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**WORK AUTHORIZATION NO. 1**  
**PROJECT: SH 130 FRONTAGE ROAD TIA UPDATE**

This Work Authorization is made pursuant to the terms and conditions of the Williamson County Contract for Engineering Services, being dated May 14, 2019 and entered into by and between Williamson County, Texas, a political subdivision of the State of Texas, (the "County") and HDR Engineering, 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 \$27,415.00.

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, 2019. 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. This Work Authorization is hereby accepted and acknowledged below.

EXECUTED this 14<sup>th</sup> day of May, 2019.

ENGINEER:

HDR Engineering, Inc.

By: [Signature]

Signature

Rashed T. Islam, PE, PTOE

Printed Name

Vice President

Title

COUNTY:

Williamson County, Texas

By: [Signature]

Signature

Bill Gravell Jr.

Printed Name

Williamson County Judge

Title

OK  
m 5/9/2019

## **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 THE COUNTY**

Williamson County shall furnish to the **ENGINEER** the following items as required:

1. Furnish available existing "as-built" information, interface data, and construction documents for the **COUNTY** projects adjacent to, crossing, and/or within limits
2. Assistance to the **ENGINEER** to obtain required data and information from other local, regional, State, and federal agencies
3. Timely review and decisions necessary for the **ENGINEER** to maintain the contracted project schedule
4. Information regarding known current or future development within the project corridor that may affect the development of the traffic projections.
5. Available existing traffic counts and design year traffic projections necessary to develop traffic studies
6. Available AM and PM peak period traffic counts for the existing intersections
7. Available signal timing information and plans for the signalized intersections within the study area

## ATTACHMENT B

### SERVICES TO BE PROVIDED BY ENGINEER

HDR Engineering, Inc. (**ENGINEER**) previously completed the traffic redistribution and analysis of the traffic volume projections on the missing SH 130 frontage road segments as listed below:

1. Phase 1: Northbound frontage from FM 685 to US 79
2. Phase 2: Northbound frontage from US 79 to Limmer Loop
3. Phase 3: Southbound frontage from Limmer Loop to US 79

The **ENGINEER** will update the traffic analysis to incorporate a fourth phase—the southbound SH 130 frontage road from US 79 to FM 685. The following tasks will be performed:

#### 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 City, State, **COUNTY**, CAMPO, 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: TRAVEL DEMAND FORECAST DEVELOPMENT

The **ENGINEER** has modified the CAMPO 2040 travel demand model (TDM) roadway network to incorporate the three (3) proposed frontage road additions as individual stand-alone improvements and as a group (“full build”). The Engineer will modify the CAMPO 2040 TDM to incorporate the fourth phase, as a stand-alone improvement and as part of the “full build” scenario.

Only the assignment process will be conducted using the CAMPO 2040 models to develop forecasted volumes (daily, three-hour AM peak and PM peak periods) for the frontage road links. The developed forecasts will be validated for reasonableness. This is an iterative process that involves the execution of the TDM, comparison of modeled traffic volumes to observed counts, adjusting the TDM, and repeating the process until acceptable matches are obtained. The three-hour AM peak and PM peak period forecasts will then be converted to peak hour volumes for all of the scenarios. The Engineer will not recalibrate the 2010 base year models nor adjust the socioeconomic data in the TDM. A Traffic and Revenue analysis will also not be performed as part of this study.

## **ATTACHMENT B**

### **TASK 3: TRAFFIC OPERATIONAL ANALYSIS**

The **ENGINEER** has developed AM peak and PM peak hour Synchro models and summarized results for the following stand-alone improvement scenarios:

- Year 2040 Phase 1 Only
- Year 2040 Phase 2 Only
- Year 2040 Phase 3 Only
- Year 2040 Full Build (all three (3) phases)

The Synchro models include the current SH 130 frontage and interchanges from FM 685 to Limmer Loop. The future year conditions models include the respective new frontage road segment(s) for each scenario.

The **ENGINEER** will update the operational analysis to include a Year 2040 Phase 4 Only scenario and incorporate Phase 4 into the Year 2040 Full Build scenario.

#### Deliverable:

Synchro output files

### **TASK 4: PREPARATION OF TECHNICAL MEMORANDUM**

The **ENGINEER** has incorporated the traffic volume forecasts and operational analysis results of the three stand-alone phase scenarios and Full Build scenario in a technical memorandum. The **ENGINEER** will update the memorandum to incorporate the Year 2040 Phase 4 Only and updated Year 2040 Full Build scenario results, including:

- Traffic volume forecasts for the frontage road links
- Comparative delay and level of service by intersection

#### Deliverables:

Draft Technical Memorandum  
Final Technical Memorandum

Task	Task Name	Calendar Days	Start	End	May 19	Jun 19	Jul 19	Aug 19	Sep 19	Oct 19	Jul 16	Aug 16
1	Project Management	162	1-May-19	30-Sep-18								
2	Travel Demand Forecast Development	33	1-May-19	3-Jun-19								
3	Traffic Operational Analysis	24	4-Jun-19	28-Jun-19								
4	Preparation of Technical Memorandum	74	17-Jun-19	30-Aug-19								
	Draft Technical Memorandum		31-Jul-19	31-Jul-19								
	Final Technical Memorandum		30-Aug-19	30-Aug-19								

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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	100	\$10.00
8 1/2"x11" Color Paper Copies	\$1.00	Sheet	50	\$50.00
11"x17" BW Paper Copies	\$0.15	Sheet	100	\$15.00
Turning Movement Counts	\$400.00	Intersection	0	\$0.00
Roadway Tube (per counter/24 Hours)	\$125.00	each/day	0	\$0.00
Mileage	\$0.555	Per Mile	-	\$0.00
SUB-TOTAL DIRECT COST				\$75.00
SUB-TOTAL LABOR				\$27,340.00
TOTAL COST				\$27,415.00