



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

November 18, 2020
AGENDA ITEM #5

Approve Amendment No. 1
to the First Amended and Restated
Maintenance Contract with Kapsch
TrafficCom USA, Inc. to change the hours of
operations for the Traffic & Incident
Management (TIM) Center

Strategic Plan Relevance:	Deliver Multi-faceted Mobility Solutions; Invest in Efforts that Extend Beyond Roadways
Department:	Operations
Contact:	Tracie Brown, Director of Operations
Associated Costs:	Not Applicable
Funding Source:	Not Applicable
Action Requested:	Consider and act on draft resolution

Summary:

Background - The Central Texas Regional Mobility Authority entered a contract with Caseta Technologies, Inc. in 2007 for the design, procurement, and installation of a toll collection system on the Authority's turnpike system. Kapsch TrafficCom USA, Inc. is the successor in interest to the contract with Caseta Technologies, Inc., serving as the Mobility Authority's toll system integrator (TSI).

In this role, Kapsch installs and maintains the Authority's toll system equipment hardware, software and intelligent transportation systems (ITS). Kapsch also provides license plate image review and transcription services necessary to facilitate the billing of the Authority's Pay By Mail toll transactions.

Current Action - Section M3.01 of the *First Amended and Restated Maintenance Services Contract for the Central Texas Regional Mobility Authority Toll Collection System* summarizes the scope of work for express lane operations and traffic & incident management activities. The agreement requires Kapsch to staff the Traffic & Incident Management (TIM) Center during peak hours described as 5:30 am - 8:00 pm, five (5) days a week, excluding holidays. Subsection A3.2 breaks those hours into two shifts – a morning shift (5:30 am – 1:30 pm) and an afternoon shift (12:00 – 8:00 pm).

Staff proposes amending the language regarding hours of operations to two 8-hour shifts, deleting any reference to specific time periods. This change allows the Authority's staff and Kapsch to work together to respond to traffic ebbs and flows varying operational needs.

There is no cost for this change. No further amendments are proposed regarding staffing levels, pricing or any key performance indicators (KPIs) and their related damages.

Previous Actions - In November 2019 the CTRMA Board approved the *First Amended and Restated Maintenance Services Contract for the Central Texas Regional Mobility Authority Toll Collection System* between the Authority and Kapsch TrafficCom, USA. The agreement provides for enhanced maintenance services for the roadside lane equipment, project host server, intelligent transportation systems (ITS), wrong way detection and communication infrastructure installed by Kapsch. Also covered by this contract is operational support of the Authority's TIM Center.

Action Requested / Staff Recommendation - Staff recommends approval of Amendment No. 1 of the First Amended & Restated Maintenance Services Contract with Kapsch TrafficCom to change the hours of operations for the Traffic & Incident Management (TIM) Center.

Financing - Not Applicable

Backup Provided - Draft Resolution
Amendment No. 1 to the First Amended & Restated Maintenance Services Contract

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

RESOLUTION NO. 20-0XX

**APPROVING AMENDMENT NO. 1 TO THE FIRST MENDED AND RESTATED
MAINTENACE SERVICES CONTRACT WITH KAPSCH TRAFFICCOM USA, INC.**

WHEREAS, by Resolution No. 19-072 dated November 20, 2019, the Central Texas Regional Mobility Authority (Mobility Authority) approved an Amended and Restated Maintenance Services Contract (Maintenance Services Contract) with Kapsch TrafficCom USA, Inc. (Kapsch); and

WHEREAS, the Executive Director and Kapsch have negotiated proposed Amendment No. 1 to the Maintenance Services Contract to modify the hours of Kapsch staff present at the Mobility Authority's Traffic and Incident Management Center; and

WHEREAS, the Executive Director recommends that the Board approve proposed Amendment No. 1 to Maintenance Services Contract with Kapsch in the form or substantially the same form attached hereto as Exhibit A.

NOW THEREFORE, BE IT RESOLVED, that the Board hereby authorizes the Executive Director to finalize and execute Amendment No. 1 to the Amended and Restated Maintenance Services Contract with Kapsch TrafficCom USA, Inc. in the form or substantially the same form attached hereto as Exhibit A.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 18th day of November 2020.

Submitted and reviewed by:

Approved:

Geoffrey Petrov, General Counsel

Robert W. Jenkins, Jr.
Chairman, Board of Directors

Exhibit A

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

**AMENDMENT NO 1 TO THE FIRST AMENDED AND RESTATED
MAINTENANCE SERVICES CONTRACT FOR
THE CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY
TOLL COLLECTION SYSTEM**

THIS AMENDMENT TO THE FIRST AMENDED AND RESTATED MAINTENANCE SERVICES CONTRACT is made to be effective as of the 1st day of November , 2020, (the “Effective Date”) by and between the Central Texas Regional Mobility Authority (“the Authority” or “CTRMA”), a political subdivision of the State of Texas, and Kapsch TrafficComm USA, Inc. (“Contractor” or “Kapsch”) with offices located at 8201 Greensboro Drive, Suite 1002, McLean, Virginia 22102002, McLean, VA 22102.

WHEREAS, by Resolution No. 19-072 dated November 20, 2019, the Central Texas Regional Mobility Authority approved an Amended and Restated Maintenance Services Contract with Kapsch TrafficCom USA, Inc. (“Maintenance Services Contract”); and

WHEREAS, the Authority and Kapsch wish to further amend the Maintenance Services Contract as provided herein.

NOW, THEREFORE, for and in consideration of the mutual covenants and conditions herein contained, and other good and valuable consideration the receipt and sufficiency of which are hereby acknowledged, the CTRMA and the Contractor hereby agree as follows:

Section M3.01 of the Scope of Work Summary is amended to read:

The TSI shall staff the TIM Center during peak hours, five (5) days a week excluding holidays in accordance with the Work Breakdown Structure and Staffing Plan (Exhibit B). In no event shall the TSI operator leave the ELCC unstaffed during an emergency, active event or incident, even at the end of a shift.

Section A3.2 ELCC Supervisors and Operators is amended as follows:

In addition to an ELCC Shift Supervisor, there shall be a minimum of two (2) full-time equivalent ELCC Operators covering two 8-hour shifts, one in the morning and one in the afternoon, five (5) days per week. The specific hours will be negotiated by Mobility Authority and Kapsch staff to ensure that TIM Center operations are sufficiently monitored.

IN WITNESS WHEREOF, the parties hereto have executed this Amendment No. 1 to the Maintenance Services Contract as of the date first above written.

“CTRMA”:
CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

By: _____
Mike Heiligenstein, Executive Director

“Contractor”:
KAPSCH TRAFFICOM USA, INC.

By: _____
Name: Peter Aczel
VP & General Manager, Delivery &
Title: Operations, Central Region

ATTACHMENTS:
Attachment M-1 Scope of Work

INSERT ATTACHMENT M-1
SCOPE OF WORK
(Revised 10/27/2020)

TOLL COLLECTION SYSTEM MAINTENANCE SERVICES

SCOPE OF WORK

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

TOLL COLLECTION SYSTEM MAINTENANCE SERVICES

SCOPE OF WORK

M1.0 General

M1.01. Background

The Central Texas Regional Mobility Authority (CTRMA) designated the US183-A Turnpike Project as the first priority for implementation in conjunction with the TxDOT plans for development of the Central Texas Turnpike Project (CTTP). Subsequent to the implementation of the design/build process for the US183-A Turnpike Project, 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 as part of the CTRMA Turnpike System. Several of the toll road segments are in various stages of project development, in design or construction by TxDOT, and it is intended that these proposed segments as identified in *Attachment D* also will be implemented by the CTRMA as parts of its Turnpike System. The Toll Collection System for the various segments of the CTRMA Turnpike System as shown in *Attachment D* includes various combinations of Electronic Toll Collection (ETC), and Express ETC.

M1.02. Summary Scope of Work

The Contractor shall maintain the portions of the Toll Collection System that have received Acceptance as they come on line until Project Acceptance at which time the entire CTRMA Toll Collection System shall be under the Maintenance Services Agreement (“the Maintenance Contract”). For the purpose of scoping the work and the fee structure, the two phases of the Project are considered separate.

M2.0 Scope of Work Elements

M2.01. Scope of Work

The Contractor’s responsibilities shall include preventive, predictive, corrective and emergency maintenance of the entire CTRMA Toll Collection System.

1. Lane Systems

- In-lane Toll Collection System Software
- Lane Controllers
- AVI System
- AVC System
- VES Equipment and Computers
- Equipment in road-side cabinets

2. Plaza System

- Toll Collection System Software
- Plaza Computer Systems (Operating System, Database, Disks, etc.)
- Plaza Workstations
- Emergency Generators
- UPS
- Communications Equipment

3. Host System

- Toll Collection System Software including MOMS and Security Access Software
- Host Computer Systems (Operating System, Database, Tape Library, Disks etc.)
- Security Access System
- Communications Equipment
- Host Workstations
- Host Printers and other Toll Collection Equipment

M3.0 MoPac Express Lane Operations and Staffing

The following overview outlines the basic concept of the MoPac Operations, Image Review and Maintenance and Support of the MoPac Express Lanes Project (Express Lanes). Once the project is in revenue collection The Express Lanes are Intended to serve as a reliable north-south travel option along MoPac from Parmer Lane to Lady Bird Lake.

This Scope of Work includes the services, provided by Kapsch TrafficCom USA, Inc. (formerly known as Schneider Electric) as the Tolls Systems Integrator (TSI), associated with maintenance and operation of the MoPac Managed Lanes project which Includes the Express Lanes Command Center (ELCC), Image Review, Trip Building and monitoring and maintenance of the Express Lanes. The TSI is responsible for the operation and maintenance of the variable tolling system (Toll System) and related Intelligent Transportation Systems in

support of the Toll Management System (TMS) described in Toll System and Toll-related ITS Design, Installation, and Testing, Work Authorization 10 (WA#10). The TMS components include, but not limited to closed circuit television (CCTV) cameras, traffic detection system (TDS), variable toll message signs (VTMS), VTMS cameras and VTMS Automatic Vehicle Identification (AVI) equipment. The TSI shall meet the Service Level Agreements and Key Performance Indicators provided in Exhibit 5-1: Service level Agreements and Key Performance Indicators within WA#10. For Maintenance, the TSI's duties, Responsibilities and Liabilities in regard to Performance Measurements are contained within the Maintenance Contract, executed March 3, 2007; Sections 7 Contractor Representations and Warranties and 10.0 Performance Measurement.

The Express Lanes will be in operation and collecting tolls 24 hours a day, 7 days a week, 365 days a year based on current approved business rules, with the exception of limited periodic maintenance intervals.

The Mobility Authority will be responsible for operations of the EXPRESS LANES.

M3.01. Scope of Work Summary

This Scope of Work covers two tasks outlined below:

Task 1 – Operations: Manage and operate the Express Lanes Command Center (ELCC) located at 104 North Lynnwood Trail, Cedar Park, Texas 78613, for the purposes of monitoring, supporting Austin Public Safety staff in returning the Express Lanes to normal operational flow, image review and trip building. The term of the Operations Contract shall be for an initial period of one (1) year (the “Initial Term”), commencing on the Effective Date of Day One of Toll Revenue Collection. The Initial Term shall be extended automatically for successive periods of one (1) year each unless and until terminated otherwise. The Operations Contract may be terminated by either party upon the expiration of the Initial Term or any subsequent one-year extension of this Operations Contract, provided that at least ninety (90) days’ written notice is given to the other party prior to the expiration of the Initial Term and any additional subsequent terms.

Task 2 – Maintenance: Provide monitoring, operations and maintenance support for roadside and Intelligent Transportation (ITS) Equipment identified in WA #10, Exhibit A; Section A3.04, to monitor and validate the accurate operations of the Express Lanes, the Project Host and the Toll System

M3.01.01. Task 1 - Operations

- The TSI shall staff the TIM Center during peak hours, five (5) days a week excluding holidays in accordance with the Work Breakdown Structure and Staffing Plan (Exhibit B). In no event shall the TSI operator leave the ELCC unstaffed during an emergency, active event or incident, even at the end of a shift.

- This task consists of work necessary to provide on-site monitoring of the ELCC and the systems, variable pricing engine, toll rates, performance of manual tasks necessary for the system's effective operation, and the operations of the ELCC.
- TSI shall provide on-site monitoring and traffic control device operation. TSI shall provide the required level of personnel necessary to cover shifts. Shifts can be split or modified, as long as the appropriate staffing levels are maintained
- TSI shall provide continuous monitoring of the variable pricing engine results, participate and lead toll rate discussions, provide tuning and configuration updates to the parameters required to meet the CTRMA goals.
- TSI shall provide on-site monitoring of closed-circuit television, police radio channels, public safety computer-aided dispatch terminals, Internet-based information sources and software programs
- The EXPRESS LANES will be operated with variable pricing. Operators will strive to maintain reliable travel conditions through the use of variable tolls, established to proactively monitor demand on the facility. Reliable travel conditions are defined as Level of Service (LoS) C or better, with average speeds of 53 mph or higher.
- EXPRESS LANES operations will be monitored, and pricing may be adjusted manually if necessary, to achieve the desired effect on traffic. However, it is the intent the system will operate in an automated manner, to the extent possible, under normal traffic conditions. Traffic sensors will be used to monitor continuously the operating conditions of the EXPRESS LANES and a variable toll rate will be calculated to manage demand, in order to maintain an acceptable LoS.

Operations Staffing

TSI shall provide the services including, but not limited to, management, administrative and technical aspects of the Operations Contract. All activities are required to be tracked, meeting minutes produced, and coordination activities documented.

TSI shall provide CTRMA with Operations Manager for the life of the Contract, as well as an Operations Supervisor for the Operations staff. Any changes to the TSI Operations Manager or any of the other indicated personnel in this Contract shall be subject to review and approval by CTRMA in writing. The hiring and training timeline of these personnel is referenced in the Work Breakdown Structure and Staffing Plan (Attachment A)

A3.2 ELCC Supervisor and Operators

TSI shall provide the names and resumes for all management positions. TSI shall provide the names for all non-management positions. Operations staff classifications will include the following TSI positions, as a minimum:

1. ELCC Shift Supervisor
2. ELCC Operators (2)

Attachment M-1

Revised Oct 27, 2020

In addition to an ELCC Shift Supervisor, there shall be a minimum of two (2) full-time equivalent ELCC Operators covering two 8-hour shifts, one in the morning and one in the afternoon, five (5) days per week. The specific hours will be negotiated by Mobility Authority and Kapsch staff to ensure that TIM Center operations are sufficiently monitored-

Purpose

The primary purpose of the Operations Staffing is to provide a weekday AM and PM peak staff to operate the EXPRESS LANES, which includes:

1. Monitor, direct, and administer the personnel designated to operate and support the Tolling, TMS, and Managed Lanes system.
2. Perform traffic incident detection and verification using the TMS and available tools.
3. Provide reporting and announcement of roadwork, incidents and events.
4. Support the CTECC by reporting incidents when detected, as well as support First Responders in incident management and recovery.
5. Coordinate operations & roadwork information with various partner agencies.
6. Provide training of staff and updates of procedures to facilitate the improvement of operations and day-to-day interaction.
7. Provide support during emergencies, storms, and other significant events.
8. Support the development of continuous improvement processes through performance measures and self-assessments.
9. Furnish materials, supplies, tools, equipment, labor, and other incidentals necessary for the work in accordance with project documents.

Duties

- The duties for Task 1 consist of all work necessary to manage all of the Personnel included, but not limited to, general oversight of ELCC operators, Quality Assurance and Quality Control, operational assistance during emergencies; weather-related storms, and other significant events as well as general contract administration. It also includes participation in meetings by the TSI.
- TSI personnel shall be scheduled to work Monday through Friday from 5:30am – 8:00pm. In no event shall the TSI operator leave the ELCC unstaffed during an emergency, active event or incident, even at the end of a shift.

Sub-Task Descriptions for Task 1 - Operations:

- a. TSI shall employ, train, supervise, and schedule ELCC operators. The hiring and training timeline of these personnel is referenced in Exhibit B, MoPac Staffing Plan. This shall include accommodating vacations, sick leave, and

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other absences of CTRMA Operations personnel by providing adequate training and supervision of relief operators, and on-call personnel.

- b. TSI Operations personnel shall be responsible for issuing a work order for equipment repair and helping to establish priorities for repair of failed equipment shall also be considered part of this task.
- c. TSI shall attend regular meetings with CTRMA to cooperatively identify and prioritize work to be performed.
- d. TSI shall maintain records and documentation as directed to support the overall operations of the ELCC and provide data for documenting performance measures and progress.
- e. TSI shall participate in post-incident debriefings with all appropriate Agencies involved in managing such major traffic incident, to determine whether existing operating procedures should be changed.
- f. TSI personnel assigned to this task shall be available to respond to electronic notifications within one hour during off-duty hours to provide assistance as appropriate. In the event of a significant incident or situation outside of the scope of the Standard Operating Procedures.
- g. TSI shall provide adequate staff and resources for all tasks and activities throughout the duration of the contract, including planned and unplanned staff absences, emergencies, storms, and other significant events.
- h. TSI shall prepare and submit monthly invoices and progress reports in accordance with applicable CTRMA requirements. Clerical/Administrative support staff will prepare consultant invoices, reports, forms, letters, and any other official project related correspondences, as well as hiring of staff and or other personnel related duties. The Clerical/Administrative support staff are not expected to have ELCC-related activities as a full-time task nor are they to be based at the TIMC.
- i. During peak periods, on holiday weekends, special events, and/or emergency conditions, greater levels of staffing may be required by CTRMA. If CTRMA deems additional TSI personnel are necessary to operate the expanded functions of the MoPac project, the TSI shall provide extra staff (provided a minimum of four-hour notice is provided) for the short-term. In no event shall the TSI operator leave the ELCC unstaffed during an emergency, active event or incident, even at the end of a shift. If CTRMA determines the additional ELCC staff will be a permanent position requirement, the staffing level shall be adjusted via supplemental agreement. Additional pricing estimates shall be provided upon request.

- j. TSI shall participate in the monitoring of traffic incidents by issuing appropriate notifications to the CTECC and activating motorist information resources from the ELCC during the previously given hours of operation. All other times the CTECC will be monitoring for incidents. Problems encountered with any of the systems must be reported immediately to the appropriate systems support personnel as described in the Standard Operating Procedures. TSI shall update social media as defined in the Standard Operating Procedures on behalf of the CTRMA.
- k. TSI shall provide coordinated monitoring of incidents with CTRMA and outside agency personnel. Incident monitoring shall be performed in accordance with the Standard Operating Procedures.
- l. TSI shall answer phone inquiries and coordinate incident-related activities with operational partners and provide them with the necessary information about traffic conditions. Telephone calls from the media shall be referred to appropriate CTRMA Personnel.
- m. TSI shall perform Trip verification activities, inspection of queued images within 48 hours to verify posting of toll rates and charges for trips.
- n. TSI shall perform Trip verification activities, including visual inspection and verification of toll charges for Trips within 72 hours as described in the Image Review Operational Procedures.
- o. TSI will provide Image Reviewed plates for trip building purpose and image-based tolling that will be sent directly to Image Billing vendor as described in the Image Review Operational Procedures.

M3.01.02. Task 2 - Maintenance

- TSI shall provide monitoring, support and maintenance for all items installed and integrated as part of the MIP. These items include, but not limited to items identified in WA #10, Exhibit A, Appendix F and Exhibit H: four (4) gantry locations for toll system installation, Variable toll message signs (VTMS) and VTMS cameras, traffic detection systems, CCTV cameras, Project Host, servers, generators, uninterruptable power supplies, toll collection equipment, cameras, switches, cabling, Violation Enforcement System, software and configuration items for Automatic Vehicle Identification, Automatic Vehicle Detection System, Image Capture and Processing System, Digital Video Audit System.
- TSI shall ensure the MoPac Express Lanes system meets the Service Level Agreements and Key Performance Indicators identified and agreed to in Work Authorization #10, Section 5 Performance Requirements.

Sub-Task Descriptions for Task 2 – Maintenance:

- a. Four toll collection points are defined on the MoPac Expressway. TSI will be responsible for maintaining the entirety of the Express Lanes, including all components provided directly by the system integration contract with Kapsch TrafficCom.
- b. On-site monitoring of traffic control device operation, managed lanes, and variable message sign system of the systems includes monitoring of and dialog with, but not limited to:
 - i. The relevant software program and the associated/related field equipment; and
 - ii. The software computer programs that allow operators to create/activate/deactivate messages on variable message signs. Each of these sets of computer programs provides for operator dialogue using computer terminals.

M3.02. Contract Support

This task covers work by TSI to update Standard Operating Procedure manuals for use in day-to-day operations and to provide necessary training. CTRMA shall review and approve proposed training procedures. TSI shall provide materials to CTRMA documenting the training of personnel. This task also includes proactively assisting CTRMA in minimizing the impact of construction, maintenance, and other activities on the motoring public.

5.1 Sub-Task Descriptions for Support Task:

- a. TSI shall work with CTRMA to develop and update the Standard Operating Procedures (SOP) Manuals for use. Due to the nature of operations, this shall be an ongoing task that will take place at any time an SOP needs to be updated. TSI shall, at a minimum, review all SOPs on a semi-annual basis and provide CTRMA with recommendations for changes to address current operational conditions.
- b. TSI shall provide training to new operations personnel and in-service training to existing staff. The training shall be based on the current CTRMA SOP manuals. Training shall be provided on an as-needed basis as TSI staff is transitioned into the project; when new or significant changes are applied to SOPs or software programs; or when individual operator performance indicates the need for remedial training. Training shall include formal classroom style exercises and hands-on training. The training shall provide for knowledge checks to ensure they are competent prior to their being assigned to the operations tasks. Training shall also include side-by-side mentoring in

the form of assignment to the operations tasks for at least one week under the supervision of a Supervisor. This applies to both new operators and operators for whom remedial training is required.

- c. In order to keep the staff current with their abilities, TSI shall conduct “in-service” training to all staff. This shall be in the form of written exercises, or other CTRMA approved methods, and shall take place at least once per month.
- d. Maintenance Personnel and other entities with approved, planned lane closures on State Highways will send information to the TMC describing the details of the activities and lane closures in advance of the closure. TSI personnel will enter this information into the TMS software, prepare DMS plans for the work, and forward non-maintenance work and DMS plan information to appropriate CTRMA personnel, in accordance with Standard Operating Procedures.
- e. On a daily basis, TSI personnel shall review systematically the roadwork information received at the ELCC and identify those locations competing needs for lane closures exist. TSI personnel shall notify the appropriate parties when a conflict is identified. It will be the responsibility of the competing parties to resolve the conflict.
- f. On a daily basis, and in accordance with Standard Operating Procedures, TSI personnel shall prepare and distribute a summary report of the scheduled roadwork and send roadwork notifications to CTRMA personnel.

M3.03. PERFORMANCE MANAGEMENT

TSI shall carry out all Work in accordance with the Project Schedule and in a prompt, skillful and careful manner, using qualified personnel and in accordance with the “Standard of Care” defined as that level of care and skill ordinarily exercised by other employees currently practicing in the same locality under similar conditions. Employees shall perform the Work in a manner that is coordinated with contractor activities on the Project, and in accordance with the terms and conditions of this Work Authorization and the Agreement.

TSI will ensure that operators are compliant with established corporate policy regarding performance evaluation, training, and mentoring. Performance reviews and improvement will also be in accordance with established corporate guidelines.

M3.04. Staffing Management

TSI shall ensure employees meet the following minimum requirements:

- 1) Current driver license or Texas Identification (ID) card in accordance with the Texas Statutes.
- 2) Minimum age of eighteen (18) years old.
- 3) Proof of education, certifications, diploma(s), degree(s), professional affiliation(s).
- 4) Document the minimum of the last five (5) employment positions unless having worked less after graduating high school or college.

TSI shall conduct reference checks on all TSI personnel proposed to be used on/during this Contract and will keep all reference records on file and available to CTRMA for the Contract period.

TSI, during the Contract period, shall, prior to hiring, have resumes of all proposed staff and all new hires along with copies of Driver's Licenses or State of Texas issued ID on file for CTRMA review.

M4.0 Maintenance Plan

The Contractor shall create a Maintenance Plan that covers all aspects of the CTRMA Toll Collection System pertinent to the Scope of Work.

The Maintenance Plan will be updated periodically by mutual agreement of the parties as they deem reasonably necessary.

M4.01. Coverage

The Contractor will provide maintenance services on a seven (7) day a week/twenty-four (24) hours a day basis with the following response and repair times depending on severity of incident, except where otherwise specified in an approved roadway maintenance manual.

- A Priority 1 Maintenance Event is defined as any malfunction or fault that will result in the immediate loss of revenue and/or hazard to personnel.
- Priority 2 Maintenance Event is defined as any malfunction or fault that will not result in immediate loss of revenue but will/may impact operational performance.
- A Priority 3 Maintenance Event is defined as any action or event reported that will/may impact operational performance, has potential of degrading the System performance, and has no impact to revenue collection.

For purposes of the above, response time is defined as the period beginning when the Contractor is notified of a problem and ending when the Contractor's maintenance

technician creates a ticket. Repair time is defined as the period beginning when the Contractor's ticket is acknowledged and ending when the fault is corrected. Response and repair time for every maintenance event will be recorded and made available to the CTRMA.

For all remote Express Toll Locations on the State Highway System, the Contractor shall work with CTRMA in scheduling and coordinating any maintenance, adjustments, and repair activities involving active traffic lanes for setting up the lane and accessing the equipment in the lane. All maintenance, adjustments, and repair activities within State highways will be subject to the review and approval by TxDOT and the CTRMA.

M4.02. Notification Procedures

The Contractor may be notified of Toll Collection System malfunctions, problems, and discrepancies in several different ways. There can be verbal notification from a CTRMA employee, written notification from an authorized CTRMA employee, verbal notification from CSC/VPC staff, and MOMS messages from the MOMS or other MOMS notification system (i.e., automatic paging, etc.).

In all cases, it shall be the responsibility of the Contractor to log all reported problems with all pertinent information concerning the problem into MOMS. After receiving notification, the Contractor shall confirm the problem directly with the reporting individual or other CTRMA personnel at the location of the problem. The Contractor shall then dispatch the appropriate maintenance personnel to resolve the problem.

M4.02.01. Verbal Notification

Verbal notification of a maintenance call shall be defined as in-person, telephone, or pager call, and subsequent return telephone call by the Contractor. In all cases, the first conversation with or page of the Contractor shall signify the start of response time for purposes of measuring the Contractor's response time.

M4.02.02. Written Notification

Written notification shall be defined as a written description of a problem, typically provided by the CTRMA or the VPC.

M4.02.03. MOMS Notification

MOMS notification shall consist of the MOMS software identifying a problem with the system. MOMS message information shall be provided in the maintenance reports, as described elsewhere in this document.

M5.0 Spare Parts

Spare parts prior to Project Acceptance will be procured through the Toll Collection System Contract. Notwithstanding anything to the contrary in this specification, the Contractor shall purchase on behalf of the CTRMA (and at the CTRMA's expense) an initial stock of spare parts and equipment for the Toll Collection System at such time as the CTRMA and the Contractor shall mutually agree at the cost of such spare parts and equipment without any 10% mark-up.

M5.01. Procurement

The Contractor shall purchase all spares on behalf of the CTRMA in a manner to ensure that the CTRMA obtains the benefit of all warranties associated with such spares. The cost of the spare parts shall not include any mark up and shall be agreed to prior to the Effective Date. The Contractor shall maintain and track the inventory of all spares and consumables for the CTRMA using the MOMS and shall provide the CTRMA with a list itemizing all spares and consumables in the CTRMA's inventory as reasonably requested, but not more frequently than once a month. All of the CTRMA's spares and consumables shall be maintained by the Contractor free and clear of all liens and encumbrances of any kind whatsoever at locations to be agreed upon between the CTRMA and the Contractor. The CTRMA shall have the right to inspect the spares and consumables inventory during normal business hours and shall give the Contractor written notice any time the CTRMA removes any of its spares or consumables.

M5.02. Inventory Management

The Contractor's performance of the Maintenance Services is predicated on there being an adequate spares inventory available. The Contractor shall provide no less frequently than annually a list of recommended spares quantities, and it is the CTRMA's responsibility to approve the purchase of the spares to be made. The CTRMA will hold harmless the Contractor in the event spares are not available as a consequence of the CTRMA's not accepting the Contractor's recommended quantity of spares. The Contractor shall hold harmless the CTRMA in the event spares and/or consumables are not available as a consequence of the Contractor's failure to purchase the spares and/or consumables ordered by the CTRMA.

The Contractor shall be responsible for providing all miscellaneous repair parts and materials costing less than \$20 per item, at its own expense, which shall include, but not be limited to, fuses, touch-up paint, screws and nuts, wire, connectors, cables, labels, and insulating tape, as required, to comply with the requirements of these specifications. The Contractor will provide normal shop consumables (e.g., solder, lubricants, cleaning rags, etc.) and spares costing less than \$20 per item, excluding toll system consumables (e.g., magnetic media, batteries, receipt printer paper, light bulbs, etc.), at no additional cost to the CTRMA.

The Contractor shall cooperate with and assist the CTRMA as reasonably necessary to ensure that all spare parts, equipment and other CTRMA owned property stored or otherwise located on the Contractor's leased property shall not be subject to any risk of being confiscated, claimed, attached, or withheld by the Contractor's landlord, any of the Contractor's creditors or any similar risk. This cooperation shall include, but not be limited to, affixing appropriate labeling to all such property. The Contractor's Maintenance Facility and/or any location where CTRMA equipment is stored shall be secured and connected to the Security Access System. It is also recommended that the Contractor's Maintenance Facility be part of the CTRMA network and all Contractor access to the CTRMA System be made through this network. It is the Contractor's responsibility to ensure that the Contractor Maintenance Staff have access to the MOMS and all the required connections are established.

M6.0 Staffing

As of the Effective Date, the Contractor shall have the following full-time personnel situated in Austin. Changes in the scope of work, including, but not limited, to the addition or subtraction of lanes and/or equipment may cause changes in the staffing levels.

- Maintenance Manager (who shall be responsible for overseeing the performance of the Service)
- Maintenance Technicians
- Network/System Engineer (can be remote)

An office housing the administrative functions and the central repair depot (including the spares warehouse) will be located in the Austin metropolitan area.

A senior employee of the Contractor shall be identified with overall responsibility for overseeing the performance of the Maintenance Contract and managing the Maintenance Services.

The Contractor shall ensure that the field maintenance team has technical support in the areas of radio frequency, hardware, systems, communications and software.

M7.0 Personnel Training

The Contractor's field technicians shall have completed training courses, as evidenced by the resumes provided by the Contractor to the CTRMA, prior to being assigned to work on the CTRMA Toll Collection System. The Contractor shall provide for any necessary supplemental training of all maintenance technicians for the Toll Collection System, which shall be scheduled such that it will be completed no later than one (1) week prior to field installation of the any new lane configurations. The training shall consist of a minimum of two (2) weeks of both hands-on classroom instruction and on-the-job training.

M7.01. Staff Assignments

Maintenance staff shall be part of the Contractor's field installation team to obtain first-hand experience with the equipment.

The Contractor's Maintenance Technicians responsible for the field repairs shall be trained for major module/PC board swap-out. The Contractor's Technicians, because of experience at the bench level, shall also be trained to repair equipment at the component level as needed.

M7.02. Training Materials

Training materials shall consist of maintenance manuals, vendor manuals and other documentation that may be provided by the Contractor or by the CTRMA, as well as classroom training materials to be developed by the Contractor.

M7.03. Training Program

The content of the training course shall contain but not be limited to the following:

- Use of maintenance documentation such as maintenance manuals, drawings, parts lists and vendor manuals
- A maintenance program showing personnel assignments, transportation requirements and communications
- Systems overview
- Theory, use, preventive maintenance, troubleshooting, diagnostics, repair and testing of the lane to plaza to host interaction ("System"), lane to plaza interaction ("Sub-system"), and repairs to equipment or components (assembly/ sub-assembly/ component), and lane operations
- System preventive maintenance at the host, plaza and lane levels, including schedules
- Maintenance facilities (including equipment)
- Corrective and emergency maintenance procedures (troubleshooting, diagnostics, repair, testing and post-maintenance)
- Spare parts and spare equipment provisioning
- Use of maintenance tools
- Response times, expected repair times
- Maintenance facility procedures
- Maintenance forms and maintenance reports

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The Contractor's Maintenance Manager shall attend the training course with the Maintenance Technicians and the CTRMA staff shall also attend the training. The Contractor shall establish procedures for training new-hire or replacement personnel and shall provide refresher training for the existing maintenance force. New hire or replacement personnel shall receive the same hands-on classroom and on-the-job training as specified in this section before being assigned official maintenance duties.

The Contractor shall keep training records on all maintenance personnel. The CTRMA shall be allowed to audit maintenance personnel qualifications and training records at any time during this Contract.

The Contractor shall supply training procedures for maintenance personnel for CTRMA approval not less than 60 days prior to the training start date.

M8.0 Safety

The Contractor shall adhere to the CTRMA's safety procedures set forth in the Maintenance Plan.

M9.0 Reporting Requirements

The CTRMA and its Representatives shall always have access to all service records.

M9.01. Field/Shop Maintenance Records

The Contractor shall maintain current and accurate records for all field and shop maintenance work. The Contractor shall prepare a service report every time service is performed for corrective or emergency work and such information shall be entered MOMS. The report shall include, but not be limited to notification time, notification procedure (verbal, written, or MOMS), plaza ID and lane number (if in-lane equipment) or equipment location, toll collector's ID number (if a collector is in the lane), equipment description, work or service performed, reported fault, parts used and the time the service was started and completed. One copy of all service reports and records shall be forwarded to the CTRMA once every month. All preventive and predictive maintenance activities shall be reported in the same manner as corrective and emergency maintenance work.

M9.02. Summary Reports

Monthly maintenance summary reports shall be prepared and submitted to the CTRMA. These reports shall include, but not be limited to, average repair times, failure statistics, spare parts and spare equipment used, spare parts and spare equipment disposition (i.e. returned to manufacturer for repair, in maintenance shop for repair, etc.), total down time of the equipment and other summary information for all classes of equipment.

M10.0 System Documentation

The Contractor shall maintain one full set of all Toll Collection System documentation including, but not limited to, as-built drawings, toll equipment service manuals, computer manuals, software documentation, parts lists and other data as may be required for record purposes at the toll maintenance shop. In addition, one (1) versioned set of complete documentation shall be maintained by the Contractor in a documentation management system.

The Contractor shall furnish all maintenance personnel with appropriate System documentation as may be required to perform their respective duties.

All System documentation shall be recorded at the toll maintenance shop. The documentation provided and/or assembled under the Maintenance Contract shall be considered proprietary and confidential. The Contractor's employees shall not reproduce the documentation or discuss the contents of the documentation with the CTRMA toll collectors or other unauthorized personnel.

M11.0 Performance Measurement

The CTRMA will review the Contractor's performance on a monthly basis, utilizing the monthly summary reports provided by the Contractor, in addition to input from the CTRMA staff. Performance will be measured by:

- Comparing average response times and repair time in each "Priority" category described under "Coverage" in Subsection M3.01 for the current month, year to date, and since Notice to Proceed for this Maintenance Contract with the requirements specified in the Technical Requirements.
- Failure to keep accurate records or otherwise improperly reporting maintenance activities.
- Review of spare parts and spare equipment availability

As described in the Restated Maintenance Agreement, the Contractor will be notified in writing of deficient performance and shall take corrective actions.

M12.0 Key Performance Indicators

Kapsch proposes the following Key Performance Indicator (KPI) measurements for Maintenance services. These KPIs are measurable values that demonstrate achievement of key business objectives, while also including either liquidated damages for missed targets or lost revenue.

Audits conducted by CTRMA or its third party vendor will be completed according to the schedule set forth below or at CTRMA's discretion.

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KPI ID	KPI Name	Key Performance Indicator Description	KPI	Maximum Liquidated Damages (per calendar month)	Testing Frequency
1	AVD	The vehicle detection subsystem shall detect 99.90% of vehicles passing through the Toll Zone once and only once under all conditions within the Design specification described in the requirements, including vehicles in the shoulders and straddling the lane and shoulder. Kapsch will reconcile discrepancies from CTRMA audits. Variance may be dependent on vehicle volume.	99.90%	\$200 per gantry location-per each 0.1% below threshold	Audits by CTRMA at their discretion, executed by CTRMA, with minimum transaction count as determined by audit confidence as a threshold.
2	AVC	The AVC subsystem shall correctly classify 99.50% of all detected vehicles at speeds from 5 mph up to and including 100 mph, including vehicles straddling the lanes. Shoulders are excluded from this calculation. Kapsch will reconcile discrepancies from CTRMA audits. Variance may be dependent on vehicle volume.	99.50%	\$200 per gantry location-per each 0.1% below threshold	Audits by CTRMA at their discretion, executed by CTRMA, with minimum transaction count as determined by audit confidence as a threshold.
3	AVI	The AVI subsystem will correctly detect, read and assign to the correct vehicle 99.90% of all properly installed Transponders on all detected vehicles at speeds from 5 mph up to and including 100 mph, including vehicles in the shoulders and straddling the lanes.	99.90%	\$200 per gantry location-per each 0.1% below threshold	Audits by CTRMA at their discretion, executed by CTRMA, with minimum transaction count as determined by audit confidence as a threshold.
4	LPIC	The LPIC subsystem will capture one front human readable license plate image or one rear human readable license plate image and associated to the correct vehicle for	99.50%	\$200 per gantry location-per each 0.1% below	Audits by CTRMA at their discretion, executed by

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		99.50% of all detected vehicles traveling at speeds from 5 mph up to and including 100 mph, including vehicles straddling the lane and shoulder.		threshold	CTRMA, with minimum transaction count as determined by audit confidence as a threshold.
5	IR	For transactions rejected by the manual review process, less than 1.00% shall have incorrect code-off results.	<1.00%	\$200 per gantry location-per each 0.1% below threshold	Audits by CTRMA at their discretion, executed by CTRMA, with minimum transaction count as determined by audit confidence as a threshold.
6	Trip	99.50% of all transactions shall be correctly assembled into trips.	99.50%	\$200 per gantry location-per each 0.1% below threshold	Monthly with minimum transaction count as determined by audit confidence as a threshold.
7	Trip	99.99% of all trips shall be transmitted to the CTRMA primary host system within 4 calendar days of the exit transaction of the trip.	99.99%	\$200 per gantry location-per each 0.1% below threshold	Monthly with minimum transaction count as determined by audit confidence as a threshold.
8	MVD	The volume provided by Traffic Detection Systems (MVD) shall be 95.00% accurate.	95.00%	\$200 per gantry location-per each 0.1% below threshold	Monthly with minimum transaction count as determined by audit confidence as a threshold.
9	Host	100% of all transactions must be processed within 20 days of their transaction timestamp. A transaction qualifies as “processed” if the transaction has reached its final destination within the CTRMA	100.00%	Actual revenue above \$5,000 (calculated using liquidation rate) AND	Monthly

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		Transaction processing workflow. The transaction processing workflow is responsible for achieving the required 20 day processing limit within the agreed constraints of external vendor processing quantity allowances.		2. 50% of any indirect costs incurred greater than \$5,000, with a limit of \$50,000 per occurrence in addition to any direct damages applicable per <i>Section 7. Performance Guaranty</i>	
10	IR	For transactions requiring manual review process, 99.50% shall be completed within 72 hours from the time the transaction qualified for manual review.	99.50%	\$200 per gantry location-per each 0.1% below threshold	Monthly Calculated based on number of transactions within a month vs. number not processed within 72 hours.
11	Reports	1. The monthly report, accurately detailing system performance relative to all Project KPIs, shall be submitted to CTRMA each month. 2. System and as necessary manual report to be provided by the contractor to indicate performance. 3. Contractor to provide complete report, cover page, table of contents, KPI table and summaries, format to be agreed upon by Contractor and CTRMA.	By the 15th of the following month	Cannot invoice for monthly maintenance without submitting this report.	Monthly
12	Availability	Each ETC lane shall be available 99.50% of the time. An available lane is defined as a lane with the ability to collect revenue either through image capture or tag read and association.	99.50%	N/A - KPI #9 (Host) covers the maximum liquidated damages for the this section.	Monthly
13	Availability	The Host Level system shall be available 99.50% of the time. An available host is defined as a fully operating host such that Reports, ROMS, and transaction processing are online (with the exception of approved downtime for maintenance purposes).	99.50%	N/A - KPI #9 (Host) covers the maximum liquidated damages for this section.	Monthly

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14	Availability	Express Lanes CCTV shall be available 99.50% of the time, excluding scheduled maintenance.	Express: 99.50%	\$200 per each 0.5% below threshold	Monthly
15	Availability	Non-Express CCTV shall be available 95.00% of the time, excluding scheduled maintenance.	Non-Express: 95.00%	\$200 per each 0.5% below threshold	Monthly
16	Availability	DMS shall be available 95.00% of the time, excluding scheduled maintenance.	95.00%	\$200 per each 0.5% below threshold	Monthly
17	Availability	Express MVDs shall be available 99.50% of the time per segment, excluding scheduled maintenance.	Express: 99.50%	Express: \$100 per each 0.5% below threshold per segment.	Monthly
18	Availability	MVDs shall be available 95.00% of the time per device, excluding scheduled maintenance.	Non-express: 95.00%	Non-Express: \$100 per each 0.5% below threshold per device.	Monthly
19	VTMS Availability	The VTMS System will be available as outlined below, excluding scheduled maintenance. Availability of 99.95%, with a 15 minute grace period for emergency maintenance.	99.95%, 15 min. grace excluded	Actual revenue above \$5,000 (calculated using liquidation rate).	Monthly
20	VTMS Accuracy	The System will post and maintain the correct toll rate to the VTMS 99.90% of the time per VTMS under all conditions within the Design specification described in the requirements.	99.90%	\$200 per each 0.5% below threshold	Monthly
21	Time to Respond – Priority 1	On Average, all priority 1 tickets must be acknowledged within 1 hour of ticket creation. A Priority 1 Maintenance Event is defined as any malfunction or fault that will result in the immediate loss of revenue and/or hazard to personnel.	N/A	\$200 if average is > 1 hour	Monthly
22	Time to Repair - Priority 1	On Average, all priority 1 tickets must be repaired within 4 hours of ticket acknowledgement.	N/A	\$350 if average is > 4 hour	Monthly
23	Time to Respond – Priority 2	On Average, all priority 2 tickets must be acknowledged within 1 hour of ticket creation. Priority 2 Maintenance Event is defined as any malfunction or fault that will not result in immediate loss of revenue but will/may impact operational performance.	N/A	\$200 if average is > 1 hour	Monthly

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24	Time to Repair - Priority 2	On Average, all priority 2 tickets must be repaired within 12 hours of ticket acknowledgement.	N/A	\$350 if average is > 12 hour	Monthly
25	Time to Respond – Priority 3	On Average, all priority 3 tickets must be acknowledged within 1 hour of ticket creation. A Priority 3 Maintenance Event is defined as any action or event reported that will/may impact operational performance, has potential of degrading the System performance, and has no impact to revenue collection.	N/A	\$200 if average is > 1 hour	Monthly
26	Time to Repair - Priority 3	On Average, all priority 3 tickets must be repaired within 36 hours of ticket acknowledgement.	N/A	\$200 if average is > 36 hour	Monthly

M13.0 Confidentiality

The Contractor shall keep all information regarding its activities pursuant to this Contract confidential and will communicate such information only with authorized CTRMA personnel or CTRMA designated representatives.

[END OF SECTION]