



**CENTRAL TEXAS  
Regional Mobility Authority**

Meeting Date: December 16, 2015  
AGENDA ITEM # 4

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Approve a supplement to the work authorization with Atkins North America, Inc., for oversight of the Manor Expressway (290E) Project.

Strategic Plan Relevance: Regional Mobility  
Department: Engineering  
Contact: Justin Word, P.E., Director of Project Management  
Associated Costs: \$ 1,827,000  
Funding Source: Project Funds  
Action Requested: Consider and act on draft resolution

Summary:

This Supplemental Work Authorization No. 6 to Work Authorization No. 1 will allow continuation of GEC support services related to oversight of the activities under the Design Build contract to bring the project to final acceptance. Proposed services will include the following:

- 1.0 290E/SH 130 Interim Solution - Consists of bid phase support, construction oversight services, and public involvement services associated with the interim solution at 290E/SH 130. Substantial construction is scheduled to begin in March 2016, and open to traffic date is anticipated for May 2016.
- 2.0 290E/SH 130 Direct Connectors - Design Oversight Services - Final design of the direct connectors is anticipated to begin in early 2016 and is expected to take 1 year to complete. Services shall consist of project management and oversight of the Mobility Authority's selected design consultant.
- 3.0 290E CDA Project/Change Management Beyond 12/31/2015 - Extension of project management and construction oversight services will be required to oversee closeout of the construction of 290E Phase 2 to June 2016.
- 4.0 Maintenance Support - This scope consists of GEC maintenance support services to augment the Mobility Authority's Maintenance personnel in the administration of the maintenance program. This scope includes but is not limited to maintenance program development support, work program development, strategic planning, capital programming, alternative identification, budget tracking, asset management software implementation support, inspection of contracted maintenance and permit activities, contract administration, plans reviews, data collection, reporting, and record keeping. Services shall cover maintenance support for 1 year (to December 2016.)

- 5.0 Traffic Management Center (TMC) Implementation - The current scope for TMC implementation planning runs through December 31, 2015. The TMC will serve numerous functions, including detection, verification, and management of incidents, distribution of information to travelers, and optimization of roadway capacity through active strategies such as toll rate management. The purpose of this scope item is to extend TMC planning activities and coordination to December 2016 to coincide with planning efforts associated with the opening of the MoPac Express Lane project.

Backup provided:                      Draft Resolution  
   Supplemental Work Authorization No. 6

**GENERAL MEETING OF THE BOARD OF DIRECTORS  
OF THE  
CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY**

**RESOLUTION NO. 15-\_\_\_\_**

**APPROVING SUPPLEMENT TO THE WORK AUTHORIZATION WITH ATKINS  
NORTH AMERICA, INC. FOR OVERSIGHT OF THE MANOR EXPRESSWAY (290)  
PROJECT.**

WHEREAS, Atkins North America, Inc., (“Atkins”) serves as a general engineering consultant to the Mobility Authority under the Agreement for General Consulting Civil Engineering Services effective January 1, 2010 (the “GEC Agreement”); and

WHEREAS, Atkins currently provides general engineering consultant support services to the Mobility Authority under Work Authorization No. 1 for the Manor Expressway (290E) project (the “Project”) authorized by the Board of Directors in Resolution No. 09-77 dated November 18, 2009; and

WHEREAS, pursuant to Resolution Nos. 09-84, 10-70, 11-036 ,14-066, and 15-042 the Board of Directors has approved Supplement Nos. 1, 2, 3, 4 and 5 to Work Authorization No. 1, respectively.

WHEREAS, a proposed Supplement No. 6 to Work Authorization No. 1 is attached hereto as Exhibit A and sets forth a Scope of Services and other terms for additional GEC and project management services necessary to oversee the design and construction of the Project; and

WHEREAS, the Executive Director recommends approval of proposed Supplement No. 6 to Work Authorization No. 1.

NOW THEREFORE, BE IT RESOLVED that the Board of Directors hereby adopts and approves Supplement No. 6 to Work Authorization No. 1 in substantially the form attached hereto as Exhibit A; and

BE IT FURTHER RESOLVED that the Executive Director is authorized to finalize and execute Supplement No. 6 to Work Authorization No. 1 on behalf of the Mobility Authority.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 16<sup>th</sup> day of December, 2015.

Submitted and reviewed by:

Approved:

\_\_\_\_\_  
Geoffrey Petrov, General Counsel

\_\_\_\_\_  
Ray A. Wilkerson  
Chairman, Board of Directors

**EXHIBIT D**  
**WORK AUTHORIZATION**

**Supplement No. 6 to Work Authorization No.1**

This Work Authorization is made as of this 1<sup>st</sup> day of December, 2015, under the terms and conditions established in the AGREEMENT FOR GENERAL CONSULTING ENGINEERING SERVICES, dated as of January 4<sup>th</sup>, 2010 (the Agreement), between the **Central Texas Regional Mobility Authority** (Authority) and **Atkins North America, Inc.** (GEC). This Work Authorization is made for the following purpose, consistent with the services defined in the Agreement:

*Manor Expressway  
Oversight Services*

**Section A. - Scope of Services**

A.1. GEC shall perform the following Services:

Please reference Attachment A – Services to be Provided by the GEC

A.2. The following Services are not included in this Work Authorization, but shall be provided as Additional Services if authorized or confirmed in writing by the Authority.

Not applicable.

A.3. In conjunction with the performance of the foregoing Services, GEC shall provide the following submittals/deliverables (Documents) to the Authority:

Please reference Attachment A – Services to be Provided by the GEC

**Section B. - Schedule**

GEC shall perform the Services and deliver the related Documents (if any) according to the following schedule:

Services defined herein are expected to be substantially complete within sixteen (16) months from the date this Supplement becomes effective. This Supplement will not expire until all tasks associated with the Scope of Services are complete.

**Section C. - Compensation**

C.1. In return for the performance of the foregoing obligations, the Authority shall pay to the GEC the amount not to exceed \$1,827,000, based on Attachment B -Fee Estimate. This will increase the not to exceed amount for Work Authorization No. 1 from \$39,573,265.34 to \$41,400,265.34. Compensation for Direct Expenses under this Supplement which are incurred as part of normal business operations (i.e., internal document reproduction, internal plotting, travel and parking associated with

local meetings, etc.) will be reimbursed on a Lump-Sum basis in the amount of: \$19,000.00 (with \$1,187.50 to be invoiced monthly). Profit will be 12% for all services. Compensation shall be in accordance with the Agreement.

C.2. Compensation for Additional Services (if any) shall be paid by the Authority to the GEC according to the terms of a future Work Authorization.

**Section D. - Authority’s Responsibilities**

The Authority shall perform and/or provide the following in a timely manner so as not to delay the Services of the GEC. Unless otherwise provided in this Work Authorization, the Authority shall bear all costs incident to compliance with the following:

Please reference Attachment A – Services to be Provided by the GEC

**Section E. - Other Provisions**

The parties agree to the following provisions with respect to this specific Work Authorization:

Not applicable.

Except to the extent expressly modified herein, all terms and conditions of the Agreement shall continue in full force and effect.

Authority: Central Texas Regional Mobility  
Authority

GEC: Atkins North America, Inc.

By: Mike Heiligenstein

By: \_\_\_\_\_

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Title: Executive Director

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

**CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY**

**SUPPLEMENT NO. 6 TO  
WORK AUTHORIZATION NO. 1  
ATKINS**

**ATTACHMENT A  
SERVICES TO BE PROVIDED BY GEC**

**290E (MANOR EXPRESSWAY PROJECT)**

**1.0 290E/SH 130 Interim Solution - Bid Phase Support and Construction Oversight Services**

**1.1 Bid Phase Support**

Finalize letting documents and support bidding and award of construction contractor.

**1.2 Construction Oversight Services**

The GEC will be the single point of contact between the Mobility Authority and the respective Contractor(s), acting as an extension of the Mobility Authority staff by providing qualified technical and professional personnel to perform the duties and responsibilities assigned under the terms of this Agreement. The GEC shall not control or direct the construction under the construction contract. Field inspections, testing and oversight reviews by the GEC will not relieve the Contractor of sole responsibility for the means and methods of construction, or for health or safety precautions in connection with the work under the construction contract.

**a. Project Administration**

- Review and report on the contractor's submittals of records and reports including, weekly payroll, statement of wage compliance, requests for payment materials on hand, DBE compliance and/or other reports and records required by TxDOT and/or FHWA.
- Report project progress and issues in a timely manner.
- Review, monitor, and report on contractor's project schedule (if submitted).
- Review and submit a report on the contractor's as-built plans.
- Maintain accurate records of the costs involved in potential change order work. These records will include labor and equipment times and materials installed (temporary or permanent) in the portion of the work in dispute.
- Assist in reviewing, monitoring, and evaluating of the contractor's compliance with contract requirements and maintaining the appropriate files thereof.
- Provide compliance oversight of third party agreements and development permits.
- Tracking database - Maintain the tracking database for correspondence, transmittals, requests for information, meeting minutes, action items, submittals, Inspector daily reports, project diary, project schedule, change orders, pay estimates, lien waivers, shop drawings, working drawings,

erection drawings, catalog cut sheets, mix designs, non-conformance reports, payment certifications, Insurance and Bonds, issues, material test data, schedules, audits, related technical data, and issues associated with the Project.

b. Construction Inspection and Engineering

The GEC will provide quality control and assurance oversight for the construction of the project through construction inspection and engineering services. Included with this task will be the following efforts:

- Review the Contractor's plan for construction Quality Control to be used in the field.
- Inspect Contractor's construction operations.
- Maintain diary and associated required documentation.
- Schedule and hold Pre-Construction conference for the project.
- Document pre-project conditions via still photography and video.
- Review concrete, asphalt and lime mix designs as submitted by the Contractor for concurrence with contract documents as required by the project design and specifications.
- Coordinate, prepare, and attend weekly Project Construction Progress Meetings with the Contractor. Prepare meeting minutes and required action items for distribution and archive.

c. Materials Testing

GEC shall provide the following construction materials testing services on an as-needed basis. The testing frequency will be based on the TxDOT Guide Schedule of Sampling and Testing or as directed by the Client or Client's representative.

- Soils (Laboratory):
  - Perform moisture/density relationship tests, proctors (method as required by project specification), for each type of material or as requested by the Client.
  - Perform Atterberg limits (Tex-104, 105, & 106-E) determination for each type of material or as requested by the Client.
  - Perform sieve analysis (Tex-110-E) for each type of material or as requested by the Client
  - Perform material verification testing as required or requested including sieve analysis, Atterberg limits, Texas triaxial, wet ball mill, bar linear shrinkage, soil-lime compression, resistivity of soils, soil pH, sulfate content of soils, etc.
- Soils (Field):
  - Perform in-place nuclear density tests (Tex-115-E) as specified by construction documents or per 3,000 CY per lift of flexible base or as requested by the Client
- Hot Mix Asphaltic Concrete:
  - Test each type of HMA on a lot basis. A production lot consists of 4 sublots and on lot will be 1,000 tons or fraction placed per type of

material or as requested by the Client. Each lot will be tested for extraction/gradation, asphalt content, VMA and laboratory density.

- Test two (2) asphalt cores for each subplot of asphaltic concrete placement. Cores shall be used to verify thickness and in-place density for asphalt.
- HMAC Aggregates:
  - Perform HMAC aggregate verification testing as required or requested by the Client including sieve analysis, decantation, L.A. abrasion, magnesium sulfate soundness, sand equivalent, organic impurities, deleterious materials, acid insoluble residues, micro deval, flat & elongated particles, coarse aggregate angularity, plasticity index, bar linear shrinkage, etc.
- Concrete:
  - Sample, mold, cure, and test one (1) set of four (4) concrete compressive strength cylinders for every 60 cubic yards of structural concrete placed, or as required by the project specifications. Two (2) cylinders will be tested at 7 days and two (2) cylinders will be tested at 28 days or as requested by the Client.
  - Perform one (1) slump test per 60 cubic yards of structural concrete placed.
  - Report air content of concrete as specified by construction documents per sample.
  - Review mix design of concrete as requested by the Client.
  - Sample, mold, cure and test one (1) set of two (2) flowable backfill compressive strength cylinders for every 100 cubic yards placed, or as required by the specifications. The two (2) cylinders will be tested at 28 days.
- Concrete Aggregates:
  - Perform concrete aggregate verification testing as required or requested by the Client including sieve analysis, decantation, L.A. abrasion, magnesium sulfate soundness, sand equivalent, organic impurities, fineness modulus, deleterious materials, acid insoluble residues, etc.

d. Utility Adjustment Coordination

- Utility Adjustment Coordination
  - Participate in meetings as necessary to effectively manage the utility coordination process.
  - Schedule periodic meetings with utility owner's representatives for coordination purposes.
  - Attend meetings with Mobility Authority and other interested parties as directed.
  - Meet with the Contractor and/or designer as necessary to resolve matters relating to schedules, utility identification, design changes, conflict resolution, and negotiation with utility owners.
  - Assist Mobility Authority with negotiating the details of utility agreements with the utility companies. Details will include any necessary betterment percentages, indirect costs, plans, estimates and

schedules for the utility companies' activities. The GEC will also prepare draft agreements for Mobility Authority's use including the necessary exhibits and information concerning the project (such as reports, plans and surveys).

- Monitor and report utility adjustment status.

- Utility Engineering

- Review existing utility information for conflicts with the proposed Project and provide a utility conflict analysis.

- Provide a conceptual utility relocation plan.

- Review utility plans for compliance with the appropriate policies, compatibility with the Project features, betterment inclusion and constructability.

- Provide oversight review of location, materials, and backfilling of trenches associated with utility adjustments; not responsible for actual location of utilities.

## **2.0 290E/SH 130 Direct Connectors Design Oversight Services -**

### **2.1 Project Management and Administration**

The GEC shall support the Mobility Authority in the management of a final design consultant including but not limited to:

- a. Track and report on project progress and issues in a timely manner.

- b. Prepare a detailed project schedule that consists of tasks, subtasks, critical dates, milestones, deliverables, and design reviews.

- c. Maintain records and files related to the project throughout the duration of the services. Transfer project files to the Mobility Authority upon completion of work or as directed by the Mobility Authority.

- d. Respond to project related questions

- e. Review progress reports and invoices

- f. Document processes and procedures.

- g. Coordinate and review communications and submittals

- h. Facilitate project meetings to assess progress, schedule, and quality of services being provided, as well as identify issues. The GEC will also participate in regular staff meetings, client meetings, and executive management meetings as needed. Prepare meeting minutes.

### **2.2 Review Design Reports, Layouts, and Preliminary Plans**

The GEC will review plans and reports submitted by the Mobility Authority's design consultant at the direction of the Mobility Authority. Including, but not limited to:

- a. Geotechnical reports

- b. Bridge and retaining wall layouts

- c. Pavement design

- d. Design summary report

- e. Preliminary plan and profile sheets, typical sections, and cross sections

- f. Hydraulic reports, drainage designs, water quality designs, detention design

- g. Utility layouts/SUE
- h. Traffic control phasing
- i. ITS, Tolling, and Signing layouts

### 2.3 Review PS&E Plans

The GEC will review Plans, Specifications, and Estimates (PS&E) submitted by the Mobility Authority's design consultant at the direction of the Mobility Authority. Including by not limited to:

- a. 30% Plan Set
- b. 60% Plan Set
- c. 100% Plan Set
- d. Specification list
- e. Quantity Estimate

### 2.4 Bidding Support

Finalize letting documents and support bidding and award of construction contractor. Upon completion of PS&E documents, the GEC will support the Mobility Authority in its efforts to issue bidding documents, review bids, and award and enter into a contract for the construction of the Project.

### 2.5 Environmental Services

The GEC will provide support for environmental services, including but not limited to the following:

- a. Agency coordination
- b. Document reviews, such as Water Pollution Abatement Plans (WPAP) prior to Mobility Authority submission to the TCEQ
- c. Environmental and stakeholder commitment tracking
- d. Public involvement support, including elected official outreach, stakeholder outreach, website support, e-newsletters, open houses, environmental related PI support, and development of renderings as requested by the Mobility Authority

### 2.6 Toll Systems/Facilities Design

The GEC will coordinate design activities between the Mobility Authority's toll system integrator and final design consultant as necessary

### 2.7 Financial Planning Support

The GEC will support the Mobility Authority in financial planning related activities, including but not limited to:

- a. Operation, Maintenance, and Renewal and Replacement Estimate updates
- b. Project Cost Estimate Updates
- c. Toll Feasibility Analysis Updates
- d. Financial Advisor Support/Financial Plan Development

2.8 Project Development Support. The GEC will support the Mobility Authority in project development related activities, including but not limited to:

- a. Loan and/or grant applications
- b. Engineering and technical support
- c. Traffic modeling
- d. TxDOT and FHWA coordination
- e. T & R consultant coordination
- f. Project Development Agreement (PDA)
- g. CAMPO coordination
- h. Litigation support
- i. Utility and ROW support

2.9 Public Involvement

GEC will provide public involvement outreach support on behalf of the Mobility Authority to include but not limited to neighborhood outreach, agency and elected official outreach services as requested by the Mobility Authority.

### **3.0 290E CDA Project Close Out**

3.1 Project / Change Management Beyond 12/31/2015. This task, originally authorized through Supplement No. 5 to Work Authorization No. 1, was contemplated to be complete by December 31, 2015. Due to project closeout extending beyond this date, Supplemental No. 6 to Work Authorization No. 1 extends the anticipated work effort through June 30, 2016. The work to be performed by the General Engineering Consultant (GEC) will include project management and construction oversight services necessary to oversee closeout of the construction of the Manor Expressway (290 East) Phase II Project through the use of a Design/Build Comprehensive Development Agreement (D/B CDA). This will entail those professional services and associated deliverables required to complete the oversight activities associated with the management of the D/B CDA Developer (hereinafter referred to as the Developer). Activities included in this task:

a. Project Coordination

Work with Mobility Authority, TxDOT, Developer, third party consultants, utility companies, public agencies, contractors and the general public as required until Project Final Acceptance.

b. Program Reporting

Prepare and issue weekly reports on the Project's status which will document status of Project close-out activities.

c. Change Order Processing and Management

- Provide review of potential change orders on the Project and process in accordance with the CDA and coordinate with external agencies as required

- Review change order cost estimates prepared by the Developer, evaluate Developer claims for extension of time, and provide comments to Mobility Authority
- Maintain log and retain all documents associated with potential change orders
- Prepare status reports and presentation for the Dispute Resolution Board if required

d. Dispute/Claims Support

- Assemble supporting documentation, review, analyze and provide recommendations to Mobility Authority on the Developer's submittal of a dispute
- Review, analyze and make recommendations to Mobility Authority on the Developer's claim package submittal
- Participate as needed in preparation and presentation to Dispute Resolution Board

e. Project Meetings & Documentation

The GEC will facilitate the project meetings to assess progress, schedule, and quality of services being provided as well as identify issues. The GEC will also participate in regular staff meetings, client meetings, and executive management meetings as needed.

f. Document Distribution

- Assign identification coding to incoming and outgoing Project related documentation and perform entry into the EDMS
- Prepare, manage, record, distribute and archive documentation of Project activities, progress, and related communications
- Log and track submittals and deliverables

g. Developer Draw Requests

- Review completeness of Developer's submittals
- Evaluate that the request accurately reflects monies due for acceptable work completed
- Notify the Mobility Authority of amount approved for payment

#### **4.0 Maintenance Support**

The GEC shall provide maintenance support services to augment the Mobility Authority's Maintenance personnel in the administration of the maintenance program. This scope includes but is not limited to maintenance program development support, work program development, strategic planning, capital programming, alternative identification, budget tracking, asset management software implementation support, inspection of contracted maintenance and permit activities, contract administration, plans reviews, data collection, reporting, and record keeping. All work shall be performed such that it is consistent with Mobility Authority maintenance practices and meets Mobility Authority standards and specifications.

##### 4.1 Maintenance Program Development Support

- a. Support the Mobility Authority in program scope development/assessment, including resource planning, capital programming, and alternative identification
- b. Support the Mobility Authority in the development of the maintenance work program, including but not limited to the following:
  - Strategic and Annual Planning
    - 5-Year Work Plan
    - 1-Year Operations and Maintenance Budget
    - Long Term Forecasts
  - Asset life cycle management
  - Budget tracking
  - Asset management software implementation support
  - Operational evaluation, including the development of speed studies, safety studies, and traffic studies
  - Support Mobility Authority in agency wide programs, such as the health and safety program, wet weather accident reduction plan, emergency management and business continuity, loss prevention, risk management, and quality management plan

#### 4.2 Contract Administration

- a. Assist in the development of scopes of work and specifications for maintenance contracts, attend pre-bid meetings, and monitor contract requirements on behalf of the Mobility Authority
- b. Assist in processing contract documents, negotiations, award, and approval of management plans
- c. Review plans
- d. Prepare change orders and contract time extensions for Mobility Authority approval
- e. Assist in the management of the performance based maintenance contract through the Mobility Authority Maintenance Contract Administrator
- f. Conduct quality inspections and evaluations of contracted maintenance activities to improve contract effectiveness and inspection/administration practices

#### 4.3 Contract Management

- a. Coordinate, plan, and schedule contract maintenance activities
- b. Assist in the preparation of maintenance contract packages by providing field measurements, estimating quantities and other necessary data. Prepare and review contract maintenance work orders.
- c. Prepare contract progress reports
- d. Periodically review the roadway and roadside for short-term and long-term maintenance needs
- e. Perform final punch list inspection of construction projects
- f. Conduct and/or participate in the pre-bid conferences and pre-work conferences of maintenance contracts
- g. Assist in snow and ice dry run, preparation, implementation, and lessons learned activities when needed
- h. Assist in incident management activities, including but not limited to:
  - Emergency preparedness and recovery management
  - Emergency services coordination

- Hazardous Materials activities
- Public involvement coordination
- i. Maintain contract files in accordance with current Mobility Authority requirements
- j. Support the Mobility Authority in coordination with TxDOT, City of Austin, City of Cedar Park, City of Leander, and other agencies when needed
- k. Inventory management
- l. Assist the Mobility Authority in coordination of Third-party damage claims submitted by maintenance contractor
- m. Support the Mobility Authority in the development and maintenance of a maintenance management system

#### 4.4 Permit Operations

- a. Assist the Mobility Authority in processing permits
- b. Review permit application requests and associated engineering drawings to ensure that applicable forms are properly completed and that proposed construction within the Mobility Authority's right-of-way is in accordance with the Mobility Authority's specifications and standards
- c. Coordinate and/or perform field inspections of permitted construction that is in progress to ensure compliance with the Mobility Authority's specifications and standards

#### 4.5 Field Inspections

- a. Verify the acceptability of the Contractor's work methods and work product
- b. Provide periodic field reviews of traffic control plans
- c. Interact with the Contractor's superintendent to correct deficiencies
- d. Perform independent assignments as directed by the Mobility Authority
- e. Assist the Mobility Authority in the annual maintenance inspections
- f. Document field inspections
- g. Coordinate with TxDOT in obtaining BRINSAP documents and repair plan

#### 4.6 Plans Review

- a. Review and comment on all phases of design plans with careful attention to access management, traffic control, signing/pavement markings, safety issues, and maintainability as assigned
- b. Attend all meetings related to plans review
- c. Perform independent assignments as directed by the Mobility Authority
- d. Conduct site visits when needed

### **5.0 Traffic Management Center Implementation**

Work closely with the Mobility Authority in the implementation of the new Traffic Management Center (TMC). The TMC will be responsible for the monitoring and control of traffic on the Mobility Authority system. The TMC will serve numerous functions: (1) Detection, verification, and active management of incidents which reduce roadway capacity; (2) Distribution of information to travelers; and (3) Optimization of roadway capacity through active strategies such as managing toll rates. Additional functions, such as motorist assistance patrols, may be managed

from within the TMC. GEC responsibilities for implementation of the TMC will entail the following:

5.1 Daily Operations

Develop daily operations procedures to include management center functions, personnel list/organization charts, hours of operations, staffing, after-hours/on-call roster, remote operations procedures, security procedures, maintenance checklist, startup/shutdown procedures, failure recovery, agency/jurisdictional contact list, notification procedures, and policies for contact with media

5.2 Control System Operation Procedures

Develop control system operation procedures that detail day-to-day staff interaction with electronic hardware and software system operation. Documentation will include operator interface information, operational procedures, and incident management procedures

5.3 Maintenance Procedures

Develop hardware and software system maintenance operations to assist staff when systems require routine maintenance or incident/failure response. This document will address routine maintenance (typical daily checks, adjustments, and minor component replacement), preventative maintenance, spare/backup equipment deployment/use, emergencies, interaction with contractors who provide support services, and contract maintenance.

5.4 System Operations Logs

Develop procedures and manual and automated logs associated with documenting system operations. Logs will include operations, maintenance, events, system reports, traffic data, and risk management

5.5 Concept of Operations/Implementation Plan

Develop and update plan which will describe the functions of the TMC and how they will be performed (at a high level). This document will include traffic control concept strategies, traffic monitoring, data analysis, interagency coordination, and emergency procedures

5.6 Facility Security/Access Control

Create business processes, forms, logs, and operating procedures for the issuance of access control badges to Mobility Authority staff/consultants/contractors and oversee issuance of badges by center staff. Monitor access control system performance and maintenance; report outages; coordinate system repairs.

## 5.7 Budgeting

Develop detailed annualized cost estimate for funding of necessary operations, maintenance, and renewal and replacement elements for the traffic management system, safety, security, enforcement, and incident management

## 5.8 Interlocal Agreements and Contracts

Review all service interlocal agreements and contracts associated with the Mobility Authority traffic operations, including law enforcement, courtesy patrols, wrecker services, maintenance contractors, TxDOT, and the system integrator. Review any Mobility Authority commitments made to the Board, stakeholders, or the community. Prepare the Mobility Authority for negotiations for services and interaction with local/regional authorities and partners. Develop new Interlocal Agreements and Contracts to support efficient traffic operations and incident clearance.

## 5.9 Incident Management

Oversee staff who monitor and respond to incidents utilizing available resources. Analyze data sources to determine and project incident volumes on the Mobility Authority system. Develop emergency and incident reporting and notification procedures.

## 5.10 Mobility Authority traffic management business plan

Working with the Mobility Authority, determine the service level that will be provided for items such as courtesy patrols, dedicated wreckers, and HazMat services for each facility. This task will include assessing and possibly expanding wrecker services. This task may also include the development of Memorandum of Understandings and/or interlocal agreements to enhance response beyond standard service levels for the system as traffic volume increases.

## 5.11 Public Safety Services

Help the Mobility Authority interact effectively with local public safety resources and partners.

## 5.12 Interagency Exchange

Investigate traffic management centers at other agencies as directed by the Mobility Authority. This task will entail interagency exchange of information through phone and email correspondences, as well travel to the various TMCs operations.

## 5.13 Traffic and Incident Management Dashboard

Develop reports for Mobility Authority executive administration and staff. Oversee implementation of the advanced traffic management system and help develop reports, internal and external data touchpoints, and a smooth integration with existing/legacy systems.

## Attachment B - Fee Estimate Summary

CTRMA General Engineering Consultant  
Atkins - Man-hour Breakdown & Fee Estimate  
290E Corridor GEC Services

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### ATKINS - Supplemental Work Authorization #6 to Work Authorization #1

#### 290E Corridor GEC Services

TASK	<u>SUBTOTAL</u> Labor + Overhead +	<u>SUBTOTAL</u> Direct Expenses	<u>TOTAL</u>
1.0 290E/SH 130 Interim Solution - Bid Phase Support and Construction Oversight	\$ 314,071	\$ 5,000	\$ 319,071
2.0 290E/SH 130 Direct Connectors Design Oversight Services	\$ 493,154	\$ 4,500	\$ 497,654
3.0 290E CDA Project Close Out	\$ 137,331	\$ 2,250	\$ 139,581
4.0 Maintenance Support	\$ 774,946	\$ 5,000	\$ 779,946
5.0 Traffic Management Center Implementation	\$ 88,144	\$ 2,250	\$ 90,394
Subtotals	\$ 1,807,646	\$ 19,000	\$ <b>1,826,646</b>
		<b>TOTAL (rounded)</b>	<b>\$ 1,827,000</b>

**Attachment B - Fee Estimate**

**290E Corridor GEC Services**

TASK / WORK DESCRIPTION	(Estimated Average Labor Rates)						TOTAL HRS
	A \$ 80.00	B \$ 70.00	C \$ 60.00	D \$ 45.00	E \$ 35.00	F \$ 25.00	
1.0 290E/SH 130 Interim Solution - Bid Phase Support and Construction Oversight Services							
1.1 Bid Phase Support	34	140	54	0	0	0	228
1.2 Construction Oversight Services							
a Project Administration	16	110	54	36	32	24	272
b Construction Inspection and Engineering	0	0	115	600	325	96	1136
c Materials Testing	0	0	120	60	24	16	220
d Concrete	0	0	24	18	10	8	60
e Concrete Aggregates	0	0	24	12	10	0	46
f Utility Adjustment Coordination	0	0	120	96	40	16	272

TOTAL DIRECT LABOR		50	250	511	822	441	160	2234
<i>% Total by Classification</i>		2.24%	11.19%	22.87%	36.79%	19.74%	7.16%	
Labor Costs	\$	4,000	\$ 17,500	\$ 30,660	\$ 36,990	\$ 15,435	\$ 4,000	\$ 108,585
Overhead Costs	1.5825 \$	6,330	\$ 27,694	\$ 48,519	\$ 58,537	\$ 24,426	\$ 6,330	\$ 171,836
Profit	12.0% \$	1,240	\$ 5,423	\$ 9,502	\$ 11,463	\$ 4,783	\$ 1,240	\$ 33,650
<b>Total Loaded Labor</b>	\$	11,570	\$ 50,617	\$ 88,681	\$ 106,990	\$ 44,644	\$ 11,570	<b>\$314,071</b>

<b>Direct Expenses</b>	
Plotting and Reproduction	\$ -
Mail and Deliveries	\$ -
Misc Expenses	\$ -
Travel and Field Expenses	\$ 5,000
<b>Total Direct Expenses</b>	<b>\$ 5,000</b>

**Total \$ 319,071**

**Attachment B - Fee Estimate**

**290E Corridor GEC Services**

TASK / WORK DESCRIPTION	(Estimated Average Labor Rates)							TOTAL HRS
	A \$ 80.00	B \$ 70.00	C \$ 60.00	D \$ 45.00	E \$ 35.00	F \$ 25.00		
2.0 290E/SH 130 Direct Connectors Design Oversight Services								
2.1 Project Management and Administration	215	110	0	0	0	40	365	
2.2 Review Design Reports, Layouts, and Preliminary Plans	40	74	175	125	60	24	498	
2.3 Review PS&E Plans	24	60	220	133	170	16	623	
2.4 Bidding Support	150	109	0	0	0	0	259	
2.5 Environmental Services	0	0	125	0	0	0	125	
2.6 Toll Systems/Facilities Design	50	75	0	0	0	0	125	
2.7 Financial Planning Support	74	75	0	100	0	0	249	
2.8 Project Development Support	74	75	0	100	0	0	249	
2.9 Public Involvement	12	24	18	180	120	80	434	
<b>TOTAL DIRECT LABOR</b>	639	602	538	638	350	160	2927	
	<i>% Total by Classification</i>	<i>21.83%</i>	<i>20.57%</i>	<i>18.38%</i>	<i>21.80%</i>	<i>11.96%</i>	<i>5.47%</i>	
Labor Costs	\$ 51,120	\$ 42,140	\$ 32,280	\$ 28,710	\$ 12,250	\$ 4,000	\$ 170,500	
Overhead Costs	1.5825 \$ 80,897	\$ 66,687	\$ 51,083	\$ 45,434	\$ 19,386	\$ 6,330	\$ 269,816	
Profit	12.0% \$ 15,842	\$ 13,059	\$ 10,004	\$ 8,897	\$ 3,796	\$ 1,240	\$ 52,838	
<b>Total Loaded Labor</b>	\$ 147,859	\$ 121,886	\$ 93,367	\$ 83,041	\$ 35,432	\$ 11,570	<b>\$493,154</b>	
<b>Direct Expenses</b>								
Plotting and Reproduction	\$ -							
Mail and Deliveries	\$ -							
Misc Expenses	\$ -							
Travel and Field Expenses	\$ 4,500							
<b>Total Direct Expenses</b>	<b>\$ 4,500</b>							

**Total \$ 497,654**

**Attachment B - Fee Estimate**

**290E Corridor GEC Services**

TASK / WORK DESCRIPTION	(Estimated Average Labor Rates)							TOTAL HRS
	A	B	C	D	E	F		
	\$ 80.00	\$ 70.00	\$ 60.00	\$ 45.00	\$ 35.00	\$ 25.00		
3.0 290E CDA Project Close Out								
3.1 Project/Change Management Beyond 12/31/2015								
a Project Coordination	8	60	54	16	10	0	148	
b Program Reporting	4	8	16	12	0	0	40	
c Change Order Processing and Management	0	64	60	0	0	0	124	
d Dispute/Claims Support	60	160	64	30	0	16	330	
e Project Meetings and Documentation	0	0	0	0	20	20	40	
f Document Distribution	0	0	0	0	10	30	40	
g Developer Draw Requests	0	24	20	0	20	16	80	
<b>TOTAL DIRECT LABOR</b>	72	316	214	58	60	82	802	
<i>% Total by Classification</i>	8.98%	39.40%	26.68%	7.23%	7.48%	10.22%		
Labor Costs	\$ 5,760	\$ 22,120	\$ 12,840	\$ 2,610	\$ 2,100	\$ 2,050	\$ 47,480	
Overhead Costs	1.5825 \$ 9,115	\$ 35,005	\$ 20,319	\$ 4,130	\$ 3,323	\$ 3,244	\$ 75,137	
Profit	12.0% \$ 1,785	\$ 6,855	\$ 3,979	\$ 809	\$ 651	\$ 635	\$ 14,714	
<b>Total Loaded Labor</b>	\$ 16,660	\$ 63,980	\$ 37,138	\$ 7,549	\$ 6,074	\$ 5,930	<b>\$137,331</b>	
<b>Direct Expenses</b>								
Plotting and Reproduction								
Mail and Deliveries	\$ -							
Misc Expenses								
Travel and Field Expenses	\$ 2,250							
<b>Total Direct Expenses</b>	<b>\$ 2,250</b>							
<b>Total</b>	<b>\$ 139,581</b>							

## Attachment B - Fee Estimate

### 290E Corridor GEC Services

TASK / WORK DESCRIPTION	(Estimated Average Labor Rates)							TOTAL HRS
	A	B	C	D	E	F		
	\$ 80.00	\$ 70.00	\$ 60.00	\$ 45.00	\$ 35.00	\$ 25.00		
4.0 Maintenance Support								
4.1 Maintenance Program Development Support	24	595	164	164	580	24	1551	
4.2 Contract Administration	24	375	120	110	380	24	1033	
4.3 Contract Management	24	375	110	96	400	24	1029	
4.4 Permit Operations	12	96	24	24	96	0	252	
4.5 Field Inspections	12	280	80	72	325	0	769	
4.6 Plans Review	8	180	50	50	180	0	468	

TOTAL DIRECT LABOR	104	1901	548	516	1961	72	5102
<i>% Total by Classification</i>	<i>2.04%</i>	<i>37.26%</i>	<i>10.74%</i>	<i>10.11%</i>	<i>38.44%</i>	<i>1.41%</i>	
Labor Costs	\$ 8,320	\$ 133,070	\$ 32,880	\$ 23,220	\$ 68,635	\$ 1,800	\$ 267,925
Overhead Costs	1.5825 \$ 13,166	\$ 210,583	\$ 52,033	\$ 36,746	\$ 108,615	\$ 2,849	\$ 423,991
Profit	12.0% \$ 2,578	\$ 41,238	\$ 10,190	\$ 7,196	\$ 21,270	\$ 558	\$ 83,030
<b>Total Loaded Labor</b>	<b>\$ 24,065</b>	<b>\$ 384,892</b>	<b>\$ 95,102</b>	<b>\$ 67,162</b>	<b>\$ 198,520</b>	<b>\$ 5,206</b>	<b>\$774,946</b>

Direct Expenses	
Plotting and Reproduction	\$ -
Mail and Deliveries	\$ -
Misc Expenses	
Travel and Field Expenses	\$ 5,000
<b>Total Direct Expenses</b>	<b>\$ 5,000</b>

**Total \$ 779,946**

**Attachment B - Fee Estimate**

**290E Corridor GEC Services**

TASK / WORK DESCRIPTION	(Estimated Average Labor Rates)							TOTAL HRS
	A \$ 80.00	B \$ 70.00	C \$ 60.00	D \$ 45.00	E \$ 35.00	F \$ 25.00		
5.0 Traffic Management Center Implementation								
5.1 Daily Operations	8	24	0	0	0	0	0	32
5.2 Control System Operation Procedures	0	8	0	0	0	0	0	8
5.3 Maintenance Procedures	8	32	4	0	0	0	0	44
5.4 System Operations Logs	0	8	0	0	0	0	0	8
5.5 Concept of Operations/Implementation Plan	8	64	0	0	0	0	0	72
5.6 Facility Security/Access Control	0	14	0	0	0	0	0	14
5.7 Budgeting	0	24	0	0	0	0	0	24
5.8 Interlocal Agreements and Contracts	8	24	16	0	0	0	0	48
5.9 Incident Management	8	48	0	0	15	0	0	71
5.10 Mobility Authority traffic management business plan	8	52	0	0	8	0	0	68
5.11 Public Safety Services	0	8	0	0	0	0	0	8
5.12 Interagency Exchange	0	32	0	0	16	0	0	48
5.13 Traffic and Incident Management Dashboard	0	5	0	0	0	0	0	5
<b>TOTAL DIRECT LABOR</b>	48	343	20	0	39	0	0	450
<i>% Total by Classification</i>	10.67%	76.22%	4.53%	0.09%	8.74%	0.05%		
Labor Costs	\$ 3,840	\$ 24,010	\$ 1,224	\$ 18	\$ 1,376	\$ 6	\$ 30,474	
Overhead Costs	1.5825 \$ 6,077	\$ 37,996	\$ 1,937	\$ 28	\$ 2,178	\$ 9	\$ 48,225	
Profit	12.0% \$ 1,190	\$ 7,441	\$ 379	\$ 6	\$ 426	\$ 2	\$ 9,444	
<b>Total Loaded Labor</b>	\$ 11,107	\$ 69,447	\$ 3,540	\$ 52	\$ 3,981	\$ 17	<b>\$88,144</b>	
<b>Direct Expenses</b>								
Plotting and Reproduction	\$ -							
Mail and Deliveries	\$ -							
Misc Expenses	\$ -							
Travel and Field Expenses	\$ 2,250							
<b>Total Direct Expenses</b>	\$ 2,250							
<b>Total</b>	\$ 90,394							