WYLIE EDC

Wylie Economic Development Board

AGENDA REPORT

Meeting Date:	January 19, 2022	**Item Number:**	3
Prepared By:	Jason Greiner	**Account Code:**	
Date Prepared:	1/17/22	**Exhibits:**	

Subject

Consider and act upon the award of bid for the flood study at Hooper/Steel to Cardinal Strategies Engineering Services, LLC.

Recommendation

Motion to award a contract to Cardinal Strategies in the amount of $38,300 and further authorizing the Executive Director to execute any and all necessary documents.

Discussion

As discussed at the 1-6-22 WEDC Meeting, the Wylie Economic Development Corporation is investigating potential infrastructure improvements to help attract light industrial development to the area. The intersection of Steel and Hooper shows several undeveloped lots along the western side and there is a stream that runs from north to south through the middle of this undeveloped area. The stream is unmapped by FEMA within this specific area but shows to be Zone A downstream of Hooper Road. There should be no FEMA coordination needed.

In order to meet the City of Wylie Engineering Standards, this stream needs to be studied to identify the existing and fully developed flow rates and to establish the local floodplain limits. It is anticipated that reclamation is desired to understand what these properties may be able to achieve in order to develop. In addition, the culvert crossings under both Steel and Hooper are thought to be undersized and may need to be improved to help with potential floodplain reclamation. This scope will investigate potential upsizing of these crossings.

There have been a couple of prior hydrologic and hydraulic studies performed in this area associated with individual developments. Both were prepared by the same engineer but show very different results in flow rates due to differences in time of concentration. This flow rate change drastically changes the limits of the floodplain.

Phase I – Flood Study

1. Collect previous studies and review in detail for comprehension
2. Collect Topographic Field Survey data for Steel and Hooper Road crossings.
3. Collect engineering plans for Steel Road and Hooper Road from the City of Wylie
4. Using the latest TNRIS LiDAR data, delineate the overall watershed to Woodbridge Parkway.
5. Determine the existing and fully developed hydrological parameters for the watershed using the SCS Unit Hydrograph method. This will be completed for pre-project and post-project conditions.

6. Construct an HMS model to determine the flow rates.
7. Determine if detention is warranted based on the differences in flow rates (if any).
8. Using the latest TNRIS LiDAR data, construct a hydraulic model (HEC-RAS) for the stream from Woodbridge Parkway to FM 544. Include Steel and Hooper crossings based on previous modeling, development plans, and site visits with field measurements.
9. Plot the existing and fully-developed floodplain based on the existing contours.
10. Investigate reclamation utilizing the existing stream crossings. Reclamation should be based on equal conveyance.
11. Plot the reclaimed floodplain potential.
12. Investigate improvements to Steel Road culverts and adjust reclamation potential.
13. Plot the reclaimed floodplain potential with the improved Steel Road crossing.
14. Investigate improvement to Hooper Road culverts and adjust reclamation potential.
15. Plot the reclaimed floodplain potential with the improved Steel Road and Hooper Road crossings.
16. Prepare a technical report to summarize the findings.

Phase	Cost
Phase 1 – Flood Study	$38,300

Cost Estimate does not include the following:

1. Environmental permitting
2. Coordination with any entities other than City of Wylie
3. Updates to the flood study or any additional coordination with Wylie due to changes to the site or grading plan
4. Development of a FEMA LOMR submittal
5. Engineering Design Plans

Upon approval, WEDC Staff will sign and return the documentation and expedite this process.