CENTRAL TEXAS
Regional Mobility Authority

AGENDA ITEM #4 SUMMARY

Authorize a new work authorization with Telvent USA, LLC to provide new toll system installation services to the Cameron County Regional Mobility Authority.

Strategic Plan Relevance: Innovative, Economic Vitality

Department: Toll Operations

Associated Costs: $3,970,012 (no cost to Mobility Authority)

Funding Source: Cameron County Regional Mobility Authority

Board Action Required: Yes

Description of Matter: At the January 2010 Board of Directors meeting, the Board passed Resolution No. 10-06 to authorize an interlocal agreement between the Mobility Authority and the Cameron County Regional Mobility Authority (CCRMA). Under this interlocal agreement and through our Contract for Toll System Implementation with Telvent USA, LLC (Telvent), the Mobility Authority has assisted CCRMA in the installation and implementation of its toll system for the SH 550 toll road in Brownsville. CCRMA is requesting Mobility Authority assistance under the interlocal agreement to expand the SH 550 toll road in a project commonly referred to as the "Direct Connector."

This request is for approval of a new work authorization with Telvent to install the toll system for the Direct Connector. The "not to exceed" cost of $3,970,012 for implementation and integration of the Direct Connector toll system will be paid by CCRMA. The Mobility Authority incurs no costs other than a minimal amount of staff time for coordination and management of the Telvent work authorization.

Reference documentation: Draft Resolution
Draft Work Authorization

Contact for further information: Tim Reilly- Director of Toll Operations

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

RESOLUTION NO. 14-___

APPROVING A NEW WORK AUTHORIZATION WITH TELVENT USA LLC TO PROVIDE TOLL SYSTEM INSTALLATION SERVICES TO THE CAMERON COUNTY REGIONAL MOBILITY AUTHORITY

WHEREAS, the Mobility Authority provides services to Cameron County Regional Mobility Authority ("CCRMA") through its Contract for Toll System Implementation effective April 27, 2005, with Telvent USA, LLC, formerly known as Caseta Technologies (the "Telvent Contract") under an interlocal agreement between the Mobility Authority and CCRMA effective January 27, 2010 (the "ILA"); and

WHEREAS, CCRMA has notified the Mobility Authority that it desires assistance from the Mobility Authority under the ILA and the Telvent Contract for implementation of the toll system for the Direct Connector expansion project as part of its SH 550 toll road; and

WHEREAS, the Executive Director recommends approval of the proposed work authorization under the Telvent Contract attached and incorporated into this resolution as Exhibit 1.

NOW THEREFORE, BE IT RESOLVED that the proposed work authorization is 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 attached as Exhibit 1.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 30th day of April, 2014.

Submitted and reviewed by:

_____
Andrew Martin
General Counsel for the Central
Texas Regional Mobility Authority

Approved:

_____
Ray A. Wilkerson
Chairman, Board of Directors
Resolution Number: 14-___
Date Passed: 04/30/2014

EXHIBIT 1 TO RESOLUTION 14-___

WORK AUTHORIZATION

[on the following 20 pages]

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

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WORK AUTHORIZATION

WORK AUTHORIZATION NO. 11

TOLL COLLECTION SYSTEMS IMPLEMENTATION-
CAMERON COUNTY RMA SH 550-DIRECT CONNECTOR TOLL PROJECT

THIS WORK AUTHORIZATION No. 11 is made 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 "Authority" or "CTRMA"), and Telvent USA, LLC, as the successor in interest to Caseta Technologies, Inc. (the "Contractor", also referred to as the "System Integrator" or "SI"), as amended February 26, 2010, and on May 2, 2011.

PART I. The Contractor will perform toll system implementation services described in **Exhibit A** attached hereto. The Contractor's duties and responsibilities to coordinate with the CCRMA's contracted designers and construction contractors is detailed in the Responsibility Matrix attached thereto as **Exhibit C**. The Attachments are attached hereto and made a part of this Work Authorization.

PART II. The maximum amount payable under this Work Authorization No. 11 is $3,970,012. This amount is based generally upon the estimated fees set forth in **Exhibit B**, 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 No. 11 shall be made in accordance with Article12 of the Contract, and Attachment A, Article 1 of the GENERAL PROVISIONS.

PART IV. This Work Authorization is effective _____, 2014 and shall terminate one year following System 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 **Exhibit D**.

PART V. This Work Authorization No. 11 does not waive any of the parties' responsibilities and obligations provided under the Contract, and except as specifically modified by this Work Authorization No. 11, all such responsibilities and obligations remain in full force and effect.

IN WITNESS WHEREOF, this Work Authorization No. 11 is executed in duplicate counterparts and hereby accepted and acknowledged below.

THE CONTRACTOR: Telvent USA, LLC

Signature Date
Typed/Printed Name and Title

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

EXHIBIT A	SCOPE OF WORK
EXHIBIT B	FEE PROPOSAL
EXHIBIT C	RESPONSIBILITY MATRIX
EXHIBIT D	SCHEDULE

CAMERON COUNTY REGIONAL MOBILITY AUTHORITY

TOLL COLLECTION SYSTEMS IMPLEMENTATION

CCRMA SH 550 – Direct Connector Toll Project

SCOPE OF WORK for Systems Integrator

A1.0 General

A1.01. Background

The Cameron County Regional Mobility Authority (CCRMA) approved the implementation of the proposed Toll Implementation Plan to construct additional capacity on various segments of highway network in the CCRMA Long-Range Plan as toll road facilities in conjunction with lanes for development of the SH550 tolling route. The toll road segments are in various stages of project development, design or construction by the Cameron County Regional Mobility Authority (CCRMA). It is intended that the proposed segment will be implemented by the CTRMA as part of the CCRMA Toll Road System. A tabulation of ***Detailed Lane Configuration*** for the Toll Collection System (TCS) as currently anticipated for the SH550 – Direct Connector Project ("the Project") is included as part of this Exhibit A. The TCS for the Project will be all Electronic Toll Collection (ETC).

A1.02. Summary Scope of Work

The Scope of Work for this Work Authorization provides details for the procurement, installation, testing, and implementation of a complete and fully operational TCS for the Project, including all of the required communications and systems interfaces, and one (1) year of toll systems maintenance services. The Work includes the design and installation of a single bidirectional mainline tolling point (two lanes and one shoulder in each direction) and two single-lane ramps (with no shoulders). The Work also includes design, coordination, and project interface activities to facilitate the design and construction of the toll system infrastructure facilities by others on the Project. This Work Authorization also authorizes the Systems Integrator (SI) to establish and maintain relationships with a wide variety of third parties and to coordinate the designs for the proposed TCS with the Project to ensure that the construction of the toll system infrastructure facilities will be fully compatible and will meet the requirements for CCRMA's TCS. In this role, the SI will work closely with CCRMA, CTRMA, TxDOT, and various designers and roadway contractors in developing the required TCS and network infrastructure.

A2.0 General Description – Toll Road Infrastructure and Site

A2.01. SH550 – Direct Connector

Proposed Facility: The improved corridor will include a four-lane Toll Road (Two Lanes and One Shoulder Lane in each direction). The Toll Lanes will be separated from the frontage roads by a grassed elevated median and physical barrier.

A3.0 General Description - Toll Collection System Elements

A3.01. General Requirements

The TCS for the Project, which is being designed and implemented as one of a series of separate work authorizations for the various segments of the proposed Toll Road System, generally will be fully compatible with the current SH550 Toll Road Project TCS including, Automatic Vehicle Identification (AVI), Automatic Vehicle Detection and Classification (AVDC), a Violation Enforcement System (VES) with an integrated camera and triggering system to capture referenced digital images of license plates, a Remote Online Management System (ROMS) and a Closed Circuit Television (CCTV) System for viewing of traffic and toll equipment cabinets. It is required that the System be interoperable with the other Texas ETC systems. The CCRMA contracts with the CTRMA for access to members of the Texas Statewide Interoperability Task force for CSC services for its customers.

The SI shall provide the systems, communications and bandwidth necessary for the toll transactions, images, CCTV video and system messages to be transferred and processed in a manner consistent with current toll system operations and processes.

A revised detailed tabulation of the elements of the TCS, indicating locations and basic components is attached as "***Detailed Lane Configurations***". The general locations and layouts for the toll facilities of the Project as currently proposed are indicated on the attached schematic diagram. This diagram is based on the latest information currently available and is 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 TCS are developed further.

A4.0 General Description and Requirements - ETC Systems

For all TCS field installations on 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 shall include, but are not limited to:

- Design, Furnish & Install roadside cabinet enclosures, with HVAC for appropriate environmental protection and climate controls for electronic equipment;
- Design, Furnish & Install Lightning Surge Suppression System & Components for the protection of the entire TCS, including microwave-based communications/antennas and service/feeder power;

- Design, Furnish and Install microwave-based communications between the Direct Connector tolling locations and the existing toll collection system;

  Note: If microwave-based communications is not feasible between the Direct Connector tolling points and the existing 1847 tolling location, Telvent USA, LLC will work with CCRMA to design and establish a ground-based, fiber network design and implementation. Based on the design, required installation options and estimated costs, CCRMA shall decide if the work will be performed by Telvent USA, LLC or CCRMA. If CCRMA directs the work to be performed by Telvent USA, LLC and the cost cannot be covered within the approved project budget, CTRMA will request an appropriate cost increase to the Interlocal agreement. In either case, Telvent USA, LLC is not responsible for 3rd party communications provider (e.g., AT&T) installation or monthly service fees.
- Design, Furnish and Install Communication System Outside, Inside, and Network Components (i.e.: Cable, Terminations, Switches, routers and other network devices) to interconnect tolling equipment at individual Direct Connector tolling points;
- Design, Furnish and Install Communication System Outside, Inside, and Network Components (i.e.: Cable, Terminations, Switches, routers and other network devices) to interconnect the two Direct Connector ramp tolling locations;
- Design, Furnish & Install ETC Lane components, including Lane Controllers, AVI, AVDC, VES and ROMS systems and hardware;
- Design, Furnish & Install a CCTV systems and hardware capable of monitoring mainline traffic at the Direct Connector tolling point and all toll equipment cabinets including ramps;
- Design, Furnish & Install all ETC Lane Equipment wiring & cable, hardware, brackets, and fasteners required to attach the ETC and CCTV equipment to the gantries provided by the Contractor;
- Design, Furnish & Install ROMs monitoring for all ETC, UPS/power and CCTV;
- Design, Furnish & Install Uninterruptible Power Supply, including wiring & cable, hardware, and ROMs interface;
- Design, Furnish & Install Portable Generator Connections for manual power switchover capability;
- Design, Furnish and Provide Portable Generators capable of providing ample power to the Direct Connector tolling points and compatible with the existing SH550 Portable Generators, and
- Provide complete testing and acceptance of all systems for the complete, fully operational TCS, furnished and installed.

A5.0 Civil Work – Toll System Infrastructure Provide by SI

For all TCS field installations on the Project, the SI will be required to complete certain civil work and provide for the design and installation of certain civil elements. The principle civil items shall include, but are not limited to:

- Design of the following:
  - In-pavement conduit and roadside junction boxes at the toll points;
  - Concrete pads for the toll equipment cabinets and required stub-ups;
  - Conduit from toll equipment cabinets to the roadside junction boxes;
  - Conduit from the power poles to the toll equipment cabinets, and
  - Access Driveways to provide for maintenance vehicles to service toll equipment cabinets under live traffic;
- Coordinate with the Roadway Contractor(s) for the placement and installation of in-pavement conduit and connected roadside ground boxes. these elements to ensure that the construction is acceptable for the TCS as designed;
- Coordinate with CCRMA for the delivery of power to the tolling locations;
- Coordinate with CCRMA and the Roadway Contractor(s) regarding the precise locations for each of the gantry structures and to provide the Roadway Contractor(s) with detailed information for the installation of the TCS equipment at all locations, and
- Coordinate with CCRMA and the Roadway Contractor(s) regarding all TCS infrastructure provided or installed by a CCRMA contractor or the Roadway Contractor(s).

For the following items, CCRMA reserves the right to provide all or part of the Civil Work described. Should CCRMA choose to provide this Work, CTRMA agrees not to invoice CCRMA for these items. Should CCRMA choose to provide a portion of this work, CTRMA will only invoice CCRMA for the portion of the Work provided by CTRMA.

- Installation of conduit and cabling required to extend power from the power poles to the toll equipment cabinets;
- Installation of concrete pads for toll equipment cabinets, including required conduit stub-ups, and
- Installation of Access Driveways to provide for maintenance vehicles to be used in servicing toll equipment cabinets and gantries under live traffic.

A6.0 Civil Work – Toll System Infrastructure Provide by Others

CCRMA, through its roadway construction contract will provide for a minimum of 60 linear feet of jointed concrete pavement at the area designated for the 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 CCRMA details.

A portion of the toll system infrastructure required for the TCS will be provided and installed by others. The principle items of work and primary components of the TCS infrastructure that will be provided and installed by others shall include:

- GFRP Bar Reinforced Pavement Section;
- Retaining Walls and Coping Details;
- Drainage Features;
- Civil Site Work, including Grading, Fencing and Drainage;
- The procurement, fabrication and installation of gantries for the TCS to be located on the Project will be by others, including foundations and gantry structures. 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;
- In-pavement conduit and connected roadside ground boxes. 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;
- Power will be provided by others and terminated in an area within 500 feet of toll equipment cabinets;
- Gantry lightning protection air, terminal, Down Conductors;
- Master Ground Bus Bar, and Ground Electrodes. Equipment connection to the Ground Electrode for the toll systems cabinet enclosure Master Ground Bus Bar will be provided by Others, and
- All signing, pavement markings, traffic barriers and other roadway appurtenances.

Except as may be expressly indicated, all toll infrastructure is the responsibility of the SI.

A7.0 Coordination and Project Interface

The work related to this Work Authorization generally will include, but not be limited to:

- Design input and providing detailed information including TCS component details, dimensions and layout configurations, and specific technical requirements for elements of the proposed TCS;
- Preparation of construction/installation guidelines for various components of CCRMA's TCS;
- Review of construction documents prepared by others, and
- Attendance and participation at coordination meetings as determined by project schedule and/or as requested by CCRMA

The SI is to participate is the process for coordination which will enable the contractors and designers on the Project to obtain specific, detailed information regarding the proposed TCS components in order to complete the design/construction of the appropriate toll facilities

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 CCRMA in developing the required network.

TCS infrastructure facilities at the Direct Connector toll locations will be provided as indicated in ***Section A5.0 and Section A6.0*** hereof. The SI shall fully coordinate the designs for the TCS 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 CCRMA's TCS. 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 properly to accommodate the SI's own particular system components as required to meet CCRMA TCS performance and accuracy requirements.

A7.0 Work Authorization Toll Facilities Responsibility Matrix

The SI is responsible for design and coordination of the various aspects of the TCS as identified in the ***ATTACHMENT C - Toll Facilities Responsibility Matrix***, and shall work with CCRMA, 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.

CAMERON COUNTY REGIONAL MOBILITY AUTHORITY

TOLL COLLECTION SYSTEMS IMPLEMENTATION

CCRMA SH 550 – Direct Connector Toll Project

FEE PROPOSAL for Systems Integrator

B1.0 Fee Proposal

This attachment provides the Fee Proposal that Telvent has developed for the Project.

B1.01. Cost

The cost for specific services and equipment, and the cost of the toll system required to collect and process tolls on the Project, shall not, without prior written consent of CTRMA, exceed the cost provided within this attachment. In order to receive prior written consent Telvent shall provide to CTRMA both the requested increase amount and a written justification. Subsequently, CTRMA will request from CCRMA an authorization for an increase in cost to the Interlocal agreement. Until formal approval is received form CCRMA, Telvent shall be at risk for any work performed, expenses incurred or equipment purchased that result in the Project costs exceeding those provided within this attachment.

B1.02. CCRMA Civil Work Option

CCRMA reserves the right to provide all or part of the Civil Work. Should CCRMA choose to provide this Work, Telvent agrees not to invoice CTRMA for this work. Should CCRMA choose to provide a portion of this work, Telvent shall only invoice CTRMA for the portion of the Work provided by Telvent.

B1.03. Detailed Fee Proposal

CCRMA - Direct Connector Toll System Impementation Cost Estimate					
L/I	Description	Cost	QTY	Extended Cost	
1	**Toll System Implementation - Direct Connector - Mainline (4 Lanes)**				
2	Equipment	$ 229,826	4	$	919,304
3	Labor	$ 278,647	4	$	1,114,588
4	Other Direct Costs	$ -			
5	Install/Maint Misc (veh's, ins, fuel, maint, tools, cell's, etc.)	$ 9,477	4	$	37,908
6	Travel (air fare, milage, car rental, hotel, per-deim)	$ 5,131	4	$	20,522
7	Installation SubK Support	$ 16,476	4	$	65,902
8	**Subtotal**			$	**2,158,223**
9					
10	**Toll System Implementation - Direct Connector - Ramps (2 Single Lanes)**				
11	Equipment	$ 306,435	2	$	612,869
12					
13	Labor	$ 315,647	2	$	631,294
14	Other Direct Costs	$ -			
15	Install/Maint Misc (veh's, ins, fuel, maint, tools, cell's, etc.)	$ 12,636	2	$	25,272
16	Travel (air fare, milage, car rental, hotel, per-deim)	$ 6,841	2	$	13,681
17	Installation SubK Support	$ 21,967	2	$	43,935
18	**Subtotal**			$	**1,327,051**
19					
20	**General Project Costs**				
21	Travel and Substinance				
22	Other Direct Costs				
23	Bonding/Insurance	$ 45,391	1	$	45,391
24	Item 2				
25	Year 1 Maintenance (System Monitoring and Remote Support)				
26	**Subtotal**			$	**45,391**
27					
28					
29	**Civil Work**				
30	Mainline Civil Work				
31	Driveway	$ 18,517	4	$	74,066
32	Pad	$ 14,135	4	$	56,538
33	Conduit	$ 8,685	4	$	34,741
34	Power	$ 15,858	4	$	63,430
35					
36	Ramps Civil Work				
37	Driveway	$ 35,664	2	$	71,329
38	Pad	$ 23,274	2	$	46,548
39	Conduit	$ 16,001	2	$	32,002
40	Power	$ 30,346	2	$	60,692
41	**Subtotal**			$	**439,347**
42	**Total**			$	**3,970,012**

CAMERON COUNTY REGIONAL MOBILITY AUTHORITY
TOLL COLLECTION SYSTEMS IMPLEMENTATION

Attachment C

Responsibility Matrix
SH550 – Direct Connector Toll Project

LEGEND	
Primary Responsibility	A
Support Responsibility	B
Coordination Responsibility Only	C
No Responsibility	D

Work Description	1	2	3
	Design	Procure	Install and/or Construct

Element/Task/Component/ Sub-system	CCRMA (TXDOT) CCRMA, Civil Designer and/or Roadway Contractor			CTRMA (TELVENT USA, LLC) System Integrator (SI)			Comments Other Responsibility/Information
TOLL COLLECTION FACILITIES	1	2	3	1	2	3	
Construction Schedule	A	A	A	C	C	C	
Toll System Implementation Schedule	B	B	B	A	A	A	
Gantry conduit, J boxes, wire ways and pull strings, and horizontal mounting brackets.	B	A	A	A	D	B	SI to provide locations and elevations for gantry mounted conduit, J boxes, wire ways and pull strings and horizontal mounting brackets on gantry for toll equipment mounting. Roadway Designer to incorporate into Physical Layout Design Packages. Roadway Contractor to Procure and Install.
Gantry down-arm mounting brackets	D	D	B	A	A	A	SI to design, procure and install all down-arms from the horizontal mounting brackets for the direct mounting of toll system equipment.

CAMERON COUNTY REGIONAL MOBILITY AUTHORITY
TOLL COLLECTION SYSTEMS IMPLEMENTATION

Responsibility Matrix
SH550 – Direct Connector Toll Project

LEGEND	
Primary Responsibility	A
Support Responsibility	B
Coordination Responsibility Only	C
No Responsibility	D

Work Description	1	2	3
	Design	Procure	Install and/or Construct

Element/Task/Component/ Sub-system	CCRMA (TXDOT) CCRMA, Civil Designer and/or Roadway Contractor			CTRMA (TELVENT USA, LLC) System Integrator (SI)			Comments Other Responsibility/Information
							Roadway Contractor to Support the installation within their schedule.
In pavement toll system conduit and junction box layouts.	A	A	A	B	B	B	SI to provide diagrams, locations relative to the gantries and pavement requirements (e.g., location of expansion joints, type of rebar, depth of rebar, etc.) for in pavement toll system conduit and junction box layouts. Roadway Designer to incorporate into Physical Layout Design Packages. Roadway Contractor to Support the installation within their schedule.
Toll system in-pavement loops	B	D	B	A	A	A	SI to design, procure and install all toll system in-pavement loops (performed after pouring and proper hardening of roadway concrete by the Roadway Contractor at the tolling points).

CAMERON COUNTY REGIONAL MOBILITY AUTHORITY
TOLL COLLECTION SYSTEMS IMPLEMENTATION

Responsibility Matrix
SH550 – Direct Connector Toll Project

LEGEND	
Primary Responsibility	A
Support Responsibility	B
Coordination Responsibility Only	C
No Responsibility	D

Work Description	1	2	3
	Design	Procure	Install and/or Construct

Element/Task/Component/ Sub-system	CCRMA (TXDOT) CCRMA, Civil Designer and/or Roadway Contractor			CTRMA (TELVENT USA, LLC) System Integrator (SI)			Comments Other Responsibility/Information
							Roadway Designer to incorporate into Physical Layout Design Packages. Roadway Contractor to Support the installation within their schedule.
Concrete pads with conduit stub-ups for roadside toll equipment enclosures.	B	D	B	A	A	A	SI to design procure and install concrete pads with conduit stub-ups for roadside toll equipment enclosures. Concept Drawings provided by Designer and then incorporated into Physical Layout Design Packages. Roadway Contractor to Support the installation
Conduit from meter pole to main disconnect at toll equipment enclosures.	B	B	B	A	A	A	SI to design procure and install conduit from power drop to toll equipment enclosures.

CAMERON COUNTY REGIONAL MOBILITY AUTHORITY
TOLL COLLECTION SYSTEMS IMPLEMENTATION

Attachment C

Responsibility Matrix
SH550 – Direct Connector Toll Project

LEGEND	
Primary Responsibility	A
Support Responsibility	B
Coordination Responsibility Only	C
No Responsibility	D

Work Description	1	2	3
	Design	Procure	Install and/or Construct

Element/Task/Component/ Sub-system	CCRMA (TXDOT) CCRMA, Civil Designer and/or Roadway Contractor			CTRMA (TELVENT USA, LLC) System Integrator (SI)			Comments Other Responsibility/Information
							Concept Drawings provided by Designer and then incorporated into Physical Layout Design Packages.
Wiring from meter pole to main disconnect at toll equipment enclosures.	B	B	B	A	A	A	SI to design procure and install conduit from power drop to toll equipment enclosures. Concept Drawings provided by Designer and then incorporated into Physical Layout Design Packages.
Roadside toll equipment enclosures with HVAC and physical security.	B	D	B	A	A	A	SI to design, procure and install 332D roadside toll equipment enclosures with HVAC and physical security. Concept Drawings provided by Designer and then incorporated into Physical Layout Design Packages.

CAMERON COUNTY REGIONAL MOBILITY AUTHORITY
TOLL COLLECTION SYSTEMS IMPLEMENTATION

Responsibility Matrix
SH550 – Direct Connector Toll Project

LEGEND	
Primary Responsibility	A
Support Responsibility	B
Coordination Responsibility Only	C
No Responsibility	D

Work Description	1	2	3
	Design	Procure	Install and/or Construct

Element/Task/Component/ Sub-system	CCRMA (TXDOT) CCRMA, Civil Designer and/or Roadway Contractor			CTRMA (TELVENT USA, LLC) System Integrator (SI)			Comments Other Responsibility/Information
							Roadway Contractor to Support the installation within their schedule.
Utilities	A	A	A	B	D	B	CCRMA or Roadway Contractor to furnish and install electrical service to meet specific electrical power requirements for the Toll System Roadway Contractor to provide necessary "clear zone" at or near ROW for installation of electrical service, including misc grading and drainage as required by service design and /or Utility.
Grading	A	A	A	D	D	D	Designer to provide grading requirements. Roadway Contractor to complete all required grading.
Drainage	A	A	A	D	D	C	Designer to provide grading requirements. Roadway Contractor to complete all required

CAMERON COUNTY REGIONAL MOBILITY AUTHORITY
TOLL COLLECTION SYSTEMS IMPLEMENTATION

Responsibility Matrix
SH550 – Direct Connector Toll Project

LEGEND	
Primary Responsibility	A
Support Responsibility	B
Coordination Responsibility Only	C
No Responsibility	D

Work Description	1	2	3
	Design	Procure	Install and/or Construct

Element/Task/Component/ Sub-system	CCRMA (TXDOT) CCRMA, Civil Designer and/or Roadway Contractor			CTRMA (TELVENT USA, LLC) System Integrator (SI)			Comments Other Responsibility/Information
							drainage work.
Striping	A	A	A	B	D	D	Designer to incorporate into Striping Plan. Roadway Contractor to furnish and install
SI to design, procure and install all toll system components.	C	C	C	A	A	A	SI to design, procure and install all toll system components, including Lane Controllers, AVI, AVDC, VES, UPS, Communications, Portable Generators and manual power cutover capability for connection to portable generators.
CCTV/DVR System	C	C	C	A	A	A	SI to design, procure and the CCTV/DVR to assist in system audits, monitor traffic and monitor all toll system equipment enclosures.
Wireless Intra-Tolling Location Communication	D	D	B	A	A	A	SI to provide communications between the Direct Connector tolling points as required and between the Direct Connector tolling points and the existing toll system as required

CAMERON COUNTY REGIONAL MOBILITY AUTHORITY
TOLL COLLECTION SYSTEMS IMPLEMENTATION

Responsibility Matrix
SH550 – Direct Connector Toll Project

LEGEND	
Primary Responsibility	A
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Coordination Responsibility Only	C
No Responsibility	D

Work Description	1		2		3		
	Design		Procure		Install and/or Construct		
							via wireless microwave communications.
Fiber-based Intra-Tolling Location Communication (should wireless communications not be feasible)	A	A	A	B	C	C	Should wireless microwave communications not be feasible, CCRMA to procure and install communications between the Direct Connector tolling points and the existing system. SI to support the design of this system.
Toll equipment enclosure protective Fencing/Guardrail/Bollards	B	C	C	A	A	A	SI to provide requirements for specific equipment clearances for Toll Collection System, SI intends to have all equipment located in planned designed clear zones
Lightning Protection & Grounding for Gantry	A	A	A	B	D	D	Designer to provide Lighting Protection System for ETC Gantry. Roadway Contractor to furnish and install Lighting Protection System for Gantry. SI to furnish and install Lighting Protection System for 332D roadside enclosures.
Lightning Protection & Grounding for toll equipment enclosure, toll system and CCTV/DVR.	C	D	B	A	A	A	SI to furnish and install ETC System lighting surge suppression system, for feeder circuits, video, detector, microwave communication antennas/system, CCTV/DVR, data and

CAMERON COUNTY REGIONAL MOBILITY AUTHORITY
TOLL COLLECTION SYSTEMS IMPLEMENTATION

Attachment C

Responsibility Matrix
SH550 – Direct Connector Toll Project

LEGEND	
Primary Responsibility	A
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Coordination Responsibility Only	C
No Responsibility	D

Work Description	1	2	3
	Design	Procure	Install and/or Construct
			control circuits.

CAMERON COUNTY REGIONAL MOBILITY AUTHORITY
TOLL COLLECTION SYSTEMS IMPLEMENTATION

Attachment C

Responsibility Matrix
SH550 – Direct Connector Toll Project

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Coordination Responsibility Only	C
No Responsibility	D

Work Description	1	2	3				
	Design		Procure		Install and/or Construct		
OTHER							
FCC Licenses/Regulations as applies to AVI	A	D	A	A	B	B	SI to provide required documentation to permit the CCRMA to obtain the required licenses to use and or operate AVI equipment and components. CCRMA to provide exhibit documents for Application and FCC Schedule D & H Roadway Contractor to provide NAD83 Lat & Long, and Elevation Data
Material On Hand Storage, Insurance, and Transfer of Ownership	D	D	D	A	A	A	SI to be responsible for storage & control of all materials and equipment until installed on site, and storage.

CAMERON COUNTY REGIONAL MOBILITY AUTHORITY

TOLL COLLECTION SYSTEMS IMPLEMENTATION

CCRMA SH 550 – Direct Connector Toll Project

Schedule for Systems Integrator

D1.0 Schedule

Telvent USA, LLC shall, in coordination with CCRMA and the appropriate CCRMA contractors, develop and maintain a toll system implementation schedule. Unless otherwise approved by CCRMA, Telvent USA, LLC shall purchase and install equipment and complete all commissioning tests in order to meet an October 1, 2014 road opening and start of tolling date for the Project.