

July 21, 2022

Mr. Jeff Edmonds, P.E.  
Director of Engineering Services  
City of Corpus Christi  
P.O. Box 9277  
Corpus Christi, Texas 78469-9277

Re: Proposal for Professional Engineering Services  
Final Design for Instrumentation Rehabilitation at Wesley Seale Dam  
**Wesley Seale Dam Instrumentation Testing and Rehabilitation**  
**Project No. 20258**

Dear Mr. Edmonds:

At the request of your staff, Freese and Nichols, Inc. (FNI) is pleased to submit this proposal for providing professional engineering services to the City of Corpus Christi to rehabilitate the dam safety monitoring instrumentation at Wesley E. Seale Dam (WSD). FNI completed a Preliminary Engineering Report (PER) in February 2019 that includes an evaluation of existing conditions and provides recommendations for bringing the dam safety monitoring instrumentation at WSD into proper operation. Option 2-Replacement as presented in the PER is the basis for this proposal. FNI will perform the following services to develop the final design of the instrumentation system rehabilitation.

### PROJECT UNDERSTANDING

The project bid documents will address the following recommendations for upgrades and maintenance as included in the PER:

1. Clean and test for lag time and overall performance of sixteen (16) manually monitored piezometers.
2. Clean 25 relief wells and relief well outfall pipes by water jetting.
3. Replace all twenty-five (25) vibrating wire sensors in piezometers with a Geokon 6300 type sensor or equivalent. Add one barometer with vibrating wire technology to the system to allow for atmospheric pressure compensation as required. Route sensor leads to corresponding instrumentation panels for data collection and storage.
4. Replace all seventeen (17) vibrating wire sensors in the extensometers with a Geokon 4500 type sensor or equivalent. Include a thermistor to measure temperature.
5. Acquire a new Geokon inclinometer probe or equivalent to resume inclinometer data collection on a regular interval.
6. Replace the existing data-loggers with a modern system at four (4) instrumentation panels.
7. Re-wiring of replaced equipment by tracing the existing conduits. It is assumed that the existing conduits are in good condition and will allow for re-wiring.
8. Provide wireless communications between instrumentation panels.
9. Replace the existing SCADA system with a new SCADA system compatible with Citywide Utilities Dept. SCADA.
10. Replace the existing Access database with a custom database and dashboard accessible via the City's computer network and mobile devices.
11. Install permanent GPS monitoring stations and permanent monitoring points with the Trimble GPS system or equivalent.

### SCOPE OF SERVICES

- A. Project Management: Perform project management and quality control/quality assurance as necessary throughout the duration of the project. Tasks to be performed include:
1. Setup project and develop a detailed work plan and project schedule.
  2. Conduct one internal and one external project kick-off meeting and recurring internal team meetings.
  3. Project Management and controls, including preparing monthly reporting (PM and One Page Reports) for an assumed 12-months period.
  4. Coordinate site visits and meetings with the City.
  5. Oversee and document quality assurance (QA) and quality control (QC) program and project submittals.
  6. Subcontractors and supplier coordination and management.
- B. Design Phase Services: Perform maintenance and design improvements to the WSD instrumentation system in coordination with the recommendations provided in the PER and further input from the City as part of this project development.
1. Retrieve archived AutoCAD drawings of the WSD Stabilization Project and update drawings to the current software version and to City standards.
  2. Perform one (1) site visit to compare existing drawings and field conditions and begin developing schematic design, drawing set layout, and vendor consultation.
  3. Perform two (2) site visits during instrument condition assessment and testing.
  4. Coordinate one (1) meeting via conference call with Utilities Dept. IT staff to identify SCADA requirements compatible with the Wesley E. Seale Dam Operations Center SCADA and the O.N. Stevens WTP SCADA systems.
  5. Design of Communication and SCADA system. FNI will work with its subcontractor, Automated Concepts, to develop an integrated communication and SCADA system.
  6. Develop performance specs for the surveying system, including requirements for initial benchmarking and future monitoring requirements.
  7. Collect limited topographic data (northing, easting, elevation) as verification for select instrumentation.
  8. Develop 60 % design submittal package. Submittals will be provided in Electronic form (PDF) and 2 hard copies.
    - a. Deliverables:
      - i. 60% Construction Drawings
      - ii. 60% Opinion of Probable Construction Costs
      - iii. Outline of Technical Specifications
      - iv. Outline of Draft Design Basis Report
    - b. Hold one (1) virtual review meeting with City staff to discuss deliverables and review comments on the 60% submittal.
  9. Develop 90% design submittal package. Submittals will be provided in Electronic form (PDF) and two (2) hard copies.
    - a. Address 90% design review comments from the City and further develop design documents.

- b. Deliverables:
    - i. 90% Construction Drawings
    - ii. 90% Front-end and Technical Specifications
    - iii. 90% Opinion of Probable Construction Costs
    - iv. Draft Design Basis Report
  - c. Hold one (1) virtual review meeting with City staff to discuss issues and review the 90% submittal.
  - d. Hold one (1) meeting with TCEQ Dam Safety for project review and document TCEQ comments/feedback
10. Develop Final Design and IFB submittal package. Submittals will be provided in Electronic form (PDF) and 2 hard copies.
- a. Address 90% design review comments from the City
  - b. Deliverables:
    - i. IFB Construction Drawings
    - ii. IFB Specifications
    - iii. IFB Opinion of Probable Construction Costs
    - iv. Final Design Basis Report
  - c. Submit IFB construction documents to TCEQ Dam Safety for review and approval.
11. Develop instrumentation guiding document for the City outlining the recommended cleaning, inspection, warning levels, and monitoring schedules for the upgraded system.
- C. Bid Phase Services: Provide assistance to the City during the bidding process.
1. Assist City in soliciting qualified contractors to bid on the project.
  2. Participate in the pre-bid meeting.
  3. Assist City in securing bids by responding to bidder's requests for information (RFI) during bid phase. Prepare addenda as necessary to address RFI's.
  4. Compile the bid tab, review bids for responsiveness, and provide a bid award recommendation to the City.
- D. Construction Phase Services: Upon completion of contract negotiation between the City and selected contractor, proceed with the performance of general construction oversight during construction.
1. Attend the pre-construction meeting and provide an agenda and record and provide meeting minutes.
  2. Provide general representation services during construction by assisting the City in submittal review. Key submittals to be reviewed include:
    - i. Record data on specified instruments and equipment
    - ii. Record data on measured data collected by a contractor
    - iii. Record drawings on wiring diagram
    - iv. Shop drawing on instrumentation panel and associated hardware
    - v. Shop drawings on database architecture and visual interface for data processing and viewing
    - vi. Operation and Maintenance Manual
  3. Attend up to eight (8) monthly construction progress meetings, provide an agenda, and record and provide meeting minutes.
  4. Provide contractor oversight during jetting/cleaning tasks to assure the proper execution of the work to prevent damage to casings.
  5. Participate in four (4) engineering site visits during construction to observe work progress. Prepare site visit reports documenting findings, photographs, and follow-up actions. Visits to the site in excess of the specified number are an additional service.
  6. Conduct, with the City, one (1) substantial completion walk-through site visit to document conformance with the contract documents. Prepare a list of deficiencies to be corrected by the contractor before the recommendation of final payment.
  7. Conduct one (1) final completion walk-through site visit.
  8. Revise the construction drawings in accordance with the information furnished by the City and Contractor reflecting changes in the Project made during construction. Two (2) sets of prints of "Record Drawings" shall be provided by FNI to City.
  9. Prepare a training presentation for City staff to include the following:
    - i. Overview of the WSD Instrumentation
    - ii. Purpose of Dam Safety Instrumentation
    - iii. Data Collection from Instrumentation System
    - iv. Data Processing and Database Update Process
    - v. Data Evaluation and Analysis Process
    - vi. One (1) Virtual Meeting to Present to the City Staff
  10. Perform site visits only through coordination with Engineering Services staff.
- E. Warranty Phase: Upon final completion, proceed with monitoring support to track system performance and dam behavior.
10. Conduct instrumentation data assessments as part of two (2) site visits within the 1-yr warranty period and based on City provided data. As part of the site visit, extensometers will be read with a micrometer as part of data collection. Select instruments will be locally read at each panel using a vibrating wire readout unit and inclinometer probes as appropriate. Provide a brief memorandum summarizing findings.
  11. Conduct with the City's representatives a 1-year inspection (one day visit) of the project to evaluate site conditions and dam performance as measured by instrumentation and noted from site observations. Provide memorandum summarizing findings from site observations and instrumentation data review over the 1-yr warranty period.

#### **ADDITIONAL SERVICES**

Services to be performed by FNI, if authorized by the Owner, which are not included in the above described services, will be considered an additional service.

- Additional site visits to those listed under basic services
- Rebidding
- Additional monthly construction meetings
- Additional Warranty Phase services
- Development of Operations and Maintenance Manuals
- SCADA consulting, troubleshooting, or recovery
- Evaluation of data
- Instrument reading
- Instrumentation system training beyond what is listed under basic services

#### **TIME OF COMPLETION**

FNI is authorized to commence work on Services upon execution of an Agreement and receipt of a notice to proceed. The deliverables will be completed within the following schedule:

Deliverable	Completion
60% Submittal	24 weeks after receiving NTP
90% Submittal	12 weeks after receiving 60% Comments from the City
IFB Submittal	8 weeks after receiving 90% Comments from the City
Training Presentation and Instrumentation Guiding Manual	Within 4 weeks of construction completion
Record Drawings	Within 4 weeks of receiving as-built drawings from contractor
Site Visit Memorandum	Within one week from the site visit
Post Warranty Period Memorandum	Within 4 weeks from the site visit.

If FNI's services are delayed through no fault of FNI, FNI shall be entitled to equitable adjustment of compensation and FNI shall be entitled to adjust the contract schedule consistent with the number of days of delay.

#### SERVICES PROVIDED BY THE CITY

1. Assist FNI by placing at FNI's disposal all available information pertinent to the Project, including previous reports, operation, and maintenance guides, development plans, as-builts and any other data relative to the Project.
2. Coordinate and arrange for FNI to access the dam site as required for FNI to perform services.
3. Provide input and comments on deliverables, as appropriate.
4. Provide a qualified construction inspection for the duration of the construction.

#### DESIGNATED REPRESENTATIVES

FNI and the County designate the following representatives:

1. FNI Project Manager: Gurkan Ozgurel  
10431 Morado Circle, Building 5, Suite 300  
Austin, TX 78759  
(512)-402-8845  
[gurkan.ozgurel@freese.com](mailto:gurkan.ozgurel@freese.com)
2. City Representative: Ryan Hedrick  
2101 Leopard Street  
Corpus Christi, TX 78401  
(361) 826-3592  
[ryanh4@cctexas.com](mailto:ryanh4@cctexas.com)
3. FNI Accounting Representative: Billy Metzger  
10431 Morado Circle, Building 5, Suite 300  
Austin, TX 78759  
(512) 617-3177  
[billy.metzger@freese.com](mailto:billy.metzger@freese.com)

#### COMPENSATION

FNI proposes to furnish our services as described herein. The total lump-sum fee for the scope of services shall be \$358,005.32. If FNI sees the Scope of Services changing so that additional services are needed, FNI will notify the City for approval before proceeding.

Payment of the services shall be due and payable upon submission of a statement for services. Statements for services shall not be submitted more frequently than monthly.

We appreciate the opportunity to submit this proposal. If additional information or clarification is desired, please do not hesitate to contact us.

Sincerely,

FRESE AND NICHOLS, INC.



Ron Guzman, P.E.  
Principal