THE STATE OF TEXAS §
§
COUNTY OF HIDALGO §

SUPPLEMENTAL AGREEMENT NO. 1
TO WORK AUTHORIZATION NO. 1
TO AGREEMENT FOR PROFESSIONAL SERVICES
C-17-204-10-30

THIS SUPPLEMENTAL AGREEMENT is made pursuant to the terms and conditions of Article 8 of the Agreement made by and between **HIDALGO COUNTY**, hereinafter called the "**Owner**", and **L&G Consulting Engineers Inc,** d/b/a **L&G Engineering**, professional engineers of Mercedes, Texas, hereinafter called the **"Engineer".**

WITNESSETH

WHEREAS, the **Owner** and the **Engineer** executed the Main Contract Agreement on the 5th day of November 2018, concerning professional engineering services for the **"Mile 10 project from Mile 6 to FM 1015"** for the completion of the Environmental Document, Public Involvement, Schematic Design hereinafter referred to as the "**Project**"; and,

WHEREAS, it has become necessary to amend "*Exhibit B, Scope of Services to be provided by the Engineer*" of Work Authorization No. 1 for the following reasons:

1. Capacity and Level of Services Analysis will be performed by Ergonomic Transportation Solutions, Inc.,

WHEREAS, it has become necessary to amend *"Exhibit D-1 – Estimated Man-Hour Breakdown"* of Work Authorization No. 1 to include the costs associated with Capacity and Level Service Analysis,

WHEREAS, the Estimated Cost from the original Work Authorization No. 1 $1,370,741.52 will increase by $56,000.00; therefore the amount of Work Authorization No. 1 increases to $1,426,741.52.

NOW, THEREFORE, premises considered, the **Owner** and the **Engineer** agree that said **Agreement is** amended as follows:

1. Sections of the Agreement, EXHIBIT "B" – SERVICES TO BE PROVIDED BY THE ENGINEER and EXHIBIT "D-1" – PROJECT ESTIMATED FEE SCHEDULE, are revised to reflect the above listed modifications of this Supplement.

All other provisions are unchanged and remain in full force and effect.

IN WITNESS WHEREOF, the Engineer and the Owner have caused this Supplemental Agreement to the Agreement for Professional Services to be executed as of the ___day of _____, 2021.

ENGINEER:
L&G CONSULTING ENGINEERS, INC.

BY: _____
Jacinto Garza P.E., President

OWNER:
HIDALGO COUNTY

BY: _____
Richard F. Cortez, County Judge

EXHIBIT "A"

Services to be provided by the County

1. The County will issue work authorization to initiate all required services and designate the authorized representative of the coordination of each work authorization.

2. The County will provide copies of all subdivision plats of record and/or in the subdivision process.

3. The County will provide the Engineer with on-going guidance, timely reviews, and decisions necessary to complete services required by the work authorization in order to permit the Engineer to maintain an agreed upon project schedule.

4. The County will process all acceptable requests for payment in a timely manner.

EXHIBIT "B"

SCOPE OF SERVICES

CAPACITY AND LEVEL OF SERVICE ANALYSIS

Along Mile 10 North Road: From Mile 6 West Road to FM 1015

Ergonomic Transportation Solutions, Inc. (ETSI) will provide traffic analysis services to assess present and future quality of traffic flow along Mile 10 North Road, from Mile 6 West Road to FM 1015, in Hidalgo County, Texas.

Analysis input data will include existing traffic count data along with future projected traffic data from available sources. No new traffic counts will be necessary.

The analysis will follow TRB's Highway Capacity Manual, latest edition and it will cover two peak traffic periods (usually 1 typical weekday AM hour and 1 typical weekday PM hour), for three scenarios: 1) Existing Year Scenario, 2) Construction Completion Year Scenario and 3) Future Design Year Scenario (20 years after construction).

Key elements of the study are:

- Assessment of traffic trends and capacities on the existing Mile 10 North Road facility,
- Determination and assessment of future traffic patterns on "No Build" and "Build" alternatives,
- Determination of geometric requirements to ensure acceptable quality of traffic flow (LOS C or better).
- Determination of intersection controls
- Determination of lane assignments
- Determination of access management treatments
- Determination of Pedestrian facility requirements
- Determination of Bicycle facility requirements

The study effort is described in the following tasks:

TASK I - COLLECTION OF PERTINENT INFORMATION

ETSI will assemble and review project related data from various sources, including public

agencies as well as private entities.

This effort will consist of data collection in the following categories:

- Traffic Trends: ETSI will utilize past collected turning movement counts along Mile 10 North as part of a previously conducted Signal Warrant study.
- Traffic trends on competing parallel corridors, if available.
- Related CADD files of the study area (to be furnished by L&G)
- Other available Engineering Maps and topographic data in electronic and/or hard copy format
- Existing and/or planned Development in the area (obtained from local governments and/or the Lower Rio Grande Valley MPO)
- Short and Long Range Transportation Planned Improvements in the area that may influence traffic operations within the study area
- Existing and projected Land Use, Socioeconomic and Other Demographic Data (obtained from the Lower Rio Grande Valley MPO)
- Crash records from available TxDOT databases
- Data to be provided by L&G:
    - Travel Demand Model assignments for base and future years (Report produced by C&M)
    - Relevant study reports, if available
    - Design data from record drawings of existing and proposed facilities
    - Roadway inventory information, including the number of lanes, speed limits, pavement and ROW widths
    - Existing Record drawings for the existing facility, if available
    - Existing traffic signal timing plans, if available
    - Aerial photos
    - Other information as the need arises

The data collection process may require coordination meetings with local community officials. The following agencies may be contacted to provide input and available information for the study:

- Texas Department of Transportation
- Lower Rio Grande Valley MPO (LRGV MPO)

- Hidalgo County

Deliverables: ETSI will present a summary list of all data collected within an appendix of the Final Study report. Electronic files of the data will be submitted to L&G.

TASK II – FIELD RECONNAISSANCE

ETSI will conduct field investigations along the study corridor and will record data relevant to traffic flow, such as:

- Record intersection geometries and controls
- Observe and record traffic signal phasing and timing
- Record presence of pedestrian and bicycle facilities
- Observe pedestrian flows if present
- Observe bicycle flows if present
- Observe traffic operations during AM and PM peak periods at each key intersection and determine adequacy of traffic flow quality. Identify obvious capacity problems and related issues that would need to be considered when developing solutions.
- Identify major traffic generators and record their access to Mile 10 North Road
- Record unsafe conditions as observed
- Identify site distance restrictions if any
- Identify posted speed limits
- Identify presence of roadway illumination
- Record visible utilities, including power lines
- Record existing development in the vicinity of the corridor

The above field information will be used to develop and assess the "Existing Conditions" scenario.

Deliverables: Field reconnaissance data will be organized in report and exhibit/table format in the Final Study report.

TASK III – TRAFFIC PROJECTIONS AND TRIP GENERATION

After collection of all traffic counts, ETSI will assess and determine peak traffic periods for

analysis purposes. ETSI will balance the traffic counts to reflect two peak traffic hours, typically one AM peak and one PM for a typical weekday.

ETSI will also develop Average Weekday Daily Traffic volumes for each link within the corridor to represent the existing traffic conditions.

Classification of trucks and buses will be presented for the peak traffic hour and also for the typical weekday.

Facility peak-hour factors and directional distribution ratios will be calculated based on the existing counts for the various sections of the corridor.

ETSI will assess collected crash reports and determine if certain improvements within the unsafe areas can enhance safety. ETSI will make appropriate recommendations as needed.

ETSI will review and assess current and future planned Land Use information, collected from the LRGV MPO.

ETSI will review the vacant land adjacent to the existing facility and develop trip generation rates and new trips, based on future anticipated land uses, provided by the LRGV MPO.

ETSI will distribute the newly generated trips using the area roadway network. The new trips will be added to the projected volumes developed by the C&M Travel Demand model. The Total Trips will be used to evaluate the Future Design Year scenario.

Peak Hour turning movement volumes will be developed for all analysis scenarios.

Parallel competing corridor traffic will be assessed for potential diversion to the new improved Mile 10 North facility. Additional trips may be developed and added to the Total Volumes.

Deliverables: ETSI will present the trip generation and projection in the final report.

TASK IV – DEVELOP EXISTING CONDITIONS SCENARIO

Based on collected information, ETSI will develop a model network on SYNCHRO or other TxDOT accepted platform to replicate the traffic flow with the existing geometric conditions and controls. All significant roadway links will be coded into the model, including driveways that provide access to major generators.

The model will be adjusted based on field observations to ensure that the existing traffic operations are replicated properly.

Capacity and Level of Service analyses will be performed for two peak traffic hours in a typical weekday. Usually these fall within the morning peak period from 6:00am to 9:00am and within the afternoon peak period from 4:00pm to 6:30pm.

Input for the model will include balanced peak hour traffic volumes, existing geometries and controls. Signalized intersections will be modeled based on optimal phasing and timing plans, unless existing phasing/timing plans become available.

Level of Service indices along with vehicle queues, delays and other measurements of effectiveness will be assessed for accuracy based on field observations.

Deliverables: ETSI will present the methodology and analysis results for the Existing Conditions Scenario in Final Study report.

TASK V - DEVELOP AND ANALYZE ALTERNATIVE SCENARIOS

Following the analysis of the Existing Conditions scenario, ETSI will develop the models for the Construction Completion Year scenario and the Future Design Year scenario (20 years after construction).

Using the SYNCHRO platform and based on information received from L&G, ETSI will test the following alternative scenarios:

- Existing Conditions (2 lanes) with future traffic volumes
- Construction Completion Year (4 lanes) with future traffic volumes
- Future Design Year ((4 lanes) with future traffic volumes

Capacity and Level of Service analysis results will be compared among the scenarios and alternative improvements will be further tested and recommended if deemed appropriate. Analyses results will include vehicle delays, vehicle queues, speeds, vehicle miles traveled, vehicle hours traveled, intersection level of service and other measurements of effectiveness.

Several iterations may be conducted on the above scenarios in order to reach satisfactory

results and acceptable quality of traffic flow.

ETSI may offer recommendations for improving vehicular, pedestrian and bicycle flow through the facility. Such improvements may include:

1. Capacity improvements
2. Added turn lanes
3. Access Management Improvements
4. Pedestrian accommodations
5. Bicycle accommodations
6. Safety improvements, such continuous and/or safety lighting
7. Proposed signalization
8. Intelligent Transportation Systems improvements

Deliverables: ETSI will present the methodology and analysis results for the Alternative Scenario in Final Study report.

TASK VI - TRAFFIC ENGINEERING REPORT

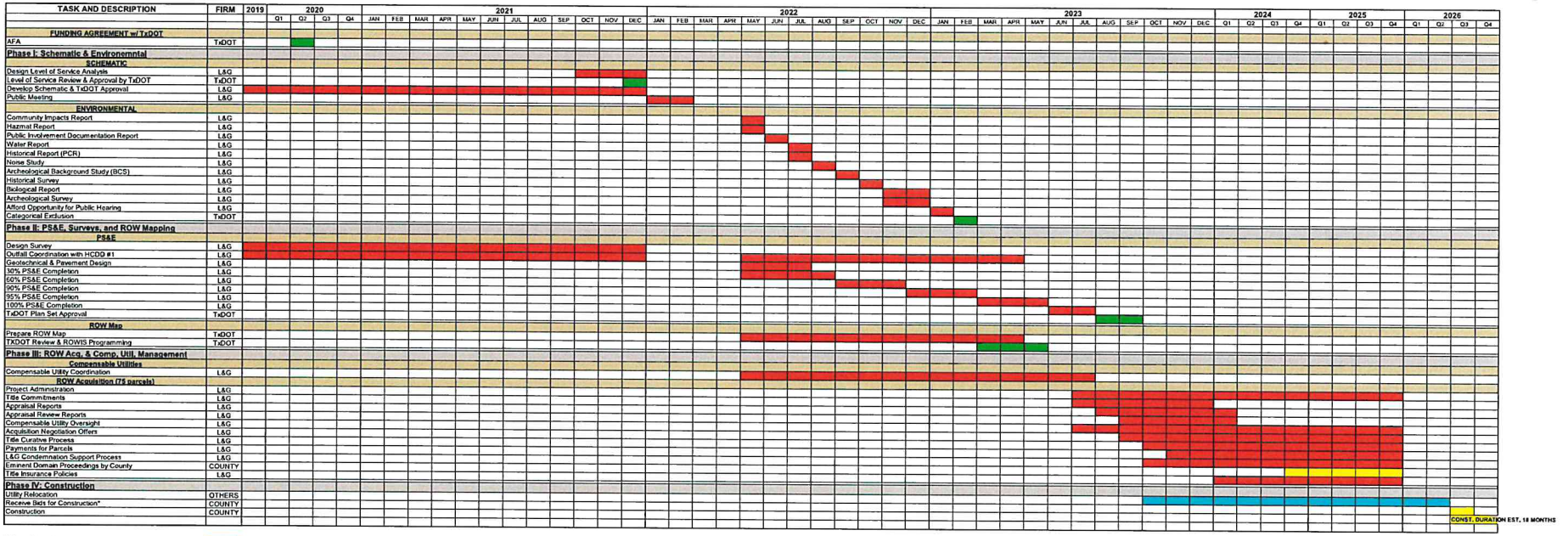
ETSI will prepare a report that describes the each of the above task. The report will cover all contributing factors of the traffic engineering elements of the study, the methodologies used and recommendations for improvements. Adequate number of exhibits and tables will be presented along with renderings of traffic simulation snap shots depicting the various alternative scenarios.

The report will be submitted in draft form for review. After review comments have been received, ETSI will make the necessary modifications and produce the final report.

TASK VII - COORDINATION AND PUBLIC INVOLVEMENT

ETSI will coordinate its effort with L&G during the duration of the project. ETSI may contact other agencies upon authorization from L&G.
ETSI will participate in one public meeting and will assist L&G with presentation of the traffic elements of the project.

PROJECT DEVELOPMENT SCHEDULE
MILE 10 N (CSJ: 0921-02-360)
From Mile 6 W To FM 1015
Length = 3.0 miles



* Note: Schedule assumes project will be moved from FY2029 to FY2026

L&G FUNCTION
TXDOT FUNCTION
HIDALGO COUNTY FUNCTION
OTHERS

revised by J. Sinclair (10-27-2021)

3:27 PM 10/27/2021

REVISED - EXHIBIT D-1
ESTIMATED MAN-HOUR BREAKDOWN

MILE 10 PROJECT ~ from Mile 6 to FM 1015

		Senior Project Manager	Senior Engineer	Senior Environmental Scientist /Specialist	Project Engineer	Right-of-Way Administrator	Senior Engineer Tech	CADD Operator/GIS Analyst	Environmental Planner / Specialist	Admin / Clerical	TOTAL HOURS	Sub-Contract Amounts / ROW COST	TOTAL LINE ITEM COST
	CONTRACT RATE	215.34	180.42	171.69	139.68	197.88	116.40	78.57	84.39	58.20			
WORK AUTHORIZATION NO. 1 - WITH HIDALGO COUNTY													
PHASE I - EA, PUBLIC INVOLVEMENT & SCHEMATIC DESIGN													
1	Determ. of Local cost vs State Cost / Feas. Study and Agreements/AFA with TxDOT/LPA Coord	70	93		78					38.696	279.696		$ 45,000.00
2	Environmental Document with TxDOT			380				380	390	120.088	1270.088		$ 135,000.00
3	Public Involvement for the project with stakeholders and 1 Public Meeting	36	36	114	56	36	36.000	32.000	116	33.340	495.340		$ 67,200.00
4	Archeological and Historial Research *(SUB - See Page 2 and 3 of 6)*			0				0	0	0.000	0.000	$ 18,000.00	$ -
5	Manage and Assist Sub-Consultant with Archeological and Historical Research			62				17.250			79.250		$ 12,000.00
6	Engineering Technical Support at Public Meetings with Layouts etc.				18		210			78.038	306.038		$ 31,500.00
7	Schematic for Roadway & OUTFALLS	48	100		978			912			2037.985		$ 236,640.00
8	Schematic Layout for Intersection Layouts (Mile 5 1/2, FM 88, Mile 4 1/2, Mile 4, Mile 3 1/2, FM 1015)	38	38	110	55	36	32	20	116	20.339			$ 65,000.00
8	Traffic Data Request as per TxDOT directive *(SUB - See Page 4 of 6)*				83				65	20.790	168.790	$ 21,711.28	$ 18,288.72
9	Traffic Signal Warrants (6 Locations) *(SUB - See Page 5 of 6)*				10					11.027	21.027	$ 51,961.47	$ 2,038.53
10	Hydrological Map for 4 Outfall Drain Ditches outfalls and capacities	24	95		290			346			754.994		$ 90,000.00
11	Office Surveys for Schematic (Prel. Ownership Identification and Property Rights) ROADWAY	20	30		204	121	60			14.750	449.750		$ 70,000.00
12	Office Surveys for Schematic (Prel. Ownership Identification and Property Rights) 1.5 Miles of OUTFALLS	8	20		100	60	30			5.775	223.775		$ 35,000.00
13	Preliminary Compensable Utilities Identification on Schematic (ROADWAY AND OUTFALLS)	16	24		100	24	232			8.635	404.635		$ 54,000.00
14	Update Schematic based on comments as provided by TxDOT / FHWA for Schematic, EA Update w/FHWA, City of Weslaco and County Recommendations	16	24		60		115			7.864	222.864		$ 30,000.00
15	Engineering Technical Support to address Public Hearing with Layouts etc.		16	36	35		35	35		29.548	186.548		$ 22,500.00
16	Field Surveys for Design and Construction of ROADWAY *(SUB - See Page 6 of 6)*	40	40		80			147		6.090	313.090	$ 135,091.00	$ 38,909.00
17	Field Surveys for Design and Construction of OUTFALLS *(SUB - See Page 6 of 6)*				300			192		6.124	498.124	$ 20,836.00	$ 57,345.82
18	Either address the Public or hold 1 Public Hearing	12	16	36	36	18		36	36	15.318	205.318		$ 27,000.00
19	Sub-Surface Utility Engineering (SUE) 25 pot holes / mile	30			42		198			5.941	275.941	$ 50,000.00	$ 35,719.71
SUB-TOTAL		**328**	**532**	**738**	**2525**	**295**	**750**	**2117.229**	**723**	**422.363**	**7917.312**	**$ 297,599.75**	**$ 1,073,141.77**

Sub-Total Manhours Fee with Subconsultant Fee:	$ 1,370,741.52

REVISED - EXHIBIT D-1
ESTIMATED MAN-HOUR BREAKDOWN

MILE 10 PROJECT ~ from Mile 6 to FM 1015

	Senior Project Manager	Senior Engineer	Senior Environmental Scientist /Specialist	Project Engineer	Right-of-Way Administrator	Senior Engineer Tech	CADD Operator/GIS Analyst	Environmental Planner / Specialist	Admin / Clerical	TOTAL HOURS	Sub-Contract Amounts / ROW COST	TOTAL LINE ITEM COST
CONTRACT RATE	215.34	180.42	171.69	139.68	197.88	116.40	78.57	84.39	58.20			
SUPPLEMENTAL No. 1 to WORK AUTHORIZATION NO. 1 - WITH HIDALGO COUNTY												
Capacity and level of Service Analysis												
1 Capacity and Level of Service Analysis	16	50		32			20		10.086	128.086	$ 36,905.41	$ 19,094.59
SUB-TOTAL	**16**	**50**	**0**	**32**	**0**	**0**	**20**	**0**	**10.0857**	**128.0857**	**36905.41**	**$ 19,094.59**

Sub-Total Manhours Fee with Subconsultant Fee:	$ 56,000.00
TOTAL PROJECT FEE to include SUPLEMENTAL #1 to WA#1:	**$ 1,426,741.52**

ERGONOMIC TRANSPORTATION SOLUTIONS, INC.
5300 Hollister, Suite 220
Houston, Texas 77040
Tel. (713) 956-9601
Fax: (713) 956-9667

October 26, 2021

Mr. Jacinto Garza, P.E.,
President
L & G Engineering
2100 W. Expressway 83
Mercedes, Texas 78570

Reference: Capacity and Level of Service Analysis for Mile 10 North Road: From Mile 6 West to FM 1015, Hidalgo County, Texas

Dear Jacinto:

We are pleased to submit the attached fee proposal to conduct the referenced services. Our work will cover capacity and level of service analysis to fulfill TxDOT requirements. The analysis will cover the all segments and controlled intersections along the Mile 10 North Road. Our effort will involve traffic modeling for the entire facility during two peak traffic hours and for three target dates, as required by TxDOT; Existing Year, Construction Completion Year and Future Design Year (20 years after construction).

Analyses methodologies described in TRB's Highway Capacity Manual, latest edition will used to assess the quality of traffic flow in order to fulfill TxDOT's requirements.

Our proposed fee for this effort is $36,905.41. Exhibit A shows the proposed scope of services, Exhibit B shows a breakdown of our proposed fees and Exhibit C shows the proposed timeline schedule.

As always we thank you for giving us the opportunity to assist you.

Sincerely,

Harry C. Simeonidis, P.E.,
President

Attachments

EXHIBIT "A"

SCOPE OF SERVICES

CAPACITY AND LEVEL OF SERVICE ANALYSIS

Along Mile 10 North Road: From Mile 6 West Road to FM 1015

Ergonomic Transportation Solutions, Inc. (ETSI) will provide traffic analysis services to assess present and future quality of traffic flow along Mile 10 North Road, from Mile 6 West Road to FM 1015, in Hidalgo County, Texas.

Analysis input data will include existing traffic count data along with future projected traffic data from available sources. No new traffic counts will be necessary.

The analysis will follow TRB's Highway Capacity Manual, latest edition and it will cover two peak traffic periods (usually 1 typical weekday AM hour and 1 typical weekday PM hour), for three scenarios: 1) Existing Year Scenario, 2) Construction Completion Year Scenario and 3) Future Design Year Scenario (20 years after construction).

Key elements of the study are:

- Assessment of traffic trends and capacities on the existing Mile 10 North Road facility,
- Determination and assessment of future traffic patterns on "No Build" and "Build" alternatives,
- Determination of geometric requirements to ensure acceptable quality of traffic flow (LOS C or better).
- Determination of intersection controls
- Determination of lane assignments
- Determination of access management treatments
- Determination of Pedestrian facility requirements
- Determination of Bicycle facility requirements

The study effort is described in the following tasks:

TASK I - COLLECTION OF PERTINENT INFORMATION

ETSI will assemble and review project related data from various sources, including public

agencies as well as private entities.

This effort will consist of data collection in the following categories:

- Traffic Trends: ETSI will utilize past collected turning movement counts along Mile 10 North as part of a previously conducted Signal Warrant study.
- Traffic trends on competing parallel corridors, if available.
- Related CADD files of the study area (to be furnished by L&G)
- Other available Engineering Maps and topographic data in electronic and/or hard copy format
- Existing and/or planned Development in the area (obtained from local governments and/or the Lower Rio Grande Valley MPO)
- Short and Long Range Transportation Planned Improvements in the area that may influence traffic operations within the study area
- Existing and projected Land Use, Socioeconomic and Other Demographic Data (obtained from the Lower Rio Grande Valley MPO)
- Crash records from available TxDOT databases
- Data to be provided by L&G:
    - Travel Demand Model assignments for base and future years (Report produced by C&M)
    - Relevant study reports, if available
    - Design data from record drawings of existing and proposed facilities
    - Roadway inventory information, including the number of lanes, speed limits, pavement and ROW widths
    - Existing Record drawings for the existing facility, if available
    - Existing traffic signal timing plans, if available
    - Aerial photos
    - Other information as the need arises

The data collection process may require coordination meetings with local community officials. The following agencies may be contacted to provide input and available information for the study:

- Texas Department of Transportation
- Lower Rio Grande Valley MPO (LRGV MPO)

- Hidalgo County

Deliverables: ETSI will present a summary list of all data collected within an appendix of the Final Study report. Electronic files of the data will be submitted to L&G.

TASK II – FIELD RECONNAISSANCE

ETSI will conduct field investigations along the study corridor and will record data relevant to traffic flow, such as:

- Record intersection geometries and controls
- Observe and record traffic signal phasing and timing
- Record presence of pedestrian and bicycle facilities
- Observe pedestrian flows if present
- Observe bicycle flows if present
- Observe traffic operations during AM and PM peak periods at each key intersection and determine adequacy of traffic flow quality. Identify obvious capacity problems and related issues that would need to be considered when developing solutions.
- Identify major traffic generators and record their access to Mile 10 North Road
- Record unsafe conditions as observed
- Identify site distance restrictions if any
- Identify posted speed limits
- Identify presence of roadway illumination
- Record visible utilities, including power lines
- Record existing development in the vicinity of the corridor

The above field information will be used to develop and assess the "Existing Conditions" scenario.

Deliverables: Field reconnaissance data will be organized in report and exhibit/table format in the Final Study report.

TASK III – TRAFFIC PROJECTIONS AND TRIP GENERATION

After collection of all traffic counts, ETSI will assess and determine peak traffic periods for

analysis purposes. ETSI will balance the traffic counts to reflect two peak traffic hours, typically one AM peak and one PM for a typical weekday.

ETSI will also develop Average Weekday Daily Traffic volumes for each link within the corridor to represent the existing traffic conditions.

Classification of trucks and buses will be presented for the peak traffic hour and also for the typical weekday.

Facility peak-hour factors and directional distribution ratios will be calculated based on the existing counts for the various sections of the corridor.

ETSI will assess collected crash reports and determine if certain improvements within the unsafe areas can enhance safety. ETSI will make appropriate recommendations as needed.

ETSI will review and assess current and future planned Land Use information, collected from the LRGV MPO.

ETSI will review the vacant land adjacent to the existing facility and develop trip generation rates and new trips, based on future anticipated land uses, provided by the LRGV MPO.

ETSI will distribute the newly generated trips using the area roadway network. The new trips will be added to the projected volumes developed by the C&M Travel Demand model. The Total Trips will be used to evaluate the Future Design Year scenario.

Peak Hour turning movement volumes will be developed for all analysis scenarios.

Parallel competing corridor traffic will be assessed for potential diversion to the new improved Mile 10 North facility. Additional trips may be developed and added to the Total Volumes.

Deliverables: ETSI will present the trip generation and projection in the final report.

TASK IV – DEVELOP EXISTING CONDITIONS SCENARIO

Based on collected information, ETSI will develop a model network on SYNCHRO or other TxDOT accepted platform to replicate the traffic flow with the existing geometric conditions and controls. All significant roadway links will be coded into the model, including driveways that provide access to major generators.

The model will be adjusted based on field observations to ensure that the existing traffic operations are replicated properly.

Capacity and Level of Service analyses will be performed for two peak traffic hours in a typical weekday. Usually these fall within the morning peak period from 6:00am to 9:00am and within the afternoon peak period from 4:00pm to 6:30pm.

Input for the model will include balanced peak hour traffic volumes, existing geometries and controls. Signalized intersections will be modeled based on optimal phasing and timing plans, unless existing phasing/timing plans become available.

Level of Service indices along with vehicle queues, delays and other measurements of effectiveness will be assessed for accuracy based on field observations.

Deliverables: ETSI will present the methodology and analysis results for the Existing Conditions Scenario in Final Study report.

TASK V - DEVELOP AND ANALYZE ALTERNATIVE SCENARIOS

Following the analysis of the Existing Conditions scenario, ETSI will develop the models for the Construction Completion Year scenario and the Future Design Year scenario (20 years after construction).

Using the SYNCHRO platform and based on information received from L&G, ETSI will test the following alternative scenarios:

- Existing Conditions (2 lanes) with future traffic volumes
- Construction Completion Year (4 lanes) with future traffic volumes
- Future Design Year ((4 lanes) with future traffic volumes

Capacity and Level of Service analysis results will be compared among the scenarios and alternative improvements will be further tested and recommended if deemed appropriate. Analyses results will include vehicle delays, vehicle queues, speeds, vehicle miles traveled, vehicle hours traveled, intersection level of service and other measurements of effectiveness.

Several iterations may be conducted on the above scenarios in order to reach satisfactory

results and acceptable quality of traffic flow.

ETSI may offer recommendations for improving vehicular, pedestrian and bicycle flow through the facility. Such improvements may include:

1. Capacity improvements
2. Added turn lanes
3. Access Management Improvements
4. Pedestrian accommodations
5. Bicycle accommodations
6. Safety improvements, such continuous and/or safety lighting
7. Proposed signalization
8. Intelligent Transportation Systems improvements

Deliverables: ETSI will present the methodology and analysis results for the Alternative Scenario in Final Study report.

TASK VI - TRAFFIC ENGINEERING REPORT

ETSI will prepare a report that describes the each of the above task. The report will cover all contributing factors of the traffic engineering elements of the study, the methodologies used and recommendations for improvements. Adequate number of exhibits and tables will be presented along with renderings of traffic simulation snap shots depicting the various alternative scenarios.

The report will be submitted in draft form for review. After review comments have been received, ETSI will make the necessary modifications and produce the final report.

TASK VII - COORDINATION AND PUBLIC INVOLVEMENT

ETSI will coordinate its effort with L&G during the duration of the project. ETSI may contact other agencies upon authorization from L&G.
ETSI will participate in one public meeting and will assist L&G with presentation of the traffic elements of the project.

EXHIBIT B "FEE SCHEDULE" - CAPACITY AND LEVEL OF SERVICE ANALYSIS
Along Mile 10 North Road: From Mile 6 West Road to FM 1015

Ergonomic Transportation Solutions, Inc.

CAPACITY AND LEVEL OF SERVICE ANALYSIS				MANHOURS					
				Project Manager	Senior Transp. Engineer	Transportation Engineer	CADD Designer	Administrative Assistant	Total
TASK									
	1	Collection of Pertinent Information		2	4	8			14
	2	Field Reconnaissance			16	16			32
	3	Traffic Projections and Trip Generation		8	24	32			64
	4	Develop Existing Conditions Scenario		4	12	24			40
	5	Develop and Analyze Alternative Scenarios		4	24	48			76
	6	Traffic Enginering Report		4	8	16	12	8	48
	7	Coordination and Public Involvment		8					8
		Subtotal		**30**	**88**	**144**	**12**	**8**	**282**

Total Sheets/Labor Hours		**30**	**88**	**144**	**12**	**8**	**282**
Contract Rates		$ 68.00	$ 46.00	$ 34.00	$ 23.00	$ 19.00	
Direct Salary Cost		$ 2,040.00	$ 4,048.00	$ 4,896.00	$ 276.00	$ 152.00	$ 11,412.00
Overhead Multiplier	165.260%	$ 3,371.30	$ 6,689.72	$ 8,091.13	$ 456.12	$ 251.20	$ 18,859.47
Fixed Fee	12.50%	$ 676.41	$ 1,342.22	$ 1,623.39	$ 91.51	$ 50.40	$ 3,783.93
Total Labor Costs		**$ 6,087.72**	**$ 12,079.94**	**$ 14,610.52**	**$ 823.63**	**$ 453.59**	**$ 34,055.41**

Ergonomic Transportation Solutions, Inc. Expenses

EXPENSES

Travel (airfare, lodging, mileage or car rental)	$ 2,850.00	
Total Expenses	**$ 2,850.00**	
Total Cost		**$ 36,905.41**

EXHIBIT C
TIME LINE SCHEDULE

CAPACITY AND LEVEL OF SERVICE ANALYSIS ALONG MILE 10 NORTH RD - FROM MILE 6 WEST RD TO FM 1015

TASK	25-Oct-21	1-Nov-21	8-Nov-21	15-Nov-21	22-Nov-21	29-Nov-21	6-Dec-21	13-Dec-21	20-Dec-21	27-Dec-21
NOTICE TO PROCEED	NTP									
1) Collection of Pertinent Information										
2) Field Reconnaissance										
3) Traffic Projections and Trip Generation										
4) Develop Existing Conditions Scenario										
5) Develop and Analyze Alternative Scenarios										
6) Traffic Engineering Report							S1	REVIEW		S2
7) Coordination and Public Involvement										

LEGEND	
	SCHEDULED TASK
S1	DRAFT REPORT SUBMITTAL
S2	FINAL REPORT SUBMITTAL