CAMINO REAL REGIONAL MOBILITY AUTHORITY
BOARD RESOLUTION

WHEREAS, a Memorandum of Understanding between the Camino Real Regional Mobility Authority (CRRMA) and the Texas Department of Transportation (TxDOT) was entered into on February 26, 2014 and subsequently supplemented (MOU), in order to establish the relationship, responsibilities and duties between TxDOT and the CRRMA in connection with the joint development, construction, funding, operation and maintenance of the Border West Expressway Project (the Project); and

WHEREAS, the CRRMA entered into an agreement ("Contract") with Schneider Electric Mobility NA, Inc. (fka Telvent USA LLC, hereinafter referred to as "Schneider") on December 12, 2012 for Schneider to provide various toll system integration and maintenance services to the CRRMA; and

WHEREAS, pursuant to the MOU as amended, the CRRMA is responsible for all tolling improvements to the Project and therefore desires to amend the Contract with Schneider to incorporate a change order to establish the toll system requirements necessary for the Project;

NOW, THEREFORE, BE IT RESOLVED BY THE CAMINO REAL REGIONAL MOBILITY AUTHORITY:

THAT the Executive Director is hereby authorized to execute Change Order No. 05 with Schneider Electric Mobility NA, Inc. (formerly known as Telvent USA LLC) as it relates to system integration and maintenance services for the Border West Expressway Project, including any additional documents or materials as may be necessary.

PASSED AND APPROVED THIS 12TH DAY OF AUGUST, 2015.

CAMINO REAL REGIONAL MOBILITY AUTHORITY

_____
Joe D. Wardy, Vice Chair

ATTEST:

_____
Susan A. Melendez, Board Secretary

APPROVED AS TO CONTENT:

_____
Raymond L. Telles
Executive Director

CAMINO REAL REGIONAL MOBILITY AUTHORITY

****

CHANGE ORDER

CHANGE ORDER NO. 5

TOLL COLLECTION AND MAINTENANCE
Border West Expressway

THIS CHANGE ORDER is made this, _____ day of _____ 2015, pursuant to the terms and conditions of the Agreement for Toll System Integration and Maintenance, dated December 12, 2012 (the Contract) entered into by and between the Camino Real Regional Mobility Authority ("CRRMA"), and Schneider Electric Mobility NA, Inc. (formerly known as TELVENT USA LLC, hereinafter referred to as "Contractor").

PART I. The Contractor will perform toll collection system integration and maintenance services generally described in the Scope of Work attached hereto as **Attachment A**. The Contractor will perform up to standards described in the Performance Requirements attached hereto as **Attachment B**. The Contractor's duties and responsibilities to coordinate with TxDOT'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 Pricing Forms attached hereto as **Attachments D and E**. The Contractor shall perform all work in accordance with the Project Schedule and Milestones more clearly defined in **Attachment A**.

PART II. The maximum amount payable under this Change Order No. 5 is $5,561,071.66. This amount is based upon the estimated fees set forth in the pricing forms provided as **Attachments D and E** hereto which is incorporated herein and made a part of this Change Order.

PART III. Payment to the Contractor for the services established under this Change Order shall be made in accordance with all applicable provisions of the Contract.

PART IV. This Change Order shall become effective on the date of execution by the parties hereto and shall terminate after not less than three (3) years and not more than ten (10) years after final acceptance, unless extended by a supplemental Change Order as provided in the Contract.

PART V. This Change Order No. 5 does not waive any of the parties' responsibilities and obligations provided under the Contract, and except as specifically modified by this Change Order, all such responsibilities and obligations remain in full force and effect.

[SIGNATURES BEGIN ON THE FOLLOWING PAGE]

IN WITNESS WHEREOF, this Charge Order No. 5 is executed in duplicate counterparts and hereby accepted and acknowledged below.

THE CONTRACTOR

Signature Date

Typed/Printed Name and Title

CAMINO REAL REGIONAL MOBILITY AUTHORITY

Signature Date

Typed/Printed Name and Title

LIST OF ATTACHMENTS

Attachment A Scope of Work
Attachment B Performance Requirements
Attachment C Toll Facility Responsibility Matrix
Attachment D Pricing Form – Unit Prices
Attachment E Pricing Form – Maintenance Prices
Attachment F Reference Documents
Tolling Schematic
Comprehensive Development Agreement Technical Provisions
Memorandum of Understanding between CRRMA and TxDOT
Downtown Access Option E (U-Turn Drawing)

Camino Real Regional Mobility Authority

Toll System Integration and Maintenance

Border West Expressway

ATTACHMENT A

Scope of Work

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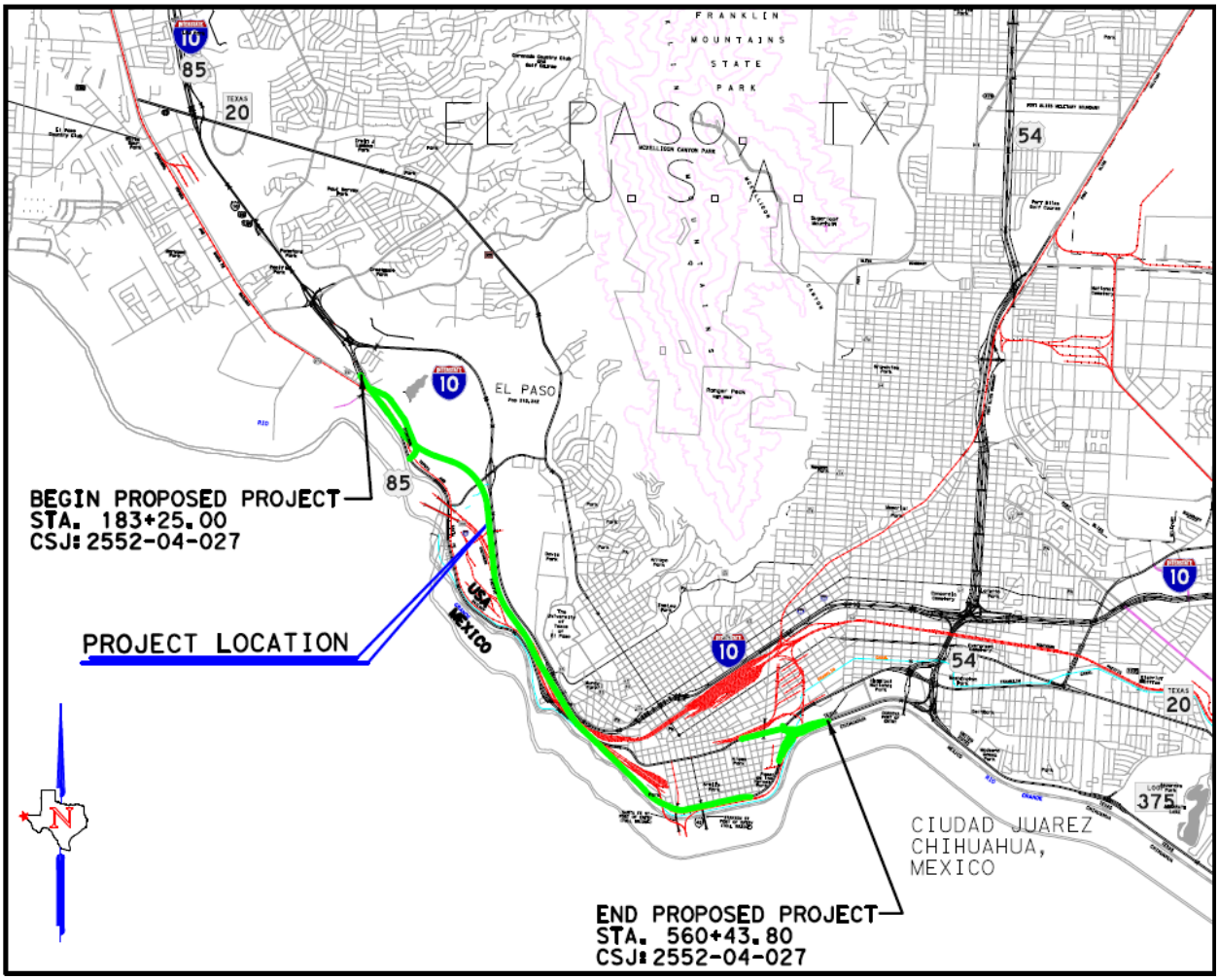
1. INTRODUCTION

1.1. BACKGROUND

The CRRMA is responsible for the development, design, and construction of the ***Border West Expressway Toll Lanes Project,*** which consists of a four-lane toll facility (two lanes in each direction), extending Loop 375 for approximately 9 miles (7 miles tolled), from Racetrack Drive to US 54. A map of the project area is provided in Figure 1. CRRMA and the Texas Department of Transportation (TxDOT) entered into a Memorandum of Understanding effective February 26, 2014,as supplemented, in which TxDOT agreed to develop, design, and construct improvements specifically described and depicted in the plans and specifications previously prepared by TxDOT, which plans and specifications are contained in the Comprehensive Development Agreement (CDA) dated August 22, 2014. Upon completion of the construction of the Project improvements, CRRMA will maintain and operate the Toll Lanes.

Figure 1: Map of Border West Expressway Toll Lanes Project Area



1.2. General Toll Lane Project Elements

The Toll Lanes include three toll collection points (Toll Points), one main lane gantry in each direction west of Executive Center and two entrance/exit toll collection points at Spur 1966 and Executive Center.

Toll rates will be based on a pre-determined time-of-day rate schedule established to manage congestion during higher volume travel periods. Toll rate adjustments will be reviewed and potentially adjusted by TxDOT periodically. Toll rates will be transmitted to a Variable Toll Rate Sign (VTRS) board in the lanes to display information in accordance with the current rate schedule. Neither dynamic pricing, in which rates change according to actual, real-time traffic volumes, nor trip building, in which data from several toll points are assembled to calculate one toll rate, will be implemented for the Toll Lanes.

The toll concept for the Toll Lanes has been developed to employ two Electronic Toll Collection (ETC) methods: Automatic Vehicle Identification (AVI) and Video Tolling. In-lane cash toll collection methods will not be used. Toll Collection System (TCS) equipment will detect vehicles, capture the date and time of vehicle passage, classify the number of vehicle axles and apply the appropriate toll rate, capture associated transponder reads and license plate images, and collect, store, and transmit the data through specified interfaces. The TCS equipment will also have reporting capabilities to both monitor TCS performance and support CRRMA's business operations. The TCS shall interface with the existing TCS used for César Chávez Express Toll Lanes and the Tornillo-Guadalupe Port of Entry toll collection system. CRRMA requires toll systems and technology to be interoperable with the other Texas ETC systems; this allows ETC customers to use any Texas toll agency facility without multiple transponders in their vehicle. Transponders, readers, and antennas are required to be compatible with the American Trucking Association (ATA) protocol, as well as compatible with 6B and 6C. Multi-protocol readers are acceptable.

CRRMA transactions will be processed through a Back Office System (BOS) provided by a third-party. The BOS provider will process AVI and Video Tolling transactions, and will process interoperable transactions through the Texas Interoperability Hub.

1.3. Toll Project Definition

The "Project" is defined as the toll implementation on the Toll Lanes of Border West Expressway requiring a toll system integration and maintenance contractor (Contractor) to design, develop, furnish, install, integrate, test, and maintain a TCS.

2. GENERAL PROJECT SCOPE OF WORK

The Scope of Work (Work) to be performed by the Contractor for the Project is comprised of two segments. The first segment of Work begins with design and ends with System Acceptance; this is "Work Segment 1 – Integration." Upon System Acceptance, a NTP may be issued for the second segment of Work (NTP2), which consists of warranty and maintenance; this is "Work Segment 2 – Warranty and Maintenance." The Contractor will perform both segments under a single agreement to which this Scope of Work is attached, such agreement and its attachments are collectively referred to hereinafter as the Contract, and each segment will be associated with a separate Notice to Proceed (NTP).

2.1. WORK SEGMENT 1 – INTEGRATION

The Contractor shall furnish all hardware; cables and connections; software; interfaces; installation; integration, testing; labor, personnel; transportation; materials; storage; tools; supplies; permits; licenses; equipment; and any other services, equipment, or materials necessary to supply fully functional TCS in accordance with the requirements of the Contract. The Contractor shall be responsible for all traffic control activities for the duration of this Work Segment. The TCS shall include the ability to filter tags to accommodate non-revenue tags. The TCS shall include the ability to add/deduct transactions for customers who make a u-turn east of Spur 1966 as shown in the Downtown Access Option E document attached herein. The Contractor shall furnish all Variable Toll Rate Signs (VTRS) in accordance with the responsibilities established in Attachment 21-1 of the Comprehensive Development Agreement (CDA) included herein as Attachment C and Section 3.6 of this Scope document.

2.2. WORK SEGMENT 2 – WARRANTY AND MAINTENANCE

After the Tolling Commencement / Open to Traffic Milestone and upon NTP2, the Contractor shall provide warranty and maintenance services for all hardware and software delivered under this procurement for up to eight (8) years in accordance with the requirements of the Contract. The warranty and Maintenance period of the Contrac shall be for at least three years (3) and no more than eight (8) years and shall be established within the NTP2. The Contractor will be responsible for maintaining the entire TCS. The Contractor shall be responsible for all traffic control activities associated with lane closures and maintenance activities necessary under this Work Segment.

3. TOLL COLLECTION SYSTEM

3.1. CONFIGURATION

The Contractor shall deliver a TCS that meets the configuration parameters reflected in Figure 3 below. Note that Figure 3 is not to scale.

Figure 2: Toll Lanes Configuration Schematic

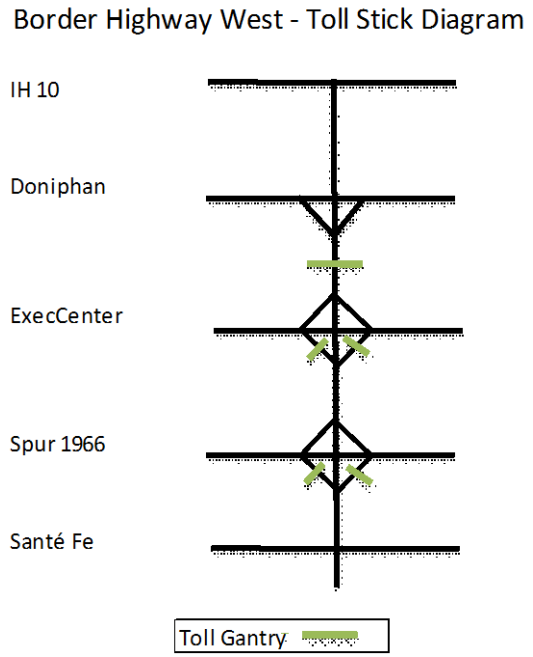


Table 1: Toll Lanes Configuration

One (1) Mainlane Gantry	
Between Doniphan Dr. and Executive Center Blvd.	
Six (6) Main Lanes	12 Feet Wide
Three (3) in Each Direction	
Four (4) Shoulder Lanes	10 Feet Wide
Two (2) in Each Direction	
Four (4) Ramp Locations	
Eastbound On-Ramp East of Executive Center Blvd.	
Two (2) Ramp Lanes	14 Feet Wide
Two (2) Should Lanes	8 Feet Wide
	4 Feet Wide
Westbound Off-Ramp East of Executive Center Blvd.	
One (1) Ramp Lane	14 Feet Wide
One (1) Shoulder Lane	4 Feet Wide
Eastbound On-Ramp East of Spur 1966	
One (1) Ramp Lane	14 Feet Wide
Two (2) Shoulder Lanes	8 Feet Wide
	4 Feet Wide
Westbound Off-Ramp East of Spur 1966	
One (1) Ramp Lane	14 Feet Wide
Two (2) Shoulder Lanes	8 Feet Wide
	4 Feet Wide

3.2. SYSTEMS ARCHITECTURE

As per the responsibilities established in Attachment 21-1 of the Comprehensive Development Agreement (CDA), attached to the Contract as Attachment C and the reference documents, attached to the Contract as Attachment F, the Developer is working in conjunction with TxDOT and the CRRMA to design and construct the Roadway and Toll Infrastructure. Only those items of the Infrastructure shown to be constructed by the Developer will be provided. Any and all Work that is required for a fully functioning TCS is the Contractor's responsibility.

If there is an item of Work required for a fully functioning TCS that is not shown to be constructed by the Developer, it shall be the Contractor's responsibility and all costs shall be included in the Pricing Forms attached to the Contract as Attachments D and E. The CRRMA is not obligated to provide anything other than the Infrastructure. The Contractor is responsible for all Work required to provide the CRRMA with a fully functional and operating TCS in accordance with the Contract, regardless of the Responsibility Matrix (Attachment C).

The Contractor will be responsible for providing a TCS capable of transmitting transaction data to a third-party BOS provider through an integrated interface, as well as locally filtering tags.

3.3. TCS REQUIREMENTS

The Contractor shall provide, install, and test all equipment, systems, subsystems, and components to comply with the requirements of the Contract for the following:

- Automatic Vehicle Detection (AVD) and Automatic Vehicle Classification (AVC)
- Automatic Vehicle Identification (AVI) readers and antennas
- License Plate Image Capture (LPIC)
- Variable Toll Rate Signs (VTRS) including single line DMS blocks
- Lane Controllers
- Maintenance Online Management System (MOMS) to include monitoring for all TCS components
- Project Host Server (PHS)
- Secure climate controlled roadside cabinets or enclosures that are not otherwise provided
- Spare parts
- Data connectivity to all equipment
- System interfaces, including an interface to a third-party BOS
- FCC Licenses/Regulations as applies to toll systems
- Communication equipment
- Uninterruptible Power Supply (UPS) and backup generator

3.4. TOLL TRANSACTION REQUIREMENTS

In accordance with the requirements of the Contract, toll transactions recorded by the TCS shall include all data required by the Texas Interoperability Hub Interface Control Documents (ICD), including the following:

- Date and time
- Location (Toll Point) including lane number
- Transaction type
- License plate images
- Vehicle Classification
- Toll rate
- Transponder ID (if applicable)

The Contractor shall compile transaction data from all Toll Points in a format that is in accordance with the Texas Interoperability Hub ICDs.

3.5. PHS REQUIREMENTS

In accordance with the requirements of the Contract, the Contractor shall provide a PHS to collect all toll transactions from all CRRMA Toll Points and transmit transactions to a third-party BOS for processing.

The PHS shall have dedicated hardware and software for the CRRMA TCS and shall process and store data exclusive to CRRMA.

The PHS shall be housed in a secure and climate-controlled location provided by CRRMA. Redundant systems are required under this Contract for data backup, business continuity, and disaster recovery. Redundant systems are not required to be located in El Paso, Texas.

Once in production, the Contractor shall use a system environment separate from the PHS for testing software modifications, fixes, and updates prior to their release into CRRMA's production environment.

3.5.1. Reporting

The PHS shall have the following reporting capabilities provided by the Contractor in conformance with the requirements of the Contract:

- Produce user-generated reports based on predefined and ad-hoc report criteria that have the ability to distinguish between César Chávez Express Toll Lanes, Tornillo-Guadalupe Port of Entry and Border West Expressway transactions.
- Monitor and report on the condition and maintenance of the TCS through an integrated MOMS.
- Post time-of-day pricing toll rates and messages to the VTRS.

3.6. VTRS REQUIREMENTS

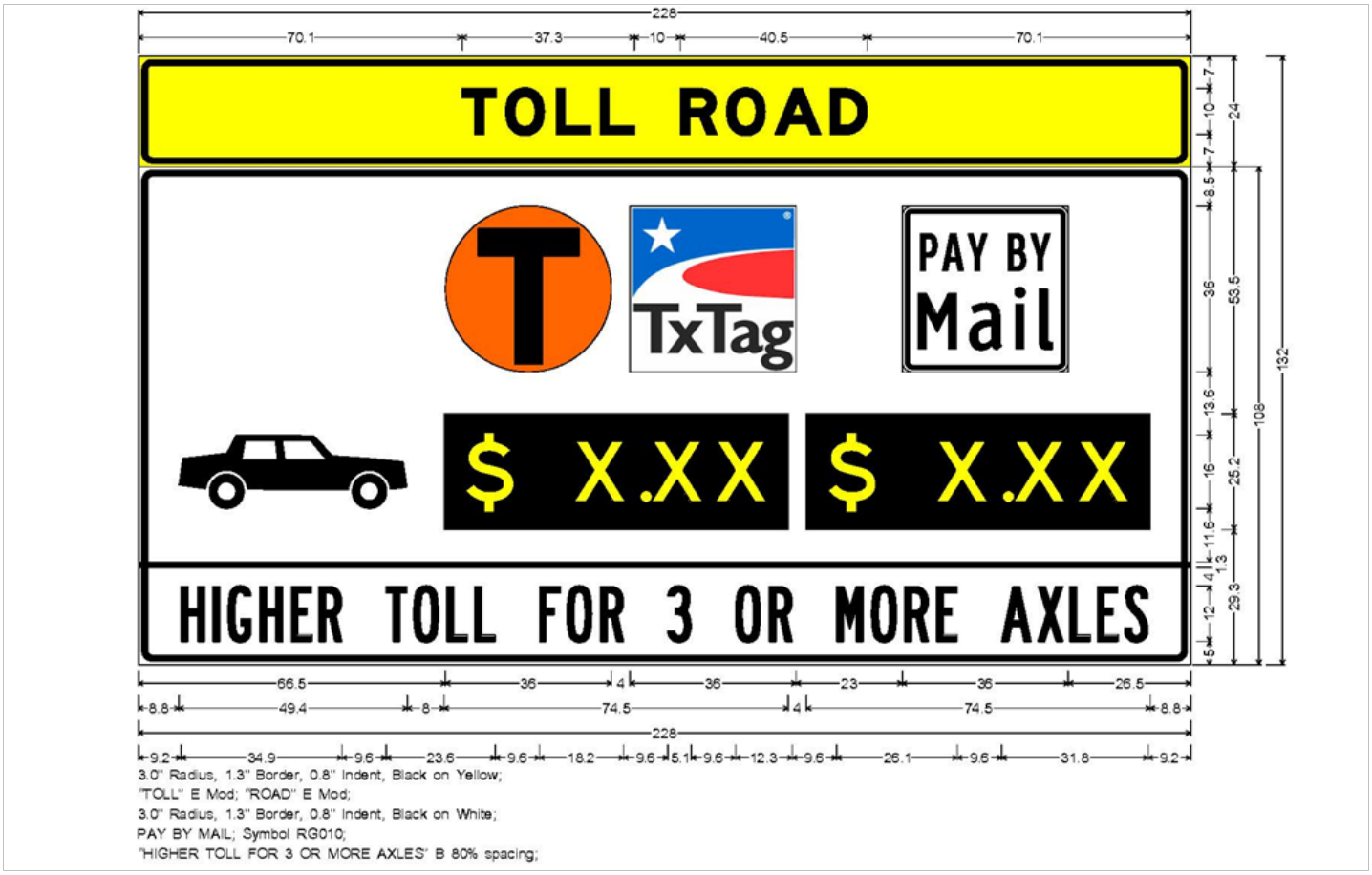
In accordance with this Contract, the Contractor shall provide, install, and test all equipment, systems, subsystems, and components of the variable toll rate sign (VTRS) system including single-line dynamic messaging sign (SDMS) modules and controller cabinets according to the schematic attached to the Contract as Attachment F with locations as shown in the following table:

Location	SDMS Modules	SDMS Controller Cabinets
Station 383+42 (BHW) 24EB Sign Structure	2	1
Station 392+25 (BHW) 25WB Sign Structure	2	1
Station 251+00 (BHW) 14WB Sign Structure	2	1
Station 238+30 (BHW) 11EB Sign Structure	2	1
Station 368+50 (BHW) 16EB Sign Structure	2	1
Station 276+90 (BHW) 17WB Sign Structure	2	1

Table 2: SDMS Locations and Modules

LED panels shall have 12” character heights with five (5) characters per Figure 3 below. Height and width of blocks will be provided at the time the CRRMA and the Developer agree to sign specifications.

Figure 3: VTRS Toll Sign



3.7. PERFORMANCE REQUIREMENTS

The Contractor shall deliver a TCS that meets or exceed the Performance Requirements specified in Attachment B to the Contract, which include:

- Vehicle detection
- Vehicle identification
- Vehicle classification
- Transponder read accuracy
- Lane identification accuracy
- Transaction management
- Toll rate posting to the VTRS
- System availability
- Response and repair time

4. PROJECT MANAGEMENT

The Contractor shall provide project management and support in conformance with the requirements of the Contract for the following:

- Schedule
- Project status meeting participation and documentation
- Project coordination with the CRRMA, the CRRMA's GEC, TxDOT's Developer, and third parties including BOS providers and partnering agencies
- Risk management
- Quality management
- Progress reporting
- Document control
- Development of system training and manuals
- Administration of deliverable review and approval processes
- System documentation
- Within MOMS, spare parts inventory and management
- System configuration verification and requirements traceability
- Performance verification and documentation
- Security compliance verification and documentation

All documents required in this Section are to be placed on a File Transfer Protocol (FTP) site provided by the Contractor. Contractor shall provide access to the documents to CRRMA-designated individuals. Documents and Comment Logs shall be stored on site using version control and an approved file naming convention and file structure.

5. DESIGN AND DEVELOPMENT

The Contractor shall design and develop the TCS to meet or exceed all requirements set forth in the Contract. The Contractor shall coordinate with the CRRMA, the CRRMA's GEC, the Developer, and TxDOT during the design process prior to system development that is required to modify the Contractor's TCS.

The Contractor shall use existing and tested TCS modules where possible and appropriate to limit the amount of development and customization needed for the CRRMA. The Contractor shall clearly distinguish for CRRMA TCS components that are configurable in the base TCS, and TCS components that require modification or enhancement through a development effort.

The Contractor shall deliver, in conformance with the requirements of the Contract, the following:

- General design, which shall be a summary of the design concepts with user instructions for configuration, reports, and monitoring of the CRRMA installation.
- Preliminary Design, which is an overview of the Contractor's overall design, including system interfaces and proposed modifications to the Infrastructure.
- System detailed design, which is the installation and implementation of drawings, shop drawings, cut sheets, component serial numbers, and as-built / as-installed diagrams and configurations / settings.
- Design changes, which shall be the changes or modifications from the Contractor's base system required to meet the requirements and specifications of this CRRMA Project.

6. INSTALLATION

The Contractor shall provide a complete and comprehensive Installation Work Plan and perform all installation activities in conformance with the requirements of the Contract. The Contractor shall safely and effectively fulfill the successful installation of all TCS and VTRS components in coordination with the CRRMA, the CRRMA's GEC, the Developer, TxDOT, and third parties to mitigate negative impacts to the Project and Project personnel.

The Contractor is responsible for maintaining all design documentation, permits, certification, and licenses required for installation activities.

The Contractor is responsible for determining its lay down/staging requirements and for providing them. The CRRMA will not provide a lay down/staging area for the Work. The Contractor shall be responsible for any and all utilities, security, and improvements needed at its lay down/staging area.

The Contractor shall be responsible for all traffic control activities including plans, personnel, and devices in compliance with the provisions set forth by this Contract related to traffic control and lane closures.

The Contractor shall perform installation inspections and provide report documentation to CRRMA to certify compliance with design documentation and any approved Change Orders.

The Contractor shall provide certified payrolls for all construction activities.

7. TESTING

In accordance with the requirements of the Contract, the Contractor shall provide a complete Master Test Plan and perform all TCS and VTRS testing activities. In addition to any other entry criteria specified by CRRMA, test plans, procedure, and parameters shall be approved by CRRMA prior to commencing TCS and VTRS testing. After completing each test phase or event, the Contractor shall produce and submit a Test Report documenting the test results to CRRMA.

The Contractor shall maintain multiple test environments as needed to ensure that CRRMA's configurations are matched exactly during every phase of development, installation, and testing.

The following test phases shall be performed in conjunction with and witnessed by CRRMA's staff and/or designees, unless otherwise determined by CRRMA:

- On-site First Installation Test (OFIT) – Testing of the first location with the solution installed to demonstrate that it meets the requirements and to address any anomalies found through interactions with the devices, customers, and systems using actual operational conditions on a limited test basis. The test shall be conducted with controlled tests, at the location, and shall use live operational data with a limited pool of transactions. In the event the test is halted due to a failure of the solution, the test shall be restarted upon notification from CRRMA and at no additional cost to CRRMA.
- Commissioning Test – Validating all requirements are complete, all installation activities are complete, and the solution is ready to be used in operations at each location. The test shall be conducted with controlled tests and repeated at each location following installation. In the event the test is halted due to failure of the solution, the test shall be restarted upon notification from CRRMA and at no additional cost to CRRMA.
- Operations Test – End-to-end testing of all software and device features and functionality to ensure all requirements are met. The test shall be conducted with controlled tests and live operational data over a 90-day period of operations. Every location shall be tested after all lanes and associated equipment are installed, and integration with the toll system completed, so the system can be determined to be operating per the requirements. In the event the test is halted due to failure of the solution, the test shall be restarted upon notification from CRRMA and at no additional cost to CRRMA.
- Final System Acceptance Test

8. MAINTENANCE (WORK SEGMENT 2)

During the Work Segment 2, the Contractor will be responsible for maintaining the entire TCS, including all components provided directly by the Contractor and those purchased or leased from third parties.

Maintenance activities shall address predictive, preventive, and emergency requirements for all hardware, software, and interfaces within timeframes prescribed in Attachment B of the Contract.

The Contractor is encouraged to proactively plan and perform activities that identify and prevent potential system issues before they occur. As a result, higher priority, shorter response and repair times, and associated damage amounts are associated with reactive, emergency maintenance.

Maintenance issues will be identified, entered, stored, and reported on from within the MOMS. Work orders may be automatically generated by MOMS, in the case of issues detected by automated monitoring, or entered by maintenance technicians in all other circumstances. All events and activities associated with maintenance issues and work orders will be entered, updated, and tracked throughout their existence.

The priority of a given maintenance issue will be assigned as follows:

- Priority 1 – any malfunction or fault that will result in the immediate loss of revenue, results in incorrect information being presented to the public via VTRS, and/or presents a hazard to the public or maintenance staff.
- Priority 2 – any malfunction or fault that will / may impact operational performance, but will not result in the immediate loss of revenue.
- Priority 3 – any action or event planned or reported that has the potential of degrading system performance, but does not impact operational performance and has no impact on revenue collection.

Spare parts and maintenance equipment shall be housed onsite in good working condition, in support of timely repairs and replacements to the system. The Contractor will be required to provide local storage.

9. SCHEDULE MILESTONE DATES

The Contractor shall deliver Work Segment 1 in accordance with the Milestones listed in Table 1 below. The Contractor shall deliver the Work in the sequence shown in Table 1, and the Contractor's schedule shall meet the Guaranteed Date or an accelerated date. The Contractor shall meet the requirements for the specified Deliverables and qualifying events as specified in the Contract. In the event of the Guaranteed Date is not met, liquidated damages shall be assessed in accordance with the Contract.

Table 3: TCS Integration Schedule Milestones

#	Milestone Name	Qualifying Event	Guaranteed Date
1	Project Initiation	Approval of: • Project Management Plan (PMP) • Critical Path Method Schedule • Project Initiation Conference Documentation • Quality Management Plan (QMP) • Updated Subcontracting Plan • Monthly Progress Report(s) for reporting periods that end prior to this Milestone's Guaranteed Date Executed Contract Bond Submittal of Insurance Certificates	December 3, 2015
2	Design Approval	Approval of: • Preliminary Design Document • System Design Document • Master Test Plan • Software Development Plan • Monthly Progress Report(s) for reporting periods that end prior to this Milestone's Guaranteed Date	January 19, 2016
3	Installation Readiness	Approval of: • Installation Plan • Installation Drawings • Traffic Control Plan • Monthly Progress Report(s) for reporting periods that end prior to this Milestone's Guaranteed Date Any Applicable Permits or Licenses	March 8, 2016
4	OFIT	Approval of: • OFIT Detailed Test Procedures • OFIT Test Report • Monthly Progress Report(s) for reporting periods that end prior to this Milestone's Guaranteed Date	August 11, 2016
5	Commissioning Test	Approval of: • Commissioning Detailed Test Procedures	October 15, 2016

		• Commissioning Test Report • Maintenance Plan • Operational Detailed Test Procedures • Monthly Progress Report(s) for reporting periods that end prior to this Milestone's Guaranteed Date	
6	Open to Traffic / Tolling Commencement	Toll Lanes fully opened to traffic Commencement of toll collection	October 20, 2016
7	System Acceptance	Approval of: • Operational Test Report • As-Built Installation Drawing • As-Built System Design Document (SDD) • Operations Manual • Monthly Progress Report(s) for reporting periods that end prior to this Milestone's Guaranteed Date • All other Project documentation specified in the Contract including the Technical Provisions	March 22, 2017

10. TECHNICAL PROVISIONS

This work shall be in conformance with all Technical Provisions enumerated within Attachment E of the Contract, unless modified below.

- Change REQ-3.12.1: The TCS shall provide the capability for users to generate and produce reports based on predefined and ad hoc report criteria. ROMS shall have the ability to generate separate reports for each roadway.
- Add REQ-3.3.12: The AVI system shall have the ability to filter non-revenue tags.

- Border Highway West-Specific Modifications
  - Change REQ-3.5.13: The TCS shall correctly correlate all Transaction data related to each vehicle into a single Transaction for that vehicle, for all detected vehicles that pass through a Toll Point, including vehicles in the shoulders and straddling the lane on the edge of the Toll Lane (including any and all available data for AVD, AVC, AVI, LPIC, and the toll rate for that Toll Point) in accordance with the associated Performance Measure(s) as shown in *Attachment F – System Performance Measures, Required Service Levels, and Liquidated Damages.*
  - Add REQ-3.8.8 - Vehicle classes will be assigned as follows:
    - 2 axles = Class 2
    - 3 axles = Class 3
    - 4 axles = Class 4
    - 5 axles = Class 5
    - 6 or more axles = Class 6
  - Change REQ-3.9.7.1: Availability calculations shall include all hardware, software, peripherals, and connecting infrastructure associated with the following components / subsystems:
    - AVI
    - AVD
    - AVC
    - LPIC
    - VTRS
    - PHS
  - Change Section 4.7: The Contractor will furnish and install the VTRS as shown in the Schematic included in Attachment F and in Section 3.6 of the

Scope document. The Developer shall be responsible for overhead toll signage including Type O and G sign panels and designing and installing foundation, sign panels and structures. The Contractor shall install SDMS.

- Change Section 4.9.2: The Contractor shall design, procure, and install emergency backup electrical service systems that provide backup power with an automatic transfer switch (ATS) in the event of a utility outage. The emergency backup electrical service system shall be capable of automatically switching an electric power source from its primary source to a standby source. The emergency backup electrical service system connection shall be capable of transferring power by approved conductors with weather-tight connections into an industry standard transfer switch that powers the main distribution panel providing all necessary backup power for the TCS. The Contractor shall use propane/diesel tanks for generators, since natural gas is not an option on this site. The design shall be coordinated with CRRMA.

  The electrical output of the emergency backup electrical service system designed and constructed by the Contractor shall be rated to support the complete Toll Point, at each location, including the toll lane and shoulder, with 33 percent power growth at the Toll Point, at a minimum. Generator's rated output shall consider derating for high and low temperatures and elevations which may be present at the installed locations. Generator shall be operational for up to twenty-four (24) hours without refueling. Contractor shall perform regular maintenance on all generators according to the maintenance agreement approved by the CRRMA. CRRMA but at a minimum include monthly 1 hour test runs on all generators

[END OF ATTACHMENT]

Camino Real Regional Mobility Authority

Toll System Integration and Maintenance Agreement

ATTACHMENT B
System Performance Measures, Required Service Levels, and Liquidated Damages

1. TCS PERFORMANCE MEASURES

Upon completion of Tolling Commencement / Open to Traffic, Performance Measures and associated Liquidated Damages for the performance of the TCS shall take effect. The requirements for performance of the TCS are set forth in Attachment E to the Contract and as modified in this Change Order Attachment B of the Contract. Performance Measures will be evaluated and Liquidated Damages, if any, will be assessed based on the evaluation results.

The Performance Measures for the TCS appear in Table 1 below. The table includes the following columns:

- ID – Performance Measure requirement number
- Attachment E Section / Requirement - The section and/or requirement number(s) in Attachment E of the Contract for reference to the related Performance Measure.
- Title of Functional Area – description of the related functional area
- Performance Measure – defined system Performance Measure
- Reporting Frequency – how often the measure is reported and the deliverable document in which it is included
- Minimum Quantity – minimum period of time which may be calculated or used for Performance Measure or the minimum quantity of vehicles or data set which should be used in the performance calculation
- Measurement Method – the method with which the information is automatically or manually calculated and delivered to CRRMA
- Liquidated Damages – the method and amount the associated damages are calculated and assessed

Note that MMR appears where the Monthly Maintenance Report shall contain contents, reports or data for the Performance Measure.

Average monthly Transactions shall be based on historical data for a comparable prior period determined by CRRMA; provided that, if the Project does not have at least 6 months of operating history from which to compare, Liquidated Damages shall be calculated using average transaction volumes from traffic and revenue studies for the period of time in question.

Table 1: TCS Performance Measures and Liquidated Damages – Border West Expressway

ID	Attachment "E" Section / Requirement	Title and Functional area	Performance Measure	Reporting Frequency – Documentation	Minimum Quantity	Measurement Method	Damage Calculation
1	Section 3 REQ-3.2.7	Vehicle Detection (AVD)	The vehicle detection system shall detect 99.96 percent of vehicles passing through the Toll Point, including vehicles in the shoulders and straddling the lane on the edge of the Toll Point.	Random Sample	Selected period of at least one (1) hour per location.	Random Sample: Contractor shall supply transaction data for random sample selected period via PHS (an agreed upon traffic count of vehicles between SI and CRRMA). CRRMA will compare to manual traffic count data.	Average Monthly Transactions for the month of the selected period x percent below Performance Measure x average daily toll rate or $500 for every 0.1 percent below requirement, whichever is higher Monthly maintenance payments may be held until corrected.
2	Section 3 REQ-3.3.2	Vehicle Identification (AVI)	The AVI system shall correctly detect and read 99.96 percent of all properly installed Transponders on all detected vehicles at speeds from 0 mph up to and including 100 mph, including vehicles in the shoulders and straddling the lane on the edge of the Toll Point.	Random Sample	Selected period of at least one (1) hour per location.	Random Sample: Contractor shall supply transaction data for random sample selected period via PHS (an agreed upon traffic count of vehicles between SI and CRRMA). CRRMA will compare to manual traffic count data.	Average Monthly AVI Transactions for the month of the selected period x percent below Performance Measure x ($1.50 + average daily toll rate) or $500 for every 0.1 percent below requirement, whichever is higher Monthly maintenance payments may be held until corrected. CRRMA, at its sole discretion, may reduce damages using a daily or hourly proration based on sufficient system report data.
3	Section 3 REQ-3.4.1 REQ-3.4.3	Image Capture (LPIC)	The LPIC system shall capture one front human readable license plate image or one rear human readable license plate image for 99.8 percent of all detected vehicles traveling at speeds from 0 mph up to and including 100 mph, including vehicles in the shoulders and straddling the lane on the edge of the Toll Point.	Random Sample	Selected period of at least one (1) hour per location.	Random Sample: Contractor shall supply transaction data for random sample selected period via PHS. Use BOS reporting tools to check image review and code-off results.	Average Monthly Transactions for the month of the selected period x percent below Performance Measure x average daily toll rate or $500 for every 0.1 percent below requirement, whichever is higher Monthly maintenance payments may be held until corrected.
4	Section 3 REQ-3.5.11 REQ-3.5.12 REQ-3.5.13	Transaction Creation	The TCS shall correctly correlate all Transaction data related to each vehicle into a single Transaction for that vehicle for 100 percent of all detected vehicles that pass through the Toll Point, including vehicles in the shoulders and straddling the lane on the edge of the Toll Point (including any and all available data for vehicle detection, AVD, AVI, LPIC, and the Toll for that Toll Point.)	Random Sample	Selected period of at least one (1) hour per location.	Random Sample: Contractor shall supply transaction data for random sample selected period via PHS. CRRMA will compare to manual traffic count data. An agreed upon traffic count of vehicles between SI and CRRMA. Use BOS reporting tools to check image review and code-off results.	Average Monthly Transactions for the month of the selected period x percent below Performance Measure x ($2.00 + average daily toll rate) or $500 for every 0.1 percent below requirement, whichever is higher Monthly maintenance payments may be held until corrected.
5	Section 3 REQ-3.6.13	Rate Posting	The TCS shall post to the VTRS and maintain the correct toll rate 99.99 percent of the time.	Monthly - MMR	Each occurrence of posting failure.	Random Sample: Contractor shall provide posting error reports through the PHS.	Percent below Performance Measure x average daily toll rate x 50% Monthly maintenance payments may be held until corrected. CRRMA, at its sole discretion, may reduce damages using a daily or hourly proration based on sufficient system report data.
6	Section 3, Requirements REQ-3.1.4 REQ-3.9.7.1 REQ-3.9.7.2 REQ-3.9.7.3 REQ-3.9.7.4 REQ-3.9.7.5	System Availability	The PHS shall be available 99.5 percent of each month. Each deployed lane / Toll Point shall be available 99.5 percent of each month.	Monthly – MMR	One (1) month of component failure data from MOMS.	Monthly: Using MOMS data, identify all downtime periods, then divide the number of available hours by the total number of hours in the month.	$500 for every 0.1 percent below requirement Monthly maintenance payments may be held until corrected.
7	Section 3 REQ-3.9.8.6 Section 9.3.3 Section 9.9	Mean Time Between Failures	Requirement for each TCS component to be negotiated based on Contractor-selected equipment and associated manufacturer's information	Monthly – MMR	One (1) month of component failure data from MOMS.	Monthly: Use MOMS data. Identify all failed components and compare each to required time between failures for component type. If multiple failed components of the same type, average their time between failures to find the mean and compare it instead.	$500 for each component not meeting requirement Monthly maintenance payments may be held until corrected.
8	Sec 3 REQ 3.5.13 REQ-3.8.8 REQ-3.9.7.1	Vehicle Classification (AVC)	The vehicle classification system shall correctly classify 99.5 percent of vehicles passing through the Toll Point.	Random Sample	Selected period of at least one (1) hour per location.	Random Sample: Contractor shall supply transaction data for random selected period via PHS (an agreed upon traffic count of vehicles between SI and CRRMA).	Average Monthly Transactions for the month of the selected period x percent below Performance Measure x average daily toll rate or $500 for every 0.1 percent below requirement, whichever is higher

							Monthly maintenance payments may be held until corrected.

2. REQUIRED SERVICE LEVELS (MAINTENANCE)

Upon completion of Tolling Commencement / Open to Traffic, Required Service Levels for Maintenance and associated Liquidated Damages for the performance by the Contractor shall take effect. The requirements for Maintenance are set forth in Attachment E of the Contract and as modified in this Attachment B. Required Service Levels will be evaluated and Liquidated Damages, if any, will be assessed based on the evaluation results.

The Service Levels for maintenance appear in Table 2 below. The table includes the following columns:

- ID – Performance Measure requirement number
- *Attachment E of the Contract* Section / Requirement – The section and/or requirement number(s) in which the related Technical Provisions can be referenced
- Section – section number of related functional requirement
- Title and Functional area – description of the related functional area
- Performance Measure – defined Required Service Level
- Reporting Frequency– how often the measure is reported and the deliverable document in which it is included
- Minimum Quantity – minimum period of time which should be used in the service level calculation
- Measurement Method – the method with which the information is automatically or manually calculated and delivered to CRRMA
- Liquidated Damages – the method and amount the associated damages are calculated and assessed

Note that MMR appears where the Monthly Maintenance Report shall contain contents, reports or data for the Performance Measure.

Table 2: Maintenance Required Service Levels and Liquidated Damages

ID	Attachment "E" Section / Requirement	Title and Functional area	Required Service Level	Reporting Frequency – Documentation	Minimum Quantity	Measurement Method	Damage Calculation
9	Section 9.2.1 Section 9.9	Mean Time to Respond and Repair	Priority 1 – Contractor shall respond within 2 hours and repair within 4 hours.	Monthly – MMR	Monthly: A full month of MOMS work order data.	Monthly: Use MOMS data, for each Priority Level where the allowable mean response or repair time is not met. The number of maintenance events is multiplied by the quantity of hours exceeding the allowable mean response or repair time. The response and repair times will be held during tolling operational hours. All tickets received during non-tolling hours will be described within the monthly MMR.	$500 per occurrence plus $250 per hour each hour over required repair time. Additionally lost revenue will be calculated as follows: Average Monthly Transactions - Total Monthly Transactions x average daily toll rate
			Priority 2 – Contractor shall respond within 4 hours and repair within 8 hours.				$250 per occurrence plus $100 per hour each hour over required repair time
			Priority 3 – Contractor shall respond within 12 hours and repair within 14 days or agreed upon schedule between Contractor and CRRMA.				$100 per occurrence plus $50 per hour each hour over required repair time
10	Section 3.12.22	Reports and Record Keeping	Contractor shall submit all required reports and records according to agreed-upon dates.	Monthly – Various	n/a	Monthly: Compare to negotiated schedule dates and ongoing reporting frequencies	$50 per late report / recordkeeping incident
11	Section 3 REQ-3.9.5 .1 REQ-3.9.5 .2 REQ-3.9.5 .3 Section 9.5.2	Spare Parts Availability	Contractor shall maintain and actively manage required spare parts at negotiated levels and in conditions necessary to ensure their ability respond and repair issues within requirements.	Monthly – MMR	Monthly: Monthly usage and end of month spare parts inventory data from MOMS.	Monthly: Compare MOMS data to negotiated spare parts levels	$500 per month per occurrence or anticipated revenue associated whichever is greater
12	Section 3 REQ-3.9.4.2 Section 9.2	Preventive Maintenance	Contractor shall perform preventive maintenance according to the CRRMA-approved schedule	Monthly – MMR	Monthly: Preventive maintenance activity data from MOMS.	Monthly: Compare MOMS data to negotiated preventive maintenance schedule.	$50 per occurrence per preventative maintenance item
13	Section 10	Lane Closure Notification for Priority 2 and Priority 3	Advanced lane closure notice shall be provided by the Contractor within 24 hours of the event.	Monthly – MMR	n/a	Monthly: Compare MOMS data to time lane closure notification was received for each Priority 2 and Priority 3 maintenance event. For each lane closure notification that exceeds the 24 hour time period required for notification, multiply the number of hours in excess of 24 hours by the Damage/hour specified for the event.	
			Priority 2				$100 per hour each hour over 24 hours
			Priority 3				$50 per hour each hour over 24 hours

[END OF ATTACHMENT]

Texas Department of Transportation

BOOK 2 – TECHNICAL PROVISIONS

FOR

LOOP 375 - BORDER HIGHWAY WEST EXTENSION

PROJECT

Design-Build Project

ATTACHMENT 21-1
TOLL SYSTEMS RESPONSIBILITIES MATRIX

August 22, 2014

BHW Toll Responsibility Matrix

Texas Department of Transportation **Toll Systems Responsibility Matrix**

LEGEND		Work Description		
Primary Responsibility	A	**1**	**2**	**3**
Support Responsibility	B	Design	Procure	Install and/or Construct
Coordination Responsibility Only	C			
No Responsibility	D			

Element/Task/Component/ Sub-system	TxDOT (T)			Developer (D)			CRRMA/System Integrator (SI)			Comments Other Responsibility/Information
	1	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**	
FACILITIES										
Toll Zone Layout	B	D	C	B	A	A	A	B	B	Elements of the layout will be constructed by either D or SI as identified in the layout
Metered power service to roadside equipment cabinet	B	D	C	A	A	A	B	D	B	SI to provide power requirements and special requirement for construction of utilities near Toll Zone.
Electrical conductors from Equip Pad to Toll Zone Equipment	B	D	C	D	A	A	A	D	B	
Complete backup power systems: generators, automatic transfer switches, and fuel tanks	C	D	C	D	D	D	A	A	A	
Uninterruptible Power Supplies for the lane controllers/Tolling Equipment at Toll Sites	C	D	C	D	D	D	A	A	A	
Lightning Protection & Grounding	C	D	C	A	A	A	B	D	B	
Duct Bank (Toll Zones)	C	D	C	A	A	A	B	D	B	D to provide fiber in a dedicated vault separate from ITS on opposite sides of roadway.
Fiber Optic cables in Duct Bank for Toll Systems	C	D	C	A	A	A	B	D	B	

BHW Toll Responsibility Matrix

Texas Department of Transportation **Toll Systems Responsibility Matrix**

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Coordination Responsibility Only	C			
No Responsibility	D			

Element/Task/Component/ Sub-system	TxDOT (T)			Developer (D)			CRRMA/System Integrator (SI)			Comments Other Responsibility/Information
	1	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**	
Fiber Optic data/communication wire/fiber to ground box at Toll Zone	C	D	C	A	A	A	B	D	B	D to provide fiber, in accordance with SI specs, to ground boxes adjacent to each toll zone equipment cabinet pad
Data/communication wire/fiber from ground box at Toll Zone to toll systems equipment	B	D	C	D	D	C	A	A	A	
Installation/Electrical Design and Plans to junction box at Toll Zone	C	D	C	A	A	A	B	D	B	D to install to electrical junction box adjacent to roadside equipment cabinet.
Installation/Electrical Design and Plans from junction box at Toll Zone to toll systems equipment	C	D	C	B	D	C	A	A	A	SI to install from electrical junction box to gantries.
Toll Zone pavement and structure, using special GFRP section and conduit stub ups for pavement sensors	B	D	C	A	A	A	B	D	B	SI to provide pavement loop details with stub-up locations. Stub-ups to terminate in junction boxes adjacent to Toll Zone pavement, not on structure
Concrete Barrier Installation	B	D	C	A	A	A	D	D	D	D to provide Concrete Barrier as per Toll Plaza Layout. Barrier openings will accommodate maintenance driveways.
Pavement sensors	B	D	C	D	D	C	A	A	A	D to provide access to SI to saw cut and install pavement sensors
Gantries and foundations	B	D	C	A	A	A	B	D	B	T to provide SI specs to D for gantry design. D to coordinate locations with T

BHW Toll Responsibility Matrix

Texas Department of Transportation **Toll Systems Responsibility Matrix**

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Coordination Responsibility Only	C			
No Responsibility	D			

Element/Task/Component/ Sub-system	TxDOT (T)			Developer (D)			CRRMA/System Integrator (SI)			Comments Other Responsibility/Information
	1	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**	
Toll Equipment mounts on Gantries	B	D	C	D	D	C	A	A	A	SI to install any required equipment mounts on gantries. SI to coordinate with T during the design phase to incorporate any req'd framing to support equipment mounts.
Concrete Pads for power, elec, roadside toll equip, generator, LP tank	B	D	C	A	A	A	B	D	C	
Roadside equipment cabinets (including HVAC systems)	C	D	C	D	D	C	A	A	A	SI to install complete
Toll Signage	B	D	C	A	A	A	B	A	A	D to design and install foundation and structure. SI to install the SDMS.
Maintenance Driveway (including all roadway items within the toll zones)	B	D	C	A	A	A	B	D	D	For at-grade, D to provide maintenance access driveway w' a min of 6" flex base and 3" HMA
ELECTRONIC TOLL COLLECTION SUB-SYSTEMS (ETC)										
Automatic Vehicle Classification System and Image Capturing System (ICS) Hardware	C	D	C	D	D	C	A	A	A	D to coordinate access to roadway for installations.
Computer rack system, routers, hubs, switches, firewalls, VPN, modems, patch/distribution panels,	C	D	C	D	D	C	A	A	A	D to coordinate access to roadway for installations.
Toll Plaza Host Computer	C	D	C	D	D	D	A	A	A	

BHW Toll Responsibility Matrix

Texas Department of Transportation **Toll Systems Responsibility Matrix**

LEGEND		Work Description		
Primary Responsibility	A	**1**	**2**	**3**
Support Responsibility	B	Design	Procure	Install and/or Construct
Coordination Responsibility Only	C			
No Responsibility	D			

Element/Task/Component/ Sub-system	TxDOT (T)			Developer (D)			CRRMA/System Integrator (SI)			Comments Other Responsibility/Information
	1	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**	
Support equipment at designated Customer Service Center	C	D	C	D	D	D	A	A	A	
Commissioning and Operational Testing	C	D	C	D	D	C	A	A	A	D to coordinate access to roadway for installations.
Lane controller software	C	D	C	D	D	D	A	A	A	
Plaza Computer Software	C	D	C	D	D	D	A	A	A	
Host Computer Software	C	D	C	D	D	D	A	A	A	
Toll Collection System Application Software	C	D	C	D	D	D	A	A	A	
Maintenance Online Management System Software	C	D	C	D	D	D	A	A	A	
Site Acceptance Test	C	D	C	D	D	C	A	A	A	D to coordinate access to roadway for installations.
System Acceptance Test	C	D	C	D	D	D	A	A	A	
Training: (User and Maintenance)	C	D	C	D	D	D	A	A	A	
Documentation: (User and Maintenance)	C	D	C	D	D	D	A	A	A	
Documentation: ETS Installation/Electrical Design and Plans	C	D	C	D	D	D	A	A	A	

BHW Toll Responsibility Matrix

Texas Department of Transportation **Toll Systems Responsibility Matrix**

LEGEND		Work Description		
Primary Responsibility	A	**1**	**2**	**3**
Support Responsibility	B	Design	Procure	Install and/or Construct
Coordination Responsibility Only	C			
No Responsibility	D			

Element/Task/Component/ Sub-system	TxDOT (T)			Developer (D)			CRRMA/System Integrator (SI)			Comments Other Responsibility/Information
	1	**2**	**3**	**1**	**2**	**3**	**1**	**2**	**3**	
Documentation: Civil As-built Drawings, and Contract Closeout Documents	C	D	C	A	D	D	D	A	A	
Documentation: ETS As-built Drawings	C	D	C	D	D	D	A	A	A	
FCC Licenses/Regulations as applies to toll systems	C	D	C	D	D	D	A	A	A	
Lane Controller Hardware	C	D	C	D	D	C	A	A	A	D to coordinate access to roadway for installations
Communication Equipment	C	D	C	D	D	C	A	A	A	D to coordinate access to roadway for installations.

Attachment D

PRICING FORM – UNIT PRICES

ITEM / LINE		DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL
A	**1**	**Project Costs**				
	2	Mobilization (5% of B+C)	Lump Sum	1	$208,489.40	$208,489.40
	3	Payment Bond	Lump Sum	1	Included in Below	$0.00
	4	Performance Bond	Lump Sum	1	$ 46,904.50	$46,904.50
	5	Insurance	Lump Sum	1	$ -	$0.00
	6	**Subtotal – Project Costs**				**$255,393.90**
B	**7**	**Toll System**				
	8	Toll Collection System (TCS)	Each	1	$1,984,811.06	$1,984,811.06
	9	Project Host Server (PHS)	Each	2	$77,975.46	$155,950.91
	10	VTRS System	Each	6	$52,434.00	$314,603.98
	11	SDMS Models	Each	0	Incl in VTRS	
	12	SDMS Controller Cabinets	Each	0	Incl in VTRS	
	13	Traffic Control	Lump Sum	1	N/A	N/A
	14	Emergency Generators (per Tolling Point)	Each	3	$43,206.21	$129,618.64
	15	Uninterruptible Power Supply	Each	6	$4,675.55	$28,053.28
	16	Toll Security System	Each	6	$6,509.28	$39,055.68
	17	**Subtotal - Toll System**				$2,652,093.56
C	**18**	**Contractor Services**				
	19	Project Management	Lump Sum	1	$162,120.60	$162,120.60
	20	Project Documentation	Lump Sum	1	$249,166.75	$249,166.75
	21	System Design & Development	Lump Sum	1	$452,540.84	$452,540.84
	22	"Turnaround" Solution Design & Development	Lump Sum	1	$111,315.41	$111,315.41

ITEM / LINE		DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL
	23	Onsite First Installation Test (OFIT)	Lump Sum	1	$116,855.40	$116,855.40
	24	Lane Commissioning / Tolling Commencement	Lump Sum	1	$207,307.62	$207,307.62
	25	Operations Testing / Final Acceptance	Lump Sum	1	$218,387.84	$218,387.84
	26	**Subtotal - Contractor Services**				**$1,517,694.46**
D	**27**	**Additional Items**				
	28	26 Rigid Metal Conduit (3")	Feet	5280	$53.04	$280,035.23
	29	27 PVC Conduit Schedule 40 (3")	Feet	5280	$17.21	$90,866.89
	30	48 SM Fiber Optic communications	Feet	5280	$14.08	$74,345.64
	31	29 Copper/CAT-6 communications	Feet	5280	$4.52	$23,873.21
	32	SDMS Module	Each	1	$11,733.84	$11,733.84
	33	SDMS Controller Cabinet	Each	1	$10,951.59	$10,951.59
	34	Complete VTRS Lone Sign Location with 2 SDMS and Sign Controller	Each	1	$58,988.25	$58,988.25
	35	Emergency Generators (per Tolling Point)	Each	1	$48,606.99	$48,606.99
	36	Uninterruptible Power Supply	Each	1	$5,259.99	$5,259.99
	37	Toll Security System	Each	1	$7,322.94	$7,322.94
	38	Initial Spares Inverntory	Lump Sum	1	$120,507.20	$120,507.20
	39	**Subtotal - Additional Items**				**$732,491.77**
	40	**Grand Total – Toll System Implementation (Sections A,B, C and D)**				**$5,157,673.69**

NOTE: Form D pricing shall include all third-party software licenses for the term of Work Segment 2.

Notes / Assumptions / Comments:

Excludes any and all taxes (assumes that CRRMA will provide a Tax Exempt Certificate at NTP).

Excludes costs for Traffic Control (MOT) during the System Installation/Integration Phase

Attachment E

PRICING FORM – MAINTENANCE PRICES

ITEM / LINE		DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL
E	41	**Toll System Maintenance**				
	42	Project Maintenance per Month	Month	36	$ 5,973.11	$215,031.96
	43	Spare Parts Replenishment per Month	Month	36	$ 1,804.73	$64,970.28
	44	Traffic Control (MOT)	Month	36	$ 1,093.91	$39,380.76
	45	Remote SW Support for "Turnaround" Solution	Month	36	$ 1,003.74	$36,134.64
	46	**Subtotal – Toll Zone Maintenance**				$355,517.64
F	47	**Other Maintenance Activities**				
	48	Annual Performance Audit**	Yearly	3	$ 15,960.11	$47,880.33
	49	**Subtotal – Other Maintenance Activities**				$47,880.33
	50	**TOTAL PRICING - MAINTENANCE**				**$403,397.97**

** Pricing assumes Performance Audit will done at same time as the PA for the Manual Lanes

Attachment E1

PRICING FORM – MILESTONE PAYMENT STRUCTURE

Excludes Additional Items (D) and Maintence Services (E & F)

Payment #	Milestone	Payment Calculation Requirement	Payment Amount
Mob	Mobilization	*50% of Mobilization, Bond cost, and Insurance*	*$151,149.20*
1	Project Initiation	*50% of Mobilization*	*$104,244.70*
2	Design Approval	*25% of Items B&C*	*$1,042,447.01*
3	Installation Readiness	*30% of Items B&C*	*$1,250,936.41*
4	Onsite First Installation Test (OFIT)	*15% of Items B&C*	*$625,468.20*
5	Commissioning Test	*10% of Items B&C*	*$416,978.80*
6	Open to Traffic / Tolling Commencement	*10% of Items B&C*	*$416,978.80*
7	System Acceptance	*10% of Items B&C*	*$416,978.80*

TOTAL	**$4,425,181.92**