WORK AUTHORIZATION NO. 1

PROJECT: Wilco Transportation Plan

This Work Authorization is made pursuant to the terms and conditions of the Williamson County Contract for Engineering Services for Updating the Wilco Transportation Plan, being dated **March 19, 2024** and entered into by and between Williamson County, Texas, a political subdivision of the State of Texas, (the "County") and **Alliance Transportation Group** (the "Engineer").

Part1. 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 **$703,278.00.**

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 **December 31, 2025**. 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 Mar 19, 2024.

ENGINEER:	COUNTY:
Alliance Transportation Group	Williamson County, Texas
By: 	By: Bill Gravell Jr. Bill Gravell (Mar 19, 2024 17:11 CDT)
Signature	Signature
JD Allen	Bill Gravell, Jr.
Printed Name	Printed Name
President	County Judge
Title	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

Williamson County Road & Bridge Division personnel will provide project direction, review and oversight. Additionally, they will provide available data (GIS, cross sections, etc) on planned roadways in Williamson County, and work with CAMPO to obtain a copy of the CAMPO travel demand model and its underlying scripts.

Attachment B

Services to be Provided by the Engineer

Description of Project:
This work program builds upon the collaborative effort with the ATG team serving as an extension of Williamson County (Wilco) staff to provide support for long range planning activities. The following Scope of Work denotes specific steps and major deliverables.

Task 1 Project Management
The ENGINEER shall provide monthly updates on project progress, along with regular reporting in the form of project invoicing. A Project Management Plan (PMP) will be developed at the start of the project to identify overall scheduling, roles, responsibilities and procedures for handling of data, analyses and contact between Wilco and ATG.

Task 2 Wilco Version of Travel Demand Model

The ENGINEER shall begin to update the CAMPO regional travel demand model (model) to more precisely reflect Wilco transportation facilities and travel patterns. This updated model is intended to support long range planning in the County. The model roadway network shall include existing transportation projects as of September 1, 2023, as well as committed projects as listed in the Williamson County Bond Program construction letting list as well as projects identified for construction in the adopted (as of September 1, 2023) CAMPO Transportation Improvement Program. The model shall include updated alignments for corridors in the LRTP and a socioeconomic year designed to represent Wilco at Build Out condition.

CAMPO has released the draft 2050 MTP travel demand model to jurisdictions and supporting ENGINEERS. The 2050 MTP CAMPO model includes the newest socioeconomic forecast for the region, the model runs more reliability and faster, and it will be used to support the 2050 CAMPO Metropolitan Transportation Plan that will be delivered in 2025. This model represents the logical starting point to refine in support of Wilco long range planning efforts as it will be valid longer.

2.1 Highway Network Verification and Update

Review base year transportation system networks within the model so that the representation of roadways and roadway attributes in the model is consistent with actual base year roadway characteristics. The latest Metropolitan Transportation Plans (MTP), and the TxDOT Statewide Transportation Improvement Program (STIP) will be reviewed within the project area and for facilities directly impacting the project area.

Add roadways (grade separated facilities and arterials) from the Wilco Long Range Transportation Plan (LRTP) to form a more detailed future year highway network layer with which the CAMPO model can be operated with and to support analysis of the LRTP system.

2.2 Additional Highway Network Detail

Refine and add additional detail to the highway network geography as necessary to provide the scale and resolution necessary to support the analysis of travel patterns within Wilco and to support analysis of the Wilco Long Range Transportation Plan (LRTP).

Deliverables for Task 2

- Updated TransCAD format CAMPO highway network layer

Task 3 Wilco Demographics

The ENGINEER shall plan for the update of population and employment demographics and socioeconomic data for an ultimate build out scenario for Williamson County. The build out scenario shall be based on realistic assumptions about future growth, based on current distribution and density of land uses in the County supplemented by reasonable assumptions about future growth trends, emerging patterns, available supply stock, anticipated absorption capacity, and using other high growth counties in the state as examples of other high growth scenarios.

Task 3.1 Assemble Methodology

The ENGINEER will also research options for the forecasting of Williamson County socio-economic inputs to the model to reflect a build out scenario and to disaggregate to the new more details TAZ structure. The socio-economic forecasting procedure shall be designed to support the requirements of the CAMPO Model and the needs of the Williamson County LRTP.

Task 3.2 Socioeconomic Build Out Scenarios

The ENGINEER shall develop population, household and employment demographics for an ultimate build out scenario of Williamson County. This analysis includes, to the greatest extent possible, planned and proposed inventory that could influence development in the study area.

The ENGINEER shall analyze the information generated and synthesized to estimate the build-out capacity of all transportation analysis zones for existing development types at prevailing and/or anticipated densities and land utilization rates, taking into account limits on developable land by type.

Using the gathered information, the ENGINEER shall allocate the additional population, households and employment to the respective CAMPO TDM traffic analysis zones (TAZ) within the study area.

Deliverables for Task 3 Demographics

- Technical memorandum that includes detailed description of the methods, assumptions and processes used.
- A GIS database containing the ultimate build out demographic, socioeconomic and land use data as influenced by each transportation scenario at the TAZ level.

Task 4 Travel Demand Modeling and Analysis

The following tasks are designed to measure and analyze the future performance of the Williamson County transportation system under a set of transportation scenarios defined by the County using the updated model.

Task 4.1 Mobility Measures

To define how the TDM will be used and the results will be aggregated, reported and analyzed, the ENGINEER shall focus on the ways in which the multimodal transportation system performs in terms of quantitative mobility measures. Mobility is a measure of the transportation system's ability to successfully move people and goods from one place to another, both within the County and to connect them to regional activity centers. Mobility measures will include TDM output data including:

- Traffic congestion
- Total system delay
- Roadway Level of Service

Individual mobility measures shall be developed in collaboration with County with a focus on items related to outcome based system performance management principles used for assessment of projects in regional, state and federal funding programs.

Task 4.2 Evaluation of Future Traffic Conditions (model scenarios)

The ENGINEER shall apply the CAMPO travel demand model to develop traffic forecasts for a selected set of up to four (4) Alternative Build Scenarios. These runs shall provide the County with the ability to undertake, with support from the ENGINEER, scenario based planning and testing of proposed alternatives to be used in development and analysis of the LRTP. Under this task the ENGINEER shall:

- Perform model runs to produce traffic forecasts for each of the four (4) scenarios using the ultimate build out land use and socioeconomic scenario (as revised for each scenario).
- Format the results and report the transportation system outcomes of each scenario in terms of the selected mobility measures.
- Interpretation and comparative analysis of the results of each of the modeled scenarios to provide insight into the dynamics of the various alternatives, the potential impacts and interactions of transportation and land use, and the factors most likely to help or hinder optimization of the transportation system in Williamson County.

Deliverables for Task 4

- A set of transportation performance measures that can be used to evaluate the performance of the Williamson County Transportation System performs.
- CAMPO model traffic forecasts for each of four (4) scenarios defined by the County
- Comparative analysis of the results of the four (4) scenarios to provide insight into the dynamics of the various alternatives and the interaction of the transportation system and future land use.

Task 5 Mapping Support

To support the County in providing materials to help staff, County planning partners, policy makers and the public visualize the outputs of the model, the ENGINEER shall provide maps depicting key measures and outputs of the model.

Task 5.1 Traffic Map Production

The ENGINEER shall produce Build Out volume maps to focus on state facilities and proposed Wilco corridors, and shall create maps depicting the number of lanes needed to support the model forecast volumes for the horizon and Build Out years that focus on state facilities and proposed Wilco corridors.

Deliverables

- Three (3) printed copies of the updated Build Out volume maps.
- PowerPoint slides (3 to7) depicting the updated Build Out volumes depicted on the updated maps.
- Three (3) printed copies maps depicting the number of lanes needed to support the model forecast.

Task 6 Travel Demand Modeling Research and Analysis

The following tasks are designed to research, identify, analyze and present historic traffic forecast produced to support regional long-range planning. The analysis of these historic travel demand forecast shall present trends and conclusion related to the accuracy of the historic forecast and possible shortcoming and there impacts on the planning of transportation infrastructure in Williamson County.

Task 6.1 Identification and Analysis of Historic Roadway Forecast

The ENGINEER shall obtain available historic travel demand models (TDM) used to facilitate transportation planning in Wilco. It is envisioned that a subset of the following models will be obtained and analyzed:

- **1992 Base Travel Demand Model** –Network layer and assignment file may be available. Included a 2020 forecast year. Model covers Travis County and a small sliver of Williamson.
- **1997 Base Travel Demand Model** – TransCAD network and assignment file are available. Included 2015 & 2025 forecast years. Three counties in model.
- **2007 Base Travel Demand Model** – TransCAD Network and assignment file and at least a 2017 & 2030 traffic assignment file. This is the 1997 model with updated 2007 demographics.
- **2005 Base Travel Demand Model** – Five county model version. Many forecast years.
- **Campo 01/01/2016 –** 2010 base year model with several forecast years.
- **Campo 12/02/2016** – 2010 base model with several forecast years. This is essentially the current version of the model used for Capital Express Study, WilCo LRTP, and Orange Line Analysis.
- **CAMPO 2015 Based model** –version of the model. Developed by ATG. Networks and Demographics by CAMPO GPC.
- **CAMPO 2017** – in use in 2023. Developed by AECOM under a TPP contract.
- **CAMPO 2050 MTP**- not in active use as of 2023. Will be adopted with the 2050 MTP.

Deliverables

- Memorandum with chart and maps conveying historic forecasts and their accuracy and possible impacts on transportation planning in Wilco.

Task 7 Updating Existing Major Transportation Plan Documentation

7.1 Receive/incorporate updates to existing technical memos based upon previous tasks.

7.2 Conduct review meetings with Williamson County

7.3 Develop final report with executive summary.

Task 8 EWH at I-30

The Engineer will develop projected traffic volumes for the intersection of EWH (East Williamson Highway aka Gattis School Road) and SH 130. The analysis for this intersection will use a set of travel demand models and perform an operational analysis of the intersection. The goal of the analysis is to properly size the future bridge and intersections at this location. To support the development of future traffic the effort will make use of the following travel demand models:

1) CAMPO Draft 2050 Model
2) CAMPO Draft 2050 Model known developments
3) Wilco 2018 LRTP Travel Demand Model- Ultimate Build out scenario

Task 2: Route and Design Studies

1. Review, validate and add necessary geographic detail to the most recent 2050 Draft CAMPO Travel Demand Model (TDM), and the Wilco 2018 LRTP Travel Demand Model.
    - The Engineer will confirm that major components of the Wilco long range plan network that have direct impact on the project area are included in the model network and reflect the latest LRTP update.
    - The Engineer will update the socio-economic data of the CAMPO Draft 2050 model to reflect known developments.
2. ATG will develop 24-hour traffic forecast volumes for the project limits presented on line diagrams for the following scenarios at the EWH (East Williamson Highway aka Gattis School Road) and SH 130 Intersection based on the following models and model scenarios:
    - CAMPO Draft 2050 Model
    - CAMPO Draft 2050 Model with Samsung, other known developments, and the new 1,600-acre development northeast of the Chandler Road at FM 1660 intersection that is anticipated to be a facility similar to Samsung
    - Wilco 2018 LRTP Travel Demand Model- Ultimate Build out scenario with Corridors A and E refined to the current LRTP as appropriate for the scenario
3. Traffic operational analysis
    - Provide high level guidance on the configuration and operation of the intersection with projected volumes (3 scenarios) using CAP-X software.
    - Provide traffic operational analysis using SYNCRHO (3 scenarios) based on a standard diamond interchange.
        - ATG will evaluate queues and level of service for both sides of the EWH (East Williamson Highway aka Gattis School Road) and SH 130 intersection, as well as the nearby intersection of EWH and Muirfield Bend Drive under all 3 scenarios.
        - ATG will make recommendations on lane configurations for intersection of EWH (East Williamson Highway aka Gattis School Road) and SH 130 under each scenario.

- ATG will summarize the analysis and results in a technical memorandum.

This scope explicitly excludes the following services.

- Any additional traffic forecast outside of the project limits

Deliverables:

- Technical Memorandum

Attachment C

Work Schedule

Work Schedule:

Engineering services work shall begin immediately upon receipt of the agreement between County and Engineer and authorization to proceed on assigned services. The completed deliverables are due by December 31, 2025.

Attachment D

Fee Schedule

Please see next page.

Alliance Hours and Labor Costs by Task and Labor Category

	Project Principal	Senior Project Manager	Quality Manager	Senior Engineer	Project Engineer	Traffi Engineer	Engineer-in-Training (EIT)	Senior Engineering Technician	Engineering Technician	Sr Planner	Sr Travel Demand Modeler	Travel Demand Modeler III	Travel Demand Modeler I/II	Planner III	Planner II	Planner I	Project Administrator	Clerical	Total Hours	Cost by Task
Task 1 Project Management and Communication																			0	$0.00
Task 1.1 Kickoff Meeting	12	8								8									28	$9,264.00
Task 1.3 Ongoing Project Management and Administration	12	12								12							40	36	112	$20,736.00
																			0	$0.00
Task 2 Wilco Version of Travel Demand Model																			0	$0.00
2.1 Highway Network Verification	12	12					24			24	8	60	12	24					176	$42,120.00
2.2 Additional TAZ and Highway Network Detail										4	48	120	80	24					276	$60,144.00
2.3 Base Year Model Runs and Traffic Comparison										12	60	88	60						220	$50,160.00
2.4 Travel Demand Modeling Memorandum										12	24	24							60	$15,840.00
																			0	$0.00
Task 3 Wilco Demographics for Build Out																			0	$0.00
Task 3.1 Assemble Data	8	12								12		36	24	16					108	$25,800.00
Task 3.2 Socioeconomic Build Out Scenarios	8	12					8			36	80	132	60						336	$80,952.00
																			0	$0.00
Task 4 Travel Demand Modeling and Analysis																			0	$0.00
Task 4.1 Mobility Measures	4	12								36									52	$15,768.00
Task 4.2 Evaluation of Future Traffic Conditions	8	8								24	80	40	40						200	$ 50,832.00
																			0	$ -
Task 5 Mapping Support																			0	$ -
Task 5.1 Traffic Map Production	8	12		16			24			24	24	48				8			164	$ 41,128.00
																			0	$ -
																			0	$ -
Task 6 Travel Demand Modeling Research and Analysis																			0	$ -
Task 6.1 Identification and Analysis of Historic Roadway Forecast	16	16								36	40	24	24	8					164	$ 43,920.00
Task 7 Update existing Major Transportation Plan documentation																				
Task 7.1 Receive/incorporate updates to existing technical memo	8	20	8							20				40	60	120		8	284	$ 40,760.00
Task 7.2 Conduct review meetings with Williamson County	8	60								20				8	8	8		8	120	$ 32,072.00
Task 7.3 Develop final report with executive summary.	8	48	18							20				100	120	220		8	542	$ 76,520.00
Task 8 EWH at I-30																				
Task 8.1: Project Management	1	6		2	11		12										10	4	46	$ 9,357.00
Task 8.2: Route and Design Studies	2	14		2	1		26				16	40	8						109	$ 25,217.00
Task 8.3: Traffic Operational Analysis	3	6		16	17		64	4	5										115	$ 23,652.00
Total Hours	**118**	**258**	**26**	**36**	**29**	**0**	**158**	**4**	**5**	**300**	**380**	**612**	**308**	**220**	**188**	**356**	**50**	**64**	**3112**	**$664,242.00**
Labor rate	$360.00	$330.00	$330.00	$295.00	$255.00	$205.00	$156.00	$202.00	$149.00	$288.00	$288.00	$228.00	$156.00	$222.00	$162.00	$132.00	$135.00	$100.00		
Hours x Labor	$42,480.00	$85,140.00	$8,580.00	$10,620.00	$7,395.00	$0.00	$24,648.00	$808.00	$745.00	$86,400.00	$109,440.00	$139,536.00	$48,048.00	$48,840.00	$30,456.00	$46,992.00	$6,750.00	$6,400.00		$703,278.00
	$42,480.00	**$85,140.00**	**$8,580.00**	**$10,620.00**	**$7,395.00**	**$0.00**	**$24,648.00**	**$808.00**	**$745.00**	**$86,400.00**	**$109,440.00**	**$139,536.00**	**$48,048.00**	**$48,840.00**	**$30,456.00**	**$46,992.00**	**$6,750.00**	**$6,400.00**		**$703,278.00**