



SCOPE OF SERVICES

Solicitation Number: CLMP300

Project Name: Walnut Creek WWTP Expansion to 100 Million Gallons Per Day

PROJECT FOR:

CITY OF AUSTIN, *AUSTIN WATER*, THROUGH ITS CAPITAL CONTRACTING OFFICE

PROJECT TITLE:

Walnut Creek WWTP Expansion to 100 Million Gallons Per Day

OBJECTIVES OF THE PROJECT:

The City of Austin anticipates selecting a qualified professional engineering firm (Consultant) to provide planning, design, and construction phase services for the Walnut Creek Wastewater Treatment Plant (WWTP) Expansion to 100 million gallons per day (MGD). The expanded facility must be operational by 2028.

BACKGROUND:

Walnut Creek WWTP is permitted to treat and discharge an average daily flow of 75 MGD and a 2-hour peak flow of 165 MGD. This project will expand the plant to treat and discharge an annual average daily flow of 100 MGD and a 2-hour peak flow of 300 MGD.

The treated plant effluent discharges into Segment No. 1428 of the Colorado River Basin and is designated as a Public Water Supply (PWS). A portion of the plant's effluent is used for non-potable water (NPW) on the plant site and supplies much of the City's growing Water Reclamation Initiative (WRI) program. The Texas Commission on Environmental Quality (TCEQ) regulates the quality of effluent discharged into the Colorado River and the quality of reclaimed water. The discharge and reclaimed permit limits are below:

Average Daily Discharge Limitations

Limit	2015	2019
CBOD	5 mg/l	5 mg/l
TSS	5 mg/l	5 mg/l
Ammonia Nitrogen	2 mg/l	2 mg/l
Total Phosphorus	-	1 mg/l*
<i>E. coli</i>	126/100 ml	126/100 ml
DO	6 mg/l	6 mg/l
pH	6.0 - 9.0 SU	6.0 - 9.0 SU

*upon completion of expansion to 100 MGD

It is anticipated that future permit limits for Total Phosphorus will become more stringent, and that permit limits for Total Nitrogen, Nitrate, and Total Dissolved Solids (TDS) will probably be added in future permit renewals.

Reuse Type 1 Quality Requirements

CBOD (30-day average)	5 mg/l
Turbidity (30-day average)	3 NTUs
<i>E. coli</i> (30-day geometric mean)	20/100 ml
<i>E. coli</i> (Single Grab)	75/100 ml

Walnut Creek WWTP includes six individual treatment trains, built in three phases. Each train consists of an aeration basin, a flocculation basin, a secondary clarifier, a chlorine contact basin, and the pumps, piping, and electrical equipment required to operate each train.

The first phase was constructed in 1977 with a rated capacity of 18 MGD. This phase included Activated Sludge Complex 1, comprised of trains 1 and 2. The Thickener Building was built in 1982.

Activated Sludge Complex 2, comprised of trains 3 and 4, was constructed in 1987 and increased the capacity of the WWTP to 40 MGD.

Due to population growth and increased flow prior to the completion of the 1987 expansion, an Interim Plant with a capacity of 13.5 MGD was constructed in 1985 with a discharge limit of 10 mg/l BOD and 15 mg/l TSS. The Interim Plant includes aeration basins, clarifiers, chlorine contact basins, and pumping. The Interim Plant was used until the 1987 expansion was completed.

Activated Sludge Complex 3, comprised of trains 5 and 6, was constructed in 1990 to meet new permitting requirements passed in 1988. The limits changed from 20 mg/l BOD, 20 mg/l TSS to more stringent limits of 10 mg/l BOD, 15 mg/l TSS, 2 mg/l ammonia. This included modifying Activated Sludge Complex 1 and 2 to double the aeration basin volume and install fine bubble diffusers. The capacity of the plant was increased to a rated capacity of 60 MGD with a 2-hour peak of 140 MGD.

In 1990, Annual Average Permit limits were added to the discharge permit to include 5 mg/l BOD, 5 mg/l TSS, and 2 mg/l ammonia.

The 75 MGD Expansion was constructed in 2005 with an influent wastewater characteristic of 160 mg/l BOD concentration with a 2-hour peak flow of 165 MGD. The aeration basins were not expanded.

Until the mid-1990's, effluent from Walnut Creek WWTP was discharged directly into Walnut Creek, which borders the treatment plant to the west and discharges into the Colorado River. Due to the increasing volumes of effluent, the outfall was relocated to the Colorado River, south of the plant. A new 96-inch diameter, approximately 7300-foot-long, effluent pipe, which runs approximately parallel to Walnut Creek, was constructed to convey the flow to the new outfall.

Walnut Creek WWTP is located entirely within zip code 78724 in the City of Austin's District 1.

ANTICIPATED SERVICES:

The following is intended as a guide to the general nature of services that will be provided based on the Major Scopes of Work described herein.

Austin Water has completed a study, *The Walnut Creek Wastewater Treatment Plant Optimization and Facility Plan*, in preparation for the expansion project. The study identified capacity and reliability improvements to the existing facility and recommended new facilities to handle future projected flows and permit limits. The finalized plan is available as Attachment A

Phase 1 - Preliminary Engineering Services

This phase will develop a clear, well-defined scope for the project. A proposal, including cost and schedule, will be developed and submitted by the Consultant, and the work will proceed upon written authorization. Preliminary engineering will result in establishing sufficient project detail such that design phase services can be initiated. This will include development and submittal of a preliminary engineering report (PER) with major process Piping and Instrumentation drawings (P&IDs), site layouts, plan and profile layouts, opinion of probable project cost and project schedule.

Anticipated services may include but are not limited to the following:

1. Review *The Walnut Creek Wastewater Treatment Plant Optimization and Facility Plan*.
2. Meet with the Austin Water Facility Engineering, Process Engineering, Regulatory Services, Treatment Support, and Operation and Maintenance staff to receive information about existing operations and any previous investigations of possible solutions.
3. Conduct preliminary field surveys and determine any site constraints.
4. Permitting, including any special permitting requirements (Federal, State, and Local).
5. Evaluate existing hydraulic and organic loadings and compare to current treatment plant capacity.
6. Review and comment on plausible future effluent permit requirements from the Texas Commission of Environmental Quality (TCEQ) and the US Environmental Protection Agency (EPA).
7. Expansion requirements to treat and process 100 MGD average daily flow.
8. Provide budgetary construction and engineering costs. Cost estimates should be consistent with the American Society of Professional Estimators Class 3 estimates.
9. The selected Consultant shall, upon conclusion of their reviews, investigations, and preliminary evaluations, prepare, present and publish details and summary of their findings, solution options, budget constraints, cost estimates, recommendations, Piping and Instrumentation drawings (P&IDs), site layouts, plan and profile layouts and a design and construction schedule for the recommended improvements in a PER format.

Phase 2 - Final Design and Bidding Phase Services

The selected Consultant shall, upon written authorization, prepare detailed final design plans, specification, and cost estimates utilizing TCEQ and City of Austin standards and other applicable standards. The Consultant shall also provide permitting support as needed for the construction of the project.

Anticipated services may include but are not limited to the following:

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 at the above noted progress milestones.
4. The Consultant will assist the City in the bidding of the project including responding to pre-bid inquiries, issuing bid documents, addendums, submitting permit application(s), conducting a pre-bid conference, and reviewing construction bids received. A certified American Society of Professional Estimators Class 1 (Level of Accuracy H: +3% to +15% / L: -3% to -10%) opinion of probable construction cost shall be delivered to the Owner prior to bid opening.
5. Complete conformed engineering documents including all addendums.

Phase 3 - Construction Phase Services

The Consultant shall, upon written authorization, furnish construction phase services coinciding with the construction contractor’s activities. These services are those generally associated with the construction phase.

Anticipated services may include but are not limited to the following:

1. Submit monthly construction status reports with each monthly payment application.
2. Regularly visit the job site to review the progress and quality of the work being accomplished.
3. Respond to Requests for Information (RFIs).
4. Review shop drawing submittals.
5. Prepare necessary change orders.
6. Interpret the plans, specifications, and other contract documents as required.
7. Prepare as-built drawings of the completed facilities.
8. Certify that the project was constructed in accordance with approved plans and specifications.

Phase 4 - Warranty Phase Services

The Consultant shall, upon written authorization, provide warranty phase services, as needed, generally consisting of assisting the City in correcting project malfunctions or deficiencies.

PROPOSED PROJECT SCHEDULE:

Preliminary Engineering Phase	12 Months
Design Phase & Permitting	24 Months
Bid Phase	6 Months
Construction Phase	48 Months
Warranty Phase	12 Months

PROPOSED PROCUREMENT SCHEDULE

RFQ Issue Date: Monday, March 2, 2020
 Pre-Response Meeting: Monday, March 9, 2020
 RFQ Due Date: Wednesday, April 22, 2020
 Interviews (if applicable): Week of June 8, 2020

Tentative Water & Wastewater Commission Date: Wednesday, July 15, 2020

Tentative City Council Date: Thursday, July 30, 2020

COST ESTIMATE:

The estimated Consultant Project Cost for Preliminary Engineering Phase is \$15,000,000.

The City intends to return to Council to request additional authorization for Final Design and then again for Construction Phase and Warranty Phase Services. These amounts will be determined after the Preliminary and Final Design recommendations are reviewed and approved by the City. Additional engineering fees for these remaining phases are not expected to exceed \$33,000,000 for final design and \$18,000,000 for construction phase and warranty phase services. The total estimated engineering services fee is not expected to exceed \$66,000,000.

MAJOR AND OTHER SCOPES OF WORK:

Below is a list of the major scopes of work that the City has identified for this project. ****There must be representation for all major scopes of work listed in the prime's statement of qualifications. 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.***

In addition, the City has identified Other Scopes of work that MAY materialize during the course of the project. The City does not guarantee that the scopes listed under Other Scopes of work 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**

Process Engineering
 Mechanical Engineering
 Hydrology and Hydraulic Engineering (for site drainage)
 Permitting and City of Austin Site Development Permit Services
 Instrumentation and Controls Engineering
 Electrical Engineering

Other Scopes of Work

Civil Engineering
 Structural Engineering
 Architectural Services
 Environmental Consulting/Assessment/Studies
 Permitting Services
 Geotechnical Soils
 Surveying Services, Not Aerial or Research
 Cost Estimating Services

Notes:

- Construction Inspection and Public Information and Communications are **NOT** subconsultant opportunities. These services will be performed in-house or under a separate contract, if needed, and will be determined when project assignment is made.
- 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.
- A consultant performance evaluation will be performed on all professional services contracts. This evaluation will be conducted at the end of each Preliminary, Design and Construction phase.