

Fort Bend County

Levee Improvement District No. 19

Aptim Environmental & Infrastructure, Inc.

Job Order No. 01

January 24, 2018

Design and Construction Systems Review

Phase I – Design and Construction System Review

The intent of these services is to perform an independent review of the design and construction of Fort Bend County Levee Improvement District (LID) No. 19's facilities to confirm that these facilities were designed and constructed within compliance of all applicable Federal, State, County, or City standards including at the time of implementation. Also, this review will confirm whether these facilities are presently within compliance. A detailed report documenting all findings will be provided as final deliverable of Phase I.

Documents and Data Review

1. Review all documents and data received and identify any additional data that may be needed to complete a thorough review.
2. Review Federal, State, County, and City standards regarding the design and operations of these facilities and identify any revisions since the time of implementation
3. Review monumentation and datums used for understanding of vertical and horizontal control

Design Review

1. Review final design reports, calculations, plans, and specifications for LID 19 drainage system, levees, and pump station for compliance of governing standards at the time of implementation
2. Review design assumptions including river levels, rain events, inflow from sources outside of the LID 19, storage reservoirs, and pump facilities
3. Perform a two-day site visit to inspect facilities and surrounding area
4. Review existing H&H models input/output data files
5. Review geotechnical reports for soil properties
6. Review all available survey data and GIS data for understanding of the topography and any changes in elevation (i.e., consolidation of levee material)
7. Review operations and observations documented during Hurricane Harvey to compare alongside the facilities' designed capabilities

Construction Review

1. Review "Record Drawings" of LID 19 facilities for consistency with original plans and specifications
2. Review construction submittals for consistency with original plans and specifications (ie..pump curves)
3. Review Construction Daily Reports of LID 19 facilities from Resident Project Representative to determine any construction anomalies that may not be apparent in existing facility

Meetings /Questions/Interviews

1. Coordinate and conduct progress meetings with LID 19 personnel
2. If necessary, provide questions and/or conduct interviews to aid in clarifying any assumptions or methodologies included in the design

Report Development

1. Compile all documentation of reviews and findings
2. Develop a detailed report including an executive summary on LID 19 Facilities Design Compliance

Deliverables

1. 10 hard copies of spiral bound report
2. 5 digital copies of the report on individual jump drives (digital copy will be place on portal for downloading as well)

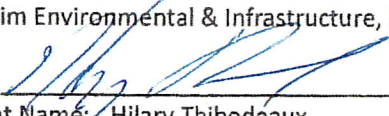
Price (Not-To-Exceed)

| Task Description | Approx. Man-Hours | Cost |
|---------------------------------------|-------------------|---------------------|
| Review of Existing Documents and Data | 94 | \$12,347.00 |
| Design Review | 414 | \$58,341.00 |
| Construction Review | 136 | \$17,585.00 |
| Meetings / Questions / Interviews | 47 | \$7,352.00 |
| Report Development | 123 | \$17,448.00 |
| Direct Expenses (Travel Expenses) | | \$3,200.00 |
| Total Not-To-Exceed Cost | 814 | \$116,273.00 |


Completion

Job Order No. 1 will be complete, in its entirety, on or before April 7, 2018.

Aptim Environmental & Infrastructure, Inc.

By:  Date: 2/2/18
Print Name: Hilary Thibodeaux
Title: Engineering Director

Fort Bend County Levee Improvement District No. 19

 Date: 1/21/18
President, Board of Directors