

WORK AUTHORIZATION NO. 2

PROJECT: Traffic Signal Warrant Studies

This Work Authorization is made pursuant to the terms and conditions of the Williamson County Contract for Engineering Services, being dated **October 8, 2015** and entered into by and between Williamson County, Texas, a political subdivision of the State of Texas, (the "County") and **HDR, Inc.** (the "Engineer").

Part 1. The Engineer will provide the following Engineering Services set forth in Attachment "B" of this Work Authorization.

Part 2. The maximum amount payable for services under this Work Authorization without modification is **\$16,290.60.**

Part 3. Payment to the Engineer for the services established under this Work Authorization shall be made in accordance with the Contract.

Part 4. This Work Authorization shall become effective on the date of final acceptance and full execution of the parties hereto and shall terminate on **September 30, 2017.** The Engineering Services set forth in Attachment "B" of this Work Authorization shall be fully completed on or before said date unless extended by a Supplemental Work Authorization.

Part 5. This Work Authorization does not waive the parties' responsibilities and obligations provided under the Contract.

Part 6. County believes it has sufficient funds currently available and authorized for expenditure to finance the costs of this Work Authorization. Engineer understands and agrees that County's payment of amounts under this Work Authorization is contingent on the County receiving appropriations or other expenditure authority sufficient to allow the County, in the exercise of reasonable administrative discretion, to continue to make payments under this Contract. It is further understood and agreed by Engineer that County shall have the right to terminate this Contract at the end of any County fiscal year if the governing body of County does not appropriate sufficient funds as determined by County's budget for the fiscal year in question. County may effect such termination by giving written notice of termination to Engineer.

Part 7. This Work Authorization is hereby accepted and acknowledged below.

EXECUTED this 29th day of November, 20 16.

ENGINEER:

HDR, Inc.

By: 

Signature

RASHED ISLAM

Printed Name

VICE PRESIDENT

Title

COUNTY:

Williamson County, Texas

By: 

Signature

DAK B. CATTIE

Printed Name

County Judge

Title

LIST OF ATTACHMENTS

Attachment A - Services to be Provided by County

Attachment B - Services to be Provided by Engineer

Attachment C - Work Schedule

Attachment D - Fee Schedule

Attachment A - Services to be Provided by County

The **COUNTY** shall furnish to the **ENGINEER** the following items as required:

1. Meet with the **ENGINEER** as needed to discuss project.
2. Current CAD files and/or as-built drawings for the following intersections:
 - a. Anderson Mill Road and Amasia Drive
 - b. Anderson Mill Road and Osborne Drive
3. Crash history data for the most recent thirty-six (36) months for the intersections listed above.
4. Timely review and decisions necessary for the **ENGINEER** to maintain the contracted project schedule.

Attachment B - Services to be Provided by Engineer

HDR Engineering, Inc. (**ENGINEER**) will perform traffic signal warrant studies at the intersections listed below.

1. Anderson Mill Road and Amasia Drive
2. Anderson Mill Road and Osborne Drive

The following tasks will be conducted to complete the study.

A. FEASIBILITY, ROUTE, AND DESIGN STUDIES (FUNCTION CODE 110)

TASK 1: Project Management

The **ENGINEER** will coordinate with the **COUNTY** as necessary for successful completion of the work assignment. The following tasks will be completed:

- Coordinate with the **COUNTY** and project team to obtain project details.
- Attend one (1) meeting to discuss project progress and to present study results.
- Submit monthly invoices.

TASK 2: Data Collection

The **ENGINEER** will obtain necessary traffic data and information to complete existing conditions operational analysis of the intersections listed above. The following tasks will be completed:

- Collect 12-hour manual turning movement counts from 6:00 AM to 6:00 PM on a typical weekday (Tuesday, Wednesday, or Thursday), at the study intersections. Counts will be recorded at 15-minute and hourly intervals and will include pedestrian volumes.
- Collect 24-hour automated approach traffic counts, broken into 15-minute and hourly intervals, concurrently with the turning movement counts, at the study intersections.
- Perform a field review of the study intersections to document existing geometrics, lane use, traffic controls, and operational characteristics.
- Collect crash data from the Texas Department of Transportation Traffic Operations Division (TRF) for the most recent thirty-six (36) month period of available data.

TASK 3: Traffic Signal Warrant Studies

The **ENGINEER** will complete the signal warrant analyses for the study intersections and document all results and conclusions in a warrant analysis report. The following tasks will be completed:

- Perform traffic signal warrant analysis, based on the guidelines provided in the Texas Manual on Uniform Traffic Control Devices (TMUTCD).
- Complete the TxDOT form "Traffic Survey Count Analysis" for the study intersections for inclusion in the report.
- Develop recommendations for traffic control at the study intersections based on the results of the warrant analysis, field observations, and engineering judgment.

TASK 4: Preparation of Technical Memorandum

The **ENGINEER** will summarize results of the traffic signal warrant studies in a technical memorandum. The memorandum will include the following information for the study intersections:

- Documentation of study methodology
- Hourly approach volumes
- Results of signal warrant analysis
- Conclusions and recommendations
- TxDOT form: Traffic Survey – Count Analysis
- Other supporting documentation used to perform analyses

DELIVERABLES:

- Draft Technical Memorandum
- Final Technical Memorandum

Attachment C - Work Schedule

PROJECT NAME: Williamson County, Anderson Mill Road Warrant Studies

TASK	TASK DESCRIPTION	SR PROJECT MANAGER	SENIOR ENGINEER	PROJECT ENGINEER	DESIGN ENGINEER	EIT	CAD OPERATOR	ADMIN/ CLERICAL	TOTAL LABOR HRS.	TOTAL LABOR COST
FC 110	FEASIBILITY, ROUTE, AND DESIGN STUDIES									
1	PROJECT MANAGEMENT		8					8	16	\$2,080.00
2	TRAFFIC DATA COLLECTION AND REVIEW		2	4		8			14	\$1,910.00
3	TRAFFIC WARRANT ANALYSIS		4	12		24			40	\$5,340.00
4	PREPARATION OF TECHNICAL MEMORANDUM		4	6		24		2	36	\$4,570.00
	HOURS SUB-TOTALS	0	18	22	0	56	0	10	106	\$13,900.00
	CONTRACT RATE	\$240.00	\$195.00	\$150.00	\$125.00	\$115.00	\$90.00	\$65.00		
	TOTAL LABOR COSTS	\$0.00	\$3,510.00	\$3,300.00	\$0.00	\$6,440.00	\$0.00	\$650.00		\$13,900.00
	SUBTOTAL									\$13,900.00

Direct Cost	Contract Rate	Unit	Quantity	Amount
Standard Postage	0.46	each	0	\$0.00
Hazardous Materials Database Search	\$2,000	each	0	\$0.00
CADD Plotting	\$7.50	LF	0	\$0.00
Mylar Plots	\$3.00	LF	0	\$0.00
Digital Ortho Plotting	\$7.50	LF	0	\$0.00
8 1/2"x11" BW Paper Copies	\$0.10	Sheet	400	\$40.00
8 1/2"x11" Color Paper Copies	\$1.00	Sheet	200	\$200.00
11"x17" BW Paper Copies	\$0.15	Sheet	0	\$0.00
Turning Movement Counts	\$50.00	Hour	24	\$1,200.00
Roadway Tube (per counter/24 Hours)	\$125.00	each/day	7	\$875.00
Mileage	\$0.54	Per Mile	140	\$75.60
SUB-TOTAL DIRECT COST				\$2,394.10
SUB-TOTAL LABOR				\$13,900.00
TOTAL HOURLY RATE COST				\$16,290.60

Attachment D - Fee Schedule

Task	Year				2016								2017								
	Month:				NOV				DEC				JAN				FEB				
	Week of:				6	13	20	27	4	11	18	25	1	8	15	22	29	5	12	19	26
Project Management																					
Notice to Proceed																					
Project Management																					
Traffic Engineering Studies																					
Traffic Warrant Studies																					
Meeting with County																					
Data Collection/Reduction																					
Field Review																					
Warrant Analysis																					
Preparation of Draft Tech Memo																					
County Draft Review																					
Preparation of Final Tech Memo																					