



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

Regular Meeting of the Board of Directors

9:00 a.m.

Wednesday, March 27, 2024

Lowell H. Lebermann, Jr., Board Room
3300 N. IH-35, Suite 300
Austin, Texas 78705

*A live video stream of this meeting may be viewed on the internet at
www.mobilityauthority.com*

Persons with disabilities. If you plan to attend this meeting and may need auxiliary aids or services, such as an interpreter for those who are deaf or hearing impaired, or if you are a reader of large print or Braille, please contact Laura Bohl at (512) 996-9778 at least two days before the meeting so that appropriate arrangements can be made.

Español. Si desea recibir asistencia gratuita para traducir esta información, llame al (512) 996-9778.

AGENDA

No action on the following:

1. Welcome and opportunity for public comment – See **Notes** at the end of this agenda.

Consent Agenda

*See **Notes** at the end of this agenda.*

2. Approve the minutes from the February 28, 2024 Regular Board Meeting and the March 18, 2024 Special Called Board Meeting.
3. Prohibit the operation of certain vehicles on Mobility Authority toll facilities pursuant to the Habitual Violator Program.

Regular Items

Items to discuss, consider, and take appropriate action.

4. Accept the financial statements for February 2024.
5. Discuss and consider approving revisions to Amendment No. 3 to the First Amended and Restated Maintenance Services Contract for the Central Texas Regional Mobility Authority Toll Collection System to clarify that Kapsch TrafficCom USA, Inc. will continue to provide intelligent transportation systems maintenance services for the Mopac Express Lane.

Briefings and Reports

Items to discuss, consider, and take appropriate action.

6. 183A Phase III Project Update
7. Executive Director Report.
 - A. Agency performance metrics.
 - i. Roadway Performance
 - ii. Call-Center Performance

Executive Session

Under Chapter 551 of the Texas Government Code, the Board may recess into a closed meeting (an executive session) to deliberate any item on this agenda if the Chairman announces the item will be deliberated in executive session and identifies the section or sections of Chapter 551 that authorize meeting in executive session. A final action, decision, or vote on a matter deliberated in executive session will be made only after the Board reconvenes in an open meeting.

The Board may deliberate the following items in executive session if announced by the Chairman:

8. Discuss the sale, transfer or exchange of one or more parcels or interests in real property owned by the Mobility Authority and related legal issues as authorized by §551.071 (Consultation with Attorney) and §551.072 (Deliberation Regarding Real Property; Closed Meeting).
9. Discuss legal issues related to claims by or against the Mobility Authority; pending or contemplated litigation and any related settlement offers; or other matters as authorized by §551.071 (Consultation with Attorney).

10. Discuss legal issues relating to procurement and financing of Mobility Authority transportation projects and toll system improvements, as authorized by §551.071 (Consultation with Attorney).
11. Discuss personnel matters related to the executive director's employment agreement as authorized by §551.074 (Personnel Matters).

Reconvene in Open Session.

Regular Items

Items to discuss, consider, and take appropriate action.

12. Adjourn meeting.

Notes

Opportunity for Public Comment. At the beginning of the meeting, the Board provides a period of up to one hour for public comment on any matter subject to the Mobility Authority's jurisdiction. Each speaker is allowed a maximum of three minutes. A person who wishes to address the Board must register in advance and provide the speaker's name, address, phone number and email, as well as the agenda item number and whether you wish to speak during the public comment period or during the agenda item. If a speaker's topic is not listed on this agenda, the Board may not deliberate the speaker's topic or question the speaker during the open comment period but may direct staff to investigate the matter or propose that an item be placed on a subsequent agenda for deliberation and possible action by the Board. The Board may not deliberate or act on an item that is not listed on this agenda.

Consent Agenda. The Consent Agenda includes routine or recurring items for Board action with a single vote. The Chairman or any Board Member may defer action on a Consent Agenda item for discussion and consideration by the Board with the other Regular Items.

Public Comment on Agenda Items. A member of the public may offer comments on a specific agenda item in open session if he or she signs the speaker registration sheet for that item before the Board takes up consideration of the item. The Chairman may limit the amount of time allowed for each speaker. Public comment unrelated to a specific agenda item must be offered during the open comment period.

Meeting Procedures. The order and numbering of agenda items is for ease of reference only. After the meeting is convened, the Chairman may rearrange the order in which agenda items are considered, and the Board may consider items on the agenda in any order or at any time during the meeting.

Participation by Telephone Conference Call. One or more members of the Board of Directors may participate in this meeting through a telephone conference call, as authorized by Sec. 370.262, Texas Transportation Code (*see below*). Under that law, each part of the telephone conference call meeting that by law must be open to the public, shall be audible to the public at the meeting location, and will be tape-recorded or documented by written minutes. On conclusion of the meeting, the tape recording or the written minutes of the meeting will be made available to the public.

TEXAS TRANSPORTATION CODE Sec. 370.262. MEETINGS BY TELEPHONE CONFERENCE CALL.

(a) Chapter 551, Government Code, does not prohibit any open or closed meeting of the board, a committee of the board, or the staff, or any combination of the board or staff, from being held by telephone conference call. The board may hold an open or closed meeting by telephone conference call subject to the requirements of Sections 551.125(c)-(f), Government Code, but is not subject to the requirements of Subsection (b) of that section.

(b) A telephone conference call meeting is subject to the notice requirements applicable to other meetings.

(c) Notice of a telephone conference call meeting that by law must be open to the public must specify the location of the meeting. The location must be a conference room of the authority or other facility in a county of the authority that is accessible to the public.

Mobility Authority Board Meeting Agenda
Wednesday, March 27, 2024

(d) Each part of the telephone conference call meeting that by law must be open to the public shall be audible to the public at the location specified in the notice and shall be tape-recorded or documented by written minutes. On conclusion of the meeting, the tape recording or the written minutes of the meeting shall be made available to the public.

TEXAS GOVERNMENT CODE Sec. 551.125. OTHER GOVERNMENTAL BODY. (a) Except as otherwise provided by this subchapter, this chapter does not prohibit a governmental body from holding an open or closed meeting by telephone conference call.

~~(b) A meeting held by telephone conference call may be held only if:~~

~~(1) an emergency or public necessity exists within the meaning of Section 551.045 of this chapter; and~~

~~(2) the convening at one location of a quorum of the governmental body is difficult or impossible; or~~

~~(3) the meeting is held by an advisory board.~~

(c) The telephone conference call meeting is subject to the notice requirements applicable to other meetings.

(d) The notice of the telephone conference call meeting must specify as the location of the meeting the location where meetings of the governmental body are usually held.

(e) Each part of the telephone conference call meeting that is required to be open to the public shall be audible to the public at the location specified in the notice of the meeting as the location of the meeting and shall be tape-recorded. The tape recording shall be made available to the public.

(f) The location designated in the notice as the location of the meeting shall provide two-way communication during the entire telephone conference call meeting and the identification of each party to the telephone conference shall be clearly stated prior to speaking.



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

March 27, 2024
AGENDA ITEM #1

Welcome and opportunity for public
comment

Welcome and opportunity for public comment.
No Board action required.



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

March 27, 2024
AGENDA ITEM #2

Approve the minutes from the
February 27, 2024 Regular Board
Meeting and March 18, 2024 Special
Called Board Meeting

Strategic Plan Relevance: Service
Department: Legal
Contact: Geoff Petrov, General Counsel
Associated Costs: N/A
Funding Source: N/A
Action Requested: Consider and act on motion to approve minutes

Description/Background: Approve the attached draft minutes for the February 27, 2024, Regular Board Meeting and March 18, 2024, Special Called Board Meeting.

Backup provided: Draft minutes February 27, 2024, Regular Board Meeting and March 18, 2024, Special Called Board Meeting

MINUTES
Regular Meeting of the Board of Directors of the
CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

Wednesday, February 28, 2024
9:00 a.m.

This was an in-person meeting. Notice of the meeting was posted January 26, 2024, online on the website of the Mobility Authority and in the Mobility Authority's office lobby at 3300 N. Interstate 35, #300, Austin, Texas 78705-1849. Chairman Jenkins, Vice Chair Nikelle Meade*, Board Members David Armbrust, Mike Doss, Heather Gaddes, Ben Thompson, and David Singleton were present.

**An archived copy of the live-stream of this
meeting is available at:**

<https://mobilityauthority.new.swagit.com/videos/298644>

After noting that a quorum of the Board was present, Chairman Jenkins called the meeting to order at 9:02 a.m. and had each Board Member state their name for the record.

1. Welcome and opportunity for public comment.

No comment was provided.

Consent Agenda

2. Approve the minutes from the January 31, 2024 Regular Board Meeting.
3. Prohibit the operation of certain vehicles on Mobility Authority toll facilities pursuant to the Habitual Violator Program.

ADOPTED AS: RESOLUTION NO. 24-007

4. Approve an agreement with Lone Star Paving Company for mill and overlay work on the 45SW Maintenance Project.

ADOPTED AS: RESOLUTION NO. 24-008

5. Amendment No. 3 to the First Amended and Restated Maintenance Services Contract for the Central Texas Regional Mobility Authority Toll Collection System with Kapsch TrafficCom USA, Inc. to remove intelligent transportation system performance based maintenance services from the agreement.

ADOPTED AS: **RESOLUTION NO. 24-009**

MOTION: Approve Item Nos. 2 through 5.
RESULT: Approved (Unanimous); 7-0
MOTION: Heather Gaddes
SECONDED BY: Mike Doss
AYE: Armbrust, Doss, Gaddes, Jenkins, Meade, Singleton,
 Thompson
NAY: None.

Regular Items

6. Accept the financial statements for January 2024.

Presentation by Jose Hernandez, Chief Financial Officer.

ADOPTED AS: **RESOLUTION NO. 24-010**

MOTION: Accept the financial statements for January 2024
RESULT: Approved (Unanimous); 7-0
MOTION: David Singleton
SECONDED BY: Nikelle Meade
AYE: Armbrust, Doss, Gaddes, Jenkins, Meade, Singleton,
 Thompson
NAY: None.

7. Discuss and consider approving a toll rate schedule for the 183A Phase III Project.

Presentation by Jose Hernandez, Chief Financial Officer.

ADOPTED AS: **RESOLUTION NO. 24-011**

MOTION: Approve a toll rate schedule for the 183A Phase III
 Project.
RESULT: Approved (Unanimous); 7-0
MOTION: Mike Doss
SECONDED BY: Ben Thompson
AYE: Armbrust, Doss, Gaddes, Jenkins, Meade, Singleton,
 Thompson
NAY: None.

8. Discuss and consider approving an agreement with Luna Data Solutions Inc. for a video interoperability sharing solution to support regional coordination for traffic management and incident response.

Presentation by Greg Mack, Director of Information Technology and Tracie Brown, Director of Operations.

ADOPTED AS: **RESOLUTION NO. 24-012**

MOTION: Approve an agreement with Luna Data Solutions Inc. for a video interoperability sharing solution to support regional coordination for traffic management and incident response.

RESULT: Approved (Unanimous); 7-0

MOTION: Heather Gaddes

SECONDED BY: Nikelle Meade

AYE: Armbrust, Doss, Gaddes, Jenkins, Meade, Singleton, Thompson

NAY: None.

9. Discuss and consider approving Change Order No. 24 with The Lane Construction Corporation for increases in the quantity of topsoil required for the 183A Phase III project.

Presentation by Mike Sexton, Director of Engineering.

ADOPTED AS: **RESOLUTION NO. 24-013**

MOTION: Approve Change Order No. 24 with The Lane Construction Corporation for increases in the quantity of topsoil required for the 183A Phase III project.

RESULT: Approved (Unanimous); 7-0

MOTION: David Singleton

SECONDED BY: Mike Doss

AYE: Armbrust, Doss, Gaddes, Jenkins, Meade, Singleton, Thompson

NAY: None.

Executive Session

Chairman Jenkins announced in open session at 9:36 a.m. that the Board would recess the meeting and reconvene in Executive Session to deliberate the following items:

13. Discuss the exchange or purchase of one or more parcels or interests in real property owned by the Mobility Authority and related legal issues as authorized by §551.071

(Consultation with Attorney) and §551.072 (Deliberation Regarding Real Property; Closed Meeting).

14. Discuss legal issues related to claims by or against the Mobility Authority; pending or contemplated litigation and any related settlement offers; or other matters as authorized by §551.071 (Consultation with Attorney).
15. Discuss legal issues relating to procurement and financing of Mobility Authority transportation projects and toll system improvements, as authorized by §551.071 (Consultation with Attorney).
16. Discuss personnel matters as authorized by §551.074 (Personnel Matters).

After completing the executive session, the Board reconvened in open meeting at 10:59 a.m. and *Nikelle Meade did not join the dais following Executive Session.

Regular Items

10. Discuss and consider approving Amendment No. 1 to the agreement with Great Hills Constructors for the 183 North Mobility Project to modify the early completion incentive and to add an interim milestone for early lane opening and associated incentive.

Presentation by Mike Sexton, Director of Engineering.

ADOPTED AS:	RESOLUTION NO. 24-014
MOTION:	Approve Change Order No. 24 with The Lane Construction Corporation for increases in the quantity of topsoil required for the 183A Phase III project.
RESULT:	Approved ; 5-1
MOTION:	David Armbrust
SECONDED BY:	Heather Gaddes
AYE:	Armbrust, Doss, Gaddes, Jenkins, Thompson
NAY:	Singleton.

Briefings and Reports

11. An update on the Mobility Authority's Habitual Violator Program and related toll nonpayment enforcement remedies

Presentation by Tracie Brown, Director of Operations.

12. Executive Director Board Report

Presentation by James M. Bass, Executive Director.

- A. 183 Trail Interpretative Signage and Augmented Reality Experience
- B. Agency performance metrics.
 - i. Roadway performance
 - ii. Call-Center performance

Regular Items

17. Approve a final agreed judgment with Klatt Properties LP, Sprint Spectrum LP, Verizon Wireless Services LLC f/k/a Dallas MTA LP, and Wells Fargo Bank for the acquisition of Parcel 3 of the 183A Phase III Project, a 3.646-acre tract of land owned by Klatt Properties, a Texas Limited Partnership; and located at County Road 258 and 183A, Liberty Hill, Williamson County, Texas.

Presentation by Geoff Petrov, General Counsel.

ADOPTED AS: RESOLUTION NO. 24-015

MOTION: The CTRMA authorize the Executive Director to execute a final agreed judgement with Klatt Properties LP, Sprint Spectrum LP, Verizon Wireless Services LLC f/k/a Dallas MTA LP, and Wells Fargo Bank in an amount not to exceed \$1,600,000.00 to resolve a condemnation action for the acquisition of Parcel 3, a 3.646-acre tract of land owned by Klatt Properties, a Texas Limited Partnership, and located at County Road 258 and 183A, Liberty Hill, Williamson County, Texas, for public use related to the expansion, construction, operation, and maintenance of the 183A Phase III Project, a state highway project, by adopting the resolution presented in executive session.

RESULT: Approved (Unanimous); 5-0
MOTION: Ben Thompson
SECONDED BY: Heather Gaddes
AYE: Doss, Gaddes, Jenkins, Singleton, Thompson
NAY: None.

18. Adjourn meeting.

After confirming that no member of the public wished to address the Board, Chairman Jenkins declared the meeting adjourned at 11:35 a.m.

MINUTES
Special Called Meeting of the Board of Directors of the
CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

Monday, March 18, 2024
3:00 p.m.

This was an in-person meeting. Notice of the meeting was posted March 15, 2024, online on the website of the Mobility Authority and in the Mobility Authority's office lobby at 3300 N. Interstate 35, #300, Austin, Texas 78705-1849. Chairman Jenkins, Vice Chair Nikelle Meade, Board Members David Armbrust, Mike Doss*, Heather Gaddes, Ben Thompson, and David Singleton* were present.

**An archived copy of the live-stream of this
meeting is available at:**

<https://mobilityauthority.new.swagit.com/videos/300018>

After noting that a quorum of the Board was present, Chairman Jenkins called the meeting to order at 3:21 p.m.

1. Welcome and opportunity for public comment.

No comment was provided.

Executive Session

*Note: Mike Doss and David Singleton joined for the Executive Session.

Chairman Jenkins announced in open session at 3:22 p.m. that the Board would recess the meeting and reconvene in Executive Session to deliberate the following items:

2. Discuss the exchange or purchase of one or more parcels or interests in real property owned by the Mobility Authority and related legal issues as authorized by §551.071 (Consultation with Attorney) and §551.072 (Deliberation Regarding Real Property; Closed Meeting).
3. Discuss legal issues related to claims by or against the Mobility Authority; pending or contemplated litigation and any related settlement offers; or other matters as authorized by §551.071 (Consultation with Attorney).
4. Discuss personnel matters related to the executive director's employment agreement, as authorized by §551.074 (Personnel Matters).

After completing the executive session, the Board reconvened in open meeting at 4:54 p.m.

5. Adjourn meeting.

After confirming that no member of the public wished to address the Board, Chairman Jenkins declared the meeting adjourned at 4:54 p.m.



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

March 27, 2024
AGENDA ITEM #3

Prohibit the operation of certain
vehicles on Mobility Authority toll
facilities pursuant to the Habitual
Violator Program

Strategic Plan Relevance:	Stewardship & Service
Department:	Operations
Contact:	Tracie Brown, Director of Operations
Associated Costs:	N/A
Funding Source:	N/A
Action Requested:	Consider and act on draft resolution

Project Description/Background: The Mobility Authority's habitual violator process prescribes two notices before habitual violator remedies go into effect. A pre-determination letter is sent 60 days before any remedies are enforced advising the customer again of their outstanding balance and providing an opportunity for resolution. Assuming no resolution, a *Notice of Determination* is mailed notifying the customer they've been determined to be a habitual violator and advising of the consequences. The customer is also informed of their right to appeal the decision and the process by which to do so.

If the customer does not contact the Authority to appeal the habitual violator determination or resolve their outstanding balance, a block is placed on the related vehicle's registration preventing renewal. The block remains in effect until all tolls and fees have been paid, a payment plan has been arranged with the Mobility Authority or the customer is determined to no longer be a habitual violator.

Previous Actions & Brief History of the Program/Project: State law provides that persons deemed to be habitual violators may also be prohibited from use of the Mobility Authority's toll facilities by order of the Board of Directors. Habitual violator customers operating a vehicle in violation of a ban are subject to a Class C misdemeanor with a fine up to \$500. A second or subsequent occurrence may result in impoundment of the vehicle. Similar to registration blocks, vehicle bans remain in effect until all

outstanding amounts owed to the Authority have been resolved or the customer is no longer deemed a habitual violator.

Financing: Not applicable.

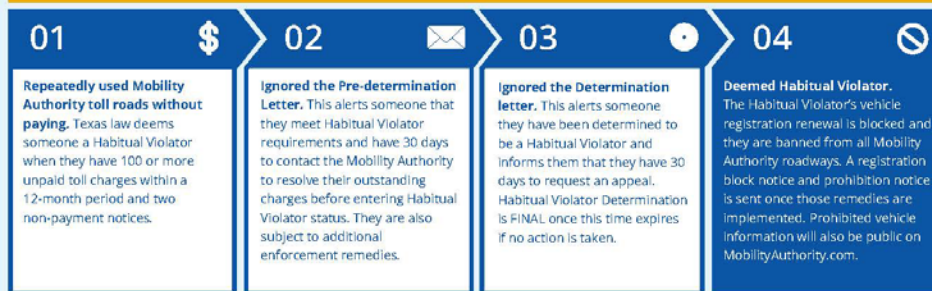
Action requested/Staff Recommendation: Staff affirms that all required steps have been followed and proper notice previously provided to customers determined to be habitual violators. To date, these customers have not appealed this determination or resolved their outstanding balances.

Therefore, staff recommends that the Board of Directors approve the order prohibiting certain vehicles from use of the Authority's toll facilities. Following the Board's approval of this order, a Notice of Prohibition will be mailed by first class mail advising of the ban, consequences if the ban is violated and how the customer may resolve their outstanding balance.

Backup provided: Habitual Violator Vehicle Ban FAQs
Draft Resolution



Habitual Violator Process



Who is a Habitual Violator?

A Habitual Violator is defined in Section 372.106(a) of the Texas Transportation Code as (A) one who was issued at least two written notices of nonpayment that contained in aggregate 100 or more events of nonpayment within a period of one year and, (B) was issued a warning that failure to pay the amounts specified in the notices may result in the toll project entity's exercise of Habitual Violator remedies.

What enforcement remedies is the Mobility Authority implementing for Habitual Violators?

To encourage equitable payment by all customers, legislation allows for enforcement remedies up to and including vehicle registration renewal blocks, prohibiting Habitual Violator's vehicles on Mobility Authority roadways, on-road enforcement of the vehicle ban, as well as posting names to the agency website of those Habitual Violators with banned vehicles. The Mobility Authority will be implementing these remedies beginning November 2019.

How will I know I'm a Habitual Violator subject to enforcement remedies?

Habitual Violators are provided due process protections prior to any enforcement action.

- A registered vehicle owner who the Mobility Authority determines meets the Habitual Violator status is sent a letter advising them that Habitual Violator remedies may be implemented if the customer's outstanding balance is not resolved. This letter is not required by law but is sent as a courtesy to reflect the Mobility Authority's commitment to the customer.
- A registered vehicle owner who the Mobility Authority determines to be a Habitual Violator receives written notice of that determination and an opportunity for a justice of the peace hearing to challenge their Habitual Violator status.
- Habitual Violator Determination is FINAL if no action is taken, prompt in the Mobility Authority to send a Vehicle Registration Block Notice and/or a Vehicle Ban Notice. These notices urge the Habitual Violator yet again to resolve their toll debt with the Mobility Authority.
- Sufficient time is provided to respond to all notifications.

Learn more about the Habitual Violator Enforcement Program at MobilityAuthority.com



How can I resolve my Habitual Violator status and settle my toll bill balance?

You can pay outstanding tolls and administrative fees with cash, money order or credit card (a payment plan may be available) by: calling the Mobility Authority Customer Service Center at 512-410-0562, online at www.paymobilitybill.com, or in person at our walk-up center.

Why is the Mobility Authority pursuing enforcement remedies?

The vehicle registration block and other toll enforcement actions are intended to encourage tollway drivers to pay for services rendered to ensure fairness to the overwhelming majority of drivers who pay for the service, maintenance and safety of the toll roads.

How will a person be notified that he or she is subject to enforcement remedies?

A notification letter announcing that a person has met the criteria of Habitual Violator is sent to the address in the Texas Department of Motor Vehicles (TTC 372.106) database, allowing 30 days to contact to dispute their determination as a Habitual Violator or address the account balance before remedies are applied. If the Habitual Violator does not make arrangements with the Mobility Authority during this period, they will be subject to all enforcement remedies. Additionally, notification of a registration renewal block is mailed.

Can someone dispute a toll bill?

Yes. You may contact the Mobility Authority to review all outstanding tolls and fees, correct any errors and arrange for payment to clear your status as a Habitual Violator and the block on your registration. Habitual Violators are also given an opportunity to request an administrative hearing with a justice of the peace.

How will I know or be notified that I am subject to a vehicle ban?

Habitual violators subject to vehicle ban will receive notification that they have been banned, including when the ban will take effect and instructions for how to remove their status as a Habitual Violator.

Can I dispute my toll bill that subjects me to the vehicle ban?

Yes. You may contact the Mobility Authority to review all outstanding tolls and administrative fees, correct any errors and arrange for payment to clear your status as a Habitual Violator and remove the vehicle ban.

What happens if I am banned, but get caught driving on a Mobility Authority toll road?

A person commits an offense when operating a vehicle in violation of the ban and is subject to a Class C misdemeanor with a fine up to \$500. A second or subsequent occurrence of driving on the tollway in violation of a ban may result in impoundment of the vehicle.

How will the Mobility Authority know if I'm still driving (after being banned)?

Mobility Authority roads are equipped with technology that recognizes vehicle and license plates on our prohibited list. Individuals operating a prohibited vehicle on Mobility Authority roads will be reported to nearby law enforcement patrolling Mobility Authority roads.

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

RESOLUTION NO. 24-0XX

**PROHIBITING THE OPERATION OF CERTAIN MOTOR VEHICLES
ON MOBILITY AUTHORITY TOLL FACILITIES PURSUANT TO
THE HABITUAL VIOLATOR PROGRAM**

WHEREAS, Transportation Code, Chapter 372, Subchapter C, authorizes toll project entities, including the Central Texas Regional Mobility Authority (Mobility Authority), to exercise various remedies against certain motorists with unpaid toll violations; and

WHEREAS, Transportation Code §372.106 provides that a “habitual violator” is a registered owner of a vehicle who a toll project entity determines:

(1) was issued at least two written notices of nonpayment that contained:

(A) in the aggregate, 100 or more events of nonpayment within a period of one year, not including events of nonpayment for which: (i) the registered owner has provided to the toll project entity information establishing that the vehicle was subject to a lease at the time of nonpayment, as provided by applicable toll project entity law; or (ii) a defense of theft at the time of the nonpayment has been established as provided by applicable toll project entity law; and

(B) a warning that the failure to pay the amounts specified in the notices may result in the toll project entity’s exercise of habitual violator remedies; and

(2) has not paid in full the total amount due for tolls and administrative fees under those notices; and

WHEREAS, the Mobility Authority previously determined that the individuals listed in Exhibit A are habitual violators, and these determinations are now considered final in accordance with Transportation Code, Chapter 372, Subchapter C; and

WHEREAS, Transportation Code §372.109 provides that a final determination that a person is a habitual violator remains in effect until (1) the total amount due for the person’s tolls and administrative fees is paid; or (2) the toll project entity, in its sole discretion, determines that the amount has been otherwise addressed; and

WHEREAS, Transportation Code §372.110 provides that a toll project entity, by order of its governing body, may prohibit the operation of a motor vehicle on a toll project of the entity if:

(1) the registered owner of the vehicle has been finally determined to be a habitual violator; and

(2) the toll project entity has provided notice of the prohibition order to the registered owner; and

WHEREAS, the Executive Director recommends that the Board prohibit the operation of the motor vehicles listed in Exhibit A on the Mobility Authority's toll roads, including (1) 183A Toll; (2) 290 Toll; (3) 71 Toll; (4) MoPac Express Lanes; (5) 45SW Toll; and (6) 183 Toll.

NOW THEREFORE, BE IT RESOLVED that the motor vehicles listed in Exhibit A are prohibited from operation on the Mobility Authority's toll roads, effective March 27, 2024; and

BE IT FURTHER RESOLVED that the Mobility Authority shall provide notice of this resolution to the individuals listed in Exhibit A, as required by Transportation Code §372.110; and

BE IT IS FURTHER RESOLVED that the prohibition shall remain in effect for the motor vehicles listed in Exhibit A until the respective habitual violator determinations are terminated, as provided by Transportation Code §372.110.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 27th day of March 2024.

Submitted and reviewed by:

Approved:

James M. Bass
Executive Director

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

Exhibit A

LIST OF PROHIBITED VEHICLES

(To be provided at the Board Meeting)



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

March 27, 2024
AGENDA ITEM #4

Accept the financial statements for
February 2024

Strategic Plan Relevance: Stewardship
Department: Finance
Contact: José Hernández, Chief Financial Officer
Associated Costs: N/A
Funding Source: N/A
Action Requested: Consider and act on draft resolution

Project Description/Background: Presentation and acceptance of the financial statements for February 2024.

Previous Actions & Brief History of the Program/Project: N/A

Financing: N/A

Action requested/Staff Recommendation: Accept the financial statements for February 2024.

Backup provided: Draft Resolution
Draft financial statements for February 2024

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

RESOLUTION NO. 24-0XX

ACCEPT THE FINANCIAL STATEMENTS FOR FEBRUARY 2024

WHEREAS, the Central Texas Regional Mobility Authority (Mobility Authority) is empowered to procure such goods and services as it deems necessary to assist with its operations and to study and develop potential transportation projects, and is responsible to insure accurate financial records are maintained using sound and acceptable financial practices; and

WHEREAS, close scrutiny of the Mobility Authority's expenditures for goods and services, including those related to project development, as well as close scrutiny of the Mobility Authority's financial condition and records is the responsibility of the Board and its designees through procedures the Board may implement from time to time; and

WHEREAS, the Board has adopted policies and procedures intended to provide strong fiscal oversight and which authorize the Executive Director, working with the Mobility Authority's Chief Financial Officer, to review invoices, approve disbursements, and prepare and maintain accurate financial records and reports; and

WHEREAS, the Executive Director, working with the Chief Financial Officer, has reviewed and authorized the disbursements necessary for the month of February 2024 and has caused financial statements to be prepared and attached to this resolution as Exhibit A.

NOW THEREFORE, BE IT RESOLVED, that the Board of Directors accepts the financial statements for February 2024, attached hereto as Exhibit A.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 27th day of March 2024.

Submitted and reviewed by:

Approved:

James M. Bass
Executive Director

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

Exhibit A

Central Texas Regional Mobility Authority
Income Statement
For the Period Ending February 29, 2024

	Budget Amount	Actual Year to	Percent of	Actual Prior
	FY 2024	Date	Budget	Year to Date
REVENUE				
Operating Revenue				
Toll Revenue	153,792,700	104,010,536	67.63%	90,995,190
Video Tolls	64,352,000	38,565,885	59.93%	42,556,360
Fee Revenue	12,962,900	8,422,187	64.97%	8,640,483
Total Operating Revenue	231,107,600	150,998,609	65.34%	142,192,033
Other Revenue				
Interest Income	24,905,700	34,585,877	138.87%	19,694,128
Grant Revenue	945,500	179,310	18.96%	267,971
Misc Revenue	230,000	9,889	4.30%	16,467
Total Other Revenue	26,081,200	34,775,076	133.33%	19,978,567
TOTAL REVENUE	257,188,800	185,773,685	72.23%	162,170,600
EXPENSES				
Salaries and Benefits				
Salary Expense - Regular	4,871,464	2,715,962	55.75%	2,415,698
Salary Reserve	80,000	-	-	-
TCDRS	1,591,401	1,219,667	76.64%	668,591
FICA	249,197	122,886	49.31%	107,401
FICA MED	70,635	39,298	55.63%	35,170
Health Insurance Expense	584,446	309,727	52.99%	274,781
Life Insurance Expense	3,817	2,148	56.27%	2,741
Auto Allowance Expense	10,200	6,545	64.17%	6,163
Other Benefits	166,290	94,622	56.90%	63,004
Unemployment Taxes	5,760	6	0.11%	(1,542)
Total Salaries and Benefits	7,633,210	4,510,861	59.10%	3,572,007
Administrative				
Administrative and Office Expenses				
Accounting	9,500	5,685	59.84%	5,418
Auditing	245,000	133,467	54.48%	138,655
Financial Advisors	162,000	112,500	69.44%	133,200
Human Resources	37,500	1,283	3.42%	49,498
Legal	70,000	12,272	17.53%	24,397
IT Services	365,000	166,142	45.52%	286,394
Internet	150	-	-	-
Software Licenses	1,167,000	984,097	84.33%	475,766
Cell Phones	27,800	18,634	67.03%	10,977
Local Telephone Service	2,000	1,490	74.49%	63,465
Overnight Delivery Services	250	-	-	48
Copy Machine	10,000	10,176	101.76%	10,176
Repair & Maintenance-General	10,000	10,339	103.39%	-
Meeting Facilities	2,000	-	-	-
Community Meeting / Events	-	5,050	-	-

Central Texas Regional Mobility Authority
Income Statement
For the Period Ending February 29, 2024

	Budget Amount FY 2024	Actual Year to Date	Percent of Budget	Actual Prior Year to Date
Meeting Expense	13,750	6,562	47.72%	6,844
Toll Tag Expense	3,000	400	13.33%	300
Parking / Local Ride Share	3,550	104	2.93%	490
Mileage Reimbursement	4,350	539	12.40%	702
Insurance Expense	651,000	434,612	66.76%	373,681
Rent Expense	562,540	377,815	67.16%	417,689
Building Parking	3,500	650	18.58%	1,020
Total Legal Services	488,000	252,988	51.84%	150,576
Total Administrative and Office Expenses	3,837,890	2,534,805	66.05%	2,149,293
Office Supplies				
Books & Publications	5,090	2,557	50.23%	1,687
Office Supplies	8,250	538	6.52%	1,615
Misc Office Equipment	4,500	989	21.98%	8,470
Computer Supplies	202,100	58,857	29.12%	197,562
Copy Supplies	1,000	-	-	-
Other Reports - Printing	1,500	43	2.88%	-
Office Supplies - Printed	2,000	1,922	96.11%	1,089
Postage Expense	550	797	144.98%	366
Total Office Supplies	224,990	65,704	29.20%	210,789
Communications and Public Relations				
Graphic Design Services	75,000	-	-	-
Website Maintenance	464,000	290,767	62.67%	34,078
Research Services	150,000	-	-	-
Communications and Marketing	400,000	29,760	7.44%	-
Advertising Expense	500,000	185,338	37.07%	129,358
Direct Mail	40,000	-	-	-
Video Production	160,000	-	-	29,097
Photography	25,000	885	3.54%	11,895
Radio	50,000	-	-	-
Other Public Relations	22,500	5,000	22.22%	1,200
Promotional Items	20,000	2,867	14.33%	12,682
Annual Report printing	1,300	-	-	-
Direct Mail Printing	17,500	-	-	-
Other Communication Expenses	15,000	-	-	19,388
Total Communications and Public Relations	1,940,300	514,617	26.52%	237,699
Employee Development				
Subscriptions	750	139	18.53%	1,528
Agency Memberships	88,440	48,327	54.64%	45,724
Continuing Education	14,800	500	3.38%	1,049
Professional Development	20,150	2,289	11.36%	4,672
Other Licenses	2,500	197	7.88%	577
Seminars and Conferences	104,100	6,870	6.60%	42,623

Central Texas Regional Mobility Authority
Income Statement
For the Period Ending February 29, 2024

	Budget Amount	Actual Year to	Percent of	Actual Prior
	FY 2024	Date	Budget	Year to Date
Travel	110,500	29,261	26.48%	8,540
Total Employee Development	341,240	87,583	25.67%	104,713
Financing and Banking Fees				
Trustee Fees	62,000	49,500	79.84%	50,000
Bank Fee Expense	3,240	4,335	133.78%	848
Continuing Disclosure	7,000	9,903	141.46%	11,525
Arbitrage Rebate Calculation	16,300	16,105	98.80%	16,300
Rating Agency Expense	45,000	45,000	100.00%	43,000
Total Financing and Banking Fees	133,540	124,842	93.49%	121,673
Total Administrative	6,477,960	3,327,551	51.37%	2,824,167
Operations and Maintenance				
Operations and Maintenance Consulting				
GEC-Trust Indenture Support	1,131,395	461,348	40.78%	434,546
GEC-Financial Planning Support	275,000	178,592	64.94%	175,734
GEC-Toll Ops Support	1,584,000	559,175	35.30%	516,353
GEC-Roadway Ops Support	1,605,500	529,250	32.96%	562,200
GEC-Technology Support	679,526	536,999	79.03%	302,647
GEC-Public Information Support	200,000	128,724	64.36%	97,189
GEC-General Support	1,631,820	685,834	42.03%	482,079
General System Consultant	1,381,000	640,440	46.38%	526,619
Traffic Modeling	125,000	-	-	-
Traffic and Revenue Consultant	1,010,000	264,793	26.22%	595,200
Total Operations and Maintenance Consulting	9,623,241	3,985,154	41.41%	3,692,567
Roadway Operations and Maintenance				
Roadway Maintenance	3,431,819	1,592,835	46.41%	689,304
Landscape Maintenance	2,789,256	1,545,623	55.41%	1,678,265
Signal & Illumination Maint	25,000	-	-	-
Maintenance Supplies-Roadway	400,000	48,337	12.08%	(39,301)
Tools & Equipment Expense	-	20	-	444
Gasoline	30,000	12,007	40.02%	12,370
Repair & Maintenance - Vehicles	10,000	4,251	42.51%	(5,526)
Natural Gas	2,500	10,841	433.66%	4,401
Electricity - Roadways	250,000	185,157	74.06%	186,676
Total Roadway Operations and Maintenance	6,938,575	3,399,073	48.99%	2,526,633
Toll Processing and Collection Expense				
Image Processing	3,000,000	1,828,662	60.96%	2,187,259
Tag Collection Fees	11,500,000	7,195,208	62.57%	6,393,339
Court Enforcement Costs	10,000	-	-	-
ETC Incentive	500,000	-	-	-
Total Processing and Collection Expense	15,010,000	9,023,870	60.12%	8,580,598

Central Texas Regional Mobility Authority
Income Statement
For the Period Ending February 29, 2024

	Budget Amount FY 2024	Actual Year to Date	Percent of Budget	Actual Prior Year to Date
Toll Operations Expense				
Generator Fuel	3,000	1,072	35.74%	1,252
Fire & Burglar Alarm	500	329	65.79%	329
Refuse	2,360	1,332	56.43%	1,338
Telecommunications	60,000	91,267	152.11%	2,240
Water - Irrigation	7,500	6,100	81.34%	4,840
Electricity	750	502	66.94%	512
ETC Spare Parts Expense	100,000	118,576	118.58%	-
Repair & Maintenance Toll Equip	50,000	65,066	130.13%	78,097
Law Enforcement	600,000	306,954	51.16%	293,168
ETC Maintenance Contract	6,450,000	3,295,833	51.10%	4,552,759
Transaction Processing Maintenance Contract	2,000,000	1,197,480	59.87%	248,740
ETC Toll Management Center System Operation	2,885,054	481,038	16.67%	396,750
ETC Development	650,000	79,241	12.19%	52,925
ETC Testing	225,000	-	-	-
Total Toll Operations Expense	13,034,164	5,644,791	43.31%	5,632,950
Total Operations and Maintenance	44,605,980	22,052,888	49.44%	20,432,748
Other Expenses				
Special Projects and Contingencies				
HERO	200,000	93,439	46.72%	98,553
Special Projects	100,000	-	-	-
71 Express Net Revenue Payment	5,000,000	1,242,975	24.86%	3,798,994
Customer Relations	10,000	-	-	-
Technology Initiatives	185,000	-	-	43,834
Other Contractual Svcs	390,000	120,500	30.90%	239,920
Contingency	200,000	-	-	-
Total Special Projects and Contingencies	6,085,000	1,456,914	23.94%	4,181,300
TOTAL OPERATING EXPENSE	64,802,150	31,348,213	48.38%	31,010,222
Non Cash Expenses				
Amortization Expense				
Amortization Expense - Software	1,300,000	8,466	0.65%	850,546
Amortization Expense - Right to Use Asset - Leases	350,000	171,584	49.02%	-
Amortization Expense - Refundings	2,000,000	4,169,680	208.48%	3,635,258
Subtotal Amortization Expense	3,650,000	4,349,731	119.17%	4,485,804
Depreciation Expense				
Dep Expense - Furniture & Fixtures	-	-	-	1,742
Dep Expense - Equipment	477,000	415,137	87.03%	-
Dep Expense - Autos & Trucks	46,000	20,273	44.07%	35,567
Dep Expense - Building & Toll Fac	188,000	117,832	62.68%	117,832
Dep Expense - Highways & Bridges	48,610,000	34,504,414	70.98%	33,747,696
Dep Expense - Toll Equipment	4,000,000	2,024,887	50.62%	2,415,447

Central Texas Regional Mobility Authority
Income Statement
For the Period Ending February 29, 2024

	Budget Amount	Actual Year to	Percent of	Actual Prior
	FY 2024	Date	Budget	Year to Date
Dep Expense - Signs	2,000,000	805,969	40.30%	677,714
Dep Expense - Land Improvements	885,000	389,131	43.97%	589,956
Depreciation Expense - Computers	-	-	-	63,673
Undevelopable Projects	-	(1,570)	-	-
Subtotal Depreciation Expense	56,206,000	38,276,073	68.10%	37,649,627
Total Non Cash Expenses	59,856,000	42,625,803	71.21%	42,135,430
Non Operating Expenses				
Bond Issuance Expense	1,250,000	-	-	352,197
Loan Fee Expense	40,000	-	-	32,000
Interest Expense - Debt Obligations	95,964,098	53,157,801	55.39%	51,886,879
Interest Expense - Right to Use Assets	-	-	-	-
CAMPO RIF Payment	6,000,000	6,000,000	100.00%	5,000,000
Community Initiatives	645,000	5,000	0.78%	37,500
Total Non Operating Expenses	103,899,098	59,162,801	56.94%	57,308,576
TOTAL EXPENSES	228,557,248	133,136,817	58.25%	130,454,228
Net Income	28,631,552	52,636,868		31,716,372

Central Texas Regional Mobility Authority
Balance Sheet
as of February 29, 2024

as of 02/29/2024 **as of 02/28/2023**

ASSETS

Current Assets

Cash

Regions Operating Account	100,303	1,100,359
Cash in TexStar	35,960	43,612
Regions Payroll Account	109,080	103,692

Restricted Cash

Goldman Sachs FSGF 465	303,293,175	1,079,301,427
Restricted Cash - TexSTAR	63,599,194	14,605,465
Treasury SLGS	114,999,000	-
Overpayments account	-	291,003

Total Cash and Cash Equivalents	482,136,711	1,095,445,558
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Accounts Receivables

Accounts Receivable - Net	5,125,449	2,770,089
Due From Other Agencies	376,361	48,966
Due From TTA	516,488	262,008
Due From NTTA	1,566,378	968,375
Due From HCTRA	2,251,448	1,582,191
Due From TxDOT	1,794,340	164,602
Interest Receivable	690,443	693,342

Total Receivables	12,320,907	6,489,575
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Short Term Investments

Treasuries	328,907,093	(0)
Agencies	189,998,036	(0)

Total Short Term Investments	518,905,128	(0)
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Total Current Assets	1,013,362,746	1,101,935,132
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Construction in Progress

	454,170,362	318,641,663
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Capital Assets (Net of Depreciation and Amortization)

Depreciable Assets

Computers	-	34,834
Furniture and Fixtures	-	436
Equipment	985,951	9,624
Autos and Trucks	26,608	58,315
Buildings and Toll Facilities	4,112,129	4,299,187
Highways and Bridges	1,691,630,624	1,683,490,569
Toll Equipment	17,153,027	19,776,616
Signs	10,957,440	12,784,848

Central Texas Regional Mobility Authority
Balance Sheet
as of February 29, 2024

	as of 02/29/2024	as of 02/28/2023
Land Improvements	4,925,204	5,609,313
Right of way	88,149,606	88,149,606
Leasehold Improvements	-	16,932
Intangible Assets		
Computer Software	-	956,635
Right to Use Assets		
Leases	1,115,297	-
Total Fixed Assets	1,819,055,886	1,815,186,913
Other Assets		
Intangible Assets-Net	164,644,052	171,656,927
2005 Bond Insurance Costs	-	3,081,727
Prepaid Insurance	404,232	343,216
Deferred Outflows (pension related)	2,738,023	675,913
Pension Asset	1,046,634	2,549,818
Total Other Assets	168,832,942	178,307,601
Total Assets	3,455,421,935	3,414,071,310
LIABILITIES		
Current		
Accounts Payable	9,089,824	15,232,041
Construction Payable	9,021,692	5,178,420
Overpayments	-	294,629
Interest Payable	14,599,897	12,911,917
TCDRS Payable	83,883	78,409
Medical Reimbursement Payable	4,740	-
Due to other Agencies	7,524	16,948
Due to TTA	628,895	-
Due to HCTRA	150,522	107,353
Due to Other Entities	98,668	513,484
71E TxDOT Obligation - ST	6,680,478	5,617,101
Total Current Liabilities	40,366,124	39,950,302
Long Term Liabilities		
Compensated Absences	222,277	240,954
Right to Use Obligations - Lease	1,286,881	-
Deferred Inflows (pension related)	1,378,935	1,481,361
Long Term Payables	2,888,093	1,722,315

Central Texas Regional Mobility Authority
Balance Sheet
as of February 29, 2024

as of 02/29/2024 as of 02/28/2023

Bonds Payable

Senior Lien Revenue Bonds:

Senior Lien Revenue Bonds 2010	99,212,884	92,082,148
Senior Lien Revenue Bonds 2011	9,593,574	15,869,881
Senior Lien Revenue Bonds 2015	10,000,000	10,000,000
Senior Lien Refunding Revenue Bonds 2016	47,045,000	59,340,000
Senior Lien Revenue Bonds 2018	44,345,000	44,345,000
Senior Lien Revenue Bonds 2020A	50,265,000	50,265,000
Senior Lien Refunding Bonds 2020B	54,305,000	54,970,000
Senior Lien Refunding Bonds 2020C	133,210,000	138,435,000
Senior Lien Revenue Bonds 2020E	167,160,000	167,160,000
Senior Lien Revenue Bonds 2021B	255,075,000	255,075,000
Senior Lien Refunding Bonds 2021D	274,150,000	274,625,000
Senior Lien Refunding Bonds 2021E	329,545,000	332,585,000
Sn Lien Rev Bnd Prem/Disc 2013	-	(0)
Senior Lien Premium 2016 Revenue Bonds	6,373,374	6,894,360
Sn Lien Revenue Bond Premium 2018	2,705,502	2,972,075
Senior Lien Revenue Bond Premium 2020A	11,016,588	11,231,234
Senior Lien Refunding Bond Premium 2020B	10,879,864	11,414,939
Senior Lien Revenue Bonds Premium 2020E	22,996,945	24,712,331
Senior Lien Revenue Bonds Premium 2021B	52,508,384	53,204,617
Senior Lien Refunding Bonds Premium 2021D	43,410,124	44,094,015
Total Senior Lien Revenue Bonds	1,623,797,238	1,649,275,601

Sub Lien Revenue Bonds:

Sub Lien Refunding Bonds 2016	69,055,000	71,435,000
Sub Lien Refunding Bonds 2020D	93,430,000	97,440,000
Subordinated Lien BANs 2020F	110,875,000	110,875,000
Subordinate Lien Refunding Bonds 2020G	61,570,000	61,570,000
Subordinated Lien BANs 2021C	244,185,000	244,185,000
Sub Refunding 2013 Prem/Disc	-	0
Sub Refunding 2016 Prem/Disc	4,483,479	5,252,914
Subordinated Lien BANs 2020F Premium	3,335,720	7,338,585
Subordinated Lien Refunding Bonds Premium 2020G	6,494,933	6,898,905
Sub Lien BANS 2021C Premium	21,566,419	29,178,097
Total Sub Lien Revenue Bonds	614,995,552	634,173,501

Central Texas Regional Mobility Authority
Balance Sheet
as of February 29, 2024

as of 02/29/2024 as of 02/28/2023

Other Obligations

TIFIA Note 2021	363,146,591	356,470,501
71E TxDOT Obligation - LT	49,167,292	55,077,264
Regions 2022 MoPac Loan	23,765,900	24,690,900
Total Other Obligations	436,079,783	436,238,665
Total Long Term Liabilities	2,677,760,666	2,721,410,081
Total Liabilities	2,718,126,790	2,761,360,383

NET ASSETS

Contributed Capital	121,462,104	121,462,104
Net Assets Beginning	563,196,173	499,532,451
Current Year Operations	52,636,868	31,716,372
Total Net Assets	737,295,145	652,710,927

Total Liabilities and Net Assets	3,455,421,935	3,414,071,310
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Central Texas Regional Mobility Authority
Statement of Cash Flow
as of February 2024

Cash flows from operating activities:

Receipts from toll revenues	160,952,151
Receipts from Other Sources	189,199
Payments to vendors	(56,270,615)
Payments to employees	(4,534,976)
Net cash flows provided by (used in) operating activities	100,335,758

Cash flows from capital and related financing activities:

Payment on Intangible assets	(4,169,680)
Interest Expense	(79,341,621)
Issuance Expense	(3,508,621)
Payments on bonds / loans	(41,228,251)
RIF Contribution	(6,000,000)
Acquisition of capital assets - non project	(6,000,796)
Acquisitions of construction in progress	(96,384,335)
Net cash flows provided by (used in) capital and related financing activities	(236,633,304)

Cash flows from investing activities:

Interest income	34,582,978
Purchase of investments	(297,850,426)
Net cash flows provided by (used in) investing activities	(263,267,447)

Net increase (decrease) in cash and cash equivalents	(399,564,993)
Cash and cash equivalents at beginning of period	894,022,611
Cash and cash equivalents at end of period	494,457,618

Reconciliation of change in net assets to net cash provided by operating activities:

Operating income	52,679,761
Adjustments to reconcile change in net assets to net cash provided by operating activities:	
Depreciation and amortization	42,625,803
Changes in assets and liabilities:	
Decrease in accounts receivable	9,953,542
Increase in prepaid expenses and other assets	(257,140)
Decrease in accrued expenses	(23,243,132)
Decrease in Interest expense	53,162,801
Increase in interest receivable	(34,585,877)
Total adjustments	47,655,997
Net cash flows provided by (used in) operating activities	\$ 100,335,758

Reconciliation of cash and cash equivalents:

Unrestricted cash and cash equivalents	127,565,249
Restricted cash and cash equivalents	366,892,369
Total	494,457,618

CTRMA INVESTMENT REPORT

	Month Ending February 29, 2024					Rate Feb
	Balance 1/31/2024	Accrued Interest	Additions	Cash Transfers	Withdrawals	
Amount in Trustee TexStar						
2011 Sr Lien Financial Assist Fund	16.57	0.04				16.61 5.30%
2013 Sub Lien Debt Service Reserve General Fund	837,039.68	3527.04				840,566.72 5.30%
Trustee Operating Fund	52,116,962.43	219,605.61		4,000,000.00		52,336,568.04 5.30%
Renewal and Replacement	2,724,480.60	17,441.94				6,741,922.54 5.30%
TxDOT Grant Fund	8.67	0.01				8.68 5.30%
Senior Lien Debt Service Reserve Fund	487,389.26	2,053.71				489,442.97 5.30%
2015B Sr Ln Project	1,057,786.62	4,457.20				1,062,243.82 5.30%
2015C TIFIA Project	375,162.74	1,580.84				376,743.58 5.30%
2018 Sr Lien Project	745,319.95	3,140.54				748,460.49 5.30%
	999,010.69	4,209.56				1,003,220.25 5.30%
	59,343,177.21	256,016.49	-	4,000,000.00	-	63,599,193.70

Amount in TexStar Operating Fund	889,514.25	6,445.73		4,000,000.00	4,860,000.00	35,959.98 5.30%
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Goldman Sachs

Operating Fund	17,987,521.28	62,509.73	541.99	(4,000,000.00)	3,659.75	14,046,913.25 5.21%
2020A Senior Lien Debt Service	214,523.74	411.44		209,437.50		424,372.68 5.21%
2020B Senior Lien Debt Service	285,059.57	645.89		276,837.50		562,542.96 5.21%
2020C Senior Lien Debt Service	764,354.83	2,269.31		734,488.33		1,501,112.47 5.21%
2020D Sub Lien Debt Service	530,790.30	1,741.60		507,698.90		1,040,230.80 5.21%
2020D Sub Debt Service Reserve Fund	864,474.54	7,182.89				871,657.43 5.21%
2020E Sr Lien Project	75,086,175.00	335,335.07	51,376,000.00		120,737,520.00	6,059,990.07 5.21%
2020E Sr Ln Project Cap Interest	11,724,196.81	51,372.14				11,775,568.95 5.21%
2020F Sub Lien Debt Service	440,376.70	902.88		429,153.94		870,433.52 5.21%
2020G Sub Lien Debt Service	202,769.88	415.73		197,602.40		400,788.01 5.21%
2020G Sub Debt Service Reserve Fund	1,326,073.45	7,129.28				1,333,202.73 5.21%
2021A Sub Debt Service Reserve Fund	1,407,593.63	6,227.63				1,413,821.26 5.21%
2021A TIFIA Sub Lien Debt Service Acct	2,274,145.19	7,873.68		292,541.08		2,574,559.95 5.21%
2021B Senior Lien Cap I Project Fund	25,146,828.28	113,843.89		5,892,038.46		31,152,710.63 5.21%
2021B Senior Lien Project	4,657,362.03	155,319.02	102,750,000.00		104,594,561.20	2,968,119.85 5.21%
2021B Senior Lien Cap I Debt Service Acct	5,866,900.00	25,138.46		(5,892,038.46)		- 5.21%
2021C Sub Lien Cap I Project Fund	1,426.02	6.31				1,432.33 5.21%
2021C Sub Lien Project	57,933,360.69	287,524.94			10,106,749.32	48,114,136.31 5.21%
2021C Sub Lien Debt Service	930,638.70	1,983.25		905,820.78		1,838,442.73 5.21%
2021D Senior Lien Debt Service	999,294.02	1,990.79		974,500.00		1,975,784.81 5.21%
2021E Senior Lien Debt Service	1,107,063.83	2,556.71		1,074,393.20		2,184,013.74 5.21%
2011 Sr Financial Assistance Fund	127.51	12.74				140.25 5.21%
2010 Senior DSF	814,718.75	393.89		750,000.00		1,565,112.64 5.21%
2011 Senior Lien Debt Service	652,094.72	2,293.24		621,250.00		1,275,637.96 5.21%
2013 Senior Lien Debt Service	42,898.50	189.95				43,088.45 5.21%
2013 Sub Debt Service Reserve Fund	131.56	0.58				132.14 5.21%
2013 Subordinate Debt Service	33,762.48	149.50				33,911.98 5.21%
2015A Sr Lien Debt Service	4,221,975.73	19,263.21		125,000.00		4,366,238.94 5.21%
2015B Project	6,770,036.23	30,299.48			84,523.57	6,715,812.14 5.21%
2015C TIFIA Project	9,961,846.08	44,110.56			3,600.00	10,002,356.64 5.21%
2016 Sr Lien Rev Refunding Debt Service	2,494,877.70	8,017.05		1,612,148.96		4,115,043.71 5.21%
2016 Sub Lien Rev Refunding Debt Service	433,527.03	1,277.34		416,820.67		851,625.04 5.21%
2016 Sub Lien Rev Refunding DSR	933,190.64	6,942.76				940,133.40 5.21%
2018 Sr Lien Project Cap I	-	0.33		(0.33)		- 5.21%
2018 Sr Lien Debt Service	272,594.82	374.92		268,104.50		541,074.24 5.21%
2018 Sr Lien Project	13,453,858.29	59,564.29				13,513,422.58 5.21%
TxDOT Grant Fund	10,259,996.41	45,430.60				10,305,427.01 5.21%
Renewal and Replacement	14,458.13	9.54		838,050.00	795,439.29	57,078.38 5.21%
Revenue Fund	10,080,374.32	72,689.33	18,129,609.42	(18,850,220.61)	117,993.22	9,314,459.24 5.21%
General Fund	32,036,365.38	135,203.54		3,146,589.17	664,221.30	34,653,936.79 5.21%
Senior Lien Debt Service Reserve Fund	9,340,549.48	41,357.81				9,381,907.29 5.21%
71E Revenue Fund	35,962,621.19	158,374.25	341,687.32	754,231.88	168,633.00	37,048,281.64 5.21%
MoPac Revenue Fund	-	9,169.28	322,532.53	715,552.13		1,047,253.94 5.21%
MoPac General Fund	14,453,667.67	57,404.21			11,588.06	14,499,483.82 5.21%
MoPac Operating Fund	1,718,093.86	5,366.50			590,685.01	1,132,775.35 5.21%
MoPac Loan Repayment Fund	807,429.40	2,502.08				809,931.48 5.21%
	364,510,124.37	1,772,777.62	172,920,371.26	(8,000,000.00)	237,879,173.72	293,324,099.53

Amount in Fed Agencies and Treasuries

Amortized Principal	564,310,566.99		104,594,561.20		150,000,000.00	518,905,128.19
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Certificates of Deposit

Total in Pools - TxStar	60,232,691.46	262,462.22	-	8,000,000.00	4,860,000.00	63,635,153.68
Total in GS FSGF	364,510,124.37	1,772,777.62	172,920,371.26	(8,000,000.00)	237,879,173.72	293,324,099.53
Total in Treasury SLGS	0.00	-	115,000,000.00		1,000.00	114,999,000.00
Total in Fed Agencies and Treasuries	564,310,566.99	-	104,594,561.20	-	150,000,000.00	518,905,128.19
Total Invested	989,053,382.82	2,035,239.84	392,514,932.46	-	392,740,173.72	990,863,381.40

All Investments in the portfolio are in compliance with the CTRMA's Investment policy and the relevant provisions of the Public Funds Investment Act Chapter 2256.023

José Hernández, CFO

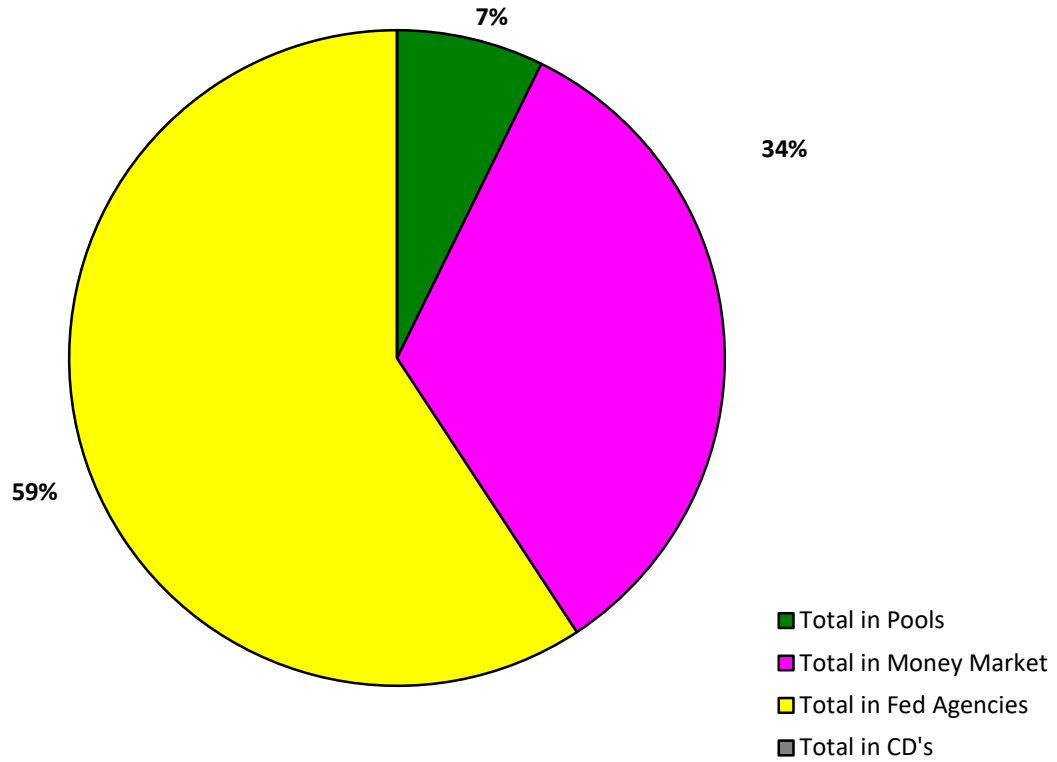
Ann Zigmund, Controller

Investments by Fund

Fund	TexSTAR	TexSTAR-Trustee	Goldman Sachs	Agencies/ Treasuries	Balance
Renewal and Replacement Fund	8.68		57,078.38		57,087.06
Grant Fund	489,442.97		10,305,427.01		10,794,869.98
Senior Debt Service Reserve Fund	1,062,243.82		9,381,907.29	104,521,880.18	114,966,031.29
2010 Senior Lien Debt Service			1,565,112.64		1,565,112.64
2011 Sr Debt Service t			1,275,637.96		1,275,637.96
2013 Sr Debt Service t			43,088.45		43,088.45
2013 Sub Debt Service			33,911.98		33,911.98
2013 Sub Debt Service Reserve Fund	840,566.72		132.14		840,698.86
2015 Sr Debt Service			4,366,238.94		4,366,238.94
2016 Sr Lien Rev Refunding Debt Service			4,115,043.71		4,115,043.71
2016 Sub Lien Rev Refunding Debt Service			851,625.04		851,625.04
2016 Sub Lien Rev Refunding DSR			940,133.40	6,537,152.75	7,477,286.15
Operating Fund	6,741,922.54	35,959.98	14,046,913.25		20,824,795.77
Revenue Fund			9,314,459.24		9,314,459.24
General Fund	52,336,568.04		34,653,936.79	104,438,059.91	191,428,564.74
71E Revenue Fund			37,048,281.64		37,048,281.64
MoPac Revenue Fund			1,047,253.94		1,047,253.94
MoPac General Fund			14,499,483.82		14,499,483.82
MoPac Operating Fund			1,132,775.35		1,132,775.35
MoPac Loan Repayment Fund			809,931.48		809,931.48
2015B Project	376,743.58		6,715,812.14		7,092,555.72
2015 TIFIA Project	748,460.49		10,002,356.64	30,000,000.00	40,750,817.13
2011 Sr Financial Assistance Fund	16.61		140.25		156.86
2018 Sr Lien Debt Service			541,074.24		541,074.24
2018 Sr Lien Project Cap I			-		-
2018 Sr Lien Project	1,003,220.25		13,513,422.58		14,516,642.83
2020A Senior Lien Debt Service			424,372.68		424,372.68
2020B Senior Lien Debt Service			562,542.96		562,542.96
2020C Senior Lien Debt Service			1,501,112.47		1,501,112.47
2020D Sub Lien Debt Service			1,040,230.80		1,040,230.80
2020D Sub Debt Service Reserve Fund			871,657.43	7,805,555.52	8,677,212.95
2020E Senior Lien Project			6,059,990.07	114,999,000.00	121,058,990.07
2020E Senior Lien Project Cap Interest			11,775,568.95		11,775,568.95
2020F Sub Lien Project			-		-
2020F Sub Lien Deb Service			870,433.52		870,433.52
2020G Sub Lien Debt Service			400,788.01		400,788.01
2020G Sub Lien Debt Service Reserve			1,333,202.73	2,927,083.32	4,260,286.05
2021A Sub Lien Debt Service Reserve			1,413,821.26	19,497,222.20	20,911,043.46
2021A Sub Debt Service			2,574,559.95		2,574,559.95
2021B Senior Lien Cap I Project Fund			31,152,710.63		31,152,710.63
2021B Senior Lien Project			2,968,119.85	243,178,174.31	246,146,294.16
2021B Senior Lien Cap I Debt Service Acct			-		-
2021C Sub Lien Cap I Project Fund			1,432.33		1,432.33
2021C Sub Lien Project			48,114,136.31		48,114,136.31
2021C Sub Lien Debt Service			1,838,442.73		1,838,442.73
2021D Senior Lien Debt Service			1,975,784.81		1,975,784.81
2021E Senior Lien Debt Service			2,184,013.74		2,184,013.74
Totals	63,599,193.70	35,959.98	293,324,099.53	633,904,128.19	990,863,381.40

2/29/2024

Allocation of Funds



Bank	Fund	COST	Cummulative Amortization	Book Value	Maturity Value	Interest Income		
						Accrued Interest	Amortization	Interest Earned
6180005349	2015TIFIAP	30,000,000.00		30,000,000.00	30,000,000.00			682,500.00
6180000120	GENERAL	44,963,937.40		44,963,937.40	47,150,000.00	3,864.75		62,802.25
6180000059	SENLIENCSR	45,000,000.00		45,000,000.00	45,000,000.00			1,192,500.00
1001021273	2021BPROJ	35,000,000.00		35,000,000.00	35,000,000.00			-
6180000120	GENERAL	9,960,128.90		9,960,128.90	10,000,000.00	27,777.78		277,777.78
6180000120	GENERAL	9,960,128.90		9,960,128.90	10,000,000.00	27,777.78		277,777.78
6180000059	SENLIENCSR	20,000,000.00		20,000,000.00	20,000,000.00	22,222.22		522,222.22
6180000120	GENERAL	20,000,000.00		20,000,000.00	20,000,000.00			477,000.00
6180000059	SENLIENCSR	20,000,000.00		20,000,000.00	20,000,000.00			477,000.00
6180000059	SENLIENCSR	19,499,657.96		19,499,657.96	20,000,000.00			
1001021543	2021A DSRF	19,497,222.20		19,497,222.20	20,000,000.00			
6180000120	GENERAL	19,494,444.40		19,494,444.40	20,000,000.00			
1001017484	2020D SUB DSRF	7,805,555.52		7,805,555.52	8,000,000.00			
1001021540	2020G SUB DSRF	2,927,083.32		2,927,083.32	3,000,000.00			
6180006366	2016D SUB DSRF	6,537,152.75		6,537,152.75	6,700,000.00			
1001021273	2021BProj	24,670,333.25		24,670,333.25	25,000,000.00			
1001021273	2021BProj	29,600,950.00		29,600,950.00	30,000,000.00			
1001021273	2021BProj	24,671,704.86		24,671,704.86	25,000,000.00			
1001021273	2021BProj	24,640,625.00		24,640,625.00	25,000,000.00			
1001021273	2021BProj	54,999,783.20		54,999,783.20	55,450,000.00			
1001021273	2021BProj	49,594,778.00		49,594,778.00	50,000,000.00			
		518,823,485.66	-	518,823,485.66	525,300,000.00	81,642.53	-	3,969,580.03

Goldman Sachs County Road Escrow Funds

	Balance 1/31/2024	Additions	Accrued Interest	Withdrawals	Balance 2/29/2024
Travis County Escrow Fund - Elroy Road	3,056,882.88		13,541.02		3,070,423.90
Travis County Escrow Fund - Ross Road	167,066.26		740.44		167,806.70
Travis County Escrow Fund - Old San Antonio Road	26,839.85		118.85	17,069.78	9,888.92
Travis County Escrow Fund - Old Lockhart Road	132,767.03		587.80		133,354.83
Travis County Escrow Fund - County Line Road	5,938,433.95		26,342.30	29,444.21	5,935,332.04
Travis County Escrow Fund - South Pleasant Valley Road	294,777.29		1,315.72		296,093.01
Travis County Escrow Fund - Thaxton Road	93,310.92		424.57		93,735.49
Travis County Escrow Fund - Pearce Lane Road	261,271.37		1,169.50		262,440.87
	9,971,349.55	-	44,240.20	46,513.99	9,969,075.76



PERFORMANCE

As of February 29, 2024

Current Invested Balance	\$ 11,928,691,803.89
Weighted Average Maturity (1)	37 Days
Weighted Average Life (2)	69 Days
Net Asset Value	0.999934
Total Number of Participants	1024
Management Fee on Invested Balance	0.06%*
Interest Distributed	\$ 51,354,048.54
Management Fee Collected	\$ 625,999.74
% of Portfolio Invested Beyond 1 Year	4.85%
Standard & Poor's Current Rating	AAAm

Rates reflect historical information and are not an indication of future performance.

February Averages

Average Invested Balance	\$ 12,038,851,375.87
Average Monthly Yield, on a simple basis	5.3035%
Average Weighted Maturity (1)	36 Days
Average Weighted Life (2)	69 Days

Definition of Weighted Average Maturity (1) & (2)

(1) This weighted average maturity calculation uses the SEC Rule 2a-7 definition for stated maturity for any floating rate instrument held in the portfolio to determine the weighted average maturity for the pool. This Rule specifies that a variable rate instruction to be paid in 397 calendar days or less shall be deemed to have a maturity equal to the period remaining until the next readjustment of the interest rate.
(2) This weighted average maturity calculation uses the final maturity of any floating rate instruments held in the portfolio to calculate the weighted average maturity for the pool.

The maximum management fee authorized for the TexSTAR Cash Reserve Fund is 12 basis points. This fee may be waived in full or in part in the discretion of the TexSTAR co-administrators at any time as provided for in the TexSTAR Information Statement.

HOLIDAY REMINDER

In observance of Good Friday, **TexSTAR will be closed Friday, March 29, 2024**. All ACH transactions initiated on Thursday, March 28th will settle on Monday, April 1st. Notification of any early transaction deadlines on the business day preceding this holiday will be sent by email to the primary contact on file for all TexSTAR participants. Please plan accordingly for your liquidity needs.

ECONOMIC COMMENTARY

Market review

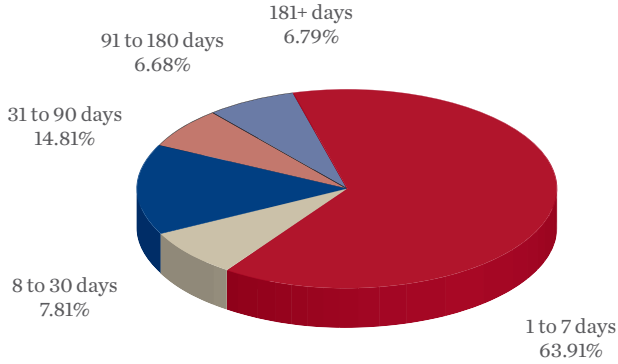
The Federal Reserve's (Fed) ability to balance price stability with maintaining economic health remained at the forefront of the macro landscape for 2024. Data in February was a mixed bag. Jobs were abundant, but inflation came in hot, and consumers took a breather from their heady pace of spending in the fourth quarter. The second estimate of 4Q23 GDP portraying an economy that expanded at an impressive 3.2% annualized rate. Overall, compared to the advanced estimate, revisions were mixed, with a decline in private inventory investment, which was partially offset by an uptick in state and local government spending as well as consumer spending. While many of the underlying details looked strong, consumption continued to power the economy. That said, consumer spending was more muted in January, with real personal spending declining 0.1% month-over-month (m/m). January retail sales also fell, declining 0.8% m/m, and December's figure was modestly revised lower. The control group, which is the input into GDP, was down 0.4% m/m. Declines were broad-based except for increases in restaurants, bars, grocery stores, and furniture. Although personal income rose, causing the savings rate to tick up slightly from a 3.7% to 3.8% annualized rate, the savings rate remains below pre-pandemic levels.

Meanwhile, January inflation data surprised to the upside, with headline CPI rising 0.3% m/m and 3.1% year-over-year (y/y) while core inflation gained 0.4% m/m and 3.9% y/y. Across core services, shelter inflation accelerated to 0.6% m/m, supported by the fastest monthly increase for owners' equivalent rent in nine months. Auto insurance and airline fares both rose 1.4% m/m, while medical care services also remained elevated. Core goods prices eased despite shipping disruptions, falling 0.3% m/m. Elsewhere, the Personal Consumption Expenditures Price Index (PCE) for January came in roughly in line with expectations, but above December's levels, rising by 0.3% m/m for the headline measure and 0.4% for the core measure. While strong, the year-over-year figures declined to 2.4% and 2.8%, respectively. The January Employment Report showed a labor market with plenty of momentum to start the year. Nonfarm payrolls rose by an impressive 353,000, almost double consensus expectations, with gains widespread across the economy. The unemployment rate held steady at 3.7% for a third straight month, marking the 26th consecutive month in which the unemployment rate was at or below 4%.

(continued page 4)

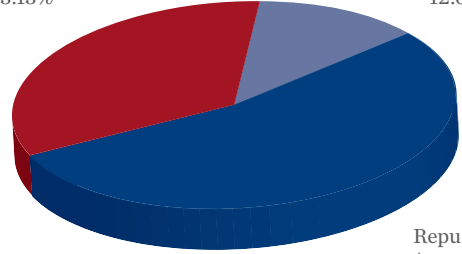
INFORMATION AT A GLANCE

PORTFOLIO BY TYPE OF INVESTMENT AS OF FEBRUARY 29, 2024



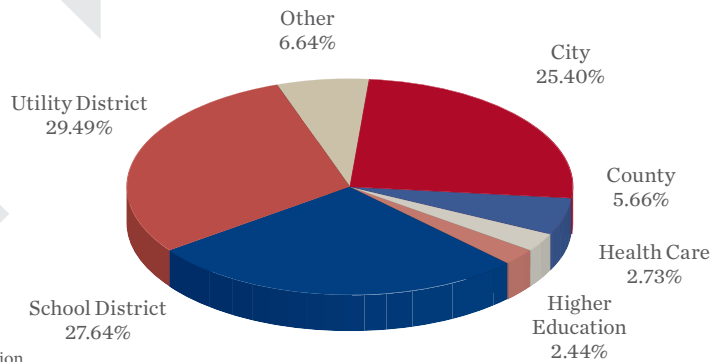
Treasuries
33.13%

Agencies
12.62%



Repurchase
Agreements
54.25%

PORTFOLIO BY MATURITY AS OF FEBRUARY 29, 2024 (1)



DISTRIBUTION OF PARTICIPANTS BY TYPE AS OF FEBRUARY 29, 2024

(1) Portfolio by Maturity is calculated using WAM (1) definition for stated maturity. See page 1 for definition

HISTORICAL PROGRAM INFORMATION

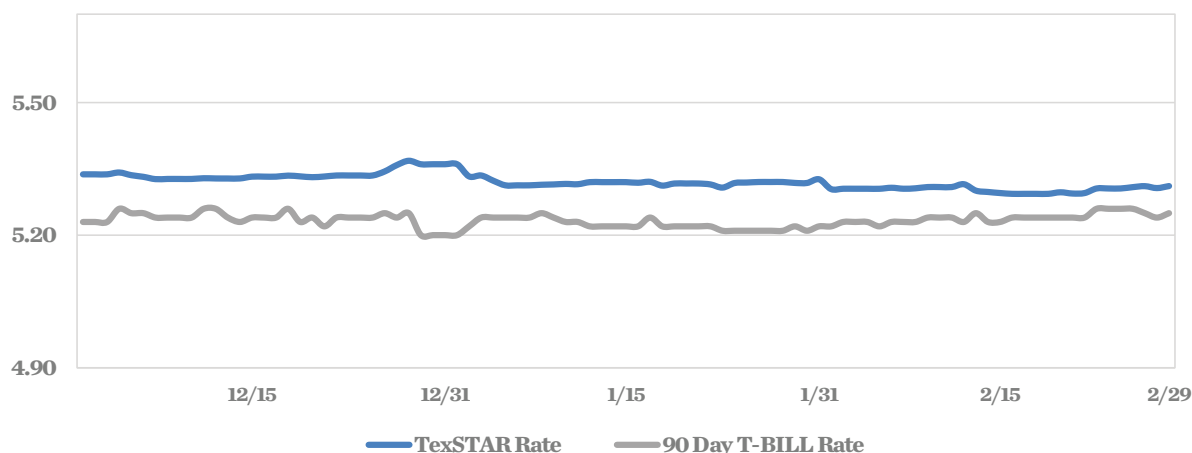
MONTH	AVERAGE RATE	BOOK VALUE	MARKET VALUE	NET ASSET VALUE	WAM (1)	WAL (2)	NUMBER OF PARTICIPANTS
Feb 24	5.3035%	\$11,928,691,803.89	\$11,927,911,436.19	0.999934	36	69	1024
Jan 24	5.3200%	11,483,316,119.03	11,483,741,551.85	1.000037	42	77	1024
Dec 23	5.3378%	10,557,076,424.02	10,557,101,303.24	0.999972	44	85	1037
Nov 23	5.3307%	10,148,883,026.83	10,148,191,305.12	0.999931	33	74	1034
Oct 23	5.3231%	10,017,668,653.01	10,016,121,800.83	0.999845	29	69	1031
Sep 23	5.3105%	9,992,445,950.80	9,990,730,955.61	0.999816	29	56	1028
Aug 23	5.2974%	10,207,693,267.12	10,205,377,223.94	0.999773	26	49	1023
Jul 23	5.1148%	10,852,471,505.08	10,849,665,890.42	0.999741	22	47	1021
Jun 23	5.0764%	10,475,876,514.08	10,473,945,855.73	0.999806	22	50	1020
May 23	5.0471%	10,704,350,596.85	10,702,720,616.60	0.999847	20	45	1019
Apr 23	4.8292%	10,940,711,794.05	10,941,057,413.24	1.000031	17	42	1017
Mar 23	4.6066%	11,042,113,205.98	11,042,864,910.32	1.000029	11	39	1012

PORTFOLIO ASSET SUMMARY AS OF FEBRUARY 29, 2024

	BOOK VALUE	MARKET VALUE
Uninvested Balance	\$ 759.50	\$ 759.50
Accrual of Interest Income	11,440,537.71	11,440,537.71
Interest and Management Fees Payable	(51,211,363.19)	(51,211,363.19)
Payable for Investment Purchased	(292,574,772.55)	(292,574,772.55)
Repurchase Agreement	6,651,714,999.94	6,651,714,999.94
Government Securities	5,609,321,642.48	5,608,541,274.78
TOTAL	\$ 11,928,691,803.89	\$ 11,927,911,436.19

Market value of collateral supporting the Repurchase Agreements is at least 102% of the Book Value. The portfolio is managed by J.P. Morgan Chase & Co. and the assets are safekept in a separate custodial account at the Federal Reserve Bank in the name of TexSTAR. The only source of payment to the Participants are the assets of TexSTAR. There is no secondary source of payment for the pool such as insurance or guarantee. Should you require a copy of the portfolio, please contact TexSTAR Participant Services.

TEXSTAR VERSUS 90-DAY TREASURY BILL



This material is for information purposes only. This information does not represent an offer to buy or sell a security. The above rate information is obtained from sources that are believed to be reliable; however, its accuracy or completeness may be subject to change. The TexSTAR management fee may be waived in full or in part at the discretion of the TexSTAR co-administrators and the TexSTAR rate for the period shown reflects waiver of fees. This table represents historical investment performance/return to the customer, net of fees, and is not an indication of future performance. An investment in the security is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Although the issuer seeks to preserve the value of an investment of \$1.00 per share, it is possible to lose money by investing in the security. Information about these and other program details are in the fund's Information Statement which should be read carefully before investing. The yield on the 90-Day Treasury Bill ("T-Bill Yield") is shown for comparative purposes only. When comparing the investment returns of the TexSTAR pool to the T-Bill Yield, you should know that the TexSTAR pool consists of allocations of specific diversified securities as detailed in the respective Information Statements. The T-Bill Yield is taken from Bloomberg Finance L.P. and represents the daily closing yield on the then current 90-Day T-Bill. The TexSTAR yield is calculated in accordance with regulations governing the registration of open-end management investment companies under the Investment Company Act of 1940 as promulgated from time to time by the federal Securities and Exchange Commission.

DAILY SUMMARY FOR FEBRUARY 2024

DATE	MNY MKT FUND EQUIV. [SEC Std.]	DAILY ALLOCATION FACTOR	INVESTED BALANCE	MARKET VALUE PER SHARE	WAM DAYS (1)	WAL DAYS (2)
2/1/2024	5.3045%	0.000145330	\$11,779,999,932.07	1.000045	38	72
2/2/2024	5.3053%	0.000145352	\$11,933,361,574.30	0.999993	37	70
2/3/2024	5.3053%	0.000145352	\$11,933,361,574.30	0.999993	37	70
2/4/2024	5.3053%	0.000145352	\$11,933,361,574.30	0.999993	37	70
2/5/2024	5.3052%	0.000145348	\$12,241,300,881.08	0.999999	36	68
2/6/2024	5.3075%	0.000145412	\$12,308,047,615.39	0.999996	35	68
2/7/2024	5.3053%	0.000145351	\$12,305,021,315.22	1.000012	35	67
2/8/2024	5.3063%	0.000145377	\$11,967,135,938.80	1.000011	36	69
2/9/2024	5.3091%	0.000145454	\$12,113,992,915.04	0.999996	34	68
2/10/2024	5.3091%	0.000145454	\$12,113,992,915.04	0.999996	34	68
2/11/2024	5.3091%	0.000145454	\$12,113,992,915.04	0.999996	34	68
2/12/2024	5.3155%	0.000145630	\$12,434,398,747.28	1.000006	34	66
2/13/2024	5.3010%	0.000145232	\$12,274,324,661.17	0.999961	35	68
2/14/2024	5.2980%	0.000145151	\$12,094,768,402.31	0.999979	37	69
2/15/2024	5.2956%	0.000145085	\$12,119,870,453.63	0.999976	37	70
2/16/2024	5.2938%	0.000145035	\$12,105,285,556.78	0.999943	37	70
2/17/2024	5.2938%	0.000145035	\$12,105,285,556.78	0.999943	37	70
2/18/2024	5.2938%	0.000145035	\$12,105,285,556.78	0.999943	37	70
2/19/2024	5.2938%	0.000145035	\$12,105,285,556.78	0.999943	37	70
2/20/2024	5.2973%	0.000145131	\$12,162,774,830.16	0.999970	34	67
2/21/2024	5.2945%	0.000145056	\$12,271,154,087.96	0.999969	34	66
2/22/2024	5.2955%	0.000145083	\$11,939,362,030.33	0.999932	35	67
2/23/2024	5.3059%	0.000145366	\$11,815,266,975.62	0.999937	35	67
2/24/2024	5.3059%	0.000145366	\$11,815,266,975.62	0.999937	35	67
2/25/2024	5.3059%	0.000145366	\$11,815,266,975.62	0.999937	35	67
2/26/2024	5.3089%	0.000145449	\$11,750,956,880.46	0.999939	36	68
2/27/2024	5.3111%	0.000145509	\$11,765,200,929.51	0.999933	37	69
2/28/2024	5.3068%	0.000145392	\$11,774,674,768.95	0.999952	37	69
2/29/2024	5.3113%	0.000145516	\$11,928,691,803.89	0.999934	37	69
Average	5.3035%	0.000145300	\$12,038,851,375.87		36	69



ECONOMIC COMMENTARY (cont.)

Meanwhile, wage growth accelerated to 0.6% m/m and 4.5% y/y. Initial Jobless Claims also continued to underscore tight labor dynamics. At the first Federal Open Market Committee (FOMC) meeting of the year, the Fed voted to leave the federal funds rate unchanged at a target range of 5.25%-5.50%. The minutes from the meeting were released in February and generally matched the tone and comments from Chair Powell's press conference where he pushed back on a March rate cut and emphasized greater confidence was needed that inflation is moving back to the 2% target. The Committee agreed that policy is likely at its peak rate. It appears that more participants are concerned about easing too quickly versus the risk of keeping policy too tight for too long. Given the hot inflation print and tight labor market, interest rates moved higher as the market pulled back its expectations for rate cuts in 2024. While the three-month Treasury bill yield was relatively unchanged, up 1 basis point (bp), ending the month at 5.38%, the one-year T-bill and two-year Treasury yields rose more significantly by 28 bps and 41 bps to 5.00% and 4.62%, respectively.

Outlook

Healthy growth momentum, strong corporate earnings, and a resilient labor market have all added credence to a soft landing. Although there continues to be an overall disinflationary trend, January's surprisingly hot inflation reports dashed hopes for any rate cuts in March causing markets to lower their expectations for easing in 2024, more closing matching the Fed's forecast of three cuts this year. Going forward, the Fed will need to see further evidence that inflation is moving back to 2% before delivering rate cuts. Until then, it has made no conclusions on the timing of rate cuts or the end of quantitative tightening (QT). In fact, the January FOMC meeting minutes corroborated Chair Powell's message at the press conference that the Fed will take its time cutting rates. As such, monetary policy uncertainty remains. After the exceptional growth we experienced in 2023, driven by a strong job market and consumer spending, growth will likely be slower in 2024. We continue to believe that they will kick off policy easing beginning in June or July this year.

This information is an excerpt from an economic report dated February 2024 provided to TexSTAR by JP Morgan Asset Management, Inc., the investment manager of the TexSTAR pool.



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CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

March 27, 2024
AGENDA ITEM #5

Discuss and consider approving revisions to Amendment No. 3 to the First Amended and Restated Maintenance Services Contract for the Central Texas Regional Mobility Authority Toll Collection System to clarify that Kapsch TrafficCom USA, Inc. will continue to provide intelligent transportation systems maintenance services for the MoPac Express Lane

Strategic Plan Relevance:	Service & Stewardship
Department:	Operations
Contact:	Greg Mack, Director of IT & Toll Systems
Associated Costs:	Reduction of \$22,670.06 to the Kapsch TrafficCom toll system monthly maintenance cost
Funding Source:	Operating Budget
Action Requested:	Consider and act on draft resolution

Background: Kapsch TrafficCom USA, Inc. serves as the Mobility Authority's system integrator. In this role, Kapsch is tasked with installing and maintaining 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 as well as traffic management operations support.

In January 2023 the Mobility Authority issued a Request for Proposal for an Intelligent Transportation System (ITS) performance-based maintenance services agreement to cover all existing and future ITS elements on the Mobility Authority's system. Three firms submitted proposals in response to the RFP - Kapsch TrafficCom USA, Inc., Lumin8 Transportation Technologies, LLC, and SICE Inc.

After an evaluation of the responses and pricing, Kapsch TrafficCom USA, Inc. received

the highest rating. The *Intelligent Transportation System (ITS) Performance Based Maintenance Services Agreement* between Kapsch TrafficCom USA, Inc. and the Mobility Authority was executed on October 31, 2023.

Action Requested: Last month the CTRMA Board considered an amendment to remove the ITS and scope for all roadways from Kapsch's toll system maintenance agreement given the new ITS performance-based maintenance services agreement. Before that amendment's execution it was discovered that those changes were too broad. The MoPac Express Lane relies on ITS items such as closed-circuit television (CCTV) cameras, microwave vehicle detectors (MVDs) and variable toll message (VTMS) signs to manage traffic and respond to incidents; calculate the variable toll rate; and communicate the appropriate toll rate to customers. Therefore, only ITS elements not related to the MoPac Express Lane should be removed from the Kapsch Toll System Maintenance Services Agreement.

Therefore, staff proposes the following changes to the *Kapsch Restated Maintenance Agreement* to remove ITS-related contract scope not related to MoPac Express Lane facilities and operations:

- Section M12.0 of the Scope of Work Summary – modify key performance indicator #8 (MVD) to apply to Express Lane facilities and remove key performance indicators #15 (Availability), #16 (Availability), and #18 (Availability).
- The KPI Reporting and Management Plan - modify key performance indicator #8 (MVD) to apply to Express Lane facilities and remove key performance indicators #15 (Availability), #16 (Availability), and #18 (Availability).
- Schedule 1.5 Maintenance Services Contract for Toll Collection System – remove pricing for ITS Maintenance and the related ITS bill of quantities for non-Express Lane facilities and operations.

The total decrease to the Kapsch toll system monthly maintenance cost from these changes is \$22,670.06.

Previous Actions: The Central Texas Regional Mobility Authority executed a contract with Caseta Technologies, Inc. on April 27, 2005, 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.

In November 2019 the Mobility Authority's Board approved a Restated Maintenance Agreement with Kapsch TrafficCom for enhanced toll system maintenance services for the roadside lane equipment, project host system, intelligent transportation systems (ITS), wrong way detection and communication infrastructure installed by Kapsch TrafficCom USA for all CTRMA toll facilities.

The first amendment to the Restated Maintenance Agreement was approved in November 2020. This amendment altered the hours of the traffic & incident management operations staff. Amendment No. 2 to the Kapsch Restated Maintenance Agreement acknowledged a change in transaction processing responsibilities from Kapsch to ETC.

Financing: Not Applicable

Staff Recommendation: Staff recommends the approval of revisions to Amendment No. 3 to the First Amended and Restated Maintenance Services Contract for the Central Texas Regional Mobility Authority Toll Collection System to clarify that Kapsch TrafficCom USA, Inc. will continue to provide intelligent transportation systems maintenance services for the MoPac Express Lane.

Backup provided:

- Draft Resolution
- Amendment No. 3 to the First Amended and Restated Maintenance Services Contract for the Central Texas Regional Mobility Authority Toll Collection System Kapsch-CTRMA Toll Maintenance Agreement M-1 Scope of Work (Revised 03.18.24)
- Kapsch-CTRMA Maintenance Agreement - Schedule 1.5 Price Schedule (Revised 03.18.24)
- Kapsch-CTRMA KPI Reporting and Management Plan (Revised 03.18.24)

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

RESOLUTION NO. 24-0XX

**APPROVING REVISIONS TO AMENDMENT NO. 3 TO THE FIRST AMENDED
AND RESTATED MAINTENANCE SERVICES CONTRACT WITH
KAPSCH TRAFFICCOM USA, INC.**

WHEREAS, by Resolution No. 24-009 dated February 24, 2024, the Central Texas Regional Mobility Authority Board of Directors (Board) approved Amendment No. 3 to the Amended and Restated Maintenance Services Contract (Maintenance Services Contract) with Kapsch TrafficCom USA, Inc. (Kapsch) to remove scope of work and pricing related to intelligent transportation system (ITS) performance-based maintenance services; and

WHEREAS, Prior to execution of Amendment No. 3, Mobility Authority Operations staff realized that the Mobility Authority still needs Kapsch to provide ITS performance-based maintenance services for the Mopac Express Lane pursuant to the Maintenance Services Contract; and

WHEREAS, the Executive Director requests the Board to approve an updated version of Amendment No. 3 to the Maintenance Services Contract to containing revisions that allow Kapsch to continue providing ITS performance-based maintenance services for the Mopac Express Lane which is attached hereto as Exhibit A.

NOW THEREFORE BE IT RESOLVED that the Board of Directors hereby approves the revised Amendment No. 3 to the Amended and Restated Maintenance Services Contract to allow Kapsch TrafficCom USA, Inc. to continue providing ITS performance-based maintenance services for the Mopac Express Lane 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 27th day of March 2024.

Submitted and reviewed by:

Approved:

James M. Bass
Executive Director

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

Exhibit A

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

**REVISED AMENDMENT NO 3 TO THE FIRST AMENDED AND RESTATED
MAINTENANCE SERVICES CONTRACT FOR
THE CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY
TOLL COLLECTION SYSTEM**

THIS AMENDMENT No. 3 TO THE AMENDED AND RESTATED MAINTENANCE SERVICES CONTRACT (“Amendment No. 3”) is made to be effective as of the 1st day of December 2023, (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, by Resolution No. 20-077 dated November 20, 2020, the Board of Directors of the Authority approved a Second Amendment to the Maintenance Services Contract to update the hours for TIM operations; and

WHEREAS, by Resolution No. 22-030 dated June 29, 2022, the Board of Directors of Authority approved an Amendment to the Maintenance Services Contract to update certain Key Performance Indicators; and

WHEREAS, pursuant to Resolution No. 24-009 dated February 28, 2024, the Board of Directors of Authority authorized Amendment No. 3 to the Maintenance Services Contract for the removal of scope of work and pricing related to ITS performance-based maintenance services but it was not executed.

WHEREAS, pursuant to Resolution No. 24-0XXX dated March 27, 2024, the Board of Directors of Authority authorized this revised Amendment No. 3 to the Maintenance Services Contract to modify the scope of work and pricing related to ITS performance-based maintenance services.

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 M12.0 of the Scope of Work Summary is amended to modify key performance indicator #8 (MVD) to apply to Express Lane facilities and remove key performance indicators #15 (Availability), #16 (Availability), and #18 (Availability) in

recognition of the Authority's separate Intelligent Transportation Systems (ITS) Performance Based Maintenance Contract executed October 31, 2023.

Schedule 1.5 Maintenance Services Contract for Toll Collection System is amended to remove pricing for ITS Maintenance and the related ITS bill of quantities for non-Express Lane facilities and operations.

The KPI Reporting and Management Plan appended to the Restated Maintenance Services Contract is amended to modify key performance indicator #8 (MVD) to apply to Express Lane facilities and remove key performance indicators #15 (Availability), #16 (Availability), and #18 (Availability).

IN WITNESS WHEREOF, the parties hereto have executed this Amendment No. 3 to the Maintenance Services Contract as of the date first above written.

**CENTRAL TEXAS REGIONAL MOBILITY
AUTHORITY**

By: _____
James Bass, Executive Director

KAPSCH TRAFFICCOM USA, INC.

By: _____
Name: _____
Title: _____

ATTACHMENTS:

Attachment M-1 Scope of Work_rev31824
KPI Reporting and Management Plan_rev0318.24
Schedule 1.5 Maintenance Services Contract for Toll Collection System_rev031824

TOLL COLLECTION SYSTEM MAINTENANCE SERVICES

SCOPE OF WORK

*(Reflects ITS scope changes
not related to Express Lane operations
per March 2024 amendment)*

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 (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 ELCC during peak hours and in operations from 5:30 am – 8 pm, 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.

Attachment M-1

Revised February 2024

- 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 February 2024

In addition to a ELCC Shift Supervisor, initially it is anticipated that there will be 2 full-time equivalent ELCC Operators covering the following shifts, 13 hours per day and five (5) days per week:

1. Morning shift: 5:30 AM to 1:30 PM
2. Afternoon shift: 12:00 Noon to 8:00 PM

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

Attachment M-1

Revised February 2024

- 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

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 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.

K P I D	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	99.90%	\$200 per gantry location, per each 0.1% below threshold	Audits by CTRMA, and executed by CTRMA, shall be evenly

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		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.			spread over the course of 12-months (e.g., approximately 1/12 th of locations audited each month), with minimum transaction count of 3,000, as determined by 90% 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, and executed by CTRMA, shall be evenly spread over the course of 12-months (e.g., approximately 1/12 th of locations audited each month), with minimum transaction count as determined by 90% 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, and executed by CTRMA, shall be evenly spread over the course of 12-months (e.g., approximately 1/12 th of locations audited each month), with minimum transaction count of 5,500, as determined by 90% audit

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					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 99.00% of all detected vehicles traveling at speeds from 5 mph up to and including 100 mph, including vehicles straddling the lane and shoulder.	99.00%	Estimated revenue loss (calculated using liquidation rate), per gantry location, for performance below threshold.	Monthly
5	IR	For transactions rejected by the manual review process, less than 1.00% shall have incorrect code-off results.	<1.00%	\$200 per each 0.1% below threshold	Quarterly performance audit, to be executed by Kapsch, with minimum transaction count of 1,500 per Code-Off category, 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 roadway direction, per each 0.1% below threshold	Monthly
7	Trip Processing	100% of all trips shall be transmitted to the CTRMA Data Platform System (DPS) within six (6) calendar days of the exit transaction of the trip.	100%	<p>1. For lost or uncollectable transactions:</p> <p>a) Actual revenue above \$5,000 AND</p> <p>b) any direct damages associated with the loss.</p> <p>2. For transactions transmitted >6 days and <=30 days, AND result in revenue generation:</p> <p>a) 10% of actual revenue AND</p> <p>b) any direct damages associated with the delay.</p> <p>3. For transactions older than 30 calendar days:</p> <p>a) Actual revenue above \$5,000 AND</p> <p>b) any direct damages associated with the loss.</p>	Monthly

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8	MVD	The volume provided by Express Lane Traffic Detection Systems (MVD) related to non-Express Lane facilities shall be 95.00% accurate.	95.00%	\$200 per MVD, per each 0.1% below threshold	Annual performance audit, to be executed by Kapsch, for a minimum of 5 minutes and minimum vehicle count of 30, per MVD, as determined by audit confidence as a threshold.
9	Non-EL Transaction Processing	100% of all non-EL transactions shall be transmitted to the CTRMA Data Platform System (DPS) within three (3) calendar days of the transaction date.	100%	<p>1. For lost or uncollectable transactions:</p> <ul style="list-style-type: none"> a) Actual revenue above \$5,000 AND b) any direct damages associated with the loss. <p>2. For transactions transmitted >3 days and <=30 days, AND result in revenue generation:</p> <ul style="list-style-type: none"> a) 10% of actual revenue AND b) any direct damages associated with the delay. <p>3. For transactions older than 30 calendar days:</p> <ul style="list-style-type: none"> a) Actual revenue above \$5,000 AND b) any direct damages associated with the loss. 	Monthly
10	IR	For transactions requiring a manual review process, 99.50% shall be completed, AND returned, within 72 hours from the time the image review request was received.	99.50%	<p>1. For Image Reviews completed >72 hours and <= 10 days:</p> <ul style="list-style-type: none"> a) \$200 per each 0.1% below threshold. <p>2. For Image Reviews completed >10 days and <= 30 days, AND result in revenue generation:</p> <ul style="list-style-type: none"> a) 10% of actual revenue AND b) any direct damages associated with the delay. 	Monthly

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				<p>3. For lost or uncollectable Image Review transactions:</p> <ul style="list-style-type: none"> a) Actual revenue above \$5,000 AND b) any direct damages associated with the loss <p>4. For transactions older than 30 calendar days:</p> <ul style="list-style-type: none"> a) Actual revenue above \$5,000 AND b) any direct damages associated with the loss 	
11	Reports	<p>1. Monthly Maintenance Report, accurately detailing system performance relative to all Project KPIs, shall be submitted to CTRMA each month.</p> <p>2. Monthly Inventory Report, to be exported directly from MOMs, accurately detailing the location, count, and serial numbers of all the CTRMA hardware, including retired hardware (if applicable), spares and Return Material Authorization (RMA) hardware for the previous calendar month.</p> <p>3. Contractor to provide complete reports, cover page, table of contents, and summaries, format to be agreed upon by Contractor and CTRMA.</p>	By the 15th of the following month	Cannot invoice for monthly maintenance without submitting these reports.	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%	Lost or delayed transactions as a result of ETC lane unavailability shall be included in, and calculated per, KPI #7 (Trip Processing) or KPI #9 (Non-EL Transaction Processing).	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	99.50%	\$200 per each 0.1% below threshold	Monthly

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		approved downtime for maintenance purposes).			
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	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	\$100 per each event > 1 hour	Monthly
22	Time to Repair - Priority 1	All priority 1 tickets must be repaired within 4 hours of ticket acknowledgement.	N/A	\$200 per each event > 4 hour	Monthly
23	Time to Respond – Priority 2	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	N/A	\$75 per each event > 1 hour	Monthly

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		loss of revenue but will/may impact operational performance.			
24	Time to Repair - Priority 2	All priority 2 tickets must be repaired within 12 hours of ticket acknowledgement.	N/A	\$150 per each event > 12 hour	Monthly
25	Time to Respond – Priority 3	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	\$25 per each event > 1 hour	Monthly
26	Time to Repair - Priority 3	All priority 3 tickets must be repaired within 36 hours of ticket acknowledgement.	N/A	\$50 per each event > 36 hour	Monthly
27	Inventory	All CTRMA hardware, to include those currently installed, maintained as spares, and Return Material Authorization (RMA) (if applicable), shall be included in an Annual Physical Inventory Audit Program, as agreed upon by the contractor and CTRMA.	Due yearly with February MMR	Cannot invoice for monthly maintenance without submitting Inventory Audit.	Annually

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]

**REVISED MARCH 2024 IN AMENDMENT #3 TO REMOVE ITS SCOPE
RELATED TO NON-EXPRESS LANE FACILITIES**

SCHEDULE 1.5

**MAINTENANCE SERVICES CONTRACT
FOR TOLL COLLECTION SYSTEM**

PRICE SCHEDULE

This section provides descriptions of the Method of Measurement and the Basis of Payment to complete the work for maintenance services on the toll collection systems on the CTRMA’s Toll Road System.

1. Hourly Rates

The Hourly Rates proposed for Amendment No. 6 proposed are FY 2022 Fully Loaded Rates.

Item Description / Position Title	FY 2019	FY 2020	FY 2021	FY 2022
		2.00%	N/A	3.00%
Software Engineer	\$ 157.59	\$ 157.59	\$162.32	\$182.40
System / Hardware Engineer	\$ 172.52	\$ 172.52	\$177.70	\$199.69
Technician	\$ 120.90	\$ 120.90	\$124.53	\$139.94
Database Administrator	\$ 224.14	\$ 224.14	\$230.86	\$259.42
Documentation Clerk	\$ 161.66	\$ 161.66	\$166.51	\$187.11
Testing Engineer	\$ 171.17	\$ 171.17	\$176.31	\$198.12
Project Manager	\$ 224.14	\$ 224.14	\$230.86	\$259.42
Network Administrator	\$ 156.22	\$ 156.22	\$160.91	\$180.82
Business Analyst	\$ 157.59	\$ 157.59	\$162.32	\$182.40

2. Amendment No. 6 Maintenance Contract Pricing

A. Monthly Maintenance Services for 183A Toll Phases I& II, 290 Toll Phase I - III, 71 Toll, MoPac Express Lane, 45 SW Toll, 183 South Toll Phases I - II

The monthly fee for maintaining 183A Toll, 290 Toll, 71 Toll, MoPac Express Lane, 45 SW Toll and 183 South Toll projects, including Plaza System; Host System; Communications Equipment: all ETC Toll Lanes ~~and related intelligent transportation systems (ITS); and System Administration and Express Lane Intelligent Transportation Systems (ITS)and the complete Intelligent Transportation Systems (ITS)~~ as furnished and installed shall be measured on a per month basis. Each per month unit shall include furnishing all labor,

materials, and support services to perform Maintenance Services for that month in conformance with the requirements of the Specifications, the specified requirements of the ITS equipment for applicable roadways, and as accepted by the CTRMA.

Amendment No. 5 Maintenance Contract Pricing	Monthly	Annual
183-A, 290-E, TX-71, Mopac Express Lanes, 45SW and 183S	\$474,623.17	\$5,695,478.04

Amendment No. 6 Maintenance Contract Pricing	Monthly	Annual
183-A, 290-E, SH-71, Mopac Express Lanes, 45SW, 183S and additional ITS	\$486,726.51	\$5,840,718.12

Monthly Support for Maintenance of 183-A, 290-E, TX-71, Mopac Express Lanes, 45SW, 183S and additional ITS	
Software Engineers	4 FTEs
Systems Administration	2 FTEs
Business Analyst	1 FTE
Maintenance Technicians	7 FTEs
TOTAL	14 FTEs

B. TMC Operations Support

Amendment No. 6 adjusts pricing for the TIM Center Operations to facilitate adding or removing staff as CTRMA expands. CTRMA anticipates the use of four (4) operators in fiscal year 2022. The monthly pricing per FTE is \$9,782.48.

TMC Operations Support				
Description	Unit (hrs.)	2022 CPI Adjusted Rate	TMC Operation	
			Qty	Per Month
Operations Support	173	\$56.55	4	\$39,129.90

3. Out of Scope Services

The hourly rates for out of scope services pursuant to Section 11 of the Toll Collection System Maintenance Services Contract are reflected in the FY 22 fully loaded rates, outlined in Section 1.

4. Other Direct Costs

Other Direct Costs (ODCs) are the reasonable actual direct incremental costs incurred by the Contractor for the performance of the applicable Work that are directly attributable to such Work. ODCS may include leasing, fuel, repairs, tolls, etc. associated with maintenance vehicle costs. ODCs also cover consumables maintenance technicians may use in performing their duties.

Role	FY 2019	FY 2020	FY 2021	FY 2022
		2.00%	N/A	3.00%
Technicians ODCs	\$2,169.31	\$2,169.31	\$2,234.39	\$2,437.72

5. ITS Maintenance

A. Cost Breakdown

Amendment No. 6 adjusts pricing for all furnished and installed ITS equipment to facilitate adding or subtracting of said equipment over the course of this Maintenance Services Contract. Costs per device are on a per month basis and included in Amendment No. 6 Maintenance Contract Pricing as outlined in Section 2.

ITS Cost per Device	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
		N/A	N/A	N/A	9.10%
CCTV	\$112.00	\$112.00	\$112.00	\$122.19	\$129.52
DMS*	\$133.00	\$133.00	\$133.00	\$145.10	\$153.81
VTMS	\$140.00	\$140.00	\$140.00	\$152.74	
MVDs	\$108.00	\$108.00	\$108.00	\$117.83	\$124.90

** Updated to reflect 2023 pricing. DMS device deleted per revised Amendment #3 related to ITS scope removal for non-Express Lane facilities and operations*

B. ITS Bill of Quantities

ITS Project	CCTV	VTMS	DMS	MVDs
290 E	13	0	2	34
MoPac	30	5	0	58
SH71	1	0	0	0
45SW	10	0	2	11
183S	14	0	5	29
183A	42	0	2	11
Total	110	5	11	143
	30	5	0	58

** Deleted all ITS projects except MoPac per revised Amendment #3 related to ITS scope removal for non-Express Lane facilities and operations*

6. Toll System Maintenance

Amendment No. 6 adjusts the pricing of monthly fees for maintaining 183A Toll, 290 Toll, 71 Toll, MoPac Express Lane, 45 SW Toll and 183 South Toll projects. The pricing, displayed below as a per lane fee, includes all required systems to support transaction capture, transaction creation and transaction transmission. These systems include the Plaza System, Host System, Communications Equipment, ETC Toll Lanes and System Administration. The maintenance fee cost breakdown is to facilitate the adding or subtracting of ETC Toll Lanes over the course of this Maintenance Services Contract.

Toll Project	Lanes	Fee per Lane	Toll System Maintenance	ITS Maintenance	Toll Project Maintenance	
					Monthly	Annually
290-E	43	\$2,097.54	\$90,194.22	6,237.98	\$96,079.11	\$1,152,949.32
MoPac	7	\$8,166.85	\$57,167.95	\$11,263.54	\$68,431.49	\$821,177.88
SH71	6	\$1,633.37	\$9,800.22	\$ 129.52	\$9,922.41	\$119,068.92
45SW	6	\$2,450.06	\$14,700.36	\$ 2,976.72	\$17,508.59	\$210,103.08
183S	37	\$4,083.41	\$151,086.17	\$ 6,204.42	\$156,939.40	\$1,883,272.80
183A	40	\$3,278.18	\$131,127.20	\$ 7,121.41	\$137,845.51	\$1,654,146.12
Total	139		\$454,076.36	\$32,650.39 \$11,263.54	\$486,726.51	\$5,840,718.12

** Updated to reflect 2023 ITS maintenance cost per device and then deleted per revised Amendment #3 related to ITS scope removal for non-Express Lane facilities and operations*

CTRMA

KPI-RAMP v1.3 | 06/17/2022 - Released

REVISED MARCH 2024 IN AMENDMENT #3 TO REMOVE ITS SCOPE
RELATED TO NON-EXPRESS LANE FACILITIES

Central Texas Regional Mobility Authority - Maintenance Open Road Tolling

KPI Reporting And Management Plan

KPI-RAMP

Doc No.: NAMCPRJ-1472315366-637

Version: 1.3

Document Control

Document Name	CTRMA Maintenance ORT - KPI Reporting And Management Plan
File Name	20220617_Kapsch_CTRMA_Maintenance Services_KPI-RAMP_v1.3
Contract #	16-31-043-00
Project Title	Maintenance Open Road Tolling
Client	Central Texas Regional Mobility Authority (CTRMA)
Project Manager	Mark Stewart
Author	Mark Stewart

Change Notice

Rev #	Change Reason	Quality Control	Quality Assurance	Completed
1.0	Initial Version	Mark Stewart	Samuel Herbert	03-10-2020
1.1	Revision	Mark Stewart	Samuel Herbert	05-25-2021
1.2	Comment Revision	Mark Stewart	Samuel Herbert	06-13-2022
1.3	Content Revision	Mark Stewart	Samuel Herbert	06-17-2022

Reference to the status- and version administration:

Status:

- Draft the document is being processed
- Released the document has been checked and released, it can only be modified if the version number is updated.
- Final the document is complete

Versions:

- 1.0, 1.1, etc. **“Released”** versions
- 2.0 Accepted version with the status **“Final”**
- 2.1, 2.2, etc. Minor revisions, supplements to version 2.0

Reference to the data classification

Public	No restriction
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Secret	Restricted to selected employees, server encryption needed

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0 Introduction

This Key Performance Indicator (KPI) Reporting and Management Plan describes how performance indicators will be monitored, calculated, audited, and reported to support KPI Reporting and Liquidated Damage (LD) assessment.

0.1 Abbreviations

The following table contains a list of important abbreviations used within this document.

Abbreviation	Description
AVC	Automatic Vehicle Classification
AVD	Automatic Vehicle Detection
AVI	Automatic Vehicle Identification
CCTV	Closed Circuit Television
CTRMA	Central Texas Regional Mobility Authority
DB	Database
DMS	Dynamic Message Sign
DPS	Data Platform System
DVAS	Digital Video Audit System
DVR	Digital Video Recorder
ETC	Electronic Toll Collection
ICS	Image Capture Station
KPI	Key Performance Indicator
LD	Liquidated Damage
LPIC	License Plate Image Capture
MMR	Monthly Maintenance Report
MPH	Miles Per Hour
MVD	Microwave Vehicle Detection
PBM	Pay By Mail
RMA	Return Material Authorization
ROMS	Remote Operations and Maintenance System
SLA	Service Level Agreement
SNTPD	Simple Network Time Protocol Daemon

Abbreviation	Description
TB	Tag Based
TCS	Toll Collection System
TVL	Tag Validation List
VES	Violation Enforcement System
VMS	Video Monitoring System
VTMS	Variable Toll Message Sign
ZC	Zone Controller

Table 1 List of used Abbreviations

0.2 List of referenced documents

The following table contains a list of documents referenced by this document.

Ref. No.	Doc. No.	Doc. Type	Document Title
[1]	NAMCPRJ-149165766-142	PDF	12_1_FINAL_AIS_Kapsch_Restated_Maint_Agreement_KapschSigned_20191216

Table 2 List of referenced documents

0.3 Revenue Calculation Parameters

The following parameters guide the calculation of revenue;

- > Actual revenue calculated using 100% of AVI and I-Toll transactions and Pay by Mail transactions at the liquidation rate
- > Pay by Mail revenue value should be calculated as 10% of affected transactions calculated using the AVI rate (i-Toll transactions), and the remaining 90% is calculated using the current Pay by Mail toll rate factor (e.g. AVI toll rate *1.5)
- > Liquidation rate (e.g. 0.5) to be evaluated at the beginning of each Fiscal Year based on the prior year's results and applied to the estimated Pay by Mail revenue loss amount
- > For lost or uncollectable transactions, transactions older than 30 calendar days are considered ineligible for billing due to age

1 KPI #1 – Automatic Vehicle Detection (AVD)

1.1 Description

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.

1.2 KPI Goal

The KPI goal is 99.90%.

1.3 Maximum Liquidated Damages

Maximum liquidated damages are \$200 per gantry location, per each 0.1% below threshold.

1.4 Testing Frequency

Audits by CTRMA and executed by CTRMA, shall be evenly spread over the course of 12-months (e.g. approximately 1/12th of locations audited each month), with a minimum transaction count as determined by 90% confidence and a statistically significant sample size, as shown in Table 3, to show KPI compliance.

Minimum Required Samples
3,000

Table 3 KPI#1 Minimum Required Samples

1.5 Testing Process

The current testing process is a monthly audit, where CTRMA will perform a manual review of host reports, matched against Digital Video Audit System (DVAS) footage or third-party video surveillance, to ensure all vehicles traversing the roadway are detected and have transactions created for them within the host reports.

1.6 Measurement Method

$$\text{Measured Accuracy per Gantry Location} = \left[1 - \left(\frac{\text{Detection Errors}}{\text{Total Number of Vehicles at Audited Gantry}} \right) \right] \times 100$$

1. System reports (e.g., Traffic Reports - Lane Image Tool Report) available for audit period.
2. Video of traffic through the gantry provides determination of vehicle presence.
3. Human review of gantry video determines detection errors and transaction count.
4. Excludes:
 - a) Undetected motorcycles straddling lanes as known system deficiency.
 - b) Vehicles traveling in the wrong direction.
 - c) Vehicles in tow using rope, chains, or other unorthodox methods.

1.7 Example KPI Calculation

In this example scenario, assume that during the audit period, and at the audited gantry, there were 5,000 Total Number of Vehicles identified in the corresponding Traffic Report. During manual review of video footage, 37 Detection Errors were identified when comparing DVAS footage or third-party video surveillance to system reports (e.g., Traffic Reports).

- > Total Number of Vehicles Through Audited Gantry = 5,000
- > Detection Errors = 37

$$\text{Measured Accuracy} = \left[1 - \left(\frac{37}{5,000} \right) \right] \times 100 = 99.26\%$$

$$\text{Liquidated Damages} = \frac{(0.999 - 0.992)}{0.001} \times \$200 = \$1400$$

2 KPI #2 – Automatic Vehicle Classification (AVC)

2.1 Description

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.

2.2 KPI Goal

The KPI goal is 99.50%.

2.3 Maximum Liquidated Damages

Maximum liquidated damages are \$200 per gantry location, per each 0.1% below threshold.

2.4 Testing Frequency

Audits by CTRMA and executed by CTRMA, shall be evenly spread over the course of 12-months (e.g. approximately 1/12th of locations audited each month), with a minimum transaction count as determined by 90% confidence and a statistically significant sample size, as shown in Table 4, to show KPI compliance.

Minimum Required Samples
3,000

Table 4 KPI#2 Minimum Required Samples

2.5 Testing Process

The current testing process is a monthly audit. In this audit, CTRMA will perform a manual review of host reports matched against DVAS and/or third-party video, to ensure all vehicles reported in the host are properly classified.

2.6 Measurement Method

$$\text{Measured Accuracy per Gantry Location} = \left[1 - \left(\frac{\text{Axle-Based Classification Errors}}{\text{Total Number of Vehicles at Audited Gantry}} \right) \right] \times 100$$

1. System report (Traffic Reports - Lane Image Tool Report) available for audit period.
2. Video of traffic through the gantry provides determination of vehicle classification via axle counts per vehicle.
3. Human review of gantry video determines classification errors and transaction count.
4. Excludes:
 - a) Undetected motorcycles straddling lanes as known system deficiency.
 - b) Vehicles traveling in the wrong direction.
 - c) Vehicles in tow using rope, chains, or other unorthodox methods.
 - d) Vehicles traveling in lanes not outfitted with classification hardware.
 - e) Undetected vehicles (the system cannot classify a vehicle it does not detect)

2.7 Example KPI Calculation

In this example scenario, assume that during the audit period, and at the audited gantry, there were 5,000 Total Number of Vehicles identified in the corresponding Traffic Report. During manual review of video footage, 37 Axle-Based Classification Errors were identified when comparing DVAS footage or third-party video surveillance to system reports (e.g., Traffic Reports).

> Total Number of Vehicles Through Audited Gantry = 5,000

> Axle-Based Classification Errors = 37

$$\text{Measured Accuracy} = \left[1 - \left(\frac{37}{5,000} \right) \right] \times 100 = 99.26\%$$

$$\text{Liquidated Damages} = \frac{(0.995 - 0.992)}{0.001} \times \$200 = \$600$$

3 *KPI #3 – Automatic Vehicle Identification (AVI)*

3.1 Description

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.

3.2 KPI Goal

The KPI goal is 99.90%.

3.3 Maximum Liquidated Damages (per calendar month)

Maximum liquidated damages are \$200 per gantry location, per each 0.1% below threshold.

3.4 Testing Frequency

Audits by CTRMA and executed by CTRMA, shall be evenly spread over the course of 12-months (e.g. approximately 1/12th of locations audited each month), with a minimum transaction count as determined by 90% confidence and a statistically significant sample size, as shown in Table 5, to show KPI compliance.

Minimum Required Samples
5,500

Table 5 KPI#3 Minimum Required Samples

3.5 Testing Process

For AVI Detect and Read Accuracy:

1. Kapsch provides a report that displays all vehicle transactions per gantry. From this data set, the transactions are filtered for tag reads and non-tag read vehicle transactions.
2. Another filter query removes transactions with an indicated vehicle speed between 5 MPH to 100 MPH.
3. From this data set, transactions with the same transponder are matched with other vehicle transactions that occurred on the same roadway, on the same day.
4. The accuracy is calculated by counting the number of vehicles charged as an iToll at a gantry that had a tag read on the same roadway, on the same day, as an error. This value is then divided by the total number of vehicles at that plaza on that day.
5. Kapsch provides a report that includes transactions and all images captured for each transaction occurring within a CTRMA selected time (audit period). Only AVI transactions will be used. All non-AVI transactions shall be removed.
6. Transactions are matched with other vehicle transactions that occurred on the roadway in the same audit period.

7. However, if the images from both initial transactions show different vehicles, images from a third transaction for the audited transponder are compared.
 - a) If the images from this third transaction match the audited transaction, the audit will consider the audited transponder correctly correlated to the transaction.
 - b) If the images from the third transaction do not match the audited transaction, the audit shall consider the audited transponder to have an AVI correlation error.
 - c) If the transactions are spurious or buffered tags that are clearly correlation errors, they are counted (e.g., missed association or cross lane reads).

3.6 Measurement Method

Measured Accuracy per Gantry Location

$$= \left\{ 1 - \left[\frac{(Detection\ and\ Read\ Errors) + (Correlation\ Errors)}{(Detection\ and\ Read\ Audited\ Samples) + (Correlation\ Audited\ Samples)} \right] \right\} \times 100$$

1. The Number of Detection and Read Errors and Correlations Errors is the number of vehicles with an iToll transaction that was also identified to have a separate successful tag transaction at a minimum of one other gantry on the same roadway during the same day.
2. Detection and Read Audited Samples and Correlation Audited Samples are the total number of vehicles passing through the plaza.
3. Excludes vehicles:
 - a) Traveling in the wrong direction
 - b) Transactions with no images
 - c) Transponders with only one transaction
 - d) Transactions where cannot be reliably demonstrated to be the same or a different vehicle, due to such factors as image quality or obscured plate numbers

3.7 Example KPI Calculation

In this example scenario, assume that during the audit period, and at the audited gantry, there were 5,000 Total Number of Vehicles identified in the corresponding Detailed Transaction Report. An Ad-Hoc Query flagged 187 iTolls as Missed AVI Reads and Correlations as there were corresponding tag reads at another plaza on the same day.

- > Total Number of Vehicles at Audited Gantry = 5,000
- > Total Number of Missed AVI Reads and Correlations = 187

$$Measured\ Accuracy = \left[1 - \left(\frac{187}{5,000} \right) \right] \times 100 = 96.26\%$$

$$Liquidated\ Damages = \frac{(0.999 - 0.962)}{0.001} \times \$200 = \$7,400$$

4 KPI #4 – License Plate Image Capture (LPIC)

4.1 Description

The LPIC subsystem will capture one front, human-readable license plate image or one rear, human-readable license plate image and associate it to the correct vehicle for 99.00% of all detected vehicles traveling at speeds from 5 mph up to and including 100 mph, including vehicles straddling the lane and shoulder.

4.2 KPI Goal

The KPI goal is 99.00%.

4.3 Maximum Liquidated Damages

Estimated revenue loss is calculated using liquidation rate, per gantry location, for performance below the threshold.

4.4 Testing Frequency

Testing will occur monthly.

4.5 Testing Process

For LPIC Capture and Association:

1. View the Code Offs by Lane Report for the roadway and audit period that is being verified. Use the first day of the month as the start date, and the last day of the month as the end date. Repeat this process for all roadways.
2. View each report and isolate “Camera issue at lane” code off rows for each plaza/lane.
3. Record “Total TRX”, “Total Toll”, and “Total Pct” for all camera issues at the lane code off.
4. The Image Capture accuracy will be reflected in the report and can be identified by the formula below.

4.6 Measurement Method

Measured Accuracy per Gantry = $100 - (\text{Camera Issue at Lane Code Off Total Pct})$

Exclusions include the following:

1. Undetected motorcycles straddling lanes as a known system deficiency.
2. Vehicles traveling in the wrong direction.
3. Vehicles in tow using rope, chains, or other unorthodox methods.
4. Vehicles with missing, damaged, or obstructed license plates.
5. Vehicles with unreadable temporary license plates.
6. Motorcycles with unreadable license plates.

7. Out of State license plates that were unidentifiable.

Note: This metric only evaluates legally mounted license plates and plates that are deemed to be unidentifiable due strictly to camera issues. These are code-offs conditions and will remain in the sample set.

Camera issues include the following:

1. Blurred image
2. Cut-off image (timing)
3. Images with no vehicles (timing)
4. Over/under exposure
5. Camera angle

4.7 Example KPI Calculation

In this example scenario, assume that during the audit period, and at the audited gantry, there were 2,000 Camera Issue at Lane Code Offs, equaling a total toll value of \$2,400, and a total percentage of 1.49%, as identified in the Code Offs by Lane report. The total transactions, prior to code offs, are included in the reports calculation; thus, the listed failure rate of 1.49% can be used independently to determine KPI achievement.

- > Total Count of Camera Issue at Lane Code Off transactions = 2,000
- > Total Toll of Camera Issue at Lane Code Off transactions = \$2,400
- > Total Percentage of Camera Issue at Lane Code Off transactions = 1.49%

$$\text{Measured Accuracy} = 100 - 1.49\% = 98.51\%$$

$$\text{Transactions Below Threshold} = \frac{\left[2,000 \times \frac{(1.49 - 1.00)}{100} \right]}{\left(\frac{1.49}{100} \right)} = 658$$

$$\text{Total Toll Below Threshold} = \left(\frac{\$2,400}{2,000} \right) \times 658 = \$789.60$$

$$\text{Average Toll per Transaction} = \left(\frac{\$789.60}{658} \right) = \$1.20$$

$$\begin{aligned} \text{Pay by Mail Revenue Value AVI (iToll)} &= \frac{(658 \times 10\%) \times \$1.20}{1.5} = \$52.64 \text{ Pay by Mail Revenue Value} \\ &= ((658 \times 90\%) \times \$1.20) \times 0.5 = \$355.32 \end{aligned}$$

$$\text{Total Pay by Mail Revenue Value} = \$52.64 \text{ (AVI)} + \$355.32 \text{ (PBM)} = \$407.96$$

5 KPI #5 – IR

5.1 Description

For transactions rejected by the manual review process, less than 1.00% shall have incorrect code-off results.

5.2 KPI Goal

The KPI goal is <1.00%.

5.3 Maximum Liquidated Damages

Maximum liquidated damages are \$200, per each 0.1% below threshold.

5.4 Testing Frequency

Audits by CTRMA, at their discretion, will be executed by CTRMA, with a minimum transaction count as determined by a statistically significant sample size, as shown in Table 6, to show KPI compliance.

Minimum Required Samples per Code Off Category
1,500

Table 6 KPI#5 Minimum Required Samples

5.5 Testing Process

The current testing process is a quarterly audit, where validation will be conducted on a randomized set of coded off transactions. This subset of transactions is manually reviewed by the Kapsch Transaction Validation Team to ensure coded off transactions are given the proper code off, and to identify any valid transactions that were erroneously coded off.

Quarterly Audit Schedule:

Quarter	Review Period	Audit Due Date
1	January 1 st – March 31 st	April MMR
2	April 1 st – June 30 th	July MMR
3	July 1 st – September 30 th	October MMR
4	October 1 st – December 31 st	January MMR

Table 7 KPI#5 Quarterly Audit Schedule

5.6 Measurement Method

$$\text{Measured Accuracy} = \left[1 - \left(\frac{\text{Pursuable Code Offs} + \text{Incorrect Code Offs}}{\text{Total Manually Audited Coded Off Images}} \right) \right] \times 100$$

1. Obtain a random sample set of manually reviewed coded off transactions.
2. Verify the image code off is not pursuable (license plate number or jurisdiction unclear)

5.7 Verify a valid code off reason was applied. Example KPI Calculation

In this example scenario, assume that during the audit period, there were 5,000 Manually Audited Coded Off Images. When reviewing the images, there were 25 code offs that were pursuable and 125 code offs that were categorized incorrectly.

- > Total Number Manually Audited Coded Off Images = 5,000
- > Total Number of Pursuable Coded Off Images = 25
- > Total Number of Incorrectly Coded Off Images = 125

$$\text{Measured Accuracy} = \left[1 - \left(\frac{25 + 125}{5,000} \right) \right] \times 100 = 97.00\%$$

$$\text{Liquidated Damages} = \frac{(0.99 - 0.97)}{0.001} \times \$200 = \$4,000$$

6 *KPI #6 – Trip*

6.1 Description

99.50% of all transactions shall be correctly assembled into trips.

6.2 KPI Goal

The KPI goal is 99.50%.

6.3 Maximum Liquidated Damages

Maximum liquidated damages are \$200 per roadway direction, per each 0.1% below threshold.

6.4 Testing Frequency

Testing will occur monthly.

6.5 Testing Process

Testing is performed through an Ad-Hoc Query.

The test will evaluate a “correctly assembled trip” using Trip Accuracy and Fare assignment. A vehicle’s identification will be evaluated by using both Tag, if present, and LPN information.

The inspection of a vehicle’s identification can identify two failure types: split trip and combined vehicle information. A split trip represents a vehicle reporting on two or more distinct trips, instead of being combined into a singular trip. A combined vehicle information failure represents two distinct vehicles included in a singular trip.

Trip building validation will be conducted by verifying that all transactions with a matching plate or tag value, between 21 minutes before trip start time, through 21 minutes after the trip end time, are all included within a singular trip. Once it is verified that the trip’s vehicle did not pass another toll point prior to or after the formed trip, the trip may be considered complete.

Fare assignment will be evaluated by comparing the Toll Rate Sign Posting Report to Entry Point Tolling location. The rate that was active on the sign will be compared to entry point and assigned fare to validate accuracy.

6.6 Measurement Method

$$\text{Measured Accuracy per Roadway Direction} = \left[1 - \left(\frac{\text{Total Incorrectly Assembled Trips}}{\text{Total Audited Trips}} \right) \right] \times 100$$

1. The number of incorrectly assembled trips will be identified by the sum of audited trips that failed to achieve both trip accuracy and correct fare assignment.
2. Total number of trips will be the count of trips evaluated.

6.7 Example KPI Calculation

In this example scenario, assume that during the audit period, and per audited roadway direction, there were 9,000 trips evaluated. Of those evaluated, 125 trips failed either trip accuracy or correct fare assignment.

- > Total Number of Incorrectly Assembled Trips = 125
- > Total Number of Trips = 9,000

$$\text{Measured Accuracy} = \left[1 - \left(\frac{125}{9,000} \right) \right] \times 100 = 98.61\%$$

$$\text{Liquidated Damages} = \frac{(0.995 - 0.986)}{0.001} \times \$200 = \$1,800$$

7 *KPI #7 – Trip Processing*

7.1 **Description**

100% of all trips shall be transmitted to the CTRMA Data Platform System (DPS) within six (6) calendar days of the exit transaction of the trip.

7.2 **KPI Goal**

The KPI goal is 100%.

7.3 **Maximum Liquidated Damages (per calendar month)**

Maximum liquidated damages for lost or uncollectable transactions:

1. Actual revenue above \$5,000, AND
2. Any direct damages associated with the loss

Maximum liquidated damages for transactions transmitted > 6 days and <= 30 days, AND the result in revenue generation:

1. 10% of actual revenue, AND
2. Any direct damages associated with the delay

Maximum liquidated damages for transactions older than 30 calendar days:

3. Actual revenue above \$5,000, AND
4. Any direct damages associated with the loss

Note: Actual revenue value should be calculated using 100% of AVI and i-Toll transactions, and Pay by Mail transactions at the liquidation rate (to be validated every new fiscal year).

7.4 **Testing Frequency**

Testing will occur monthly.

7.5 **Testing Process**

Testing is performed through an Ad-Hoc Query.

7.6 Measurement Method

Measured Accuracy =

$$\left\{ 1 - \left[\frac{\text{Count of Mopac DB Trips} - (\text{Count of CTRMA DB Trips} - \text{Count of CTRMA DB Trips} > 6 \text{ Days and } \leq 30 \text{ Days})}{\text{Count of Mopac DB Trips}} \right] \right\} \times 100$$

1. Count of Mopac DB Trips will be the total count of Mopac Trips in the Mopac DB.
2. Count of CTRMA DB Trips will be the total count of Mopac Trips that are found in the CTRMA DB.
3. The >6 Days will be determined by evaluating the Mopac Trip exit timestamp as the start time, and the RTRAN transmission timestamp, to the DPS, as the stop time.

7.7 Example KPI Calculation

In this example scenario, assume that during the audit period, there were 50,000 valid Mopac Trips found in the Mopac DB. Using the same sample set, there were a total of 50,000 Mopac Trips located in the CTRMA DB. Of those 50,000 Mopac Trips, 7,500 exceeded the 6 day RTRAN transmission time limit. Of the 7,500 trips that failed the KPI, 4,000 were AVI or iTolls, and 3,500 were Pay by Mail (PBM). The 4,000 AVI transactions totaled \$8,400 while the 3,500 PBM transactions totaled \$12,600.

- > Total Count of Mopac Trips in Mopac DB = 50,000
- > Total Count of Mopac Trips in CTRMA DB = 50,000
- > Total Count of Mopac Trips in CTRMA DB > 6 Days and <= 30 Days = 7,500
- > Total Count of Mopac Trips in CTRMA DB <= 6 Days = (50,000 – 7,500) = 42,500
- > Total Count of Mopac Trips Delayed > 6 Days and <= 30 Days = 7,500

$$\text{Measured Accuracy} = \left\{ 1 - \left[\frac{50,000 - (50,000 - 7,500)}{50,000} \right] \right\} \times 100 = 85.00\%$$

Actual Revenue Value = \$8,400 + (\$12,600 x 0.5) = \$14,700

Liquidated Damages = \$14,700 x 10% = \$1,470

8 KPI #8 – *Express Lane* Microwave Vehicle Detection (MVD)

8.1 Description

The volume of MVD data provided by the Traffic Detection System will be 95.00% accurate.

8.2 KPI Goal

The KPI goal is 95.00%.

8.3 Maximum Liquidated Damages (per calendar month)

Maximum liquidated damages are \$200 per MVD, per each 0.1% below threshold.

8.4 Testing Frequency

Kapsch will execute an annual performance audit.

8.5 Testing Process

The current testing process is a yearly audit of all MVDs, performed by Kapsch, that will verify MVDs through comparing volume provided by the physical device (observed via the HDSmart Utility), and the volume counted through DVAS footage or third-party video surveillance. Each MVD will be audited for a minimum of five minutes, with a minimum count of 30 vehicles. The results will be annotated on the MVD Calibration Verification Sheet (see Appendix A). Any devices that fail to meet KPIs will be re-audited the following month.

Yearly Audit Schedule:

Review Period	Audit Due Date
October 1 st – October 31 st	November MMR

Table 8 KPI#8 Yearly Audit Schedule

8.6 Measurement Method

$$\text{Measured Accuracy per MVD} = \left[1 - \left(\frac{\text{Observed Traffic Volume} - \text{MVD Reported Traffic Volume}}{\text{Observed Traffic Volume}} \right) \right] \times 100$$

1. Observed Traffic Volume is the total observed traffic volume passing the audited MVD.
2. MVD Reported Traffic Volume is the total traffic volume captured by the MVD, via the HDSmart Utility, at the audited MVD.
3. Exceptions:
 - a) Any MVD disabled for predictive or preventative maintenance.
 - b) Any MVDs in non-working conditions pending repair of a damaged component. Example KPI Calculation.
 - c) Any MVD which is unavailable during the auditing period, will have an individual audit conducted within 30 days of becoming available.

In this example scenario, assume that during the audit period, and per the audited MVD, there were 5,000 vehicles observed through the recorded video feed for the audited MVD location. Using the same time period and location, there were a total of 4,500 vehicles captured by the MVD through the HDSmart Utility.

- > Total Observed Traffic Volume at MVD Location = 5,000
- > Total MVD Reported Traffic Volume at MVD Location = 4,500

$$\text{Measured Accuracy} = \left[1 - \left(\frac{5000 - 4500}{5000} \right) \right] \times 100 = 90.00\%$$

$$\text{Liquidated Damages} = \frac{(0.950 - 0.900)}{0.001} \times \$200 = \$10,000$$

9 KPI #9 – Non-EL Transaction Processing

9.1 Description

100% of all Non-EL transactions shall be transmitted to the CTRMA DPS within three (3) calendar days of the transaction date.

9.2 KPI Goal

The KPI goal is 100%.

9.3 Maximum Liquidated Damages (per calendar month)

Maximum liquidated damages for lost or uncollectable transactions:

1. Actual revenue above \$5,000, AND
2. Any direct damages associated with the loss

Maximum liquidated damages for transactions transmitted > 3 days and <= 30 days, AND result in revenue generation:

1. 10% of actual revenue, AND
2. Any direct damages associated with the delay

Maximum liquidated damages for transactions older than 30 calendar days:

1. Actual revenue above \$5,000, AND
2. Any direct damages associated with the loss

Note: Actual revenue value should be calculated using 100% of AVI and i-Toll transactions, and PBM transactions at the liquidation rate (to be validated every new fiscal year).

9.4 Testing Frequency

Testing will occur monthly.

9.5 Testing Process

Testing is performed through an Ad-Hoc Query

9.6 Measurement Method

$$\text{Measured Accuracy} = \left[1 - \left(\frac{\text{Count of Transactions} > 3 \text{ Days and } \leq 30 \text{ Days}}{\text{Count of Total Transactions Created}} \right) \right] \times 100$$

1. The count of transactions > 3 Days and <= 30 Days will be the number of transactions initially transmitted to the DPS, in the RTRAN file, within this timeframe.
2. To determine if the 3 day time limit was achieved, the transaction timestamp (lane date) will represent the start time, and the RTRAN file transmission timestamp will represent the end time.
3. The count of total transactions will be all created transactions within the annotated periods above.

9.7 Example KPI Calculation

In this example scenario, assume that during the audit period, there were 50,000 transactions created. Using the same sample set, it was found that 10,000 transactions were transmitted to the DPS, in the initial RTRAN file, outside the 3 day time limit. Of the 10,000 transactions, 6,000 were AVI or iToll, and 4,000 were PBM. The 6,000 AVI transactions totaled \$4,800 while the 4,000 PBM transactions totaled \$4,800.

> Total Count of Transactions = 50,000

> Total Count of Transactions Transmitted > 3 Days and <= 30 Days = 10,000

$$\text{Measured Accuracy} = \left[1 - \left(\frac{10,000}{50,000} \right) \right] \times 100 = 80.00\%$$

Actual Revenue Value = \$4,800 + (\$4,800 x 0.5) = \$7,200

Liquidated Damages = \$7,200 x 10% = \$720

10 KPI #10 – IR

10.1 Description

For transactions requiring a manual review process, 99.50% shall be completed, AND returned, within 72 hours from the time the image review request was received.

10.2 KPI Goal

The KPI goal is 99.50%.

10.3 Maximum Liquidated Damages (per calendar month)

Maximum liquidated damages for Image Reviews completed > 72 hours and <= 10 days:

1. \$200 per each 0.1% below threshold.

Maximum liquidated damages for Image Reviews completed > 10 days and <= 30 days, AND result in revenue generation:

1. 10% of actual revenue, AND
2. Any direct damages associated with the delay

Maximum liquidated damages for lost or uncollectable Image Review transactions:

1. Actual revenue above \$5,000, AND
2. Any direct damages associated with the loss

Maximum liquidated damages for transactions older than 30 calendar days:

1. Actual revenue above \$5,000, AND
2. Any direct damages associated with the loss

Note: Actual revenue value should be calculated using 100% of AVI and i-Toll transactions, and Pay by Mail transactions at the liquidation rate (to be validated every new fiscal year).

10.4 Testing Frequency

Testing will occur monthly.

10.5 Testing Process

Testing is performed through an Ad-Hoc Query.

10.6 Measurement Method

$$\text{Measured Accuracy} = \left[1 - \left(\frac{\text{Total Manual Image Review Results Returned } > 72 \text{ Hours and } \leq 10 \text{ Days}}{\text{Total Manual Image Review Requests Received}} \right) \right] \times 100$$

1. Total manual Image Review requests received is the total amount of image review requests received from the DPS, in an IREQ file.
2. Total manual Image Review results returned > 72 hours and <= 10 days will be the number of image review results returned to the DPS, in an ITRAN, within this timeframe.
3. To determine if Image Review timeframes were achieved, the IREQ receipt timestamp will represent the start time, and the ITRAN file transmission timestamp will represent the end time.

10.7 Example KPI Calculation

In this example scenario, assume that during the audit period, there were 250,000 manual Image Review requests received in an IREQ file. Using the same sample set, there were a total of 246,000 manual Image Review results returned in an ITRAN file within the 72-hour time limit. Of the remaining 4,000 manual Image Review requests, 2,000 were completed and results returned > 72 hours and <= 10 days. The final 2,000 manual Image Review requests were completed and returned > 10 days and <= 30 days. Of the 2,000 transactions, 1,200 were AVI or iToll, and 800 were PBM. The 1,200 AVI transactions totaled \$960 while the 800 PBM transactions totaled \$1,450.

- > Total Count of Manual Image Review Requests Received = 250,000
- > Total Count of Manual Image Review Results Returned < 72 Hours = 246,000
- > Total Count of Manual Image Review Results Returned > 72 Hours and <= 10 Days = 2,000
- > Total Count of Manual Image Review Results Returned > 10 Days and <= 30 Days = 2,000

$$\text{Measured Accuracy} = \left[1 - \left(\frac{2,000}{250,000} \right) \right] \times 100 = 99.20\%$$

$$\text{Liquidated Damages for Image Review Results Returned } > 72 \text{ Hours and } \leq 10 \text{ Days} = \frac{(0.995 - 0.992)}{0.001} \times \$200 = \$600$$

$$\text{Actual Revenue Value for Image Review Results Returned } > 10 \text{ Days and } \leq 30 \text{ Days} = \$960 + (\$1,450 \times 0.5) = \$1,685$$

$$\text{Liquidated Damages for Image Review Results Returned } > 10 \text{ Days and } \leq 30 \text{ Days} = \$1,685 \times 10\% = \$168.50$$

$$\text{Total Liquidated Damages for Image Review Results Returned } > 72 \text{ Hours} = \$600 + \$168.50 = \$768.50$$

11 KPI #11 – Reports

11.1 Description

The Monthly Maintenance Report, accurately detailing system performance relative to all Project KPIs, shall be submitted to CTRMA each month. The Monthly Inventory Report, to be exported directly from the Remote Operations and Maintenance System (ROMS), accurately details the location, count, and serial numbers of all the CTRMA hardware, including retired hardware (if applicable), spares and Return Material Authorization (RMA) hardware for the previous calendar month. Kapsch is to provide complete reports, which include a cover page, table of contents, and summaries, in a format to be agreed upon by Kapsch and CTRMA.

11.2 KPI Goal

All elements described in Section 11.1 will be submitted to CTRMA by the 15th of the following month.

11.3 Maximum Liquidated Damages (per calendar month)

Kapsch cannot invoice for the monthly maintenance fee without submitting these reports.

11.4 Testing Frequency

Testing will occur monthly.

11.5 Testing Process

n/a

12 *KPI #12 – ETC Availability*

12.1 **Description**

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.

12.2 **KPI Goal**

The KPI goal is 99.50%.

12.3 **Maximum Liquidated Damages**

Lost or delayed transactions as a result of ETC lane unavailability shall be included in, and calculated per, KPI #7 (Trip Processing) or KPI #9 (Non-EL Transaction Processing).

12.4 **Testing Frequency**

Testing will occur monthly.

12.5 **Testing Process**

The Toll Zone Equipment Availability KPI will be measured using the ROMS Downtime Analysis Report, as configured and agreed upon by Kapsch and CTRMA.

12.5.1 Applicability

The Toll Zone Equipment Availability KPI is applicable as follows:

MOPAC

1. Shoulder Lane Availability
 - a. 1 of 2 Cameras are operational **AND**
 - b. 1 of 2 SICKs are operational
2. Non-Shoulder Lane Availability
 - a. 1 of 2 Cameras are operational **AND**
 - b. 1 of 2 SICKs are operational **OR**
 - c. Tag Reader is operational
3. All Lane Availability
 - a. 1 of 2 ZC Applications are running and creating accurate vehicle transactions **AND**
 - b. 1 of 2 ICS Servers is online and receiving images from cameras

All Other Roadways

1. Shoulder Lane Availability
 - a. 1 of 2 Cameras are operational **AND**
 - b. Idris is operational
2. Non-Shoulder Lane Availability
 - a. 1 of 2 Cameras are operational **AND**
 - b. Idris is operational **OR**
 - c. Tag Reader is operational
3. All Lane Availability
 - a. 1 of 2 ZC Applications are running and creating accurate vehicle transactions **AND**
 - b. 1 of 2 ICS Servers is online and receiving images from cameras

12.6 Measurement Method

$$\text{Measured Accuracy per ETC Lane} = \left[1 - \left(\frac{\text{Total Lane Unavailability Time Per Plaza}}{\text{Total Time in Audit Period}} \right) \right] \times 100$$

1. Total lane unavailability time per plaza will be the cumulative downtime that meets the defined unavailability criteria listed in this KPI.
2. Total time in audit period is the total days, hours, and or minutes within the corresponding audit time frame.
3. The following excluded downtime examples will be captured within ROMS to adjust system availability calculations automatically:
 - a) Inaccessibility due to hazardous conditions
 - b) Downtime for scheduled maintenance
 - c) External forces which cause equipment damage
 - d) Inaccessibility due to CTRMA driven operational considerations, even though device has failed.

12.7 Example KPI Calculation

In this example scenario, assume that during the audit period, Lane X was unavailable, as defined in the availability criteria of this KPI, for a cumulative total of 6 hours and 35 minutes. The Total Time in Audit Period was 720 hours.

- > Total Lane Unavailability = 6 hours, 35 minutes (395 min)
- > Total Time in Audit Period = 720 hour (43,200 min)

$$\text{Measured Accuracy} = \left[1 - \left(\frac{395}{43200} \right) \right] \times 100 = 99.09\%$$

12.8 Estimated Revenue Loss Measurement Method

For the purpose of quantifying lost revenue, the calculated liquidation rate, as referenced in this document, will utilize the following parameters:

1. Identify the revenue loss timeframe
 - a) Determine total allowable unavailable time for audit period
 - b) Determine when total allowable unavailability time has been exhausted
 - c) Determine adjusted start time and end time of lost revenue event that is subject to liquidated damages
2. Identify the historical transaction volume, rate, and type of the referenced plaza/lane for the liable timeframe for the lost revenue incident.
3. Historical transaction data will be for the identical day of the week and identical time of day for the prior three weeks.
4. Historical transaction data will be evaluated to determine percentage of tag based (TB) transactions vs PBM transactions.
5. Identify current Liquidation Rate (maintained by CTRMA).

The estimated revenue loss will use the following calculation methods:

$$\text{Allowable Unavailable Time} = \text{Total Time in Audit Period} - (0.995(\text{Total Time in Audit Period}))$$

$$\text{Adjusted Unavailable Time} = \text{Unavailable Time} - \text{Allowable Unavailable Time}$$

$$\text{Revenue Loss Start Time} = \text{Start Time of Unavailability} + \text{Allowable Unavailable Time}$$

$$\text{Revenue Loss End Time} = \text{Revenue Loss Start Time} + \text{Adjusted Unavailable Time}$$

$$\text{Estimated Revenue Loss} =$$

$$\{ \text{Liquidation Rate (Avg PBM Transactions} \times \text{Avg PBM Toll Rate)} \} + (\text{Avg TB Transactions} \times \text{Avg TB Toll Rate})$$

12.9 Example Estimated Revenue Loss Calculation

In this example scenario, assume that during the audit period, Lane X was unavailable, as defined in the availability criteria of this KPI, for a cumulative total of 6 hours and 35 minutes (395 minutes). The Total Time in Audit Period was 720 hours (43,200 minutes).

$$\text{Allowable Unavailable Time} = 43,200 \text{ minutes} - (0.995(43,200)) = 216 \text{ minutes}$$

$$\text{Adjusted Unavailable Time} = 395 \text{ minutes} - 216 \text{ minutes} = 175 \text{ minutes}$$

$$\text{Revenue Loss Start Time} = 08:35AM + 216 \text{ minutes} = 12:11PM$$

$$\text{Revenue Loss End Time} = 12:11PM + 175 \text{ minutes} = 03:06PM$$

$$\text{Estimated Revenue Loss} = \{0.50 (412 \times \$1.85)\} + (515 \times \$1.25) = \$1,024.85$$

Note: Reference KPI #7 (Trip Processing) and KPI #9 (Non-EL Transaction Processing) for the inclusion of any liquidated damages.

13 KPI #13 – ETC Host Availability

13.1 Description

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).

13.2 KPI Goal

The KPI goal is 99.50%.

13.3 Maximum Liquidated Damages

Maximum liquidated damages are \$200 per each 0.1% below threshold.

13.4 Testing Frequency

Testing will occur monthly.

13.5 Testing Process

The ETC Host Availability KPI will be measured using the ROMS Downtime Analysis Report, as configured and agreed upon by Kapsch and CTRMA.

13.5.1 Applicability

The ETC Host Availability KPI is applicable as follows:

- > For the purpose of this KPI, the ETC Host includes the systems, applications, and processes listed below:
 - Database
 - Toll Host (Reports)
 - ROMS (Engine, DB, UI)
 - Application Server
 - VES Server
 - Host Server
 - Inserters (Host, ICS, ROMS)

- > Calculated unavailability will only apply when both the primary ETC Host and secondary ETC Host have failed or are unavailable.

13.6 Measurement Method

$$\text{Measured Accuracy} = \left[1 - \left(\frac{\text{Total ETC Host Unavailability Time}}{\text{Total Time in Audit Period}} \right) \right] \times 100$$

1. Total ETC Host unavailability time will be the cumulative downtime that meets the defined unavailability criteria listed in this KPI.
2. Total Time in Audit Period is the total days, hours, and or minutes within the corresponding audit time frame.
3. The following excluded downtime examples will be captured within ROMS to adjust system availability calculations automatically:
 - a) Inaccessibility due to hazardous conditions
 - b) Downtime for scheduled maintenance
 - c) External forces which cause equipment damage
 - d) Inaccessibility due to CTRMA driven operational considerations, even though device has failed.

13.7 Example KPI Calculation

In this example scenario, assume that during the audit period, primary and secondary ETC Hosts were both unavailable, as defined in the availability criteria of this KPI, for a cumulative total of 6 hours and 35 minutes. Total Time in Audit Period was 720 hours.

- > Total Host Unavailability = 6 hours, 35 minutes (395 min)
- > Total Time in Audit Period = 720 hour (43,200 min)

$$\text{Measured Accuracy} = \left[1 - \left(\frac{395}{43200} \right) \right] \times 100 = 99.09\%$$

$$\text{Liquidated Damages} = \frac{(0.995 - 0.990)}{0.001} \times \$200 = \$1,000$$

14 *KPI #14 – Express Closed-Circuit Television (CCTV) Availability*

14.1 Description

Express CCTV shall be available 99.50% of the time, excluding scheduled maintenance.

14.2 KPI Goal

The KPI goal is 99.50%.

14.3 Maximum Liquidated Damages.

Maximum liquidated damages are \$200 per each 0.5% below threshold.

14.4 Testing Frequency

Testing will occur monthly.

14.5 Testing Process

The Express CCTV Availability KPI will be measured using the ROMS Downtime Analysis Report, as configured and agreed upon by Kapsch and CTRMA.

14.6 Measurement Method

$$\text{Measured Accuracy} = \left[1 - \left(\frac{\text{Total Express CCTV Unavailability Time}}{\text{Total Time in Audit Period}} \right) \right] \times 100$$

1. Total Express CCTV Unavailability Time will be the cumulative downtime of each Express CCTV during the audit period.
2. Total Time in Audit Period is the total days, hours, and/or minutes within the corresponding audit time frame.
3. The following excluded downtime examples will be captured within ROMS to adjust system availability calculations automatically:
 - a) Inaccessibility due to hazardous conditions
 - b) Downtime for scheduled maintenance
 - c) External forces which cause equipment damage
 - d) Inaccessibility due to CTRMA driven operational considerations, even though device has failed.

14.7 Example KPI Calculation

In this example scenario, assume that during the audit period, Express CCTV #1 & #2 were unavailable for a cumulative total of 6 hours and 35 minutes. The Total Time in Audit Period was 720 hours.

- > Total Express CCTV Unavailability = 6 hours, 35 minutes (395 min)
- > Total Time in Audit Period = 720 hour (43,200 min)

$$\text{Measured Accuracy} = \left[1 - \left(\frac{395}{43200} \right) \right] \times 100 = 99.09\%$$

$$\text{Liquidated Damages} = \frac{(0.995 - 0.990)}{0.005} \times \$200 = \$200$$

15 *KPI #15 – Non-Express CCTV Availability*

15.1 **Description**

Non-Express CCTV shall be available 95.00% of the time, excluding scheduled maintenance.

15.2 **KPI Goal**

The KPI goal is 95.00%.

15.3 **Maximum Liquidated Damages**

Maximum liquidated damages are \$200 per hour, 0.5% per hour threshold.

15.4 **Testing Frequency**

Testing will occur monthly.

15.5 **Testing Procedure**

The Non-Express CCTV Availability KPI will be measured using the ROMS Downtime Analysis Report, configured and agreed upon by Kapsch and CTRMA.

15.6 Measurement Method

$$\text{Measured Accuracy} = \left[1 - \left(\frac{\text{Total Non Express CCTV Unavailability Time}}{\text{Total Time in Audit Period}} \right) \right] \times 100$$

1. Total Non-Express CCTV Unavailability Time will be the cumulative downtime of each Non-Express CCTV during audit period.
2. Total Time in Audit Period is the total days, hours, and or minutes within the corresponding audit time frame.
3. The following excluded downtime examples will be captured in the ROMS to adjust system availability calculations automatically.
 - a) Inaccessibility due to natural conditions
 - b) Downtime for scheduled maintenance
 - c) External forces which cause equipment damage
 - d) Inaccessibility due to CTRMA departmental considerations, even though device has failed.

15.7 Example KPI Calculation

In this example scenario, assume that during the audit period, Non-Express CCTV #1 & #2 were unavailable for a cumulative total of 6 hours and 35 minutes. The Total Time in Audit Period was 720 hours.

- > Total Non-Express CCTV Unavailability = 6 hours, 35 minutes (395 min)
- > Total Time in Audit Period = 720 hour (43,200 min)

$$\text{Measured Accuracy} = \left[1 - \left(\frac{395}{43200} \right) \right] \times 100 = 99.09\%$$

$$\text{Liquidated Damages} = \frac{(0.950 - 0.990)}{0.005} \times \$200 = \$0$$

16 *KPI #16 – Dynamic Message Sign (DMS) Availability*

16.1 **Description**

DMS shall be available 95.00% of the time, excluding scheduled maintenance.

16.2 **KPI Goal**

The KPI goal is 95.00%.

16.3 **Maximum Liquidated Damages.**

Maximum liquidated damages are \$200 per event, with a maximum hold.

16.4 **Testing Frequency**

Testing will occur monthly.

16.5 **Testing Procedure**

The DMS Availability KPI will be measured using the ROMS Downtime Analysis Report, configured and agreed upon by Kapsch and CTRMA.

16.6 Measurement Method

$$\text{Measured Accuracy} = \left[1 - \left(\frac{\text{Total DMS Unavailability Time}}{\text{Total Time in Audit Period}} \right) \right] \times 100$$

1. Total DMS Unavailability Time will be the cumulative downtime of each DMS during audit period.
2. Total Time in Audit Period is the total days, hours, and or minutes in the corresponding audit time frame.
3. The following excluded downtime examples will be captured within DMS to adjust system availability calculations automatically:
 - a) Inaccessibility due to network conditions
 - b) Downtime for scheduled maintenance
 - c) External forces which cause system downtime
 - d) Inaccessibility due to CTRMA driver operational considerations, even though device has failed.

16.7 Example KPI Calculation

In this example scenario, assume that during the audit period, DMS #1 & #2 were unavailable for a cumulative total of 6 hours and 35 minutes. The Total Time in Audit Period was 720 hours.

- > Total DMS Unavailability Time: 6 hours, 35 minutes (395 min)
- > Total Time in Audit Period: 720 hours (43,200 min)

$$\text{Measured Accuracy} = \left[1 - \left(\frac{395}{43200} \right) \right] \times 100 = 99.09\%$$

$$\text{Liquidated Damages} = \frac{(0.950 - 0.990)}{0.005} \times \$200 = \$0$$

17 *KPI #17 – Express MVD Availability*

17.1 **Description**

Express MVDs shall be available 99.50% of the time per segment, excluding scheduled maintenance.

17.2 **KPI Goal**

The KPI goal is 99.50%.

17.3 **Maximum Liquidated Damages**

Maximum liquidated damages are: \$100 per each 0.5% below threshold, per segment.

17.4 **Testing Frequency**

Testing will occur monthly.

17.5 **Testing Process**

The Express MVD's Availability KPI will be measured using the ROMS Downtime Analysis Report, as configured and agreed upon by Kapsch and CTRMA.

17.6 Measurement Method

$$\text{Measured Accuracy per Segment} = \left[1 - \left(\frac{\text{Total Express MVD Unavailability Time}}{\text{Total Time in Audit Period}} \right) \right] \times 100$$

1. Total Express MVD Unavailability Time will be the cumulative downtime of each Express MVD, per segment, during audit period.
2. Total time in audit period is the total days, hours, and or minutes within the corresponding audit time frame.
3. The following excluded downtime examples will be captured within ROMS to adjust system availability calculations automatically:
 - a) Inaccessibility due to hazardous conditions
 - b) Downtime for scheduled maintenance
 - c) External forces which cause equipment damage
 - d) Inaccessibility due to CTRMA driven operational considerations, even though device has failed.

17.7 Example KPI Calculation

In this example scenario, assume that during the audit period, Express MVD #1 and #2, of segment #4, was unavailable for a cumulative total of 6 hours and 35 minutes. Total Time in Audit Period was 720 hours.

- > Total Express MVD Unavailability = 6 hours, 35 minutes (395 min)
- > Total Time in Audit Period = 720 hour (43,200 min)

$$\text{Measured Accuracy} = \left[1 - \left(\frac{395}{43200} \right) \right] \times 100 = 99.09\%$$

$$\text{Liquidated Damages} = \frac{(0.995 - 0.990)}{0.005} \times \$100 = \$100$$

18 KPI #18 – Non-Express MVD Availability

18.1 Description

Non-Express MVDs shall be available 95.00% of the time per device excluding scheduled maintenance.

18.2 KPI Goal

The KPI goal is 95.00%.

18.3 Maximum Liquidated Damages

Maximum liquidated damages are: \$100 per device per month threshold per device.

18.4 Testing Frequency

Testing will occur monthly.

18.5 Testing Procedure

The Non-Express MVD Availability KPI will be measured using the ROMS Diagnostic Analysis Report, configured and agreed upon by Kapsch and CTRMA.

18.6 Measurement Method

$$\text{Measured Accuracy per Device} = \left[1 - \left(\frac{\text{Total Non Express MVD Unavailability Time}}{\text{Total Time in Audit Period}} \right) \right] \times 100$$

1. Total Non-Express MVD Unavailability Time will be the cumulative minutes of each Non-Express MVD during audit period.
2. Total Time in Audit Period will be total days, hours, and or minutes in the corresponding audit time frame.
3. The following excluded downtime examples will be captured in ROMS to adjust system availability calculations automatically:
 - a) Inaccessibility due to hazardous conditions
 - b) Downtime for scheduled maintenance
 - c) External forces which cause equipment failure
 - d) Inaccessibility due to CTRMA operational considerations, even though device has failed.

18.7 Example KPI Calculation

In this example scenario, assume during the audit period, Non-Express MVD #1 was unavailable for a cumulative total of 6 hours and 35 minutes. Total Time in Audit Period was 720 hours.

- > Total Non-Express MVD Unavailability = 6 hours, 35 minutes (395 min)
- > Total Time in Audit Period = 720 hour (43,200 min)

$$\text{Measured Accuracy} = \left[1 - \left(\frac{395}{43200} \right) \right] \times 100 = 99.09\%$$

$$\text{Liquidated Damages} = \frac{(0.950 - 0.990)}{0.005} \times \$100 = \$0$$

19 *KPI #19 – Variable Toll Message Sign (VTMS) Availability*

19.1 **Description**

The Variable Toll Message Sign (VTMS) System will be available as outlined below, excluding scheduled maintenance. It will have an availability of 99.95%, with a 15-minute grace period for emergency maintenance.

19.2 **KPI Goal**

The KPI goal is 99.95%, with the exclusion of a 15-minute grace period.

19.3 **Maximum Liquidated Damages**

Maximum liquidated damages are actual revenue above \$5,000 (calculated using liquidation rate).

19.3.1 **Liquidated Damages Calculation Method**

For the purpose of calculating liquidated damages of actual revenue, said revenue shall be otherwise deemed uncollectable by CTRMA. Uncollectable revenue will utilize the following calculation example:

Liquidated Damages = Liquidation Rate (PBM Expected Revenue) + (TB Expected Revenue)

Current Liquidation Rate maintained by CTRMA

19.4 **Testing Frequency**

Testing will occur monthly.

19.5 **Testing Process**

The VTMS's Availability KPI will be measured using the ROMS Downtime Analysis Report, configured and agreed upon by Kapsch and CTRMA.

19.6 Measurement Method

$$\text{Measured Accuracy} = \left[1 - \left(\frac{\text{Total VTMS Unavailability Time} - 15 \text{ Minute Grace Period per Occurrence}}{\text{Total Time in Audit Period}} \right) \right] \times 100$$

1. Total VTMS Unavailability Time will be the cumulative downtime of each VTMS during audit period.
2. Total Time in Audit Period is the total days, hours, and or minutes within the corresponding audit time frame.
3. A 15-minute grace period, per occurrence, will be deducted from the total unavailable time.
4. The following excluded downtime examples will be captured within ROMS to adjust system availability calculations automatically:
 - a) Inaccessibility due to hazardous conditions
 - b) Downtime for scheduled maintenance
 - c) External forces which cause equipment damage
 - d) Inaccessibility due to operational considerations, even though device has failed.

19.7 Example KPI Calculation

In this example scenario, assume that during the audit period, VTMS #1 was unavailable for a cumulative total of 6 hours and 35 minutes. Of the cumulative unavailable time, two hours was excluded downtime due to the sum of eight separate, 15-minute grace periods. Total time in audit period was 720 hours.

- > Total VTMS Unavailability = 6 hours, 35 minutes (395 min)
- > Total Grace Period Time = 2 hours (120 min)
- > Adjusted Unavailability = 4 hours, 35 minutes (275 min)
- > Total Time in Audit Period = 720 hour (43,200 min)

$$\text{Measured Accuracy} = \left[1 - \left(\frac{395 - 120}{43200} \right) \right] \times 100 = 99.36\%$$

19.8 Estimated Revenue Loss Measurement Method

For the purpose of quantifying lost revenue, the calculated liquidation rate as referenced in this document, will utilize the following parameters:

1. Identify the revenue loss timeframe
 - a) Determine total allowable unavailable time for audit period
 - b) Determine when total allowable unavailability time has been exhausted
 - c) Determine adjusted start time and end time of lost revenue event that is subject to liquidated damages
2. Identify the historical transaction volume, rate, and type of the referenced plaza/lane for the liable timeframe for the lost revenue incident.
3. Historical transaction data will be for the identical day of the week and identical time of day, for the prior three weeks.
4. Historical transaction data will be evaluated to determine percentage of TB transactions vs PBM transactions.
5. Identify current Liquidation Rate (maintained by CTRMA).

The estimated revenue loss will use the following calculation methods:

$$\text{Allowable Unavailable Time} = \text{Total Time in Audit Period} - (0.9995(\text{Total Time in Audit Period}))$$

$$\text{Adjusted Unavailable Time} = \text{Unavailable Time} - \text{Allowable Unavailable Time}$$

$$\text{Revenue Loss Start Time} = \text{Start Time of Unavailability} + \text{Allowable Unavailable Time}$$

$$\text{Revenue Loss End Time} = \text{Revenue Loss Start Time} + \text{Adjusted Unavailable Time}$$

$$\text{Estimated Revenue Loss} =$$

$$\{\text{Liquidation Rate (Avg PBM Transactions} \times \text{Avg PBM Toll Rate)}\} + (\text{Avg TB Transactions} \times \text{Avg TB Toll Rate})$$

19.9 Example Estimated Revenue Loss Calculation

In this example scenario, assume that during the audit period, Lane X was unavailable, as defined in the availability criteria of this KPI, for a cumulative total of 6 hours and 35 minutes (395 minutes). The Total Time in Audit Period was 720 hours (43,200 minutes).

$$\text{Allowable Unavailable Time} = 43,200 \text{ minutes} - (0.9995(43,200)) = 21 \text{ minutes}$$

$$\text{Adjusted Unavailable Time} = 395 \text{ minutes} - 21 \text{ minutes} = 374 \text{ minutes}$$

$$\text{Revenue Loss Start Time} = 08:35\text{AM} + 21 \text{ minutes} = 08:56 \text{ AM}$$

$$\text{Revenue Loss End Time} = 08:56 \text{ AM} + 374 \text{ minutes} = 03:10\text{PM}$$

$$\text{Estimated Revenue Loss} = \{0.50 (412 \times \$1.85)\} + (515 \times \$1.25) = \$1,024.85$$

20 KPI #20 – VTMS Accuracy

20.1 Description

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.

20.2 KPI Goal

The KPI goal is 99.90%.

20.3 Maximum Liquidated Damages

Maximum liquidated damages are \$200 per each 0.5% below threshold.

20.4 Testing Frequency

Testing will occur monthly.

20.5 Testing Process

Testing is performed through an Ad-Hoc Query, in addition to the ROMS Downtime Analysis Report, as configured and agreed upon by Kapsch and CTRMA.

Accuracy of the VTMS will be evaluated for the following criteria:

- > Rate sent from the trip engine matches the rate displayed on VTMS
- > Default rates shown on VTMS

20.6 Measurement Method

$$\text{Measured Accuracy per VTMS} = \left[1 - \left(\frac{\text{Total Time of Incorrectly Displayed Toll Rate per VTMS}}{\text{Total Time in Audit Period}} \right) \right] \times 100$$

1. Total Time of Incorrectly Displayed Toll Rate per VTMS will be the cumulative time that each VTMS presented an incorrect toll rate during the audit period.
2. Total Time in Audit Period is the total days, hours, and or minutes within the corresponding audit time frame.
3. The following excluded downtime examples will be captured within ROMS to adjust system availability calculations automatically:
 - a) Inaccessibility due to hazardous conditions
 - b) Downtime for scheduled maintenance
 - c) External forces which cause equipment damage
 - d) Inaccessibility due to operational considerations, even though device has failed.

20.7 Example KPI Calculation

In this example scenario, assume that during the audit period, VTMS #1 posted an inaccurate toll rate for a cumulative total of 6 hours and 35 minutes. The Total Time in Audit Period was 720 hours.

- > Total Time of Incorrectly Displayed Toll Rates per VTMS = 6 hours, 35 minutes (395 min)
- > Total Time in Audit Period = 720 hour (43,200 min)

$$\text{Measured Accuracy} = \left[1 - \left(\frac{395}{43200} \right) \right] \times 100 = 99.08\%$$

$$\text{Liquidated Damages} = \frac{(0.999 - 0.990)}{0.005} \times \$200 = \$400$$

21 *KPI #21 – Time to Respond – Priority 1*

21.1 **Description**

All Priority 1 tickets must be acknowledged within one (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.

21.2 **KPI Goal**

N/A

21.3 **Maximum Liquidated Damages**

Maximum liquidated damages are \$100 per each event > 1 hour.

21.4 **Testing Frequency**

Testing will occur monthly.

21.5 **Applicability**

Time to Respond – Priority 1 KPI is applicable as follows:

- > Emergency events that are directly impacting safety, or issues in which revenue and/or data loss has occurred, is imminent, or is reasonably expected to occur if repair, restoration, or remediation is not completed.

21.6 Testing Process

Measured per event, based on the ROMS Service Level Agreement (SLA) Detail Report

21.6.1 Exclusion for safety

If there are reasonable instances in which a technician cannot respond—if that response would put themselves, the travelling public, or any other being in harm or impending danger—the technician will be expected to wait until they can safely assess, access, and respond to the incident. This will be recorded in the daily log, and this time will be excluded from the calculation of this KPI.

21.7 Measurement Method

P1 Response Time = (Time_{Acknowledged}) – (Time_{Created})

21.8 Example KPI Calculation

In this example scenario, assume that during the audit period, there were 10 P1 tickets that had a response time > 1 hour.

Total Sum of P1 Tickets with Response Time > 1 hour = 10

Liquidated Damages = 10 x \$100 = \$1,000

22 KPI #22 – Time to Repair – Priority 1

22.1 Description

All Priority 1 tickets must be repaired within four (4) hours of ticket acknowledgement.

22.2 KPI Goal

N/A

22.3 Maximum Liquidated Damages

Maximum liquidated damages are \$200 per each event > 4 hours.

22.4 Testing Frequency

Testing will occur monthly.

22.5 Applicability

Time to Repair – Priority 1 KPI is applicable as follows:

- > Emergency events that are directly impacting safety, or issues in which revenue and/or data loss has occurred, is imminent, or is reasonably expected to occur if repair, restoration, or remediation is not completed.

22.6 Testing Process

This KPI is measured per event, based on the ROMS Service Level Agreement (SLA) Detail Report.

22.6.1 Exclusion for safety

If there are reasonable instances in which a technician cannot respond—if that response would put themselves, the travelling public, or any other being in harm or impending danger—the technician will be expected to wait until they can safely assess, access, and respond to the incident. This will be recorded in the daily log, and this time will be excluded from the calculation of this KPI.

22.7 Measurement Method

$$P1 \text{ Repair Time} = (Time_{\text{Repaired}}) - (Time_{\text{Acknowledged}})$$

22.8 Example KPI Calculation

In this example scenario, assume that during the audit period, there were 10 P1 tickets that had a repair time > 4 hours.

$$\text{Total Sum of P1 Tickets with Repair Time} > 4 \text{ hours} = 10$$

$$\text{Liquidated Damages} = 10 \times \$200 = \$2,000$$

23 *KPI #23 – Time to Respond – Priority 2*

23.1 **Description**

All Priority 2 tickets must be acknowledged within one (1) hour of ticket creation. A 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.

23.2 **KPI Goal**

N/A

23.3 **Maximum Liquidated Damages**

Maximum liquidated damages are \$75 per each event > 1 hour.

23.4 **Testing Frequency**

Testing will occur monthly.

23.5 **Applicability**

Time to Respond – Priority 2 KPI is applicable as follows:

- > Non-critical issues in which revenue and/or data loss is not reasonably expected to occur if repair, restoration, or remediation is not completed.

23.6 Testing Process

This KPI is measured per each event, based on the ROMS SLA Detail Report.

23.6.1 Exclusion for safety

If there are reasonable instances in which a technician cannot respond—if that response would put themselves, the travelling public, or any other being in harm or impending danger—the technician will be expected to wait until they can safely assess, access, and respond to the incident. This will be recorded in the daily log, and this time will be excluded from the calculation of this KPI.

23.7 Measurement Method

$$P2 \text{ Response Time} = (Time_{Acknowledged}) - (Time_{Created})$$

23.8 Example KPI Calculation

In this example scenario, assume that during the audit period, there were 10 P2 tickets that had a response time > 1 hour.

$$Total \text{ Sum of P2 Tickets with Response Time} > 1 \text{ hour} = 10$$

$$Liquidated \text{ Damages} = 10 \times \$75 = \$750$$

24 *KPI #24 – Time to Repair – Priority 2*

24.1 **Description**

All Priority 2 tickets must be repaired within 12 hours of ticket acknowledgement.

24.2 **KPI Goal**

N/A

24.3 **Maximum Liquidated Damages**

Maximum liquidated damages are \$150 per each event > 12 hours.

24.4 **Testing Frequency**

Testing will occur monthly.

24.5 **Applicability**

Time to Repair – Priority 2 KPI is applicable as follows;

- > Non-critical issues in which revenue and/or data loss is not reasonably expected to occur if repair, restoration, or remediation is not completed.

24.6 Testing Process

This KPI is measured per each event, based on the ROMS SLA Detail Report.

24.6.1 Exclusion for safety

If there are reasonable instances in which a technician cannot respond--if that response would put themselves, the travelling public, or any other being in harm or impending danger--the technician will be expected to wait until they can safely assess, access, and respond to the incident. This will be recorded in the daily log, and this time will be excluded from the calculation of this KPI.

24.7 Measurement Method

$$P2 \text{ Repair Time} = (Time_{\text{Repaired}}) - (Time_{\text{Acknowledged}})$$

24.8 Example KPI Calculation

In this example scenario, assume that during the audit period, there were 10 P2 tickets that had a repair time > 12 hours.

$$Total \text{ Sum of P2 Tickets with Repair Time} > 12 \text{ hours} = 10$$

$$Liquidated \text{ Damages} = 10 \times \$150 = \$1,500$$

25 *KPI #25 – Time to Respond – Priority 3*

25.1 **Description**

All Priority 3 tickets must be acknowledged within one (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 the potential to degrade the system performance, and has no impact to revenue collection.

25.2 **KPI Goal**

N/A

25.3 **Maximum Liquidated Damages**

Maximum liquidated damages are \$25 per each event > 1 hour.

25.4 **Testing Frequency**

Testing will occur monthly.

25.5 **Applicability**

Time to Respond – Priority 3 KPI is applicable as follows;

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.

25.6 Testing Process

This KPI is measured per each event, based on the ROMS SLA Detail Report.

25.6.1 Exclusion for safety

If there are reasonable instances in which a technician cannot respond—if that response would put themselves, the travelling public, or any other being in harm or impending danger—the technician will be expected to wait until they can safely assess, access, and respond to the incident. This will be recorded in the daily log, and this time will be excluded from the calculation of this KPI.

25.7 Measurement Method

$$P3 \text{ Response Time} = (Time_{Acknowledged}) - (Time_{Created})$$

25.8 Example KPI Calculation

In this example scenario, assume that during the audit period, there were 10 P3 tickets that had a response time > 1 hour.

$$Total \text{ Sum of P3 Tickets with Response Time} > 1 \text{ hour} = 10$$

$$Liquidated \text{ Damages} = 10 \times \$25 = \$250$$

26 KPI #26 – Time to Repair – Priority 3

26.1 Description

All Priority 3 tickets must be repaired within 36 hours of ticket acknowledgement.

26.2 KPI Goal

N/A

26.3 Maximum Liquidated Damages

Maximum liquidated damages are \$50 per each event > 36 hours.

26.4 Testing Frequency

Testing will occur monthly.

26.5 Applicability

Time to Repair – Priority 3 KPI is applicable as follows;

- > 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.

26.6 Testing Process

This KPI is measured per each event, based on the ROMS SLA Detail Report.

26.6.1 Exclusion for safety

If there are reasonable instances in which a technician cannot respond—if that response would put themselves, the travelling public, or any other being in harm or impending danger—the technician will be expected to wait until they can safely assess, access, and respond to the incident. This will be recorded in the daily log and this time will be excluded from the calculation of this KPI.

26.7 Measurement Method

$$P3 \text{ Repair Time} = (Time_{\text{Repaired}}) - (Time_{\text{Acknowledged}})$$

26.8 Example KPI Calculation

In this example scenario, assume that during the audit period, there were 10 P3 tickets that had a repair time > 36 hours.

$$\text{Total Sum of P3 Tickets with Repair Time} > 36 \text{ hours} = 10$$

$$\text{Liquidated Damages} = 10 \times \$50 = \$500$$

27 *KPI #27 – Inventory*

27.1 **Description**

All CTRMA hardware, including that which is currently installed, maintained as spares, and RMA (if applicable), shall be included in an Annual Physical Inventory Audit Program, as agreed upon by Kapsch and CTRMA.

27.2 **KPI Goal**

All elements described in Section 27.1 shall be inventoried annually and submitted with the yearly February Monthly Maintenance Report (MMR).

27.3 **Maximum Liquidated Damages (per calendar month)**

Kapsch cannot invoice for the monthly maintenance fee without submitting this audit.

27.4 **Testing Frequency**

Testing will occur annually.

27.5 **Testing Process**

n/a

-END OF DOCUMENT-

Appendix A Appendix A MVD Calibration Verification Sheet

The MVD Calibration Verification Sheet is displayed on the following pages.

MVD Calibration Verification Sheet

Detector ID	05100 - NB	Associated Cabinet	DP1
Mounting Height		Setback	

TEST SETUP

References	1. <i>Wavetronix MVD Calibration Guide</i>
Requirements	(modified) - ITS-327 (4.18.8.1) Total traffic and per lane volume must be within 10% of visually confirmed counts. <i>Note: 5% stated erroneously in spec. HDSmart datasheet states 90% accuracy (10% of visually confirmed counts), not 95%.</i> ITS-329 (4.18.8.3) Occupancy must be within 10% of field verified calculations. ITS-331 (4.18.8.4) These requirements apply to all MVD locations. Testing must require the use of live traffic. ITS-332 (4.18.8.5) The MVD shall provide full coverage of the managed lanes, general purpose lanes, frontage roads, and all ramps.
Pre-Requisites	1. <i>Initial MVD alignment procedure completed (per wavetronix mvd calibration guide).</i> 2. <i>MVD configured for coverage of all required lanes and bin classes (per mvd configuration datasheet).</i> 3. <i>Live traffic on the roadway.</i>
Test Setup Instructions	1. <i>One or more persons as needed to cover all lanes during volume and bin testing.</i> 2. <i>One person with accurate watch synchronized (+/- 1 sec) to MVD time.</i> 3. <i>Laptop connected to MVD via HDSmart configuration utility to review MVD data log. Also must be in close proximity to other test personnel during the test.</i>

MVD Calibration Verification Sheet

MVD Configuration

With laptop logged in to MVD via HDSmart utility, check all configuration settings are correct, per the mvd configuration sheet and mvd lane configuration list.	Configuration Verified <input type="checkbox"/>
--	---

VEHICLE COUNT VERIFICATION

1. Using the thumb clicker, count cars in assigned lane for a minimum 5 minute period (note: 5 cars minimum must be counted). Record total counts to the right. Note: Two people will be simultaneously counting up to 2 lanes each. Note: In addition to counting for a minimum of 5 minutes, a minimum of 5 vehicles must be counted for each lane to get an acceptable sample size. 2. Record values reported by the MVD the right. 3. Calculate and record Difference and %Accuracy values.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #e1eef6;"> <th colspan="6" style="text-align: center;">LANE 1 (closest lane) COUNTS</th> </tr> <tr style="background-color: #e1eef6;"> <th style="width: 15%;">Start Time</th> <th style="width: 15%;">Clicker</th> <th style="width: 15%;">MVD</th> <th style="width: 15%;">End Time</th> <th style="width: 15%;">Difference</th> <th style="width: 15%;">% Accuracy</th> </tr> </thead> <tbody> <tr> <td>2:04pm</td> <td style="text-align: center;">30</td> <td style="text-align: center;">29</td> <td>2:08pm</td> <td style="text-align: center;">1</td> <td style="text-align: center;">96.7%</td> </tr> <tr style="background-color: #e1eef6;"> <th colspan="6" style="text-align: center;">LANE 2 COUNTS</th> </tr> <tr style="background-color: #e1eef6;"> <th>Start Time</th> <th>Clicker</th> <th>MVD</th> <th>End Time</th> <th>Difference</th> <th>% Accuracy</th> </tr> <tr> <td>2:08pm</td> <td style="text-align: center;">30</td> <td style="text-align: center;">26</td> <td>2:12pm</td> <td style="text-align: center;">4</td> <td style="text-align: center;">86.7%</td> </tr> <tr style="background-color: #e1eef6;"> <th colspan="6" style="text-align: center;">LANE 3 COUNTS</th> </tr> <tr style="background-color: #e1eef6;"> <th>Start Time</th> <th>Clicker</th> <th>MVD</th> <th>End Time</th> <th>Difference</th> <th>% Accuracy</th> </tr> <tr> <td>2:12pm</td> <td style="text-align: center;">30</td> <td style="text-align: center;">26</td> <td>2:16pm</td> <td style="text-align: center;">4</td> <td style="text-align: center;">86.7%</td> </tr> <tr style="background-color: #e1eef6;"> <th colspan="6" style="text-align: center;">LANE 4 COUNTS</th> </tr> <tr style="background-color: #e1eef6;"> <th>Start Time</th> <th>Clicker</th> <th>MVD</th> <th>End Time</th> <th>Difference</th> <th>% Accuracy</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">0</td> <td style="text-align: center;">#DIV/0!</td> </tr> <tr style="background-color: #e1eef6;"> <th colspan="6" style="text-align: center;">LANE 5 (furthest lane) COUNTS</th> </tr> <tr style="background-color: #e1eef6;"> <th>Start Time</th> <th>Clicker</th> <th>MVD</th> <th>End Time</th> <th>Difference</th> <th>% Accuracy</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td style="text-align: center;">0</td> <td style="text-align: center;">#DIV/0!</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #e1eef6;"> <th colspan="6" style="text-align: center;">Total Counts (add clicker counts above, compare with total volume logged by MVD)</th> </tr> <tr style="background-color: #e1eef6;"> <th style="width: 15%;">Start Time</th> <th style="width: 15%;">Clicker</th> <th style="width: 15%;">MVD</th> <th style="width: 15%;">End Time</th> <th style="width: 15%;">Difference</th> <th style="width: 15%;">% Accuracy</th> </tr> </thead> <tbody> <tr> <td>2:04pm</td> <td style="text-align: center;">90</td> <td style="text-align: center;">81</td> <td>2:16pm</td> <td style="text-align: center;">9</td> <td style="text-align: center;">90.0%</td> </tr> </tbody> </table>	LANE 1 (closest lane) COUNTS						Start Time	Clicker	MVD	End Time	Difference	% Accuracy	2:04pm	30	29	2:08pm	1	96.7%	LANE 2 COUNTS						Start Time	Clicker	MVD	End Time	Difference	% Accuracy	2:08pm	30	26	2:12pm	4	86.7%	LANE 3 COUNTS						Start Time	Clicker	MVD	End Time	Difference	% Accuracy	2:12pm	30	26	2:16pm	4	86.7%	LANE 4 COUNTS						Start Time	Clicker	MVD	End Time	Difference	% Accuracy					0	#DIV/0!	LANE 5 (furthest lane) COUNTS						Start Time	Clicker	MVD	End Time	Difference	% Accuracy					0	#DIV/0!	Total Counts (add clicker counts above, compare with total volume logged by MVD)						Start Time	Clicker	MVD	End Time	Difference	% Accuracy	2:04pm	90	81	2:16pm	9	90.0%
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MVD Calibration Verification Sheet

Test Lead Signature	Kevin Pruitt	Date Completed	22-Nov-21
END OF DATA SHEET			



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

March 27, 2024
AGENDA ITEM #6

183A Phase III Project update

Strategic Plan Relevance: Stewardship, Service & Safety
Department: Engineering
Contact: Mike Sexton, Director of Engineering
Associated Costs: N/A
Funding Source: N/A
Action Requested: Briefing and Board Discussion Only

Description/Background:

Presentation on project under construction, 183A Phase III Project.

Backup provided: None



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

March 27, 2024
AGENDA ITEM #7

Executive Director Board Report

Strategic Plan Relevance: Stewardship, Collaboration, Innovation, Service & Safety

Department: Executive

Contact: James M. Bass, Executive Director

Associated Costs: N/A

Funding Source: N/A

Action Requested: Briefing and Board Discussion Only

Project Description/Background:

Executive Director Report.

- A. Agency performance metrics.
 - i. Roadway Performance
 - ii. Call-Center Performance

Backup provided: None



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

March 27, 2024
AGENDA ITEM #8

Executive Session

Executive Session:

Discuss the sale, transfer or exchange of one or more parcels or interests in real property owned by the Mobility Authority and related legal issues as authorized by §551.071 (Consultation with Attorney) and §551.072 (Deliberation Regarding Real Property; Closed Meeting).



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

March 27, 2024
AGENDA ITEM #9

Executive Session

Executive Session:

Discuss legal issues related to claims by or against the Mobility Authority; pending or contemplated litigation and any related settlement offers; or other matters as authorized by §551.071 (Consultation with Attorney).



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

March 27, 2024
AGENDA ITEM #10

Executive Session

Executive Session:

Discuss legal issues relating to procurement and financing of Mobility Authority transportation projects and toll system improvements, as authorized by §551.071 (Consultation with Attorney).



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

March 27, 2024
AGENDA ITEM #11

Executive Session

Executive Session:

Discuss personnel matters related to the executive director's employment agreement, as authorized by §551.074 (Personnel Matters).



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

March 27, 2024
AGENDA ITEM #12

Adjourn Meeting

Adjourn Board Meeting.