completion.
2. Design schedule including the above noted progress milestones.
3. Opinion of Probable Construction Cost beginning at 60% and greater stages.
4. A Responsibility Assignment Matrix that fully integrates the responsibilities of the Owner, Engineer, Programmer and Contractor necessary for the Start-up and Commissioning of the new Facility Complex.
5. Monthly updates of design schedule and Resource Allocation Plan (RAP), submitted with each monthly payment application.

Bid Phase – The engineer shall provide bid phase services including the issuance of any addendums, participation in the pre-bid conference with potential construction contractors, preparation of responses to questions from contractors, and work with the City’s team to evaluate the bids received and recommend the construction contract award.

Deliverables:

1. Monthly construction status reports, submitted with each monthly payment application.

Construction Phase & Warranty Phase – It is anticipated that the engineer shall provide construction phase services, which may include having on-site representatives to provide construction services and start-up services. Details for this phase will be addressed prior to the start of construction. Similarly, warranty phase services may need to be provided and the scope details for required services will be determined at a later date.

PROPOSED SCHEDULE:

The anticipated duration for the project phases is as follows:

- Preliminary Engineering – complete within 9 months from the Notice to Proceed
- Detail Design - complete within 16 months from Notice to Proceed
- Bid and Award Phase – 6 months
- Construction Phase – 24 months

COST ESTIMATE:

The estimated total cost for professional services is \$3,020,000 and the estimated total construction cost is \$12,000,000. The professional services estimated cost by phase is as follows:

Preliminary Engineering/Bidding ----- \$500,000
 Detail Design ----- \$1,520,000
 Construction/Warranty ----- \$1,000,000

POTENTIAL SUBCONSULTANT/VENDOR OPPORTUNITIES:

Below is a list of potential subconsultant opportunities on this project. This listing is not a guarantee that each of the scopes listed below will materialize on this contract. If the prime consultant intends to enter into a subconsulting agreement on a scope of work not listed below, the prime consultant is required to contact SMBR and request an updated availability list of certified firms in each of the scopes of work for which the prime consultant intends to utilize a subconsultant

Major Scopes of Work

Electrical Engineering*
 Civil Engineering*
 Structural Engineering*
 Mechanical Engineering*

Other Scopes of Work

Architecture
 Surveying
 Geotechnical Services

* There must be representation for all major scopes of work listed. The experience of the firms listed to perform the Major Scopes of Work, whether a subconsultant or prime firm, will be evaluated under Consideration Item 6 – Major Scopes of Work – Comparable Project Experience.

Notes:

- Participation at the prime or subconsultant level may create a conflict of interest and thus necessitate exclusion from any contracts resulting from the work performed in the design phase.
- If the City determines that a conflict of interest exists at the prime or subconsultant level, the City reserves the right to replace/remove the prime or instruct the prime consultant to remove the subconsultant with the conflict of interest and to instruct the prime consultant

to seek a post-award change to the prime consultant's compliance plan as described in City Code § 2-9B-23. Such substitutions will be dealt with on a case-by-case basis and will be considered for approval by Small and Minority Business Resources (SMBR) in the usual course of business. The City's decision to remove a prime or subconsultant because of a conflict of interest shall be final.

- Construction Inspection and Public Information and Communications are **NOT** a subconsultant opportunity on this scope of services. These services will be performed in-house or under a separate contract if needed.