



**CENTRAL TEXAS
Regional Mobility Authority**

AGENDA ITEM #6 SUMMARY

Approve a work authorization with Schneider Electric Mobility NA Inc. for toll system integration services for the 183 South (Bergstrom Expressway) Project.

Strategic Plan Relevance: Regional Mobility

Department: Toll Operations

Associated Costs: \$12,982,173 (not to exceed)

Funding Source: TxDOT/CAMPO, Revenue Bonds and TIFIA

Board Action Required: Yes

Description of Matter:

Under this proposed work authorization, Schneider Electric (formerly Telvent USA LLC) will provide tolls systems integration services related to project activities required to assist the Mobility Authority in the development of the 183 South (Bergstrom Expressway) project.

These efforts will include, but not be limited to: design, procurement, installation, testing, and integration of a complete and fully operational toll collection system and intelligent transportation system.

Reference: Proposed Work Authorization 13
Draft Resolution

Contact: Tim Reilly, Director of Toll Operations

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

WORK AUTHORIZATION

WORK AUTHORIZATION NO. 13

**TOLL COLLECTION AND INTELLIGENT TRANSPORTATION
SYSTEMS IMPLEMENTATION**

Bergstrom Expressway

THIS WORK AUTHORIZATION is made this, _____ day of _____, 2015, pursuant to the terms and conditions of Article 1 of the GENERAL PROVISIONS, Attachment A to the original Contract for Toll System Implementation, dated April 27, 2005 (the Contract) entered into by and between the Central Texas Regional Mobility Authority (the "Mobility Authority"), and Schneider Electric Mobility NA, Inc., a.k.a. Telvent-USA Corporation (the Contractor).

PART I. The Contractor will perform toll collection and traffic management system integration services generally described in the Scope of Work attached hereto as **Attachment A** and illustrated in the Project Layout attached hereto as **Attachment B**. The Contractor's duties and responsibilities to coordinate with the CTRMA's contracted Design/Build contractor is detailed in the Responsibilities Matrix attached hereto as **Attachment C**. The Contractor's duties are further described in the CTRMA Fixed Price Tolling Standard attached hereto as **Attachment D**. The Contractor shall perform all work in accordance with Federal Requirements in **Attachment G**.

PART II. The maximum amount payable under this Work Authorization No. 13 is \$ 12,982,173. This amount is based generally upon the estimated fees set forth in Schedule 1 of the Contract, as superseded by the fee schedule set forth in **Attachment E** hereto which is incorporated herein and made a part of this Work Authorization.

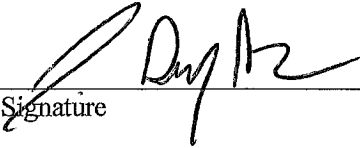
PART III. Payment to the Contractor for the services established under this Work Authorization shall be made in accordance with Article 12 of the Contract, and **Attachment A**, Article 1 of the GENERAL PROVISIONS.

PART IV. This Work Authorization shall become effective on the date of execution by the parties hereto and shall terminate one (1) year after final acceptance, unless extended by a supplemental Work Authorization as provided in **Attachment A**, Article 1 of the GENERAL PROVISIONS. The work shall be performed in accordance with the Project Schedule and Milestones as set forth in **Attachment F**.

PART V. This Work Authorization No. 13 does not waive any of the parties' responsibilities and obligations provided under the Contract, and except as specifically modified by this Work Authorization, all such responsibilities and obligations remain in full force and effect.

IN WITNESS WHEREOF, this Work Authorization No. 13 is executed in duplicate counterparts and hereby accepted and acknowledged below.

THE CONTRACTOR:

 _____
Signature
7/10/15 _____
Date
J. DARBY SWANK _____
Typed/Printed Name and Title VPOE ELECTRONIC TOLLING

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

Executed for and approved by the Central Texas Regional Mobility Authority for the purpose and effect of activating and/or carrying out the orders, established policies or work programs heretofore approved and authorized by the Texas Transportation Commission.

Signature Date

Typed/Printed Name and Title

LIST OF ATTACHMENTS

- Attachment A Scope of Work
- Attachment B Project Layout
- Attachment C Toll Facility Responsibility Matrix
- Attachment D Fixed Price Tolling Standards
- Attachment E Fee Schedule/Budget
- Attachment F Project Schedule and Milestones
- Attachment G Federal Requirements

ATTACHMENT A

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY
**TOLL COLLECTION AND INTELLIGENT TRANSPORTATION SYSTEMS
IMPLEMENTATION
Bergstrom Expressway Project**

SCOPE OF WORK for SYSTEMS INTEGRATOR

A1.0 General

A1.01. Background

The Capital Area Metropolitan Planning Organization (CAMPO) approved the implementation of the proposed Toll Implementation Plan to construct additional capacity on various segments of highway network in the CAMPO Long-Range Plan as toll road facilities in conjunction with plans for development of the Central Texas Turnpike Project. Several of the toll road segments are in various stages of project development, design or construction by the Mobility Authority. It is intended that these proposed segments will be implemented by the Mobility Authority as parts of the Turnpike System.

The Bergstrom Expressway (“Project”) is an 8-mile facility that will extend from US 290 to SH 71. The Mobility Authority has selected a design/build contractor to complete the project. The design and construction is expected to begin by fall 2015 and open-to-traffic date anticipated for 2020. The Toll Collection System (TCS) for the Bergstrom Expressway will be all Electronic Toll Collection (ETC). Additionally, the Project will require the implementation of an Intelligent Transportation System (ITS). While the roadway corridor will be designed and constructed in phases, the ITS will be designed as a whole before installation of any individual field component or fiber segments. This necessitates the timely completion of a complete ITS Plan.

A1.02. Summary Scope of Work

The Scope of Work for Work Authorization No. 13 includes, but is not limited to, procurement, installation, testing, and implementation of a complete and fully operational Toll Collection System (TCS) and Intelligent Transportation System (ITS). Services will also include communications and system interfaces design, coordination, and project interface activities to facilitate the design and construction of the infrastructure facilities by others on the Project.

This Work Authorization authorizes the SI to establish and maintain relationships with a wide variety of third parties, and to coordinate the designs for the proposed TCS and ITS, with the entire Project to ensure that the construction of the system infrastructure facilities will be fully compatible and will meet the Mobility Authority’s requirements. In this role, the SI will work closely with the Mobility Authority, TxDOT, and various designers and roadway contractors in developing the required complete TCS, ITS, and network infrastructure.

A2.0 General Description – Toll Road Infrastructure and Site

The Project limits extend from US 290 to SH 71, and include six tolled lanes with four to six frontage road lanes. The project length is approximately 8 miles.

The existing roadway in the vicinity of the preliminary location of the toll gantries includes two 12-foot lanes in each direction, with one 4-foot and one 10-foot shoulder and a depressed grass median in select locations. Right-of-way width varies from 370 to 457 feet for ramp toll locations, 727 to 748 feet for direct connector toll locations, and 431 to 503 feet for mainline toll locations. All tolling locations are at grade except for the NB and SB direct connectors which are 5-feet and 14-feet above grade respectively.

The TCS for the Project will be all ETC. The full build project will consist of 28 gantry lanes at the locations listed in Table 1 below. Locations are approximate and are subject to change as the CDA Developer progresses toward the completion of plans development.

Table 1: Gantry Locations and Lane Counts

Approximate Station Location	Direction of Travel	No. of Lanes	No. of Shoulders (6' or greater)	Gantry Type	Comments
307+00	Northbound	3	2	Mainline	The preliminary schematic typical section includes 10 foot shoulders on either side. However, the typical section may be different if the location of the gantry is revised.
339+50	Southbound	4	2	Mainline	The preliminary schematic typical section includes 10 foot shoulders on either side. However, the typical section may be different if the location of the gantry is revised.
4541+50	Northbound	5	2	Mainline	The preliminary schematic typical section includes 10 foot shoulders on either side. However, the typical section may be different if the location of the gantry is revised.
3541+70	Southbound	5	2	Mainline	The preliminary schematic typical section includes 10 foot shoulders on either side. However, the typical section may be different if the location of the gantry is revised.
292+00	Southbound	1	1	Ramp	One 4 foot and one 6 foot shoulder.
293+50	Northbound	1	1	Ramp	One 4 foot and one 6 foot shoulder.
369+00	Northbound	2	1	Ramp	One 4 foot and one 6 foot shoulder.
452+00	Northbound	1	1	Ramp	One 4 foot and one 6 foot shoulder.
453+50	Southbound	2	1	Ramp	One 4 foot and one 8 foot shoulder.
4592+00	Northbound	2	2	Direct Connector	One 8 foot and one 8 foot shoulder.
3592+00	Southbound	2	1	Direct Connector	One 4 foot and one 8 foot shoulder.
Total Gantry Lanes		28	8		

Refer to the Bergstrom Expressway Toll Lanes Project Layout included as *ATTACHMENT B – Project Layout* for the general project layout.

A3.0 General Requirements

A3.01. General Requirements - Toll Collection System

The TCS for the Project, will be an expansion of the TCS which has been designed and implemented for the 183A Toll Road and the Manor Expressway Projects, using automatic vehicle identification and classification technology, a Video Capture System (VCS) with an integrated camera and triggering system to capture referenced digital images of license plates, a Digital Video Auditing System (DVAS), and a Remote Online Management System (ROMS). It is required that the TCS be interoperable with the other Texas ETC systems.

The Mobility Authority contracts with the members of the Texas Statewide Interoperability Agreement for CSC services for its customers. The Pay By Mail (PBM) Processing Center is located in a separate facility, and is being administered by a third party under contract to the Mobility Authority.

Expansion of the Mobility Authority's TCS to serve the Project will include coordination and design of appropriate interfaces with the IOPHub and PBM Processing Center. Appropriate communications links between the various toll facilities on the Project and the Mobility Authority's Administrative Offices, the Mobility Authority's TMC, the IOPHub, and the PBM Processing Center are part of the requirements of the design/implementation work.

A3.02. General Requirements - Intelligent Transportation System

The proposed field network will consist of a fiber optic communication network that facilitates communication to various ITS field devices along the Project back to the Mobility Authority's TMC. The ITS devices to be installed on the Project network include 11 closed circuit television (CCTV) cameras, 5 dynamic message signs (DMS), 38 radar vehicle sensing detectors (RVSD), and ATMS readers that are configured for collection of data and monitoring of traffic on the expressway mainlanes and frontage roads.

The general locations, layouts, and implementation schedule for the ITS for the Bergstrom Expressway Project, as currently proposed, are based on the latest information currently available, and they are intended for informational purposes only. The locations are subject to change, and it should be anticipated that refinements and adjustment to the locations and layouts indicated will be required as designs for the ITS are further developed.

The proposed ITS network for the Bergstrom Expressway project should be fully integrated with both the Mobility Authority and TxDOT TMC software. TxDOT will have a dedicated connection to Mobility Authority, and will be provided bandwidth on the Mobility Authority's network sufficient to allow for shared video and data between the two agencies' systems. The terms of device and data sharing on Bergstrom Expressway is outlined in the "Agreement for Sharing Intelligent Transportation Systems (ITS) Data", a user agreement specifically between TxDOT and the Mobility Authority. Specifically, it addresses the use of TxDOT's Center-to-Center protocol and an application programming interface (API) for access to the Mobility Authority's traffic database.

The SI shall design and install a system that is compatible with the Austin Regional ITS Architecture for both control of devices and reception of images and data. The proposed system shall be an extension of field devices to the already existing TxDOT Austin District System. The database administrator at the TxDOT Austin District TMC will add the new device addresses to the already functioning tables. Note also that the

fiber trunk line for the Bergstrom Expressway shall be tied into the TxDOT fiber system at the US 183 HUB facility.

The ITS and duct bank will be in accordance with guidelines included in the *Austin District Guidelines for Developing Freeway Corridor Traffic Management System*.

A4.0 General Description – Equipment and Installation

A4.01. Equipment and Installation – Toll Collection System

For all TCS field installations on the various segments of the Project, the SI will be required to provide and install the toll equipment systems and hardware for a complete, tested, and operating TCS under this Work Authorization. The principle items of work and primary components of the TCS at each toll location will include, but are not limited to:

- Furnish and install in-lane processors (ILP) and ancillary devices.
- Furnish and install ETC lane components, including automatic vehicle detection system (AVDS), automatic vehicle classification (AVC), VCS, and automatic vehicle identification (AVI) systems and hardware. Saw cut pavement for any in-pavement sensors.
- Furnish and install all ETC lane equipment wiring and cable, hardware, mounts, and fasteners required to attach the ETC equipment to the gantries provided by others.
- Furnish and install ROMS monitoring for all ETC site equipment (i.e. ILP, AVDS, AVC, AVI, VCS, HVAC, generators, power, communications equipment, etc.).
- Furnish and install a fault tolerant, single mode fiber optic IP-based communication system including fiber optic cables, terminations, switches, routers, firewalls, hubs, patch panels, and other network devices.
- Furnish and install master ground system connected to the master ground bus bar provided by others.
- Furnish and install backup electrical power including emergency generators, fuel tanks, and automatic transfer switches.
- Furnish and install UPS, including wiring and cable, hardware, and ROMS interface.
- Furnish and install ILP enclosure, with HVAC for appropriate environmental protection and climate controls for electronic equipment.
- Furnish and install site surveillance cameras and security systems and communications to monitor each ILP enclosure and gantry.
- Provide power from the electrical service to the toll locations.
- Prepare and submit all required documents to acquire Federal Communication Commission (FCC) Licensing.
- Provide complete testing, certification and acceptance of all systems for complete, fully operational TCS, furnished and installed.

The procurement, fabrication and installation of gantries for the TCS will be completed by others. It is the responsibility of the SI, nevertheless, to work closely with the Mobility Authority, TxDOT, and the various designers and roadway contractors to establish the precise locations for each of the gantry structures and to provide the Roadway Contractor(s) with detailed installation information for the TCS equipment at each location.

A4.02. Equipment and Installation – Intelligent Transportation System

For all ITS field installations on the various segments of the Project, the SI will be responsible for the final ITS design, and the purchase and installation of the ITS equipment for a complete, tested, and operational system under this Work Authorization. The principle items of work and primary components of the system at each location will include, but are not limited to:

- Furnish and install the fiber optic cabling required for the ITS.
- Furnish and install CCTV cameras, communications, and equipment enclosures.
- Furnish and install the DMS, communications, and equipment enclosures.
- Furnish and install RVSD, communications, and equipment enclosures.
- Connect to the existing communication hub at the US 183 and US 290 interchange.
- Provide complete testing, certification and acceptance of all systems for complete, fully operational ITS, furnished and installed.

Elements of the ITS infrastructure will be the responsibility of others. Nevertheless, it is the responsibility of the SI to work closely with the Mobility Authority and the various designers and roadway contractors to establish the precise locations for the elements above and to provide the Roadway Contractor(s) with detailed information as needed.

A5.0 Coordination and Project Interface

The SI is to participate in the process for coordination which will enable the contractors and designers of the Project to obtain specific, detailed information regarding the proposed system components, which includes the TCS and ITS, in order to complete the design/construction of the appropriate infrastructure. The SI will be responsible for maintaining relationships with a wide variety of third parties, including designers, roadway contractors, and various suppliers. In this role, the SI will work closely with the Mobility Authority and TxDOT in developing the required network. The work related to this Work Authorization No. 13 generally will include, but not be limited to:

- Provide design input and detailed information, including toll system component details, dimensions, layout configurations, locations and specific technical requirements for elements of the proposed TCS and ITS.
- Prepare construction/installation guidelines for various components of the Mobility Authority's TCS and ITS.
- Review of construction documents prepared by others.
- Attend and participate in coordination meetings as determined by project schedule and/or as requested by the Mobility Authority. This includes attending design coordination meetings, construction meetings, and issue resolution meetings as necessary to resolve outstanding comments.
- Provide "over the shoulder" reviews, as necessary.
- Submit Installation Plan and Installation Drawings to the Mobility Authority for review and approval.
- Provide input in the development of the project schedule as it relates to the installation and testing of the TCS and ITS. The SI shall review the project baseline schedule prepared by the D/B contractor for acceptance.

All infrastructure facilities for the Project will be provided by others as indicated in *Section A6.0 and Section A7.0* hereof. The SI shall fully coordinate the designs for the TCS and ITS with others and provide the

required details and technical requirements to ensure that the construction of the toll system infrastructure facilities will be fully compatible and meet the requirements for the two systems.

The SI is responsible for coordinating with others and for providing all necessary details, system requirements, and reviews of construction documents to ensure that the gantries are located and configured to properly accommodate the SI's own particular system components as required to meet the Mobility Authority TCS performance and accuracy requirements.

Prior to deploying any toll collection equipment or technology, the SI shall certify to the Mobility Authority that the technology complies with the most current interoperability rules.

A6.0 Work by Others – Civil/Roadway Construction

A6.01. Civil/Roadway Construction - Toll Collection System

The Mobility Authority, through its roadway construction contracts, will provide jointed concrete pavement in each of the areas designated for toll collection facilities. The pavement will be reinforced with glass fiber reinforced polymer (GFRP) bars. Transverse joints and longitudinal joints will be placed at positions equal to lane widths and as shown on the Mobility Authority details. Power and communication lines to support the wide area network (WAN) will be provided by others and terminated at an ILP enclosure in an area within 500 feet of the gantry. The SI is responsible for the communication links between the Host, IOPHub, PBM Processing Center, the Mobility Authority's TMC, TxDOT's TMC, and all toll facilities via a communication trunk line and WAN.

Except as may be expressly indicated elsewhere, all toll system infrastructure required for the TCS at the designated toll locations will be provided and installed by others. The principle items of work and primary components of the TCS infrastructure to be provided by others at each location shall include, but are not limited to:

- GFRP bar reinforced pavement section.
- Retaining walls and coping details.
- Drainage features.
- Civil site work, including grading, access driveways, and fencing.
- All toll gantry procurement and installation, including foundations and gantry structures.
- ILP enclosure concrete foundation slab.
- Conduit and ground boxes providing connections between the ILPs and the ETC lane equipment installations. NOTE: It is the responsibility of the SI to coordinate with the Roadway Contractor(s) for the placement and installation of these elements to ensure that the construction is acceptable for the TCS as designed.
- Gantry and ILP enclosure lightning protection air terminals, down conductors, ILP master bus bar, and ground electrodes. Equipment connection to the ground electrode for the ILP enclosure master ground bus bar will be provided by others.
- Power and WAN communication services up to the location of the ILP enclosures.
- Provide, install, and incorporate natural gas lines, if available. NOTE: SI is to coordinate and provide generator requirements including locations for gas feeds for the emergency generators.
- Concrete foundations for emergency generators and associated fuel tanks.

- All signing, pavement markings, traffic barriers and other roadway appurtenances required at each location.

Refer to the Fixed Price Tolling Standards that were issued by the Mobility Authority on November 2013, which is included as *ATTACHMENT D – Fixed Price Tolling Standards*.

A6.02. Civil/Roadway Construction - Intelligent Transportation System

Except as may be expressly indicated elsewhere, all ITS infrastructure required will be provided and installed by others. The principle items of work and primary components of the ITS infrastructure to be provided by others shall include, but are not limited to:

- ITS layouts
- Duct bank
- Conduits
- Electrical services
- Grounding circuits
- Support structures and associated foundations

A7.0 Toll Facilities Responsibility Matrix

For this work authorization, the SI is responsible for design and coordination of the various aspects of the TCS, and ITS, as identified in *ATTACHMENT C - Toll Facilities Responsibility Matrix*, and shall work with the Mobility Authority, TxDOT, roadway designers and contractors, and others as described herein.

A8.0 Project Schedule

The Project Schedule shall be developed to incorporate the milestone dates established for this Work Authorization No. 13 as presented in *ATTACHMENT F – Project Schedule and Milestones*.
[END OF SECTION]

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

RESOLUTION NO. 15-___

**APPROVING A WORK AUTHORIZATION WITH SCHNEIDER ELECTRIC
MOBILITY NA INC. FOR TOLL SYSTEMS INTEGRATION SERVICES FOR
THE 183 SOUTH (BERGSTROM EXPRESSWAY) PROJECT.**

WHEREAS, the Central Texas Regional Mobility Authority (“Mobility Authority”) entered into a contract with Caseta Technologies, Inc. dated April 27, 2005, for the design, procurement, and installation of a toll collection system on the Authority’s turnpike system (the “Contract”); and

WHEREAS, Schneider Electric Mobility NA Inc. (“Schneider”) is the successor in interest to the Contract with Caseta Technologies, Inc., and all rights and obligations of Caseta Technologies, Inc. under the Contract are now the rights and obligations of Schneider; and

WHEREAS, the Executive Director and Schneider have discussed and agreed to a proposed work authorization for Schneider to provide toll systems integration services for development of the 183 South (Bergstrom Expressway) project (the “Project”); and

WHEREAS, the Executive Director recommends approval of the proposed work authorization in the form or substantially the same form as provided in the backup material.

NOW THEREFORE, BE IT RESOLVED that the proposed work authorization with Schneider for toll systems integration services for the Project is hereby approved; and

BE IT FURTHER RESOLVED that the Executive Director may finalize and execute on behalf of the Mobility Authority the proposed work authorization in the form or substantially the same form provided to the Board as agenda backup information.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 29th day of July, 2015.

Submitted and reviewed by:

Approved:

Andrew Martin, General Counsel

Ray A. Wilkerson
Chairman, Board of Directors