



May 2, 2023

Mr. Chris Whittaker
City Manager
City of Angleton
121 S Velasco,
Angleton, TX 77515

Re: Proposal for intersection study for the City of Angleton, TX

Dear Mr. Whittaker,

HDR Engineering, Inc. (HDR) is pleased to submit this proposal for performing engineering services for the above referenced project. This proposal is based on our understanding of the project as per previous conversations.

1. Introduction and Objective:

The City of Angleton requested HDR to conduct an intersection study to determine what improvements are needed at the intersection of County Road 44 and Enchanted Oaks Drive. As part of the study, a signal warrant analysis will be conducted to determine if the intersection should be signalized per the guidelines provided in the 2011 Texas Manual on Uniform Traffic Control Devices (TMUTCD) Revision 2. In addition to the warrant analysis, the existing year and one future year traffic condition will be analyzed using traffic modeling software Synchro or Highway Capacity Software (HCS). Turning movement counts will be conducted as part of this study.

2. Project Approach:

The first step is the data collection, which includes historical traffic counts from Texas Department of Transportation's (TxDOT) Traffic Count Database System (TCDS) and any previously conducted traffic studies. New turning movement counts will be conducted for 12 hours on an average weekday at the study intersection. These turning movement counts will then be evaluated with each relevant traffic signal warrant as outlined in the TMUTCD. The satisfaction of any of the warrants along with engineering judgement will be important to determine if the study intersection should be signalized.

In addition, the peak hours of traffic for the study intersection will be calculated from the turning movement counts. This peak hour data will be analyzed using traffic modeling software Synchro or HCS to determine the existing year and future year traffic condition of the study intersection. HDR and the City will choose one future year as part of this analysis. A growth rate will be determined using historical traffic counts. Further traffic recommendations will be made using this traffic analysis.

This study will be documented in the form of a project memorandum, which will include conceptual exhibits showing the traffic recommendations and construction cost estimates. HDR will attend up to two meetings to discuss project progress and results.

3. Methodology. The study methodology can be summarized in these steps:

- a. Data Collection
- b. Signal Warrant Analysis
- c. Peak Hour Traffic Analysis
- d. Project Memorandum

a. Data Collection

Historical traffic data will be collected from TxDOT's TCDS and from any previously conducted traffic studies. New turning movement counts will be conducted for 12 hours on an average weekday at the study intersection.

b. Signal Warrant Analysis

Signal warrant analysis will be conducted using TxDOT's Traffic Survey – Count Analysis Form, which uses guidelines from the TMUTCD.

c. Peak Hour Traffic Analysis

The typical traffic operation for an intersection has a morning peak hour and an afternoon peak hour. The new turning movement counts will be used to determine these peak hours. An additional midday or school peak hour may be calculated if needed. The peak hour data will then be analyzed through a capacity analysis using Synchro or HCS. Capacity analysis is a method by which traffic volumes are compared to the calculated roadway and intersection capacities to evaluate existing year and future year traffic conditions. Historical traffic counts will be used to determine a growth rate to project traffic data for a future year scenario.

d. Project Memorandum

This study will be documented in the form of a project memorandum, which will include a summary of the data collection, signal warrant analysis, peak hour calculations, growth rate calculations, existing and future year capacity analysis, conceptual exhibits showing recommended intersection improvements and construction cost estimates.

Deliverables:

- 1. Turning movement counts in an excel spreadsheet form.
- 2. TxDOT's Traffic Survey – Count Analysis Form.
- 3. Conceptual exhibits showing recommended intersection improvements and construction cost estimates.
- 4. Project memorandum.

FEE SUMMARY

Design Phase Services

Basic Services (Lump Sum):	\$ 24,285
Traffic Counts (Subconsultant's cost plus 10%):	\$ 715
Total Fee:	\$ 25,000

SCHEDULE

It is estimated that the schedule to accomplish the complete the study in approximately six (6) months from the date of authorization to proceed.

INVOICES

HDR will submit monthly invoices for all engineering work completed to invoice date. The invoices for lump sum work will be based on a percentage of completion of each phase applied to the lump sum fee and based on the appropriate fee cost for work from our subconsultants. Time and materials charges and additional services beyond those described in the Scope of Services will be invoiced on the basis of direct labor costs times a factor of 3.18 and direct cost plus 10%. Mileage will be charged at prevailing IRS rates.

HDR appreciates the opportunity to submit this proposal and we look forward to continuing our work with the City.

Sincerely,

HDR ENGINEERING, INC.



David Weston
Vice President/Area Manager

Approved:

Authorized signature on behalf of the City of Angleton: _____

Printed Name: _____

Title: _____

Date: _____