



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

Regular Meeting of the Board of Directors

9:00 a.m.

Wednesday, September 30, 2020

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*

SPECIAL NOTE TO MEMBERS OF THE PUBLIC: Pursuant to the March 16, 2020 proclamation issued by Governor Abbott, this meeting will be held by videoconference in order to advance the public health goal of limiting face-to-face meetings (also called "social distancing") to slow the spread of COVID-19. Some Board Members may be present in the Lebermann Board Room while others may attend the meeting via videoconferencing. In order to maintain safe social distancing, members of the public will not be permitted to attend in person. Instead, we ask that you view the Board Meeting online via the live stream link on our website. Members of the public that wish to join the videoconference to provide comments during the Board Meeting must register at least 30 minutes prior to the scheduled start time by contacting the Central Texas Regional Mobility Authority at (844) 287-6220.

AGENDA

No action on the following:

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

Convene the Audit Committee Meeting

2. Audit Committee Meeting
 - A. Audit Committee meeting called to order by Committee Chairman Singleton.
 - B. Introduction of external auditors from RSM US LLP.

- C. Discuss, consider, and take appropriate action to accept the Fiscal Year 2020 Audit Reports.
- D. Adjourn Audit Committee.

Consent Agenda

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

- 3. Approve the minutes from the August 26, 2020 Regular Board Meeting.
- 4. 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.

- 5. Accept the financial statements through August 2020 and consider the monthly budget update.
- 6. Discuss and consider approving a contract with Stantec Consulting Services, Inc. for traffic and revenue engineering services.
- 7. Discuss and consider approving a contract with CDM Smith Inc. for traffic and revenue engineering services.
- 8. Discuss and consider approving a contract with C&M Associates, Inc. for traffic and revenue engineering services.
- 9. Discuss and consider authorizing the issuance, sale and delivery of Central Texas Regional Mobility Authority Senior Lien Revenue Bonds, Subordinate Lien Revenue Bond Anticipation Notes, and Subordinate Lien Refunding Bonds, in accordance with specified parameters for improvements to the CTRMA System, including the 183A Phase III Project, and the refunding of certain outstanding Obligations.
- 10. Discuss and consider approving a Project Development Agreement with the Texas Department of Transportation for the 183A Phase III Project.
- 11. Discuss and consider awarding a construction contract for the 183A Phase III Project.
- 12. Discuss and consider approving Work Authorization No. 1 with Cofiroute USA, LLC for the automation of the Habitual Violator Program.

13. Authorize negotiation and execution of a contract to purchase each of the following described parcels or property interests for the 183A Phase III Project:
 - A. Parcel 3E of the 183A Phase III Project, an easement taking of 20,000 square feet from a 11.34-acre parcel of real estate, **owned by Tiny Foster**, and located at 1880 Hwy 183, Leander, TX 78641.

Briefings and Reports

Items for briefing and discussion only. No action will be taken by the Board.

14. Presentation regarding TxDOT/TxTag back office transition
15. Executive Director Board Report.
 - A. Key findings of CTRMA travel behavior survey
 - B. Effect of COVID-19 on agency operations
 - C. 183 North procurement update
 - D. 183 South schedule update
 - E. Annual toll rate adjustments

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:

16. Discuss the acquisition of one or more parcels or interests in real property needed for the 183A Phase III Project and related issues, pursuant to §551.072 (Deliberation Regarding Real Property) and §551.071 (Consultation with Attorney).
17. 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).
18. Discuss legal issues relating to procurement and financing of Mobility Authority transportation projects, as authorized by §551.071 (Consultation with Attorney).
19. Discuss personnel matters as authorized by §551.074 (Personnel Matters).

Reconvene in Open Session.

Regular Items

Items to discuss, consider, and take appropriate action.

20. 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.

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.

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 law must be open to the public, shall be audible to the public at the meeting location, and will be tape-recorded. On conclusion of the meeting, the tape recording of the meeting will be made available to the public.

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.

(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.

*Mobility Authority Board Meeting Agenda
Wednesday, September 30, 2020*

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.

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CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

September 30, 2020
AGENDA ITEM #1

Welcome and opportunity for
public comment

Welcome and opportunity for public comment.

Board Action Required: No



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

September 30, 2020
AUDIT COMMITTEE MEETING
AGENDA ITEM #2

Accept the Independent Audit Reports from
RSM US LLP for the Fiscal Year Ending
June 30, 2020

Strategic Plan Relevance: Regional Mobility/Innovation/Economic
Vitality/Sustainability

Department: Finance

Contact: Bill Chapman, Chief Financial Officer

Associated Costs: N/A

Funding Source: N/A

Action Requested: Consider and act on draft resolution

Background – Each year the Mobility Authority engages an independent CPA firm to conduct the Authority’s required annual audit and single audit. RSM US LLP has completed the annual audit for FY 2020 and will present those reports to the Audit Committee. The draft Resolution accepts the annual audits for FY 2020

Audit Committee - Agenda

- A. Audit Committee meeting called to order by Committee Chairman Singleton.
- B. Introduction of external auditors from RSM US LLP.
- C. Discuss, consider, and take appropriate action to accept the Fiscal Year 2020 Audit Reports.
- D. Adjourn Audit Committee.

Action Requested – Accept the annual audits for FY 2020.

Backup Provided: Draft Resolution
FY 2020 Audit Reports – Report to the Board of Directors, Basic
Financial Statements, Federal Awards Compliance Report & State
Awards Compliance Report

**MEETING OF THE AUDIT COMMITTEE
OF THE
CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY**

RESOLUTION NO. 20-0XX

**ACCEPTING THE INDEPENDENT AUDIT REPORTS FROM RSM US LLP
FOR THE FISCAL YEAR ENDING JUNE 30, 2020**

WHEREAS, by Resolution No. 09-50 enacted July 31, 2009, the Board of Directors established the Audit Committee as a standing committee of the Board of Directors, consisting of all of the members of the Board of Directors; and

WHEREAS, under Resolution No. 09-50 and Section 101.036 of the Mobility Authority Policy Code, the Audit Committee is authorized to exercise all powers and authority of the Board of Directors with respect to Mobility Authority finances, and accordingly acts as, and on behalf of, the Board of Directors with respect to the matters addressed by this resolution; and

WHEREAS, the firm of RSM US LLP, has been engaged to provide an independent audit of the finances of the Central Texas Regional Mobility Authority for the fiscal year ending on June 30, 2020, and has presented that audit to the Audit Committee; and

WHEREAS, the Audit Committee has reviewed the “Report to the Board of Directors”, the “Basic Financial Statements”, the “Federal Awards Compliance Report” and the “State Awards Compliance Report” prepared by RSM US LLP, attached respectively as Exhibits A, B, C and D to this resolution, and has heard and considered the presentation on the audit by RSM US LLP.

NOW THEREFORE, BE IT RESOLVED, that the Audit Committee accepts the independent audit reports of the Central Texas Regional Mobility Authority prepared by RSM US LLP for the fiscal year ending on June 30, 2020; and

BE IT FURTHER RESOLVED that this resolution constitutes approval by the Audit Committee of the investment reports required by 43 *Texas Administrative Code* Rule §26.61(b).

Adopted by the Audit Committee of the Board of Directors of the Central Texas Regional Mobility Authority on the 30th day of September 2020.

Submitted and reviewed by:

Approved:

Geoffrey Petrov, General Counsel

David Singleton
Chairman, Audit Committee

Exhibit A

Report to the Board of Directors

Central Texas Regional Mobility Authority

Report to the Board of Directors
September 24, 2020





RSM US LLP

811 Barton Springs Rd
Suite 550
Austin, TX 78704

T +1 512 476 0717
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www.rsmus.com

September 24, 2020

Board of Directors
Central Texas Regional Mobility Authority
Austin, Texas

Dear Members of the Board of Directors:

We are pleased to present this report related to our audit of the financial statements of Central Texas Regional Mobility Authority (the Authority) as of and for the year ended June 30, 2020. This report summarizes certain matters required by professional standards to be communicated to you in your oversight responsibility for Authority's financial reporting process.

This report is intended solely for the information and use of the Board of Directors and management, and is not intended to be, and should not be, used by anyone other than these specified parties. It will be our pleasure to respond to any questions you have about this report. We appreciate the opportunity to continue to be of service to Central Texas Regional Mobility Authority.

RSM US LLP

THE POWER OF BEING UNDERSTOOD
AUDIT | TAX | CONSULTING

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Required Communications

Generally accepted auditing standards (AU-C 260, *The Auditor's Communication With Those Charged With Governance*) require the auditor to promote effective two-way communication between the auditor and those charged with governance. Consistent with this requirement, the following summarizes our responsibilities regarding the financial statement audit as well, as observations arising from our audit that are significant and relevant to your responsibility to oversee the financial reporting process.

Area	Comments
Our Responsibilities With Regard to the Financial Statement Audit	<p>Our responsibilities under auditing standards generally accepted in the United States of America and <i>Government Auditing Standards</i> issued by the Comptroller General of the United States have been described to you in our arrangement letter dated February 18, 2020. Our audit of the financial statements does not relieve management or those charged with governance of their responsibilities, which are also described in that letter.</p>
Overview of the Planned Scope and Timing of the Financial Statement Audit	<p>We have issued a separate communication to the Members of the Audit Committee of the Board of Directors dated, February 18, 2020, and met with the Audit Committee during the February 26, 2020 Audit Committee meeting regarding the planned scope and timing of our audit and identified significant risks.</p>
Accounting Policies and Practices	<p>Preferability of Accounting Policies and Practices Under accounting principles generally accepted in the United States of America, in certain circumstances, management may select among alternative accounting practices. In our view, in such circumstances, management has selected the preferable accounting practice.</p> <p>Adoption of, or Change in, Accounting Policies Management has the ultimate responsibility for the appropriateness of the accounting policies used by the Authority. The Authority did not adopt any significant new accounting policies, nor have there been any changes in existing significant accounting policies during the current period.</p> <p>Significant or Unusual Transactions We did not identify any significant or unusual transactions or significant accounting policies in controversial or emerging areas for which there is a lack of authoritative guidance or consensus.</p> <p>Management's Judgments and Accounting Estimates Summary information about the process used by management in formulating particularly sensitive accounting estimates and about our conclusions regarding the reasonableness of those estimates is in the attached Summary of Significant Accounting Estimates.</p>
Audit Adjustments	<p>There were no audit adjustments made to the final trial balance presented to us for our audit.</p>
Uncorrected Misstatements	<p>We are not aware of any uncorrected misstatements other than misstatements that are clearly trivial.</p>

Area	Comments
Disagreements With Management	We encountered no disagreements with management over the application of significant accounting principles, the basis for management's judgments on any significant matters, the scope of the audit, or significant disclosures to be included in the financial statements.
Consultations With Other Accountants	We are not aware of any consultations management had with other accountants about accounting or auditing matters.
Significant Issues Discussed With Management	No significant issues arising from the audit were discussed or the subject of correspondence with management.
Significant Difficulties Encountered in Performing the Audit	We did not encounter any significant difficulties in dealing with management during the audit.
Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of the Financial Statements Performed in Accordance with Government Auditing Standards	We have separately issued a report on internal control over financial reporting and on compliance and other matters based on our audit of the financial statements and major program, as required by <i>Government Auditing Standards</i> and Title 2 U.S. Code of Federal Regulations Part 200, <i>Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards</i> (Uniform Guidance) and this communication is included within the compliance report of the Authority for the year ended June 30, 2020.
Significant Written Communication Between Management and Our Firm	Copies of significant written communication between our firm and management of the Authority, the representation letter provided to us by management, is attached as Exhibit A.

Summary of Significant Accounting Estimates

Accounting estimates are an integral part of the preparation of financial statements and are based upon management's current judgment. The process used by management encompasses its knowledge and experience about past and current events, and certain assumptions about future events. Management may wish to monitor throughout the year the process used to determine and record these accounting estimates. The following describes the significant accounting estimates reflected in the Authority's June 30, 2020, financial statements.

Estimate	Accounting Policy	Management's Estimation Process	Basis for Our Conclusions on Reasonableness of Estimate
Valuation of Investments	The money market mutual fund and local government investment pool are reported at net asset values (NAV) based on amortized cost. Investments in debt securities are reported at fair value based on pricing service models.	Fair value is the price that would be received to sell an asset in an orderly transaction between market participants at the measurement date. Investments in debt securities are reported at fair value based upon pricing service models. The money market mutual fund and local government investment pool are reported at the NAV of the underlying securities based on amortized cost.	We tested the fair value of investments at year-end by using a valuation specialist to price debt securities. For investments measured using NAV, we confirmed the year-end NAV. We concluded management's estimates are reasonable.
Depreciable Life of Property and Equipment	The depreciable life of property and equipment is set at the estimated useful life of the related asset.	The determination is made at the time the asset is placed into service and involves various judgments and assumptions, including the estimated useful life and prior experience.	We concluded the estimates used by management are reasonable.
Pension Expense and Net Pension Asset/Liability	The Authority participates in the Texas County and District Retirement System (TCDRS), a statewide agent multiple-employer retirement system. The Authority records the pension expense and net pension asset/liability in its financial statements and discloses the pension expense and net pension asset/liability in Note 7 to the financial statements.	The pension expense and net pension asset/liability were measured as of December 31, 2019. This calculation is prepared by an independent actuarial company engaged by TCDRS, and the Authority's management reviews and considers the appropriateness of the assumptions.	We obtained the TCDRS actuarial valuation report and we confirmed the Authority's reported balances agreed with the actuarial report. We tested the significant assumptions and conclusions for reasonableness and tested the underlying data for completeness and accuracy. We concluded the estimates used by management's are reasonable.

Exhibit A—Significant Written Communication Between Management and Our Firm



September 24, 2020

RSM US LLP
811 Barton Springs Rd, 5th floor
Austin, Texas 78704

This representation letter is provided in connection with your audit of the basic financial statements of Central Texas Regional Mobility Authority (the "Authority") as of and for the years ended June 30, 2020 and 2019, for the purpose of expressing an opinion on whether the financial statements are presented fairly, in all material respects, in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP).

We confirm, to the best of our knowledge and belief, that as of September 24, 2020:

Financial Statements

1. We have fulfilled our responsibilities, as set out in the terms of the audit arrangement letter dated February 18, 2020 for the preparation and fair presentation of the financial statements referred to above in accordance with U.S. GAAP.
2. We acknowledge our responsibility for the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.
3. We acknowledge our responsibility for the design, implementation and maintenance of internal control to prevent and detect fraud.
4. Significant assumptions used by us in making accounting estimates, including those measured at fair value, are reasonable and reflect our judgment based on our knowledge and experience about past and current events, and our assumptions about conditions we expect to exist and courses of action we expect to take.
5. Related-party transactions, including those with other organizations for which the nature and significance of their relationship with the Authority are such that exclusion would cause the reporting entity's financial statements to be misleading or incomplete, including interfund accounts and advances receivable and payable, sale and purchase transactions, interfund transfers, long-term loans, leasing arrangements and guarantees, have been recorded in accordance with the economic substance of the transaction and appropriately accounted for and disclosed in accordance with the requirements of U.S. GAAP.
6. All events subsequent to the date of the financial statements, and for which U.S. GAAP requires adjustment or disclosure, have been adjusted or disclosed.
7. We have no direct or indirect legal or moral obligation for any debt of any organization, public or private, or to special assessment bond holders that is not disclosed in the financial statements.
8. We have no knowledge of any uncorrected misstatements in the financial statements.

Information Provided

9. We have provided you with:
 - a. Access to all information of which we are aware that is relevant to the preparation and fair presentation of the financial statements such as records, documentation and other matters;
 - b. Additional information that you have requested from us for the purpose of the audits;
 - c. Unrestricted access to persons within the Authority from whom you determined it necessary to obtain audit evidence; and
 - d. Minutes of the meetings of the governing boards and committees, or summaries of actions of recent meetings for which minutes have not yet been prepared.
10. All transactions have been recorded in the accounting records and are reflected in the financial statements.
11. We have no knowledge of any instances which would require us to disclose to you the results of our assessment of risk that the financial statements may be materially misstated as a result of fraud.
12. We have no knowledge of allegations of fraud or suspected fraud affecting the Authority's financial statements involving:
 - a. Management.
 - b. Employees who have significant roles in internal control.
 - c. Others where the fraud could have a material effect on the financial statements.
13. We have no knowledge of any allegations of fraud or suspected fraud affecting the Authority's financial statements received in communications from employees, former employees, analysts, regulators, or others.
14. We have no knowledge of noncompliance or suspected noncompliance with laws and regulations.
15. We are not aware of any pending or threatened litigation and claims whose effects should be considered when preparing the financial statements, and we have not consulted legal counsel concerning litigation or claims.
16. We have disclosed to you the identity of the Authority's related parties and all the related-party relationships and transactions of which we are aware.
17. We are aware of no significant deficiencies, or material weaknesses in the design or operation of internal controls that could adversely affect the Authority's ability to record, process, summarize and report financial data.
18. We are aware of no communications from regulatory agencies concerning noncompliance with, or deficiencies in, financial reporting practices.
19. During the course of your audit, you may have accumulated records containing data that should be reflected in our books and records. All such data have been so reflected. Accordingly, copies of such records in your possession are no longer needed by us.

Supplementary Information

20. With respect to supplementary information presented in relation to the financial statements as a whole:
 - a. We acknowledge our responsibility for the presentation of such information.
 - b. We believe such information, including its form and content, is fairly presented in accordance with U.S. GAAP.
 - c. The methods of measurement or presentation have not changed from those used in the prior period.
 - d. When supplementary information is not presented with the audited financial statements, we will make the audited financial statements readily available to the intended users of the supplementary information no later than the date of issuance of the supplementary information and the auditor's report thereon.

21. With respect to Management's Discussion and Analysis and Required Supplementary Information – Pension presented as required by Governmental Accounting Standards Board to supplement the basic financial statements:
 - a. We acknowledge our responsibility for the presentation of such required supplementary information.
 - b. We believe such required supplementary information is measured and presented in accordance with guidelines prescribed by U.S. GAAP.
 - c. The methods of measurement or presentation have not changed from those used in the prior period.

Compliance Considerations

In connection with your audit conducted in accordance with *Government Auditing Standards*, we confirm that management:

22. Is responsible for the preparation and fair presentation of the financial statements in accordance with the applicable financial reporting framework.
23. Is responsible for compliance with the laws, regulations and provisions of contracts and grant agreements applicable to the auditee.
24. Has not identified any instances that have occurred, or are likely to have occurred, of fraud and noncompliance with provisions of laws and regulations that have a material effect on the financial statements or other financial data significant to the audit objectives, and any other instances that warrant the attention of those charged with governance.
25. Has not identified any instances that have occurred, or are likely to have occurred, of noncompliance with provisions of contracts and grant agreements that have a material effect on the determination of financial statement amounts.

26. Has not identified instances that have occurred, or are likely to have occurred, of waste or abuse that could be quantitatively or qualitatively material to the financial statements.
27. Is responsible for the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.
28. Acknowledges its responsibility for the design, implementation and maintenance of internal controls to prevent and detect fraud.
29. Has a process to track the status of audit findings and recommendations.
30. Has identified for the auditor previous audits, attestation engagements and other studies related to the audit objectives and whether related recommendations have been implemented.
31. Acknowledges its responsibilities as it relates to non-audit services performed by the auditor, including a statement that it assumes all management responsibilities; that it oversees the services by designating an individual, preferably within senior management, who possesses suitable skill, knowledge or experience; that it evaluates the adequacy and results of the services performed; and that it accepts responsibility for the results of the services.

In connection with your audit of federal awards conducted in accordance with Subpart F of Title 2 U.S. Code of Federal Regulations (CFR) Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance) and the state of Texas *Uniform Grant Management Standards* (UGMS), we confirm:

1. Management is responsible for complying, and has complied, with the requirements of Uniform Guidance and UGMS.
2. Management is responsible for understanding and complying with the requirements of laws, regulations, and the provisions of contracts and grant agreements related to each of its federal and state programs.
3. Management is responsible for establishing and maintaining, and has established and maintained, effective internal control over compliance for federal and state programs that provides reasonable assurance that the auditee is managing federal awards in compliance with federal and state statutes, regulations, and the terms and conditions of the federal award that could have a material effect on its federal and state programs.
4. Management is responsible for the preparation of the schedule of expenditures of federal and state awards, acknowledges and understands its responsibility for the presentation of the schedule of expenditures of federal and state awards in accordance with the Uniform Guidance and UGMS; believes the schedule of expenditures of federal and state awards, including its form and content, is fairly presented in accordance with the Uniform Guidance and UGMS; asserts that methods of measurement or presentation have not changed from those used in the prior period, or if the methods of measurement or presentation have changed, the reasons for such changes has been communicated; and is responsible for any significant assumptions or interpretations underlying the measurement or presentation of the schedule of expenditures of federal and state awards.
5. Management has identified and disclosed all of its government programs and related activities subject to the Uniform Guidance and UGMS compliance audit.

6. Management has identified and disclosed to the auditor the requirements of federal and state statutes, regulations, and the terms and conditions of federal and state awards that are considered to have a direct and material effect on each major program.
7. Management has made available all federal awards (including amendments, if any) and any other correspondence relevant to federal and state programs and related activities that have taken place with federal agencies or pass-through entities.
8. Management has identified and disclosed to the auditor all amounts questioned and all known noncompliance with the direct and material compliance requirements of federal and state awards or stated that there was no such noncompliance.
9. Management believes that the auditee has complied with the direct and material compliance requirements (except for noncompliance it has disclosed to the auditor).
10. Management has made available all documentation related to compliance with the direct and material compliance requirements, including information related to federal and state program financial reports and claims for advances and reimbursements.
11. Management has provided to the auditor its interpretations of any compliance requirements that are subject to varying interpretations.
12. Management has disclosed to the auditor any communications from federal and state awarding agencies and pass-through entities concerning possible noncompliance with the direct and material compliance requirements, including communications received from the end of the period covered by the compliance audit to the date of the auditor's report.
13. Management has disclosed the nature of any subsequent events that provide additional evidence with respect to conditions that existed at the end of the reporting period that affect noncompliance during the reporting period.
14. Management has disclosed all known noncompliance with direct and material compliance requirements occurring subsequent to the period covered by the auditor's report or stated that there were no such known instances.
15. Management has disclosed whether any changes in internal control over compliance or other factors that might significantly affect internal control, including any corrective action taken by management with regard to significant deficiencies and material weaknesses in internal control over compliance, have occurred subsequent to the period covered by the auditor's report.
16. Federal and state program financial reports and claims for advances and reimbursements are supported by the books and records from which the basic financial statements have been prepared.
17. The copies of federal and state program financial reports provided to the auditor are true copies of the reports submitted, or electronically transmitted, to the federal agency or pass-through entity, as applicable.
18. Management has charged costs to federal awards in accordance with applicable cost principles.
19. The reporting package does not contain protected personally identifiable information.

20. Management has accurately completed the appropriate sections of the data collection form.
21. If applicable, management has disclosed all contracts or other agreements with service organizations.
22. If applicable, management has disclosed to the auditor all communications from service organizations relating to noncompliance at those organizations.

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY



Bill Chapman - Chief Financial Officer



Mary Temple - Controller

Exhibit B

Basic Financial Statements

Central Texas Regional Mobility Authority

Basic Financial Statements
June 30, 2020

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Basic Financial Statements

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RSM US LLP

Independent Auditor's Report

Board of Directors
Central Texas Regional Mobility Authority

Report on the Financial Statements

We have audited the accompanying financial statements of the Central Texas Regional Mobility Authority (the Authority), which comprise the Statements of Net Position as of June 30, 2020 and 2019; the related Statements of Revenues, Expenses and Changes in Net Position and Statements of Cash Flows for the years then ended; and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements, as listed on the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Authority's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Authority as of June 30, 2020 and 2019, and the changes in its financial position and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters***Required Supplementary Information***

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis and the Required Supplementary Information—Pension Plan, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements and other knowledge we obtained during our audits of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming an opinion on the basic financial statements as a whole. The Indenture Cash Flow and Debt Service Coverage on page 50 is presented for purposes of additional analysis and is not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements, or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

RSM US LLP

Austin, Texas
September 24, 2020

Central Texas Regional Mobility Authority

Management's Discussion and Analysis June 30, 2020 and 2019

MANAGEMENT DISCUSSION AND ANALYSIS (MD&A)

The Central Texas Regional Mobility Authority (the Authority) presents the following discussion and analysis of the Authority's financial activities during the fiscal years that ended June 30, 2020 and 2019. This section is intended to be read in conjunction with the Authority's financial statements, which immediately follow this section.

OVERVIEW OF THE FINANCIAL STATEMENTS

The financial section of this annual report consists of four parts: management's discussion and analysis, the basic financial statements, the notes to the financial statements and the required supplementary information.

The financial statements provide both long-term and short-term information about the Authority's overall financial status. The financial statements also include notes that explain some of the information in the financial statements and provide more detailed data.

Basic financial statements: The financial statements are designed to provide readers with an overview of the Authority's finances in a manner similar to private-sector business.

The *Statements of Net Position* present information on all of the Authority's assets and deferred outflows, as well as the Authority's liabilities and deferred inflows with the difference reported as *net position*. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the Authority is improving or deteriorating. The Statements of Net Position can be found on pages 9-10 of this report.

The *Statements of Revenues, Expenses and Changes in Net Position* present information showing how the Authority's net position changed during the fiscal years ended June 30, 2020 and 2019. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of related cash flows. Therefore, revenues and expenses are reported in this statement for some items that will only result in cash flows in future fiscal periods. The increase or decrease in net position may serve as an indicator of the effect of the Authority's current year operations on its financial position. The Statements of Revenues, Expenses and Changes in Net Position can be found on page 11 of this report.

The *Statements of Cash Flows* summarize all of the Authority's cash flows into three categories as applicable: 1) cash flows from operating activities, 2) cash flows from capital and related financing activities and 3) cash flows from investing activities. The Statement of Cash Flows can be found on page 12 of this report. The Statements of Cash Flows, along with the related notes and information in other financial statements, can be useful in assessing the following:

- The Authority's ability to generate future cash flows
- The Authority's ability to pay its debt as the debt matures
- Reasons for the difference between the Authority's operating cash flows and operating income
- The impact of the Authority's financial position of cash and noncash transactions from investing, capital, and financing activities

Central Texas Regional Mobility Authority

Management's Discussion and Analysis (Continued) June 30, 2020 and 2019

The *Notes to Financial Statements* provide additional information that is essential to a full understanding of the data provided in the basic financial statements. The Notes to Financial Statements can be found starting on page 13 of this report.

FINANCIAL HIGHLIGHTS

- Total toll revenue increased to \$116.9 million in 2020 from \$108.3 million in 2019 or an 8% increase. Total toll revenue increased to \$108.3 million in 2019 from \$91.5 million in 2018 or an 18% increase.
- Total operating expenses were approximately \$77.5 million, \$64.5 million and \$58.6 million in 2020, 2019 and 2018, respectively.
- Total construction in progress was approximately \$634.0 million, \$763.4 million and \$642.5 million as of June 30, 2020, 2019 and 2018, respectively. Construction in progress decreased by approximately \$129.4 million from 2019 to 2020 in part due to progress made on the 183 South Project and the 290 E Phase III offset by current period transfers for sections placed in service during the period for both the 183 South Project and 290 E Phase III.
- Construction in progress increased by approximately \$120.9 million from 2018 to 2019 in part due to progress made on the SH 45 Southwest Project of approximately \$22.6 million, progress made the 290E Phase III Project of approximately \$16.7 million, and the 183 South Project (collectively, the Projects) of approximately \$110.5 million and various other projects which totaled approximately \$12.3 million. The Authority also placed into service the remaining work on the MoPac Improvement Project of approximately \$41.2 million.
- Total restricted cash and cash equivalents decreased by \$94.1 million from 2019 to 2020. The overall decrease in restricted cash and cash equivalent was largely due to ongoing Projects.
- Total restricted cash and cash equivalents increased by \$77.8 million from 2018 to 2019. The overall increase in restricted cash and cash equivalent was largely due to bond proceeds received for the 290E Phase III Project.

FINANCIAL ANALYSIS OF THE AUTHORITY

Net position: As noted above, net position may serve over time as a useful indicator of the Authority's financial position. The net position reflects an un-expendable and expendable portion of net position. The Authority's assets and deferred outflows exceeded liabilities and deferred inflows by approximately \$669.8 million, \$663.8 million and \$636.1 million as of June 30, 2020, 2019 and 2018, respectively (see Table A-1). As of June 30, 2020, 2019 and 2018, the largest portion of the Authority's net position is reflected its investment in capital assets (the Tolling System infrastructure and related assets) net of any outstanding debt used to acquire those assets. The second largest portion of net position, as of June 30, 2020, 2019 and 2018, is expendable and reflects proceeds restricted for debt service or construction expenditures. Although the Authority's investment in its capital assets is reported net of related debt, it should be noted that the resources needed to repay this debt must be provided from other sources, since the capital assets themselves cannot be used to liquidate these liabilities.

Central Texas Regional Mobility Authority

Management's Discussion and Analysis (Continued)
June 30, 2020 and 2019

Table A-1
Condensed Schedules of Net Position Information
(In Thousands of Dollars)

	2020	2019	2018
Current assets	\$ 217,671	\$ 210,885	\$ 182,094
Restricted assets	252,951	347,054	204,384
Pension asset	897	177	826
Capital assets	1,968,134	1,810,304	1,673,628
Total assets	<u>2,439,653</u>	<u>2,368,420</u>	<u>2,060,932</u>
Deferred outflows of resources	105,247	107,392	108,057
Total assets and deferred outflows of resources	<u>\$ 2,544,900</u>	<u>\$ 2,475,812</u>	<u>\$ 2,168,989</u>
Total liabilities	\$ 1,874,977	\$ 1,811,756	\$ 1,532,560
Deferred inflows of resources	194	236	278
Total liabilities and deferred inflows of resources	<u>\$ 1,875,171</u>	<u>\$ 1,811,992</u>	<u>\$ 1,532,838</u>
Net position:			
Invested in capital assets	\$ 446,275	\$ 439,875	\$ 447,015
Restricted for other purposes	122,723	118,363	106,764
Unrestricted	100,731	105,582	82,372
Total net position	<u>669,729</u>	<u>663,820</u>	<u>636,151</u>
Total liabilities, deferred inflows of resources and net position	<u>\$ 2,544,900</u>	<u>\$ 2,475,812</u>	<u>\$ 2,168,989</u>

For fiscal year 2020, restricted assets decreased as a result of the Authority's ongoing construction of the Projects and the start of the 290E Phase III Project. The Authority's decrease in the restricted assets is offset by the increase in funds held in escrow for Travis County road projects for agreements between the County and the Authority.

For fiscal year 2019, current and restricted assets increased as a result of the Authority's ongoing construction of the Projects and the start of the 290E Phase III Project. The Authority received grant funds, TIFIA loans and bond proceeds to fund the Projects.

For fiscal year 2020 and 2019, excluding accumulated depreciation, depreciable capital assets increased as a result of the ongoing construction and current period Project additions of approximately \$326.5 million and \$44.6 million, respectively.

For fiscal year 2019 and 2018, excluding accumulated depreciation, depreciable capital assets increased as a result of the ongoing construction and current period Project additions of approximately \$44.6 million and \$202.4 million, respectively

Changes in net position: The operating revenues continue to increase as the level of toll transactions increases within the completed projects of the Authority's Tolling System (which as of June 30, 2020, includes the 183A Turnpike Project (Phases I and II), the 290E Project (Phases I and II), the SH 71 Express Project and SH 45 Southwest Project. The average daily Tolling System transactions increased in 2020 from approximately 267.5 thousand per day in 2019 to approximately 278.1 thousand per day or from an annual total of approximately 97.6 million to 101.5 million from 2019 to 2020.

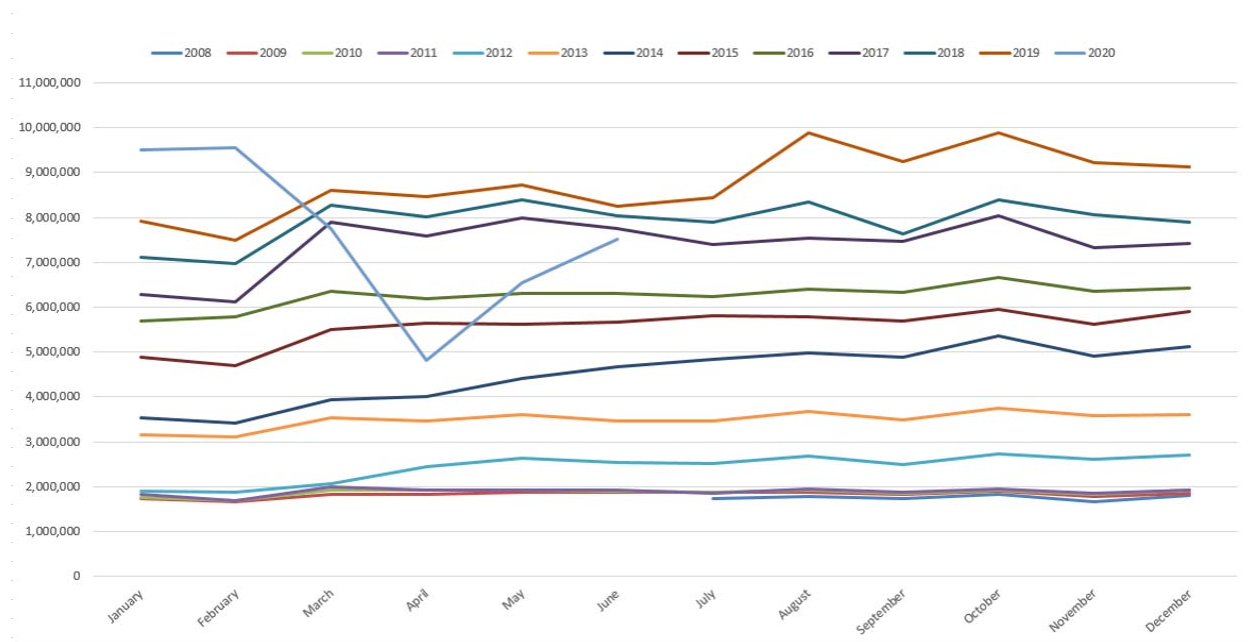
Central Texas Regional Mobility Authority

Management's Discussion and Analysis (Continued) June 30, 2020 and 2019

Activity in the MoPac Improvement Project is not reflected in the total Tolling System transactions above. The MoPac Improvement Project is not included in the Authority's Tolling System established by the bond indenture securing the Authority's toll revenue obligations. For fiscal year 2020 and 2019, activity of the MoPac Improvement Project consisted of approximately 9.6 million and 12.6 million transactions, respectively, and approximately \$14.3 million and \$17.5 million in revenue, respectively.

The chart below includes transactions for the completed projects of the Authority's Tolling System (which as of June 30, 2020, includes the 183A Turnpike Project (Phases I and II), the 290E Project (Phases I and II) the SH 71 Express Project and the SH 45 Southwest Project).

Total Monthly Tolling System Transactions



As noted at Table A-2 on the following page, operating expenses increased by \$13.3 million from 2019 to 2020 and by \$5.9 million from 2018 to 2019. The increases are related to the increase in the number of tolling transactions which result in additional expenses for road maintenance, image tag and collection fees.

The nonoperating expenses (net) increased from \$32.8 million in fiscal year 2019 to \$36.4 million in fiscal year 2020. The amounts were consistent with prior year.

The nonoperating expenses (net) increased from \$32.5 million in fiscal year 2018 to \$32.8 million in fiscal year 2019.

Central Texas Regional Mobility Authority

Management's Discussion and Analysis (Continued)
June 30, 2020 and 2019

The change in net position before capital grants and contributions is a gain of approximately \$2.6 million, \$10.9 million and \$0.978 million in fiscal years 2020, 2019 and 2018 respectively. See Table A-2.

Table A-2
Condensed Schedules of Revenue, Expenses and Changes in Net Position Information
(In Thousands of Dollars)

	2020	2019	2018
Revenues:			
Toll revenue	\$ 116,927	\$ 108,314	\$ 91,492
Grant proceeds and other operating	8	41	682
Total revenues	<u>116,935</u>	<u>108,355</u>	<u>92,174</u>
Expenses:			
Administrative Expenses	8,859	9,582	7,672
Operations and Maintenance	22,773	18,943	19,196
Special Projects and Contingencies	6,295	6,100	3,689
Depreciation and amortization	39,983	29,934	28,045
Total expenses	<u>77,910</u>	<u>64,559</u>	<u>58,602</u>
Operating income	39,025	43,796	33,572
Total net nonoperating revenue (expenses)	<u>(36,367)</u>	<u>(32,802)</u>	<u>(32,594)</u>
Change in net position—before capital grants and contributions	2,658	10,994	978
Capital grants and contributions, net	3,250	16,676	17
Change in net position	5,908	27,670	995
Total net position at beginning of year	663,821	636,151	635,156
Total net position at end of year	<u>\$ 669,729</u>	<u>\$ 663,821</u>	<u>\$ 636,151</u>

CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital assets: As of June 30, 2020, 2019 and 2018, the Authority had invested approximately \$634.0 million, \$763.4 million and \$642.5 million, respectively, in construction in progress. Of the \$634.0 million, and \$763.4 million of the construction in progress, the non-Tolling System projects (projects other than the 183A Turnpike Project, the 290E Project, the 183 South Project, the SH 71 Express Project and SH 45 Southwest Project) made up \$43.5 million and \$129.1 million of the total in 2020 and 2019, respectively. See Table A-3 and Note 3.

Table A-3
Capital Assets Information
(Net of Depreciation, in Thousands of Dollars)

	2020	2019	2018
Property and equipment	\$ 7,157	\$ 5,002	\$ 4,862
Toll road	1,535,679	1,210,661	1,171,794
Accumulated depreciation	(208,705)	(168,808)	(145,518)
Construction in progress	634,003	763,449	642,491
Net capital assets	<u>\$ 1,968,134</u>	<u>\$ 1,810,304</u>	<u>\$ 1,673,629</u>

Central Texas Regional Mobility Authority

Management's Discussion and Analysis (Continued)

June 30, 2020 and 2019

Long-term debt: As of June 30, 2020, 2019 and 2018, the Authority had total debt outstanding of approximately \$1,789.9 million, \$1,747.9 million and \$1,441.4 million, respectively. See Table A-4.

Table A-4
Long Term Debt Information
(In Thousands of Dollars)

	<u>2020</u>	<u>2019</u>	<u>2018</u>
Long-term debt:			
Total bonds and other obligations	\$ 1,798,976	\$ 1,747,903	\$ 1,441,425
Long term debt outstanding	<u>\$ 1,798,976</u>	<u>\$ 1,747,903</u>	<u>\$ 1,441,425</u>
Debt service payments:			
Principal payments	\$ 14,460	\$ 7,425	\$ 8,755
Interest payments	51,317	57,575	54,324

Excluding the TxDOT Reimbursement Amount obligation related to the SH 71 Express Project, the total debt obligations include the current portion of the obligations of \$15.6 million, \$14.6 million and \$7.4 million for 2020, 2019 and 2017, respectively.

Additional information on the Authority's long-term debt can be found in Note 4 of this report.

Economic Factors and Next Year's Budget

Given the context within which 2021 Operating Budget will be implemented and not knowing the longer-term impact due to COVID-19 on revenue, the 2021 budget pares back expenses to reflect that uncertainty. The revenue estimate for FY 2021 of \$124.4 million is an approximate 11% decrease over the FY 2020 budget. The revenues were projected using the most recent System Transaction and Revenue (T&R) estimates and the current year to date revenue for MoPac. Expense estimates for FY 2021 are \$131.3 million, representing a 6% decrease over the FY 2020 budget.

CONTACTING THE AUTHORITY'S FINANCIAL MANAGEMENT

This financial report is designed to provide interested parties with a general overview of the Authority's finances and to demonstrate the Authority's accountability for the money it receives. If you have questions about this report or need additional financial information, contact the Central Texas Regional Mobility Authority, 3300 North IH 35, Suite 300, Austin, 78705.

Central Texas Regional Mobility Authority

**Statements of Net Position
June 30, 2020 and 2019**

	2020	2019
Current assets:		
Unrestricted:		
Cash and cash equivalents (Note 2)	\$ 38,909,537	\$ 43,796,711
Investments (Note 2)	83,730,161	88,707,812
Due from other governments (Note 8)	9,985,068	12,345,989
Accrued interest receivable	227,930	782,617
Prepaid expenses and other assets	257,675	200,167
Total unrestricted	<u>133,110,371</u>	<u>145,833,296</u>
Restricted:		
Cash and cash equivalents (Note 2)	84,560,272	65,051,895
Total restricted	<u>84,560,272</u>	<u>65,051,895</u>
Total current assets	<u>217,670,643</u>	<u>210,885,191</u>
Noncurrent assets:		
Restricted assets:		
Cash and cash equivalents (Note 2)	23,472,678	132,711,936
Investments (Note 2)	229,478,605	214,341,876
Total restricted assets	<u>252,951,283</u>	<u>347,053,812</u>
Pension asset (Note 7)	896,834	177,226
Total capital assets, net (Note 3)	1,968,134,306	1,810,304,756
Total assets	<u>2,439,653,066</u>	<u>2,368,420,985</u>
Total deferred outflows of resources (Notes 5 and 7)	<u>105,246,520</u>	<u>107,391,830</u>
Total assets and deferred outflows of resources	<u><u>\$ 2,544,899,586</u></u>	<u><u>\$ 2,475,812,815</u></u>

See notes to financial statements.

Central Texas Regional Mobility Authority

Statements of Net Position (continued)
June 30, 2020 and 2019

	2020	2019
Current liabilities:		
Payable from current assets:		
Accounts payable	\$ 3,350,160	\$ 8,368,846
Due to other governments	2,684,082	3,843,193
Accrued expenses	1,371,403	1,048,980
Total payable from current assets	<u>7,405,645</u>	<u>13,261,019</u>
Payable from restricted current assets:		
Construction accounts payable	38,809,110	22,328,944
Accrued interest payable	29,786,162	27,687,951
Bonds, notes payable and other obligations, current portion (Note 4)	15,965,000	14,460,000
Unearned revenue	-	575,000
Total payable from restricted current assets	<u>84,560,272</u>	<u>65,051,895</u>
Total current liabilities	<u>91,965,917</u>	<u>78,312,914</u>
Noncurrent liabilities:		
Bonds, notes payable and other obligations, net of current portion (Note 4)	1,783,011,449	1,733,443,031
Total noncurrent liabilities	<u>1,783,011,449</u>	<u>1,733,443,031</u>
Total liabilities	1,874,977,366	1,811,755,945
Total deferred inflows of resources (Notes 5 and 7)	193,638	235,911
Total liabilities and deferred inflows of resources	<u>1,875,171,004</u>	<u>1,811,991,856</u>
Net position:		
Net investment in capital assets	446,275,037	439,875,334
Restricted for debt service	122,722,855	118,363,136
Unrestricted	100,730,690	105,582,489
Total net position	<u>\$ 669,728,582</u>	<u>\$ 663,820,959</u>

See notes to financial statements.

Central Texas Regional Mobility Authority

**Statements of Revenues, Expenses and Changes in Net Position
Years Ended June 30, 2020 and 2019**

	2020	2019
Operating revenues:		
Tolls	\$ 116,926,800	\$ 108,314,272
Other operating	7,622	40,514
Total operating revenues	<u>116,934,422</u>	<u>108,354,786</u>
Operating expenses:		
Administrative expenses	8,858,553	9,581,813
Operations and maintenance	22,773,283	18,942,686
Other operating expenses	6,294,999	6,099,937
Depreciation and amortization	39,983,305	29,933,665
Total operating expenses	<u>77,910,140</u>	<u>64,558,101</u>
Operating income	<u>39,024,282</u>	<u>43,796,685</u>
Nonoperating revenues (expenses):		
Interest income	4,463,494	5,273,584
Gain on sale of assets	11,117	4,348
Financing expense	(1,614,044)	(2,529,291)
Interest expense, net of interest capitalized	(39,227,622)	(35,551,238)
Total nonoperating revenues (expenses), net	<u>(36,367,055)</u>	<u>(32,802,597)</u>
Change in net position before capital grants and contributions	2,657,227	10,994,088
TxDOT capital grants and contributions	3,250,396	16,675,838
Change in net position	<u>5,907,623</u>	<u>27,669,926</u>
Total net position at beginning of year	<u>663,820,959</u>	<u>636,151,033</u>
Total net position at end of year	<u>\$ 669,728,582</u>	<u>\$ 663,820,959</u>

See notes to financial statements.

Central Texas Regional Mobility Authority

Statements of Cash Flows Years Ended June 30, 2020 and 2019

	2020	2019
Cash flows from operating activities:		
Receipts from toll fees	\$ 119,287,721	\$ 101,641,302
Receipts from other income	7,622	40,514
Payments to vendors	(38,302,274)	(26,158,836)
Payments to employees	(5,631,094)	(5,160,799)
Net cash flows provided by operating activities	<u>75,361,975</u>	<u>70,362,181</u>
Cash flows from capital and related financing activities:		
Proceeds from notes payable and other obligations	62,770,819	312,568,386
Payments on revenue bonds issuance	(4,874,983)	(2,254,919)
Payments on interest	(55,966,816)	(52,427,010)
Payments on bonds	(16,706,323)	(9,028,847)
Purchase of capital assets	(516,125)	(1,022,477)
Payments for construction in progress	(155,853,136)	(174,467,655)
Proceeds from capital grants	2,675,396	9,114,794
Net cash flows provided by (used) in capital and related financing activities	<u>(168,471,168)</u>	<u>82,482,272</u>
Cash flows from investing activities:		
Interest income	8,360,648	9,913,994
Purchase of investments	(281,846,351)	(379,881,060)
Proceeds from sale or maturity of investments	271,976,841	289,512,410
Net cash flows (used in) investing activities	<u>(1,508,862)</u>	<u>(80,454,656)</u>
Net increase (decrease) in cash and cash equivalents	(94,618,055)	72,389,797
Cash and cash equivalents at beginning of year	<u>241,560,542</u>	<u>169,170,745</u>
Cash and cash equivalents at end of year	<u>\$ 146,942,487</u>	<u>\$ 241,560,542</u>
Reconciliation of change in net position to net cash provided by operating activities:		
Operating income	<u>\$ 39,024,282</u>	<u>\$ 43,796,685</u>
Adjustments to reconcile change in net position to net cash provided by operating activities:		
Depreciation and amortization	39,983,305	29,933,665
Changes in assets and liabilities:		
Increase in due from other governments	2,360,921	(8,009,082)
Increase in prepaid expenses and other assets	(57,508)	(153,649)
Increase (decrease) in accounts payable	(1,018,686)	3,289,075
Increase (decrease) in accrued expenses	(4,836,688)	233,863
Increase (decrease) in pension asset	(719,608)	649,171
Increase in deferred outflow of resources	668,230	664,726
Decrease in deferred inflow of resources	(42,273)	(42,273)
Total adjustments	<u>36,337,693</u>	<u>26,565,496</u>
Net cash flows provided by operating activities	<u>\$ 75,361,975</u>	<u>\$ 70,362,181</u>
Reconciliation of cash and cash equivalents:		
Unrestricted cash and cash equivalents	\$ 38,909,537	\$ 43,796,711
Restricted cash and cash equivalents:		
Current	84,560,272	65,051,895
Noncurrent	23,472,678	132,711,936
Total	<u>\$ 146,942,487</u>	<u>\$ 241,560,542</u>

See notes to financial statements.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 1. Organization and Summary of Significant Accounting Policies

The financial statements of the Central Texas Regional Mobility Authority (the Authority) have been prepared in conformity with accounting principles generally accepted in the United States of America (GAAP) as applied to government units. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for establishing governmental accounting and financial reporting principles. The more significant of the Authority's accounting policies are described below:

A. Reporting entity: The Authority was authorized by the State of Texas in 2002. The Authority is authorized to construct, maintain, repair and operate turnpike projects at locations authorized by the Legislature of the State of Texas and approved by the Texas Department of Transportation (TxDOT). The Authority receives its revenues from tolls, fees and reimbursement grants from the operation of turnpike projects and reimbursement grants for the construction of toll projects. The Authority may issue revenue bonds for the purpose of paying the costs of turnpike projects.

The Authority was formed through the joint efforts of Travis and Williamson Counties (the Counties). Their efforts began in September 2002, following the enactment of provisions by the 77th Texas Legislature authorizing the formation of regional mobility authorities (RMAs). The petition to form the Authority was filed by the Counties, and the Texas Transportation Commission granted approval for its formation in October 2002. The initial meeting of the Board of Directors (the Board) of the Authority was held in January 2003. Each County appoints three directors, and the Governor appoints the presiding officer. The members are appointed in belief that the composition of the Board and the common interest in the region shared by all Board members will result in adequate representation of all political subdivisions within the geographic area of the RMA and serve without pay for terms of two years. The Authority has full control over all operations, but must comply with certain bond indentures and trust agreements. The Authority employs an Executive Director who manages the day-to-day operations.

In evaluating how to define the Authority for financial reporting purposes, management has determined there are no entities over which the Authority exercises significant influence. Significant influence or accountability is based primarily on operational or financial relationships with the Authority. Since the Authority does not exercise significant influence or accountability over other entities, it has no component units.

B. Basis of accounting: The operations of the Authority are accounted for within a single proprietary (enterprise) fund through which all financial activities are recorded. The measurement focus for an enterprise fund is the flow of economic resources. An enterprise fund follows the accrual basis of accounting. With this measurement focus, all assets, liabilities and deferred inflows and outflows of resources associated with the operations are included on the Statements of Net Position. Net position (i.e., total assets and deferred outflows net of total liabilities and deferred inflows) is segregated into amounts of net investment in capital assets, amounts restricted for capital activity and debt service pursuant to the bond indenture, and amounts which are unrestricted. Under the accrual basis of accounting, revenues are recognized in the period in which they are earned, expenses are recognized in the period in which the liability is incurred regardless of the timing of related cash flows, and depreciation of capital assets is recognized. Revenue from grants and contracts specifying allowable costs to be incurred are recognized as revenue when all eligibility requirements imposed by the provider are met and qualifying expenditures have been incurred.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 1. Organization and Summary of Significant Accounting Policies (Continued)

C. Pledged revenue: In accordance with the bond indenture, as amended, between the Authority and the trustee named therein, the Authority has designated the following projects as part of the "CTRMA Turnpike System" (the Tolling System) as of June 30, 2020: the 183A Turnpike Project, the 290E Project, the 183 South Project, the SH 71 Express Project and the SH 45 Southwest Project. The trust estate established by the bond indenture is pledged to secure certain outstanding obligations of the Authority, and such trust estate includes the revenues from the Tolling System. The Tolling System may also include any future Project and other roads, bridges or other toll facilities for which the Authority has operational responsibility that the Authority designates as part of the Tolling System by official action of its Board of Directors.

D. Cash, cash equivalents and investments: Cash and cash equivalents include cash on hand, demand deposits, investments in the money market mutual fund and short-term investments with original maturities of three months or less from the date of acquisition. Bank deposits are fully collateralized or covered by federal depository insurance. Fair value is the price that would be received to sell an asset in an orderly transaction between market participants. Investments in debt securities are reported at fair value based on pricing service modeling for fixed income securities. Investment in local government investment pools are reported at amortized cost. The net change in fair value of investments is recorded on the Statements of Revenues, Expenses and Changes in Net Position and includes the unrealized and realized gains and losses on investments. The Authority's investment practices are governed by State statutes, the Authority's own investment policy and bond indentures and the Texas Public Funds Investment Act.

E. Compensated absences: Full-time regular employees are eligible for vacation, which accrue monthly. The maximum paid accrual is from 180 hours for one to two years of service up to 336 hours for 10 plus years of service. Vested vacation leave is recorded as an expense and a liability as the benefits accrue to employees. There are no accumulating sick leave benefits that vest for which any liability must be recognized. Accrued vacation leave on the Statements of Net Position is \$543,329 and \$541,425 as of June 30, 2020 and 2019, respectively.

F. Capital assets: Capital assets, which include property and equipment, right of way and toll roads, are reported at cost. Capital assets acquired through contributions, such as those from developers or other governments, are recorded at estimated acquisition value at the date of donation. Capital assets are defined as assets with initial, individual costs exceeding \$500 to \$20,000, depending on the asset category. Depreciation is computed on the straight-line method over the following estimated useful lives:

	<u>Estimated Useful Live</u>
Roads and bridges	40 years
Improvements	5-20 years
Buildings	20-30 years
Equipment	3-10 years

A full month's depreciation is taken in the month an asset is placed in service. When property and equipment are disposed, the cost and accumulated depreciation are removed from the respective accounts, and the resulting gain or loss, if any, is recorded in operations.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 1. Organization and Summary of Significant Accounting Policies (Continued)

F. Capital assets (continued): The Authority capitalizes interest cost of restricted tax-exempt borrowings less any interest earned on temporary investment of the proceeds of those borrowings from the date of borrowing until the specified qualifying assets acquired with those borrowings are ready for their intended use.

The Authority tests for impairment of capital assets when significant unexpected decline in service utility occurs. There were no asset impairments in fiscal year 2020 or 2019.

G. Grants and contributions: Revenues from grants and contributions are cash and noncash which include the following: (1) Capital grants and contributions which are restricted revenues whose resources may only be spent to purchase, build or use capital assets for specified programs or (2) Operating grants and contributions which are restricted in the way they may be spent for operations of a particular program.

The Authority has entered into several construction contracts with TxDOT for the construction of roadways using Highway Planning and Construction federal funding and certain state funding for transportation improvements. During the years ended June 30, 2020 and 2019, the Authority recognized capital grants and contributions of approximately \$3.2 million and \$16.7 million, respectively, from TxDOT. Revenues from federal and state cost reimbursement grants and contracts are recognized as earned when all eligibility requirements, including incurring allowable expenditures, have been met. As of June 30, 2020 and 2019, there was approximately \$0.0 and \$575,000, respectively, of unearned revenue from a TxDOT construction contract which is recorded as unearned revenue in the Statements of Net Position until qualifying allowable expenditures are incurred.

H. Restricted assets: Certain assets of the Authority are classified as restricted assets in the Statement of Net Position because their use is limited by applicable bond covenants or TxDOT construction contracts. When the proceeds are restricted for the acquisition or construction of noncurrent assets or are restricted for liquidation of long-term debt, they are further classified as noncurrent restricted assets. The Authority's policy is to first apply restricted resources when an expense is incurred for purposes for which both restricted and unrestricted net position are available. In the financial statements, restricted net position is reported for amounts that are externally restricted by creditors (e.g., bond covenants), grantors, contributors or laws and regulations of other governments or law through constitutional provision or enabling legislation.

I. Income taxes: The Authority is an instrumentality of the state of Texas. As such, income earned in the exercise of its essential government functions is exempt from federal income taxes.

J. Pensions: The net pension liability, deferred outflows and deferred inflows of resources related to pensions, pension expense, information about the fiduciary net position of the Authority's participation in the Texas County and District Retirement System (TCDRS), an Agent Plan, and additions to/deductions from TCDRS's fiduciary net position have been determined on the same basis as they are reported by TCDRS. For this purpose, benefit payments (including refunds of employee contributions) are recognized in the TCDRS net pension liability calculations when due and payable in accordance with the benefit terms. The investments are stated at fair value.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 1. Organization and Summary of Significant Accounting Policies (Continued)

K. Deferred outflows and inflows of resources: The Authority has classified as deferred inflows of resources items that represent acquisition of net position that applies to future periods and will not be recognized as a revenue until then. The Authority has classified as deferred outflows of resources certain items that represent a consumption of resources that applies to a future period and, therefore, will not be recognized as an expense until then. Bond issuance cost, other than prepaid insurance, is expensed as incurred, in accordance with GASB Statement No. 65, *Items Previously Reported as Assets and Liabilities*. Deferred gains/losses on refunding (the difference between the reacquisition price and the carrying value of the existing debt) are recorded as deferred outflows of resources and amortized over the shorter of the life of the original bonds or the life of the refunding bonds.

L. Long-term obligations: Long term obligations are reported as liabilities in the statement of net position and consist of notes and bonds payable and related premiums and discounts. The Authority amortizes premiums and discounts over the estimated life of the bonds as an adjustment to interest expense using the effective interest method.

M. Classification of operating and nonoperating revenue and expenses: The Authority defines operating revenues and expenses as those revenues and expenses generated by the Authority's Tolling System (the 183A Turnpike Project, the 290E Project, the 183 South Project, the operations of the SH 71 Express Project and the SH 45 Southwest Project) and non-Tolling System (the MoPac Improvement Project). It also includes all revenues and expenses not related to capital and related financing, noncapital financing or investing activities. This definition is consistent with the Codification of Governmental Accounting and Financial Reporting Standards, which defines operating receipts as cash receipts from customers and other cash receipts that do not result from transactions defined as capital and related financing, noncapital financing or investing activities. All revenues and expense not meeting this definition are reported as nonoperating revenue and expenses.

N. Estimates: The preparation of the financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts in the financial statements and the accompanying notes. Actual results could differ from those estimates.

O. Noncash disclosures for statements of cash flows—capital appreciation bonds: The Authority's outstanding capital appreciation bonds Series 2010 and 2011 included accreted interest of \$6.4 million and \$6 million for the periods ended June 30, 2020 and 2019, respectively.

P. Issued but not yet effective pronouncements: GASB Statement No. 89, *Accounting for Interest Cost Incurred before the end of a Construction Period*, requires that interest cost incurred before the end of a construction period be recognized as an expense in the period in which the cost is incurred for financial statements prepared using the economic resources measurement focus. As a result, interest cost incurred before the end of a construction period will not be included in the historical cost of a capital assets. The requirements of the statement are effective for the period beginning after December 15, 2020. Management of the Authority is currently evaluating the requirements of this pronouncement but expects the adoption will have an impact on the financial statements as capitalized interest will no longer be capitalized.

Q. Reclassification: Certain reclassifications have been made to the prior year's statements of net position to enhance comparability with the current year's financial statements and to enhance the comparability with the periodic reporting completed by the Authority.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 2. Cash and Investments

The Authority's Board has adopted an Investment Policy to set forth the factors involved in the management of investment assets for the Authority. The Authority seeks to mitigate risk by investing in compliance with the investment policy, state statutes and bond indenture provisions by qualifying the broker or financial institution with whom the Authority will transact business, maintaining sufficient collateralization, portfolio diversification and limiting maturities.

TexSTAR Investment Pool and Goldman Sachs Fund balances are carried at amortized cost, which does not require categorization under GASB Statement No. 72, *Fair Value Measurements and Application*.

The Authority had the following investments as of June 30:

Summary of Investments by Type	2020	2019
Cash and cash equivalents		
Cash	\$ 930,319	\$ 729,063
Goldman Sachs Financial Square Treasury Obligations Fund	146,012,168	240,831,479
TexSTAR Investment Pool	293,077,714	143,782,654
U.S. government sponsored enterprises and treasury notes	20,131,052	159,267,034
Total cash and investments	<u>\$ 460,151,253</u>	<u>\$ 544,610,230</u>
Unrestricted cash and cash equivalents	\$ 38,909,537	\$ 43,796,711
Unrestricted investments	83,730,161	88,707,812
Restricted cash and cash equivalents:		
Current	84,560,272	65,051,895
Noncurrent	23,472,678	132,711,936
Restricted investments	229,478,605	214,341,876
Total cash and cash equivalent and investment, as reported on the Statement of Net Position	<u>\$ 460,151,253</u>	<u>\$ 544,610,230</u>

The Authority utilizes various methods to measure the fair value of investments on a recurring basis. GASB Statement No. 72, *Fair Value Measurement and Application*, establishes a hierarchy that prioritizes inputs to valuation methods. The three levels of inputs are:

Level 1: Inputs are unadjusted quoted prices in active markets for identical assets and liabilities that the Authority has the ability to access.

Level 2: Inputs are observable other than quoted prices included in Level 1 that are observable for the asset or liability, either directly or indirectly. These inputs may include quoted prices for the identical instrument in an inactive market, prices for similar instruments, interest rates, prepayment speeds, credit risk, yield curves, default rates and similar data.

Level 3: Inputs are unobservable for the asset or liability, to the extent relevant observable inputs are not available, representing the Authority's own assumptions about the assumptions a market participant would use in valuing the asset or liability, and would be based on the best information available.

Hierarchy: The fair value hierarchy gives the highest priority to Level 1 inputs and the lowest priority to Level 3 inputs.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 2. Cash and Investments (Continued)

The availability of observable inputs can vary from security to security and is affected by a wide variety of factors, including, for example, the type of security, whether the security is new and not yet established in the marketplace, the liquidity of markets, and other characteristics particular to the security. To the extent that valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgment. Accordingly, the degree of judgment exercised in determining fair value is greatest for instruments categorized in Level 3.

The inputs used to measure fair value may fall into different levels of the fair value hierarchy. In such cases, for disclosure purposes, the level in the fair value hierarchy within which the fair value measurement falls in its entirety, is determined based on the lowest level input that is significant to the fair value measurement in its entirety. Investments measured at net asset value do not have significant terms or conditions for redemption or commitment for additional funding. The inputs or methodology used for valuing securities are not necessarily an indication of the risk associated with investing in those securities.

The following tables summarize the inputs used as of June 30, 2020 and 2019, for the Authority's investments measured at fair value:

Investment Type	Level 1	Level 2	Level 3	Balance
Farmer MAC	\$ -	\$ 20,131,052	\$ -	\$ 20,131,052
Total U.S. government sponsored enterprise securities and treasury notes	\$ -	\$ 20,131,052	\$ -	20,131,052
Investments at NAV based on amortized cost:				
Goldman Sachs Financial Square Treasury Obligations Fund				146,012,168
TexSTAR Investment Pool				293,077,714
Total				\$ 459,220,934

Investment Type	Fair Value Hierarchy at June 30, 2019			Balance
	Level 1	Level 2	Level 3	
Federal HOME Loan Bank	\$ -	\$ 24,952,549	\$ -	\$ 24,952,549
Fannie Mae	-	24,913,659	-	24,913,659
U.S. Treasury Notes	-	89,323,258	-	89,323,258
Farmer MAC	-	20,077,568	-	20,077,568
Total U.S. government sponsored enterprise securities and treasury notes	\$ -	\$ 159,267,034	\$ -	159,267,034
Investments at NAV based on amortized cost:				
Goldman Sachs Financial Square Treasury Obligations Fund				240,831,479
TexSTAR Investment Pool				143,782,654
Total				\$ 543,881,167

Custodial credit risk—deposits: Custodial credit risk for deposits is the risk that, in the event of the failure of a depository financial institution, the Authority will not be able to recover its deposits or will not be able to recover its collateral securities that are in the possession of an outside party. The Authority has a formal policy specific to custodial credit risk, which requires bank deposit accounts to be collateralized with pledged securities equal to 105% of the carrying value.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 2. Cash and Investments (Continued)

The Authority was fully collateralized with pledged securities held in the name of the pledging financial institution for amounts in excess of the Federal Deposit Insurance Corporation limit as of June 30, 2020 and 2019. Cash balance as of June 30, 2020 and 2019, is \$930,319 and \$729,063, respectively.

Custodial credit risk—investments: Custodial credit risk for investments is the risk that, in the event of the failure of the counterparty to a transaction, the Authority will not be able to recover the value of its investment or collateral securities that are in the possession of an outside party. Investment securities are exposed to custodial risk if the securities are uninsured, are not registered in the name of the Authority and are held by the counterparty, its trust or agent, but not in the Authority's name. The Authority's investment securities are not exposed to custodial credit risk because all securities are held by the Authority's custodial bank in the Authority's name.

Concentration of credit risk: Concentration of credit risk is the risk of loss attributed to the magnitude of the Authority's investment in a single issuer. The Authority is authorized to invest funds in accordance with its investment policy, bond indentures and the Texas Public Funds Investment Act. Authorized investments include, but are not limited to: United States Treasury and federal agency issues, certificates of deposit issued by a state or national bank domiciled in the state of Texas, repurchase agreements collateralized by United States Treasury or federal agency securities, guaranteed investment contracts (GICs), obligations of states and municipalities, Securities and Exchange Commission (SEC) registered no-load money market mutual funds and local government investment pools. The Authority does not have a specific investment policy related to concentration of credit risk. The Authority does have a policy related to portfolio diversification.

With regards to investment composition, the Authority's investment policy currently states that local government investment pools may not exceed 80% of the total investment portfolio less bond funds. Bond funds may be invested at 100% of total investment portfolio. No other parameters for investment composition are stated in the approved investment policy.

The Authority's portfolio consisted of the following as of June 30:

	2020		2019	
TexSTAR Investment Pool	\$293,077,714	63.8%	\$ 143,782,654	26.4%
Goldman Sachs Financial Square Treasury Obligations Fund	146,012,168	31.8%	240,831,479	44.3%
Federal HOME Loan Bank	-	0.0%	24,952,549	4.6%
Farmer MAC	20,131,052	4.4%	20,077,568	3.7%
Fannie Mae	-	0.0%	24,913,659	4.6%
U.S. Treasury notes	-	0.0%	89,323,258	16.4%
Total	<u>\$459,220,934</u>		<u>\$ 543,881,167</u>	

Interest rate risk: Interest rate risk is the risk that the changes in interest rates will adversely affect the fair value of an investment. Interest rate risk may be mitigated by investing operating funds primarily in shorter term securities, money market funds or similar investment pools and limiting the average maturity of the portfolio.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 2. Cash and Investments (Continued)

The Authority's investment policy notes that with regard to maximum maturities, the Authority will attempt to match its investments with anticipated cash flow requirements. Unless matched to a specific cash flow, the Authority will not directly invest operating or general funds in securities maturing more than 16 months from the date of purchase, unless approved by the Authority's Board. Investment of bond proceeds shall not exceed the projected expenditure schedule of the related project. Reserve funds may be invested in securities exceeding 12 months if the maturities of such investments are made to coincide as nearly as practicable with the expected use of the funds.

As of June 30, 2020 and 2019, the Authority's investments in debt securities mature as follows:

Investment Type	Investment Maturities (in Days)—2020				Fair Value
	90 Days or Less	91 to 180 Days	191 to 365 Days	Greater Than 365 Days	
Farmer MAC	\$ -	\$ 20,131,052	\$ -	\$ -	\$ 20,131,052
Total U.S. government sponsored enterprise securities and treasury notes	\$ -	\$ 20,131,052	\$ -	\$ -	\$ 20,131,052

Investment Type	Investment Maturities (in Days)—2019				Fair Value
	90 Days or Less	91 to 180 Days	191 to 365 Days	Greater Than 365 Days	
Federal HOME Loan Bank	\$ 24,952,549	\$ -	\$ -	\$ -	\$ 24,952,549
Fannie Mae	4,990,510	-	19,923,149	-	24,913,659
U.S. Treasury Notes	-	39,956,250	49,367,008	-	89,323,258
Farmer MAC	-	-	-	20,077,568	20,077,568
Total U.S. government sponsored enterprise securities and treasury notes	\$ 29,943,059	\$ 39,956,250	\$ 69,290,157	\$ 20,077,568	\$ 159,267,034

Local Government Investment Pool: The Texas Short-Term Asset Reserve Fund (TexSTAR) is a public funds investment pool created pursuant to the Interlocal Cooperation Act, Chapter 791, of the Texas Government Code, and the Public Funds Investment Act, Texas Government Code, Chapter 2256. TexSTAR is managed by a 5-member board of trustees who has contracted with JPMorgan Investment Management, Inc. and First Southwest Asset Management, Inc. to administer the operations of the fund. TexSTAR is rated AAA by Standard & Poor's and maintains a weighted average maturity of 60 days or less, with a maximum maturity of 13 months for any individual security. The amounts can be withdrawn with limited notice.

The Chief Financial Officer of the Authority is the President of the Board of TexSTAR. The Authority has investments of \$293.1 million and \$143.8 million, respectively, in TexSTAR as of June 30, 2020 and 2019.

Money market mutual fund: The Goldman Sachs Financial Square Treasury Obligations Fund is a government money market fund. The fund values its securities using net asset value. The fund is rated Aaa by Moody's as of June 30, 2020. The redemption frequency is one day and there are no unfunded commitments.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 2. Cash and Investments (Continued)

Credit risk: Credit risk is the risk than an issuer or other counterparty to an investment will not fulfill its obligations to the Authority. To help mitigate credit risk, credit quality guidelines are incorporated into the investment policy, as follows:

- Limiting investments to the safest types of securities, as listed above under the concentration of credit risk section
- Pre-qualifying the financial institutions, brokers/dealers, intermediaries, and advisors with which the Authority will do business

The Authority's investments had the following credit risk structure as of June 30, 2020 and 2019, based on Standard & Poor's ratings:

U.S. Government Sponsored Enterprise Securities and Treasury Notes	Standard & Poor's		2020	2019
	Investment Grade Rating			
Federal HOME Loan Bank	AA+	\$ -	\$ 24,952,549	
Fannie Mae	AA+	-	24,913,659	
U.S. Treasury Notes	Aaa	-	89,323,258	
Farmer MAC	NR	20,131,052	20,077,568	
Total		\$ 20,131,052	\$ 159,267,034	

Note 3. Capital Assets

The following schedule summarizes the capital assets of the Authority as of June 30, 2020 and 2019:

	2019	Additions	Disposals/ Adjustments	Transfers	2020
Nondepreciable assets:					
Construction in progress	\$ 763,449,265	\$ 197,146,765	\$ -	\$ (326,592,379)	\$ 634,003,651
Right of way	88,149,608	-	-	-	88,149,608
Total nondepreciable assets	851,598,873	197,146,765	-	(326,592,379)	722,153,259
Depreciable assets:					
Property and equipment	5,001,732	604,188	(88,063)	1,639,148	7,157,005
Toll road:					
Building and toll facilities	7,062,332	-	-	-	7,062,332
Highways and bridges	1,055,762,444	-	-	313,378,062	1,369,140,506
Toll equipment	32,223,257	-	-	8,252,763	40,476,020
Signs	13,220,587	63,503	-	3,322,406	16,606,496
Land improvements	14,243,759	-	-	-	14,243,759
Total depreciable assets	1,127,514,111	667,691	(88,063)	326,592,379	1,454,686,118
Accumulated depreciation:					
Property and equipment	(2,053,454)	(1,106,248)	76,945	-	(3,082,757)
Building and toll facilities	(2,115,071)	(176,748)	-	-	(2,291,819)
Highways and bridges	(142,425,781)	(33,228,260)	-	-	(175,654,041)
Toll equipment	(14,170,300)	(3,659,103)	-	-	(17,829,403)
Signs	(2,727,678)	(844,751)	-	-	(3,572,429)
Land improvements	(5,315,944)	(958,678)	-	-	(6,274,622)
Total accumulated depreciation	(168,808,228)	(39,973,788)	76,945	-	(208,705,071)
Net property and equipment	\$ 1,810,304,756	\$ 157,840,668	\$ (11,118)	\$ -	\$ 1,968,134,306

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 3. Capital Assets (Continued)

	2018	Additions	Disposals/ Adjustments	Transfers	2019
Nondepreciable assets:					
Construction in progress	\$ 642,490,583	\$ 165,586,920	\$ -	\$ (44,628,238)	\$ 763,449,265
Right of way	88,149,608	-	-	-	88,149,608
Total nondepreciable assets	<u>730,640,191</u>	<u>165,586,920</u>	<u>-</u>	<u>(44,628,238)</u>	<u>851,598,873</u>
Depreciable assets:					
Property and equipment	4,862,250	141,203	(2,055,711)	2,053,990	5,001,732
Toll road:					
Building and toll facilities	7,062,332	-	-	-	7,062,332
Highways and bridges	1,015,014,149	-	-	40,748,295	1,055,762,444
Toll equipment	34,290,129	705,751	(4,587,114)	1,814,491	32,223,257
Signs	13,033,602	175,523	-	11,462	13,220,587
Land improvements	14,243,759	-	-	-	14,243,759
Total depreciable assets	<u>1,088,506,221</u>	<u>1,022,477</u>	<u>(6,642,825)</u>	<u>44,628,238</u>	<u>1,127,514,111</u>
Accumulated depreciation:					
Property and equipment	(3,623,535)	(459,281)	2,029,362	-	(2,053,454)
Building and toll facilities	(1,948,634)	(166,437)	-	-	(2,115,071)
Highways and bridges	(117,227,785)	(25,197,996)	-	-	(142,425,781)
Toll equipment	(15,815,548)	(2,941,866)	4,587,114	-	(14,170,300)
Signs	(2,397,132)	(330,546)	-	-	(2,727,678)
Land improvements	(4,504,754)	(811,190)	-	-	(5,315,944)
Total accumulated depreciation	<u>(145,517,388)</u>	<u>(29,907,316)</u>	<u>6,616,476</u>	<u>-</u>	<u>(168,808,228)</u>
Net property and equipment	<u>\$ 1,673,629,024</u>	<u>\$ 136,702,081</u>	<u>\$ (26,349)</u>	<u>\$ -</u>	<u>\$ 1,810,304,756</u>

Construction in progress as of June 30, 2020 and 2019, consists of the following:

	2019	Additions	Disposals	Transfers	2020
Construction in progress:					
Preliminary and construction costs	\$ 696,479,929	\$ 163,071,267	\$ -	\$ (317,673,008)	\$ 541,878,188
Collection system	7,748,050	10,268,992	-	(8,919,370)	9,097,672
Capitalized interest	59,221,286	23,806,505	-	-	83,027,791
Net construction in progress	<u>\$ 763,449,265</u>	<u>\$ 197,146,764</u>	<u>\$ -</u>	<u>\$ (326,592,378)</u>	<u>\$ 634,003,651</u>
Construction in progress:					
Preliminary and construction costs	\$ 597,365,817	\$ 143,742,350	\$ -	\$ (44,628,238)	\$ 696,479,929
Collection system	5,610,379	2,137,671	-	-	7,748,050
Capitalized interest	39,514,387	19,706,899	-	-	59,221,286
Net construction in progress	<u>\$ 642,490,583</u>	<u>\$ 165,586,920</u>	<u>\$ -</u>	<u>\$ (44,628,238)</u>	<u>\$ 763,449,265</u>

Including amortization expense, depreciation expense for the years ended June 30, 2020 and 2019, totaled \$39,973,788 and \$29,907,316, respectively.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 3. Capital Assets (Continued)

As of June 30, 2020 and 2019, the Authority has the following other non-Tolling System capital assets (capital assets other than the 183A Turnpike Project, the 290E Project, the 183 South Project and the SH 71 Express Project):

	2020	2019
Construction in progress non-Tolling System projects:		
MoPac Improvement Project	\$ 4,638,241	\$ -
MoPac South	15,519,789	12,771,933
183 North Mobility	18,898,656	14,802,876
SH 45 Southwest	-	97,048,703
US 290 West (Oak Hill)	4,452,011	4,464,530
Capital assets in non-Tolling System projects:		
Building and toll facilities, net of depreciation	203,516,633	213,952,059
Toll equipment, net of depreciation	3,632,447	4,753,332
Total non-Tolling System projects	<u>\$ 250,657,777</u>	<u>\$ 347,793,433</u>

Note 4. Notes and Bonds Payable

The following schedule summarizes total notes and bonds payable for the years ended June 30, 2020 and 2019:

	2019	Additions/ Accretion	Amortization/ Deductions	2020	Due Within One Year
Series 2010 Obligations (CIB and CAB bonds)	\$ 42,239,710	\$ -	\$ (7,240,000)	\$ 34,999,710	\$ -
Series 2010 CAB accretion	35,040,989	5,422,788	-	40,463,777	-
Total 2010 Bonds	77,280,699	5,422,788	(7,240,000)	75,463,487	-
Series 2011 Obligations	9,999,944	-	-	9,999,944	-
Series 2011 CAB accretion	6,405,044	1,047,088	-	7,452,132	-
Total 2011 Bonds	16,404,988	1,047,088	-	17,452,076	-
Series 2013 Obligations	234,700,000	-	(5,560,000)	229,140,000	6,230,000
TIFIA Bond 2015—Series C	230,302,177	66,720,514	-	297,022,691	-
SIB Bond 2015—Series E	33,034,828	660,692	-	33,695,520	-
SHF Bond 2015—Series D	33,034,858	660,692	-	33,695,550	-
Series 2015 Bonds—Series A and B	367,575,000	-	-	367,575,000	810,000
Total 2015 Bonds	663,946,863	68,041,898	-	731,988,761	810,000
Sub Lien Refunding Bonds, Series 2016	73,905,000	-	(415,000)	73,490,000	435,000
Sr. Lien Refunding Bonds, Series 2016	358,030,000	-	(1,245,000)	356,785,000	8,490,000
Total 2016 Bonds	431,935,000	-	(1,660,000)	430,275,000	8,925,000
Sr. Lien Revenue Bonds, Series 2018	44,345,000	-	-	44,345,000	-
Sub Lien Revenue BAN, Series 2018	46,020,000	-	-	46,020,000	-
Total 2018 Bonds	90,365,000	-	-	90,365,000	-
Series 2020A Obligations	-	50,265,000	-	50,265,000	-
Total 2020 Bonds	-	50,265,000	-	50,265,000	-
71E Toll Project Obligation	60,728,211	-	(2,246,323)	58,481,888	-
SH 45 Southwest Obligation	57,420,370	6,390,600	(63,810,970)	-	-
Regions 2017 MoPac Obligation	24,990,900	-	-	24,990,900	-
TIFIA Bond 2019—290E Phase III	50,414	1,503	-	51,917	-
Total other obligations	143,189,895	6,392,103	(66,057,293)	83,524,705	-
Total notes, bonds and other obligations payable	1,657,822,445	80,903,877	(80,517,293)	1,708,474,029	15,965,000
Net premium (discount) on revenue bonds payable	90,080,586	11,684,232	(11,262,398)	90,502,420	-
Total notes, bonds and other obligations payable, net	1,747,903,031	\$ 92,588,109	\$ (91,779,691)	1,798,976,449	\$ 15,965,000
Less current maturities of notes and bonds payable	(14,460,000)			(15,965,000)	
Total	<u>\$ 1,733,443,031</u>			<u>\$ 1,783,011,449</u>	

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 4. Notes and Bonds Payable (Continued)

	2018	Additions/ Accretion	Amortization/ Deductions	2019	Due Within One Year
Series 2010 Obligations (CIB and CAB bonds)	43,549,710	-	(1,310,000)	42,239,710	7,240,000
Series 2010 CAB accretion	30,008,312	5,032,677	-	35,040,989	-
Total 2010 Bonds	73,558,022	5,032,677	(1,310,000)	77,280,699	7,240,000
Series 2011 Obligations	9,999,944	-	-	9,999,944	-
Series 2011 CAB accretion	5,423,344	981,700	-	6,405,044	-
Total 2011 Bonds	15,423,288	981,700	-	16,404,988	-
Series 2013 Obligations	240,415,000	-	(5,715,000)	234,700,000	5,560,000
TIFIA Bond 2015—Series C	51,912,351	178,389,826	-	230,302,177	-
SIB Bond 2015—Series E	31,752,055	1,282,773	-	33,034,828	-
SHF Bond 2015—Series D	31,752,085	1,282,773	-	33,034,858	-
Series 2015 Bonds—Series A and B	367,575,000	-	-	367,575,000	-
Total 2015 Bonds	482,991,491	180,955,372	-	663,946,863	-
Sub Lien Refunding Bonds, Series 2016	74,305,000	-	(400,000)	73,905,000	415,000
Sr. Lien Refunding Bonds, Series 2016	358,030,000	-	-	358,030,000	1,245,000
Total 2016 Bonds	432,335,000	-	(400,000)	431,935,000	1,660,000
Sr. Lien Revenue Bonds, Series 2018	-	44,345,000	-	44,345,000	-
Sub Lien Revenue BAN, Series 2018	-	46,020,000	-	46,020,000	-
Total 2018 Bonds	-	90,365,000	-	90,365,000	-
71E Toll Project Obligation	62,332,058	-	(1,603,847)	60,728,211	-
SH 45 Southwest Obligation	22,080,000	35,340,370	-	57,420,370	-
Regions 2017 MoPac Obligation	17,000,000	7,990,900	-	24,990,900	-
TIFIA Bond 2019—290E Phase III	-	50,414	-	50,414	-
Total other obligations	101,412,058	43,381,684	(1,603,847)	143,189,895	-
Total notes, bonds and other obligations payable	1,346,134,859	320,716,433	(9,028,847)	1,657,822,445	14,460,000
Net premium (discount) on revenue bonds payable	95,289,995	5,802,814	(11,012,223)	90,080,586	-
Total notes, bonds and other obligations payable, net	1,441,424,854	326,519,247	(20,041,070)	1,747,903,031	14,460,000
Less current maturities of notes and bonds payable	(7,425,000)	-	-	(14,460,000)	-
Total	\$ 1,433,999,854			\$ 1,733,443,031	

The Series 2010 Obligations, the Series 2011 Obligations, the Series 2013 Obligations, the Series 2015 Obligations, the Series 2016 Obligations, the Series 2018 Obligations, the 2019 TIFIA Bond and the Series 2020A Obligations, each as further described below, were issued by the Authority pursuant to a bond indenture between the Authority and the trustee named therein, and are secured by and payable from the trust estate established thereby, in the manner described in and subject to the terms and conditions of the bond indenture. The trust estate established by the bond indenture includes the revenues from the Tolling System. The Authority is required to establish and maintain toll rates in connection with the Tolling System as shall be sufficient to satisfy its rate covenant under the bond indenture.

Series 2010 Obligations: The Authority issued its Series 2010 Senior Lien Revenue Bonds and Taxable Series 2010 Subordinate Lien Revenue Build America Bonds (Series 2010 Subordinate Lien BABs) on March 1, 2010, collectively called the Series 2010 Obligations. The Series 2010 Senior Lien Revenue Bonds were issued in part as current interest bonds (Series 2010 CIBs) and in part as capital appreciation bonds (Series 2010 CABs). The Series 2010 Subordinate Lien BABs were refunded and redeemed in whole by the Authority on June 5, 2013.

The proceeds from the Series 2010 Obligations were used to (i) finance a portion of the costs of the 183A Phase II Project; (ii) currently refund and redeem, in whole, the Authority's outstanding Revenue Notes, Taxable Series 2009; (iii) pay capitalized interest with respect to the Series 2010 Obligations; (iv) make a deposit to the Senior Lien Debt Service Reserve Fund and the Subordinate Lien Debt Service Reserve Fund and (v) pay certain issuance costs of the Series 2010 Obligations.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 4. Notes and Bonds Payable (Continued)

The Series 2010 CIBs matured in 2019 through 2020. Interest on the Series 2010 CIBs is calculated on the basis of a 360-day year of 12, 30-day months at the rate of 5.75%. Interest on the Series 2010 CIBs is payable on each July 1 and January 1, commencing July 1, 2010. As of June 30, 2020 and 2019, the outstanding principal amount was \$0 and \$7.2 million, respectively.

The Series 2010 CABs are scheduled to mature in 2025 through 2040 at an aggregated maturity amount of \$176.1 million. The principal amount of \$34.9 million of the Series 2010 CABs represents the total amount of outstanding principal before the accreted and compounded interest as of June 30, 2020 and 2019.

Interest on the Series 2010 CABs will accrete from the date of initial delivery to stated maturity at rates ranging from 7.20% to 7.85% and will compound on each July 1 and January 1, commencing July 1, 2010. Such accreted and compounded interest will be paid as part of the maturity amount at stated maturity.

The amount of accumulated accreted interest on the Series 2010 CABs as of June 30, 2020 and 2019, was \$40.5 million and \$35.0 million, respectively. The accumulated accreted interest is added to the outstanding principal on July 1 and January 1 of each year beginning July 1, 2010.

Series 2011 Obligations: The Authority issued its Series 2011 Senior Lien Revenue Bonds and Series 2011 Subordinate Lien Revenue Bonds on June 29, 2011, collectively called the Series 2011 Obligations. The Series 2011 Senior Lien Revenue Bonds were issued in part as current interest bonds (Series 2011 CIBs) and in part as capital appreciation bonds (Series 2011 CABs). The Series 2011 CIBs were refunded in full during fiscal year 2016, and the Series 2011 Subordinate Lien Revenue Bonds were refunded in full during fiscal year 2017.

A portion of the proceeds from the Series 2011 Obligations was used to (i) prepay a State Infrastructure Bank loan in full, (ii) redeem the Authority's Series 2010 Notes in whole, (iii) pay capitalized interest with respect to the Series 2011 Obligations, (iv) make a deposit to the Senior Lien Debt Service Reserve Fund and the Subordinate Lien Debt Service Reserve Fund and (v) pay certain issuance costs of the Series 2011 Obligations. The remaining proceeds of the Series 2011 Obligations were used to finance a portion of the costs of the 290E Phase II Project and as otherwise authorized in the Indenture.

The Series 2011 CABs are scheduled to mature starting in 2022 through 2026 at an aggregated maturity amount of \$22.1 million. The principal amount of \$9.9 million for the Series 2011 CABs represents the total amount of outstanding principal before the accreted and compounded interest as of June 30, 2020 and 2019.

Interest on the Series 2011 CABs will accrete from the date of initial delivery to stated maturity at rates ranging from 5.9% to 6.5% and will compound on each July 1 and January 1, commencing July 1, 2011. Such accreted and compounded interest will be paid as part of the maturity amount at stated maturity.

The amount of accumulated accreted interest on the Series 2011 CABs as of June 30, 2020 and 2019, was \$7.5 million and \$6.4 million, respectively. The accumulated accreted interest is added to the outstanding principal on July 1 and January 1 of each year beginning July 1, 2011.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 4. Notes and Bonds Payable (Continued)

Series 2013 Obligations: The Authority issued its Series 2013A Senior Lien Revenue Refunding Bonds (Series 2013A Senior Lien Bonds), Series 2013B Senior Lien Revenue Refunding Put Bonds (Series 2013B Senior Lien Put Bonds) and Series 2013 Subordinate Lien Revenue Refunding Bonds (Series 2013 Subordinate Lien Bonds), collectively called the Series 2013 Obligations, on May 16, 2013. The Series 2013B Senior Lien Put Bonds were refunded in full during fiscal year 2016.

The proceeds from the Series 2013 Obligations were used to (i) refund in full the Authority's Series 2005 Senior Lien Revenue Bonds, the Authority's 2005 TIFIA Bond, and the Authority's Series 2010 Subordinate Lien BABs, (ii) make a deposit to the Subordinate Lien Debt Service Reserve Fund and (iii) pay certain issuance costs of the Series 2013 Obligations.

The Series 2013A Senior Lien Bonds were issued as current interest bonds and are scheduled to mature on dates ranging from 2017 through 2043. Interest on the Series 2013A Senior Lien Bonds is calculated on the basis of a 360-day year of 12, 30-day months at a rate of 5%. Interest on the Series 2013A Senior Lien Bonds is payable on each July 1 and January 1, commencing July 1, 2013. As of June 30, 2020 and 2019, the outstanding principal amount was \$133.2 million and \$136.4 million, respectively.

The Series 2013 Subordinate Lien Bonds were issued as current interest bonds and are scheduled to mature in 2017 through 2042. Interest on the Series 2013 Subordinate Lien Bonds is calculated on the basis of a 360-day year of 12, 30-day months at the rate of 5%. Interest on the Series 2013 Subordinate Lien Bonds is payable on each July 1 and January 1, commencing July 1, 2013. As of June 30, 2020 and 2019, the outstanding principal amount was \$95.9 million and \$98.3 million, respectively.

Series 2015 Obligations: The Authority issued its Senior Lien Revenue Bonds, Series 2015A (the Series 2015A Bonds) and its Senior Lien Revenue and Refunding Put Bonds, Series 2015B (the Series 2015B Bonds) on November 19, 2015. The Authority issued its Subordinate Lien Revenue Bond, Taxable Series 2015C (the 2015C TIFIA Bond), its Subordinate Lien Revenue Bond, Taxable Series 2015D (the 2015D SHF Bond), and its Subordinate Lien Revenue Bond, Taxable Series 2015E (the 2015E SIB Bond) on November 18, 2015. The Series 2015A Bonds, the Series 2015B Bonds, the 2015C TIFIA Bond, the 2015D SHF Bond and the 2015E SIB Bond are collectively referred to as the Series 2015 Obligations.

A portion of the proceeds of the Series 2015 Obligations was used to finance and refinance the costs of designing, engineering, developing and constructing the 183 South Project. The remaining proceeds of the Series 2015 Obligations were used to (i) refund and redeem in whole the Authority's outstanding Senior Lien Revenue Refunding Put Bonds, Series 2013B, (ii) prepay in whole the Authority's outstanding 2015 Draw Down Note, (iii) pay capitalized interest with respect to the Series 2015A Bonds, (iv) make deposits to the Senior Lien Debt Service Reserve Fund and (v) pay certain issuance costs of the Series 2015 Obligations.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 4. Notes and Bonds Payable (Continued)

Series 2015A Bonds: The Series 2015A Bonds were issued as current interest bonds and are scheduled to mature in 2025 through 2045. Interest on the Series 2015A Bonds is calculated on the basis of a 360-day year of 12, 30-day months at a rate of 5%. Interest on the Series 2015A Bonds is payable on each July 1 and January 1, commencing January 1, 2016. As of June 30, 2020 and 2019, the outstanding principal amount was \$298.8 million for both years.

Series 2015B Bonds: The Series 2015B Bonds were issued as current interest bonds and as variable rate obligations and are scheduled to mature in 2021 through 2045. Through the period that commenced on the issuance date thereof and ends on January 6, 2021 (initial multiannual rate period), the Series 2015B Bonds will bear interest at a rate of 5%. On January 7, 2021, the Series 2015B Bonds are subject to mandatory tender at a purchase price equal to the principal amount thereof plus accrued interest to such purchase date. If, on such date, all Series 2015B Bonds are not successfully remarketed, the Authority has no obligation to purchase such Bonds on such date, and all Series 2015B Bonds will continue to be outstanding and will bear interest at a rate of 9% per annum until subsequently remarketed.

Interest on the Series 2015B Bonds during the initial multiannual rate period is calculated on the basis of a 360-day year of 12, 30-day months and is payable on each January 1 and July 1, commencing January 1, 2016. Pursuant to the terms of the bond indenture, the Series 2015B Bonds are subject to mandatory tender for purchase and conversion to another interest rate mode at the times stated therein. As of June 30, 2020 and 2019, the outstanding principal amount was \$68.8 million for both years.

2015C TIFIA Bond: In November 2015, the Authority entered into a secured loan agreement (the 2015 TIFIA Loan Agreement) with the United States Department of Transportation, pursuant to which the Authority is authorized to borrow an amount not to exceed \$282,200,885 to pay eligible project costs of the 183 South Project. The Authority's obligation to repay amounts borrowed under the 2015 TIFIA Loan Agreement is evidenced by the 2015C TIFIA Bond. The 2015C TIFIA Bond bears interest at 3.08% per annum and the final maturity date thereof will be the earlier of (i) the date this is 35 years from the date of substantial completion of the 183 South Project and (ii) July 1, 2049. Payments of principal and interest due on the 2015C TIFIA Bond are payable in the amounts set forth in the 2015 TIFIA Loan Agreement on each January 1 and July 1, commencing on the earlier of (i) July 1, 2024 and (ii) the semiannual payment date on (or immediately preceding) the fifth anniversary of the date of substantial completion of the 183 South Project.

The Authority has received loan proceeds of approximately \$282.2 million and \$172.9 million through fiscal year 2020 and 2019, respectively, under the 2015 TIFIA Loan Agreement. As of June 30, 2020 and 2019, the 2015C TIFIA Bond had an outstanding balance of \$297.0 million and \$230.3 million, respectively. As of June 30, 2020 and 2019, the 2015C TIFIA Bond balance included accrued interest of approximately \$14.9 million and \$5.5 million, respectively, as part of the loan balance.

2015D SHF Bond: In November 2015, the Authority entered into a secured loan agreement (the SHF Loan Agreement) with TxDOT, pursuant to which the Authority is authorized to borrow an amount not to exceed \$30 million to pay eligible projects costs of the 183 South Project. The Authority's obligation to repay amounts borrowed under the SHF Loan Agreement is evidenced by the 2015D SHF Bond. Interest on the 2015D SHF Bond is payable on each January 1 and July 1, commencing July 1, 2020, and installments of principal thereof are payable on each July 1, commencing July 1, 2025 in the amounts set forth in the SHF Loan Agreement. The 2015D SHF Bond bears interest at 4% per annum and the final maturity date thereof is July 1, 2049.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 4. Notes and Bonds Payable (Continued)

As of June 30, 2020 and 2019, the 2015D SHF Bond had an outstanding balance of \$33.7 million and \$33.0 million, respectively. As of June 30, 2020 and 2019, the 2015D SHF Bond balance included accrued interest of approximately \$3.7 million and \$3 million, respectively.

2015E SIB Bond: In November 2015, the Authority entered into a secured loan agreement (the SIB Loan Agreement) with TxDOT, pursuant to which the Authority is authorized to borrow an amount not to exceed \$30 million to pay eligible projects costs of the 183 South Project. The Authority's obligation to repay amounts borrowed under the SIB Loan Agreement is evidenced by the 2015E SIB Bond. Interest on the 2015E SIB Bond is payable on each January 1 and July 1, commencing July 1, 2020, and installments of principal thereof are payable on each July 1, commencing July 1, 2025, in the amounts set forth in the SIB Loan Agreement. The 2015E SIB Bond bears interest at 4% per annum and the final maturity date thereof is July 1, 2049.

As of June 30, 2020 and 2019, the 2015E SIB Bond had an outstanding balance of \$33.7 million and \$33.0 million, respectively. As of June 30, 2020 and 2019, the 2015E SIB Bond balance included accrued interest of approximately \$3.7 million and \$3 million, respectively.

Series 2016 Obligations: On August 9, 2016, the Authority issued its Series 2016 Subordinate Lien Revenue Refunding Bonds (2016 Subordinate Lien Bonds) and on June 1, 2016 the Authority issued its Series 2016 Senior Lien Revenue Refunding Bonds (2016 Senior Lien Bonds), collectively called the Series 2016 Obligations. The proceeds of the Series 2016 Senior Lien Bonds were used to (i) refund a portion of the Series 2010 CIBs and all outstanding Series 2011 CIBs and (ii) pay issuance costs of the Series 2016 Senior Lien Bonds.

The 2016 Subordinate Lien Bonds were issued as current interest bonds and are scheduled to mature in 2019 through 2041. Interest on the 2016 Subordinate Lien Bonds is calculated on the basis of a 360-day year of 12, 30-day months at rates ranging from 3.125% to 5.000%. Interest on the 2016 Subordinate Lien Bonds is payable on each July 1 and January 1, commencing January 1, 2017. As of June 30, 2020 and 2019, the outstanding principal amount was \$73.5 million and \$73.9 million, respectively.

The 2016 Senior Lien Bonds were issued as current interest bonds and are scheduled to mature in 2020 through 2046. Interest on the 2016 Senior Lien Bonds is calculated on the basis of a 360-day year of 12, 30-day months at rates ranging from 3.375% to 5.000%. Interest on the 2016 Senior Lien Bonds is payable on each July 1 and January 1, commencing July 1, 2016. As of June 30, 2020 and 2019, the outstanding principal amount was \$356.8 million and \$358.0 million, respectively.

Series 2018 Obligations: On November 20, 2018, the Authority issued its Series 2018 Senior Lien Revenue Bonds (2018 Senior Lien Bonds) and its Series 2018 Subordinate Lien Revenue Bond Anticipation Notes (2018 Sub Lien BANs), collectively called the Series 2018 Obligations. The proceeds of the Series 2018 Obligations were used to (i) finance the costs of designing, engineering, developing and constructing the 290 E Phase III Project (ii) pay capitalized interest with respect to the 2018 Senior Lien Bonds and (iii) pay issuance costs of the Series 2018 Obligations.

The 2018 Senior Lien Bonds were issued as current interest bonds and are scheduled to mature in 2025 through 2048. Interest on the 2018 Senior Lien Bonds is calculated on the basis of a 360-day year of 12, 30-day months at rate of 5.000%. Interest on the 2018 Senior Lien Bonds is payable on each July 1 and January 1, commencing January 1, 2019. As of June 30, 2020 and 2019, the outstanding principal amount was \$44.3 million for both years.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 4. Notes and Bonds Payable (Continued)

The 2018 Sub Lien BANs were issued as current interest bonds and are scheduled to mature in 2022. Interest on the 2018 Sub Lien BANs is calculated on the basis of a 360-day year of 12, 30-day months at rate of 4.000%. Interest on the 2018 Sub Lien BANs is payable on each July 1 and January 1, commencing January 1, 2019. As of June 30, 2020 and 2019, the outstanding principal amount was \$46.02 million for both years.

Series 2020A Obligations: On January 22, 2020, the Authority issued its Series 2020A Senior Lien Revenue Bonds (Series 2020A Senior Lien Bonds). The proceeds of the Series 2020A Senior Lien Bonds were used to (i) to prepay in whole the Authority's outstanding SH 45SW Loan and (ii) pay issuance costs of the Series 2020A Senior Lien Bonds.

The Series 2020A Senior Lien Bonds were issued as current interest bonds and are scheduled to mature in 2044 through 2049. Interest on the Series 2020A Senior Lien Bonds is calculated on the basis of a 360-day year of 12, 30-day months at rate of 5.00%. Interest on the Series 2020A Senior Lien Bonds is payable on each January 1 and July 1, commencing July 1, 2020. As of June 30, 2020, the outstanding principal amount was \$50.265 million.

71E Toll Project Obligation to TxDOT: The Authority, the Capitol Area Metropolitan Planning Organization (CAMPO) and TxDOT approved the execution of a Project Agreement (the SH 71 Agreement) for the development of toll lanes on SH 71 extending from Presidential Boulevard to just east of SH 130, including the realignment of FM 973 where that road intersects with SH 71, which is referred to as the SH 71 Express Project.

Pursuant to a resolution adopted by the Authority's Board, the Authority waived and declined to exercise its option to develop, finance, and construct the SH 71 Express Project, and retained (and did not waive) its option to operate any potential toll lanes on the SH 71 Express Project and to retain the revenues generated therefrom. Upon completion of the SH 71 Express Project, the SH 71 Agreement obligates the Authority to operate and maintain the toll lanes and related infrastructure of the SH 71 Express Project developed, financed and constructed by TxDOT. The Authority will retain the revenues generated from the SH 71 Express Project, which will be used to pay operation and maintenance costs of the toll lanes, toll facilities and related equipment. After payment of such operation and maintenance costs, one-half of the remaining revenues from the SH 71 Express Project must be used to reimburse TxDOT for up to \$65.0 million of the costs of the SH 71 Express Project (the TxDOT Reimbursement Amount), plus interest thereon at 3.62% per annum.

The SH 71 Agreement obligates the Authority to repay the TxDOT Reimbursement Amount solely from one-half of the net revenues of the SH 71 Express Project over a 35-year term. The first payment is due on the first anniversary of substantial completion of the SH 71 Express Project and continuing every year thereafter for a total of 35 years or until the TxDOT Reimbursement Amount and all accrued interest is paid. The SH 71 Express Project was substantially completed on March 8, 2017, and, accordingly, the first payment payable by the Authority to TxDOT under the SH 71 Agreement was due on March 8, 2018. In the event any annual payment is not sufficient to pay for all accrued interest due, the unpaid amount of accrued interest is added to the TxDOT Reimbursement Amount.

Under the SH 71 Agreement, TxDOT is obligated to operate and maintain all other aspects of the SH 71 Express Project, including but not limited to, the general purpose lanes and the FM 973 realigned intersection with SH 71.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 4. Notes and Bonds Payable (Continued)

As of June 30, 2017, the toll lanes of the SH 71 Express Project were operational and the Authority recorded a capital contribution of \$96.0 million and a note payable to TxDOT of \$65.0 million; however, payments made by the Authority in respect of the TxDOT Reimbursement Amount are paid as, and constitute, Operating Expenses under the terms of the Authority's bond indenture securing its outstanding toll revenue obligations. During fiscal year 2020 and 2019, the Authority made debt service payments on the TxDOT Reimbursement Amount of approximately \$2.2 million and \$1.6 million, respectively in principal.

As of June 30, 2020 and 2019, the outstanding principal amount was approximately \$58.5 million and \$60.7 million, respectively.

2016 SHF SH 45SW Loan: In October 2016, the Authority entered into a secured loan agreement (the SHF SH 45SW Loan Agreement) with TxDOT, pursuant to which the Authority is authorized to borrow an amount not to exceed \$60 million to pay eligible project costs of the SH 45 Southwest Project. Interest on amounts borrowed under the SHF SH 45SW Loan Agreement (the SH 45SW Loan) (i) will accrete at 4% per annum, compounding semiannually on each January 1 and July 1, until the January 1 or July 1 which is six months prior to the initial interest payment date, and (ii) is payable on each January 1 and July 1, commencing on July 1, 2022. Principal installment payments are due on amounts borrowed under the SHF SH 45SW Loan Agreement on each January 1, commencing on the January 1, 2027, in the amounts set forth therein. Amounts borrowed under the SHF SH 45SW Loan Agreement will bear interest at 4% per annum and the final maturity date thereof is January 1, 2049. The Authority may defer up to 25% of the principal and interest due on any principal or interest payment date, not to exceed two years and not past the final maturity date. The net revenues from the SH 45 Southwest Project have been pledged as collateral for amounts borrowed under the SHF SH 45SW Loan Agreement.

During fiscal year 2020, the SW 45SW Loan was prepaid in whole from the proceeds from the Series 2020A Senior Lien Bonds. As of June 30, 2019, the outstanding principal was approximately \$57.4 million, under the SHF SH 45SW Loan Agreement.

Regions 2017 MoPac Note: In December 2017, the Authority entered into a secured loan agreement with a bank for an aggregate principal amount not to exceed \$24,990,900 (the MoPac Note). The MoPac Note bears interest at LIBOR plus 1.44% per annum and matures on December 1, 2021. The MoPac Note requires monthly interest payments on the outstanding balance starting January 1, 2018. The net revenues from the MoPac Improvement Project have been pledged as collateral for the MoPac Note.

Proceeds from the MoPac Note are to be used to pay (i) expenses of studying the cost, design, engineering and feasibility of the MoPac Improvement Project; (ii) the costs of construction of the MoPac Improvement Project (iii) the acquisition of the right-of-way other interest in the real property; (iv) expenses associated with securing the MoPac Note and (v) the reimbursement to the Authority of costs attributable to certain preliminary cost and feasibility and other expenses relating to the preparation of financing of the MoPac Improvement Project incurred prior to the execution of the MoPac Note.

During fiscal year 2019, the Authority borrowed approximately \$7.9 million to be used for the MoPac Improvement Project. As of June 30, 2020 and 2019, the outstanding principal amounts of the MoPac Note was \$24,990,900 for both years.

Central Texas Regional Mobility Authority

**Notes to Financial Statements
June 30, 2020 and 2019**

Note 4. Notes and Bonds Payable (Continued)

2019 TIFIA Bond: In March 2019, the Authority entered into a secured loan agreement (the 2019 TIFIA Loan Agreement) with the United States Department of Transportation, pursuant to which the Authority is authorized to borrow an amount not to exceed \$46,940,400 to pay eligible project costs of the 290E Phase III Project. The Authority's obligation to repay amounts borrowed under the 2019 TIFIA Loan Agreement is evidenced by the 2019 TIFIA Bond. The 2019 TIFIA Bond bears interest at 2.96% per annum and the final maturity date thereof will be the earlier of (i) the date this is 35 years from the date of substantial completion of the 290E Phase III Project and (ii) January 1, 2054. Payments of principal and interest due on the 2019 TIFIA Bond are payable in the amounts set forth in the 2019 TIFIA Loan Agreement on each January 1 and July 1, commencing on the earlier of (i) January 1, 2025 and (ii) the semiannual payment date on (or immediately preceding) the fifth anniversary of the date of substantial completion of the 290E Phase III Project.

The Authority has received loan proceeds of approximately \$50,000 during fiscal year 2019 under the 2019 TIFIA Loan Agreement. As of June 30, 2020 and 2019, the 2019 TIFIA Bond had an outstanding balance of \$50,000 for both years with accreted interest of \$1,917 and \$414, respectively.

Future payments on debt obligations: Future payments of principal and interest on the Authority's bonds and notes described in this Note 4 (based on the scheduled payments) as of June 30, 2020, are as follows:

	Current Interest Bonds		Capital Appreciation Bonds		Notes Payable	
	Principal	Interest	Principal	Interest	Principal	Interest
2021	\$ 15,965,000	\$ 56,903,750	\$ -	\$ -	\$ -	\$ 2,747,180
2022	64,125,000	55,136,575	480,449	404,551	24,990,900	2,749,534
2023	19,710,000	53,294,300	1,868,357	1,861,643	-	2,749,534
2024	21,840,000	52,287,675	3,346,476	3,878,525	-	2,749,534
2025	16,210,000	51,375,425	6,341,742	10,113,258	-	2,749,534
2026-2030	143,640,000	239,387,625	16,708,204	43,636,795	20,040,874	13,107,544
2031-2035	219,125,000	194,722,125	9,945,013	46,439,988	65,485,991	11,361,642
2036-2040	282,700,000	133,925,175	6,309,414	46,915,587	76,862,724	8,857,884
2041-2045	332,190,000	60,503,619	-	-	90,270,853	5,812,126
2046-2050	52,115,000	2,762,875	-	-	111,805,235	2,104,826
	<u>\$ 1,167,620,000</u>	<u>\$ 900,299,144</u>	<u>\$ 44,999,655</u>	<u>\$ 153,250,347</u>	<u>\$ 389,456,577</u>	<u>\$ 54,989,338</u>

Central Texas Regional Mobility Authority

Notes to Financial Statements
June 30, 2020 and 2019

Note 4. Notes and Bonds Payable (Continued)

		Total Debt Service	
		Principal	Interest
2021		\$ 15,965,000	\$ 59,650,930
2022		89,596,349	58,290,660
2023		21,578,357	57,905,477
2024		25,186,476	58,915,734
2025		22,551,742	64,238,217
2025-2029		180,389,078	296,131,964
2030-2034		294,556,004	252,523,755
2035-2039		365,872,138	189,698,646
2040-2044		422,460,853	66,315,745
2045-2049		163,920,235	4,867,701
	Total	1,602,076,232	\$ 1,108,538,829
	SH 71E Obligation	58,481,888	
	Accreted interest—CABs	47,915,909	
		106,397,797	
		\$ 1,708,474,029	

As described above, the Series 2010 CABs and the Series 2011 CABs were issued as capital appreciation bonds. The accreted interest on the Series 2010 CABs and 2011 CABs are reflected on the Statement of Net Position as additional principal and is reflected in the interest column in this table in the amount of \$47,915,909. Additionally, the 2015C TIFIA Bond, 2015D SHF Bond and the 2015E SIB Bond also included accreted interest reflected on the Statement of Net Position as additional principal and is reflected in the interest column in this table.

Note 5. Deferred Outflow and Inflow of Resources

In accordance with GASB Statement No. 63, *Financial Reporting of Deferred Outflows of Resources, Deferred Inflows of Resources and Net Position*, the Authority has classified the difference between the reacquisition price and the net carrying amount of the defeased debt as a deferred outflow of resources. The deferred outflow of resources is amortized over the term of the defeased bonds and recognized as a component of interest expense annually. The Authority has also deferred outflows and inflows of resources for certain pension related items in accordance with applicable pension standards as noted under Note 7.

The Authority's deferred outflow of resources balance is composed of the following:

	June 30	
	2020	2019
Deferred outflows from bond refundings	\$ 105,018,517	\$ 106,495,597
Pension-related amounts:		
Employer pension contribution	300,886	274,688
Difference in pension investment assumption	(190,935)	533,183
Experience changes	88,820	52,701
Assumption changes	29,232	35,661
	\$ 105,246,520	\$ 107,391,830

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 5. Deferred Outflow and Inflow of Resources (Continued)

The Authority's deferred inflow of resources balance is composed of the following:

	June 30	
	2020	2019
Pension-related amounts:		
Experience changes	\$ 193,638	\$ 235,911

Note 6. Risk Management

In conjunction with its normal operations, the Authority is exposed to various risks related to the damage or destruction of its assets from both natural and man-made occurrences; tort/liability claims; errors and omissions claims; and professional liability claims. As a result of these exposures, the Authority carries insurance with a governmental risk pool under an "all risks" policy. All categories of insurance coverage in place were either maintained at current levels or increased as to overall limits of coverage and reduction of self-retained risk so as to reduce the overall exposure of risk to the Authority. There were no settlements in excess of insurance coverage during fiscal years 2020 and 2019.

Note 7. Employee Retirement Plan

Plan description: The Authority participates in Texas County and District Retirement System (TCDRS). TCDRS is a statewide, agent multiple-employer, public employee retirement system. TCDRS is a nonprofit public trust providing pension, disability and death benefits for the eligible employees of participating counties and districts. TCDRS was established by legislative act in 1967 under authority of Article XVI of the Texas Constitution. The TCDRS Act (Subtitle F, Title 8, Texas Government Code) is the basis for TCDRS administration. TCDRS issues a publicly available annual financial report that includes financial statements and required supplementary information for the plan. That annual report may be downloaded at <http://www.tcdrs.com>.

Benefits provided: Effective the date of participation, the Authority provides retirement, disability and death benefits. A percentage of each employee's paycheck is deposited into his or her TCDRS account. That percentage has been set by the Authority at 7% and has elected a matching rate of \$2 to \$1. The employee's savings grow at a rate of 7%, compounded annually. At retirement, the employee's account balance is combined with the Authority's matching and converted into a lifetime monthly benefit. Employees receive a month of service time for each month that they make a deposit into their account. The amount of service an employee needs to earn a future benefit is called the vesting requirement. When an employee is vested, he or she has the right to a monthly benefit, which includes the employer matching contribution, at age 60 or older.

The Authority adopted a 10 year/Age 60 Retirement Eligibility described in Section 844.207 of the TCDRS Act, under which: (a) any TCDRS member who has 10 or more years of service credit with the District and other subdivisions that have adopted the provisions of Section 844.207 or 844.210, is a vested member and shall have the right to retire and receive a service retirement annuity after attaining age 60, unless the optional 8 year/age 60 Retirement Eligibility and/or Optional Rule 75 Retirement Eligibility is adopted, as allowed by the plan. The Authority has adopted both the Optional 8 year/Age 60 Retirement Eligibility, which allows an 8-year service eligibility requirement for vesting, service, and disability retirement; and Optional Rule 75, which allows the member to have the right to retire and receive service retirement annuity when years of such credited service added to his or her years of attained age equal or exceed 75.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 7. Employee Retirement Plan (Continued)

Any TCDRS member who is a vested member may terminate employment with all participating subdivisions prior to attaining age 60, and remain eligible to retire and receive a service retirement annuity after attaining age 60 provided his or her membership is not terminated other than by retirement.

Any TCDRS member who is a vested member under Section 844.207(d) may retire and receive a disability retirement annuity if he or she is certified as disabled, as defined by the plan.

Any TCDRS member who has four or more years of service credit with the District and other subdivisions is eligible for purposes of the Survivor Annuity Death Benefit.

Retirees elect to receive their lifetime benefit by choosing one of seven actuarially equivalent payment options. Prior service gives employees monetary credit for time worked for an eligible organization before it joined the system. Buybacks allow current employees to re-establish a closed TCDRS account from previous service with an employer. Partial lump sum payments at retirement allow employees to withdraw part of their TCDRS account balance as a lump sum at retirement with a reduced monthly benefit. In addition, the Authority may choose to adopt a cost-of-living adjustment (COLA) for its retirees. This adjusts retiree benefits to restore purchasing power lost due to the effects of inflation.

Employees covered by benefit terms: The following employees were covered by the benefit terms as of the valuation date December 31:

	<u>2019</u>	<u>2018</u>
Inactive employees or beneficiaries currently receiving benefits	4	3
Inactive employees entitled to, but not yet receiving benefits	11	12
Active employees	29	28
Total	<u>44</u>	<u>43</u>

Contributions: Plan members and the Authority are required to contribute at a rate set by statute. The contribution requirements of plan members and the Authority are established and may be amended. For 2020 and 2019, the contribution rate for the plan members was 7% of gross pay. The Authority pays a matching portion to the pension plan totaling 14% of gross pay for 2020 and 2019, which totaled \$494,804 and \$513,016, respectively.

Net pension asset: The Authority's net pension asset was measured as of December 31, 2019 and 2018, and the total pension liability used to calculate the net pension asset was determined by an actuarial valuation as of that date.

Actuarial assumptions: The actuarial assumptions that determined the total pension liability as of December 31, 2019 were based on the results of an actuarial experience study for the period January 1, 2013, through December 31, 2016, except where required to be different by GASB Statement No. 68.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 7. Employee Retirement Plan (Continued)

The total pension liability in the December 31, 2019 and 2018, actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

	<u>2019</u>	<u>2018</u>
Inflation	2.75%	2.75%
Salary increases (including inflation plus average merit of 1.6% and productivity of 0.5% for 2019 and 2018)	4.90%	4.90%
Investment rate of return	8.0%	8.0%

Mortality rates were based on the following:

Depositing members: For the December 31, 2019 and 2018 valuation, 90% of the RP-2014 Active Employee Mortality Table for males and 90% of the RP-2014 Active Employee Mortality Table for females, projected with 110% of the MP-2014 Ultimate scale after 2014.

Service retirees, beneficiaries and nondepositing members: For the December 31, 2019 and 2018 valuation, 130% of the RP-2014 Healthy Annuitant Mortality Table for males and 110% of the RP-2014 Healthy Annuitant Mortality Table for females, both projected with 110% of the MP-2014 Ultimate scale after 2014.

Disabled retirees: For the December 31, 2019 and 2018 valuation, 130% of the RP-2014 Disabled Annuitant Mortality Table for males and 115% of the RP-2014 Disabled Annuitant Mortality Table for females, both projected with 110% of the MP-2014 Ultimate scale after 2014.

Long-term rate of return on assets: The long-term expected rate of return on TCDRS assets is determined by adding expected inflation to expected long-term real returns, and reflecting expected volatility and correlation. The capital market assumptions and information shown below are provided by TCDRS' investment consultant. The valuation assumption for long-term expected return is re-assessed at a minimum of every four years, and is set based on a 30-year time horizon; the most recent analysis was performed in 2017.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 7. Employee Retirement Plan (Continued)

The capital market assumptions and information shown below are provided by TCDRS' investment consultant based on December 31, 2019, information for a seven- to 10-year time horizon.

Asset Class	Benchmark	Target Allocation (1)	Geometric Real Rate of Return (Expected Minus Inflation) (2)
United States Equities	Dow Jones U.S. Total Stock Market Index	14.5%	5.20%
Private Equity	Cambridge Associates Global Private Equity and Venture Capital Index (3)	20.0%	8.20%
Global Equities	MSCI World (net) Index	2.5%	5.50%
International Equities—Developed	MSCI World Ex USA (net)	7.0%	5.20%
International Equities—Emerging	MSCI EM Standard (net) index	7.0%	5.70%
Investment—Grade Bonds	Bloomberg Barclays U.S. Aggregate Bond Index	3.0%	-0.20%
Strategic Credit	FTSE High-Yield Cash-Pay Capped Index	12.0%	3.14%
Direct Lending	S&P/LSTA Leveraged Loan Index	11.0%	7.16%
Distressed Debt	Cambridge Associates Distressed Index (4)	4.0%	6.90%
REIT Equities	67% FTSE NAREIT Equity REITs Index plus 33% FRSE EPRA/NAREIT Global Real Estate Index	3.0%	4.50%
Master Limited Partnerships (MLPs)	Alerian MLP Index	2.0%	8.40%
Private Real Estate Partnerships	Cambridge Associates Real Estate Index (5)	6.0%	5.50%
Hedge Funds	Hedge Fund Research, Inc. Fund of Funds Composite Index	8.0%	2.30%

The capital market assumptions and information shown below are provided by TCDRS' investment consultant based on December 31, 2018, information for a seven- to 10-year time horizon.

Asset Class	Benchmark	Target Allocation (1)	Geometric Real Rate of Return (Expected Minus Inflation) (2)
United States Equities	Dow Jones U.S. Total Stock Market Index	10.5%	5.40%
Private Equity	Cambridge Associates Global Private Equity and Venture Capital Index (3)	18.0%	8.40%
Global Equities	MSCI World (net) Index	2.5%	5.70%
International Equities—Developed	MSCI World Ex USA (net)	10.0%	5.40%
International Equities—Emerging	MSCI EM Standard (net) index	7.0%	5.90%
Investment—Grade Bonds	Bloomberg Barclays U.S. Aggregate Bond Index	3.0%	1.60%
Strategic Credit	FTSE High-Yield Cash-Pay Capped Index	12.0%	4.39%
Direct Lending	S&P/LSTA Leveraged Loan Index	11.0%	7.95%
Distressed Debt	Cambridge Associates Distressed Index (4)	2.0%	7.20%
REIT Equities	67% FTSE NAREIT Equity REITs Index plus 33% FRSE EPRA/NAREIT Global Real Estate Index	2.0%	4.15%
Master Limited Partnerships (MLPs)	Alerian MLP Index	3.0%	5.35%
Private Real Estate Partnerships	Cambridge Associates Real Estate Index (5)	6.0%	6.30%
Hedge Funds	Hedge Fund Research, Inc. Fund of Funds Composite Index	13.0%	3.90%

- (1) Target asset allocation adopted at the June 2020 and April 2019 TCDRS Board meetings.
- (2) Geometric real rates of return in addition to assumed inflation of 1.8% and 1.7%, respectively, per investment consultant's 2020 and 2019 capital market assumptions.
- (3) Includes vintage years 2006-present of Quarter Pooled Horizon IRRs.
- (4) Includes vintage years 2005-present of Quarter Pooled Horizon IRRs.
- (5) Includes vintage years 2007-present of Quarter Pooled Horizon IRRs.

Central Texas Regional Mobility Authority

**Notes to Financial Statements
June 30, 2020 and 2019**

Note 7. Employee Retirement Plan (Continued)

Discount rate: The discount rate used to measure the total pension liability was 8.1% for both December 31, 2019 and 2018. In order to determine the discount rate to be used by the employer, the TCDRS used an alternative method to determine the sufficiency of the fiduciary net position in all future years. The alternative method reflects the funding requirements under the employer's funding policy and the legal requirements under the TCDRS Act.

- (1) TCDRS has a funding policy where the Unfunded Actuarial Accrued Liability shall be amortized as a level percent of pay over 20-year closed layered periods.
- (2) Under the TCDRS Act, the employer is legally required to make the contribution specified in the funding policy.
- (3) The employer's assets are projected to exceed its accrued liabilities in 20 years or less. When this point is reached, the employer is still required to contribute at least the normal cost.
- (4) Any increased cost due to the adoption of a COLA is required to be funded over a period of 15 years, if applicable.

Changes in net pension liability (asset): Based on the above, the projected fiduciary net position is determined to be sufficient compared to projected benefit payments. Based on the expected level of cash flows and investment returns to the system, the fiduciary net position as a percentage of total pension liability is projected to increase from its current level in future years.

Since the projected fiduciary net position is projected to be sufficient to pay projected benefit payments in all future years, the discount rate for purposes of calculating the total pension liability and net pension liability of the Authority is equal to the long-term assumed rate of return on investments. This long-term assumed rate of return should be net of investment expenses, but gross of administrative expenses for GASB Statement No. 68 purposes. Therefore, the system has used a discount rate of 8.1%. This rate reflects the long-term assumed rate of return on assets for funding purposes of 8.0%, net of all expenses, increased by 0.1% to be gross of administrative expenses.

Changes in Net Pension Liability (Asset) 2020

Changes in Net Pension Liability (Asset)	Increase (Decrease)		
	Total Pension Liability (a)	Fiduciary Net Position (b)	Net Pension Liability (Asset) (a) - (b)
Balances as of June 30, 2018	\$ 8,014,760	\$ 8,191,986	\$ (177,226)
Changes for the year:			
Service cost	714,326	-	714,326
Interest on total pension liability (1)	705,006	-	705,006
Effect of plan changes (2)	16,858	-	16,858
Effect of economic/demographic (gains) or losses	49,571	-	49,571
Refund of contributions	-	-	-
Benefit payments	(50,069)	(50,069)	-
Administrative expenses	-	(7,884)	7,884
Member contributions	-	280,130	(280,130)
Net investment income	-	1,344,360	(1,344,360)
Employer contributions	-	560,263	(560,263)
Other (3)	-	28,500	(28,500)
Balances as of June 30, 2019	\$ 9,450,452	\$ 10,347,286	\$ (896,834)

Central Texas Regional Mobility Authority

Notes to Financial Statements
June 30, 2020 and 2019

Note 7. Employee Retirement Plan (Continued)

Changes in Net Pension Liability (Asset)	Changes in Net Pension Liability (Asset) 2019		
	Increase (Decrease)		
	Total Pension Liability (a)	Fiduciary Net Position (b)	Net Pension Liability (Asset) (a) - (b)
Balances as of June 30, 2018	\$ 6,803,849	\$ 7,630,246	\$ (826,397)
Changes for the year:			
Service cost	623,080	-	623,080
Interest on total pension liability (1)	599,756	-	599,756
Effect of plan changes (2)	-	-	-
Effect of economic/demographic (gains) or losses	32,484	-	32,484
Refund of contributions	(286)	(286)	-
Benefit payments	(44,123)	(44,123)	-
Administrative expenses	-	(6,579)	6,579
Member contributions	-	242,056	(242,056)
Net investment income	-	(134,521)	134,521
Employer contributions	-	484,115	(484,115)
Other (3)	-	21,078	(21,078)
Balances as of June 30, 2019	\$ 8,014,760	\$ 8,191,986	\$ (177,226)

- (1) Reflects the change in the liability due to the time value of money. TCDRS does not charge fees or interest.
- (2) Reflects new annuity purchase rates applicable to all TCDRS employees effective January 1, 2020.
- (3) Relates to allocation of system-wide items.

Sensitivity analysis: The following presents the net pension asset/liability of the Authority, calculated using the discount rate of 8.1%, as well as what the net pension asset/liability would be if it were calculated using a discount rate that is percentage point lower (7.1%) or 1 percentage point higher (9.1%) than the current rate.

	June 30, 2020		
	Current		
	1.0% Decrease 7.1%	Discount Rate 8.1%	1.0% Increase 9.1%
Total pension liability	\$ 10,607,680	\$ 9,450,452	\$ 8,462,848
Fiduciary net position	10,345,525	10,347,286	10,346,525
Net pension liability (asset)	262,155	(896,834)	(1,883,677)
	June 30, 2019		
	Current		
	1.0% Decrease 7.1%	Discount Rate 8.1%	1.0% Increase 9.1%
Total pension liability	\$ 9,016,714	\$ 8,014,760	\$ 7,162,077
Fiduciary net position	8,191,226	8,191,986	8,191,226
Net pension liability (asset)	825,488	(177,226)	(1,029,149)

Central Texas Regional Mobility Authority

**Notes to Financial Statements
June 30, 2020 and 2019**

Note 7. Employee Retirement Plan (Continued)

Pension plan fiduciary net position: Detailed information about the pension plan's fiduciary net position is available in the separate issued TCDRS report.

Pension expense: the Authority recognized the following pension related expense (income):

Pension Expense (Income)	June 30	
	2020	2019
Service cost	\$ 714,326	\$ 623,080
Interest on total pension liability (1)	705,006	599,756
Effect of plan changes	16,858	-
Administrative expenses	7,884	6,579
Member contributions	(280,130)	(242,056)
Expected investment return net of investment expenses	(695,693)	(645,638)
Recognition of deferred inflows/outflows of resources:		
Recognition of economic/demographic gains or losses	(28,821)	(34,329)
Recognition of assumption changes or inputs	6,429	6,429
Recognition of investment gains or losses	75,451	221,333
Other (2)	(28,500)	(21,078)
Pension expense	<u>\$ 492,810</u>	<u>\$ 514,076</u>

(1) Reflects the change in the liability due to the time value of money. TCDRS does not charge fees or interest.

(2) Relates to allocation of system-wide items.

Deferred inflows and outflows of resources: the deferred inflows and outflows of resources are as follows:

Deferred Inflows/ Outflows of Resources	June 30, 2020		June 30, 2019	
	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources
Differences between expected and actual experience	\$ 193,638	\$ 88,820	\$ 235,911	\$ 52,701
Changes of assumptions	-	29,232	-	35,661
Net difference between projected and actual earnings	-	(190,935)	-	533,183
Contributions made subsequent to measurement date	-	300,886	-	274,688
	<u>\$ 193,638</u>	<u>\$ 228,003</u>	<u>\$ 235,911</u>	<u>\$ 896,233</u>

Central Texas Regional Mobility Authority

**Notes to Financial Statements
June 30, 2020 and 2019**

Note 7. Employee Retirement Plan (Continued)

Contributions made subsequent to the measurement date are eligible employer contributions made from January 1, 2020 through June 30, 2020. Amounts currently reported as deferred outflows of resources and deferred inflows of resources related to pensions, excluding contributions made subsequent to the measurement date, will be recognized in pension expense as follows:

Years ending June 30:

2021	(60,396)
2022	(71,885)
2023	3,906
2024	(152,128)
2025	(10,255)
Thereafter	24,237
	<u>\$ (266,521)</u>

The remaining balance to be recognized in future years (and included in the thereafter category), if any, will be impacted by additional future deferred inflows and outflows of resources.

Schedule of Deferred Inflows and Outflows of Resources

	Original Amount	Date Established	Original Recognition Period	Amount Recognized in 6/30/20 Expenses (1)	Balance of Deferred Inflows 6/30/2020	Balance of Deferred Outflows 6/30/2020
Investment (gains) losses	\$ (648,667)	12/31/2019	5 years	\$ (129,733)	\$ (518,934)	
Investment (gains) losses	780,159	12/31/2018	5 years	156,032	-	468,095
Investment (gains) losses	(378,957)	12/31/2017	5 years	(75,791)	(151,584)	-
Investment (gains) losses	57,439	12/31/2016	5 years	11,488	-	11,487
Investment (gains) losses	567,272	12/31/2015	5 years	113,455	-	-
Investment (gains) losses	80,751	12/31/2014	5 years	-	-	-
Economic/demographic (gains) or losses	49,571	12/31/2019	9 years	5,508	-	44,063
Economic/demographic (gains) or losses	32,484	12/31/2018	10 years	3,248	-	25,988
Economic/demographic (gains) or losses	(34,008)	12/31/2017	9 years	(3,779)	(22,671)	-
Economic/demographic (gains) or losses	(152,926)	12/31/2016	9 years	(16,992)	(84,958)	-
Economic/demographic (gains) or losses	(193,519)	12/31/2015	9 years	(21,502)	(86,009)	-
Economic/demographic (gains) or losses	46,958	12/31/2014	10 years	4,696	-	18,782
Assumption changes or inputs	15,820	12/31/2017	9 years	1,758	-	10,546
Assumption changes or inputs	42,041	12/31/2015	9 years	4,671	-	18,685

(1) Investment (gains)/losses are recognized in pension expense over a period of five years; economic/demographic (gain)/losses and assumption changes or inputs are recognized over the average remaining service life for all active, inactive and retired members.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 8. Disaggregation of Receivable and Payable Balances

Due from other agencies are comprised of current intergovernmental receivables and amounts due from other entities related to toll tag transactions on the Authority's toll roads. The Authority does not issue toll tags; however, the Authority has contracted with TxDOT and other tolling entities located both within and outside the State of Texas to handle customer service and operations related to the toll tag transactions at June 30, 2020 and 2019. Accounts payable balances are comprised of 100% current payables to contractors and vendors at June 30, 2020 and 2019.

As of June 30, 2020 and 2019, the receivable from TxDOT comprises approximately 47.1% and 60.7%, respectively, and the total balances are as follows:

	June 30	
	2020	2019
TxDOT	\$ 4,706,616	\$ 7,494,220
Agencies	2,770,089	2,776,451
Other governments	2,508,363	2,075,318
Total	<u>\$ 9,985,068</u>	<u>\$ 12,345,989</u>

Note 9. Commitments and Contingent Liabilities

Commitments: In May 2014, the Authority entered into a 10-year lease agreement for office space which was amended in April 2019. The aggregate future minimum lease payments under the new lease are as follows:

Years ending December 31:	
2021	503,162
2022	518,552
2023	453,784
	<u>\$ 1,475,498</u>

The Authority's rental expense for fiscal year 2020 and 2019 totaled \$538,012 and \$591,991, respectively, which includes common area maintenance and property taxes.

The Authority has a capital improvement program for roadway construction projects extending into future years. As of June 30, 2020 and 2019, the Authority has a capital budget of approximately \$1.744 billion and \$2.035 billion, respectively, for future toll projects, which may or may not materialize. Including the 183 South Project and the 290 E Phase III Project which are the most significant ongoing projects, the Authority's contractual commitments related to its capital improvement plan are approximately \$55.0 million and \$242.0 million, respectively, for the years ended June 30, 2020 and 2019. All contracts contain a termination for convenience clause in which such contracts may be terminated, in whole or in part, for the convenience of the Authority.

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 9. Commitments and Contingent Liabilities (Continued)

CAMPO Interlocal Agreement: Capital Area Metropolitan Planning Organization (CAMPO) is the designated metropolitan planning organization for Central Texas. As part of the designated planning organization, CAMPO received approximately \$136 million in grant funds of which \$130 million was allocated to the MoPac Improvement Project. The funding received was made available for transportation projects in the Austin area. As part of the construction of the MoPac Improvement Project, the Authority executed an agreement with CAMPO. The executed agreement calls for the sharing of surplus revenue generated from the MoPac Improvement Project by setting up a Regional Infrastructure Fund (RIF) account. The RIF account was created upon execution of the agreement with CAMPO. The Authority funded deposits into the RIF account from the surplus revenue from the MoPac Improvement Project. The amounts placed in the RIF account in accordance with the agreement are to be used to fund other CAMPO identified transportation projects in the region. As of June 30, 2020 and 2019, the Authority has funded inception to date amounts of \$7,000,000 and \$4,000,000, respectively, which is deposited in the RIF account. The commitment to the RIF account is dependent upon there being surplus revenue of the MoPac Improvement Project in the future such that the remaining amount payable to the RIF account pursuant to the CAMPO agreement of \$330 million, may be paid through fiscal year 2041. As of June 30, 2020 and 2019, the Authority's funding resulted in RIF expense of \$3,000,000 and \$2,000,000, respectively.

Litigation: As of June 30, 2020 and 2019, the Authority is involved in various contract disputes on its construction projects. Based on the status of the claims and the information available, the Authority believes that a liability has not been incurred as of the date of the financial statements. The Authority believes it has substantial defenses against these claims and the resolution of these matters will not have a material adverse effect on its financial statements.

Note 10. Authority's Tolling System Disclosure

During fiscal years 2019 and 2020, the Authority had non-Tolling System assets generating revenue (the MoPac Improvement Project) and non-Tolling System assets under construction (the SH 45 Southwest Project). For fiscal years 2020 and 2019, activity of the MoPac Improvement Project consisted of approximately 9.6 million and 12.6 million transactions, respectively, and approximately \$14.2 million and \$17.5 million in revenue, respectively. The SH 45 Southwest Project was added to the Tolling System in January 2020.

Governments that report enterprise funds or that use enterprise fund accounting and reporting standards to report their activities are required to present segment information for defined activities in the notes to the financial statements. For purposes of this disclosure, a segment is an identifiable activity reported as or within an enterprise fund or other stand-alone entity for which one or more revenue bonds or other revenue-backed debt instruments outstanding with a revenue pledge to support that debt. In addition, the activities, revenue, expenses, gains and losses, assets and liabilities are required to be accounted for separately. The requirement for separate accounting for the Authority's Tolling System is also imposed by the bond indenture. A segment has a specific identifiable revenue stream pledged in support of revenue bonds or other revenue backed debt and has related expenses, gains and losses, assets, and liabilities that can be identified.

Central Texas Regional Mobility Authority

**Notes to Financial Statements
June 30, 2020 and 2019**

Note 10. Authority's Tolling System Disclosure (Continued)

The following is condensed financial information for the Authority's Tolling System activities:

Statement of Net Position

Assets and Deferred Outflows	June 30	
	2020	2019
Current assets	\$ 177,995,864	\$ 195,283,863
Restricted assets	253,655,916	342,618,197
Pension asset	896,834	177,226
Capital assets	1,717,422,551	1,466,379,876
Total assets	<u>2,149,971,165</u>	<u>2,004,459,162</u>
Deferred outflows of resources	105,246,520	107,391,830
Total assets and deferred outflows of resources	<u><u>\$ 2,255,217,685</u></u>	<u><u>\$ 2,111,850,992</u></u>
Liabilities and Deferred Inflows		
Current liabilities	\$ 71,289,761	\$ 61,319,458
Noncurrent liabilities	1,758,020,549	1,652,181,761
Total liabilities	<u>1,829,310,310</u>	<u>1,713,501,219</u>
Deferred inflows of resources	193,638	235,911
Total liabilities and deferred inflows of resources	<u>1,829,503,948</u>	<u>1,713,737,130</u>
Net position:		
Total net position	<u>425,713,737</u>	<u>398,113,862</u>
Total liabilities, deferred inflows of resources and net position	<u><u>\$ 2,255,217,685</u></u>	<u><u>\$ 2,111,850,992</u></u>

Statements of Revenues, Expenses and Changes in Net Position

	June 30	
	2020	2019
Operating revenues	\$ 102,636,890	\$ 90,792,518
Operating expenses, including depreciation and amortization	62,811,277	52,366,847
Operating income	<u>39,825,613</u>	<u>38,425,671</u>
Total net nonoperating revenues (expenses)	<u>(36,367,055)</u>	<u>(32,802,597)</u>
Change in net position—before capital grants and contributions	3,458,558	5,623,074
Capital grants and contributions, net of TxDOT adjustment	-	4,932,399
Change in net position	<u>3,458,558</u>	<u>10,555,473</u>
Transfers into the System, Net 45 Southwest	24,141,317	
Total net position at beginning of year	<u>398,113,862</u>	<u>387,558,389</u>
Total net position at end of year	<u><u>\$ 425,713,737</u></u>	<u><u>\$ 398,113,862</u></u>

Central Texas Regional Mobility Authority

Notes to Financial Statements June 30, 2020 and 2019

Note 10. Authority's Tolling System Disclosure (Continued)

	Statement of Cash Flows	
	June 30	
	2020	2019
Net cash flows provided by operating activities	\$ 70,642,730	\$ 65,414,912
Net cash flows provided by capital and related financing activities	(148,798,656)	70,159,337
Net cash flows used in investing activities	(5,049,174)	(81,822,444)
Net decrease in cash and cash equivalents	(83,205,100)	53,751,805
Cash and cash equivalents at beginning of year	213,191,775	159,439,970
Cash and cash equivalents at end of year	<u>\$ 129,986,675</u>	<u>\$ 213,191,775</u>

Note 11. Subsequent Events

Since the coronavirus outbreak (COVID-19), a "Public Health Emergency of International Concern," the spread of COVID-19 has severely impacted many local economies around the world. Businesses are being forced to cease or limit operations for long or indefinite periods of time. Measures taken to contain the spread of the virus, including travel bans, quarantines, social distancing and closures of nonessential services have triggered significant disruptions to businesses worldwide, resulting in an economic slowdown.

The Authority has determined that these subsequent events are nonadjusting subsequent events. Accordingly, the financial position and results of operations as of and for the year ended June 30, 2020, have not been adjusted to reflect their impact. The duration and impact of the COVID-19 pandemic, as well as the effectiveness of global government and central bank responses, remains unclear at this time. It is not possible to reliably estimate the duration and severity of these consequences, as well as their impact on the financial position and results of the Authority for future periods.

On August 25, 2020, the Authority issued its Senior Lien Revenue Refunding Bonds, Series 2020B in the amount of \$57,120,000, Senior Lien Revenue Refunding Bonds, Taxable Series 2020C in the amount of \$138,435,000 and Subordinate Lien Revenue Refunding Bonds, Taxable Series 2020D in the amount of \$99,705,000 (collectively, the Series 2020 Obligations). The Series 2020 Obligations are scheduled to be issued and delivered to the initial purchasers thereof on or about September 23, 2020, which is subject to the satisfaction of certain closing conditions. A portion of the proceeds of the Series 2020 Obligations, together with certain other funds of the Authority, will be used to refund and redeem all outstanding Series 2015B Senior Lien Put Bonds and a portion of the outstanding Series 2013A Senior Lien Bonds and Series 2013 Subordinate Lien Bonds. The refunding produced \$34.4 million in net present value savings or \$46.3 million of cash flow savings.

Subsequent events have been evaluated through September 24, 2020, the date the financial statements were available to be issued.

Central Texas Regional Mobility Authority

Required Supplementary Information—Pension Plan
 Schedule of Changes in Net Pension Assets and Related Ratios
 As of Years Ended June 30

	2020	2019	2018	2017	2016	2015
Total pension liability:						
Service cost	\$ 714,326	\$ 623,080	\$ 621,685	\$ 636,083	\$ 474,778	\$ 461,237
Interest on total pension liability	705,006	599,756	512,318	417,633	361,003	295,209
Effect of plan changes	16,858	-	-	-	(33,691)	-
Effect of assumption changes or inputs	49,571	32,484	(34,008)	-	42,041	-
Effect of economic/demographic (gains) or losses	-	-	15,820	(152,926)	(193,519)	46,943
Benefit payments/refunds of contributions	(50,069)	(44,409)	(31,286)	(51,685)	(2,211)	-
Net change in total pension liability	1,435,692	1,210,911	1,084,529	849,105	648,401	803,389
Total pension liability at beginning of year	8,014,760	6,803,849	5,719,320	4,870,215	4,221,814	3,418,425
Total pension liability at end of year (a)	9,450,452	8,014,760	6,803,849	5,719,320	4,870,215	4,221,814
Fiduciary net position:						
Employer contributions	560,263	484,115	457,484	422,157	361,493	327,807
Member contributions	280,130	242,056	228,848	211,078	180,742	163,979
Investment income net of investment expense	1,344,360	(134,521)	897,084	378,134	(162,009)	261,626
Benefit payments/refunds of contributions	(50,069)	(44,409)	(31,286)	(51,685)	(2,211)	-
Administrative expenses	(7,884)	(6,579)	(5,074)	(4,111)	(3,541)	(3,345)
Other	28,500	21,078	8,731	46,648	1,713	(242)
Net change in fiduciary net position	2,155,300	561,740	1,555,787	1,002,221	376,187	749,825
Fiduciary net position at beginning of year	8,191,986	7,630,246	6,074,459	5,072,238	4,696,051	3,946,226
Fiduciary net position at end of year (b)	10,347,286	8,191,986	7,630,246	6,074,459	5,072,238	4,696,051
Net pension asset at end of year = (a) - (b)	\$ (896,834)	\$ (177,226)	\$ (826,397)	\$ (355,139)	\$ (202,023)	\$ (474,237)
Fiduciary net position as a percentage of total pension liability	109.49%	102.21%	112.15%	106.21%	104.15%	111.23%
Pensionable covered payroll	\$ 4,001,855	\$ 3,457,946	\$ 3,269,251	\$ 3,015,395	\$ 2,582,032	\$ 2,342,556
Net pension liability (asset) as a percentage of covered payroll	(22.41%)	(5.13%)	(25.28%)	(11.78%)	(7.82%)	(20.24%)

The Schedule of Changes in Net Pension Assets and related Ratio disclosure is required for 10 years. The schedule noted above is only for the years which the new GASB Statements have been implemented.

Central Texas Regional Mobility Authority

Required Supplementary Information—Pension Plan (Continued)
Schedule of Employer Contributions
As of June 30,

Year Ending	Actuarially Determined Contribution (1)	Actual Employer Contribution	Contribution Deficiency (Excess)	Covered Payroll (2)	Actual Contribution as a Percentage of Covered Payroll
2011	\$ 212,249	\$ 235,472	\$ (23,223)	\$ 1,623,942	14.5%
2012	248,565	270,179	(21,614)	1,863,303	14.5%
2013	251,978	286,786	(34,808)	2,048,602	14.0%
2014	261,182	304,447	(43,265)	2,174,701	14.0%
2015	284,621	327,807	(43,186)	2,341,479	14.0%
2016	302,614	339,408	(36,794)	2,424,343	14.0%
2017	341,041	446,675	(105,634)	3,190,536	14.0%
2018	383,156	475,880	(92,724)	3,399,143	14.0%
2019	402,505	513,015	(110,510)	3,664,393	14.0%
2020	461,814	560,263	(98,449)	4,001,855	14.0%

(1) TCDRS calculates actuarially determined contributions on a calendar year basis. GASB No. 68 indicates the Authority should report contribution amounts on a fiscal year basis.

(2) Payroll is calculated based on contributions as reported for the fiscal year to TCDRS.

Central Texas Regional Mobility Authority

**Required Supplementary Information—Pension Plan (Continued)
Notes to Schedule of Employer Contributions and Net Pension Liability
June 30, 2020 and 2019**

Actuarial methods and assumptions used: Following are the key assumptions and methods used in determining the actuarially determined contribution:

Valuation Timing	Actuarially determined contribution rates are calculated as of December 31, two years prior to the end of the fiscal year in which the contributions are reported.
Actuarial Cost Method	Individual entry age normal cost method, as required by GASB Statement No. 68, used for GASB calculations. A slightly different version of the entry age normal cost method is used for the funding actuarial valuation.
Asset Valuation Method Smoothing period Recognition method Corridor	5 years Non-asymptotic None
Economic Assumptions Inflation Salary increases Investment rate of return COLAs	2.75% 4.85% (made up of 2.75% inflation and 0.50% productivity increase assumptions) and a merit, promotion and longevity component that on average approximates 1.60% per year for a career employee. 8.00% COLAs for the Authority are not considered to be substantively automatic under GASB Statement No. 68. Therefore, no assumption for future cost-of-living adjustments is included in the GASB calculations. No assumption for future cost-of-living adjustments is included in the funding valuation.

Central Texas Regional Mobility Authority

Required Supplementary Information—Pension Plan (Continued)
Notes to Schedule of Employer Contributions and Net Pension Liability
June 30, 2020 and 2019

Demographic assumptions—related to December 31, 2019 valuation:

Annual Rates of Service Retirement*					
Retirement					
Age	Male	Female	Age	Male	Female
40-44	4.5%	4.5%	62	20%	20%
45-49	9	9	63	15	15
50	10	10	64	15	15
51	9	9	65	25	25
52	9	9	66	25	25
53	9	9	67	22	22
54	10	10	68	20	20
55	10	10	69	20	20
56	10	10	70	22	22
57	10	10	71	22	22
58	12	12	72	22	22
59	12	12	73	22	22
60	12	12	74 **	22	22
61	12	12			

* Deferred members are assumed to retire (100% probability) at the later of: a) age 60 b) earliest retirement eligibility.

** For all eligible members ages 75 and later, retirement is assumed to occur immediately.

Other terminations of employment: The rate of assumed future termination from active participation in the plan for reasons other than death, disability or retirement are all set at 0% and the rates do not vary by length of service, entry-age group (age at hire), and sex. No termination after eligibility for retirement is assumed.

Central Texas Regional Mobility Authority

Required Supplementary Information—Pension Plan (Continued)
Notes to Schedule of Employer Contributions and Net Pension Liability
June 30, 2020 and 2019

Withdrawals: Members who terminate may either elect to leave their account with TCDRS or withdraw their funds. The probability that a member elects a withdrawal varies by length of service and vesting schedule. Rates applied to your plan are shown in table below. For nondepositing members who are not vested, 100% are assumed to elect a withdrawal.

Probability of Withdrawal			
Years of Service	Probability	Years of Service	Probability
0	100%	15	40%
1	100	16	38
2	100	17	36
3	100	18	33
4	100	19	30
5	50	20	28
6	49	21	26
7	48	22	24
8	47	23	22
9	46	24	20
10	45	25	18
11	44	26	16
12	43	27	14
13	42	28	12
14	41	29*	10

*Members with more than 29 years of service are not assumed to refund.

Central Texas Regional Mobility Authority

**Supplementary Information—Indenture Cash Flow and Debt Service Coverage
June 30, 2020**

Toll revenues*		\$ 102,629,268
Miscellaneous revenue*		18,739
Interest income available to pay debt service		<u>4,463,494</u>
Total revenues		<u>107,111,501</u>
Less system operating expenses		<u>(19,781,344)</u>
Revenues available for rate covenant and additional bonds tests		87,330,157
Net senior lien debt service	\$ 31,882,588	
Net subordinate lien debt service	<u>16,302,562</u>	
Total net debt service	<u>48,185,150</u>	
Debt service coverage ratios for rate covenant and additional bonds test:		
Senior lien obligations	2.74	
Senior and subordinate lien obligations	1.81	
Less system maintenance expenses		<u>(3,282,718)</u>
Revenues available for debt service		<u>84,047,439</u>
Debt service coverage ratios for revenues available for debt service:		
Senior lien obligations	2.64	
Senior and subordinate lien obligations	1.74	
Less total net debt service		(48,185,150)
Less deposits to renewal and replacement fund		-
Less debt service payments on other obligations		<u>-</u>
Annual excess		<u><u>\$ 35,862,289</u></u>

*Total operating revenue for segment reporting of \$102,636,890 consist of toll and miscellaneous revenue.

Exhibit C

Federal Awards Compliance Report

Central Texas Regional Mobility Authority

Federal Awards Compliance Report
Year Ended June 30, 2020

Contents

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RSM US LLP

**Report on Internal Control Over Financial Reporting
and on Compliance and Other Matters Based on an
Audit of Financial Statements Performed in Accordance
With Government Auditing Standards**

Independent Auditor's Report

Board of Directors
Central Texas Regional Mobility Authority

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of Central Texas Regional Mobility Authority (the Authority) as of and for the year ended June 30, 2020, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements, and have issued our report thereon dated September 24, 2020.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Authority's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, we do not express an opinion on the effectiveness of the Authority's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect and correct misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the Authority's financial statements will not be prevented or detected and corrected on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit, we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weakness may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Authority's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instance of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of This Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Authority's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Authority's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

RSM US LLP

Austin, Texas
September 24, 2020



RSM US LLP

Report on Compliance For the Major Federal Program, Report on Internal Control Over Compliance and Report on Schedule of Expenditures of Federal Awards Required by the Uniform Guidance

Independent Auditor's Report

Board of Directors
Central Texas Regional Mobility Authority

Report on Compliance for the Major Federal Program

We have audited Central Texas Regional Mobility Authority's (the Authority) compliance with the types of compliance requirements described in the *OMB Compliance Supplement* that could have a direct and material effect on the Authority's major federal program for the year ended June 30, 2020. The Authority's major federal program is identified in the summary of auditor's results section of the accompanying Schedule of Findings and Questioned Costs.

Management's Responsibility

Management is responsible for compliance with the federal statutes, regulations and the terms and conditions of its federal awards applicable to its federal programs.

Auditor's Responsibility

Our responsibility is to express an opinion on compliance for the Authority's major federal program based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States and the audit requirements of Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards* (Uniform Guidance). Those standards and the Uniform Guidance require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major federal program occurred. An audit includes examining, on a test basis, evidence about the Authority's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance for the major federal program. However, our audit does not provide a legal determination of the Authority's compliance.

Opinion on the Major Federal Program

In our opinion, the Authority complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on its major federal program for the year ended June 30, 2020.

Report on Internal Control Over Compliance

Management of the Authority is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered the Authority's internal control over compliance with the requirements that could have a direct and material effect on a major federal program to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for the major federal program and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the Authority's internal control over compliance.

A deficiency in internal control over compliance exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect and correct noncompliance with a type of compliance requirement of a federal program on a timely basis. A material weakness in internal control over compliance is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented or detected and corrected on a timely basis. A significant deficiency in internal control over compliance is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses, as defined above. However, material weaknesses may exist that have not been identified.

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Uniform Guidance. Accordingly, this report is not suitable for any other purpose.

Report on Schedule of Expenditures of Federal Awards Required by the Uniform Guidance

We have audited the financial statements of the Authority as of and for the year ended June 30, 2020, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements. We have issued our report thereon dated September 24, 2020, which contained an unmodified opinion on those financial statements. Our audit was conducted for the purpose of forming an opinion on the basic financial statements. The accompanying Schedule of Expenditures of Federal Awards is presented for purposes of additional analysis as required by the Uniform Guidance and is not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Schedule of Expenditures of Federal Awards is fairly stated in all material respects in relation to the basic financial statements as a whole.

RSM US LLP

Austin, Texas
September 24, 2020

Central Texas Regional Mobility Authority

**Schedule of Expenditures of Federal Awards
Year Ended June 30, 2020**

Federal Grantor/Program Title	Federal CFDA Number	Pass Through Entity Grant Award Number	Passed Through to Subrecipients	Federal Expenditures
U.S. Department of Transportation				
Highway Planning and Construction Cluster:				
<i>Passed through Texas Department of Transportation:</i>				
Highway Planning and Construction—MoPac	20.205	CSJ 3136-01-107	\$ -	\$ 748,847
Highway Planning and Construction—US290W Project	20.205	0113-08-060	-	16,555
Total Highway Planning and Construction Cluster			-	765,402
Total Federal Expenditures			\$ -	\$ 765,402

See notes to Schedule of Expenditures of Federal Awards.

Central Texas Regional Mobility Authority

Note to Schedule of Expenditures of Federal Awards Year Ended June 30, 2020

Note 1. Summary of Significant Accounting Policies

Reporting entity: The Schedule of Expenditures of Federal Awards (the Schedule) includes the activity of all federal programs administered by Central Texas Regional Mobility Authority (the Authority). Because this schedule presents only a selected portion of the operations of the Authority, it is not intended to, and does not, present the financial position, changes in net position or cash flows of the Authority.

Basis of presentation: The Schedule presents total federal awards expended for each individual program and CFDA number in accordance with the requirements of Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards* (Uniform Guidance).

Basis of accounting: The expenditures for each of the federal financial assistance programs are presented on the accrual basis of accounting for the Authority's fiscal year. Such expenditures are recognized following, as applicable, either the cost principles in OMB Circular A-87, *Cost Principles for State and Local and Governments*, or the cost principles contained in Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards*, wherein certain types of expenditures are not allowable or are limited as to reimbursement. In accordance with the Uniform Guidance, the Authority did not apply or use the 10% de minimis cost rate as defined by the Uniform Guidance for the period ending June 30, 2020.

Loan and loan guarantees—Transportation Infrastructure Finance and Innovation Act (TIFIA): The United States Department of Transportation provided a secured loan to the Authority of \$282,220,885 to pay or reimburse a portion of the 183 South Toll Project and \$46,940,400 for the Manor Expressway 290E Phase III. The secured loan agreements were entered into pursuant to the provisions of TIFIA, and the loans will be repaid with toll revenues from the Toll System.

As of June 30, 2020, the Authority submitted \$282,270,885 in draw requests as eligible project cost, which included the initial draw on the 290E Phase III Project of \$50,000. The Authority's Schedule for the period ending June 30, 2018, reflected \$20,433,697, and the remaining balance of \$261,787,188 for the 183 South Toll Project on the June 30, 2019 Schedule for the eligible construction cost for the remaining balance. The 290E Phase III Project is currently in progress but has not charged the loan for eligible project cost except for \$50,000 to initiate the loan for the 290E Phase III Project in FY2019. The TIFIA loan proceeds expended on eligible project expenditures are subject to the *Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards* and are included in the Schedule of Expenditures of Federal Awards.

The TIFIA loan balance for the 183 South Toll Project as of June 30, 2020, is \$282,270,885, excluding capitalized interest of \$14,751,804.

Central Texas Regional Mobility Authority

**Schedule of Findings and Questioned Costs
Year Ended June 30, 2020**

Section I

Summary of Auditor's Results

1. Financial Statements

Type of auditor's report issued on whether the financial statements were prepared in accordance with GAAP: Unmodified

Internal control over financial reporting:

Material weakness(es) identified? _____ Yes X No

Significant deficiency(ies) identified? _____ Yes X None Reported

Noncompliance material to financial statements noted? _____ Yes X No

2. Federal Awards

Internal control over major federal program:

Material weakness(es) identified? _____ Yes X No

Significant deficiency(ies) identified? _____ Yes X None Reported

Type of auditor's report issued on compliance for the major federal program: Unmodified

Any audit findings disclosed that are required to be reported in accordance with Section 2 CFR 200.516 (a) _____ Yes X No

Identification of major federal program:

CFDA Number(s) Name of Federal Program or Cluster
20.205 Highway Planning and Construction Cluster

Dollar threshold used to distinguish between type A and type B programs: \$ 750,000

Auditee qualified as low-risk auditee? X Yes _____ No

Section II

Financial Statement Findings

None reported

Section III

Federal Award Finding and Questioned Costs

None reported

Central Texas Regional Mobility Authority

**Schedule of Prior Audit Findings
Year Ended June 30, 2020**

Prior-Year Federal Award Finding and Questioned Costs

None reported

Exhibit D

State Awards Compliance Report

Central Texas Regional Mobility Authority

State Awards Compliance Report
Year Ended June 30, 2020

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RSM US LLP

**Report on Internal Control Over Financial Reporting
and on Compliance and Other Matters Based on an
Audit of Financial Statements Performed in Accordance
With Government Auditing Standards**

Independent Auditor's Report

Board of Directors
Central Texas Regional Mobility Authority

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of Central Texas Regional Mobility Authority (the Authority) as of and for the year ended June 30, 2020, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements, and have issued our report thereon dated September 24, 2020.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Authority's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Authority's internal control. Accordingly, we do not express an opinion on the effectiveness of the Authority's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect and correct misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the Authority's financial statements will not be prevented or detected and corrected on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit, we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weakness may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Authority's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instance of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of This Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Authority's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Authority's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

RSM US LLP

Austin, Texas
September 24, 2020



RSM US LLP

**Report on Compliance for the Major State Program,
Report on Internal Control Over Compliance and Report on
Schedule of Expenditures of State Awards Required by the
State of Texas *Uniform Grant Management Standards***

Independent Auditor's Report

The Board of Directors
Central Texas Regional Mobility Authority

Report on Compliance for the Major State Programs

We have audited Central Texas Regional Mobility Authority's (the Authority) compliance with the types of compliance requirements described in the State of Texas *Uniform Grant Management Standards* (UGMS) that could have a direct and material effect on each of the Authority's major State programs for the year ended June 30, 2020. The Authority's major state programs are identified in the summary of auditor's results section of the accompanying Schedule of Findings and Questioned Costs.

Management's Responsibility

Management is responsible for compliance with state statutes, regulations, contracts and terms and conditions of its state awards applicable to its state programs.

Auditor's Responsibility

Our responsibility is to express an opinion on compliance for the Authority's major state programs based on our audit of the types of compliance requirements referred to above. We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States and the UGMS. Those standards and the UGMS require that we plan and perform the audit to obtain reasonable assurance about whether noncompliance with the types of compliance requirements referred to above that could have a direct and material effect on a major state program occurred. An audit includes examining, on a test basis, evidence about the Authority's compliance with those requirements and performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion on compliance for the major state programs. However, our audit does not provide a legal determination of the Authority's compliance.

Opinion on each of the Major State Programs

In our opinion, the Authority complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on its major state program for the year ended June 30, 2020.

Report on Internal Control Over Compliance

Management of the Authority is responsible for establishing and maintaining effective internal control over compliance with the types of compliance requirements referred to above. In planning and performing our audit of compliance, we considered the Authority's internal control over compliance with the requirements that could have a direct and material effect on each of the major state programs to determine the auditing procedures that are appropriate in the circumstances for the purpose of expressing an opinion on compliance for the major state program and to test and report on internal control over compliance in accordance with the UGMS, but not for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, we do not express an opinion on the effectiveness of the Authority's internal control over compliance.

A deficiency in internal control over compliance exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect and correct noncompliance with a type of compliance requirement of a state program on a timely basis. A material weakness in internal control over compliance is a deficiency, or combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a state program will not be prevented or detected and corrected on a timely basis. A significant deficiency in internal control over compliance is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a state program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over compliance was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies. We did not identify any deficiencies in internal control over compliance that we consider to be material weaknesses, as defined above. However, material weaknesses may exist that have not been identified.

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the UGMS. Accordingly, this report is not suitable for any other purpose.

Report on Schedule of Expenditures of State Awards Required by the State of Texas *Uniform Grant Management Standards*

We have audited the financial statements of the Authority as of and for the year ended June 30, 2020, and the related notes to the financial statements, which collectively comprise the Authority's basic financial statements. We have issued our report thereon dated September 24, 2020, which contained an unmodified opinion on those basic financial statements. Our audit was conducted for the purpose of forming an opinion on the basic financial statements. The accompanying Schedule of Expenditures of State Awards is presented for purposes of additional analysis as required by the UGMS and is not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Schedule of Expenditures of State Awards is fairly stated in all material respects in relation to the basic financial statements as a whole.

RSM US LLP

Austin, Texas
September 24, 2020

Central Texas Regional Mobility Authority

**Schedule of Expenditures of State Awards
Year Ended June 30, 2020**

State Grantor/Program Title	State Grant Award Number	Passed Through to Subrecipients	State Expenditures
Texas Department of Transportation:			
US290W Scenic Brook to Joe Tanner Grant	CSJ 0113-08-060	\$ -	\$ 4,139
MoPac Improvement Project	CSJ 3136-01-107	-	187,212
MoPac South Project Environmental Assessment	CSJ 3136-01-176	-	2,311,034
Total state expenditures		\$ -	\$ 2,502,385

See notes to Schedule of Expenditures of State Awards.

Central Texas Regional Mobility Authority

Note to Schedule of Expenditures of State Awards Year Ended June 30, 2020

Note 1. Summary of Significant Accounting Policies

Reporting entity: The Schedule of Expenditures of State Awards (the Schedule) includes the activity of all state programs administered by Central Texas Regional Mobility Authority (the Authority). Because this Schedule presents only a selected portion of the operations of the Authority, it is not intended to, and does not, present the financial position, changes in net position or cash flows of the Authority.

Basis of presentation: The Schedule presents total state awards expended for each individual program in accordance with the State of Texas *Uniform Grant Management Standards*.

Basis of accounting: The expenditures for each of the state financial assistance programs are presented on the accrual basis of accounting for the Authority's fiscal year. Such expenditures are recognized following, as applicable, either the cost principles in OMB Circular A-87, *Cost Principles for State and Local and Governments*, or the cost principles contained in the State of Texas *Uniform Grant Management Standards*, Cost Principles and Audit Requirements for State Awards, wherein certain types of expenditures are not allowable or are limited as to reimbursement. In accordance with the UGMS, the Authority did not apply or use an indirect cost rate as defined by UGMS for the period ending June 30, 2020.

Loan and loan guarantees: The Authority has no loan or loan guarantees.

Central Texas Regional Mobility Authority

**Schedule of Findings and Questioned Costs
Year Ended June 30, 2020**

Section I

Summary of Auditor's Results

1. Financial Statements

Type of auditor's report issued on whether the financial statements were presented in accordance with GAAP:

Unmodified

Internal control over financial reporting:

Material weakness(es) identified?

 Yes X No

Significant deficiency(ies) identified?

 Yes X None Reported

Noncompliance material to financial statements noted?

 Yes X No

2. State Awards

Internal control over major state programs:

Material weakness(es) identified?

 Yes X No

Significant deficiency(ies) identified?

 Yes X None Reported

Type of auditor's report issued on compliance for the major state programs:

Unmodified

Any audit findings disclosed that are required to be reported in accordance with the *UGMS*

 Yes X No

Identification of major state programs:

State Award Number(s)
CSJ 3136-01-176

Name of State Program or Cluster
MoPac South Project Environmental Assessment

Dollar threshold used to distinguish between type A and type B programs:

\$ 300,000

Auditee qualified as low-risk auditee?

 X Yes No

Section II

Financial Statement Findings

None reported

Section III

State Award Finding and Questioned Costs

None reported

Central Texas Regional Mobility Authority

**Schedule of Prior Audit Findings
Year Ended June 30, 2020**

Prior Year State Award Finding and Questioned Costs

None reported



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

September 30, 2020
AGENDA ITEM #3

Approve the minutes from the
August 26, 2020 Regular Board Meeting

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

Summary:

Approve the attached draft minutes for the August 26, 2020 Regular Board Meeting.

Backup provided: Draft minutes, August 26, 2020, 2020 Regular Board Meeting

MINUTES

Regular Meeting of the Board of

Directors of the

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

Wednesday, August 26, 2020

9:00 a.m.

This was a video conference meeting. Notice of the meeting was posted August 21, 2020 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 was present at the Lebermann Board room and on the video conference meeting were Vice Chair Meade, Board Members David Singleton, David Armbrust, Mark Ayotte, John Langmore and Mike Doss.

An archived copy of the live-streamed audio of this meeting is available at:

<https://mobilityauthority.swagit.com/play/08262020-686>

1. Welcome and opportunity for public comment.

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 who attended via video conference state their name for the record and confirm that they could both hear and be heard by all other attendees that were present in-person or live streaming. Board Members David Armbrust and David Singleton joined the video conference during the presentation of Item 5.

Consent Agenda

2. Approve the minutes from the July 29, 2020 Regular Board Meeting.
3. Approve Amendment No. 1 to the interlocal agreement with the Texas Department of Transportation for highway emergency response operations (HERO) program.

ADOPTED AS: RESOLUTION NO. 20-048

4. Approve interlocal agreement with the Texas Department of Transportation to co-locate personnel for the purpose of serving Pay By Mail customers of both agencies.

ADOPTED AS: RESOLUTION NO. 20-049

MOTION: Approve Item Nos. 2 thru 4
RESULT: Approved 5-0; (*Armbrust & Singleton were not present)
MOTION: Mike Doss
SECONDED BY: Nikelle Meade
AYE: Ayotte, Doss, Jenkins, Langmore, Meade
NAY: None.

Regular Items

5. Accept the financial statements through July 2020 and consider the monthly budget update.

Presentation by Bill Chapman, Chief Financial Officer, Robert Goode, Deputy Executive Director, Mike Heiligenstein, Executive Director, and Mary Temple, Controller.

NOTE: David Armbrust and David Singleton joined the board meeting at 9:21 a.m.

ADOPTED AS: RESOLUTION NO. 20-050

MOTION: Accept the financial statements through July 2020 and consider the monthly budget update
RESULT: Approved 7-0;
MOTION: John Langmore
SECONDED BY: Mike Doss
AYE: Armbrust, Ayotte, Doss, Jenkins, Langmore, Meade, Singleton
NAY: None.

6. Discuss and consider awarding contracts to firms qualified to perform traffic and revenue engineering services for the Mobility Authority.

Presentation by Bill Chapman, Chief Financial Officer

ADOPTED AS: RESOLUTION NO. 20-051

MOTION: Award contracts to firms qualified to perform traffic and revenue engineering services for the Mobility Authority
RESULT: Approved 7-0;
MOTION: Mark Ayotte
SECONDED BY: David Singleton
AYE: Armbrust, Ayotte, Doss, Jenkins, Langmore, Meade, Singleton
NAY: None.

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

Presentation by Tracie Brown, Director of Operations and Craig Bettmann, Senior Vice President, Client Solutions, Cogensia.

ADOPTED AS: RESOLUTION NO. 20-052

MOTION: Prohibit the operation of certain vehicles on Mobility Authority toll facilities pursuant to the Habitual Violator Program
RESULT: Approved 7-0;
MOTION: David Singleton
SECONDED BY: David Armbrust
AYE: Armbrust, Ayotte, Doss, Jenkins, Langmore, Meade, Singleton
NAY: None.

8. Discuss and consider approving a contract with Fagan Consulting LLC for general systems consultant services.

Presentation by Tracie Brown, Director of Operations.

ADOPTED AS: RESOLUTION NO. 20-053

MOTION: Approve a contract with Fagan Consulting LLC for general systems consultant services
RESULT: Approved 7-0;
MOTION: John Langmore
SECONDED BY: Mark Ayotte
AYE: Armbrust, Ayotte, Doss, Jenkins, Langmore, Meade, Singleton
NAY: None.

9. Discuss and consider approving an agreement with Kapsch TrafficCom USA, Inc. for a connected vehicle test program.

Presentation by Mike Heiligenstein, Executive Director, Jeff Dailey, Deputy Executive Director, and Brennan Hamilton, Ford Motor Company.

ADOPTED AS: RESOLUTION NO. 20-054

MOTION: Approve an agreement with Kapsch TrafficCom USA, Inc. for a connected vehicle test program
RESULT: Approved 7-0;
MOTION: Nikelle Meade
SECONDED BY: Mike Doss
AYE: Armbrust, Ayotte, Doss, Jenkins, Langmore, Meade, Singleton
NAY: None.

Briefings and Reports

10. Executive Director Board Report.

Presentation by Mike Heiligenstein, Executive Director

- A. Effect of COVID-19 on agency operations
- B. 183 North Mobility Project
- C. Results of Bond Refunding

Presentation by Bill Chapman, Chief Executive Officer

- D. Project Awards & Recognition

Executive Session Pursuant to Government Code, Chapter 551

Chairman Jenkins announced in open session at 11:05 a.m. that the Board would recess the meeting and reconvene in Executive Session to deliberate the following item:

13. Discuss personnel matters as authorized by §551.074 (Personnel Matters).

After completing the executive session, the Board reconvened in open meeting at 11:20 a.m.

Regular Items

After confirming that no member of the public wished to address the Board, Chairman Jenkins declared the meeting adjourned at 11:21 a.m.

14. Adjourn.



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

September 30, 2020
AGENDA ITEM #4

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

Strategic Plan Relevance:	Regional Mobility
Department:	Operations
Contact:	Tracie Brown, Director of Operations
Associated Costs:	Not applicable
Funding Source:	Not applicable
Action Requested:	Consider and act on draft resolution

Summary:

Background: The 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.

Current Action: State law states 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.

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.

Financing: Not applicable

Backup Provided: Draft Resolution
Habitual Violator Vehicle Ban FAQs

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

RESOLUTION NO. 20-0XX

**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) 45 SW Toll; and (6) 183S 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 September 30, 2020; 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 30th day of September 2020.

Submitted and reviewed by:

Approved:

Geoffrey Petrov, General Counsel

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

September 30, 2020
AGENDA ITEM #5

Accept the financial statements
through August 2020 and consider the monthly
budget update

Strategic Plan Relevance: Regional Mobility
Department: Finance
Contact: Bill Chapman, Chief Financial Officer
Associated Costs: N/A
Funding Source: N/A
Action Requested: Consider and act on draft resolution

Summary:

Presentation and acceptance of the monthly financial statements through August 2020.

Backup provided: Draft Resolution
Draft financial statements through August 2020

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

RESOLUTION NO. 20-0XX

ACCEPTING THE FINANCIAL STATEMENTS THROUGH AUGUST 2020

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;

WHEREAS, the Executive Director, working with the Chief Financial Officer, has reviewed and authorized the disbursements necessary for the month of August 2020, and has caused financial statements to be prepared and attached to this resolution as Exhibit A; and

NOW THEREFORE, BE IT RESOLVED, that the Board of Directors accepts the financial statements through August 2020, attached hereto as Exhibit A.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 30th day of September 2020.

Submitted and reviewed by:

Approved:

Geoffrey Petrov, General Counsel

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

Exhibit A

Central Texas Regional Mobility Authority
Income Statement
For the Period Ending August 31, 2020

	Budget Amount FY 2021	Actual Year to Date	Percent of Budget	Actual Prior Year to Date
REVENUE				
Operating Revenue				
Toll Revenue - Tags	87,282,802	11,321,157	12.97%	14,956,667
Video Tolls	23,301,118	3,456,280	14.83%	4,079,708
Fee Revenue	8,342,080	1,920,075	23.02%	1,444,367
Total Operating Revenue	118,926,000	16,697,512	14.04%	20,480,742
Other Revenue				
Interest Income	2,500,000	155,366	6.21%	1,081,964
Grant Revenue	3,000,000	380,990	12.70%	630
Misc Revenue	3,000	-	-	-
Gain/Loss on Sale of Asset	-	-	-	11,117
Total Other Revenue	5,503,000	536,357	9.75%	1,093,711
TOTAL REVENUE	\$124,429,000	\$17,233,869	13.85%	21,574,453
EXPENSES				
Salaries and Benefits				
Salary Expense-Regular	4,773,694	665,078	13.93%	617,451
Salary Reserve	80,000	-	-	-
TCDRS	675,000	96,731	14.33%	87,196
FICA	221,877	30,191	13.61%	24,908
FICA MED	72,321	10,170	14.06%	8,970
Health Insurance Expense	513,812	79,504	15.47%	64,733
Life Insurance Expense	8,138	829	10.18%	653
Auto Allowance Expense	10,200	1,275	12.50%	1,275
Other Benefits	213,038	23,560	11.06%	19,716
Unemployment Taxes	4,608	144	3.13%	-
Total Salaries and Benefits	6,572,687	907,482	13.81%	824,902

Central Texas Regional Mobility Authority
Income Statement
For the Period Ending August 31, 2020

	Budget Amount FY 2021	Actual Year to Date	Percent of Budget	Actual Prior Year to Date
Administrative				
Administrative and Office Expenses				
Accounting	8,000	1,455	18.19%	1,185
Auditing	115,000	11,000	9.57%	28,000
Human Resources	52,000	643	1.24%	236
IT Services	242,000	32,005	13.23%	1,090
Internet	450	-	-	23
Software Licenses	347,000	12,318	3.55%	10,143
Cell Phones	24,185	2,251	9.31%	800
Local Telephone Service	95,000	14,754	15.53%	522
Overnight Delivery Services	350	-	-	41
Local Delivery Services	50	-	-	-
Copy Machine	15,264	2,544	16.67%	1,272
Repair & Maintenance-General	12,000	175	1.46%	3,297
Meeting Facilities	5,000	-	-	-
Meeting Expense	14,750	434	2.94%	3,264
Toll Tag Expense	3,050	600	19.67%	150
Parking / Local Ride Share	2,900	-	-	189
Mileage Reimbursement	6,800	35	0.51%	276
Insurance Expense	450,998	68,866	15.27%	31,015
Rent Expense	570,000	93,792	16.45%	90,634
Building Parking	11,000	-	-	2,501
Legal Services	591,000	61,786	10.45%	578
Total Administrative and Office Expenses	2,566,797	302,658	11.79%	175,217
Office Supplies				
Books & Publications	4,750	839	17.66%	-
Office Supplies	9,500	1,789	18.83%	1,299
Misc Office Equipment	6,750	-	-	610
Computer Supplies	36,350	5,789	15.93%	560
Copy Supplies	1,500	-	-	565
Other Reports-Printing	8,000	-	-	-
Office Supplies-Printed	3,100	-	-	224
Postage Expense	1,150	8	0.70%	112
Total Office Supplies	71,100	8,424	11.85%	3,371

Central Texas Regional Mobility Authority
Income Statement
For the Period Ending August 31, 2020

	Budget Amount FY 2021	Actual Year to Date	Percent of Budget	Actual Prior Year to Date
Communications and Public Relations				
Graphic Design Services	20,000	-	-	-
Website Maintenance	50,000	3,412	6.82%	206
Research Services	115,000	30,671	26.67%	-
Communications and Marketing	125,000	17,556	14.05%	8,000
Advertising Expense	150,000	81,036	54.02%	72,983
Direct Mail	5,000	-	-	-
Video Production	10,000	8,820	88.20%	-
Photography	5,000	-	-	-
Other Public Relations	55,000	-	-	-
Promotional Items	-	945	-	-
Annual Report printing	6,500	553	8.51%	-
Direct Mail Printing	30,000	-	-	-
Other Communication Expenses	33,000	450	1.36%	171
Total Communications and Public Relations	604,500	143,443	23.73%	81,360
Employee Development				
Subscriptions	2,873	119	4.14%	279
Agency Memberships	60,980	950	1.56%	499
Continuing Education	9,200	275	2.99%	1,130
Professional Development	7,000	-	-	125
Other Licenses	1,250	-	-	40
Seminars and Conferences	38,500	245	0.64%	5,494
Travel	-	-	-	37,288
Total Employee Development	119,803	1,589	1.33%	44,855
Financing and Banking Fees				
Trustee Fees	48,000	3,763	7.84%	3,763
Bank Fee Expense	2,000	19	0.94%	139
Continuing Disclosure	4,000	-	-	-
Arbitrage Rebate Calculation	10,000	-	-	-
Rating Agency Expense	24,000	17,000	70.83%	16,500
Total Financing and Banking Fees	88,000	20,781	23.62%	20,402
Total Administrative	3,450,200	476,895	13.82%	325,205

Central Texas Regional Mobility Authority
Income Statement
For the Period Ending August 31, 2020

	Budget			
	Amount FY	Actual Year to	Percent of	Actual Prior
	2021	Date	Budget	Year to Date
Operations and Maintenance				
Operations and Maintenance Consulting				
GEC-Trust Indenture Support	350,129	212,464	60.68%	-
GEC-Financial Planning Support	209,410	31,828	15.20%	-
GEC-Toll Ops Support	800,000	61,688	7.71%	-
GEC-Roadway Ops Support	682,969	128,627	18.83%	-
GEC-Technology Support	741,461	432,811	58.37%	200,937
GEC-Public Information Support	100,000	2,215	2.21%	-
GEC-General Support	1,158,085	94,568	8.17%	-
General System Consultant	1,082,515	108,687	10.04%	1,571
Traffic Modeling	50,000	28,627	57.25%	-
Traffic and Revenue Consultant	150,000	-	-	-
Total Operations and Maintenance Consulting	5,324,569	1,101,515	20.69%	202,507
Roadway Operations and Maintenance				
Roadway Maintenance	3,963,810	455,934	11.50%	244,315
Landscape Maintenance	2,665,410	-	-	-
Signal & Illumination Maint	50,000	-	-	-
Maintenance Supplies-Roadway	250,000	-	-	-
Tools & Equipment Expense	1,500	2,090	139.33%	257
Gasoline	30,500	1,774	5.82%	2,467
Repair & Maintenance - Vehicles	11,000	1,342	12.20%	493
Natural Gas	-	528	-	-
Electricity - Roadways	250,000	17,001	6.80%	25,749
Total Roadway Operations and Maintenance	7,222,220	478,670	6.63%	273,281
Toll Processing and Collection Expense				
Image Processing	1,200,000	283,382	23.62%	-
Tag Collection Fees	3,611,638	899,025	24.89%	1,095,990
Court Enforcement Costs	1,478,362	-	-	-
DMV Lookup Fees	1,000	-	-	89
Total Processing and Collection Expense	6,291,000	1,182,407	18.80%	1,096,079

Central Texas Regional Mobility Authority
Income Statement
For the Period Ending August 31, 2020

	Budget Amount FY 2021	Actual Year to Date	Percent of Budget	Actual Prior Year to Date
Toll Operations Expense				
Generator Fuel	3,000	-	-	-
Fire and Burglar Alarm	500	-	-	-
Refuse	2,400	229	9.54%	221
Telecommunications	-	-	-	10,421
Water - Irrigation	7,500	306	4.09%	395
Electricity	500	106	21.23%	-
ETC spare parts expense	50,000	-	-	-
Law Enforcement	300,000	39,468	13.16%	-
ETC Maintenance Contract	4,191,000	685,351	16.35%	170,807
ETC Toll Management Center System Operation	534,000	87,187	16.33%	-
ETC Development	1,250,000	192,174	15.37%	-
ETC Testing	200,000	700	0.35%	-
Total Toll Operations Expense	6,538,900	1,005,521	15.38%	181,844
Total Operations and Maintenance	25,376,689	3,768,114	14.85%	1,753,712
Other Expenses				
Special Projects and Contingencies				
HERO	148,000	12,319	8.32%	12,319
Special Projects	-	26,121	-	8,655
71 Express Net Revenue Payment	2,300,000	-	-	-
Technology Initiatives	125,000	21,145	16.92%	-
Other Contractual Svcs	220,000	122,202	55.55%	15,500
Contingency	750,000	-	-	-
Total Special Projects and Contingencies	3,543,000	181,788	5.13%	36,474

Central Texas Regional Mobility Authority
Income Statement
For the Period Ending August 31, 2020

	Budget Amount FY 2021	Actual Year to Date	Percent of Budget	Actual Prior Year to Date
Non Cash Expenses				
Amortization Expense	1,000,000	150,833	15.08%	132,977
Amort Expense - Refund Savings	1,050,000	176,302	16.79%	174,994
Dep Exp - Furniture & Fixtures	2,620	436	16.63%	436
Dep Expense - Equipment	59,000	417	0.71%	41,205
Dep Expense - Autos & Trucks	30,000	7,195	23.98%	4,957
Dep Expense - Buildng & Toll Fac	176,800	29,458	16.66%	29,458
Dep Expense - Highways & Bridges	40,000,000	5,797,390	14.49%	4,922,000
Dep Expense - Toll Equipment	4,000,000	609,638	15.24%	555,066
Dep Expense - Signs	800,000	169,428	21.18%	57,964
Dep Expense - Land Improvements	985,000	147,489	14.97%	221,233
Depreciation Expense - Computers	75,000	32,699	43.60%	2,262
Undevelopable Projects	-	4,468,748	-	-
Total Non Cash Expenses	48,178,420	11,590,033	24.06%	6,142,552
Total Other Expenses	51,721,420	11,771,821	22.76%	6,179,027
Non Operating Expenses				
Bond Issuance Expense	2,000,000	171,619	8.58%	37,792
Loan Fee Expense	50,000	-	-	-
Interest Expense	42,091,626	6,734,866	16.00%	6,417,792
Community Initiatives	65,000	5,050	7.77%	2,500
Total Non Operating Expenses	44,206,626	6,911,535	15.63%	6,458,084
TOTAL EXPENSES	\$131,327,621	\$23,835,847	18.15%	\$15,540,930
Net Income	(\$6,898,621)	(\$6,601,978)		6,033,522

Central Texas Regional Mobility Authority
Balance Sheet
as of August 31, 2020

	as of 08/31/2020	as of 08/31/2019
ASSETS		
Current Assets		
Cash		
Regions Operating Account	\$ 246,160	\$ 271,622
Cash in TexStar	240,071	336,118
Regions Payroll Account	108,071	75,926
Restricted Cash		
Goldman Sachs FSGF 465	122,065,488	191,655,114
Restricted Cash - TexSTAR	276,636,565	274,383,773
Overpayments account	<u>719,478</u>	<u>434,028</u>
Total Cash and Cash Equivalents	400,015,832	467,156,580
Accounts Receivable		
Accounts Receivable	2,770,089	2,776,451
Due From Other Agencies	45,611	55,028
Due From TTA	777,862	928,024
Due From NTTA	725,839	852,581
Due From HCTRA	970,521	1,116,378
Due From TxDOT	716,427	515,550
Interest Receivable	<u>314,596</u>	<u>700,013</u>
Total Receivables	6,320,946	6,944,025
Short Term Investments		
Treasuries	9,855,135	89,642,629
Agencies	<u>10,144,865</u>	<u>40,036,386</u>
Total Short Term Investments	20,000,000	129,679,015
Total Current Assets	<u>426,336,778</u>	<u>603,779,620</u>
Total Construction in Progress	649,955,708	658,376,547
Fixed Assets (Net of Depreciation and Amortization)		
Computers	446,254	18,637
Computer Software	3,229,707	3,301,724
Furniture and Fixtures	6,970	9,583
Equipment	4,207	8,318
Autos and Trucks	66,224	62,197
Buildings and Toll Facilities	4,741,056	4,917,804
Highways and Bridges	1,187,689,075	1,022,274,474
Toll Equipment	22,263,609	18,756,134
Signs	12,875,729	10,434,945
Land Improvements	7,821,648	8,706,582
Right of way	88,149,606	88,149,606
Leasehold Improvements	<u>129,307</u>	<u>175,450</u>
Total Fixed Assets	1,327,423,391	1,156,815,453
Other Assets		
Intangible Assets-Net	100,912,279	102,243,946
2005 Bond Insurance Costs	3,825,356	4,038,864
Prepaid Insurance	188,809	169,640
Deferred Outflows (pension related)	198,767	866,997
Pension Asset	<u>896,834</u>	<u>177,226</u>
Total Other Assets	106,022,046	107,496,674
Total Assets	<u><u>\$ 2,509,737,923</u></u>	<u><u>\$ 2,526,468,294</u></u>

Central Texas Regional Mobility Authority
Balance Sheet
as of August 31, 2020

	as of 08/31/2020	as of 08/31/2019
LIABILITIES		
Current Liabilities		
Accounts Payable	\$ 11,382,066	\$ 33,415
Construction Payable	20,895,372	24,605,188
Overpayments	722,663	437,128
Interest Payable	9,957,006	9,226,317
Due to other Funds	1,687,633	-
TCDRS Payable	71,733	98,451
Due to other Agencies	4,784	4,113,407
Due to TTA	404,307	1,173,703
Due to NTTA	53,095	179,712
Due to HCTRA	72,730	165,914
Due to Other Entities	1,854,914	964,647
71E TxDOT Obligation - ST	1,268,601	1,723,140
Total Current Liabilities	48,374,903	42,721,021
Long Term Liabilities		
Compensated Absences	543,329	541,425
Deferred Inflows (pension related)	164,402	206,675
Long Term Payables	707,731	748,100
Bonds Payable		
Senior Lien Revenue Bonds:		
Senior Lien Revenue Bonds 2010	76,419,103	78,167,583
Senior Lien Revenue Bonds 2011	17,634,871	16,576,795
Senior Refunding Bonds 2013	133,195,000	136,405,000
Senior Lien Revenue Bonds 2015	298,790,000	298,790,000
Senior Lien Put Bnd 2015	68,785,000	68,785,000
Senior Lien Refunding Revenue Bonds 2016	356,785,000	358,030,000
Senior Lien Revenue Bonds 2018	44,345,000	44,345,000
Senior Lien Revenue Bonds 2020A	50,265,000	-
Sn Lien Rev Bnd Prem/Disc 2013	4,174,607	5,988,878
Sn Lien Revenue Bnd Prem 2015	18,184,921	19,381,426
Sn Lien Put Bnd Prem 2015	-	1,552,303
Senior lien premium 2016 revenue bonds	42,368,485	46,657,344
Sn Lien Revenue Bond Premium 2018	3,638,508	3,905,081
Senior Lien Revenue Bond Premium 2020A	11,656,830	-
Total Senior Lien Revenue Bonds	1,126,242,326	1,078,584,410
Sub Lien Revenue Bonds:		
Sub Lien Refunding Bonds 2013	95,945,000	98,295,000
Sub Lien Refunding Bonds 2016	73,490,000	73,905,000
Subordinated Lien BANs 2018	46,020,000	46,020,000
Sub Refunding 2013 Prem/Disc	890,744	1,315,892
Sub Refunding 2016 Prem/Disc	7,313,146	8,156,399
Sub Lien BANS 2018 Premium	705,511	1,234,644
Total Sub Lien Revenue Bonds	224,364,401	228,926,935
Other Obligations		
TIFIA Note 2015	298,561,393	289,561,303
TIFIA Note 2019	51,917	50,414
SIB Loan 2015	33,695,520	33,255,059
State Highway Fund Loan 2015	33,695,550	33,255,089
State 45SW Loan	-	62,836,506
71E TxDOT Obligation - LT	60,728,211	60,728,211
Regions 2017 MoPAC Note	24,990,900	24,990,900
Total Other Obligations	451,723,490	504,677,480
Total Long Term Liabilities	1,803,037,948	1,812,936,926
Total Liabilities	<u>1,851,412,851</u>	<u>1,855,657,947</u>

Central Texas Regional Mobility Authority
Balance Sheet
as of August 31, 2020

	as of 08/31/2020	as of 08/31/2019
	NET ASSETS	
Contributed Capital	121,462,104	121,202,391
Net Assets Beginning	540,619,005	543,620,311
Current Year Operations	<u>(3,756,037)</u>	<u>5,987,645</u>
Total Net Assets	<u>658,325,072</u>	<u>670,810,347</u>
Total Liabilities and Net Assets	<u>\$ 2,509,737,923</u>	<u>\$ 2,526,468,294</u>

Central Texas Regional Mobility Authority
Statement of Cash Flow
as of August 31, 2020

Cash flows from operating activities:

Receipts from toll revenues	\$	17,498,515
Receipts from interest income		68,700
Payments to vendors		(6,077,730)
Payments to employees		(1,034,811)
Net cash flows provided by (used in) operating activities		10,454,673

Cash flows from capital and related financing activities:

Interest payments		(29,858,986)
Acquisitions of construction in progress		(45,105,885)
Net cash flows provided by (used in) capital and related financing activities		(74,964,871)

Cash flows from investing activities:

Purchase of investments		(25,301,304)
Proceeds from sale or maturity of investments		41,502,383
Net cash flows provided by (used in) investing activities		16,111,443
Net increase (decrease) in cash and cash equivalents		(48,398,755)
Cash and cash equivalents at beginning of period		146,942,487
Cash and cash equivalents at end of period	\$	98,543,732

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

Operating income	\$	422,443
Adjustments to reconcile change in net assets to net cash provided by operating activities:		
Depreciation and amortization		11,413,731
Changes in assets and liabilities:		
(Increase) decrease in prepaid expenses and other assets		68,866
(Decrease) increase in accounts payable		(2,751,924)
Increase (decrease) in accrued expenses		1,395,209
Total adjustments		10,032,230
Net cash flows provided by (used in) operating activities	\$	10,454,673

Reconciliation of cash and cash equivalents:

Unrestricted cash and cash equivalents	\$	1,073,709
Restricted cash and cash equivalents		97,470,023
Total	\$	98,543,732

INVESTMENTS by FUND

		Balance		
			August 31, 2020	
Renewal & Replacement Fund				TexSTAR 276,876,635.14
	TexSTAR	403,116.99		Goldman Sachs 100,898,773.55
	Goldman Sachs	15,110.27		Agencies & Treasury Notes 20,000,000.00
	Agencies/ Treasuries		418,227.26	
Grant Fund				\$ 397,775,408.69
	TexSTAR	4,452,432.44		
	Goldman Sachs	5,625,412.71		
	Agencies/ Treasuries	-	10,077,845.15	
Senior Debt Service Reserve Fund				
	TexSTAR	78,552,076.17		
	Goldman Sachs	5,656,983.55		
	Agencies/ Treasuries	-	84,209,059.72	
2010 Senior Lien DSF				
	Goldman Sachs	60,624.55	60,624.55	
2011 Debt Service Acct				
	Goldman Sachs	789,086.89	789,086.89	
2013 Sr Debt Service Acct				
	Goldman Sachs	3,620,777.34	3,620,777.34	
2013 Sub Debt Service Account				
	Goldman Sachs	2,445,335.66	2,445,335.66	
2015 Sr Capitalized Interest				
	Goldman Sachs	-	10,322,584.19	
	TexSTAR	10,322,584.19		
2015 State Highway Fund DSA				
	Goldman Sachs	229,140.32	229,140.32	
2015 SIB DSA				
	Goldman Sachs	229,140.32	229,140.32	
2015 SHF DSRF				
	Goldman Sachs	126,329.16	126,329.16	
2015 SIB DSRF				
	Goldman Sachs	126,329.16	126,329.16	
2015B Debt Service Account				
	Goldman Sachs	1,118,958.51	1,118,958.51	
2016 Sr Lien Rev Refunding Debt Service Account				
	Goldman Sachs	9,533,221.00	9,533,221.00	
2016 Sub Lien Rev Refunding Debt Service Account				
	Goldman Sachs	845,791.18	845,791.18	
2016 Sub Lien Rev Refunding DSR				
	Goldman Sachs	6,991,439.56		
	Agencies/ Treasuries	-	6,991,439.56	
Operating Fund				
	TexSTAR	240,070.69		
	TexSTAR-Trustee	2,001,191.20		
	Goldman Sachs	73,052.22	2,314,314.11	
Revenue Fund				
	Goldman Sachs	4,133,402.80	4,133,402.80	
General Fund				
	TexSTAR	52,954,233.95		
	Goldman Sachs	647,344.69	73,601,578.64	
	Agencies/ Treasuries	20,000,000.00		
2013 Sub Debt Service Reserve Fund				
	TexSTAR	5,281,087.80		
	Goldman Sachs	3,648,564.30	8,929,652.10	
71E Revenue Fund				
	Goldman Sachs	13,469,606.11	13,469,606.11	
MoPac Revenue Fund				
	Goldman Sachs	21,165.49	21,165.49	
MoPac General Fund				
	Goldman Sachs	14,564,280.33	14,564,280.33	
MoPac Operating Fund				
	Goldman Sachs	1,780,853.54	1,780,853.54	
MoPac Loan Repayment Fund				
	Goldman Sachs	36,019.62	36,019.62	
2015B Project Account				
	Goldman Sachs	15,971,550.57		
	Agencies/ Treasuries	-		
	TexSTAR	26,337,059.85	42,308,610.42	
2015 TIFIA Project Account				
	Goldman Sachs	458,372.86		
	TexSTAR	66,876,806.94		
	Agencies/ Treasuries	-	67,335,179.80	
2015 TIFIA Debt Service Reserve Fund				
	Goldman Sachs	1,184,196.00	1,184,196.00	
2011 Sr Financial Assistance Fund				
	Goldman Sachs	0.00	10,831,725.36	
	TexSTAR	10,831,725.36		
2018 Sr Lien Project Cap I				
	Goldman Sachs	4,630,774.21	4,630,774.21	
2018 Sr Lien Project Account				
	Goldman Sachs	965,696.68		
	TexSTAR	18,624,249.56	19,589,946.24	
2018 Sub Debt Service Account				
	Goldman Sachs	307,547.05	307,547.05	
2019 TIFIA Sub Lien Project Account				
	Goldman Sachs	50,960.45	50,960.45	
2020A Senior Lien Debt Service Acct				
	Goldman Sachs	419,128.98	419,128.98	
2020 SH 45SW Project Account				
	Goldman Sachs	1,122,577.47	1,122,577.47	
			<u>\$ 397,775,408.69</u>	

CTRMA INVESTMENT REPORT

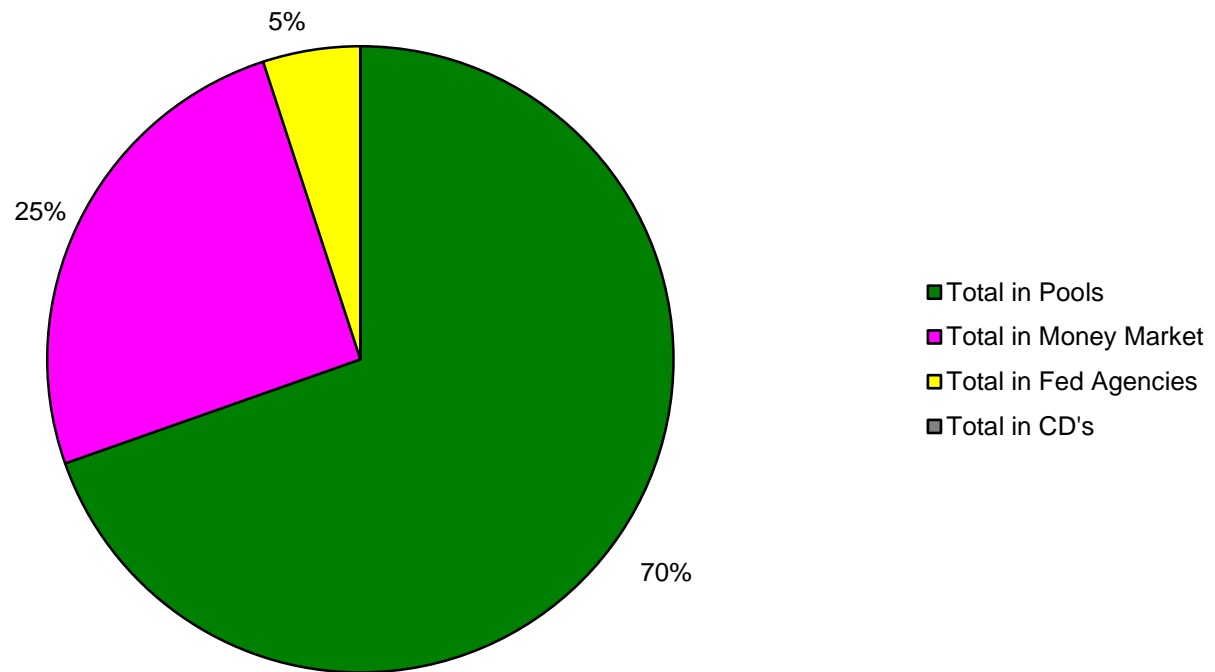
	Month Ending 8/31/2020					Rate August	
	Balance 8/1/2020	Additions	Discount Amortization	Accrued Interest	Withdrawals		Balance 8/31/2020
Amount in Trustee TexStar							
2011 Sr Lien Financial Assist Fund	10,830,212.22			1,513.14		10,831,725.36	0.1645%
2013 Sub Lien Debt Service Reserve General Fund	5,280,350.07 54,634,367.44			737.73 7,499.13	1,687,632.62	5,281,087.80 52,954,233.95	0.1645%
Trustee Operating Fund	1,072,991.41	3,228,000.00		199.79	2,300,000.00	2,001,191.20	0.1645%
Renewal and Replacement Grant Fund	403,060.67 4,451,810.48			56.32 621.96		403,116.99 4,452,432.44	0.1645%
Senior Lien Debt Service Reserve Fund	66,541,219.93	12,000,000.00		10,856.24		78,552,076.17	0.1645%
2015A Sr Ln Project Cap Interest	10,321,142.21			1,441.98		10,322,584.19	0.1645%
2015B Sr Ln Project	26,333,380.73			3,679.12		26,337,059.85	0.1645%
2015C TIFIA Project	68,267,322.33			9,484.61	1,400,000.00	66,876,806.94	0.1645%
2018 Sr Lien Project Account	19,833,942.14	1,687,632.62		2,674.80	2,900,000.00	18,624,249.56	0.1645%
	267,969,799.63	16,915,632.62		38,764.82	8,287,632.62	276,636,564.45	
Amount in TexStar Operating Fund	240,031.03	2,300,000.00		39.66	2,300,000.00	240,070.69	0.1645%
Goldman Sachs							
Operating Fund	295,706.77	3,005,310.72		34.73	3,228,000.00	73,052.22	0.0824%
2020 SH 45SW Project Account	1,122,434.47			143.00		1,122,577.47	0.0824%
2020A Senior Lien Debt Service Acct	209,737.85	209,377.43		13.70		419,128.98	0.0824%
2015B Project Account	15,969,598.05			1,952.52		15,971,550.57	0.0824%
2015C TIFIA Project Account	291,733.56	1,400,000.00		46.26	1,233,406.96	458,372.86	0.0824%
2015C TIFIA Debt Service Reserve Fund	0.00	1,184,196.00		0.00		1,184,196.00	0.0824%
2011 Sr Financial Assistance Fund	0.00			0.00		0.00	0.0824%
2010 Senior DSF	60,617.14			7.41		60,624.55	0.0824%
2011 Senior Lien Debt Service Acct	788,990.42			96.47		789,086.89	0.0824%
2013 Senior Lien Debt Service Acct	2,753,143.98	867,346.21		287.15		3,620,777.34	0.0824%
2013 Sub Debt Service Reserve Fund	3,648,118.26			446.04		3,648,564.30	0.0824%
2013 Subordinate Debt Service Acct	1,839,541.12	605,604.17		190.37		2,445,335.66	0.0824%
2015A Sr Ln Project Cap Interest	0.00			0.00		0.00	0.0824%
2015 Sub Lien SIB DSA	114,579.48	114,560.84		0.00		229,140.32	0.0824%
2015 Sub Lien SHF DSA	114,579.48	114,560.84		0.00		229,140.32	0.0824%
2015 Sub Lien SIB DSRF	0.00	126,329.16		0.00		126,329.16	0.0824%
2015 Sub Lien SHF DSRFA	0.00	126,329.16		0.00		126,329.16	0.0824%
2015A Debt Service Account	0.00			0.00		0.00	0.0824%
2015B Debt Service Acct	766,199.93	352,685.01		73.57		1,118,958.51	0.0824%
2016 Sr Lien Rev Refunding Debt Service Account	7,620,149.53	1,912,248.85		822.62		9,533,221.00	0.0824%
2016 Sub Lien Rev Refunding Debt Service Account	532,659.58	313,084.33		47.27		845,791.18	0.0824%
2016 Sub Lien Rev Refunding DSR	6,990,584.86			854.70		6,991,439.56	0.0824%
2018 Sr Lien Project Cap I	4,630,184.56			589.65		4,630,774.21	0.0824%
2018 Sr Lien Project Account	949,703.72	2,900,000.00		55.30	2,884,062.34	965,696.68	0.0824%
2018 Sub Debt Service Account	154,321.15	153,215.77		10.13		307,547.05	0.0824%
2018 Sr Lien Debt Service Account	0.00			0.00		0.00	0.0824%
2019 TIFIA Sub Lien Project Account	50,954.22			6.23		50,960.45	0.0824%
Grant Fund	5,624,725.00			687.71		5,625,412.71	0.0824%
Renewal and Replacement	15,108.42			1.85		15,110.27	0.0824%
Revenue Fund	5,656,439.67	10,345,110.39		445.10	11,868,592.36	4,133,402.80	0.0824%
General Fund	866,014.53	1,293,439.17		295.38	1,512,404.39	647,344.69	0.0824%
Senior Lien Debt Service Reserve Fund	17,654,824.98			2,158.57	12,000,000.00	5,656,983.55	0.0824%
71E Revenue Fund	12,925,297.69	621,646.89		1,529.44	78,867.91	13,469,606.11	0.0824%
MoPac Revenue Fund	101,534.45	165,608.19		18.36	245,995.51	21,165.49	0.0824%
MoPac General Fund	14,598,486.80			1,811.84	36,018.31	14,564,280.33	0.0824%
MoPac Operating Fund	1,637,874.71	245,995.51		197.17	103,213.85	1,780,853.54	0.0824%
MoPac Loan Repayment Fund	0.00	36,018.31		1.31		36,019.62	0.0824%
	107,983,844.38	26,092,666.95		12,823.85	33,190,561.63	100,898,773.55	
Amount in Fed Agencies and Treasuries							
Amortized Principal	20,000,000.00					20,000,000.00	
	20,000,000.00					20,000,000.00	
Certificates of Deposit							
Total in Pools	268,209,830.66	19,215,632.62		38,804.48	10,587,632.62	276,876,635.14	
Total in GS FSGF	107,983,844.38	26,092,666.95		12,823.85	33,190,561.63	100,898,773.55	
Total in Fed Agencies and Treasuries	20,000,000.00					20,000,000.00	
Total Invested	396,193,675.04	45,308,299.57		51,628.33	43,778,194.25	397,775,408.69	

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

William Chapman, CFO
Mary Temple, Controller

8/31/2020

Allocation of Funds



Amount of Investments As of

August 31, 2020

Agency	CUSIP #	COST	Book Value	Market Value	Yield to Maturity	Purchased	Matures	FUND
Farmer Mac	31422BDL1	20,000,000.00	20,000,000.00	20,032,622.00	2.5995%	3/11/2019	9/25/2020	General Fund
		<u>20,000,000.00</u>	<u>20,000,000.00</u>	<u>20,032,622.00</u>				

Agency	CUSIP #	COST	Cumulative Amortization	8/31/2020			Interest Income		
				Book Value	Maturity Value		Accrued Interest	Amortization	Interest Earned
Farmer Mac	31422BDL1	20,000,000.00	-	20,000,000.00	20,000,000.00		43,333.33	-	43,333.33
		<u>20,000,000.00</u>	<u>-</u>	<u>20,000,000.00</u>	<u>20,000,000.00</u>		<u>43,333.33</u>	<u>-</u>	<u>43,333.33</u>

ESCROW FUNDS

Travis County Escrow Fund - Elroy Road

	<u>Balance</u>		<u>Accrued</u>		<u>Balance</u>
	<u>8/1/2020</u>	<u>Additions</u>	<u>Interest</u>	<u>Withdrawals</u>	<u>8/31/2020</u>
Goldman Sachs	18,665,905.22		2,343.55	257,733.49	18,410,515.28

Travis County Escrow Fund - Ross Road

	<u>Balance</u>		<u>Accrued</u>		<u>Balance</u>
	<u>8/1/2020</u>	<u>Additions</u>	<u>Interest</u>	<u>Withdrawals</u>	<u>8/31/2020</u>
Goldman Sachs	(75,861.68)		15.11		(75,846.57)

Berstrom Expressway 183S Escrow Account

	<u>Balance</u>		<u>Accrued</u>		<u>Balance</u>
	<u>8/1/2020</u>	<u>Additions</u>	<u>Interest</u>	<u>Withdrawals</u>	<u>8/31/2020</u>
Goldman Sachs	206,410.03		25.24		206,435.27

Travis County Escrow Fund - Old San Antonio Road

	<u>Balance</u>		<u>Accrued</u>		<u>Balance</u>
	<u>8/1/2020</u>	<u>Additions</u>	<u>Interest</u>	<u>Withdrawals</u>	<u>8/31/2020</u>
Goldman Sachs	298,340.59	115,288.00	40.76		413,669.35

Travis County Escrow Fund - Old Lockhart Road

	<u>Balance</u>		<u>Accrued</u>		<u>Balance</u>
	<u>8/1/2020</u>	<u>Additions</u>	<u>Interest</u>	<u>Withdrawals</u>	<u>8/31/2020</u>
Goldman Sachs	283,071.18	181,588.00	40.88		464,700.06

Travis County Escrow Fund - County Line Road

	<u>Balance</u>		<u>Accrued</u>		<u>Balance</u>
	<u>8/1/2020</u>	<u>Additions</u>	<u>Interest</u>	<u>Withdrawals</u>	<u>8/31/2020</u>
Goldman Sachs	709,244.82		87.94		709,332.76

Travis County Escrow Fund - South Pleasant Valley Road

	<u>Balance</u>		<u>Accrued</u>		<u>Balance</u>
	<u>8/1/2020</u>	<u>Additions</u>	<u>Interest</u>	<u>Withdrawals</u>	<u>8/31/2020</u>
Goldman Sachs	406,691.18		49.79	3,221.61	403,519.36

Travis County Escrow Fund - Thaxton Road

	<u>Balance</u>		<u>Accrued</u>		<u>Balance</u>
	<u>8/1/2020</u>	<u>Additions</u>	<u>Interest</u>	<u>Withdrawals</u>	<u>8/31/2020</u>
Goldman Sachs	220,805.79		30.11		220,835.90

Travis County Escrow Fund - Pearce Lane Road

	<u>Balance</u>		<u>Accrued</u>		<u>Balance</u>
	<u>8/1/2020</u>	<u>Additions</u>	<u>Interest</u>	<u>Withdrawals</u>	<u>8/31/2020</u>
Goldman Sachs	80,187.31	343,247.00	10.35	9,891.65	413,553.01



183 South Design-Build Project
Contingency Status
 August 31, 2020



Original Construction Contract Value: \$581,545,700

Total Project Contingency	\$47,860,000
----------------------------------	---------------------

Obligations	CO#1 City of Austin ILA Adjustment	(\$2,779,934)
	CO#2 Addition of Coping to Soil Nail Walls	\$742,385
	CO#4 Greenroads Implementation	\$362,280
	CO#6 51st Street Parking Trailhead	\$477,583
	CO#9 Patton Interchange Revisions	\$3,488,230
	CO#10 City of Austin Utility (\$1,010,000 - no cost to RMA)	\$0
	CO#17 Boggy Creek Turnaround	\$2,365,876
	CO#21 Wall 125 Differing Site Condition - Part A	\$1,263,577
	Others Less than \$300,000 (18)	\$2,355,313
	Executed Change Orders	\$8,275,310
Change Orders Under Negotiation	\$5,100,000	
Potential Contractual Obligations	\$22,040,000	

(-) Total Obligations	\$35,415,310
------------------------------	---------------------

Remaining Project Contingency	\$12,444,690
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290E Ph. III
Contingency Status
 August 31, 2020



Original Construction Contract Value: \$71,236,424

Total Mobility Authority Contingency	\$10,633,758
Total TxDOT Project Contingency	\$15,292,524

Obligations	Others Less than \$300,000 (8)	\$152,949
	Executed Change Orders	\$152,949
	Change Orders Under Negotiation	\$274,000
	Potential Contractual Obligations	\$1,860,000

(-) Total Obligations	\$2,286,949
------------------------------	--------------------

Remaining Mobility Authority Contingency	\$8,402,569
Remaining TxDOT Contingency	\$15,236,961



**MONTHLY
NEWSLETTER
AUGUST 2020**



PERFORMANCE

As of August 31, 2020

Current Invested Balance	\$9,465,008,033.71
Weighted Average Maturity (1)	28 Days
Weighted Average Maturity(2)	93 Days
Net Asset Value	1.000190
Total Number of Participants	931
Management Fee on Invested Balance	0.06%*
Interest Distributed	\$1,869,166.32
Management Fee Collected	\$493,579.82
% of Portfolio Invested Beyond 1 Year	6.83%
Standard & Poor's Current Rating	AAAm

August Averages

Average Invested Balance	\$9,839,068,420.90
Average Monthly Yield, on a simple basis	0.1645%
Average Weighted Maturity (1)*	29 Days
Average Weighted Life (2)*	95 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.

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

NEW PARTICIPANTS

We would like to welcome the following entities who joined the TexSTAR program in August:

- * Travis County Housing Finance Corporation

HOLIDAY REMINDER

In observance of **Columbus Day, TexSTAR will be closed on Monday, October 12, 2020**. All ACH transactions initiated on Friday, October 9th will settle on Tuesday, October 13th. Please plan accordingly for your liquidity needs.

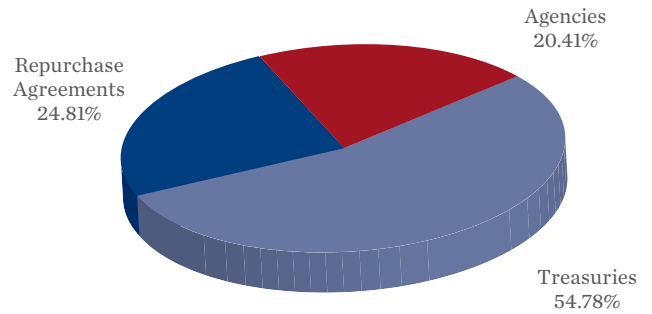
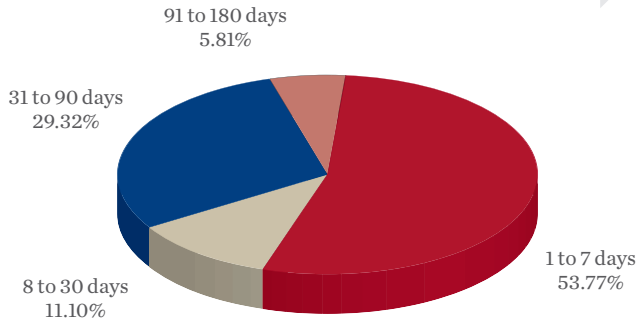
ECONOMIC COMMENTARY

Market review

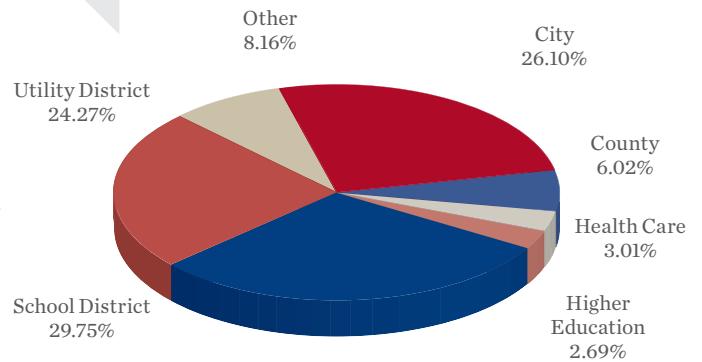
The market waded off a series of headwinds in August, despite delayed fiscal stimulus, an intensification of tensions between the U.S. and China, and a second wave of infections, which threatened the pace of economic recovery. Negotiations on a new COVID-19 relief bill stalled as the U.S. Senate adjourned in mid-August. An additional stimulus package appears unlikely before mid-September. This implies slightly lower U.S. Treasury bill issuance as there is no additional spending that requires funding. Therefore, yields on Treasury bills have continued to decline and currently stand near or at their 2-month low. The 3-month Treasury bill yield ended the month at 0.09%, and the 12-month Treasury bill yield at 0.11%. The August U.S. employment report showed solid gains despite the virus resurgence in the second half of July. Government employment increased 344,000, boosted by temporary Census hiring, while the private sector added about 1 million jobs. Additionally, many people are still being paid by their employers, under the Paycheck Protection Program (PPP), but are not actually working. As we shift into autumn, central bank policy continues to be the main fundamental driver of the market. While the ultra-accommodative monetary policy stance remains unchanged, Federal Reserve (Fed) Chairman Jerome Powell made some important announcements about the Fed's overall framework at the annual Jackson Hole symposium. The shift to an average inflation targeting approach—under which the Fed will allow inflation to remain above 2%, to make up for the fact that it has been running below 2% for an extended period of time—was largely anticipated by the market, even if it was expected to be announced at a later date. The more noteworthy incremental change is in the approach to the unemployment rate, with the Fed in future only responding to “shortfalls” and not “deviations”. In other words, a low unemployment rate alone will no longer cause the Fed to raise rates. These changes solidify the Fed's easy policy and remove the tail risk of a taper tantrum-like scenario for fixed income markets. Investor optimism across markets continued in August amid mounting hopes for a COVID-19 vaccine and data reaffirming solid global growth. *(continued page 4)*

INFORMATION AT A GLANCE

PORTFOLIO BY TYPE OF INVESTMENT AS OF AUGUST 31, 2020



DISTRIBUTION OF PARTICIPANTS BY TYPE AS OF AUGUST 31, 2020



HISTORICAL PROGRAM INFORMATION

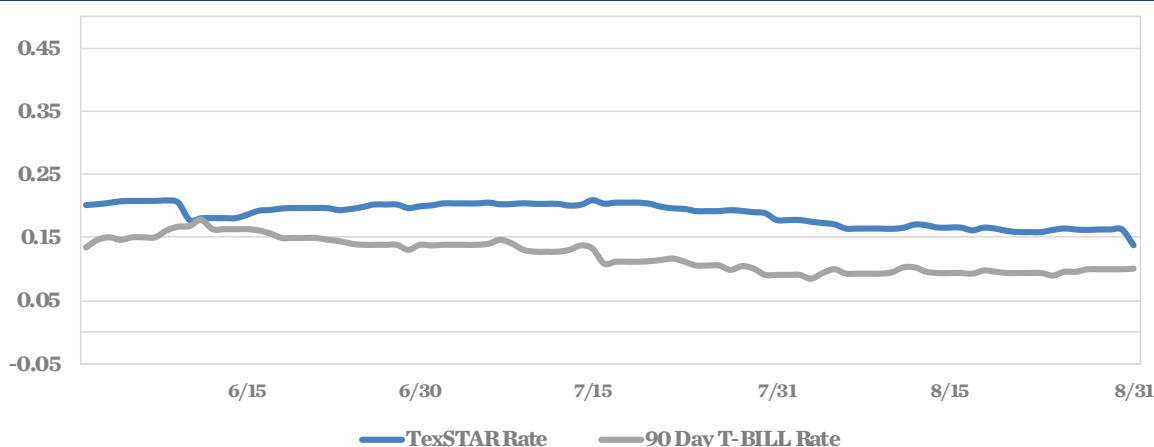
MONTH	AVERAGE RATE	BOOK VALUE	MARKET VALUE	NET ASSET VALUE	WAM (1)*	WAM (2)*	NUMBER OF PARTICIPANTS
Aug 20	0.1645%	\$ 9,465,008,033.71	\$ 9,466,814,693.25	1.000190	29	95	931
Jul 20	0.2003%	10,009,983,894.25	10,012,082,381.15	1.000209	27	101	930
Jun 20	0.1974%	9,671,601,669.74	9,674,049,521.47	1.000253	33	108	927
May 20	0.2444%	9,711,678,322.09	9,714,791,961.71	1.000320	29	103	924
Apr 20	0.4447%	9,402,508,666.82	9,406,011,209.34	1.000372	27	111	923
Mar 20	0.9570%	8,656,111,186.51	8,662,045,828.91	1.000685	27	108	922
Feb 20	1.5641%	9,669,676,298.74	9,671,875,580.06	1.000213	32	84	921
Jan 20	1.5514%	9,728,196,391.64	9,728,681,551.87	1.000027	33	96	920
Dec 19	1.5643%	8,550,355,101.35	8,550,086,726.49	0.999959	36	110	918
Nov 19	1.6177%	8,004,510,359.61	8,003,923,189.55	0.999918	30	109	917
Oct 19	1.8510%	8,148,867,422.02	8,148,521,034.89	0.999957	24	109	915
Sep 19	2.1065%	7,801,760,097.32	7,801,464,171.79	0.999962	22	113	912

PORTFOLIO ASSET SUMMARY AS OF AUGUST 31, 2020

	BOOK VALUE	MARKET VALUE
Uninvested Balance	\$ 3,783.82	\$ 3,783.82
Accrual of Interest Income	3,508,369.41	3,508,369.41
Interest and Management Fees Payable	(1,850,991.31)	(1,850,991.31)
Payable for Investment Purchased	0.00	0.00
Repurchase Agreement	2,347,594,999.82	2,347,594,999.82
Government Securities	7,115,751,871.97	7,117,558,531.51
TOTAL	\$ 9,465,008,033.71	\$ 9,466,814,693.25

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 AUGUST 2020

DATE	MNY MKT FUND EQUIV. [SEC Std.]	DAILY ALLOCATION FACTOR	INVESTED BALANCE	MARKET VALUE PER SHARE	WAM DAYS (1)*	WAL DAYS (2)*
8/1/2020	0.1780%	0.000004877	\$10,009,983,894.25	1.000209	26	92
8/2/2020	0.1780%	0.000004877	\$10,009,983,894.25	1.000209	25	92
8/3/2020	0.1752%	0.000004801	\$10,057,005,467.35	1.000203	25	92
8/4/2020	0.1731%	0.000004743	\$10,085,330,278.03	1.000198	26	95
8/5/2020	0.1711%	0.000004687	\$10,079,127,085.75	1.000196	25	94
8/6/2020	0.1641%	0.000004495	\$10,403,327,378.73	1.000193	31	95
8/7/2020	0.1641%	0.000004497	\$10,386,332,243.16	1.000225	29	93
8/8/2020	0.1641%	0.000004497	\$10,386,332,243.16	1.000225	29	93
8/9/2020	0.1641%	0.000004497	\$10,386,332,243.16	1.000225	29	93
8/10/2020	0.1636%	0.000004481	\$10,360,011,812.93	1.000222	29	92
8/11/2020	0.1654%	0.000004531	\$10,312,001,353.80	1.000217	29	95
8/12/2020	0.1707%	0.000004676	\$10,049,552,788.49	1.000219	30	97
8/13/2020	0.1695%	0.000004644	\$9,957,519,805.74	1.000221	30	96
8/14/2020	0.1657%	0.000004540	\$9,816,427,627.59	1.000212	30	96
8/15/2020	0.1657%	0.000004540	\$9,816,427,627.59	1.000212	30	96
8/16/2020	0.1657%	0.000004540	\$9,816,427,627.59	1.000212	30	96
8/17/2020	0.1612%	0.000004416	\$9,722,423,784.51	1.000212	33	96
8/18/2020	0.1656%	0.000004536	\$9,648,481,650.28	1.000219	33	97
8/19/2020	0.1640%	0.000004492	\$9,650,344,654.78	1.000213	32	97
8/20/2020	0.1603%	0.000004391	\$9,617,250,483.92	1.000213	33	100
8/21/2020	0.1584%	0.000004341	\$9,577,985,333.08	1.000202	32	98
8/22/2020	0.1584%	0.000004341	\$9,577,985,333.08	1.000202	32	98
8/23/2020	0.1584%	0.000004341	\$9,577,985,333.08	1.000202	32	98
8/24/2020	0.1619%	0.000004436	\$9,493,403,053.58	1.000204	31	98
8/25/2020	0.1642%	0.000004500	\$9,554,124,879.16	1.000206	31	97
8/26/2020	0.1625%	0.000004451	\$9,513,321,343.61	1.000207	30	97
8/27/2020	0.1619%	0.000004436	\$9,453,723,277.56	1.000209	30	97
8/28/2020	0.1626%	0.000004455	\$9,408,986,838.71	1.000200	28	95
8/29/2020	0.1626%	0.000004455	\$9,408,986,838.71	1.000200	28	95
8/30/2020	0.1626%	0.000004455	\$9,408,986,838.71	1.000200	28	95
8/31/2020	0.1369%	0.000003750	\$9,465,008,033.71	1.000190	28	93
20						
Average	0.1645%	0.000004507	\$9,839,068,420.90		29	95



(continued from page 1)

Outlook

The COVID-19 health crisis and economic shutdowns have resulted in a massive \$2 trillion hole in U.S. output. Since the trough in April, the economy has recovered a good deal of its initial losses, but economic activity remains depressed and unemployment is still high relative to pre-COVID levels. As of July, real consumption remains 4.7% below pre-COVID levels, retracing about ~75% of its decline. That said, high frequency activity data since July hints at further losses in economic momentum after a second wave of cases in southern and western states brought daily new cases in the U.S. to a new high of over 70,000 a day. Since then, the pace of increase in new virus cases has moderated to closer to 50,000 a day. We expect that a full recovery will be slow until there is a widely available vaccine, as different regions of the economy are in various stages of reopening depending on the virus’s development in that area. While the U.S. government’s response has been swift and significant, an additional fiscal stimulus package will be critical to keeping the economic recovery on track. Over 27 million people were receiving some sort of unemployment benefit as of the end of June. The White House and Congress are currently debating how to replace the July 31st expiration of enhanced unemployment benefits. Additionally, PPP loans could be keeping more than 20 million people employed that would have otherwise been out of work. We expect the Fed to maintain its aggressive quantitative easing (QE) program through the end of 2020, purchasing over \$2 trillion in U.S. Treasuries and \$1 trillion in gross agency mortgage-backed securities (MBS) purchases. We also expect the Fed to keep policy rates at the zero lower bound for the foreseeable future. Easy monetary policy that will persist for a substantial period of time will likely continue to be successful in promoting market liquidity and stabilizing inflation expectations but may struggle to fully offset the negative shock to real economic growth unless additional government aid is announced. However, we maintain a close eye on corporate solvency and defaults, as they pose a danger as the economy has structurally shifted as a result of the new social distancing requirements. The virus will determine the course of the recovery until there is a broadly distributed vaccine. Therefore, we expect the unemployment rate to remain elevated. Following the conclusion of the Democratic and Republican conventions and the Fed’s announcement of the results of its prolonged inflation policy review, the U.S. presidential election will take center stage as the next significant catalyst for markets.

This information is an excerpt from an economic report dated August 2020 provided to TexSTAR by JP Morgan Asset Management, Inc., the investment manager of the TexSTAR pool.

TEXSTAR BOARD MEMBERS

William Chapman	Central Texas Regional Mobility Authority	Governing Board President
Nell Lange	City of Frisco	Governing Board Vice President
Eric Cannon	City of Allen	Governing Board Treasurer
David Medanich	Hilltop Securities	Governing Board Secretary
Jennifer Novak	J.P. Morgan Asset Management	Governing Board Asst. Sec./Treas
Monte Mercer	North Central TX Council of Government	Advisory Board
Becky Brooks	City of Grand Prairie	Advisory Board
David Pate	Richardson ISD	Advisory Board
James Mauldin	DFW Airport/Non-Participant	Advisory Board
Sandra Newby	Tarrant Regional Water Dist/Non-Participant	Advisory Board
Ron Whitehead	Qualified Non-Participant	Advisory Board

The material provided to TexSTAR from J.P. Morgan Asset Management, Inc., the investment manager of the TexSTAR pool, is for informational and educational purposes only, as of the date of writing and may change at any time based on market or other conditions and may not come to pass. While we believe the information presented is reliable, we cannot guarantee its accuracy. HilltopSecurities is a wholly owned subsidiary of Hilltop Holdings, Inc. (NYSE: HTH) located at 1201 Elm Street, Suite 3500, Dallas, Texas 75270, (214) 859-1800. Member NYSE/FINRA/SIPC. Past performance is no guarantee of future results. Investment Management Services are offered through J.P. Morgan Asset Management Inc. and/or its affiliates. Marketing and Enrollment duties are offered through HilltopSecurities and/or its affiliates. HilltopSecurities and J.P. Morgan Asset Management Inc. are separate entities.



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

2021

FISCAL YEAR 2021
**OPERATING
BUDGET**



Monthly Budget
Report
August 2020

INTRODUCTION

Financial Tracking/Reporting - The Central Texas Regional Mobility Authority tracks revenue and expenditures throughout the fiscal year. In support of the Strategic Plan values of “Transparency”, “Accountability”, “Credibility”, “Service”, “Innovation”, and “Integrity” we report this information on our website every month, we post the data to the Electronic Municipal Market Access (EMMA) website, and the Board is briefed and votes to accept our monthly Financial Statements. We also provide a comparison of actual data to original budget projections, updates on the General Fund Balances and Reserves, and year end projections via the Quarterly Budget Reports. Beginning in Fiscal Year 2021, we are enhancing the Operating Budget reporting procedures by adding a “Monthly Budget Report” that will compare actuals to both the original budget projections and the updated projections provided in the Quarterly Budget Reports.

The table below summarizes the information included in each Operating Budget tracking Report/Statement.

Report/Statement	Information Included	Board Action
Financial Statement	<ol style="list-style-type: none"> 1. Actual Year to Date revenue and expenditures (by line item) 2. Balance Sheet 3. Statement of Cash Flow 4. Investments by Fund 5. Escrow Funds 6. Project Contingency Funds 7. TexSTAR Monthly Newsletter 	Accept Financial Statement
Monthly Budget Report	<ol style="list-style-type: none"> 1. Actual Monthly and Year to Date revenue and expenditures (same info as Financial Statement) 2. <i>Actual Monthly/Year to Date Transaction Data</i> 3. <i>Comparison of actuals to original budget projections/historical trends</i> 4. <i>Comparison of actuals to Quarterly Budget projections</i> 	Informational only
Quarterly Budget Report	<ol style="list-style-type: none"> 1. Actual Year to Date revenue and expenditures 2. <i>Update on General Fund Balances and Reserves</i> 3. <i>Year-end projections of revenues and expenditures;</i> 4. <i>Discussion on projected Operating Budget significant variances with estimated program/initiative impacts</i> 5. <i>Recommended Budget Amendment (potential restoration of program/initiative budget reductions)</i> 	Potential Budget Amendment

Monthly Budget Report - The Monthly Budget Report is developed using actual (unaudited) activity, with departmental projections of anticipated spending and revenue trends for the month and year to date. *Year end projections will be covered in the Quarterly Budget Reports.*

The following discussions, analysis, and recommendations are included in this report:

- A high-level OVERVIEW of monthly and year to date revenues and expenditures
- Comparison of actuals to original budget projections.
- Comparison of actuals to updated year end projections developed via the Quarterly Budget Reports (beginning after the first Quarterly Budget Report).
- Weekly/Monthly Transaction Trends.

OVERVIEW

Revenue - The actual total revenue through **August 2020** was **\$17,233,869** as shown in Table 1 below.

Table 1 - Revenue		
REVENUES	Adopted Budget*	Actual Revenue thru August
Tag Revenue	\$87,282,802*	\$11,321,157
Video Tolls	\$23,301,118*	\$3,456,280
Fee Revenue	<u>\$8,342,080*</u>	<u>\$1,920,075</u>
Total Operating Revenue	\$118,926,000	\$16,697,512
Interest Income	\$2,500,000	\$155,366
Grant Revenue	\$3,000,000	\$380,990
Misc. Revenue	<u>\$3,000</u>	<u>\$0</u>
Total Other Revenue	\$5,503,000	\$536,357
TOTAL REVENUE	\$124,429,000	\$17,233,869

*Revised June 26th

Expenses - The actual total expenses through **August 2020** were **\$23,835,847** as shown in Table 2 below.

Table 2 - Expenses		
EXPENSES	Adopted Budget	Actual Expenses thru August
Salaries/Benefits	\$6,572,687	\$907,482
Administrative	\$3,450,200	\$476,895
Operations/Maintenance	\$25,376,689	\$3,768,114
Other	\$51,721,420	\$11,771,821
Non-Operating	<u>\$44,206,626</u>	<u>\$6,911,535</u>
TOTAL EXPENSES	\$131,327,621	\$23,835,847

ACTUALS vs ORIGINAL PROJECTIONS

REVENUE

Transactions bottomed out in late March and early April 2020. Since that time, we have seen continuing increases. Operating Revenues in March totaled about \$9.5 million and dropped to \$6.4 million for April. Monthly revenues for both May and June were around \$7.3 million. We projected that operating revenues for July through December of 2020 would be about \$8 million/month. Operating revenues for July were **\$8,228,026** and for August were **\$8,469,486**. **The cumulative total for Operating revenues through August is \$16,697,512** as you can see below in Table 3. Please note that there could be wide swings in CTRMA revenues as we continue to adapt and react to the COVID-19 pandemic.

Table 3- Projected Revenue vs. Actual				
REVENUES	Adopted Budget*	Projected Revenue thru Aug	Actual Revenue thru Aug	Delta (less than projected)
Tag Revenue	\$87,282,802*	\$11,714,000	\$11,321,157	(\$392,843)
Video Tolls	\$23,301,118*	\$3,127,000	\$3,456,280	\$329,280
Fee Revenue	\$8,342,080*	\$1,120,000	\$1,920,075	\$800,075
Total Operating Revenue	\$118,926,000	\$15,961,000	\$16,697,512	\$736,512
Interest Income	\$2,500,000	\$417,000	\$155,366	(\$261,634)
Grant Revenue	\$3,000,000	\$420,000	\$380,990	(\$39,010)
Misc. Revenue	\$3,000	\$0	\$0	\$0
Total Other Revenue	\$5,503,000	\$837,000	\$536,357	(\$300,644)
TOTAL REVENUE	\$124,429,000	\$16,798,000	\$17,233,869	\$435,869

Total Revenues through August are **\$435,869 more than projected.**

Deltas in Projected vs Actual:

- 1) Tag Revenue – Tag Revenue historically accounts for about 73-75% of Total Operating Revenue, Video Tolls about 19-20%, and Fee Revenue about 6-8%. We projected our monthly revenue breakdown using those historic percentages. Tag Revenue through August came in at about 68% of our Total Operating Revenue, Video Tolls at 21%, and Fees at 11%.

Operating Revenue Category - % of Total

Revenue %	Tag Revenue	Video Tolls	Fee Revenue
Historical (budgeted)	73-75%	19-20%	6-8%
<i>Through August</i>	68%	21%	11%

- 2) Interest Income will vary throughout the year as returns for our investments fluctuate.
- 3) Grant Revenue comes from the Rider 42 funding which reimburses MoPac South expenditures during the environmental process.

EXPENSES

During the development of our FY 2021 Operating Budget, we asked the Department Directors to take an additional step. We asked them to project their operating expenditures on a monthly basis since some of our expenditures throughout the year are not linear. Being our first effort at monthly projections, we expect to learn as we go and refine the projections via the quarterly budget reports.

Table 4 - Expenses				
EXPENSES	Adopted Budget	Projected Expenses thru Aug	Actual Expenses thru Aug	Delta (more than projected)
Salaries/Benefits	\$6,572,687	\$1,065,800	\$907,482	\$158,318
Administrative	\$3,450,200	\$525,200	\$476,895	\$48,305
Operations/Maintenance	\$25,376,689	\$4,002,300	\$3,768,114	\$234,186
Other	\$51,721,420	\$7,196,100	\$11,771,821	(\$4,575,721)
Non-Operating	\$44,206,626	\$6,545,400	\$6,911,535	(\$366,135)
TOTAL EXPENSES	\$131,327,621	\$19,334,800	\$23,835,847	(\$4,501,047)

Total Expenses are **\$4,501,047 more than projected.** The majority of the delta is within the Other Expenses, **Non-Cash** category in the “Undevelopable Projects” line item as explained below. Taking that line item out of the total Expenses leaves a delta for the remaining Total Expenses of **\$32,299 more than projected through August.**

Substantive Line Item Deltas in Projected vs Actual:1) **SALARY/BENEFITS**

- a. Salary Expense - Projected \$780,100. Actual \$665,078. **Delta = \$115,022 less than projected.** A vacant Finance position was just recently filled. The budget also included an agency-wide COLA which has not been implemented.

2) **OPERATIONS/MAINTENANCE –**a. **OPERATIONS AND MAINTENANCE CONSULTING**

- i. GEC Trust Indenture Support: Annual Facility Inspections: Projected \$20,282. Actual \$211,834. **Delta = \$191,202 more than projected.** Utilized the low traffic period to get ahead of inspections this year.
- ii. GEC Roadway Ops Support: Maintenance Contract Support/Oversight: Projected \$0. Actual \$124,573. **Delta = \$124,573 more than projected.** More support required to launch new PBMC.
- iii. GEC Technology Support: Technology Development: Projected \$215,000. Actual \$432,811. **Delta = \$217,811 more than projected.** Software license for eBuilder (\$215k) expended earlier than projected.

b. **ROADWAY OPERATIONS AND MAINTENANCE**

- i. Roadway Maintenance: Projected \$895,125. Actual \$455,934. **Delta = \$439,191 less than projected.** August invoice is still in process due to negotiations regarding performance levels.

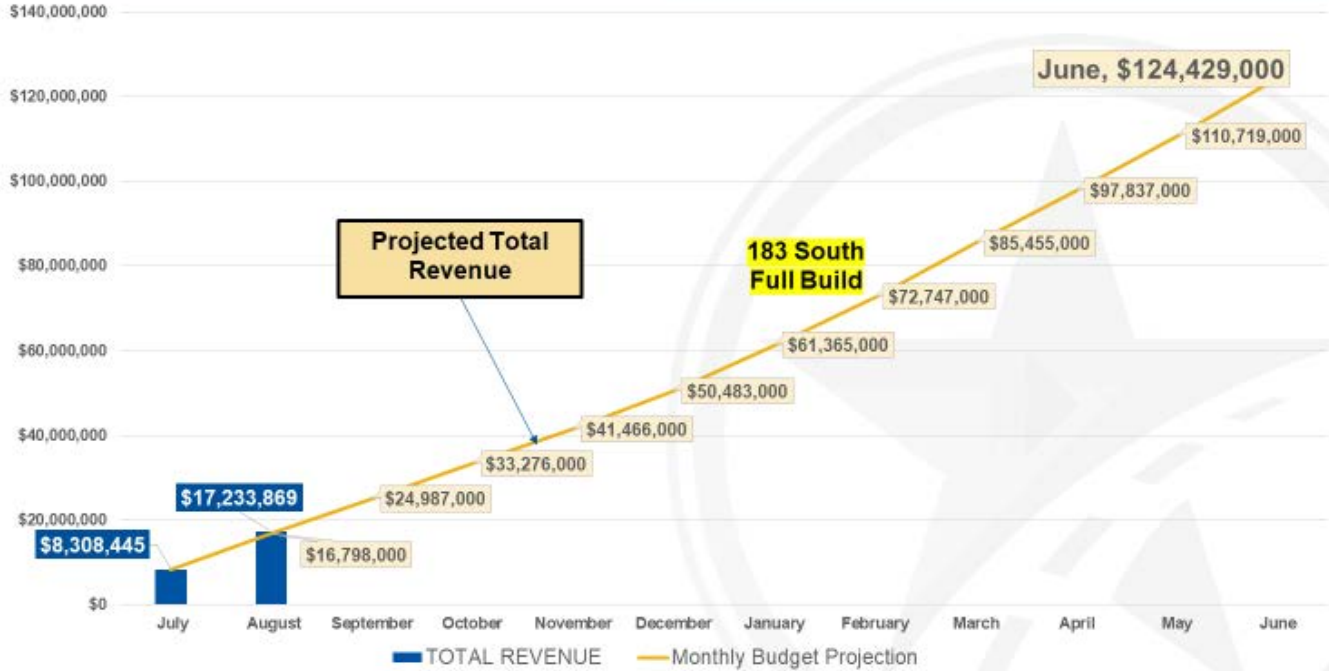
- ii. Landscape Maintenance: Projected \$399,430. Actual \$0. **Delta = \$399,430 less than projected.** August invoice is still in process due to negotiations regarding performance levels.
 - c. TOLL PROCESSING AND COLLECTION EXPENSE
 - i. Image Processing: Projected \$165,000. Actual \$283,382. **Delta = \$118,382 more than projected.** Directly related to transaction volumes.
- 3) OTHER EXPENSES
- a. NON-CASH –
 - i. Undevelopable Projects: *Projected \$0. Actual \$4,468,748. Delta = \$4,468,748 more than projected.* As we begin to develop projects, we expend general funds to progress these potential projects. When these potential projects become CTRMA projects, we reimburse the General Fund as we move into project financing. However, if a project does not become a CTRMA asset, financially we must eventually write off the project development expenses. The “Undevelopable Projects” line item in the Non-Cash expenses reflects this write off. CTRMA explored the 290West (the Y at Oakhill) as an RMA project. Now that TxDOT is building that project, and they will own the asset, it is time to write off the project development expenses. CTRMA did receive a grant (reflected in previous fiscal years) that covered most of these expenses. Minor expenditures for the CTRMA progressing IH-35 are also included in this write off. This write off is a non-cash expense and was not included in the Operating Budget.
 - b. SPECIAL PROJECTS AND CONTINGENCIES
 - i. Other Contractual Services: *Projected \$15,000. Actual \$122,202. Delta = \$107,202 more than projected.* Participation in the CARTS Eastside Bus Transfer Station was approved by the Board via an Interlocal Agreement (ILA). Funding for CTRMA’s financial support called out in the ILA (\$300,000) was listed as an “outflow” in the Consolidated System Summary of the adopted Operating Budget. We now must expense this item via an operating budget line item. The “Other Contractual” is the most logical line item in this case. The “Other Contractual” line item will likely come in over budget as a result.
- 4) NON-OPERATING EXPENSE –
- a. Bond Issuance Expense: Projected \$340,000. Actual \$171,619. **Delta = \$168,381 less than projected.** The majority of the delta resulted from refunding costs that were paid directly out of Bond proceeds.
 - b. Interest Expense: Projected \$6,200,000. Actual \$6,734,866. **Delta = \$534,866 more than projected.** Every six months the interest expense may be adjusted depending on the nature of each bond series that makes up this interest expense. For example, the premium on the 2015B series was fully amortized as of June 30, that makes up for \$310,550 of this delta. The remainder is due to the reevaluation, based on the interest schedules developed when the funds are borrowed. We do this calculation in July and January and anytime we have a refunding, new borrowings, etc.

ACTUAL VS BUDGETED, PROJECTED REVENUE AND EXPENSE CHARTS

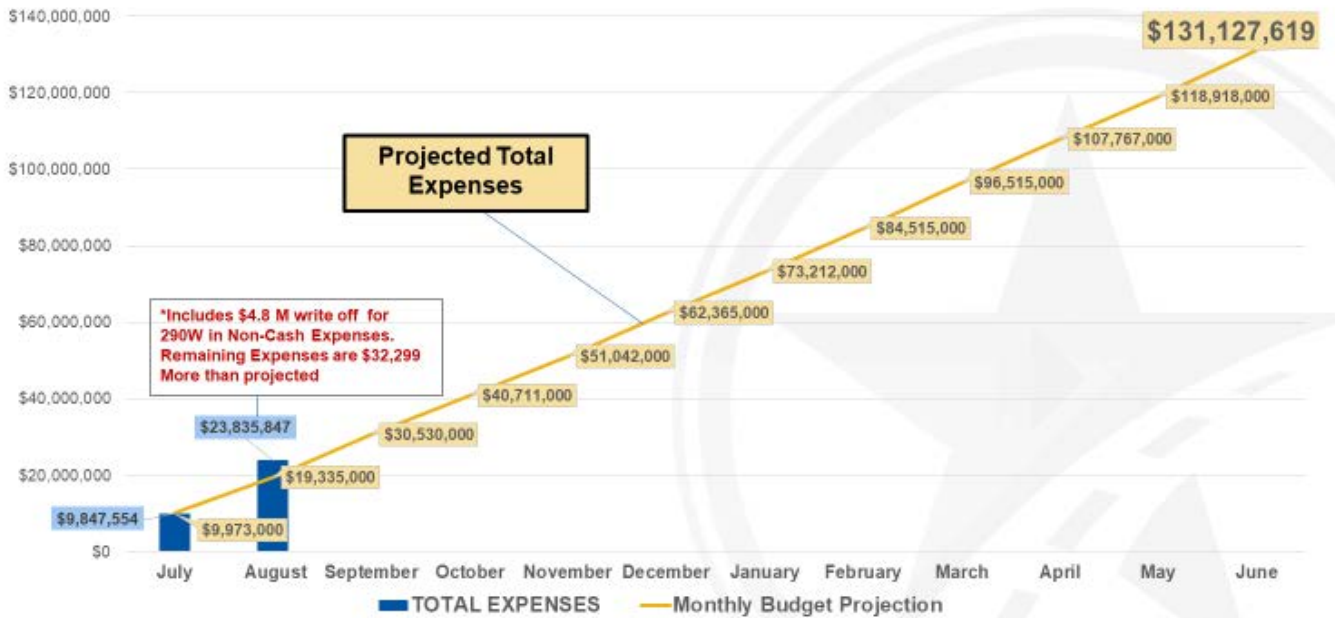
The charts below show the actual vs Budgeted, Projected Revenue and Expenses.



Actual vs Budgeted, Projected Revenue



Actual vs Budgeted, Projected Expenses

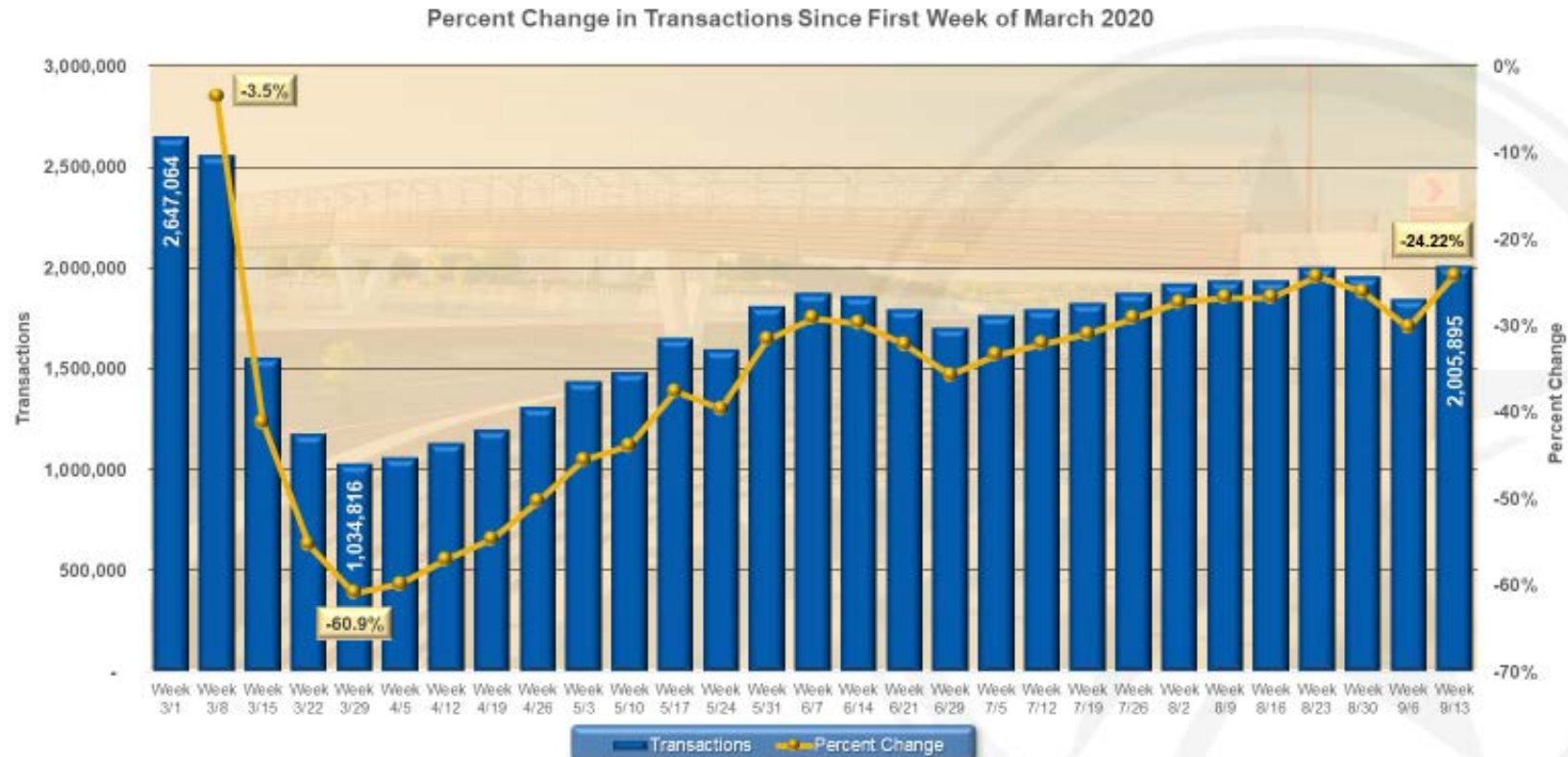


MONTHLY TRANSACTION TRENDS

The charts below supplement the information that our CFO, Bill Chapman, provides to you on a weekly basis. The numbers are the same, these charts just provide a visual depiction of that same data.

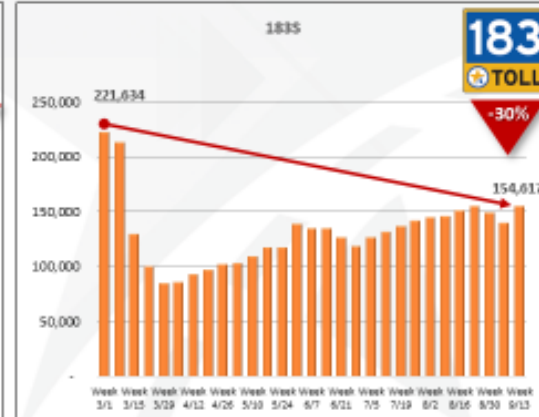
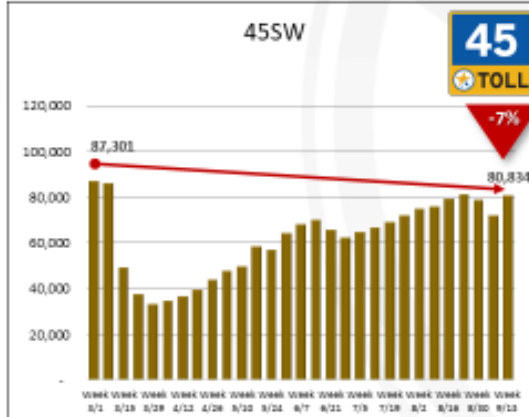
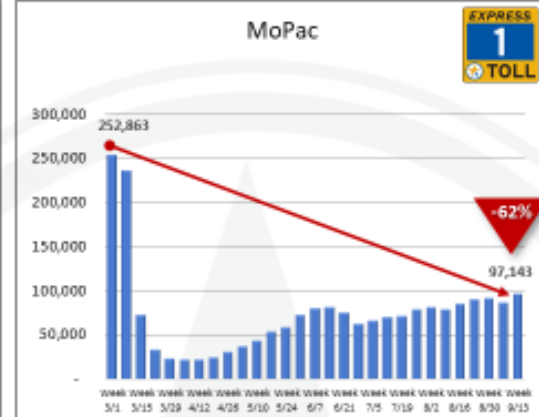
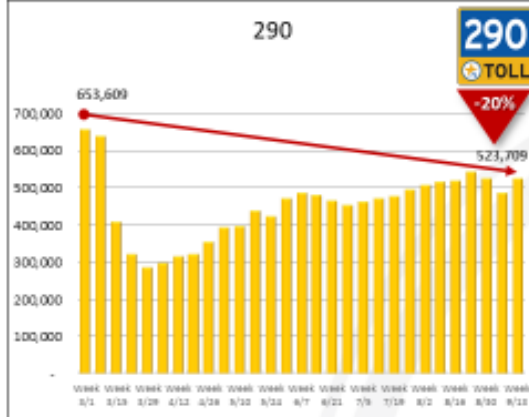
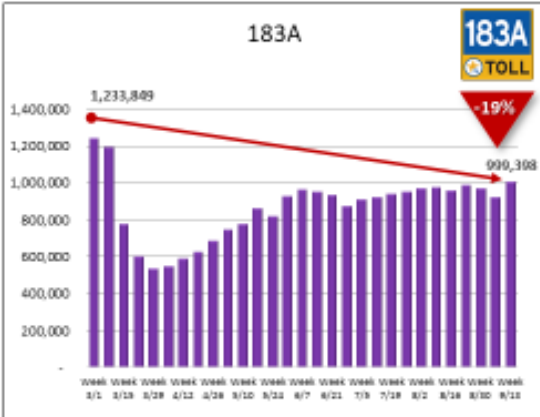


Weekly Transaction Trend (All Roadways)



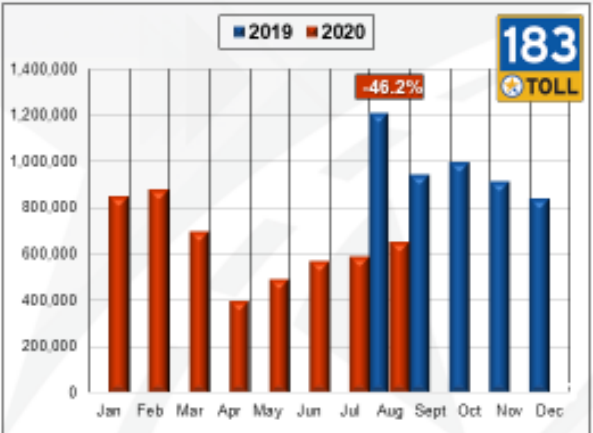
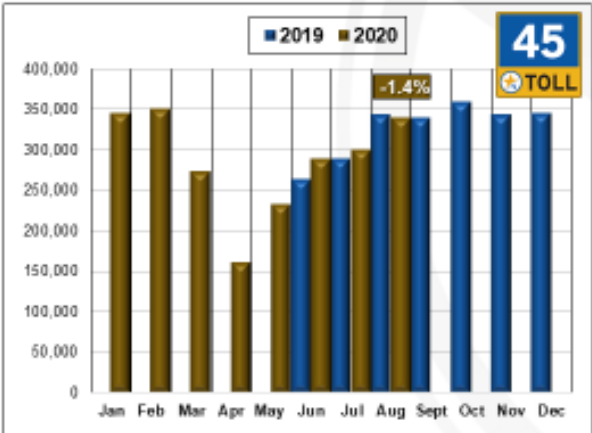
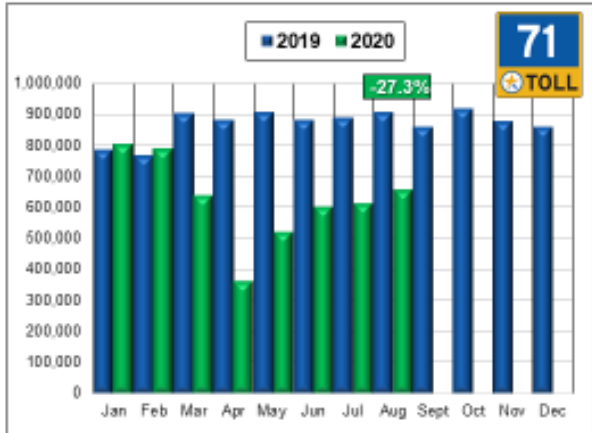
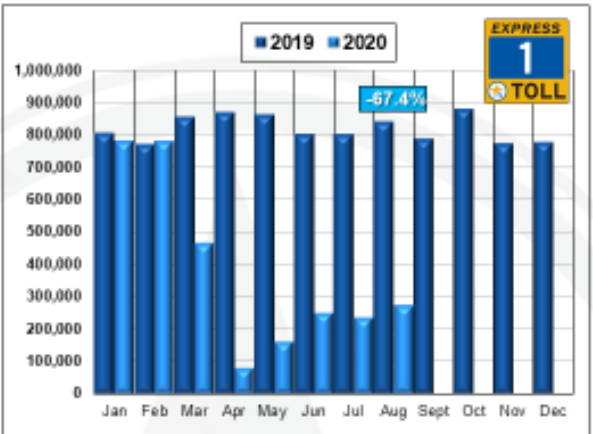
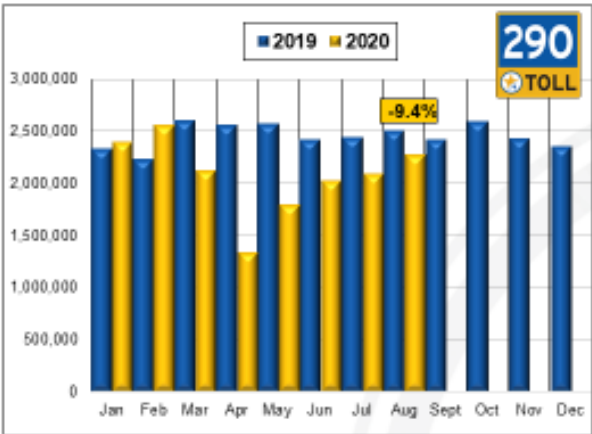
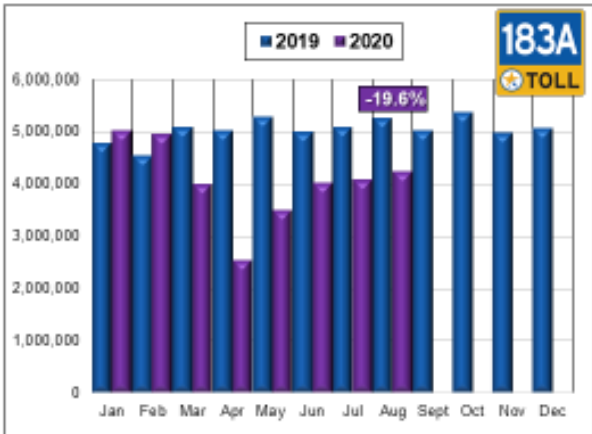


Weekly Transaction Trends by Roadway





Monthly Transaction Comparison (2019 vs 2020)



Notes: US 290 added flyover ramps at SH 130 in 2020 increasing overall transactions. 183 South was toll free in August 2019. 45SW and 183 South opened in summer 2019.



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

September 30, 2020
AGENDA ITEM #6

Discuss and consider approving a contract with
Stantec Consulting Services, Inc. to perform
traffic and revenue engineering services

Strategic Plan Relevance: Regional Mobility
Department: Finance
Contact: Bill Chapman, Chief Financial Officer
Associated Costs: \$5,000,000 Not to Exceed
Funding Source: Various
Action Requested: Consider and act on draft resolution

Background -The Central Texas Regional Mobility Authority (the Authority) has a continuing need to monitor traffic and revenue (T&R) for its existing toll projects and for new projects. The studies the Authority receives as a result of T&R consulting services contain a variety of elements related to our toll facility's traffic and revenue including corridor travel demands, future growth characteristics, market capture and demand share. The Authority's Debt Indenture also requires T&R services. These services are used throughout the life of projects from planning, feasibility, financing, construction, and monitoring. The resulting studies vary in confidence levels from sketch level to investment grade. Investment grade studies are required for project financing.

Previous Actions/Brief History of the Project/Program - A Request for Qualifications to identify and obtain the services of a qualified engineering firm(s) to provide traffic and revenue engineering services was released on July 21, 2020. Three firms submitted responses to the RFQ. On August 26, 2020 the Board authorized the Executive Director to negotiate separate contracts for traffic and revenue engineering services with all qualified firms that submitted responses to the RFQ: C&M Associates, Inc., CDM Smith, and Stantec.

Staff Recommendation - Staff recommends approving a contract with Stantec for traffic and revenue engineering services for a term of 5 years with a not to exceed cumulative payment obligation of \$5,000,000.

Funding - Funding for the traffic and revenue consulting services will come from a variety of sources including the Operating Budget and Project Funding depending on the purpose of the T&R study.

Backup Provided: Draft Contract
 Draft Resolution

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

RESOLUTION NO. 20-0XX

**APPROVING A CONTRACT WITH STANTEC CONSULTING SERVICES, INC. FOR
TRAFFIC AND REVENUE ENGINEERING SERVICES**

WHEREAS, the Central Texas Regional Mobility Authority (Mobility Authority) has an ongoing need for traffic and revenue engineering services on its existing toll projects and to develop new toll projects; and

WHEREAS, by Resolution No. 20-051, dated August 29, 2020, the Board of Directors awarded a contract to Stantec Consulting Services, Inc. (Stantec) for traffic and revenue engineering services and authorized the Executive Director to negotiate a contract with Stantec; and

WHEREAS, the Executive Director and Stantec have negotiated a proposed contract for traffic and revenue engineering services in an amount not to exceed \$5,000,000 which is attached hereto as Exhibit A and sets forth the scope of services, compensation and other terms; and

WHEREAS, the Executive Director recommends that the Board approve the contract with Stantec for traffic and revenue engineering services in the form or substantially the same form attached hereto as Exhibit A.

NOW THEREFORE, BE IT RESOLVED that the Board of Directors hereby approves the contract with Stantec Consulting Services, Inc. for traffic and revenue engineering services; and

BE IT FURTHER RESOLVED that the Executive Director is hereby authorized to finalize and execute the contract with Stantec Consulting Services, Inc. on behalf of the Mobility Authority 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 30th day of September 2020.

Submitted and reviewed by:

Approved:

Geoffrey Petrov, General Counsel

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

Exhibit A

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY
AGREEMENT FOR
TRAFFIC AND REVENUE ENGINEERING SERVICES

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**CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY
AGREEMENT FOR
TRAFFIC AND REVENUE ENGINEERING SERVICES**

This Professional Services Agreement (the “Agreement”) is made and entered into by and between the Central Texas Regional Mobility Authority (the “Authority” or “CTRMA”), a regional mobility authority and a political subdivision of the State of Texas, and Stantec Consulting Services (the “Consultant”) to be effective as of the 15th day of September, 2020 (the “Effective Date”) with respect to traffic and revenue engineering services to be performed by the Consultant, as an independent contractor, for the CTRMA.

WITNESSETH:

WHEREAS, pursuant to that certain Request for Qualifications dated July 22, 2020 (the “RFQ”), the CTRMA sought to identify and obtain the services of qualified engineering firm(s) to provide traffic and revenue engineering services for the CTRMA; and WHEREAS, three (3) firms submitted responses setting forth their respective qualifications for the work; and

WHEREAS, on August 26, 2020 the CTMRA Board authorized the Executive Director to negotiate separate contracts for Traffic and Revenue engineering services with each of the three (3) qualified providers; and

WHEREAS, this Agreement has been negotiated and finalized between those parties whereby the services shall be provided by the Consultant to the Authority at a fair and reasonable price;

NOW, THEREFORE, in consideration of payments hereinafter stipulated to be made to the Consultant by the Authority, the parties do hereby agree as follows:

**ARTICLE 1
THE SERVICES**

The Authority agrees to and hereby retains the Consultant, as an independent contractor, and the Consultant agrees to provide services to the Authority upon the terms and conditions provided in this Agreement. The Authority is the sole and exclusive client of the Consultant for the purposes of this Agreement, and this Agreement is exclusively between the Authority and the Consultant. The scope of services (the “Services”), which is described in detail in Appendix A attached hereto and incorporated herein, shall include, but not be limited to, rate/revenue analysis, traffic modeling, technical assistance, problem resolution assistance, project management duties, and duties imposed on the Traffic Consultant by Authority trust agreements. As directed by the Authority by separate Work Authorization, the Consultant shall perform such Services in relation to all CTRMA turnpike projects and potential projects, which may include, but are not limited to (1) the 183-A Turnpike; (2) 290 East Toll; (3) SH 71 Toll; (4) SH 45 Southwest Toll (5) 183 South Toll; and (6) 183 North Toll; (7) MoPac Express; and (8) MoPac South Toll.

The Consultant, as part of the Services, also shall assist the Authority in achieving the goals established in the CTRMA’s Strategic Plan, as adopted pursuant to Texas Transportation Code § 370.261 and as it may be amended from time to time by the CTRMA Board of Directors. For specific aspects of the

Services, to the extent required by any trust agreement, the Consultant shall be expected to operate independently from the Authority and without extensive oversight and direction. The Consultant shall commit the personnel and resources reasonably required to respond promptly and fully to the responsibilities and tasks assigned by the CTRMA throughout the term of the Consultant's performance of the Services described in this Agreement.

By written notice or order, Authority may, from time to time, order work suspension and/or make changes in the general scope of this Agreement, including, but not limited to, the services furnished to Authority by Consultant as described in the Scope of Work contained in the Work Authorization. If any such work suspension or change causes an increase or decrease in the price of said Work Authorization, or in the time required for its performance, Consultant shall promptly notify Authority thereof and assert its claim for adjustment within ten (10) calendar days after the change or work suspension is ordered, and an equitable adjustment shall be negotiated.

ARTICLE 2

“TRAFFIC CONSULTANTS” UNDER TRUST AGREEMENTS

Without limiting the provision of Article 1 above, and subject to a Work Authorization and the Work Authorization requirements found in subsection 3.b. herein, the Consultant shall perform the obligations of the “Traffic Consultants” under the Authority's current Master Trust Indenture, as amended, and, as agreed by the Parties, all supplemental, superceding, or additional trust agreements (collectively the “Trust Agreements”). The Authority has covenanted in Section 714 of the current Trust Agreement that, until the bonds issued in accordance with that Trust Agreement and the interest thereon shall have been paid or provision for such payment shall have been made, it will employ the Traffic Consultants for the purpose of performing and carrying out the duties imposed on it by the Trust Agreement. Those duties are summarized in the Scope of Services and provide a general, but not comprehensive, listing of the types of obligations the Consultant will be requested to perform under the Trust Agreements.

ARTICLE 3

COMPENSATION

Authorization for Consultant to perform the Services, compensation for Consultant's work, and other aspects of the mutual obligations concerning Consultant's work and payment therefore are as follows:

- a) Notwithstanding any provisions of this Agreement to the contrary, AUTHORITY and CONSULTANT mutually agree that AUTHORITY's maximum cumulative payment obligation (including obligation for CONSULTANT's profit) shall be Five Million and No/100 Dollars (\$5,000,000.00) which shall include all amounts payable to CONSULTANT for its subcontracts, leases, materials and costs arising from, or due to termination of this Agreement.
- b) BASIS FOR COMPENSATION. Subject to the terms of a Work Authorization issued pursuant to subsection 3.c. below, the Authority agrees to pay, and the Consultant agrees to accept as full and sufficient compensation and reimbursement for the performance of all Services as set forth in this Agreement, hourly rates for the staff working on the assignment computed as follows:

$$\text{Direct Labor Cost} \times (1.0 + \text{FAR}) \times 1.10$$

where Direct Labor Cost equals salary divided by 2080; FAR equals Consultant's most recent audited overhead rate under 48 C.F.R. Part 31, Federal Acquisition Regulations (FAR 31); and 1.10 reflects a 10 percent (10%) profit. Representative rates computed through this methodology as of the Effective Date of this Agreement are reflected in Appendix B. Rates will be revised annually to reflect adjustments to the Direct Labor Costs and audited FAR rates; no adjustment shall be made to the specified profit percentage. The first adjustment shall be considered in January 2021. All adjustments shall be agreed to by the parties prior to implementation, and the Authority shall have the right to review and/or audit Consultant's Direct Labor Costs and FAR rates upon written request and as provided in subsection (f) hereto. During the term of this Agreement Consultant shall provide to the Authority, prior to requesting any adjustment to rates, a copy of the report establishing a new FAR rate for Consultant.

The payment of the hourly rates and allowed costs shall constitute full payment for all Services, liaisons, products, materials, and equipment required to deliver the Services.

- c) **COMPENSATION FOR WORK AUTHORIZATIONS.** The Services to be performed by the Consultant pursuant to this Agreement shall be assigned by the Executive Director or designee and documented in a manner appropriate for the size and complexity of the specific tasks. Each activity, task, or project shall be performed pursuant to a separate Work Authorization, signed by the Executive Director or designee and the Consultant. Work shall be in accordance with the scope, schedule, and budget set forth in said Work Authorization. The standard form of Work Authorization is attached hereto and incorporated herein as Appendix C, which standard form may be modified during the term of this Agreement upon the reasonable request of the Executive Director or designee and agreement of the Consultant. Upon written directive from the Executive Director or designee (which may occur via electronic mail), the Consultant shall prepare the Work Authorization for the specific task, to be submitted for the Executive Director or designee's approval. No work shall begin on the activity until the Work Authorization is approved and fully executed. The basis for payment on each Work Authorization will be either (i) lump sum or (ii) hourly rate as computed pursuant to subsection 3.b. above, as stipulated in the Work Authorization. In neither case will the maximum be exceeded without prior written approval from the Authority. The costs associated with work performed on any Work Authorization will be tracked and reported to the Authority separately from other work performed by the Consultant. The monthly invoice to the Authority will include a progress summary of the work performed the previous month on each ongoing Work Authorization.
- d) **EXPENSES.** As indicated above, the compensation computed in accordance with subsections 3.b. and 3.c. is anticipated by the Authority and the Consultant to be full and sufficient compensation and reimbursement for the Services. Notwithstanding the foregoing, the Consultant shall be entitled to reimbursement for reasonable out-of-pocket expenses actually incurred by the Consultant that are necessary for the performance of its duties under this Agreement, said expenses being limited to travel costs incurred in conformance with the Authority's travel policy, printing costs, automobile expenses being reimbursed at the federal mileage rates for travel originating from the office of the applicable Consultant employee or subconsultant, application fees, delivery charges, and

other expenses directly approved, in advance, by the Authority. Except for automobile expenses paid at the federal mileage rate and travel paid at state approved rates (if available), all such reimbursement shall be at one-hundred percent (100%) of the actual cost thereof paid by the Consultant to unaffiliated entities; provided, however, that all non-travel related amounts in excess of \$2,000 for which the Consultant intends to seek reimbursement pursuant to this subsection 3.d. must be approved in advance and in writing by the Authority, except when such advance approval is impractical due to a bona fide emergency situation. The Authority shall not reimburse the Consultant for travel, lodging, and similar expenses incurred by the Consultant to bring additional staff to its local office or to otherwise reassign personnel to provide basic engineering and technical support of the Consultant's performance of the Services. The Consultant shall take all reasonable steps to acquire all goods and services subject to reimbursement by the Authority under this Agreement on a tax-free basis pursuant to the Authority's tax-exempt status described in subsection 3.i.

- e) **NON-COMPENSABLE TIME.** Time spent by the Consultant's employees or subconsultants to perform Services or functions capable of being carried out by other, subordinate personnel with a lower hourly rate shall be billed at a rate equivalent to that of the applicable qualified subordinate personnel. Time spent by the Consultant's personnel or subconsultants in an administrative or supervisory capacity not related to the performance of the Services shall not be compensable. Time spent on work that is in excess of what would reasonably be considered appropriate for the performance of such Services shall not be compensable. No compensation shall be made for revisions to the Consultant's or subconsultants' Services or deliverables required due in any way to the error, omission, or fault of the Consultant, its employees, agents, subconsultants, or contractors.

- f) **INVOICES AND RECORDS.** The Consultant shall submit two (2) copies of its monthly invoices certifying the fees charged and expenses incurred in providing the Services under this Agreement during the previous month, and shall also present a reconciliation of monthly invoices and the Work Authorization (and related estimates) to which the work relates. Each invoice shall be in such detail as is required by the Authority and, if the work is eligible for payment through a financial assistance agreement with the Texas Department of Transportation ("TxDOT"), in such detail as required by TxDOT, including a breakdown of Services provided on a project-by-project basis and/or pursuant to specified Work Authorizations, together with other Services requested by the Authority. Upon request of the Authority, the Consultant shall also submit certified time and expense records and copies of invoices that support the invoiced fees and expense figures. All invoices must be consistent with the rates represented in Appendix B, and direct labor costs for employees performing work for the Authority but not shown on Appendix B must be provided with any invoice reflecting such work. Unless waived in writing by the Executive Director or his designee, no invoice may contain, and the Authority will not be required to pay, any charge which is more than three (3) months old at the time of invoicing. All books and records relating to the Consultant's or subconsultants' time, out-of-pocket expenses, materials, or other services or deliverables invoiced to the Authority under this Agreement shall be made available during the Consultant's normal business hours to the Authority and its representatives for review, copying, and auditing throughout the term of this Agreement

and, after completion of the work, for three (3) years, or such period as is required by Texas or Federal law, whichever is longer.

- g) **EFFECT OF PAYMENTS.** No payment by the Authority shall relieve the Consultant of its obligation to deliver timely the Services required under this Agreement. If after approving or paying for any Service, product or other deliverable, the Authority determines that said Service, product or deliverable does not satisfy the requirements of this Agreement, the Authority may reject same and, if the Consultant fails to correct or cure same within a reasonable period of time and at no additional cost to the Authority, the Consultant shall return any compensation received therefore. In addition to all other rights provided in this Agreement, the Authority shall have the right to set off any amounts owed by the Consultant pursuant to the terms of this Agreement upon providing the Consultant prior written notice thereof.
- h) **PLACE OF PAYMENT.** Payments owing under this Agreement will be made by the Authority within thirty (30) days after receipt of the monthly invoice therefore, together with suitable supporting information, provided that if the payment is one eligible for reimbursement to the Authority from TxDOT, payment will be made within fifteen (15) business days of receipt by the Authority of the TxDOT payment. In the event the Authority disputes payment, the Authority will pay the undisputed portion when due. Payment shall be forwarded to the address shown for the Consultant:

Stantec Consulting Services Inc.
13980 Collections Center Drive
Chicago, IL 60693

- i) **TAXES.** All payments to be made by the Authority to the Consultant pursuant to this Agreement are inclusive of federal, state, or other taxes, if any, however designated, levied, or based. The Authority acknowledges and represents that it is a tax-exempt entity under Sections 151.309, et seq., of the Texas Tax Code. Title to any consumable items purchased by the Consultant in performing this Agreement shall be deemed to have passed to the Authority at the time the Consultant takes possession or earlier, and such consumable items shall immediately be marked, labeled, or physically identified as the property of the Authority, to the extent practicable.
- j) **AS-NEEDED BASIS.** As provided for above, the Authority shall request that the Consultant perform specific Services on an as-needed basis and through the issuance of Work Authorizations. No representation or assurance has been made on behalf of the Authority to the Consultant as to the total compensation to be paid to the Consultant under this Agreement.
- k) **COMPENSATION OF SUBCONSULTANTS.** As noted in the Consultant's response to the RFQ, the Consultant will employ subconsultants providing Services under this Agreement. All subconsultants providing Services under this Agreement shall be subject to, and compensated or reimbursed in accordance with, all requirements of this Article 3, provided that each subconsultant shall utilize its own actual hourly rates (computed using

its own multiplier based on actual audited FAR rates or audited overhead rates if FAR rates are not available) provided that no such rates shall exceed the corresponding rates paid by the Consultant for its personnel of comparable grade, category and experience, and further provided that no Subconsultant's FAR rate or audited overhead rate may exceed that of the Consultant without the prior written consent of the Authority. The Consultant agrees to pay its subconsultants for satisfactory performance of their contracts no later than thirty (30) days from its receipt of payment from the CTRMA. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the CTRMA. This clause applies to payments to all subconsultants. Consultant is authorized to use those subconsultants identified in Appendix D attached hereto and incorporated herein, being those subconsultants identified in the response of Consultant to the RFQ. Additional subconsultants may only be utilized with the prior written consent of the Executive Director of the Authority.

- 1) **MOST FAVORED CUSTOMER.** The Consultant shall voluntarily and promptly disclose to the Authority, and immediately provide the Authority with, the benefits of any discounted hourly fees and rates offered by the Consultant to any public entity customer in the State of Texas for comparable traffic and revenue studies. The Consultant hereby represents to the Authority, as of the effective date of this Agreement and throughout the term thereof, that except as previously disclosed in writing it has and will have no contract or arrangement with any public entity customer in the State of Texas for comparable traffic and revenue studies that provides such customer with fees, or rates that are more favorable than those afforded the Authority under this Agreement. The Consultant shall make available to the Authority for review, copying, and auditing throughout the term of this Agreement and for three (3) years or such period as is required by Texas or Federal law, whichever is longer, after the expiration thereof all such books and records as shall be necessary for the Authority or its representatives to determine compliance with this provision.

ARTICLE 4 TIME OF PERFORMANCE

It is understood and agreed that the term of this Agreement shall be a maximum of five (5) years, commencing September 15, 2020, and concluding September 15, 2025, (the "Expiration Date") subject to the earlier termination of this Agreement pursuant to Articles 5 or 6 below or further extension upon agreement of both parties. The initial period of performance is three (3) years commencing on the Effective Date, and there shall be two (2) successive one (1) year renewal terms following the expiration of the initial three (3) year period. In addition to any termination rights set forth in this Agreement, either party may elect not to extend the term of one or both of the renewal years by providing sixty (60) days written notice to the other prior to the end of the initial term of the first renewal term. Absent such notice or termination pursuant to other provisions of this Agreement, the renewal terms will automatically take effect. If at any time during the contract term the Consultant cannot provide the requested Services within the time required by the CTRMA or for any other reason, the Authority reserves the unilateral right to procure the Services from any other source it deems capable of providing those Services.

ARTICLE 5
TERMINATION FOR DEFAULT

Time is of the essence with respect to the performance and completion of all the Services to be furnished by the Consultant pursuant to Work Authorizations issued and which specify an agreed-upon completion or delivery date. Without limiting the foregoing, the Consultant shall furnish all Services in such a manner and at such times as the development schedules of the Projects require so that no delay in the progression of the evaluation, funding, design, or construction of the Projects will be caused by or be in any way attributable to the Consultant. Should the Consultant at any time, in the reasonable opinion of the Authority, not carry out its obligations under this Agreement or not be progressing toward completion of the Services to be rendered hereunder in an expeditious manner, or if the Consultant shall fail in any manner to discharge any other of its obligations under this Agreement, the Authority may, upon providing the Consultant with thirty (30) days prior written notice pursuant to Article 5 hereof and opportunity to cure, terminate this Agreement effective on the date following said 30-day notice and cure period (the "Termination Date"). Such termination shall not constitute a waiver or release by the Authority of any claims for damages, claims for additional costs incurred by the Authority to complete and/or correct the work described in this Agreement, or any other claims or actions arising under this Agreement or available at law or equity which it may have against the Consultant for its failure to perform satisfactorily any obligation hereunder, nor shall such termination pursuant to this Article 5 or Article 6 below abrogate or in any way affect the indemnification obligations of the Consultant set forth in Article 17 hereof.

If the Authority shall terminate this Agreement as, provided either in this Article 5 or Article 6, no fees of any type, other than fees due and payable pursuant to Article 3 hereof for work performed and acceptable to the Authority, as of the Termination Date or Optional Termination Date, as applicable, shall thereafter be paid to the Consultant, and the Authority shall have a right to set off or otherwise recover any damages incurred by reason of the Consultant's breach hereof, together with the right to set off amounts owed to the Consultant pursuant to the indemnity provisions. In determining the amount of any payments owed to the Consultant, the value of the work performed by the Consultant prior to termination shall be no greater than the value that would result by compensating the Consultant in accordance with Article 3 hereof for all Services performed and expenses reimbursable in accordance with this Agreement.

ARTICLE 6
OPTIONAL TERMINATION

In addition to the process for termination described above, this Agreement may also be terminated as follows:

- a. **GENERALLY.** The Authority has the right to terminate this Agreement at its sole option, at any time with or without cause, by providing thirty (30) days written notice of such intention to terminate pursuant to this subsection 6.a. hereof and by stating in said notice the "Optional Termination Date". Upon such termination, the Authority shall enter into a settlement with the Consultant upon an equitable basis as determined by the Authority, which shall fix the value of the work performed by the Consultant prior to the Optional Termination Date. In determining the value of the work performed, the Authority in all events shall compensate the Consultant for any reasonable costs or expenses attributable to the exercise of the Authority's optional termination, including reasonable costs related to developing a transition plan and providing data as provided for in Article 7, provided, however, that no

consideration will be given to anticipated profit which the Consultant might possibly have made on the uncompleted portion of the Services.

- b. **NO FURTHER RIGHTS, ETC.** Termination of this Agreement and payment of an amount in settlement as described in this Article 6 shall extinguish all rights, duties, obligations, and liabilities of the Authority and the Consultant under this Agreement, and this Agreement shall be of no further force and effect, provided, however, such termination shall not act to release the Consultant from liability for any previous default either under this Agreement or under any standard of conduct set by common law or statute. Requirements that survive termination are outlined in Article 35.
- c. **NO FURTHER COMPENSATION.** If the Authority shall terminate this Agreement as provided in this Article 6, no fees of any type, other than fees due and payable as of the Optional Termination Date, shall thereafter be paid to the Consultant, provided that the Authority shall not waive any right to damages incurred by reason of the Consultant's breach thereof. The Consultant shall not receive any compensation for Services performed or expenses incurred by the Consultant after the Optional Termination Date, and any such Services performed or expenses incurred shall be at the sole risk and expense of the Consultant.

ARTICLE 7 TERMINATION, GENERALLY

The Authority's rights and options to terminate this Agreement, as provided in any provision of this Agreement, shall be in addition to, and not in lieu of, any and all rights, actions, options, and privileges otherwise available under law or equity to the Authority by virtue of this Agreement or otherwise. Failure of the Authority to exercise any of its said rights, actions, options, and privileges to terminate this Agreement as provided in any provision of this Agreement or otherwise shall not be deemed a waiver of any of said rights, actions, options, or privileges or of any rights, actions, options, or privileges otherwise available under law or equity with respect to any continuing or subsequent breaches of this Agreement or of any other standard of conduct set by common law or statute.

Upon request by the Executive Director of the Authority, and subject to Article 13 hereto, The Consultant shall develop a transition plan to be implemented upon termination of this Agreement with the Consultant for any reason or upon the release of any subconsultant so as to ensure a smooth, efficient, and uninterrupted transition to any successor Consultant or subconsultant. The plan shall anticipate the steps necessary to transfer documents, computerized data, plans, work tasks, etc. in possession of or to be provided by the Consultant or its subconsultant(s), as the case may be, and include a schedule of events necessary to complete the transition. The plan should include, but not be limited to, a list of original documents/data being held on behalf of the Authority by the Consultant or its subconsultants; the manner and form in which information is being held; accessibility to the information; the Consultant's records retention policy and/or plan; and strategy to minimize disruption of Services in the event of the release of a subconsultant. A copy of the plan shall be given to the Executive Director for review and approval within thirty (30) days of receipt of the Executive Director's request and shall be updated as necessary to reflect any changes in Consultant activity.

ARTICLE 8
SUSPENSION OR MODIFICATION OF SERVICES; DELAYS AND DAMAGES

In addition to the foregoing rights and options to terminate this Agreement, the Authority may elect to suspend any portion of the Services of the Consultant hereunder, but not terminate this Agreement, by providing the Consultant with prior written notice to that effect. Thereafter, the suspended Services may be reinstated and resumed in full force and effect upon receipt from the Authority of thirty (30) days prior written notice requesting same. Similarly, the Authority may expand, limit, or cancel any portion of the Services previously assigned to the Consultant in accordance with this Agreement. The Consultant shall not be entitled to any damages or other compensation of any form in the event that the Authority exercises its rights to suspend or modify the Services pursuant to this Article 8, provided, however, that any time limits established by the parties in any Work Authorization or otherwise for the completion of specific portions of the Services suspended pursuant to this Article 8 shall be extended to allow for said suspension or modifications thereof. Without limiting the foregoing, the Consultant agrees that no claims for damages or other compensation shall be made by the Consultant for any delays or hindrances occurring during the progress of any portion of the Services specified in this Agreement as a result of any suspension or modification of the Services or otherwise. Such delays or hindrances, if any, shall be provided for by an extension of time for such reasonable periods as the Authority may decide. It is acknowledged, however, that permitting the Consultant to proceed to complete any Services or any part of them after the originally specified date for completion, or after the date to which the time for completion may have been extended, shall in no way operate as a waiver on the part of the Authority or any of its rights herein.

ARTICLE 9
PERSONNEL, EQUIPMENT AND MATERIAL, GENERALLY

Consultant shall provide personnel and equipment as follows:

- a. **ADEQUATE PERSONNEL, ETC.** The Consultant shall furnish and maintain, at its own expense, adequate and sufficient personnel (drawn from its own employees or from approved subconsultants) and equipment, in the reasonable opinion of the Authority, to perform the Services with due and reasonable diligence customary of an engineering firm enjoying a favorable national reputation, and in all events without delays attributable to the Consultant which have a reasonable likelihood of adversely affecting the progress of others involved with one or more of the Projects or the progress of the feasibility evaluation, design or construction of any such Project. All persons, whether employees of the Consultant or of an approved subconsultant, providing the Services shall be fully licensed to the extent required by their professional discipline associations' codes or otherwise by law.
- b. **REMOVAL OF PERSONNEL.** All persons providing the Services, whether employees of the Consultant or of an approved subconsultant, shall have such knowledge and experience as will enable them, in the Consultant's reasonable belief, to perform the duties assigned to them. Any such person who, in the opinion of the Authority, is incompetent or by his/her conduct becomes detrimental to the provision of the Services shall, upon request of the Authority, immediately be removed from the Services. The Consultant shall furnish the Authority with a fully qualified candidate for the removed person within ten (10) days thereafter, provided, however, said candidate shall not begin work under this Agreement unless and until approved by the Authority.

- c. CONSULTANT FURNISHES EQUIPMENT, ETC. Except as otherwise specified or agreed to by the CTRMA, the Consultant shall furnish all equipment, transportation, supplies, and materials required for its Services under this Agreement.

ARTICLE 10 KEY PERSONNEL

The Consultant acknowledges and agrees that the individual(s) identified on Appendix E attached hereto and incorporated herein are key and integral to the satisfactory performance of the Consultant under this Agreement. Throughout the term of this agreement, the Consultant agrees that the identified individual(s), whether employee(s) of the Consultant or of an approved subconsultant, will remain in charge of the performance of the Services and shall devote substantial and sufficient time and attention thereto. The death or disability of any such individual, his/her disassociation from the Consultant or the approved subconsultant, or his/her failure or inability to devote sufficient time and attention to the Services shall require the Consultant promptly to replace said individual with a person suitably qualified and otherwise acceptable to the Authority. In no event shall the Consultant remove, transfer, or reassign any individual identified on Appendix E except as instructed by, or with the prior written consent of, the Authority, which consent shall not be reasonably withheld. The Consultant shall use its best efforts to enhance continuity in the key personnel, subconsultants, and other employees regularly performing the Services. Individuals may be added to Appendix E with the mutual consent of the Consultant and the Authority.

ARTICLE 11 BUSINESS OPPORTUNITY PROGRAM AND POLICY COMPLIANCE

It is the policy of the Authority's Board of Directors that disadvantaged and small business have the maximum practicable opportunity to participate in the awarding of Authority contracts and related subcontracts. To do so the Authority has developed a Business Opportunity Program and Policy ("BOPP"), which is incorporated herein by reference for all purposes. The Authority requires contractors to comply with the BOPP. The Consultant acknowledges that certain Services to be performed under this Agreement are subcontractable and will be subcontracted in accordance with the BOPP and as represented in Consultant's proposal in response to the RFQ. Consultant agrees to submit monthly subcontracting reports as part of its monthly invoices.

ARTICLE 12 PLANNING AND PERFORMANCE REVIEWS; INSPECTIONS

As directed by the Authority, key personnel shall meet with the Authority's Executive Director and/or his designee(s) upon request (a) to assess the Consultant's progress under this Agreement and performance of the Services; and (b) to plan staffing levels to be provided by the Consultant to the Authority for the upcoming calendar year. The Consultant shall permit inspections of its Services and work by the Authority or others, when requested by the Authority. Nothing contained in this Agreement shall prevent the Authority from scheduling such other planning and performance reviews with the Consultant or inspections as the Authority determines necessary.

ARTICLE 13
OWNERSHIP OF REPORTS

Ownership of reports and related materials prepared by Consultant (or any subconsultant) at the direction of the Authority shall be as follows:

- a. **GENERALLY.** All of the documents, reports, plans, surveys, estimates, computer records, discs and tapes, proposals, sketches, diagrams, charts, calculations, correspondence, memoranda, survey notes, opinions, maps, photographs, drawings, data, analyses and other data and materials, and any part thereof, created, compiled or to be compiled by or on behalf of the Consultant solely under this Agreement (“work product”), including all information prepared for or posted on the Authority’s website and together with all materials and data furnished to it by the Authority, shall at all times be and remain the property of the Authority and, for a period of three (3) years from completion of the Services or such period as is required by law, whichever is longer, if at any time demand be made by the Authority for any of the above materials, records, and documents, whether after termination of this Agreement or otherwise, such shall be turned over to the Authority without delay. The Authority hereby grants the Consultant a revocable license to retain and utilize the foregoing materials, said license to terminate and expire upon the earlier to occur of (a) the completion of Services described in this Agreement or (b) the termination of this Agreement, at which time the Consultant shall deliver to the Authority all such materials and documents. If the Consultant or a subconsultant desires later to use any of the data generated or obtained by it in connection with the Projects or any other portion of the work product resulting from the Services, it shall secure the prior written approval of the Authority. Notwithstanding anything contained herein to the contrary, the Consultant shall have the right to retain a copy of the above materials, records, and documents for its archives.
- b. **SEPARATE ASSIGNMENT.** If for any reason the agreement of the Authority and the Consultant set forth in subsection 13.a. above regarding the ownership of work product and other materials is determined to be unenforceable, either in whole or in part, the Consultant hereby assigns and agrees to assign to the Authority all right, title, and interest that Consultant may have or at any time acquire in said work product and other materials which are prepared solely for this Agreement, without royalty, fee or other consideration of any sort, and without regard to whether this Agreement has terminated or remains in force. The Authority hereby acknowledges, however, that all documents and other work product provided by the Consultant to the Authority and resulting from the Services performed under this Agreement are intended by the Consultant solely for the use for which they were originally prepared. Notwithstanding anything contained herein to the contrary, the Consultant shall have no liability for the use by the Authority of any work product generated by the Consultant under this Agreement on any project other than for the specific purpose and Project for which the work product was prepared. Any other reuse of such work product without the prior written consent of the Consultant shall be at the sole risk of the Authority.
- c. **USE OF CONSULTANT WORK PRODUCT.** Except for final versions of reports which are prepared in connection with project financings, the Authority will provide Consultant written advance notice prior to releasing Consultant’s work product to any third party. Upon

receipt of notice, Consultant will have a reasonable amount of time to review such disclosure and provide the Authority written notice of the completion of review prior to release.

The Authority acknowledges that the Consultant's work product will be developed using data that is available at the time of the execution of a given work order, and will not constitute any guarantee or other assurance of future events. The Consultant will prepare work product using practices that are standard procedures in the industry.

ARTICLE 14 SUBLETTING

The Consultant shall not sublet, assign, or transfer any part of the work or obligations included in this Agreement without the prior written approval of the Authority, which approval shall not be reasonably withheld. Responsibility for sublet, assigned or transferred work shall remain with the Consultant.

ARTICLE 15 APPEARANCE AS WITNESS AND ATTENDANCE AT MEETINGS

Consultant shall cooperate with the Authority and requests for attendance at meetings and in various types of proceedings as follows:

- a. **WITNESS.** If requested by the Authority or on its behalf, the Consultant shall prepare such traffic engineering, feasibility, or other exhibits as may be requested for all hearings and trials related to any of the Projects, the Services, or the Authority's activities generally and, further, it shall prepare for and appear at conferences at the offices of legal counsel and shall furnish competent expert engineering witnesses to provide such oral testimony and to introduce such demonstrative evidence as may be needed throughout all trials and hearings with reference to any litigation relating to the Projects, the Services, or the Authority's activities.
- b. **MEETINGS.** At the request of the Authority, the Consultant shall provide appropriate personnel for conferences at its offices, or attend meetings and conferences at (a) the various offices of the Authority, (b) at the district headquarters or offices of TxDOT, (c) the offices of the Authority's legal counsel, bond counsel, and/or financial advisors, (d) at the site of any Project, or (e) any reasonably convenient location. Without limiting the foregoing, the Consultant shall provide personnel for periodic meetings with underwriters, rating agencies, and other parties when requested by the Authority.
- c. **WORK AUTHORIZATION.** In the event that services under this section are not covered by an existing Work Authorization, the Authority will issue a Work Authorization, pursuant to Article 3 hereto, to cover such services.

ARTICLE 16 COMPLIANCE WITH LAWS AND AUTHORITY POLICIES

The Consultant shall comply with all applicable federal, state, and local laws, statutes, ordinances, rules, regulations, codes and with the orders and decrees of any courts or administrative bodies or tribunals

in any matter affecting the performance under this Agreement, including, without limitation, workers' compensation laws, antidiscrimination laws, environmental laws, minimum and maximum salary and wage statutes and regulations, health and safety codes, licensing laws and regulations, the Authority's enabling legislation (Chapter 370 of the Texas Transportation Code), and all amendments and modifications to any of the foregoing, if any. The Consultant shall also comply with the Authority's policies and procedures related to operational and administrative matters, such as, but not limited to, security of and access to CTRMA information and facilities. When requested the Consultant shall furnish the Authority with satisfactory proof of compliance with said laws, statutes, ordinances, rules, regulations, codes, orders, and decrees above specified.

ARTICLE 17 AUTHORITY INDEMNIFIED

THE CONSULTANT SHALL INDEMNIFY AND SAVE HARMLESS THE AUTHORITY AND ITS OFFICERS, DIRECTORS, EMPLOYEES, AND AGENTS (WHICH, FOR PURPOSES OF THIS AGREEMENT, SHALL INCLUDE THE AUTHORITY'S GENERAL COUNSEL, BOND COUNSEL, AND FINANCIAL ADVISOR (S)), FROM ANY CLAIMS, COSTS OR LIABILITIES OF ANY TYPE OR NATURE AND BY OR TO ANY PERSONS WHOMSOEVER, ARISING FROM THE CONSULTANT'S NEGLIGENT ACTS, ERRORS OR OMISSIONS WITH RESPECT TO THE CONSULTANT'S PERFORMANCE OF THE WORK TO BE ACCOMPLISHED UNDER THIS AGREEMENT, WHETHER SUCH CLAIM OR LIABILITY IS BASED IN CONTRACT, TORT OR STRICT LIABILITY. IN SUCH EVENT, THE CONSULTANT SHALL ALSO INDEMNIFY AND SAVE HARMLESS THE AUTHORITY, ITS OFFICERS, DIRECTORS, EMPLOYEES, AND AGENTS (WHICH, FOR PURPOSES OF THIS AGREEMENT, SHALL INCLUDE THE AUTHORITY'S GENERAL COUNSEL, BOND COUNSEL, AND FINANCIAL ADVISOR (S)) FROM ANY AND ALL EXPENSES, INCLUDING REASONABLE ATTORNEYS' FEES, INCURRED BY THE INDEMNIFIED ENTITY (S) IN LITIGATING OR OTHERWISE RESISTING SAID CLAIMS, COSTS OR LIABILITIES. IN THE EVENT THE AUTHORITY, ITS OFFICERS, DIRECTORS, EMPLOYEES, AND AGENTS (WHICH, FOR PURPOSES OF THIS AGREEMENT, SHALL INCLUDE THE AUTHORITY'S GENERAL COUNSEL, BOND COUNSEL, AND FINANCIAL ADVISOR (S)) IS/ARE FOUND TO BE PARTIALLY AT FAULT, THE CONSULTANT SHALL, NEVERTHELESS, INDEMNIFY THE INDEMNIFIED ENTITY (S) FROM AND AGAINST THE PERCENTAGE OF NEGLIGENCE ATTRIBUTABLE TO THE CONSULTANT, ITS OFFICERS, DIRECTORS, EMPLOYEES, AGENTS, SUBCONSULTANTS, AND CONTRACTORS OR TO THEIR CONDUCT.

NOTWITHSTANDING THE FOREGOING, THE CONSULTANT SHALL NOT BE RESPONSIBLE FOR (A) CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, OR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE PROJECT UNLESS DEVELOPMENT OR OVERSIGHT OF SUCH MATTERS IS SPECIFICALLY ASSIGNED TO THE CONSULTANT; (B) THE FAILURE OF ANY CONTRACTOR, SUBCONTRACTOR, VENDOR, OR OTHER PROJECT PARTICIPANT, NOT UNDER CONTRACT TO THE CONSULTANT, TO FULFILL CONTRACTUAL RESPONSIBILITIES TO THE AUTHORITY OR TO COMPLY WITH FEDERAL, STATE OR LOCAL LAWS, REGULATIONS AND CODES; OR (C) PROCURING PERMITS, CERTIFICATES AND LICENSES REQUIRED FOR ANY CONSTRUCTION UNLESS SUCH PROCUREMENT RESPONSIBILITIES ARE SPECIFICALLY ASSIGNED TO THE CONSULTANT IN ACCORDANCE WITH THIS AGREEMENT.

**ARTICLE 18
CONFLICTS OF INTEREST**

The Consultant represents and warrants to the Authority, as of the effective date of this Agreement and throughout the term hereof, that it, its employees and subconsultants (a) have no financial or other beneficial interest in any contractor, engineer, product or service evaluated or recommended by the Consultant, except as expressly disclosed in writing to the Authority, (b) shall discharge their consulting engineering responsibilities under this Agreement professionally, impartially and independently, and after considering all relevant information related thereto, and (c) are under no contractual or other restriction or obligation, the compliance with which is inconsistent with the execution of this Agreement or the performance of their respective obligations hereunder. In the event that a firm (individually or as a member of a consortium) submits a proposal to work for the Authority, Consultant shall comply with the Authority's conflict of interest policies and shall make disclosures as if it were one of the key personnel designated under such policies.

**ARTICLE 19
INSURANCE**

Prior to beginning the Services designated in this Agreement, the Consultant shall obtain and furnish certificates to the Authority for the following minimum amounts of insurance:

- a. **WORKERS' COMPENSATION INSURANCE.** In accordance with the laws of the State of Texas, and employer's liability coverage with a limit of not less than \$500,000. A "Waiver of Subrogation" in favor of the Authority shall be provided.
- b. **COMMERCIAL GENERAL LIABILITY INSURANCE.** With limits not less than \$1,000,000 for bodily injury, including those resulting in death, and property damage on account of any one occurrence, with an aggregate limit of \$1,000,000. A "Waiver of Subrogation" in favor of the Authority shall be provided.
- c. **BUSINESS AUTOMOBILE LIABILITY INSURANCE.** Applying to owned, non-owned, and hired automobiles in an amount not less than \$1,000,000 for bodily injury, including death, to any one person, and for property damage on account of any one occurrence. This policy shall not contain any limitation with respect to a radius of operation for any vehicle covered and shall not exclude from the coverage of the policy any vehicle to be used in connection with the performance of the Consultant's obligations under this Agreement. A "Waiver of Subrogation" in favor of the Authority shall be provided.
- d. **ARCHITECTS AND/OR ENGINEERS PROFESSIONAL LIABILITY INSURANCE.** In the amounts normally carried for its own protection in the practice of providing general consulting services, but in no event less than \$3,000,000 per claim and aggregate. Coverage must be continuously maintained for a period of three (3) years beyond the Consultant's completion of the Services.
- e. **EXCESS UMBRELLA LIABILITY.** With minimum limits of \$1,000,000 per claim and in the aggregate, annually, as applicable excess of the underlying policies required at a.-d.

above. The Umbrella Policy shall contain the provision that it will continue in force as an underlying insurance in the event of exhaustion of underlying aggregate policy limits.

- f. **GENERAL FOR ALL INSURANCE.** The Consultant shall promptly, upon execution of this Agreement, furnish certificates of insurance to the Authority indicating compliance with the above requirements. Certificates shall indicate the name of the insured, the name of the insurance company, the name of the agency/agent, the policy number, the term of coverage, and the limits of coverage.

All policies are to be written through companies (a) registered to do business in the State of Texas; (b) rated: (i), with respect to the companies providing the insurance under subsections 19.a. through d., above, by A. M. Best Company as “A-X” or better (or the equivalent rating by another nationally recognized rating service) and (ii) with respect to the company providing the insurance under subsections 19.d. and e., a rating by A. M. Best Company or similar rating service satisfactory to the Authority and/or its insurance consultant; and (c) otherwise acceptable to the Authority.

All policies are to be written through companies registered to do business in the State of Texas. Such insurance shall be maintained in full force and effect during the life of this Agreement or for a longer term as may be otherwise provided for hereunder. Insurance furnished under subsections 19.b., and c., above, shall name the Authority additional insureds and shall protect the Authority, the Consultant, their officers, employees, directors, agents, and representatives from claims for damages for bodily injury and death and for damages to property arising in any manner from the negligent or willful wrongful acts or failures to act by the Consultant, its officers, employees, directors, agents, and representatives in the performance of the Services rendered under this Agreement. Applicable Certificates shall also indicate that the contractual liability assumed in Article 17, above, is included.

The insurance carrier shall include in each of the insurance policies required under subsections 19.a., b., c., d., and e., the following statement: “This policy will not be canceled or non-renewed during the period of coverage without at least thirty (30) days prior written notice addressed to the Central Texas Regional Mobility Authority, 301 Congress, Suite 650, Austin, TX 78701, Attention: Executive Director.”

ARTICLE 20 COORDINATION OF CONTRACT DOCUMENTS

The Statement of Qualifications for Traffic and Revenue Engineering Services and Appendices thereto, dated August 17, 2020, submitted by Stantec to the Authority (“Statement of Qualification”) is attached hereto and incorporated herein as Appendix F for all purposes, provided, however, that in the event of any conflict between said Statement of Qualifications and any other provision of, appendices or exhibits to this Agreement, the Statement of Qualifications shall be subordinate and the provision, appendices, or exhibits of this Agreement shall control.

ARTICLE 21
RELATIONSHIP BETWEEN THE PARTIES

Notwithstanding the anticipated collaboration between the parties hereto, or any other circumstances, the relationship between the Authority and the Consultant shall be one of an independent contractor. The Consultant acknowledges and agrees that neither it nor any of its employees, subconsultants, or subcontractors shall be considered an employee of the Authority for any purpose. The Consultant shall have no authority to enter into any contract binding upon the Authority, or to create any obligation on behalf of the Authority. As an independent contractor, neither the Consultant nor its employees shall be entitled to any insurance, pension, or other benefits customarily afforded to employees of the Authority. Under no circumstances shall the Consultant, or its employees, subconsultants, or subcontractors, represent to suppliers, contractors or any other parties that it is employed by the Authority or serves the Authority in any capacity other than as an independent contractor. The Consultant shall clearly inform all suppliers, contractors and others that it has no authority to bind the Authority. Nothing contained in this Agreement shall be deemed or construed to create a partnership or joint venture, to create the relationship of employee-employer or principal-agent, or to otherwise create any liability for the Authority whatsoever with respect to the liabilities, obligations or acts of the Consultant, its employees, subconsultants, or subcontractors, or any other person.

ARTICLE 22
DELIVERY OF NOTICES, ETC.

In each instance under this Agreement in which one party is required or permitted to give notice to the other, such notice shall be deemed given either (a) when delivered by hand; (b) one (1) business day after being deposited with a reputable overnight air courier service; or (c) three (3) business days after being mailed by United States mail, registered or certified mail, return receipt requested, and postage prepaid. Any notices provided under this Agreement must be sent or delivered to:

*In the case of the **Consultant**:*

Stantec Consulting Services Inc.
475 Fifth Avenue

12th Floor
New York, NY 10017
Attn: Rick Gobeille, Senior Principal

*In the case of the **CTRMA**:*

Central Texas Regional Mobility Authority
3300 N. IH 35
Suite 300
Austin, TX 78705

Attn: Mike Heiligenstein, Executive Director

Either party hereto may from time to time change its address for notification purposes by giving the other party prior written notice of the new address and the date upon which it will become effective.

ARTICLE 23
REPORTS OF ACCIDENTS, ETC.

Within twenty-four (24) hours after occurrence of any accident or other event which results in, or might result in, injury to the person or property of any third person (including an employee or subconsultant or employee of a subconsultant of the Consultant) which results from or involves any action or failure to act of the Consultant or any employee, subconsultant, employee of a subconsultant, or agent of the Consultant or which arises in any manner from the performance of this Agreement, the Consultant shall send a written report of such accident or other event to the Authority, setting forth a full and concise statement of the facts pertaining thereto. The Consultant also shall immediately send the Authority a copy of any summons, subpoena, notice, or other documents served upon the Consultant, its agents, employees, subconsultants, or representatives, or received by it or them, in connection with any matter before any court arising in any manner from the Consultant's performance of the Services under this Agreement.

ARTICLE 24
AUTHORITY'S ACTS

Anything to be done under this Agreement by the Authority may be done by such persons, corporations, firms, or other entities as the Authority may designate.

ARTICLE 25
LIMITATIONS

Notwithstanding anything herein to the contrary, all covenants and obligations of the Authority under this Agreement shall be deemed to be valid covenants and obligations only to the extent authorized by Chapter 370 of the Texas Transportation Code and permitted by the laws and the Constitution of the State of Texas, and no officer, director, or employee of the Authority shall have any personal obligations or liability thereunder.

The Consultant is obligated to comply with applicable standards of professional care in the performance of the Services. The Consultant makes no other representation or warranty, whether express or implied, and no warranty or guarantee is included or intended in this Agreement or in any "work product" or otherwise.

The Consultant shall be entitled to rely, without requirement of further investigation, on all information supplied to the Consultant by the Authority, together with any other materials, such as prior reports or analyses prepared by or on behalf of or for the benefit of Authority.

Neither Authority nor the Consultant shall in any event be liable for any consequential, incidental, indirect, punitive, exemplary or special damages including, without limitation; loss of profits, business or goodwill of any kind from any causes of action (whether arising in contract, tort or otherwise) unless caused by their willful misconduct, negligent act or omission, or other wrongful conduct. Each party to this Agreement is obligated to take commercially reasonable steps to mitigate any damages that it may incur. Nothing herein shall constitute a waiver of any other defenses that either party may have at law or in equity.

ARTICLE 26
CAPTIONS NOT A PART HEREOF

The captions or subtitles of the several articles, subsections, and divisions of this Agreement are inserted only as a matter of convenience and for reference, and in no way define, limit or describe the scope of this Agreement or the scope or content of any of its articles, subsections, divisions, or other provisions.

ARTICLE 27
CONTROLLING LAW, VENUE

This Agreement shall be governed and construed in accordance with the laws of the State of Texas. The parties hereto acknowledge that venue is proper in Travis County, Texas, for all disputes arising hereunder and waive the right to sue and be sued elsewhere.

ARTICLE 28
COMPLETE AGREEMENT

This Agreement sets forth the complete agreement between the parties with respect to the Services and, except as provided for in Article 20 above, expressly supersedes all other agreements (oral or written) with respect thereto. Any changes in the character, agreement, terms and/or responsibilities of the parties hereto must be enacted through a written amendment. No amendment to this Agreement shall be of any effect unless in writing and executed by the Authority and the Consultant. This Agreement may not be orally canceled, changed, modified or amended, and no cancellation, change, modification or amendment shall be effective or binding, unless in writing and signed by the parties to this Agreement. This provision cannot be waived orally by either party.

ARTICLE 29
TIME OF ESSENCE

As set forth in Article 5, with respect to any specific delivery or performance date or other deadline provided hereunder, time is of the essence in the performance of the provisions of this Agreement. The Consultant acknowledges the importance to the Authority of the project schedule and will perform its obligations under this Agreement with all due and reasonable care and in compliance with that schedule.

ARTICLE 30
SEVERABILITY

If any provision of this Agreement, or the application thereof to any person or circumstance, is rendered or declared illegal for any reason and shall be invalid or unenforceable, the remainder of this Agreement and the application of such provision to other persons or circumstances shall not be affected thereby but shall be enforced to the greatest extent permitted by applicable law.

ARTICLE 31
AUTHORIZATION

Each party to this Agreement represents to the other that it is fully authorized to enter into this Agreement and to perform its obligations hereunder, and that no waiver, consent, approval, or authorization

from any third party is required to be obtained or made in connection with the execution, delivery, or performance of this Agreement.

**ARTICLE 32
SUCCESSORS**

This Agreement shall be binding upon and inure to the benefit of the Authority, the Consultant, and their respective heirs, executors, administrators, successors, and permitted assigns.

**ARTICLE 33
INTERPRETATION**

No provision of this Agreement shall be construed against or interpreted to the disadvantage of any party by any court, other governmental or judicial authority, or arbiter by reason of such party having or being deemed to have drafted, prepared, structured, or dictated such provision.

**ARTICLE 34
BENEFITS INURED**

This Agreement is solely for the benefit of the parties hereto and their permitted successors and assigns. Nothing contained in this Agreement is intended to, nor shall be deemed or construed to, create or confer any rights, remedies, or causes of action in or to any other persons or entities, including the public in general.

**ARTICLE 35
SURVIVAL**

The parties hereby agree that each of the provisions in the Agreement are important and material and significantly affect the successful conduct of the business of the Authority, as well as its reputation and goodwill. Any breach of the terms of this Agreement, including but not limited to the provisions of Articles 13 and 18, is a material breach of this Agreement, from which the Consultant may be enjoined and for which the Consultant also shall pay to the Authority all damages which arise from said breach. The Consultant understands and acknowledges that the Consultant's responsibilities under Articles 13, 17, 18, and all other obligations of this Agreement related to maintaining records outlined in Article 3 shall continue in full force and effect after the Consultant's contractual relationship with the Authority ends for any reason.

**ARTICLE 36
FORCE MAJEURE**

Either party shall be excused from performing its obligations under this Agreement during the time and to the extent that it is prevented from performing by an unforeseeable cause beyond its control, including but not limited to: any incidence of fire, flood; acts of God; commandeering of material, products, plants or facilities by the federal, state or local government; national fuel shortage; or a material act or omission by the other party; when satisfactory evidence of such cause is presented to the other party, and provided further that such nonperformance is unforeseeable, beyond the control and is not due to the fault or negligence of the party not performing.

IN WITNESS WHEREOF, the parties have executed this Agreement effective on the date and year first written above.

CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

Stantec Consulting Services Inc.

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

APPENDIX A

SCOPE OF SERVICES

I. Purpose

The Consultant shall be expected to support the Authority in its communications and interactions with the Authority's accountants, rating agencies, bond insurers and underwriters, governmental entities, and the public in accordance with the highest professional standards.

The Consultant shall provide qualified technical and professional personnel to perform the duties and responsibilities assigned under the terms of this Agreement. The Authority, at its option, may elect to expand, reduce, or delete the extent of each work element described in this Scope of Services document, provided such action does not alter the intent of this Agreement.

The Authority shall request Services on an as-needed basis. There is no guarantee that any or all of the Services described in this Agreement will be assigned during the term of this Agreement. Further, the Consultant is providing these Services on a nonexclusive basis. The Authority, at its option, may elect to have any of the Services set forth herein performed by other consultants or by the Authority's staff.

II. Services

The Consultant shall be responsible for conducting complex traffic modeling and forecasting, including forecasting of revenues for bond-financed toll projects, and rendering opinions and other analyses concerning traffic and revenue projections as required under the trust agreements governing CTRMA's revenue bond financing for current and future projects.

The Scope of Services to be provided by the Consultant may include, but not be limited to, the following:

- A. Perform all duties imposed on the Traffic Consultant by the Authority's current Trust Agreement, as amended, and all supplemental, superseding, or additional trust agreements, including providing certificates and opinions related to annual reviews, proposed changes in toll rate schedules or toll classifications, and periodic bond issuances.
- B. Develop traffic and revenue projections for the existing CTRMA projects annually and for proposed new projects as requested.
- C. Monitor traffic and toll revenue performance of all facilities open to traffic and respond to questions and inquiries from the Authority; develop pro forma models which would enable the estimation of traffic and toll revenue levels on these facilities on a plaza-by-plaza or gantry-by-gantry basis.
- D. Prepare evaluations, studies, and opinions as necessary to determine recommended toll rates and periodic toll rate adjustments for the Authority's turnpike projects.

- E. Provide and maintain traffic modeling tools pertinent to the CTRMA's projects and potential projects, working closely with the Capital Metropolitan Planning Organization ("CAMPO"), the Texas Department of Transportation ("TxDOT"), and other local planning organizations as necessary, to update economic, demographic, and land use data.
- F. Perform special studies or reports as requested, including peer review analyses, regarding traffic, toll revenues, mobility, toll collection methods, and strategies and related technology and industry trends.
- G. Monitor major economic and other activities which would have an effect of the Authority's traffic and toll revenue estimates; major resources that are consulted on a daily basis include local news, Internet websites, rating agency reports, and economic reports.
- H. Present reports and findings to the CTRMA Board of Directors, rating agencies and investors, local interested parties, or otherwise upon request.
- I. Work at the direction and supervision of the authority's Executive Director, Deputy Executive Director, Chief Financial Officer, and Director of Engineering. The Consultant will also be required to work cooperatively and collaboratively with other firms serving the Authority, including but not limited to the authority's General Engineering Consultant), General Counsel, financial advisors, and Bond Counsel.

III. Subcontracting

Services assigned to subconsultants must be approved in advance by the Authority. Notwithstanding said approval, all responsibility for subcontracted work shall remain strictly with the Consultant. The subconsultants must be qualified by the Authority to perform all work assigned to them.

In the event services of a subconsultant are authorized, the Consultant shall obtain a schedule of rate, and the Authority shall review and must approve, in its discretion, any rates, including overhead, to be paid to the subconsultant.

The Consultant shall be responsible for submitting monthly reports regarding its subcontracting activity including required BOPP reporting.

**APPENDIX B
RATE SCHEDULE**

Title	Employee Name	Base Hourly Wage Rate (A)	Overhead, G & A (B) 158.566%	Profit (C) 10%	Fully Burdened Hourly Labor Rate (Columns A+B+C)
Principal in Charge	Rick Gobeille	\$134.16	\$212.73	\$34.69	\$381.58
Project Director	William Ihlo	\$103.81	\$164.61	\$26.84	\$295.26
Project Manager	Tiffany Cummings	\$53.25	\$84.44	\$13.77	\$151.46
QA/QC Director	Pamela Bailey-Campbell	\$120.00	\$190.28	\$31.03	\$341.31
Technical Advisor	Joe Sobleskie	\$100.00	\$158.57	\$25.86	\$284.42
Principal Modeler	Jun Yao	\$65.01	\$103.08	\$16.81	\$184.90
Investment Grade Advisor	Phil Eshelman	\$89.14	\$141.35	\$23.05	\$253.53
Task Manager/Demographics	Haley Collins	\$47.00	\$74.53	\$12.15	\$133.68
Modeler	Telin Kim	\$36.06	\$57.18	\$9.32	\$102.56
Task Manager/Managed Lanes & Simulation Modeling	Sheldon Mar	\$78.63	\$124.68	\$20.33	\$223.64
Traffic Engineer/Modeler	Sanaz Zehtabi	\$48.50	\$76.90	\$12.54	\$137.94
Traffic Engineer/Modeler	Najmeh Jami	\$53.25	\$84.44	\$13.77	\$151.46
Traffic Engineer	Emily Valentino	\$56.70	\$89.91	\$14.66	\$161.27
Traffic Engineer	Daniel Specter	\$47.90	\$75.95	\$12.39	\$136.24
Task Manager/Data Analytics	Sumeet Kishnani	\$103.00	\$163.32	\$26.63	\$292.96
Task Manager/Toll Systems and Technology	Sean Tihal	\$103.50	\$164.12	\$26.76	\$294.38
<u>Subconsultants</u>					Unit Cost
Bomba Consulting, LLC	Michael Bomba	-	-	-	\$186.43/hr
Cox McLain Environmental Consulting, Inc.	Ashley McLain	-	-	-	\$186.43/hr
CJ Hensch & Associates, Inc.	Mainline Counts	-	-	-	\$150/lane/day
	Arterial Counts	-	-	-	\$100/day
Ally General Solutions	Mainline Counts	-	-	-	\$350/day
	Arterial Counts	-	-	-	\$160/day
Alliance Transportation Group		-	-	-	Lump sum by task
Larson Consulting Associates, LLC		-	-	-	Lump sum by task

APPENDIX C

**WORK AUTHORIZATION
(WORK AUTHORIZATION NO. _____)**

This Work Authorization is made as of this _____ day of _____, _____, under the terms and conditions established in the AGREEMENT FOR TRAFFIC AND REVENUE ENGINEERING SERVICES, dated as of _____, _____ (the “Agreement”), between the Central Texas Regional Mobility Authority (“Authority”), represented by the Executive Director or designee, and _____ (“Consultants”). This Work Authorization is made for the following purpose, consistent with the services defined in the Agreement:

[Brief description of the Project elements to which this Work Authorization applies]

Section A. – Scope of Services

A.1. Consultant shall perform the following Services:

Refer to attached scope letter.

A.2. The following Services are not included in this Work Authorization, but shall be provided as Additional Services if authorized or confirmed in writing by the Executive Director or designee.

A.3. In conjunction with the performance of the foregoing Services, Consultant shall provide the following submittals/deliverables (Documents) to the Executive Director or designee: To be determined.

Section B. – Schedule

Consultant shall perform the Services and deliver the related Documents (if any) according to the following schedule: To be determined.

Section C. – Compensation

C.1. In return for the performance of the foregoing obligations, the Authority shall pay to Consultant the amount not to exceed \$_____ based on the attached fee estimate. Compensation shall be in accordance with the Agreement.

C.2. Compensation for Additional Services (if any) shall be paid by the Authority to Consultant according to the terms of a future Contract Amendment.

Section D. – Authority’s Responsibilities

The Authority shall perform and/or provide the following in a timely manner so as not to delay the Services of the Consultant. Unless otherwise provided in this Work Authorization, the Authority shall bear all costs incident to compliance with the following:

Section E. – Other Provisions

The parties agree to the following provisions with respect to this specific Work Authorization:

Except to the extent expressly modified herein, all terms and conditions of the Agreement shall continue in full force and effect.

AUTHORITY:

CONSULTANT:

CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

Stantec Consulting Services Inc.

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

APPENDIX D

SUBCONSULTANTS

Alliance Transportation Group

Mike Heath
(512) 821-2081
mheath@emailatg.com

Bomba Consulting, LLC

Michael Bomba, PhD
(512) 217-8411
Msbomba4@gmail.com

Cox / McLain Environmental Consulting, Inc.

Ashley McLain, AICP
(512) 299-6856
ashley@coxmcclain.com

CJ Hensch & Associates, Inc.

Dennis Cox
(281) 487-5417
denniscox@cjhensch.com

Ally General Solutions

Rolando Castañeda
(713) 459-7230
rcastaneda@allygeneralsolutions.com

Larson Consulting Associates, LLC

Catherine Larson
(206) 979-7974
catherine@larson.consulting

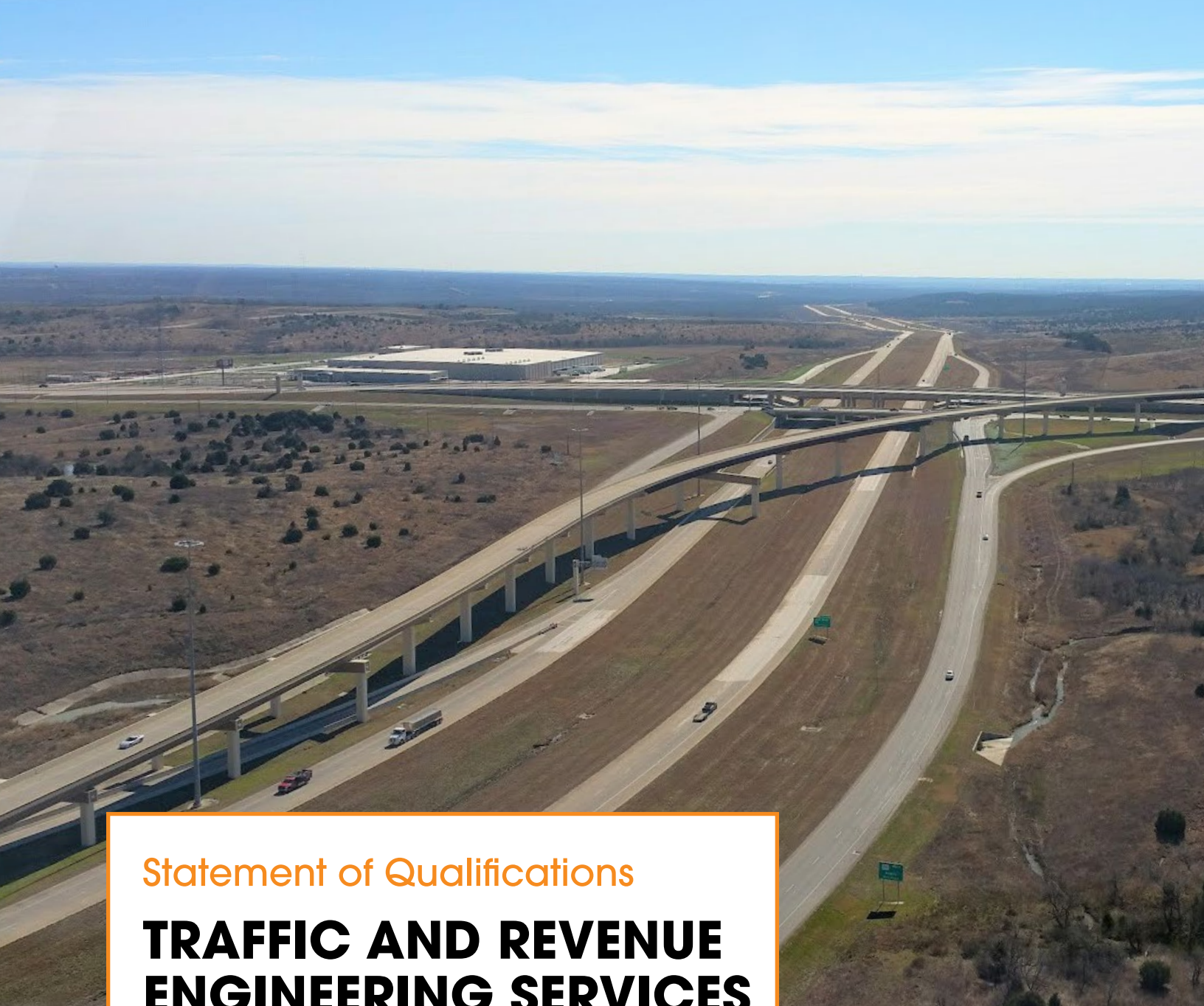
APPENDIX E

KEY PERSONNEL

Title	Employee Name
Principal in Charge	Rick Gobeille
Project Director	William Ihlo
Project Manager	Tiffany Cummings
QA/QC Director	Pamela Bailey-Campbell
Technical Advisor	Joe Sobleskie
Principal Modeler	Jun Yao
Investment Grade Advisor	Phil Eshelman

APPENDIX F

CONSULTANT STATEMENT OF QUALIFICATION



Statement of Qualifications

**TRAFFIC AND REVENUE
ENGINEERING SERVICES**

PREPARED FOR:
Central Texas Regional Mobility Authority



August 17, 2020



August 17, 2020

Attention: William Chapman

Central Texas Regional Mobility Authority

3300 N IH 35 Suite 300

Austin, Texas 78705

Reference: Traffic and Revenue Engineering Services Request for Qualifications

Dear Mr. Chapman,

The Stantec Team is pleased to submit our qualifications to provide Traffic and Revenue Engineering On-Call Services to the Central Texas Regional Mobility Authority (CTRMA/Mobility Authority) as it moves forward with various toll facility projects now in operation or in the planning stages.

Stantec, a leader in Traffic and Revenue (T&R) analyses, has over 45 years of T&R experience, with 175 successful toll revenue bond financings totaling over \$55 billion. Stantec remains at the forefront of the toll road and express lanes industry, not only in the Austin area on your facilities, but also for toll facilities around the country including California, Washington, New York, Massachusetts, New Hampshire, Ohio, Virginia, North Carolina, South Carolina, Illinois, Georgia, and Florida. Since 2005, Stantec has worked directly with the Mobility Authority, successfully preparing reports and bring-down letters for over \$1.9 billion of toll revenue bond financing (and refinancing) for your toll facilities and performing all duties imposed by the Authority's Master Trust Indenture Agreement. We are proud to have been involved with the growth of your System since the Authority's inception to the opening of 183A in 2007 and to the current System of five toll roads and one express lane facility, developing T&R projections for all facilities in some capacity. Over the past 15+ years, Stantec has been adaptable to meet the Mobility Authority's traffic and revenue needs and would continue to be nimble in our approach to provide traffic and revenue services. We are all in the midst of an unprecedented time with regards to the COVID-19 pandemic; however we are and would continue be able to provide on-going traffic and revenue support, including any specialized studies to the Mobility Authority as conditions fluctuate or project priorities shift.

Our team is prepared to continue providing all of the services that you have listed in the scope of services, including toll rate evaluations and opinions for the Mobility Authority's current and future projects, maintenance of effective traffic modeling tools by using the latest transportation plans, and updating the demographic data. We are ready to provide collaborative coordination with the Mobility Authority's staff, finance team and general engineering consultants, and cost-efficient assessments of future traffic and revenues for the Mobility Authority to determine the feasibility of a potential project.

Our knowledge of your facilities and the breadth of our experience enables us to hit the ground running and to develop effective project approaches in a meaningful manner. Bill Ihlo, PE, would continue as Project Director and Tiffany Cummings, PE, would be your Project Manager. Together they would ensure that the appropriate staff will continue to be committed to your projects, assuring that the work is conducted efficiently and cost effectively. Bill and Tiffany are backed by a team of technical advisors and experts including Rick Gobeille, PE, who currently leads Stantec's Transportation and Toll Roads Group and would be the Principal-in-Charge. Bill, Tiffany and Rick are all passionate and dedicated to continuing to provide you with our high-quality work. Together they will provide you with the same meaningful, efficient and pragmatic approach you have become familiar with. This team brings over 70 years of combined experience in traffic and revenue forecasting.

Our team is strengthened further with the inclusion of Michael Bomba, Ph.D., who has developed SED forecasts which have been equaled or exceeded by actual conditions for all Austin region toll road projects over the last 20 years. Larson Consulting Associates, led by Catherine Larson, would lead any needed customer surveys and support on presentations for various audiences. Alliance Transportation Group would provide transportation plan support services, and CJ Hensch & Associates and AGS Engineering & Construction would provide data collection services. Our team provides a full set of skills and resources to help meet the needs of the Mobility Authority. All of the key personnel included in this proposal are well versed in Austin-area toll facility studies, have worked together in the past, and understand how to deliver successful projects for the Mobility Authority.

The Stantec Team is thrilled for the opportunity to support you in your future programs. Bill Ihlo, based in our principal New York City office, will serve as the primary contact for Stantec and has the authority to negotiate and execute the contractual terms. His contact information can be found at the end of this letter.

We look forward to the next step in your selection process, and to the potential of continuing to work with you. Please do contact us if you have any questions or require additional information.

Regards,

STANTEC CONSULTING SERVICES INC.

A handwritten signature in black ink that reads "Richard J. Gobeille".

Rick Gobeille, PE
Senior Principal
475 Fifth Avenue, 12th Floor
New York, NY 10017
(212) 366-5625
rick.gobeille@stantec.com

A handwritten signature in black ink that reads "William Ihlo".

William Ihlo, PE
Principal
475 Fifth Avenue, 12th Floor
New York, NY 10017
(203) 417-6780
william.ihlo@stantec.com

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Cover Letter

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Appendix

I. The Firm

A. CAPABILITIES & RESOURCES OF PRINCIPLE OFFICE RESPONSIBLE FOR PERFORMING THIS WORK, REGIONAL TEXAS OFFICES & LISTING OF TEXAS OFFICE RESIDENT PERSONNEL BY DISCIPLINE WHO WOULD BE ASSIGNED TO THE CTRMA'S WORK

The Stantec community unites approximately 22,000 employees working in over 350 locations. We collaborate across disciplines and industries to bring infrastructure, buildings, and energy and resource projects to life.

Our work—professional consulting in planning, engineering, architecture, interior design, landscape architecture, surveying, environmental sciences, project management, and project economics—begins at the intersection of community, creativity, and client relationships.

Stantec will be the prime consultant, providing traffic modeling, toll revenue forecasting, feasibility assessment, and overall project management with over 40 employees included in its transportation planning and toll roads group. The principle office for performing this work is located in New York City with Bill Ihlo, PE (Project Director), Tiffany Cummings, PE (Project Manager), and Rick Gobeille, PE (Principal-in-Charge) based in that office supported by over 20 tolling staff. Traffic modeling efforts will be conducted primarily in our Plymouth Meeting, PA, office, home to 8 of our modeling experts. The remaining Stantec tolling staff are located in offices around the United States with four located in Texas: Marcelle Jones, JD (Strategic Planning) and Haley Collins, AICP (Demographics) based in the Dallas office, Sumeet Kishnani, PE, PTOE, LEED AP (Data Analytics) based in the Plano office, and Phil Eshelman (Managed Lanes) based in the Austin office. Haley, Sumeet and Phil have extensive experience working on Austin area projects, many of which were for CTRMA.

Joining our team is local Austinite Michael Bomba, Ph.D., of Bomba Consulting, LLC who will develop socioeconomic and land-use forecasts as he has for prior CTRMA studies. Michael will utilize support from Cox | McClain Environmental Consulting Inc. (Cox | McClain) which also has a local office in Austin. Larson Consulting Associates, LLC (LCA) will support with any Stated Preference Survey development and can support the development of presentations for various audiences.

Located in Seattle, WA, LCA specializes in policy and planning, program management, operations implementation and oversight, marketing and communications, best practices, and process improvement. LCA's founder and owner, Catherine Larson, previously worked for TxDOT and served as the liaison to various Regional Mobility Authorities. Alliance Transportation Group, Inc. (ATG), has a local office in Austin and will support Stantec with transportation plan reviews. Both data collection firms on our team, CJ Hensch & Associates, Inc. (CJH) and Ally General Solutions, LLC dba AGS Engineering & Construction (AGS), are based in Texas as well. Stantec has worked with Michael Bomba, ATG, CJH, and AGS on prior CTRMA and TxDOT studies, while LCA has worked with Stantec on tolling studies for other clients. Our entire team understands the projects, the Authority's needs, and each team member's needs. A table summarizing our team's staffing levels by location and discipline is on page 7.

B. FIRM'S EXPERIENCE PROVIDING COMPLEX TRAFFIC MODELING AND FORECASTING TOOLS, DEMONSTRATED SUCCESS IN FORECASTING TOLL REVENUE FOR BOND-FINANCED TRANSPORTATION PROJECTS, & EXPERIENCE IN RENDERING OPINIONS & OTHER ANALYSES CONCERNING T&R PROJECTIONS

Stantec has an over 45 year history of providing traffic and revenue (T&R) services on a variety of high profile, successful tolling projects throughout the United States. Stantec is a nationally recognized leader in T&R analyses and traffic operations for toll facilities. Our reports have been the basis for over 175 bond sales totaling over \$55 billion. Since 2014 alone, we have completed 50 bond sales for over \$18 billion for new, expanded or existing toll facilities. Our work has spanned 38 states, Canada and Mexico. We are the on-call T&R consultant for multiple toll authorities, including but not limited to the Washington State DOT, the North Carolina Turnpike Authority, the State Road and Tollway Authority in Georgia, the Riverside County Transportation Commission, the New York State Thruway Authority, and the Texas DOT.

Working in the best interest of our public and private clients, the communities surrounding the roadways, and the wider regions, we bring our extensive knowledge of toll roads and systems to the challenge of developing credible toll facility feasibility studies. Our clients return

to us repeatedly with requests to produce quick feasibility studies that answer the initial question “Does this project make sense?” as well as Investment Grade Studies that aid in their effort to obtain financing for their projects. Level I studies make clear whether more analysis—and more money—should be expended on the project. This is enormously helpful to clients and communities as we assess the impact to the entire regional network of tolling an existing roadway, building a new toll facility, or changing toll structures.

In addition to these early toll feasibility assessments, we also develop screening criteria for potential toll facilities, conduct traffic and revenue analyses, develop financing plans, analyze appropriate toll structures, and determine the extent to which a proposed toll facility could provide financing for itself and/or other highway projects. Our specialized Level 2 and Level 3 Investment Grade Studies provide detailed forecasts to our clients on facilities that are either under serious consideration or require bond financing and access to an investment grade rating. Whether we are working for public, quasi-public or private agencies, we work with our clients to identify the appropriate level of traffic and revenue study.

Stantec is uniquely qualified for these Traffic and Revenue Consulting Services. There is a long history and a synergy between the key tolling staff at Stantec and the CTRMA. The Stantec Team has a deep background in studying Austin’s toll facilities. We have acquired knowledge and expertise from our work on CTRMA’s existing and future toll facilities. We’ve studied US 183 as far north as Liberty Hill with our on-going work for the 183A Phase III Project, and as far south as the Austin-Bergstrom International Airport with 183 South. We recognize the challenges surrounding the 183N Express Lanes Project, particularly during this period of uncertainty with managed lanes, but are prepared to assist CTRMA navigate through it. We know the 290E toll road inside and out and know that the next phase, extending the road to the east, is critical for Manor’s mobility. We know the regional significance of 183S as a bypass around the increasingly congested IH-35. We even know the importance of small but key facilities like 71E and 45SW that provide fast and reliable connectivity to the region. Our team examines traffic from both a macro-level, analyzing how land use and regional transport policies impact traffic, and a micro-level, recognizing how line of sight,

horizontal and vertical curvature of the roadway, and signage can impact driver behavior. We do not rest on our laurels—our team is pushing boundaries. For example, our staff have studied how connected and autonomous vehicles might impact traffic and revenue. We leverage the power of big data to understand traffic better and we commit funds to R&D to make our modeling tools better.

The following table presents the 29 bond sales totaling over \$11 billion that Stantec’s T&R principals have supported since 2017:

Amount	Date	Authority
\$628,930,000	7/1/2017	Orange County Transportation Authority
\$87,495,000	7/9/2017	Greater New Orleans Expressway Commission
\$152,200,000	7/20/2017	Riverside County Transportation Commission
\$194,140,000	8/11/2017	San Diego Association of Governments
\$400,000,000	9/27/2017	Triborough Bridge and Tunnel Authority
\$720,990,000	11/9/2017	Triborough Bridge and Tunnel Authority
\$122,635,000	1/19/2018	Triborough Bridge and Tunnel Authority
\$190,300,000	1/19/2018	Triborough Bridge and Tunnel Authority
\$351,930,000	2/1/2018	Triborough Bridge and Tunnel Authority
\$107,275,000	6/21/2018	Triborough Bridge and Tunnel Authority
\$190,300,000	6/21/2018	Triborough Bridge and Tunnel Authority
\$270,090,000	8/1/2018	Triborough Bridge and Tunnel Authority
\$159,280,000	8/24/2018	Triborough Bridge and Tunnel Authority
\$107,280,000	9/21/2018	Triborough Bridge and Tunnel Authority
\$125,000,000	9/24/2018	Triborough Bridge and Tunnel Authority
\$162,995,000	10/30/2018	Triborough Bridge and Tunnel Authority
\$90,365,000	10/30/2018	Central Texas Regional Mobility Authority
\$82,500,000	11/20/2018	Triborough Bridge and Tunnel Authority
\$148,470,000	12/10/2018	Triborough Bridge and Tunnel Authority
\$700,505,000	12/14/2018	Delaware River Port Authority
\$1,587,210,000	4/30/2019	New York State Thruway Authority
\$150,000,000	5/15/2019	Triborough Bridge and Tunnel Authority
\$137,135,000	9/10/2019	Delaware Transportation Authority
\$464,650,000	10/2/2019	MassDOT Metropolitan Highway System
\$857,625,000	10/18/2019	New York State Thruway Authority
\$1,693,245,000	10/18/2019	New York State Thruway Authority
\$40,840,000	10/31/2019	New Hampshire DOT
\$48,805,000	11/20/2019	Rhode Island Turnpike and Bridge Authority
\$50,265,000	12/17/2019	Central Texas Regional Mobility Authority
\$683,780,000	2/20/2020	Texas Transportation Commission
\$450,000,000	2/20/2020	New York State Thruway Authority

For each project, we developed the appropriate modeling tools to forecast T&R as well as defend the estimates to rating agencies, investors, underwriters, TIFIA, Trustees, and other stakeholders. For

each of these sales, the required bond sale certificates were developed, trust and bond indentures followed, and appropriate level of support provided to complete a successful issue.

C. EXPERIENCE PERFORMING DUTIES IMPOSED ON TRAFFIC ENGINEERS UNDER REQUIREMENTS OF TRUST INDENTURES FOR PRIVATE BOND FINANCING, INCLUDING PROVIDING CERTIFICATES & OPINIONS RELATED TO ANNUAL REVIEWS & PERIODIC BOND ISSUANCES

Stantec can provide the CTRMA with expertise in all of the duties imposed on traffic engineers under the requirements of trust indentures for private bond financing of toll facilities. We understand these duties well from our experience on over \$50 billion of financings on toll roads and express lanes throughout the country. Our experience includes municipalities that had never run a toll facility before, to authorities that have been operating a mature system of roadways for decades, such as the New York State Thruway Authority for whom we have been working for 20 years. For each financing, the required bond sale certificates were developed, trust and bond indentures followed, and appropriate level of support provided to complete a successful issue. Our T&R staff work with our clients' financial advisors, lawyers and bankers to ensure a successful bond sale. We have successfully performed these duties for the CTRMA on several bond sales, the most recent in late 2019. We are also currently working with the Authority on a refunding study and a 183A Phase III investment grade study. Our experience with CTRMA's staff and the financial team leading the sales will be invaluable to the CTRMA's future financings. Beyond supporting the sales of these bonds, Stantec's T&R Team regularly makes annual assessments and reviews the actuals, forecasts and coverage requirements within the terms of the trust indentures.

D. EXPERIENCE PROVIDING AND MAINTAINING TRAFFIC MODELING TOOLS, INCLUDING DEVELOPMENT OF T&R PROJECTIONS FOR EXISTING AND PROPOSED TURNPIKE PROJECTS

Stantec regularly develops and maintains sophisticated traffic modeling tools for T&R studies, transportation planning studies, and environmental/air quality & noise studies throughout the country. Some clients we have done this work for include the Washington State DOT, the New Jersey DOT, and State Road and Tollway Authority. Stantec

uses a variety of modeling platforms for our traffic and revenue projects. Our basic travel demand modeling platform for the Central Texas Region uses a combined Capital Area Metropolitan Planning Organization (CAMPO) - Alamo Area Metropolitan Planning Organization (AAMPO) model. We have developed a process to weave these models together to provide more reliable estimates for travel in the region. The purpose of a joint model is to accurately represent long-distance trips in the Central Texas region (e.g. on IH-35 and SH 130 between Austin and San Antonio). This in turn allows us to better understand traffic on the CTRMA System. We start with the base MPO models and make adjustments to reflect the latest traffic activity for the base year.

These models are converted to a CUBE travel demand model that is then calibrated to existing conditions. The calibration process involves modifying the basic model inputs to approximate speed and volume at hundreds of key locations in and around the Project or System corridors. The calibrated models are used as the basis for future projections. Adjustments are made to the model parameters to reflect the latest available forecasts for demographic growth and the timing and scope of infrastructure improvements in the region. These future conditions models are then used to determine future traffic and revenue projections.

The travel demand model is useful for estimating regional flows and link assignments, but when there are operational constraints (e.g. in extremely congested areas or on managed lane projects where traffic moves between a managed lane facility, general purpose lanes and a frontage road), we also develop VISSIM microsimulation models. These models allow for the visualization and analysis of merge and weave areas, direct connectors, ramps, and other complicated flow conditions. Simulation models are used to check, for example, if the forecasted managed lane demand can actually enter and exit the facilities without creating local weaving or queuing constraints. This, in turn, may lead to adjustments to travel demand model parameters, and additional simulation model runs, in an iterative fashion, until there is general agreement between both sets of models.

E. EXPERIENCE PREPARING EVALUATIONS, STUDIES AND OPINIONS AS NECESSARY TO DETERMINE RECOMMENDED TOLL RATES AND PERIODIC TOLL RATE ADJUSTMENTS FOR TURNPIKE PROJECTS

Stantec has extensive experience advising our clients on recommended toll rates for their toll facilities. This includes reviews for the Transportation Corridor Agencies' Toll Roads and the OCTA and RCTC's 91 Express Lanes, all in Southern California, the New York State Thruway Authority, the NY MTA's Bridges and Tunnels, amongst many others. Stantec has helped prepare opinions for the Mobility Authority and other entities on toll escalation policies, veterans discounts, paypoint toll adjustments, new additions to the System, development of non-tolled roads parallel to the System, and phased openings. These evaluations were documented in written opinions presented to the Board of Directors and shared with the investment community

F. HOW THE FIRM CHARGES PROFESSIONAL FEES

Stantec charges for our efforts based on a number of factors—the direct technical labor costs, an overhead multiplier rate, and a percent fee. Costs for subconsultants and direct expenses are billed at cost, with no markup. This is consistent with the fee schedule we use for our traffic and revenue projects for TxDOT. The overhead multiplier is audited by the State of Texas annually. The current audited rate as of August 2020 is 158.566%, and our fee is 10%. The following shows the fee accrual for an employee who spends 2 hours working on a project with an hourly rate of \$20:

$$2 \text{ hours} \times \$20/\text{hour} \times (100\% + 158.566\%) \times (100\% + 10\%) = \$ 113.76$$

G. CONFLICTS OR POTENTIAL CONFLICTS OF INTEREST

Stantec confirms that it is not aware of any conflict of interest that may exist and be required to be reported at this time. Stantec shall endeavor not to enter into contracts with third parties or engage itself in any activities which may cause conflicts of interest. If a conflict of interest arises impacting the services, Stantec shall provide notification, and work to resolve or mitigate it as required.

Stantec's multi-disciplinary team includes a Community Development practice in the Central Texas region. On some of our land development projects, we have engaged with entities in which some of the Board Members may have an interest. These efforts are independent of our

traffic and revenue practice, and are typically done by Stantec staff who are not engaged in our traffic and revenue studies.

Stantec provides transportation planning, traffic engineering, and traffic and revenue forecasting services for other entities in the Austin area.

Where a conflict may exist, we will review our anticipated scope of work with the Mobility Authority prior to entering into any new engagements with other entities, such as TxDOT, County or municipal agencies.

II. Firm Organization, Staffing and Procedures

A. ORGANIZATIONAL CHART & IDENTIFIED PERSONNEL'S TRAFFIC ENGINEERING AND REVENUE ENGINEERING FOR BOND-FINANCED TURNPIKE PROJECTS EXPERIENCE

Our organizational chart can be found on the following page. Team resumes are located in the Appendix.

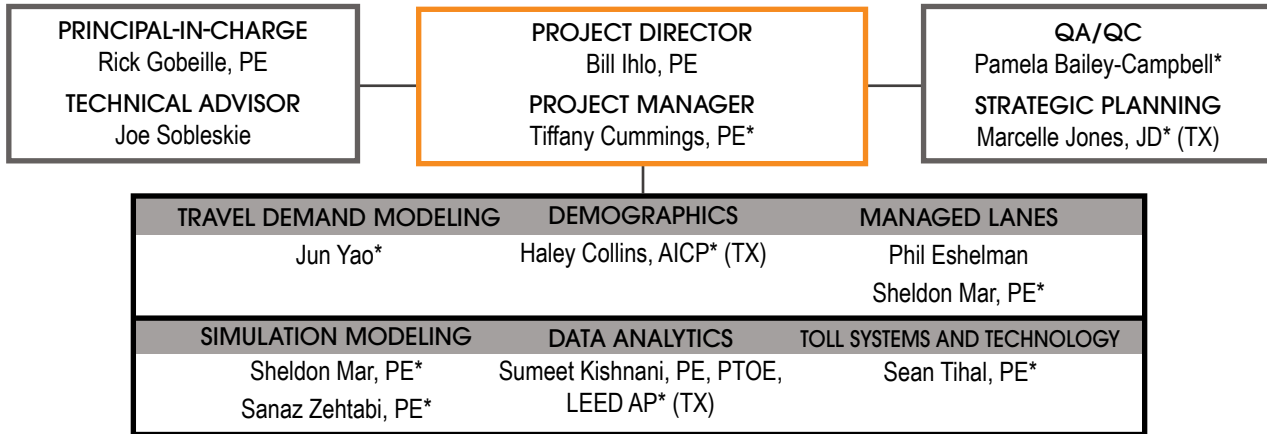
Bill Ihlo, PE, Project Director: Bill has been working on T&R projects for over 30 years. He has helped support over \$10B in infrastructure financing projects, and is a trusted resource for his clients, with a strong understanding of the players in the Central Texas region. He has worked on toll facilities for clients throughout the country, but a substantial part of his career has been devoted to T&R studies in Texas. Bill was involved with the Texas Turnpike Authority doing initial roadside OD surveys for the first Austin toll roads starting in 1998. He has been working on projects for the CTRMA since 2002 and has helped develop forecasts for all of the current CTRMA system elements. Bill has accompanied Mobility Authority staff in meetings with TIFIA, the rating agencies, and the investment community. He will be the principal officer on this contract.

Bill has also participated in the team's coordination efforts with other stakeholders in the Austin region, including discussions with TxDOT on the SH 130/290 Project and 183 North. In his time working with the Mobility Authority, Bill has worked closely with the Executive Director, Deputy Executive Director, Chief Financial Officer, Comptroller, Director of Engineering, and other key staff, in addition to the Authority's General Engineering Consultants, General Counsel, Financial Advisors, Bond Counsel, and Toll Operations Division.

Organizational Chart



PROJECT MANAGEMENT TEAM



SUBCONSULTANTS

TRANSPORTATION PLAN REVIEW ALLIANCE TRANSPORTATION GROUP, INC. ** Mike Heath (TX)	DEMOGRAPHIC FORECASTS BOMBA CONSULTING, LLC Michael Bomba, PhD (TX) COX MCCLAIN ENVIRONMENTAL CONSULTING INC.** Ashley McLain, AICP* (TX)	DATA COLLECTION CJ HENSCH & ASSOCIATES, INC.** Dennis Cox (TX) AGS ENGINEERING & CONSTRUCTION** Rolando Castañeda, PE* (TX)	SURVEYS LARSON CONSULTING ASSOCIATES, LLC Catherine Larson*
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PRINCIPAL OFFICE & OFFICER
 475 Fifth Avenue, 12th Floor, New York, NY 10017
 Bill Ihlo, PE, Project Director

*Women or Minority Staff
 **Texas HUB Firm

Tiffany Cummings, PE, Project Manager: As the Project Manager the Mobility Authority's studies have been and will continue to be Tiffany's first priority. She has spent the majority of her 10-year career working on T&R forecasting studies for toll facilities in the Austin area for both the Mobility Authority and TxDOT. Because of her experience in the region, she is an expert in the traffic patterns, land development patterns, and rapidly developing highway network of the Austin region. Tiffany has an acute understanding of the CTRMA toll facilities through her daily and monthly monitoring of nearly every facility since their opening.

She recently served as Project Manager for the CTRMA System 2019 T&R Study, an investment-grade study to refinance the CTRMA System after 45 SW was added to the System. At the same time, Tiffany also prepared investment-grade forecasts for the 183A Phase III project, to support a TIFIA loan application, which is currently underway, and for the 183N Express Lane project. For the 2019 T&R study, as well as the 2018 investment-grade T&R study for the 290E Phase III Project and the 2015 investment-grade T&R study for the 183 South Project, Tiffany

developed the data collection program, analyzed traffic data within the study area, oversaw the calibration of the travel demand model and microsimulation model, prepared the traffic and revenue forecasts, and conducted sensitivity tests. Tiffany has regularly prepared traffic and revenue reports or memos that were included in Official Statements and bringdown letters during her work on the 2015, 2016, 2018, and 2019 CTRMA bond financings and refundings as well as the 2015 Central Texas Turnpike System (CTTS) bond financing for TxDOT.

Rick Gobeille, PE, Principal-in-Charge: Rick is a nationally recognized leader in toll systems technology, development and implementation, traffic and revenue forecasting, operating cost estimates, and toll facility operations. Over the course of his 25 year career, he has prepared reports and studies, and made more than 100 presentations to ratings agencies, underwriters, and investors, in support of more than \$19B of Toll Revenue Bond Sales and Trust Agreement requirements. He has also prepared studies for the adoption of new technologies, starting with E-ZPass testing in the early 1990s. Rick provides access to approaches

and solutions considered and adopted by other tolling agencies that may bring value to the Authority.

Joe Sobleskie, Technical Advisor: Joe is a recognized leader in the T&R forecasting industry. He has served as project manager for more than \$7B in successful toll facility financing bond sales. His practical experience tying together financial and economic analyses with his transportation planning/engineering background has resulted in traffic and revenue programs for numerous toll authorities.

Pamela Bailey-Campbell, QA/QC: Pamela is a nationally recognized leader with more than 25 years of hands-on success in resolving the full range of challenging issues that arise in moving multifaceted transportation projects from concept to reality. She has directed numerous high-profile projects and advised a broad range of clients on the full life cycle of project issues. Her work has encompassed the full spectrum of program management, strategic and executive advisory services.

Marcelle Jones, JD, Strategic Planning: Marcelle has worked with more than 17 state and regional transportation agencies to prepare for and manage technology implementations. Marcelle served as a project manager for the TxDOT design-build program where she managed an 11-member team to support TxDOT with the development of procurement documents and process for regionally significant projects. Marcelle has also led transportation agencies in policy development, risk assessment, procurement options, and long term and strategic planning for electronic tolling technology; these capabilities became a precursor to on-board road user charging, app payments, variable pricing for roadway usage and a congestion management tool.

Jun Yao, Travel Demand Modeling Lead: Jun has more than 15 years of experience preparing investment grade T&R forecasts. He has led the modeling efforts and developed T&R forecasts for conventional toll roads and managed lane facilities across the nation. Within Texas, the majority of his experience has been with toll roads in the Austin area including all of the CTRMA facilities and the Central Texas Turnpike System operated by TxDOT. For several managed lane facilities, Jun has also performed microsimulation analysis to evaluate the operational characteristics of the managed lanes at key access points. He has also

performed extensive sensitivity analysis and risk analysis for rating agency presentations.

Haley Collins, AICP, Demographics Lead: Haley has 8 years of experience, which includes 3 years of experience working on T&R studies for bond-financed CTRMA turnpike projects. Her primary role in these projects is to research, analyze, and review the socioeconomic and network assumptions in the travel demand model and make changes as necessary to reflect a reasonable outlook of future growth. Through her work with CTRMA as well as on other toll roads and non-tolled corridors in Central Texas, Haley has developed an intimate knowledge of transportation and development plans in the region, and established connections with many local planning entities that provide valuable input used in model development. Prior to her role at Stantec, Haley worked with ATG, one of our subs, on projects in the Austin area. She worked primarily with cities, counties and MPOs to develop long range transportation plans. She worked extensively with the Laredo Urban Transportation Study to prepare the MPO for its first certification review by FHWA and FTA as a newly designated transportation management area.

Phil Eshelman, Managed Lanes Lead: Phil brings over 15 years of experience managing complex transportation planning programs focused on the delivery of traffic and revenue services for traditional toll roads and managed lane facilities to public toll agencies. These include all levels of analysis from sketch-level to investment grade with his studies supporting the sale of billions of dollars in toll revenue bonds. He is adept at all aspects of traffic and revenue analysis including data collection, data analysis, market research, stated and revealed preference analysis, travel demand modeling, toll diversion modeling, risk analysis, sensitivity testing, and presentations to Boards, rating agencies and investors.

Sheldon Mar, PE, Simulation Modeling Lead: Sheldon has over 15 years of experience in simulation modeling, and T&R forecasting. Sheldon regularly serves as a technical advisor on simulation modeling studies, including Stantec's recent work in the RM 620 corridor and our study of the 183N Express Lanes modeling. Sheldon regularly serves as

the project manager or technical advisor on Stantec's Managed Lanes T&R forecasts. Sheldon advised on the CTRMA's 183N Express Lanes T&R forecast, a confidential Managed Lanes forecast for TxDOT, and recently served as Stantec's Project Manager for the SR 91 Express Lanes Investment Grade Study refresh, and the I-15 Express Lanes Investment Grade Traffic and Revenue Study.

Sumeet Kishnani, PE, Data Analytics Lead: Sumeet is a licensed Texas Professional Engineer with 19 years of experience and works out of our office in Plano, Texas. He has extensive experience in the Central Texas area, including significant roles on traffic and revenue studies for 183 South, 290E Phase 3, the Central Texas Turnpike System refinancing, and Project Manager or Assistant Project Manager roles on other projects such as the SH 130 Capital Improvement Plan, RM 620 Corridor Study, and SH 45 Feasibility Study. His data analytics background brings a unique ability to refine our forecast models, especially for managed lane facilities, and to evaluate the efficiency of pricing models.

Sean Tihal, PE, Toll Systems and Technology: With over 19 years of transportation consulting experience, Sean is well versed in roadside and back office toll systems and operations, toll strategic planning, toll feasibility studies, toll operations analyses and traffic & toll revenue forecasting. He has also served as a Project Manager/Engineer on complex toll projects that included traffic and revenue analyses for the potential sale of investment bonds. He has conducted numerous studies related to capital and operating costs (CAPEX and OPEX), electronic tolling market share analyses, toll policy, tolling configurations, toll pricing and toll payment alternatives, and toll planning studies for over 28 transportation agencies across the US and Canada. As part of his toll strategic planning and system implementation work, Sean has supported his clients to assess and implement state of the practice and emerging technologies for roadside and back office electronic tolling applications including but not limited to vehicle identification and classification, payment methods, trip building, customer communications, customer account management, unpaid toll processing and invoicing, as well as networking, security and PCI compliance.

Staff Experience by Office Location

Office	Staff	T&R Forecasting	Transportation Planning	Traffic Engineering	Travel Demand Modeling	Simulation Modeling	Economic Modeling	Data Analytics	Traffic Data Collection	Demographic Forecasting	Toll Systems
New York, NY	23	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Plymouth Meeting, PA	8	✓	✓	✓	✓	✓			✓	✓	
Dallas, TX	7	✓	✓	✓		✓	✓	✓	✓	✓	
Austin, TX	4	✓	✓				✓		✓		
Atlanta, GA	1	✓	✓	✓							
Chicago, IL	1	✓	✓	✓							✓
Portland, OR	1	✓	✓		✓	✓	✓		✓		
Denver, CO	1	✓	✓				✓				
Louisville, KY	1										✓
Charlotte, NC	1	✓	✓	✓			✓				✓
Stantec Staff for Traffic and Revenue Studies	48										
Alliance Transportation Group - Austin, TX	5		✓								
Bomba Consulting, LLC - Austin, TX	2									✓	
Cox McClain Environmental Consulting, Inc. - Austin, TX	3									✓	
CJ Hensch & Associates, Inc. - Irving, TX & Pasadena, TX	3							✓			
Ally General Solutions - Houston, TX	2							✓			
Larson Consulting Associates, LLC - Tacoma, WA	1							✓			
Subconsultant Support Staff	16										

Mike Heath, Transportation Plan Review (ATG): Mike has worked closely with Stantec on traffic and revenue studies in the Central Texas Region starting in 1998. He has helped review transportation plans and defined the timing and scope of infrastructure improvements in the CAMPO and AAMPO areas. Mike has directly contributed to the successful implementation of TIFIA projects in Central Texas supported by sale of over \$2.5B of commercial bonds for new toll road construction.

Michael Bomba, PhD, Demographic Forecasts (Bomba Consulting): Michael has more than 20 years of experience contributing to T&R studies in the Austin and San Antonio regions. He has assessed the reasonableness of the CAMPO and AAMPO's population and employment estimates and forecasts at the zonal level, adjusting them as necessary for T&R purposes. Michael has completed almost 50 studies and these model inputs have been used to successfully sell approximately \$8B of municipal bonds for green field projects, major facility upgrades, building connecting ramps, and refinancing existing municipal bonds. Toll road projects in the Austin region that have been financed and constructed using these studies include: SH 130 (Segments 1 through 4), SH 45, Loop 1 North, US 183-A, US 290 East, SH 45 South-west, and US 183 South. His efforts have included participating in presentations to rating agencies in New York City and presentations to major institutional investors (e.g. BlackRock, PIMCO, Vanguard, etc.) in New York City, Philadelphia and Boston.

Ashley McLain, AICP, Demographic Forecasts (Cox | McClain): Ashley has been a consultant assessing the environmental impacts of public and private development projects since 1997. She is an experienced NEPA practitioner with a focus on socioeconomic and Environmental Justice issues and extensive experience with linear transportation and transit projects. She is very familiar with the challenges associated with project development in Texas. Ashley's role on this Team is to support Michael Bomba in updating demographic forecasts.

Dennis Cox, Data Collection (CJH): Dennis has 15 years of experience in the field of Traffic Data Collection. He has completed and directed projects in all areas of data collection and has installed multiple

types of counting equipment such as traffic pneumatic hose counters, video camera counters, and manual turning movement collection.

Rolando Castañeda, Data Collection (AGS): With over 19 years of experience in engineering projects throughout Texas, Rolando's role on this Team is to support data collection efforts.

Catherine Larson, Surveys (LCA): Catherine Larson is the founder and CEO of Larson Consulting Associates. Catherine has extensive program management experience in toll and transit program strategy, development and implementation. Earlier in her career, Catherine worked for TxDOT, where she served as the liaison to the RMAs. Her recent experience has focused on implementing start-up toll programs, but Catherine has spent her career building and growing transportation programs. Catherine will be responsible for developing stated preference surveys and will advise on presentations and trainings for various audiences. LCA is a Federal Disadvantaged Business Enterprise (DBE), and a certified DBE in several states.

B. FULL TIME KEY PERSONNEL EMPLOYEES WHO WOULD BE ASSIGNED PERMANENTLY TO CURRENT AND POTENTIAL CTRMA PROJECTS IN TEXAS & SUBCONSULTANT OFFICES

Bill Ihlo and Tiffany Cummings would be permanently assigned to the project and would not be substituted with other personnel without the Authority's prior approval. As a team, they have been supporting the CTRMA for nearly 20 years. They would be supported by key staff in the Texas area including Sumeet Kishnani in our Plano office, Haley Collins in our Dallas office, Phil Eshelman in our Austin office, and additionally by our subconsultants Mike Heath, Michael Bomba and Ashley McLain who are all based in Austin. Rick Gobeille will be the Principal-in-Charge with over 25 years of experience for toll road agencies.

C. NUMBER OF STAFF COMMITTED FOR CTRMA PROJECTS THAT MAY EXTEND FOR A TERM OF FIVE (5) YEARS PLUS 2 OPTIONS FOR 2 YEAR ADDITIONAL EXTENSIONS

Stantec's T&R Team consists of over 40 full-time transportation professionals throughout the US. We leverage their individual skills, from T&R forecasting, transportation planning, traffic engineering, travel demand modeling, simulation modeling, economic modeling, data analytics, traffic data collection, demographic forecasting, and toll

systems, based on the mix of available projects. Our core T&R Team is supported by over 50 other professionals who have expertise in one or more of the above-mentioned areas. This provides Stantec and our clients with a deep roster of qualified professionals who can be utilized for multiple concurrent projects. As needed we will collaborate with specialty consultants such as SkyComp, Streetlight Data and Airsage.

III. Experience

A-D. RELEVANT INFRASTRUCTURE DEVELOPMENT

PROJECTS SINCE JANUARY 1, 2017

CTRMA On-Call T&R Services | Texas | CTRMA System bond sale for 290E Phase III Project on 10/30/18 for \$90.4 million, CTRMA System bond sale on 12/17/19 for \$50.3 million

Stantec has been providing T&R consulting services for the Mobility Authority since its inception in 2003. Our T&R forecasts have been the basis for CTRMA's numerous successful toll revenue bond and TIFIA financings of \$1.8 billion. Recently completed or ongoing projects include analyses of Pay-by-Mail policy changes, qualified Veterans Toll Discount program, numerous 183A toll alternatives, and sketch level T&R studies of potential changes to the System. We regularly conduct assignments in connection with the Master Trust Indenture requirements; these include studies such as cash flow/coverage analyses, monitoring transactions and revenues, providing annual updates for budgeting purposes, assessing changes in toll policies, reviewing and preparing sections of bond documents, issuing certificates as required, and providing input for TIFIA's annual status

reports. In 2018, System T&R forecasts were used to finance the 290E Phase III Project and in 2019, System T&R forecasts were used to refinance System debt with the recently added 45SW toll road. Recently, we've studied the impacts of COVID-19 on CTRMA's T&R and prepared updated System forecasts for CTRMA's upcoming bond refunding in August 2020. We are also currently developing the forecast for the 183A Phase III financing.

Date of CTRMA OS	10/30/2018	12/17/2019
2019 Estimated System Revenue (in \$000s)	\$100,284	\$98,479
2019 Actual System Revenue (in \$000s)	\$99,904	\$99,904
% Difference from Estimated	-0.4%	1.4%

William Chapman, CFO | 3300 N IH 35, Suite 300, Austin, Texas 78705 | (512) 450-6284

TxDOT On-Call T&R | Texas | Texas Transportation Commission bond sale on 2/20/20 for \$683.8 million

Stantec has been providing TxDOT forecasting services through a series of on-call T&R assignments since 1998. We have prepared all levels of T&R studies, ranging from Level 1 preliminary feasibility studies to Level 3 investment-grade studies that support financing. Stantec has provided T&R services for hundreds of toll feasibility studies made during the early planning stages for the growth and improvement of the greater Austin transportation roadway network. Following on those studies, we have prepared six investment-grade T&R forecasts for toll facilities that led to more than \$5 billion in revenue bond financing. We have worked directly with several divisions within TxDOT on these studies, including the Toll Operations Division, Strategic Project Division, Debt

Recent Stantec Experience on Traffic and Revenue Projects

System	Fiscal Year	Projected Revenue (in \$000s)	Actual Revenue (in \$000s)	% Difference
CTRMA	2019	\$98,479	\$99,904	+1.4%
TxDOT	2018	\$207,500	\$219,600	+5.8%
NYSTA	2019	\$739,600	\$739,900	0%
MTA TBTA	2019	\$2,097,000	\$2,071,000	-1.2%
DelDOT	2019	\$187,762	\$187,639	+0.1%
DRPA	2018	\$335,600	\$334,000	-0.5%
GNOEC	2018	\$25,004	\$24,024	-3.9%
MassDOT	2020	\$210,800	\$169,400 (COVID-19 affected)	-19.6%
NH Turnpike	2020	\$133,400	\$118,700 (COVID-19 affected)	-11%
RITBA	2020	\$21,700	\$19,300 (COVID-19 affected)	-11%

Management Office, General Counsel, and Transportation Planning and Programming, as well as several district offices.

Representative T&R projects include several investment grade studies for the Central Texas Turnpike System (CTTS), and Level 2 Forecasts for Managed Lane projects on IH-35 and IH-10 in San Antonio, and SH 71 East in Austin. Stantec has also performed numerous Level 1 studies in Dallas, Austin, San Antonio, Laredo, El Paso, Sherman/Denison and Beaumont. We have also performed operational analyses and simulation studies for the CTTS facilities in support of ongoing expansions and planning studies.

Date of TxDOT OS	8/29/2018
2019 Estimated System Revenue (in \$000s)	\$207,500
2019 Actual System Revenue (in \$000s)	\$219,600
% Difference from Estimated	+5.8%

Marcy Saenz, Toll Operations Division | 12719 Burnet Road Austin, Texas 78727 | (512) 874-9708

New York State Thruway Authority Finance & Operation On-Call | New York | 4 NYSTA bond sales since 2017 for a total of \$4.6 billion, most recent on 2/20/20 for \$450 million

The 570-mile New York State Thruway is the longest toll facility in the US and Stantec has been the Thruway Authority's consulting engineer for more than 20 years. In this role, we periodically prepare revenue forecasts, analyze toll rates, work with the bond counsel and financial consultants on pending matters, prepare engineer's certificates for the trustee, recommend measures to relieve traffic congestion, and address other related issues as requested by the Authority's staff and board members. Notable recent work has included preparing T&R and fee revenue estimates for portions of the Thruway system that are planned to be converted to AET. Another aspect analyzed during this study included developing and revising existing policies and legislation that would support AET for consistency with existing state and federal laws and the Authority's bond resolutions. We also studied the financial implications of AET conversion in terms of net revenue changes and analysis of different toll schedules to establish revenue neutrality. We reviewed state and federal laws as they pertained to video tolling and the methods available for enforcing and collecting those tolls. Most

recently, we have been tracking COVID-related impacts on traffic and revenue on a daily basis and periodically producing a range of future estimates of T&R. We are also in the process of completing an Environmental Assessment for the proposed toll modification.

Date of Thruway OS	4/30/2019	10/18/2019
2019 Estimated System Revenue (in \$000s)	\$738,100	\$739,600
2019 Actual System Revenue (in \$000s)	\$738,900	\$739,900
% Difference from Estimated	0.1%	0.0%

Matt Howard, CFO, Finance and Accounts | 200 Southern Blvd. PO Box 189 Albany, New York 12201 | (518) 436-2820

MTA Independent Engineer for Triborough Bridge and Tunnel Authority (TBTA) Bond Issues | New York | 16 bond sales since 2017 for \$4.5 billion, most recent on 5/15/19 for \$150 million

Since 2012, Stantec has been the Independent Engineer to MTA's TBTA and has been responsible for preparing annual reports which project traffic, toll revenues and expenses for TBTA's seven toll bridge and two tunnel facilities. The report is one of several documents that are referenced as part of MTA's Continued Disclosure Filings. The MTA uses the report on an ongoing basis to assist with issuing debt securities through public credit markets and financing capital needs.

To complete each of the annual reports, we coordinated with TBTA to obtain current and historical traffic and revenue information for each of their facilities. This information was supplemented with current and historical traffic volume data for nearby non-tolled facilities along the East River, nearby non-tolled corridors, and nearby toll facilities such as the Port Authority of New York and New Jersey. Toll rates, toll revenues, and changes in toll schedules at the Port Authority facilities were also analyzed. We developed a proprietary spreadsheet model to house all the current and historical traffic and revenue data and used that model as a basis for detailed traffic and revenue forecasting.

In addition to preparing annual reports, Stantec continuously monitors T&R at each of the TBTA facilities and prepares Bringdown letters and Certification letters and interim report updates (as necessary) to assist the MTA with their bond transactions and other obligations with bondholders. We've also supported MTA through participation in Due Diligence calls for bond transactions and responding to requests for

additional information from public credit markets upon their review of the annual report or certification and bringdown letters.

Date of MTA TBTA OS	5/15/2019
2019 Estimated System Revenue (in \$000s)	\$2,097,000
2019 Actual System Revenue (in \$000s)	\$2,071,000
% Difference from Estimated	-1.2%

Patrick McCoy, Director of Finance | 2 Broadway, New York, New York 10004 | (212) 878-7183

Orange County Transportation Authority (OCTA) | California | \$628.9 million financing (TIFIA) on 7/1/17

Stantec has been the OCTA's On-Call traffic and revenue consultant since the early 2000's and has helped them develop their toll policy, evaluate toll policy changes, and forecast traffic and revenue for their first of its kind SR 91 Express Lanes. When the OCTA decided to build express lanes in the I-405 corridor, they retained Stantec to develop their toll policy and forecast the project's traffic and revenue. The I-405 project will improve 16 miles of I-405 between the SR-73 freeway in Costa Mesa and I-605 near the L.A. County line. The I-405 freeway in Southern California is infamous for its congestion. Motorists regularly experience extensive congestion in the corridor, traveling only 15 miles in an hour. The I-405 project aims to improve mobility by widening the general purpose lanes while also adding the 405 Express Lanes. Our study consisted of an extensive traffic data collection program, regional modeling, and toll policy development. We brought our experience with the 91 Express Lanes to this project by incorporating a custom T&R forecasting model that we built based on the revealed preference of Express Lanes users. The study culminated with the OCTA being able to procure a \$629 million TIFIA loan. The project is under construction and expected to open in 2023.

OCTA OS - Project not open yet

Kirk Avila, Manager of Express Lane Programs | 550 South Main Street, PO Box 14184, Orange, California 92863 | (714) 560-5674

Delaware Transportation Authority | Delaware | Bond sale on 9/10/19 for \$137.1 million

The Delaware Department of Transportation (DelDOT) retained Stantec to forecast the Delaware Turnpike and Route 1 Toll Road's traffic and

revenue. The 11-mile Delaware Turnpike is a key link in the Northeast Corridor's I-95 route from New England, New York, Philadelphia and Wilmington to Baltimore, Washington and the South. The SR 1 Corridor extends 100 miles, nearly the full length of the state, from the I-95/ Delaware Turnpike southward to the Maryland state line on the approach to Ocean City. Stantec analyzed the toll facilities' actual traffic and earnings record from its opening in 1963 and studied traffic patterns and revenue trends over the course of the Turnpike's years of operation from 1963 through 2019. SR 1 Toll Road estimates are based on its actual traffic and revenue record since the opening of the first section of the project in December 1993; its staged completion through May 2003; and, as with the Turnpike, the results through June 2016.

Date of DelDOT OS	9/10/2019
2019 Estimated System Revenue (in \$000s)	\$187,639
2019 Actual System Revenue (in \$000s)	\$187,762
% Difference from Estimated	+0.1%

Brian Motyl, Assistant Director and Finance | 800 Bay Road / Route 113, Dover, Delaware 19903 | (302) 760-2080

Delaware River Port Authority | Delaware | Bond sale on 12/14/18 for \$700.5 million

The Delaware River Port Authority (the Authority) is responsible for four toll bridges that span between New Jersey and Pennsylvania: the Betsy Ross, Benjamin Franklin, Walt Whitman, and Commodore Barry Bridges. Stantec has completed multiple Traffic and Revenue studies for the Authority over the years. In 2013, 2015, and again in 2018, Stantec developed 10-year projections of traffic and toll revenues for the four toll bridges suitable for supporting bond financing of a portion of the Authority's 5-Year Capital Program.

Our studies reviewed the current and historical conditions of DRPA infrastructure, toll structure, and traffic volumes; effects of a commuter discount program; economic, population, employment, and other demographic forecasts in the Philadelphia/Camden metropolitan area; the greater roadway network and travel behavior in the region, and current and planned construction activities that might impact the DRPA bridges or regional roadway network.

In the most recent 2018 DRPA T&R study dated November 5, 2018,

Stantec was responsible for reviewing and preparing sections of bond documents and issuing certificates as required. As a result, the Authority successfully sold \$700,505,000 in revenue bonds.

Date of DRPA OS	12/7/2018
2018 Estimated System Revenue (in \$000s)	\$335,600
2018 Actual System Revenue (in \$000s)	\$334,000
% Difference from Estimated	-0.5%

James White, Chief Financial Officer/Treasurer | One Port Center, 2 Riverside Drive, PO Box 1949, Camden, NJ 08101 | (856) 968-2000

Greater New Orleans Expressway Commission | Louisiana | Bond sale on 7/9/17 for \$87.5 million financing

The Greater New Orleans Expressway Commissions (GNOEC) retained Stantec to study how a proposed toll increase on the Lake Pontchartrain Causeway in Louisiana would impact its traffic and revenue. As part of this project, Stantec used the New Orleans Regional Planning Commission's (NORPC) TransCAD-based Travel Demand Model and Stantec's Toll Diversion Model developed in Cube. This project involved a significant amount of data collection, compilation, and processing. To establish future year growth assumptions, Stantec used economic data from Woods and Poole and Census data to review socioeconomic (SED) trends in the study area and compared this trend to the SED provided by the NORPC in their regional model. Stantec also reviewed how traffic responded to past toll increases and used these data to inform our view of toll elasticity of the facility's users. Future network improvement projects from the NORPC long range plan were also evaluated for inclusion in the background network. A T&R stream for 45 years, from 2015 to 2059, was prepared for base case and other sensitivity scenarios. The results of the analysis were used as the foundation for a subsequent project financing.

Date of GNOEC OS	7/9/2017
2018 Estimated System Revenue (in \$000s)	\$25,004
2018 Actual System Revenue (in \$000s)	\$24,024
% Difference from Estimated	-3.9%

Melissa Philpott, Director of Finance | P.O. Box 7656, Maitairie, Louisiana 70010 | (504) 835-3118

COVID-Affected Forecasts

We have completed studies and associated financing for three clients

in the recent past. Traffic and revenue for these facilities was prepared pre COVID-19, like all other toll facilities, have been negatively impacted by the COVID-19 pandemic and as a result actual results are below forecast. We are actively working with our clients to help them understand the nature of the T&R impacts, and what they should expect going forward.

Massachusetts Department of Transportation (MassDOT) Toll Consulting Support Services and T&R Forecasting Services | Massachusetts | MassDOT Metropolitan Highway System bond sale on 10/2/19 for \$464.7 million

Stantec is the T&R consultant for MassDOT. The recent task order contract requires Stantec to perform comprehensive, investment grade T&R studies to support potential bonding/ financing initiatives. Previous work by Stantec staff included a study to develop toll rates for all Turnpike System facilities as they were converted from conventional tolling to AET. This included the Western Turnpike, a ticket system replaced by mainline AET gantries. The study included analysis of revenue and toll collection cost implications of the conversion, which involved relocation of every tolling point, changes to the vehicle classification system, differential tolls for pay-by-plate and in-state versus out-of-state E-ZPass, and setting billing fees to cover collection costs. In October 2019 we completed a traffic and revenue study for a bond refunding for the Massachusetts Turnpike (MHS) in the amount of \$465 million. Current work includes analysis of COVID-19 impacts on toll and fee revenues.

Date of MassDOT OS	10/2/2019
2020 Estimated System Revenue (in \$000s)	\$210,800
2020 Est. Actual System Revenue (in \$000s)	\$169,400 (COVID-AFFECTED)
% Difference from Estimated	-19.6%

Steve Collins, Director of Tolling | 10 Park Plaza, Boston, Massachusetts 02116 | (617) 504-0124

New Hampshire Department of Transportation (NH DOT) | New Hampshire | \$40.8 million bond sale on 10/31/2019

For nearly 20 years, Stantec and/or Stantec staff have worked on a series of on-call contracts to provide toll-related services and support, including T&R forecasting. We have developed forecasting models and prepared the investment grade T&R reports to support five revenue bond

financing sales by the NHDOT in 2009, 2011, 2012, 2015, and 2019 totaling over \$882 million. Other project tasks have included a vehicle reclassification analysis, AET feasibility, analysis of potential frequency discount plans, and effects of moving or removing certain toll locations.

Date of NH DOT OS	10/31/2019
2020 Estimated System Revenue (in \$000s)	\$133,400
2020 Est. Actual System Revenue (in \$000s)	\$118,700 (COVID-AFFECTED)
% Difference from Estimated	-11.0%

John Corcoran, Administrator, Bureau of Turnpikes | 7 Hazen Drive, Concord, New Hampshire 03302 | (603) 485-3806

Rhode Island Turnpike and Bridge Authority (RITBA) | Rhode Island | \$48.8 million bond sale on 11/20/2019

Stantec is RITBA's T&R Consultant. In addition, since 2009, Stantec staff have provided On-Call Toll Consulting Services to RITBA while previously working at another firm. Most recently, we developed for the Newport Pell Bridge forecasting models that test various toll schedules and incorporate all-electronic tolling (AET). In addition, we studied the toll plaza's staffing and technology and suggested changes to reduce collection costs while considering revenue risk. Our most recent work included estimating revenues considering COVID impacts for budgeting.

Date of RITBA OS	11/20/2019
2020 Estimated System Revenue (in \$000s)	\$21,700
2020 Est. Actual System Revenue (in \$000s)	\$19,300 (COVID-AFFECTED)
% Difference from Estimated	-11.0%

Maggie Baker, CFO | RI-138, Jamestown, Rhode Island 02835 | (401)423-0800

Subconsultant Experience

Alliance Transportation Group, Inc. | LADOTD Public Private Partnership Feasibility Study | Louisiana: ATG performed a series of traffic and revenue analyses to assess the viability of six of the mega projects identified in the Louisiana Statewide Transportation Plan for implementation as tolled facilities. ATG used the respective travel demand models in each metropolitan area to evaluate the projects. ATG developed traffic and revenue forecasts for each project that, combined with capital and operating cost estimates, were used to assess the feasibility of the projects.

Connie Porter, Project Scoping Engineer | 1201 Capitol Access Road, Baton Rouge, Louisiana 70802 | (225) 379-1297

Bomba Consulting LLC | 2020 CTRMA Demographic Update | Texas:

Investment grade traffic and revenue study for existing and proposed managed lanes along Loop 1. The study required assessing the reasonableness of the Capital Area Metropolitan Planning Organization's (CAMPO) population and employment estimates and forecasts at the zonal level for the regional travel demand model, adjusting the data as necessary. The study also included interviews with local planning officials and comprehensive field surveys along multiple CTRMA roadway corridors in Travis County and western Williamson County.

Bill Chapman, Chief Financial Officer | 3300 N IH-35, Suite 300, Austin, Texas 78705 | (512) 450-6284

Cox | McLain Environmental Consulting Inc. | 2017 Central

Texas Turnpike System Update for TxDOT | Texas: Assessed the reasonableness of CAMPO's and AAMPO's travel demand model's population and employment estimates and forecasts at the zonal level for a Level 2 traffic and revenue study. The project study area incorporated six counties in Central Texas and was over 1,000 square miles in size. The effort also included interviews with local planning officials and extensive field surveys along the toll road corridors. Cox | McLain's role included using digital aerial photography to identify and quantify new population and employment growth in the project study area to assist with developing revised baseline population and employment estimates.

Marcy Saenz, Toll Operations Division | 12719 Burnet Road Austin, Texas 78727 | (512) 874-9708

CJ Hensch & Associates, Inc. | MoPac North and 183 North Traffic Data Collection | Texas:

Conducted traffic counts and travel time runs in the MoPac North and 183 corridors, in support of Stantec's traffic and revenue studies in these corridors for the Mobility Authority. Perform spot speed studies along IH 35W Toll at 22 locations, 14 locations along US 380, and 50 locations along US 67.

Dhruva Lohan, Kimberly-Horn & Associates | 13455 Noel Road, Two Galleria Office Tower, #700, Dallas, Texas 75240 | (972) 770-1305

AGS Environmental & Construction | TxDOT SH 35 – Bay City

Signals (2 Total) | Yoakum, Texas: AGS has helped Stantec conduct field observations in the Austin area for Central Texas Turnpike System projects. This included a mix of traffic counts, speed runs, and an origin-destination study.

Colby W. Wright, Jones Carter | 6330 West Loop South, Suite 150, Bellaire, Texas 77401 | (713) 353-7236

Larson Consulting Associates, LCC | Los Angeles County

Metropolitan Transportation Authority, ExpressLanes Program |

California: Larson Consulting provided program management and toll expertise for policy development, program evaluation, surveys and research, marketing and branding, and toll operations support for the ExpressLanes program. Larson Consulting was responsible for the development of the ExpressLanes toll program policies including the phased approach to address demand on the highly congested ExpressLanes. Catherine developed and managed the agency’s FasTrak declarable transponder rebranding project. Additionally, she facilitated a complete update of the program’s business rules. Furthermore Catherine oversaw the development of the ExpressLanes collections program, including the solicitation of a new collections vendor.

Silva Mardrussian | 1 Gateway Plaza, Los Angeles, California 90012 | (213) 922-4425

E. A SUMMARY OF ALL REGULATORY AND LEGAL PROCEEDINGS INITIATED SINCE JANUARY 1, 2017

There are no unsatisfied judgments or arbitration awards outstanding against Stantec. Stantec does have some legal proceedings, lawsuits, or claims pending. These are a normal part of professional services industries. All have been reported to Stantec’s insurers who are in the process of adjusting/managing them. None will have a material effect on the financial position of the company or its ability to undertake this assignment. Perhaps of greater comfort to our clients is the fact that Stantec seeks to deal with client concerns and claims promptly and fairly through its Risk Management group. As a public company, Stantec has substantial assets and maintains a high professional liability insurance

limit. Stantec’s claims history has resulted in relatively low insurance premiums when compared with firms of similar size and character.

IV. Historically Underutilized (“HUB”) And Disadvantage Business Enterprise (“DBE”) Participation

A. PROVISION FOR HUB AND/OR DBE PARTICIPATION

Stantec makes a good faith effort to comply with our client’s guidelines for HUB utilization guidelines. As described below, our Team has a roster of several certified HUB firms that can provide a range of services to the Mobility Authority. The exact mix of firms will depend on the nature of task orders and associated opportunities.

B. WOMEN/MINORITY EMPLOYEES PROPOSED TO BE ASSIGNED TO THE CTRMA PROJECT AND THEIR LEVEL OF ENDEAVOR AND RESPONSIBILITY

The below chart shows women and minority staff on the Stantec team.

Stantec Key Staff Name	Woman	Minority
Tiffany Cummings, Project Manager	✓	
Marcelle Jones, Strategic Advisor	✓	✓
Jun Yao, Travel Demand Modeling Lead		✓
Sumeet Kishnani, Data Analytics Lead		✓
Haley Collins, Demographics Lead	✓	
Sheldon Mar, Simulation Modeling Lead		✓
Sanaz Zehtabi, Simulation Modeling	✓	✓
Sean Tihal, Toll Systems and Technology		✓

The women and minority staff from our subconsultant firms listed in the following section are shown in the below chart.

Subconsultant Key Staff Name	Woman	Minority
Ashley McLain, Demographic Forecasts	✓	
Rolando Castañeda, Data Collection		✓
Catherine Larson, Surveys	✓	

C. NAME OF SUBCONTRACTED HUB OR DBE FIRMS, THEIR PRINCIPALS, A SUMMARY OF THE WORK TO BE PERFORMED & THE PERCENTAGE OF THE TOTAL CONTRACT

The Stantec Team consists of a diverse mix of professionals that have experience working on projects in the Austin area and for the Mobility Authority or other toll road agencies for several years. These firms

will be utilized to perform the services described below as needed throughout the on-call contract duration. We would work with the Mobility Authority to include these subconsultants to meet specified HUB and DBE participation goals. This includes the following categories:

- **Alliance Transportation Group, Inc.**, has helped with the review of municipal and regional transportation plans for traffic and revenue studies in the Central Texas region for nearly 10 years. They bring a strong understanding of development patterns and plans, and are a certified Disadvantaged Business Enterprise (DBE), Women-Owned Business Enterprise (WBE), and Historically Underutilized Business (HUB) in the State of Texas.
CEO - Gayle Heath; President - Mike Heath
- **Cox | McLain Environmental Consulting Inc.** is a certified DBE/WBE/HUB in the State of Texas. They have previously worked on environmental studies for the Mobility Authority. They are on our team to support with demographic analyses.
Principals - Ashley McClain; Larry Cox
- **CJ Hensch & Associates, Inc.** is a certified DBE/WBE/HUB in the State of Texas. They have worked with Stantec on data collection and summarization, and field reconnaissance tasks in the Central Texas region.
President - Carol Hensch
- **AGS Engineering & Construction** is a certified HUB and DBE in the State of Texas. AGS has also worked with Stantec on extensive data collection efforts in the Central Texas region. They bring additional depth for large field data collection programs.
President - Rolando Castañeda
- **Larson Consulting Associates, LLC** is a woman-owned business that has helped provide survey services for Stantec on traffic and revenue projects in several states. The firm is a state-certified DBE in some states and is eligible to apply for this in Texas. LCA also has Federal DBE certification.
President - Catherine Larson

D. OTHER PERTINENT INFORMATION OF WOMEN/MINORITY PARTICIPATION WITHIN OTHER SUBCONTRACTING FIRMS

The above sections identify leading Team roles for women and/or minorities. Stantec and our subconsultant team have women and/or minority support staff that regularly work on our studies.

E. DESCRIBE THE AFFIRMATIVE ACTION PLAN OF YOUR FIRM

Stantec is an Equal Employment Opportunity employer. Our policy is to provide equal opportunity to all employees and applicants and to prohibit any discrimination because of race, color, religion, sex, national origin, age, marital status, genetic information, disability, pregnancy, protected veteran status, sexual orientation or gender identity and expression. Employees will be treated based on their job-related qualifications, ability, and performance. Discrimination and harassment, including sexual harassment, is against the law, against Stantec policy, and will not be tolerated. Stantec will provide reasonable accommodations for employees and applicants with disabilities. The foundation of these policies is our commitment to treat everyone fairly and equitably and to have an unbiased work environment.

Stantec is an Affirmative Action employer, promoting equal opportunities among races, genders, religions, sexual orientations, individuals with disabilities and veterans. Stantec annually creates and implements an affirmative action plan for each of its locations in the US.

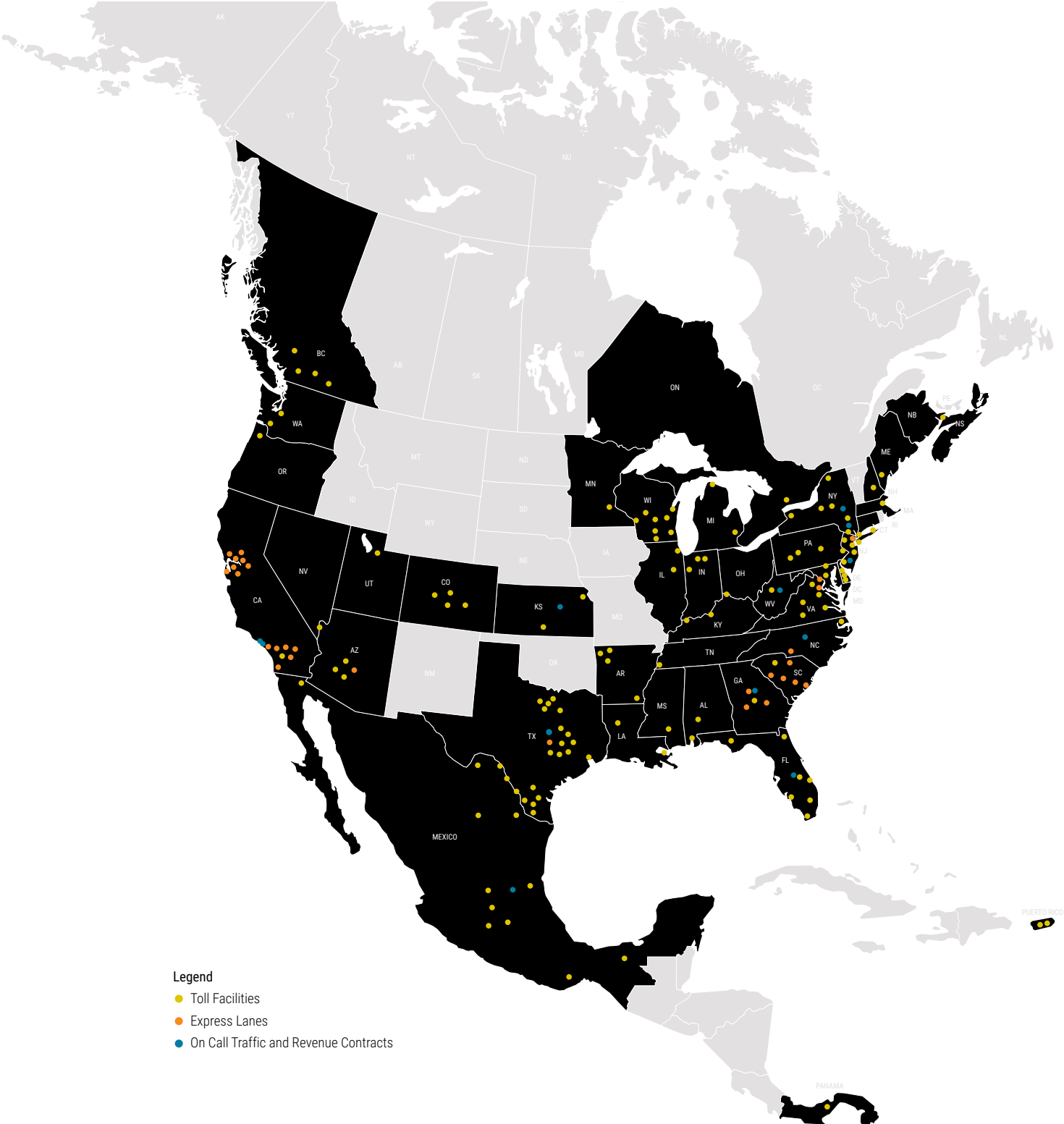
At Stantec, we create opportunity by inviting, embracing, and celebrating differences. This goal remains at the heart of our efforts to champion diversity and inclusion throughout our organization. Over the years, we've made some incredible progress in supporting this area, but as we continue to evolve, so does our understanding of how we need to shift our approach to take our work to the next level. Our overarching goal is to ensure that in all we do, we foster ongoing solidarity with our BIPOC (Black, Indigenous, and People of Color) communities. We are committed to supporting volunteerism, STEM education, mentorship, and scholarship opportunities to support BIPOC students and future leaders in our industry.

F. STATEMENT OF CONFORMITY WITH THE REQUIREMENTS OF CTRMA'S POLICY ON THE PARTICIPATION OF HUBS IN CTRMA PROFESSIONAL SERVICES AND CONTRACTING OPPORTUNITIES

Stantec will be able to conform with such requirements if and when required.

Appendix

Stantec T&R Project Experience





Bill Ihlo PE

Project Director

REGISTRATIONS

Professional Engineer
#17437, CT

Professional Engineer
#072882, NY

EDUCATION

Master of Urban Planning,
New York University, 1979

Master of Science,
Transportation Planning
and Engineering,
Polytechnic Institute of
New York, 1979

Bachelor of Science,
Management, Rensselaer
Polytechnic Institute, 1971

MEMBERSHIPS

Member, International
Bridge, Tunnel and
Turnpike Association

As a traffic engineer for over 40 years, Mr. Ihlo's duties have encompassed all phases of transportation studies, including a particular focus on traffic and revenue feasibility studies. These studies range from preliminary Phase I to investment grade projects. Mr. Ihlo is a Principal with the firm.

Select Project Experience

CTRMA Studies | Williamson County, Texas

Mr. Ihlo has been Project Manager for over 15 years, responsible for conducting a wide variety of studies in support of a long term role as the Authority's traffic consultant. Studies include preliminary feasibility, investment grade leading to financing, monitoring traffic and revenue performance, assessing changes in toll policy, preparing sections of bond documents, issuing certificates as required by trust indentures and providing input for annual reports to TIFIA. Major projects include the 11-mile 183A Turnpike now open for traffic, the 6-mile 290E Project, and the 8-mile 183S project now under construction.

Central Texas Turnpike System (CTTS) Traffic and Revenue Studies | Austin, Texas

Project Manager or Project Director in charge of conducting an investment grade level traffic and revenue study of proposed 70-miles of turnpike (SH45, Loop 1 and SH130) serving the rapidly growing suburbs of Austin. The original study was done in 2002 and resulted in a \$2.2B financing. These facilities opened for traffic in stages during 2006 and 2007 with significantly more traffic usage than expected. Updated investment grade studies were prepared in 2005, 2008, 2010, 2012, 2014, 2018, and most recently in 2019. The 2012 study was prepared in connection with expansion of the system and changes to the toll collection system including a toll increase, a cashless conversion and discounts for disabled veterans.

183A Turnpike | Austin, Texas

Project Manager responsible for conducting numerous intermediate level and investment grade traffic and revenue feasibility studies for a proposed 11-mile turnpike project serving the rapidly growing north suburbs of Austin. Phase 1 of this project opened in 2007 with significantly more traffic usage than forecasted. Phase 2 opened in 2012, some 5 years ahead of schedule and Phase 3 of this project is currently being studied for a northerly extension.

Transportation Corridor Agencies and Traffic & Revenue Study | Orange County, California

Project Manager or Technical Advisor on a long term assignment for the Transportation Corridor Agencies' (TCA) toll roads which include the San Joaquin Hills (SJH) and the Foothill /Eastern (F/E) corridors. This 51-mile toll system was built in stages between 1993 and 1999 and processes over 300,000 average weekday toll transactions. The toll facilities serve major employment and shopping centers, provide congestion relief alternatives, and provide access to future development areas. Significant traffic and revenue studies were conducted in 2003, 2008 and 2012, with extensive changes to the travel demand model including recalibration to reflect changes in land use development trends, travel patterns and network infrastructure. Other assignments include annual forecasts for budget process, analysis of toll elasticity and rate adjustments, impact of conversion to cashless operations and routine monitoring of traffic, revenue and AVI usage.

Cashless Toll Studies | Texas and California

Project Manager or Technical Advisor for several toll feasibility studies to assess the impacts of eliminating cash payments on existing toll facilities. Projects include the 183A Turnpike in Austin, TX, the CTTS roadways in Austin, TX and the TCA roadways in Orange County, CA. The 183A Turnpike successfully eliminated cash in 2008, the CTTS roadways (SH 130, SH 45N & Loop 1) converted to cashless in January 2013 and the TCA system converted in the Fall of 2013.

Managed Lane Studies | Various Locations

Project Manager or Technical Advisor for several preliminary toll feasibility studies to assess the revenue potential of constructing express lanes alongside general purpose lanes. Corridors include I-35W in Denton, TX, Tappan Zee Bridge in Rockland County, NY, I-25 in Denver, CO, I-26 in South Carolina, Loop 1 (N & S) in Austin, TX, Route 28 in Virginia, and 183N in Austin, TX.



Tiffany Cummings PE

Project Manager

REGISTRATIONS

Professional Engineer
#132525, TX

Professional Engineer
#096707, NY

EDUCATION

Bachelor of Science, Civil
Engineering, Clemson
University, 2011

MEMBERSHIPS

Chair of the WTS Greater
New York Chapter's Young
Professionals Committee,
Women's Transportation
Seminar

Ms. Cummings is a Transportation Engineer with a Bachelor of Science degree in civil engineering. She has experience in a variety of transportation engineering and planning projects, as well as site and land development projects. Specifically, she has extensive experience in transportation planning for toll roads with expertise in traffic and revenue forecasting, strategic toll rate analyses, toll facility monitoring, and travel demand model development. Ms. Cummings also has transportation operations experience for major sports stadiums.

Select Project Experience

CTRMA System (183A, 290E, 71E, SH 45 SW, 183S, and 183N Express Lanes) 2019 T&R Study | Austin, Texas

Ms. Cummings served as a Transportation Engineer and Assistant Project Manager for this investment-grade study to refinance the CTRMA System. Responsible for designing the data collection program, summarizing and analyzing existing traffic data within the study area, overseeing the calibration of the travel demand model and microsimulation model, and preparing the traffic and revenue forecasts for the System. The investment grade forecasts were used to finance the 183A Phase III and 183N Express Lane projects through a TIFIA loan application (still underway), as well as through the sale of bonds. She also authored the traffic and revenue report for inclusion in the Official Statement and TIFIA Letter of Intent. These efforts led to a 12/2019 bond sale of \$50.2B.

CTRMA System (183A, 290E, and 183S) 2018 Refinancing | Austin, Texas

Ms. Cummings served as a Transportation Engineer and Assistant Project Manager for this investment-grade study to finance the construction of 290E Phase III direct connectors. She was responsible for designing the data collection program, summarizing and analyzing existing traffic data within the study area, overseeing the calibration of the travel demand model, and preparing the traffic and revenue forecasts for the System. The investment grade forecasts were used to finance the project through a TIFIA loan application, as well as through the sale of bonds. She also helped author the traffic and revenue report for inclusion in the Official Statement and prepared presentations for rating agency meetings and investor roadshows, and also conducted numerous sensitivity tests as a part of this financing effort. These efforts led to an 10/2018 bond sale of \$90.3M.

183A Toll Road, Phase III Extension Feasibility Study | Austin, Texas

Ms. Cummings was a Transportation Designer responsible for preparing Level I traffic and revenue forecasts for the proposed five-mile northerly extension of the existing 183A toll road. She revised the background networks of the travel demand model to include the proposed project and analyzed the results of the regional travel demand model to produce the forecasts.

290E / SH 130 Direct Connector Feasibility Study | Austin, Texas

Ms. Cummings was a Transportation Engineer responsible for preparing Level I traffic and revenue forecasts for various configurations of direct connectors between the existing 290E (Manor Expressway) and SH 130 toll roads. She modified the background networks of the travel demand model for each configuration and tolling scenario. She summarized and analyzed the results of the regional travel demand model to produce forecasts for each scenario and assess the impacts of the improvements to the 290E and SH 130 toll roads.

183 South Truck Toll Discount Feasibility Study | Austin, Texas

Ms. Cummings was a Transportation Engineer responsible for conducting sensitivity tests for various truck toll discounts on the future 183S toll road. She modified the background networks of the travel demand model for each tolling scenario, and summarized and analyzed the results of the regional travel demand model to produce 183S T&R forecasts for each scenario and assess the impacts of the toll discounts to truck traffic on IH-35 and SH 130 toll road.

CTRMA System (183A, 290E, and 183S) 2015 Refinancing | Austin, Texas

Ms. Cummings served as a Transportation Engineer who was responsible for designing a data collection program, summarizing and analyzing existing traffic data within the study area, overseeing the calibration of the travel demand model, and preparing the traffic and revenue forecasts for the System.



Rick Gobeille PE

Principal-in-Charge

REGISTRATIONS

Professional Engineer
#PE050984E, PA

Professional Engineer
#21944, MD

Professional Engineer
#24GE03964100, NJ

Professional Engineer
#063235, NY

EDUCATION

Master of Engineering,
Mechanical Engineering,
Stevens Institute of
Technology, 1983

Bachelor of Engineering,
Civil Engineering, Stevens
Institute of Technology,
1980

Mr. Gobeille is a nationally recognized leader in toll systems technology, development and implementation, traffic and revenue forecasting, operating cost estimates, and toll facility operations. He has more than 25 years of experience and has led several toll collection initiatives in the industry's transformation from attended toll booth concepts to electronic toll collection (ETC), Open Road Tolling (ORT), All Electronic Tolling (AET), and Managed Lanes. Over the course of his career, he has prepared reports and studies, and made more than 100 presentations to ratings agencies, underwriters, and investors, in support of more than \$19 billion of Toll Revenue Bond Sales and Trust Agreement requirements. Of particular note, he was the project manager for the original feasibility, implementation studies, and testing for E-ZPass in the early 1990s.

Select Project Experience

MTA Independent Engineer Traffic and Revenue Study 2019 | New York, New York

As Technical Advisor Mr. Gobeille functioned as a technical advisor and independent reviewer of Stantec's 2019 forecast. This involved holding a series of review meetings as the report and forecast progressed and asking technical questions regarding the level of the traffic and revenue forecasted.

TxDOT Procurement Services* | Statewide, Texas

Responsible for leading the Engineer's activities in conjunction with a \$3B Grand Parkway Project. Activities including preparing all O&M, R&R and toll operation costs estimates, opining on the design builders proposed program and schedule, assessing schedule and cost risks and making presentations to the Rating Agencies, Underwriters and TIFIA in support of the project.

MTA Toll System Studies* | Statewide, Massachusetts

Completed several studies with regards to the Turnpike's toll collection system. Efforts included a review of the various approaches to toll collection including ticket, barrier and hybrid systems looking to optimize toll collection costs, plaza congestion and customer convenience. Results of the studies include specific recommendations to improve plaza operations through the development of new dedicated toll locations, a hybrid barrier/ticket system for future consideration. Also completed tasks that specifically studied AET pilot programs for the eastern terminus of the ticket system at I-95 and for the Tobin Bridge and the tunnels.

NYSTA Finance and Operations* | Statewide, New York

Project Director/Project Manager for several on-call traffic and revenue and financial services retainer contracts over the past 20 years that supported a variety of the Authority's projects and studies. He has completed some \$10B in successful NYSTA financing bond sales. Mr. Gobeille made significant contributions to 14 Thruway Revenue Bond Sales (including the most recent Series L), the New York Bridge TIFIA financing, Tappan Zee Bridge AET Implementation, and numerous other certifications and studies for the Authority. Other efforts he has managed under this contract include T&R projections; transportation policy and program development; and system analysis and revenue forecasting.

On-Call Toll Systems and Related Services* | Statewide, New Hampshire | Project Director

Directed on-call, toll-related services and support, including T&R forecasting. Developed the traffic and revenue model and prepared the investment grade T&R report that supported NHDOT's December 2009 \$217 million revenue bond financing sale, and completed an update of the study in August 2012 for the bond sale later this summer. Prepared certificates in support of the Additional Bonds tests that included an analysis of O&M expenses. Other project tasks included estimation of revenue effects of various frequency discount plans, feasibility of all-electronic toll collection (AETC), and revenue effects of changing to a height and axle-based classification system.

Policy Development / Strategic Planning Projects | Various Locations

As Project Manager/Director responsible for assignments that developed policy and strategic plans for toll agencies. Acting as facilitator, Mr. Gobeille led the agency teams through a consensus building process that included the commissioners, directors and executives of numerous agencies and toll authorities. Projects included: Toll System Study (NYS Thruway Authority), E-ZPass Implementation Study (NHDOT), ETTM Implementation Study (NJTA), ORT Policy Development (MDTA), Toll System Strategic Plan (Ohio Turnpike Commission), AVI / ETTM Strategic Plan (I-95 Corridor Coalition).

*denotes projects completed with other firms



Joe Sobleskie

Technical Advisor

EDUCATION

Bachelor of Science, Civil Engineering, Pennsylvania State University, 1989

Mr. Sobleskie is a recognized leader in the traffic and revenue forecasting industry. He has served as project manager for more than \$7B in successful toll facility financing bond sales for public authorities, private clients, public-private partnerships and concessionaires on projects across the US, in Chile and in Mexico. His practical experience tying together financial and economic analyses with his transportation planning/engineering background has resulted in traffic and revenue programs for numerous toll authorities and private concessionaires. Mr. Sobleskie also has notable credentials in the areas of financial forecasting, cost/benefit analysis and due diligence review.

Select Project Experience

State Road and Tollway Authority (SRTA), Northwest Corridor Express Lanes (I-75 / I-575) And I-75 South Metro Express Lanes | Atlanta, Georgia

Stantec prepared investment-grade T&R forecasts for the I-75 South Metro Express Lanes and the Northwest Corridor Express Lanes for SRTA, who obtained private financing for the I-75 South Metro Express lanes and a \$275M TIFIA loan for the Northwest Corridor because of our forecasts. The nearby SRTA-operated I-85 Express Lanes provided invaluable data for these studies, such as value of time, travel time differentials, toll rates, speed flows, and corridor throughput, all of which we analyzed and incorporated into our forecasts. Our forecasting models were subject to extensive calibration processes, providing for reliable and accurate T&R forecasts. After extensive modeling efforts to test varying tolling structures, business policies, and toll rates, we forecasted travel demand with the tolls set to facilitate SRTA's goal of achieving travel time reliability.

Georgia State Road and Tollway Authority I-85 Express Lanes Dynamic Pricing Algorithm and Facility Management (USDOT Congestion Reduction Demonstration)* | Atlanta, Georgia

Project Manager of the independent traffic consultant supporting SRTA's efforts to create the dynamic tolling pricing algorithm, in that the resulting tolling algorithm functions in the way that has been planned by the Project Team for usage on the Project to meet the Project's goal of travel time reliability for the Express Lane. Additionally, Mr. Sobleskie was one of the operators of SRTA's Toll Operations Center (TOC), which monitors and controls the I-85 Express Lanes Facility.

Georgia State Road and Tollway Authority Traffic and Revenue Consulting Services (USDOT Congestion Reduction Demonstration)* | Atlanta, Georgia

Provided overall project management for this on-call toll feasibility and traffic and revenue consulting services contract that will support statewide initiatives that require assessing the viability of toll/user-financed facilities, as well as projects that would require innovative transportation financing. The first initiative included making the investment-grade traffic and revenue study for the I-85 Express Lanes in Atlanta. Project included the investment-grade traffic and revenue study for the \$40M financing in November 2010. A toll feasibility and traffic and revenue analysis was performed to determine the viability and phasing of converting the existing HOV lanes to HOT lanes in the Atlanta region.

New York State Thruway Authority Finance and Operations* | Statewide New York

Managed this on-call traffic and revenue and financial services retainer contract that supports a variety of the Authority's projects and studies. The first task completed for this contract included conducting annual studies to support the Authority's 2012 budgeting. Other efforts under this contract include T&R projections; transportation policy and program development; and system analysis and revenue forecasting.

Orlando-Orange County Expressway Traffic and Earnings Consultant Contract* | Orlando, Florida

Project Manager responsible for the projection of future traffic and revenues on the existing system and for future-planned roadways. These projections were made annually, as a part of the Traffic and Earnings Consultant contract role to the Authority, and at other times, when the Authority sought bond financing. Mr. Sobleskie also provided analyses for frequent-user discounts to the system's electronic toll customers. Results led to over \$2.5B in financing.

New Jersey Turnpike Authority, Traffic Consultant Contract | Statewide New Jersey

Project Manager responsible for the projection of future traffic and revenues on the existing Garden State Parkway system. These projections were made annually, as part of the Traffic Consultant contract's role for the Authority, and at other times, when the Authority sought bond financing.

*denotes projects completed with other firms



Pamela Bailey-Campbell

QA/QC

EDUCATION

Master of Business Administration, University of Denver, 1990

Bachelor of Science, Biology, Missouri Southern State University, 1977

Ms. Bailey-Campbell is a nationally recognized leader with more than 25 years of hands-on success in resolving the full range of challenging issues that arise in moving multifaceted transportation projects from concept to reality. This extensive experience she provides her clients with unique insights and solutions for the development, procurement and implementation of major projects that involve public-private partnerships (P3s), tolling and complex feasibility solutions. Ms. Bailey-Campbell has directed numerous high-profile projects and advised a broad range of clients on the full life cycle of project issues. Her work has encompassed the full spectrum of program management, strategic and executive advisory services. Ms. Bailey-Campbell has served on the Eno P3 Working Group, Texas Governor's Transportation Advisory Board, Executive Committee and Board of Directors for the National Council of Public-Private Partnerships, was on the Board and held the position of President of the American Road & Transportation Builders Association P3 Division, and is an active participant in International Bridge Tunnel and Turnpike Association where she served as the Chairman for the Finance Summit, and served as the Vice-chair for the Finance Steering Committee and several previous Program Committees.

Select Project Experience

TxDOT Statewide Toll Feasibility/Implementation Projects* | Texas

Assisted the Texas Department of Transportation in the development and implementation of toll facilities throughout the 25 TxDOT Districts. The work included evaluating projects for toll viability and develop implementation plans to move those projects forward. These projects range from enhancements and conversion of existing facilities to the construction of new toll facilities.

TxDOT Management Review and Assessment* | Texas

Project Manager for a comprehensive organizational review and assessment of all aspects of the Texas Department of Transportation under contract with the State Comptroller. Assessed all aspects of the organization including administration, finance, budgets, capital programming, procurement and project delivery. Provided series of detailed white papers on findings and worked with the Department to develop a series of recommendations for value-enhancements in the organization.

E-470 Public Highway Authority, Denver, CO* | Denver, Colorado

Served as Executive Director, Chief Operating Officer, and Chief Financial Officer for the E-470 Public Highway Authority in Colorado. E-470 was a pioneer in using the public-private partnership and design-build models to deliver transportation projects. Responsibilities included the development of procurement documents, evaluation and selection, negotiations and oversight approach. Development one of the first design-build contracts for transportation in the U.S. as well as the first public-private partnership. Her responsibilities included direct oversight of all finance and operations for the Authority including the electronic toll and traffic management systems. On the financial side, directed and coordinated variable-rate financings and \$1.5B in long-term structured revenue bond financings. Also oversaw the start-up and day-to-day toll operations for the organization as well as legislative issues and the Authority's communications with the public and investors.

Northwest Arkansas Regional Mobility Authority (NWARMA) Strategic Advisory Services* | Arkansas

Served as Project Manager for the NWARMA as they selected and implemented projects to help improve transportation infrastructure within Washington and Benton Counties. Strategic advisory services included analyzing funding options, developing a strategic plan for the region as well as assisting with the development of policies pertaining to project assessment and selection, revenue and financing options, operations, and maintenance. Specific tasks performed included policy development, development of guidelines for selecting, evaluating, and prioritizing projects, assessment of potential revenues and implementation strategies and financial analysis of potential projects.

Cities of Chesapeake and Virginia Beach Virginia Infrastructure Improvement Analysis and Financial Assessment* | Virginia

Conducted assessment on the impacts of current land use planning and the financial relationship with planned and potential infrastructure improvements. Worked as a key executive of the team to develop a focused economic development strategy that will optimize tangible benefits to the cities.

*denotes projects completed with other firms



Marcelle Jones JD

Strategic Advisor

EDUCATION

Masters in Science, Urban and Regional Planning, University of Wisconsin, 1993

Juris Doctor, Law, University of Wisconsin, 1992

Bachelor of Arts, Journalism, University of Oklahoma, 1984

MEMBERSHIPS

NCHRP 20-6 Legal Research Committee, Transportation Research Board

Chair of the Standing Committee on General Law, Transportation Research Board

Member, State Bar of Texas

Foundation Member, International Bridge, Tunnel and Turnpike Association

Ms. Jones is well-versed in public sector issues and supporting clients in the evaluation and formulation of policy, procurement and strategic business decisions. Her experience and knowledge of industry practices and trends has helped agency's establish business, operational and organizational frameworks for toll operations and public-private partnerships; assess and minimize risks; and identify essential procurement and contractual provisions in public-public and public-private agreements. She has authored and advised on legislation, statutes, administrative rules, and policies for various public agencies across 17 states.

Ms. Jones served as the General Counsel and the Director of Legal Services to the North Texas Tollway Authority and as an Assistant City Attorney for the City of Arlington for the Planning and Land Development, Office of the Secretary, the Planning Commission and Zoning Board of Adjustment.

Select Project Experience

Texas Department of Transportation* | Texas

As Project Manager, Senior Program and Policy Advisor managed the procurement team assisting the Texas Department of Transportation with procurement document development, policies and procedures, and legislative matters related to their alternative delivery program for public-private partnerships and mega design-build projects delivered. Provided technical support and feasibility analysis on both solicited and unsolicited proposals to support project throughout Texas. As a Senior Program and Policy Advisor provided policy and legislative support including bill analysis, research and reports on federal and state laws and industry activity regarding highway and rail infrastructure and operations. Initiated efforts to streamline and develop programmatic P3 procurement documents. Worked with the Strategic Project Division Director to engage and partner with the Associated General Contractors of Texas and identify and address contractor concerns and develop solutions, including issues related to sureties, alternative technical concepts, disclosures and contractor evaluations. Developed interlocal agreements, project term sheets, policies and procedures for procurements, and Commission minute orders and executive summaries.

Oversaw the procurement activities for SH 99 H&I, development of program policies and procedures, contract reporting compliance audit of operating projects, including LBJ Express, toll operations support, T&R initial project feasibility, O&M assessment, and lessons learned regarding SH 99 best and final offer re-engagement. Also served as part of an integrated team that worked with TxDOT to develop a comprehensive toll program to identify and expedited project delivery solutions from the inception and planning of a toll road project to the customer service interface. Advised on impacts of state, federal and administrative laws to achieve agency goals on such matters as the use of construction-manager-at-risk, design-build, and toll policies. Identified enforcement and collection mechanisms and recommended solutions to support the State's introduction of new technology to enable video tolling/ORT facilities. Issues pertained to license plate lookups, the protection of personal information, and application of debt collection laws. Assisted in evaluating projects for toll viability/feasibility, developing toll collection schemes, procuring a toll collection system provider and providing implementation plans and oversight to move projects forward.

Ohio Turnpike and Infrastructure Commission * | Statewide Ohio

As Strategic Plan and Procurement Advisor worked with client to develop its strategic plan for toll collection systems and customer service center to guide the future deployment and integration of new technologies and innovations. Primarily responsible for evaluating commission toll policies, statutes and master trust agreement and industry lesson learned. Continue to support client with new system procurements, operations, lessons learned, policy and contracting.

Nevada Department of Transportation Pioneer Program* | Statewide Nevada

Legislation and Policy Task Manager guided the Nevada DOT in the development of its first P3 program. Researched, evaluated and drafted PPP legislation, and department policies and rules. Conducted several informational workshops with department staff to assess their knowledge of P3s and DOT's capacity to develop a program which resulted in recommendation for organizational structures to support the program. Develop presentations and advised staff and key stakeholders regarding policy positions and strategies to advance program. Our efforts lead to the development of DOT's first PPP manual that includes guideline for policy issues, project selection criteria guidelines, stakeholder strategies, and alternative project delivery mechanisms. Also drafted grant applications and monitored state bill proposals and federal register notices.

*denotes projects completed with other firms



Jun Yao

Travel Demand Modeling

EDUCATION

Master of Science,
Civil Engineering –
Transportation, University
of Virginia, 2005

Bachelor of Science,
Mathematics and
Statistics, Fudan
University, Shanghai,
China, 2002

Mr. Yao has 15 years of experience, with specialized skills in Cube Voyager, TransCAD, VISUM and VISSIM. He holds a masters degree in civil engineering, with an emphasis in travel demand forecasting and traffic operations. He was the lead analyst of many traffic and revenue (T&R) studies (including Level I, Level II and Investment Grade studies) serving clients in California, Georgia, Texas, North Carolina, and Washington. He was the lead modeler responsible for demand estimation for more than ten Vissim simulation projects. He also leads efforts requiring big data analysis capability by developing customized programs using python, VBA macro and SQL. His hands-on experience also includes regional model development and calibration, special generator model development and calibration, mesoscopic and micro-simulation modeling, traffic operation analyses, risk analysis and GIS applications.

Select Project Experience

CTRMA 183N Express Lanes Investment Grade Study | Austin, Texas

Lead Transportation Modeler responsible for refining and calibrating the model framework that was developed as a part of the Central Texas Turnpike projects. He was also responsible for QA/QC the whole modeling process, including demographic updates, highway network updates, as well as new modeling targets. He led the calibration efforts on both regional and subarea level TDM model, ran future year TDM models, produced Traffic and Revenue forecast and prepared summary tables for the report.

CTRMA 183A T&R Update | Austin, Texas

Transportation Planner responsible for preparing the Toll Diversion Model and the inputs for various model scenarios.

2010, 2012, 2014, 2018 Central Texas Turnpike System (CTTS) Update Project | Austin, Texas

Transportation Modeler responsible for preparing and running two regional models and combining them into one integrated Toll Diversion Model. The two regional models, CAMPO-Austin Model and San Antonio Regional Model were developed within TRANSCAD environment. The integrated model was developed using Cube Voyager software package. His responsibilities included the preparation of the highway network, the transit network and the socioeconomic data; external traffic adjustments; the conversion of the highway network and trip tables between the TransCAD and CUBE formats, base year calibration; preparing and running future year TDM models; producing final Traffic and Revenue forecast and preparing summary tables for a final report.

TXDOT IH 35 Managed Lane Project | Austin, Texas

Lead Modeler responsible for developing estimates of traffic and revenue for the IH 35 Managed-Lanes Level 1 traffic and revenue analysis. The analysis was performed using the 2014 CTTS Update Model Platform. Several scenarios were analyzed to reflect different project views.

IH-10/IH-35 Managed Lanes Level-II Study | San Antonio, Texas

Lead Modeler responsible for running the Alamo MPO Regional TransCAD Model and converting the network and trip tables for a CUBE TDM Model, performing the calibration for the base year condition, and conducting the traffic and revenue analysis for the horizon years.

RCTC I-15 Express Lanes Investment Grade Study; OCTA I-405 Express Lanes Investment Grade Study; TCA 241/91 Express Connector Investment Grade Study | Orange County, California

Lead Modeler responsible for the model calibration and preparation of future year model platform, which was used for T&R forecast and sensitivity analysis. A three-level modeling platform and calibration procedure was implemented to examine different aspects of the analysis. The top level was an integrated model by combining RCTC and SANDAG regional model and converting from TransCAD to Cube format. While maintaining the same framework, the middle and finer level toll diversion model was developed for each study corridors. The calibration and future forecasts were performed with focus on each specific corridor. As part of the data collection program, Python scripts were developed to programmatically collect traffic volume and real-time speed data from public websites.

State Road and Tollway Authority (SRTA) T&R On-Call 2017 Refresh | Atlanta, Georgia

Lead Analyst responsible for the model calibration, future year T&R forecast model platform, and sensitivity analysis.



Haley Collins AICP

Demographics

REGISTRATIONS

Certified Planner,
American Institute of
Certified Planners

EDUCATION

Master of Science,
Community and Regional
Planning, University of
Texas, 2013

Bachelor of Arts,
Sociology, University of
Texas, 2009

MEMBERSHIPS

Member, American
Planning Association

Ms. Collins is a transportation planner with a Master of Science in Community and Regional Planning. She has experience in a variety of transportation planning and engineering projects. Specifically, she has extensive experience in socioeconomic analysis, long-range transportation planning, traffic and revenue forecasting, toll facility monitoring, and travel demand modeling.

Select Project Experience

CTRMA 183A, 290E, 71E, SH 45 SW, 183S 2020 Traffic and Revenue Study | Texas

Ms. Collins is currently overseeing the socioeconomic and network updates to the travel demand model. She interviewed study area stakeholders to understand the short-term and long-term impacts of COVID-19 on development activity and discussed developments in the pipeline, the attractiveness of certain areas for future development, planned growth patterns, and constraints to development. The interviews were summarized and supporting materials were provided to the independent demographer to assist in developing forecasts. Ms. Collins reviewed the independent demographer's methodology for incorporating the short- and long-term impacts of COVID-19 and the resulting growth rates for reasonableness. Ms. Collins performed a detailed comparison of the newly released 2045 CAMPO transportation plan with previous network assumptions and identified changes to be incorporated in the travel demand model.

CTRMA 183A, 290E, 71E, and 183S 2018 Traffic and Revenue Study | Texas

Ms. Collins acted as the lead in reviewing and updating the network assumptions and socioeconomic inputs to the travel demand model. She reviewed various transportation plans in the study area and interviewed area stakeholders to develop a realistic estimation of the transportation projects to be constructed over the modeling forecast years. Ms. Collins also reviewed land use and socioeconomic inputs to the travel demand model and compared them to other sources of projections and past studies in the same area to understand how the forecasts have changed over time and determine the reasonableness. Her review also included Excel and GIS-based analysis of TAZ-level and county-level growth in the current forecast to identify potential outliers for revision and finalize a reasonable estimation of population and employment growth patterns over the forecast period.

Central Texas Turnpike System 2018 Traffic and Revenue Update | Texas

Ms. Collins acted as the lead in reviewing and updating the network assumptions and socioeconomic inputs to the travel demand model. She developed a list of planned improvements in the study area and worked closely with TxDOT to finalize a TxDOT-approved list of network assumptions. Ms. Collins also worked closely with an independent demographer subconsultant, providing quality assurance reviews of baseline and future year population and employment estimates. The reviews included a high-level analysis of the county control totals and growth rates between forecast years, and a more detailed TAZ-level analysis of growth patterns across the region with a focus on TAZs near Central Texas Turnpike System facilities.

RM 620 North Corridor Refinement Study 2020 | Texas

Ms. Collins worked closely with stakeholders and TxDOT to review and understand several sources of population and employment forecasts in the study area and the potential impacts of each on traffic in the corridor. She prepared a memo for review by TxDOT, which included a recommended socioeconomic dataset. Once the baseline socioeconomic dataset had been approved, Ms. Collins incorporated information gathered from stakeholders in the study area to refine the population and employment of select TAZs along the corridor to reflect known planned developments.

Mid-Currituck Bridge Traffic and Revenue Study | North Carolina

To assist in the production of an investment-grade traffic and revenue study, Ms. Collins reviewed land use and socioeconomic inputs to the travel demand model and proposed revisions to these inputs based on other sources of demographic data, including the U.S. Census Bureau, the U.S. Bureau of Labor Statistics, State Data Centers, and Woods & Poole, as well as existing and historical aerial imagery. The revised demographic inputs represented a more conservative approach, less likely to overestimate future traffic and instead, produce a reasonable estimate of toll facility usage. Ms. Collins also assisted in developing written material for the final report and relevant maps, including travel time/speed maps, traffic count maps, origin/destination maps, as well as land use and socioeconomic maps.



Phil Eshelman

Managed Lanes

EDUCATION

Bachelor of Arts,
Economics, University of
Texas, 1998

Mr. Eshelman brings over 15 years of experience managing complex transportation planning programs focused on the delivery of traffic and revenue services to public toll agencies. These include all levels of analysis from sketch to investment grade with his studies supporting the sale of billions of dollars in toll revenue bonds. He is adept at all aspects of traffic and revenue analysis including data collection, data analysis, market research, stated and revealed preference analysis, travel demand modeling, toll diversion modeling, risk analysis, sensitivity testing, and presentations to Boards, rating agencies and investors. He has managed analysis for legacy facilities with long history of transactions and greenfield facilities that are breaking new ground, including managed lane facilities with dynamically priced tolls to managed traffic and/or optimize revenue.

Select Project Experience

Lead T&R Specialist & Project Manager, Multiple Divisions/Agencies | Statewide, Texas

Lead T&R Specialist and Project Manager of various traffic and revenue related analyses for programs across Texas. Worked with the divisions of Project Finance and Debt (PFD), Strategic Contract Management (SCM), TOD and the Austin, Dallas, Houston, Laredo Districts:

- SH 288 Level 2 T&R Study and On-Going Procurement Support: Project Manager developing intermediate level traffic and revenue study to support the full concession procurement in which demand and revenue risk was transferred to the private sector. Developed forecasting models to predict estimated toll revenues from developers, coming within 5 percent of winning bid. Developed toll regulation and toll service agreement language to protect the State over the course of the 52-year concession. Presented T&R study to TIFIA for draft term sheets in advance of financing from the developers. Continued support of TxDOT through construction phases of the project.
- LBJ Express Level 2 T&R Study: Project Manager leading the analysis to develop corridor forecasting model for private developer run section of LBJ Express Lanes. Used detailed existing datasets of traffic, speed and toll rates to calibrate base year model including value of time coefficients by time period and value of reliability as a function of distributions of speeds by time period for a full year. The forecasting model, based in excel, used queuing algorithms to mimic bottlenecks, essentially providing congestion levels as if simulation models were being run.
- Also Project Manager for various sketch level analyses and toll road monitoring

Traffic and Revenue Studies, Maryland Transportation Authority | Statewide, Maryland

Lead T&R Specialist and Project Manager over the course of multiple contracts to deliver all levels and types of traffic and revenue analyses including supporting multiple financing efforts. Critical work included the annual development of T&R forecasts for the legacy facilities and documentation of historical and forecasted T&R in Annual Reports; development and documentation of forecasting models for I-95 Express Toll Lanes (ETLs) including the review of the operational ETLs; and toll schedule analysis with model development to test multiple discount scenarios within one forecasting platform.

State Road and Toll Authority, T&R Advisory Services | Atlanta, Georgia

Project Manager for this multi-year master services agreement to provide traffic and revenue studies for various express lane projects either in operation or in development. The first tasks being completed are six managed lane sketch level traffic and toll revenue studies that form a system of managed lanes in the Atlanta region. The activity-based travel demand model from ARC, the MPO, was updated to include the proposed infrastructure to develop overall corridor demand by project. These data were then used as input into corridor specific managed lane models that were calibrated to both traffic and speeds by hour. The models were adaptable to handle various toll policies and infrastructure changes to optimize the facilities as a function of mobility and financial feasibility.

TxDOT, Strategic Contract Management, Procurement Engineering Contract | Statewide, Texas

Program Manager for this contract that guides alternative delivery procurement as well as serve in the role as technical advisor on all aspects of procurement of major infrastructure across the State of Texas. Specific roles include running this multi-discipline team in the development of procurement documents, providing technical advice regarding the optimization of toll facilities as a function of infrastructure, toll policy, and risk transfer. Additional activities of the team include document control, legislative support, Sharepoint management, and administration of the office lease and operating contracts and costs.



Sheldon Mar PE

Managed Lanes & Simulation Modeling

REGISTRATIONS

Professional Engineer
#087805, NY

EDUCATION

Master of Science,
Transportation Planning &
Engineering, Polytechnic
University, 2011

Bachelor of Science,
Operations Research &
Industrial Engineering,
College of Engineering,
Cornell University, 2004

Mr. Mar has extensive experience in express lane T&R studies, traffic simulation modeling, and traffic impact studies. He has been the lead engineer or project manager for numerous transportation projects including toll road feasibility studies to investment grade studies. Express Lane studies are Mr. Mar's specialty, and he has worked on projects in Southern California, Washington, Texas, Georgia, the Carolinas, Florida, Virginia, and New York, and for various delivery mechanisms, from public options, to P3's. Mr. Mar has been serving in this role for more than 15 years.

Select Project Experience

Central Texas Regional Mobility Authority (CTRMA) System (183A, 290E, 71E, SH 45 SW, 183S, and 183N Express Lanes) 2019 T&R Study | Austin, Texas

Mr. Mar was a technical advisor for the 183N Express Lanes T&R forecast and simulation modeling. He brought to this study his experience and knowledge of express lanes to advise on toll rates, capture rates, and annualization factors. He also advised on the micro-simulation model of the corridor.

Riverside County SR 91 Express Lanes Investment Grade Study | Riverside County, California

Mr. Mar was the Transportation Engineer responsible for forecasting traffic and revenue generated by the proposed extension of the existing SR 91 Express Lanes in Orange County into neighboring Riverside County. As part of this investment grade study, he developed a spreadsheet model that modeled hourly demand in the free lanes and tolled express lanes, toll-free HOV-3+, and the effect of variable toll rates. The model incorporated revealed preference market-share curves, based on the historical relationships between 91 Express Lanes traffic and revenue and corridor congestion. Mr. Mar also developed a micro-simulation model of the 25-mile corridor that was able to independently forecast express lane utilization. Since the project's opening in 2017, Mr. Mar led the effort to optimize corridor operations through a variety of traffic operations analyses, to optimize the 91 Express Lanes toll policy, and to refresh the T&R forecast. The T&R forecast refresh culminated in the project's bonds being upgraded by both Fitch Ratings and S&P Global.

SR 91/241 Express Direct Connector Simulation | Orange, California

Mr. Mar was the lead technical advisor for Stantec's simulation of the 91/241 EDC. Stantec simulated travel conditions on the heavily congested SR 91 and SR 241 between Orange and Riverside County. The VISSIM micro-simulation model we developed was used to assess how building a direct connector from the SR 241 toll road to the Riverside County 91 Express Lanes would impact both Express Lane and general purpose lane operations. Mr. Mar advised Stantec's simulation modelers on how to properly vet and interpret traffic data collected in the corridor. Mr. Mar also advised on the calibration and modeling of future conditions. His extensive experience with VISSIM, and his deep understanding of the 91 and 241 corridors were instrumental to the team's ability to successfully model the corridor.

I-55 Corridor Study | Chicago, Illinois

Mr. Mar oversaw the development of a VISSIM model for twenty-five miles of the congested I-55 Freeway, west of Chicago. He worked closely with the project team's staff members in order to evaluate traffic model inputs, establish calibration benchmarks and develop a methodology to calibrate the simulation model into reality. Mr. Mar contributed his knowledge of freeway operations and VISSIM's car-following model parameters, and the result was a model that could be reliably used to evaluate the impacts of planned improvements to the I-55 Corridor.

I-77 Express Lanes Level 2 Traffic and Revenue Study | Mecklenburg and Iredell Counties, North Carolina

Sheldon was the Deputy Project Manager responsible for assessing the T&R potential of a proposed 25 mile Express Lane along I-77 serving Charlotte, North Carolina. Sheldon designed and managed a significant data collection effort, including traffic counts, occupancy surveys, and travel time surveys. In addition to traffic data, Sheldon led the effort to analyze historical employment, population, and income data for the region, and assessed the reasonableness of projected land use. Sheldon identified a set of optimal toll rates to charge on the Express Lanes, varying by time of day and congestion level. Travel model results were post processed, and annual T&R were forecast for a 50-year period for a variety of build alternatives. The project culminated with the NCTA successfully leasing the rights to build, operate and maintain the I-77 Express Lanes to a concessionaire. The project is open to traffic and improving mobility in the I-77 corridor.



Sanaz Zehtabi PE

Simulation Modeling

EDUCATION

Master of Science,
Transportation Engineering,
George Washington
University, 2015

Bachelor of Science, Civil
Engineering, University of
Tehran, Tehran, Iran, 2012

Ms. Zehtabi is a transportation engineer with Stantec's New York office with a background in civil engineering and transportation design. She has worked on a diverse range of transportation projects from microscopic traffic simulation and transportation modeling and traffic and revenue forecast studies to driver behavior modeling and work zone safety and mobility assessment. Ms. Zehtabi combines technical knowledge and transportation modeling skills in analyzing traffic and transportation issues. She is interested in sustainable and multimodal transport design and studying alternative measures of effectiveness for Complete Streets. Ms. Zehtabi has extensive experience with an array of computer applications including Vissim, Aimsun, Synchro, SimTraffic and is familiar with ArcGIS, Transcad and Cube.

Select Project Experience

183N Express Lanes, Existing and Future Years Capacity and Operations Analyses | Austin, Texas

Stantec is developing a VISSIM microsimulation model to evaluate the future condition and operations along an eight-mile stretch of US 183 in northwest Austin; including the two variably priced express lanes in each direction in the existing median, connections to adjacent roadways and the MoPac express lanes. This model will also supplement the travel demand model used for the investment grade study and traffic and revenue forecast. Ms. Zehtabi has an integral part in designing the data collection program and origin-destination study, summarizing and analyzing the data and developing and calibrating the microsimulation model.

I-405 Express Toll Lanes Traffic and Revenue Study -Existing and Horizon Year Microsimulation Modeling | Bellevue, Washington

As part of the effort to prepare traffic and revenue forecasts for the planned Eastside Corridor Express Toll Lane System that will expand the existing I-405 Express Toll Lanes down through Renton and connect with the SR 167 Toll Lanes, Ms. Zehtabi led the evaluation of the T&R forecast using a complex VISSIM microsimulation model for different scenarios and time periods for existing and horizon years. The multilayer model that was developed over several years provided realistic operational feedback and highlighted the problem areas, which informed the adjustments to the T&R forecasts.

SR 520 Bridge Investment Grade Traffic and Revenue Study | Seattle, Washington

As part of this study, Ms. Zehtabi led the data management and analysis effort supporting the team in calibrating the Cube regional demand model. She also played a key role in generating the T&R forecast using the travel de-mand model outputs.

NYCDOT ESA, Woodhaven Select Bus Service Corridor* | Queens, New York

A detailed conceptual design was developed for a new Select Bus Service (SBS) route along the Woodhaven Boulevard corridor—a transit-poor corridor connecting a number of high-density areas— informed through necessary data collections. Ms. Zehtabi worked on the Woodhaven Synchro models extensively and assisted with traffic analysis for existing and future conditions based on the model outputs from Simtraffic simulation.

Routes 7/15 Interchange | Norwalk, Connecticut

A traffic impact analysis was prepared to determine the potential traffic impacts associated with proposed im-provements to the Route 7/15 Interchange. Ms. Zehtabi worked on the data collection program, data analysis and the microsimulation models used for existing and future conditions traffic analysis.

Sunset Park District Development Traffic Study | Brooklyn, New York

Transportation studies were undertaken in order to evaluate current circulation patterns within and at the entry points at both terminals and determine the potential impact that proposed development may have on circulation within and at terminal entry points. Ms. Zehtabi analyzed the existing and potential future traffic impacts using a Synchro simulation model of the network surrounding BUSH terminal.

Lower Hudson Transit Link* | Westchester/Rockland, New York

As part of an effort to design a user-friendly transit system which includes new bus operations and an integrated I-287 corridor in Rockland and Westchester Counties, Ms. Zehtabi has been an integral part of the modeling team for over a year. She led and assisted with different modeling tasks for a large scale, multilayered Aimsun model and finalizing the calibration and microsimulation analysis. Additionally, she assisted the Integrated Corridor Management (ICM) team in mapping the existing Intelligent Transportation Systems (ITS) technologies along the corridor and generating visual inventories using ArcGIS.

*denotes projects completed with other firms



Sumeet Kishnani PE, PTOE, LEED AP

Data Analytics

REGISTRATIONS

Professional Engineer
#117363, TX

Professional Traffic
Operations Engineer
(PTOE)

LEED Accredited
Professional

EDUCATION

Bachelor of Engineering,
Civil Engineering, City
College of New York, 2000

Master of Engineering,
Civil Engineering, City
College of New York, 2002

MEMBERSHIPS

Member, American
Planning Association

Mr. Kishnani has over 19 years of experience that he has gained while working on a variety of transportation engineering and planning projects. He formerly served as the Transportation Department Head of a well-known New York City area engineering firm, and he also served as the Director of their Stadium and Arena Transportation Solutions Group. He has extensive experience in transportation planning, pedestrian and transit analyses and vehicular traffic capacity analyses. Mr. Kishnani also has specialized skills in planning for major events, which include simulation modeling for both vehicles and pedestrians. His experience has included project management and principal engineering roles during traffic impact studies for large private development projects, master plans and stadium operations plans. During this time, he has produced comprehensive transportation plans for over a dozen professional and collegiate facilities within the US and around the world.

Select Project Experience

TxDOT and CTRMA Toll-Road Feasibility Studies | Austin, Texas

Assistant project manager on T&R studies for TxDOT and CTRMA in the Central Texas region. Stantec has provided feasibility and investment-grade studies for almost all of the publicly-owned toll roads in the Central Texas region. We have developed forecasts for SH 45 North, SH 130 segments 1-4, SH 45 South, Loop 1 North, 183A, the Manor Expressway, and 71 Express Lanes, among projects that are currently operational, and several proposed projects that are in the planning, design, or construction stages. For these types of studies, we calibrated a weaved CAMPO and AAMPO travel demand models to observations of traffic counts, speeds, and origin-destination patterns. It was necessary to develop a joint model of the two MPO areas to account for long-distance trips between the Austin and San Antonio metro areas on IH-35 and SH 130. These models were then used to project future traffic volumes, and a toll-diversion algorithm is used to estimate projected travel demand based on tolled and free facilities on the value of time for different user groups in the region, based on revealed and stated preference, and origin-destination surveys conducted over the past decade. Feasibility studies are used to check for the viability of proposed projects to cover their capital and O&M costs. Investment-grade studies have been used to finance several billion dollars of debt for the CTTS and CTRMA systems. Attended transportation agency, rating agency, and investor meetings to discuss the methodology, forecast results, and potential sensitivities and assumptions.

CTRMA User Travel Patterns Study | Austin, Texas

Worked with the CTRMA to better understand the origins of users of the CTRMA network in Austin, Texas. We utilized Streetlight data to understand local and true, long-distance origin-destination pairs. This was used to identify the percentage of users that originated in each municipality or county, to better help stakeholders in those regions understand the benefit of their system. Streetlight data was also used to identify local origin-destination patterns, which were used to validate and adjust raw travel demand model outputs. Also developed algorithms to determine travel time contours between select origin points and a grid of destinations in the region. This information was used to examine the relative changes in travel times between the existing, future no build, and several future build scenarios.

CTRMA SH 45 Southwest Feasibility Study | Austin, Texas

Assistant project manager responsible for conducting a feasibility study for the SH 45 Southwest project for CTRMA. Evaluated changes in traffic patterns as a result of the proposed improvements, evaluated several short-, medium-, and long-term configurations, developed traffic forecasts, prepared summary memorandum of the base forecast and sensitivities to toll rates.

183 North Investment Grade Study | Austin, Texas

Assistant project manager for the development of an investment-grade study for the 183 North managed lanes project. Developed data collection program, including a combination of data from Google real-time traffic, Inrix, Streetlight, Skycomp helicopter surveys, and AirSage. Calibrated existing conditions travel demand and simulation model to observed operational conditions in the field. Modified toll road market-share curves from other projects, adjusted for regional income and cross-section geometry, to apply to the 183N corridor. Developed time-period and hourly calibration models in CUBE and VISSIM. Developed an iterative process to compare travel demand and simulation model outputs to check the feasibility of projected managed lane volumes.



Sean Tihal PE

Toll Systems and Technology

REGISTRATIONS

Professional Engineer
#084025, NY

EDUCATION

Master of Science,
Civil Engineering
(Transportation), University
of California at Berkeley,
1999

Bachelor of Science,
Civil Engineering, Illinois
Institute of Technology,
1998

MEMBERSHIPS

Member, International
Bridge, Tunnel and
Turnpike Association

CERTIFICATIONS

Young Executive
Development Program,
American Road and
Transportation Builders
Association, 2010

Mr. Tihal has a passion for helping transportation agencies to plan, develop, implement and operate all forms of electronic tolling programs including Open Road Tolling (ORT), All-Electronic Tolling (AET) and Managed Lanes. With over 19 years of transportation consulting experience, he is well versed in roadside and back office toll systems and operations, toll strategic planning, toll feasibility studies, toll operations analyses and traffic & toll revenue forecasting. Mr. Tihal has also served as a Project Manager/Engineer on complex toll projects that included traffic and revenue analyses for the potential sale of investment bonds. He has conducted numerous studies related to capital and operating costs (CAPEX and OPEX), electronic tolling market share analyses, toll policy, tolling configurations, toll pricing and toll payment alternatives, and toll planning studies for over 28 transportation agencies across the United States and Canada. Since 2004 he has represented multiple toll agencies on the E-ZPass Group's Reciprocity Task Force Committee.

Select Project Experience

Ohio Turnpike and Infrastructure Commission New Toll Collection System and E-ZPass Customer Service Center | Statewide, Ohio

Mr. Tihal led the development of Request for Proposals to procure a new electronic Toll Collection System (TCS), Customer Service Center (CSC). Efforts performed included the development of TCS and CSC business rules and the preparation of CSC and CSC functional and technical requirements. These efforts culminated in a final CSC RFP issued in 7/2018, and a final TCS RFP issued in 10/2019. Currently Mr. Tihal is supporting the implementation of the new modernized CSC with Phase 1 slated to go live in 11/2020 as well as the implementation of the modernized TCS which is expected to go live in 3/2023.

Ohio Turnpike and Infrastructure Commission Toll Collection System Modernization | Statewide, Ohio

Mr. Tihal led the preparation of a Strategic Plan for the Ohio Turnpike's next generation TCS and CSC that identified the modification of the TCS to include highway speed Open Road Tolling at the mainline plazas and gateless low speed tolling at the ramp plazas, as well as modifying the CSC to accommodate license plate unpaid toll processing. Efforts performed include an assessment of the existing system, development of potential alternatives, short listing recommended alternatives, operational analyses, risk analyses, cost/benefit analyses, identification of a preferred alternative for implementation, development of toll policies and legislation for handling unpaid tolls, constructability of the preferred alternative, a schedule of major milestones and an assessment of the various procurement options for implementing the Strategic Plan. Currently Mr. Tihal is providing as needed support to the OTIC for the TCS Modernization efforts.

Ohio Turnpike Traffic and Revenue Forecasting and Planning Services* | Statewide, Ohio

Mr. Tihal was responsible for managing a multi-year traffic and toll revenue (T&R) forecasting and planning services contract for the Ohio Turnpike which included the preparation of investment grade T&R and Operations and Maintenance forecasts that supported a \$1.1B bond sale in 2013, a \$126.7M Refunding Bond Sale in 2017 and a \$499.8M Bond Sale in 2018.

Illinois Tollway Back Office Implementation Program Management* | Northeastern Illinois, Illinois

Mr. Tihal managed a team that provided program management, coordination and implementation support services to the Illinois Tollway during the upgrade of their back office electronic tolling system. This involved coordinating all activities between the Tollway and their vendor Accenture, validation and verification of the delivered solution, oversight of formal testing activities including managing the E-ZPass reciprocity testing efforts for the new back office and post go-live system monitoring. Mr. Tihal also supported the Tollway for various other electronic tolling technology upgrades including the deployment of new violation enforcement cameras and the commissioning of new toll plazas.

Kane County DOT Longmeadow Parkway Toll Bridge Operations and Maintenance (O&M) Study* | Kane County, Illinois

Mr. Tihal led the preparation of an O&M Study for Kane County DOT's proposed Longmeadow Parkway Toll Bridge. Efforts performed include the development of goals and policies for the proposed AET TCS and Back Office System (BOS), research on best practices for TCS and BOS AET Systems, development of potential TCS and BOS alternatives, short listing of recommended TCS and BOS alternatives, preparation of cost/benefit analyses, risk analyses, net revenue analyses, and the selection of a preferred TCS alternative and a preferred BOS alternative for implementation.

*denotes projects completed with other firms



Mike is a client-focused consulting professional with more than 30 years of experience. His expertise includes data analysis, modeling, and engineering emphasis on city, state, and federal governmental agencies. He has extensive experience performing preliminary and intermediate toll analyses to determine if toll road projects have the potential for supporting bonds. Mike has directly contributed to the successful implementation of TIFIA projects in Central Texas supported by sale of over \$2.5B of commercial bonds for new toll road construction. His strong grasp of engineering, economic forecasting, and planning practices and methods combined with his proven ability to develop and coordinate complex traffic engineering and feasibility studies results in solutions that improve safety, mobility, and prosperity.

J. MICHAEL HEATH, PE

Transportation Plan Review

Years of Experience

Total: 33

Education

MBA, Business Administration,
Texas A&M University, 1990

BS, Civil Engineering, Texas A&M
University, 1986

Registrations

Professional Engineer:

TX (#78133, 1993)

LA (#38699, 2014)

AR (#15873, 2014)

AZ (#59138, 2014)

Project Experience

- Project Manager | Texas Statewide Planning On-Call Services | TxDOT | Ongoing
- Project Principal | Williamson County | MoKan Corridor Alternatives Evaluation | Williamson County, TX | 2020
- Project Principal | Williamson County | Long Range Transportation Plan (LRTP) Update | Williamson County, TX | 2019
- Project Manager | Capital Area Metropolitan Planning Organization (CAMPO) | CAMPO Travel Demand Model (TDM) Update | Austin, TX | 2019
- Project Principal | Arkansas Statewide Travel Demand Model | Arkansas | 2015
- Task Order Manager | Capital Metro General Planning Consulting Services | Austin, TX | 2011
- Project Manager | HGAC | Freight Mobility Study | Houston, TX | 2012
- Project Principal | Regional Model Update | El Paso, TX | 2013
- Project Principal | Texas Statewide Analysis Model (SAM-V3) | TxDOT | Texas | 2016
- Project Principal | AHTD | Long-Range Intermodal Transportation Plan (LRITP) | Arkansas
- Project Principal | AHTD | I-40 Toll Feasibility Study | Arkansas | 2014
- Project Manager | TxDOT | Mobility35 PEL Study | Austin, TX | 2015

Michael S. Bomba, Ph.D.

DEMOGRAPHIC FORECASTS
Bomba Consulting, LLC

Professional Experience

- Managing Member, Bomba Consulting, LLC, 2013-Present
- Research Associate Professor, Center for Logistics & Supply Chain Management, University of North Texas, 2016-Present
- Research Scientist and Associate Director, Center for Economic Development and Research, University of North Texas, 2013-2016
- Research Associate and Adjunct Professor, Center for Economic Development and Research, University of North Texas, 2008-2013
- Alliance Transportation Group, Inc., Senior Associate, 2007-2013
- Bomba & Associates, Inc., Principal, 2004-2007
- Research Associate, Center for Transportation Research, University of Texas at Austin, 2003-2005.
- Independent Consultant, 1998-2004
- Applied Economics Consulting Group, Inc., Data Analyst, 1999-2000
- Hicks & Company, Environmental Planner, 1994-1998

Education

- Ph.D., University of Texas at Austin, Public Policy
- M.S., University of Texas at Austin, Community and Regional Planning
- B.A., University of Texas at Austin, Economics and Government

Additional Courses

- Training on GTAP computable general equilibrium model, Purdue University, 2017

Professional Organizations

- North American Working Group, George W. Bush Institute. Member. 2016-Present.
- North American Strategy for Competitiveness (NASCO). Board Member, 2018-Present.
- Transportation Research Board – National Research Council, National Academies – 1999-Present Committee Memberships:
 - Agricultural and Food Transportation - AT030 (Past Member - 3 years)
 - International Trade and Transportation – AT020 (Immediate Past Chair - 6 years)
 - Freight Systems Group Executive Committee – AT000 (Member - 6 years)
 - Intermodal Freight Terminal Design and Operations –AT050 (Past Member and Secretary - 11 years)
 - Ports and Channels – AW010 (Past Member - 9 years)
- American Planning Association – 2009-2013, American Institute of Certified Planners (AICP) #24082

BACKGROUND AND EXPERIENCE

Dr. Michael S. Bomba has more than 20 years of professional experience contributing to traffic & revenue studies. In a support role to the project engineers, Dr. Bomba has assessed the reasonableness of metropolitan planning organization's (MPO's) population and employment estimates and forecasts at the zonal level, adjusting them as necessary. To date, he has completed almost 50 studies and these model inputs have been used to successfully sell approximately \$8 billion of municipal bonds for green field projects, major facility upgrades, building connecting ramps, and refinancing existing municipal bonds. Toll road projects in the Austin, Texas region that have been financed and constructed using these studies include: SH 130 (Segments 1 through 4), SH 45, Loop 1 North, US 183-A, US 290 East, SH 45 South-west, and US 183 South. Dr. Bomba's efforts have included participating in presentations to rating agencies (Moody's, S&P, and Fitch) in New York City and presentations to major institutional investors (e.g. BlackRock, PIMCO, Vanguard, etc.) in New York City, Philadelphia, and Boston.

Past projects include:

- 2020 Central Texas Regional Mobility Authority Demographic Update. 2019-2020. Central Texas Regional Mobility Authority.
- MoPac Connector Feasibility Study. 2019. Central Texas Regional Mobility Authority.
- Loop 1 North/Loop 1 South Managed Lanes. 2018-2019. Central Texas Regional Mobility Authority.
- Cibolo Parkway Project. 2018-2019. Cibolo Turnpike LP.
- U.S. 183 North Managed Lanes Investment Grade Study. 2018. Central Texas Regional Mobility Authority.
- 2017 Central Texas Turnpike Project Update (Level II study). 2017. Texas Department of Transportation.
- Cibolo Turnpike Investment Grade Study. 2017. Cibolo Turnpike L.P.
- US 290 Direct Connectors Investment Grade Study. 2016. Central Texas Regional Mobility Authority.
- LBJ East Managed Lanes Study. 2016. Texas Department of Transportation.
- 2016 CTRMA Bond Refinance. 2016. Central Texas Regional Mobility Authority.
- Commercial Truck Toll Rate Study for the Tornillo-Guadalupe Bridge. 2015. El Paso County.
- US 183 South Investment Grade Traffic and Revenue Study. 2014. Central Texas Regional Mobility Authority.



EDUCATION

B.A., American Studies
Stanford University, 1990

M.S., Community and Regional Planning,
University of Texas at Austin, 1997.
Concentration in Environmental and
Natural Resources Planning. Outstanding
Thesis Award.

PROFESSIONAL ACTIVITIES AND CONTINUING EDUCATION

American Institute of Certified Planners,
2000. Member No. 015785. APA, 1997-
present.

Employer of the Year 2009, WTS Heart of
TX Chapter; Woman of the Year 2016.

WTS Heart of Texas Chapter. Committee
Chair: 06-08 Recognitions, 09-10 Prof.
Dev't. Committee Member: 11-13 Prof.
Dev't, 14-15 Advisory Liaison; 15-16 Int'l
Conference. Southwest Region Liaison
'16-'18.

Central Texas Association of
Environmental Professionals, Member.

Guest Speaker on Enviro. Docs, TSU
Aquatic Resources Ph.D. Program, 05-06;
Speaker on Enviro. Justice, Megaregions,
Census Data UICRP 2010-2015. UT
Enviro. Science Professionals Course –
Guest Panelist 2018, 2019. CM2
presenter.

OSHA 30-hour for Construction.

TxDOT ENV211 ECOS Training, 10/10/19.

TxDOT NEPA Assignment Training –
CTAEP, Austin, TX 7/14; 7/16.

Managing the Environmental Review
Process. NTI/FTA. Ft. Worth, TX 8/13.

Basis of a HUD Part 58 Review – Office of
Environment and Energy HUD-10/12.

FTA Webinar on revisions to Title VI and
Environmental Justice Circulars, 10/11.

TxDOT ENV 114 Advanced Hazardous
Materials Training 2/08.

Consulting Engineers Council Leadership
Forum Class of 2006.

FHWA Title VI/Environmental Justice
Training, Denver CO 5/05.

TxDOT PRECERTIFICATION

Sequence No.: 6863
TxDOT Precertifications: 1.1.1, 1.2.1,
1.3.1, 1.4.1, 1.6.1, 2.5.1, 2.12.1, 2.13.1,
2.14.1

FIELDS OF EXPERIENCE

Ms. McLain is President and Principal at COX|McLAIN Environmental Consulting Inc., a WBE/DBE/HUB firm she and two partners established in September 2007. Ms. McLain was an environmental educator and researcher from 1991 to 1997 and has been a consultant assessing the environmental impacts of public and private development projects since 1997. She is an experienced NEPA practitioner with a focus on socioeconomic and Environmental Justice issues and extensive experience with linear transportation and transit projects. She is accomplished in multi-disciplinary Project Management and is extremely familiar with the challenges associated with project development in Texas, with a constant focus on solving those issues in a timely and proactive manner. Ms. McLain has managed concurrent projects for many years, including Environmental Impact Statements, Environmental Assessments, Community Impact Assessments, Major Investment Studies, Environmental Information Documents, Planning and Environmental Linkage studies, and Categorical Exclusions. Specialties include EJ analysis and indirect and cumulative impact analyses.

EMPLOYMENT HISTORY

Principal, Cox|McLain Environmental Consulting Inc. 2007-Present.

Principal/Senior Environmental Planner, Hicks & Company, Austin, TX, 1997 - 2007.

Consultant, United Nations Environment Program – Industry & Environment Office, Paris, France, 1997.

Coordinator of volunteer water quality monitors, Lower Colorado River Authority (LCRA) – Colorado River Watch Network, Austin, TX, 1995 - 1996.

Researcher/Program Assistant, Natural Resources Defense Council (NRDC) - Forestry Program, San Francisco, CA, 1993-1994.

Researcher/Program Assistant, Natural Resources Defense Council (NRDC) - Coastal Program, New York, NY, 1991 - 1993.

SELECTED RELEVANT PROJECT EXPERIENCE

North Houston Highway Improvements Project (NHHIP) – DEIS and FEIS, Harris County, Texas. CMEC Project Manager. For this approximately 25-mile project along I-45 from US-59/I-69 to Beltway 8 North, including improvements on US-59/I-69 between I-45 and Spur 257 in Harris County, Texas, CMEC supported AECOM and TxDOT Houston District as task leader for indirect impacts analysis presented in the DEIS; peer reviewer for Environmental Justice analysis and Community Impacts Assessment; task leader for the Cumulative Impacts Technical Report; and coordinator of the FEIS. CMEC staff participated in public hearings, conducted archeological survey and prepared an Archeological Survey Report, Biological Services Technical Reports, and Hazardous Materials Technical Report supporting the EIS documents. CMEC compiled the FEIS for the project team and coordinated extensively with TxDOT HOU and ENV. In final legal review July 2020.

Client: AECOM Contact: Patty Matthews Phone: (281) 675-1815

SH 6 Feasibility Study – I 10 to Clay Road – TxDOT Houston District. Project Manager for feasibility study comparing various options for raising SH 6 above the floodplain of Addicks Bayou in an area of increased development and flooding concerns. Project Manager for preparation of a Feasibility Study – environmental considerations and alternatives analysis, including GIS mapping and evaluation matrix with feasibility study report. Managed additional analysis of potential USACE permitting issues should cut and fill considerations be included in future permitting beyond feasibility study phase. 2017.

Client: AECOM (for TxDOT Houston District) Contact: Inas Aweidah, P.E. Phone: (281) 646-2400

I-35 Northeast Expansion (NEX) – EA Reevaluation, From I-410 South to FM 1103 TxDOT San Antonio District Bexar, Comal, and Guadalupe. This project builds on a past PEL study and EA FONSI from 2015 and would construct two 15-mile long bridges (i.e. upper decks) between the I-35 main lanes and frontage roads from I-410 South to FM 3009 for HOV lanes. Bridges would be constructed to connect the new upper decks of I-35 to I-410 South, I-410 North, Loop 1604 West, and Loop 1604 East. project would require approximately 36.5 acres of new right of way. CMEC prepared the Tier 1 Site Assessment and Biological Evaluation Form; Water Resources Tech Report; Historic Resources Project Coordination Request Memorandum; Archeological Background Study; and supported the Documented Reevaluation Checklist. CMEC managed the public involvement process including the Public Hearing for the Garver team. The project was cleared (EA FONSI verification) in September 23, 2019.

Client: Garver Contact: Nandita Kaundinya, P.E.; Wendy Travis, AICP Phone: (214) 619-9060

Dennis Cox
Data Collection
(281) 487-5417
denniscox@cjhensch.com



Education: San Jacinto College, Pasadena, Texas
A.A.S. – Instrumentation
December, 1990

Experience:
1999 - Present

Operations Manager - C J Hensch & Associates, Incorporated, Pasadena, Texas

- Improve the operational systems, processes and policies.
- Manage and increase the effectiveness and efficiency of support staff (administrative and field).
- Purchase materials, plan inventory and ensure efficiency.
- Perform quality controls and monitor production.
- Recruit, train, and supervise administrative and field personnel.
- Cater to clients' or personnel's concerns.

1991 - 1998

Supervisor – Texas Iron and Metal Company – Houston, Texas

- Maintain receiving, warehousing, and distribution operations by initiating, coordinating, and enforcing program, operational, and personnel policies and procedures.
- Comply with federal, state, and local warehousing, material handling, and shipping requirements.
- Safeguard warehouse operations and contents by establishing and monitoring security procedures and protocols.
- Control inventory levels by conducting physical counts; reconciling with data storage system.
- Maintain physical condition of warehouse by planning and implementing new design layouts; inspecting equipment; issuing work orders and requisitions.
- Maintain warehouse staff by recruiting, selecting, orienting, and training employees.

Computer

Proficiencies: MS Office Suite, Windows XP/8/10, Google Earth, Work Etc.

Summary

Dennis Cox - Operations Manager

Education: A.A.S. – Instrumentation

Mr. Cox has 15-years of experience in the field of Transportation Engineering Studies and Traffic Data Collection. During this time, Mr. Cox has completed and directed projects in all areas of data collection and has installed multiple types of counting equipment such as traffic pneumatic hose counters, video camera counters, and manual turning movement collection. Mr. Cox has extensive experience in project management and field personnel coordination and management.

DATA COLLECTION

Responsibilities

Mr. Castañeda has over 19 years of experience and serves as President for Ally General Solutions (AGS) and is responsible for plan preparation and necessary calculations related to the design of traffic and roadway improvements.

Experience

Project experience includes:

- Traffic Signal Design at the Intersections of Tanner Road at Cunningham Road and at Tanner Road at Brittmore Park Drive, Harris County Precinct 3, Houston, Texas--Project Engineer. Assisted with the design of two new signals on Tanner Road.
- METRO Regional Computerized Traffic Signal System, City of Houston, Houston, Texas--Project Engineer. Responsibilities included assisting with intersection and traffic signal upgrades for intersections inside the inner loop of Interstate Highway 610. Also provided technical support in the development of Traffic Signal Books.
- METRO Regional Computerized Traffic Signal System, City of Houston, Houston, Texas--Project Engineer. Responsibilities included field surveying the project area for existing utilities and traffic-related equipment. Other responsibilities were to assist with design of aerial traffic signal interconnect (fiber optic) cable in Northwest and Southwest Houston.
- METRO Regional Computerized Traffic Signal System, City of Houston, Houston, Texas--Project Engineer. Responsibilities included field verifying existing conditions for approximately 750 intersections and changing graphics for the implementation of ICONS graphic program. Assisted with end-to-end testing of about 300 intersections from TRANSTAR.
- METRO Regional Computerized Traffic Signal System, City of Houston, Houston, Texas--Project Engineer. Responsibilities included assisting with intersection and traffic signal upgrades for intersections outside the loop of Beltway 8. Other responsibilities included changing and updating signal timings for 17 intersections along Bay Area Boulevard and Briar Forest in Houston.
- Traffic Signal Design at the Intersection of State Highway 6 and Life Time Fitness Entrance, Texas Department of Transportation, Houston, Texas and City of Sugar Land, Texas--Project Engineer. Responsibilities included design of a split-phased intersection in Sugar Land and preparing plans, estimate, and specifications for bid. Other responsibilities included minor roadway design, signal timings, and synchronization along State Highway 6, along with construction management.
- Traffic Signal Improvements at the Intersections of State Highway 6 and Aetna Entrance and Kensington Boulevard, Texas Department of Transportation, Houston, Texas and City of Sugar Land, Texas--Project Engineer. Responsibilities included design and improvements to both intersections along with preparing plans, estimate, and specifications for bid. Other responsibilities included minor roadway design, signal timings, and synchronization along State Highway 6, along with construction management.
- Traffic Signal Design at the Intersection of Town Center Boulevard North and Mall Ring Road (First Colony Mall), City of Sugar Land, Texas--Project Engineer. Responsibilities included the design of "T" intersection with Wi-Fi communication. Also in the design were countdown pedestrian signal heads. Signal design will be used as city of Sugar Land's Standard for Signal Design. Prepared plans, estimate, and specifications for bid. Prepared signal timings for this signal with Sychro. Performed construction management and inspections for the project.

Professional Credentials

Bachelor of Science in Civil Engineering, Texas A&M University-Kingsville, 2001

Registered Professional Engineer: Texas (No. 98276), 2006

Member, American Society of Civil Engineers

Member, Texas Institute of Transportation Engineers

KEY QUALIFICATIONS

Catherine has extensive program management experience specializing in toll and transit program strategy, development and implementation. She is a dedicated, enthusiastic principal consultant, and Lean Six Sigma Blackbelt, with a breadth of experience in team facilitation, research methodology, program planning, project execution and continuous improvement. Catherine is recognized for her ability to provide direction in challenging and dynamic work environments. She is committed to excellence and determined to achieve exceptional results. Competencies include: policy and planning; research, procurement; program management; operations oversight; marketing and communications; best practices and process improvement.

EDUCATION

M.P.A., Public Affairs with an emphasis in Public Policy, Washington State University, 1997
B.S., Organizational Communication, Eastern Washington University, 1993

CERTIFICATIONS

Lean Six Sigma Blackbelt, 2014, Lean Six Sigma Greenbelt, 2013
Caltrans Disadvantaged Business Enterprise Certification No. 44382
City of Orlando Certification No. 20489101
Maryland Disadvantaged Business Enterprise Certification No. 18-457
Federal Disadvantaged Business Enterprise Certification No. D2F0024749
Washington State Disadvantaged Business Enterprise W2F0024749

LEAN SIX SIGMA TRAINING AND PROGRAM DEVELOPMENT

Catherine has provided Lean Six Sigma training and program development for organizations, agencies, consultants, and vendors across the nation. She has provided both Lean Six Sigma White Belt and Green Belt training and was responsible for the introduction and implementation of several Lean Six Sigma programs. In addition, Catherine has facilitated dozens of lean continuous improvement efforts from project identification through the DMAIC.

RESEARCH AND FACILITATION

Riverside County Transportation Commission, Riverside, CA; Facilitator

Catherine managed the online survey work and facilitated a series of focus groups that solicited input from customers on the proposed changes to account types, fees and transponder technology for the 91 Express Lanes.

Mission Support Alliance; Richland, WA; Facilitator

Catherine facilitated decision-making workshops for Mission Support Alliance, a contractor for the Department of Energy, responsible for sitewide services and integrated infrastructure of the Hanford Nuclear Site. One project determined the placement and design of a new fleet maintenance facility, the other was related to the site-wide fire-protection strategy.

Ohio Turnpike and Infrastructure Commission; Berea, OH, Facilitator

As part the Ohio Turnpike and Infrastructure Commission's executive strategic plan development Catherine developed the customer and stakeholder survey instruments and facilitated a series of executive management workshops to evaluate and advance the proposed technical solutions identified to address the agency's toll facility, technology and operational goals.

PROCUREMENT, PROJECT IMPLEMENTATION AND OVERSIGHT

North Carolina Turnpike Authority, NC Quick Pass and NC Ferry Customer Service Operations Procurement; Raleigh, NC; Procurement Lead

Catherine was responsible for the strategic leadership for all phases of the procurement process, from the initial Request for Information through contract negotiations and signing. The procurement process is being hailed as one of the most innovative in the industry and yielded 13 proposal submittals.

Riverside County Transportation Commission, 15 Express Lane and 91 Express Lane Projects; Riverside, CA; Principal Consultant

Catherine was responsible for the coordination of the 91 Express Lane transition from the legacy Title 21 transponder protocol to a new 6C transponder protocol that will take started in early 2020. Activities related to the 6C deployment include policy updates, lane and back office system changes, transponder procurement, research, customer communication and the transponder replacement program. In addition, she provides marketing and communications expertise and oversight for the new I-15 Express Lane project, scheduled to open in late-2020. Catherine is responsible for the development of all customer-facing materials working directly with the back-office system vendor to provide correspondence, website and IVR content.

Los Angeles County Metropolitan Transportation Authority, ExpressLanes Program; Los Angeles, CA; Program Manager

Catherine provided program management and toll expertise for policy development, program evaluation, surveys and research, marketing and branding, and toll operations support for the ExpressLanes program. She was responsible for the development of the ExpressLanes toll program policies including the phased approach to address demand on the highly congested ExpressLanes. She also developed and managed the agency's FasTrak declarable transponder rebranding project. Additionally, she facilitated a complete update of the program's business rules. Furthermore Catherine oversaw the development of the ExpressLanes collections program, including the solicitation of a new collections vendor. Catherine also served as a owner representative in the development and review of procurement solicitation documentation and requirements for the Los Angeles County Metropolitan Transportation Authority Customer Service Center Back Office System (BOS) and the Customer Service Center Operations.

Form of Contract

We have reviewed your proposed RFQ and believe that should we be selected for this assignment, we will be able to conclude a mutually satisfactory contract with you. As the RFQ did not refer to contract terms for engagement, we would propose discussions based on our standard Professional Services Agreement.

COVID-19

As we are all aware, we are working in unprecedented times as a result of the COVID-19 pandemic. The situation is fluid. Our proposal is based on our understanding of performing these services in normal conditions. As the nature and extent of the impacts due to this outbreak cannot be fully identified or quantified at this time, we feel it would be prudent to submit this proposal based on normal conditions, without accounting for impacts due this outbreak, and to discuss with you once we are able to evaluate the impacts and to work collaboratively with you on a path forward. We would be pleased to have a further discussion with you to share our respective plans and efforts to help mitigate the impact of this evolving situation on your proposed project.

Contact Information:

William Ihlo, PE

Principal

475 Fifth Avenue, 12th Floor

New York, NY 10017

(203) 417-6780

william.ihlo@stantec.com

Rick Gobeille, PE

Senior Principal

475 Fifth Avenue, 12th Floor

New York, NY 10017

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Design with community in mind



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

September 30, 2020
AGENDA ITEM #7

Discuss and consider approving a contract with
CDM Smith Inc. to perform traffic and revenue
engineering services

Strategic Plan Relevance: Regional Mobility
Department: Finance
Contact: Bill Chapman, Chief Financial Officer
Associated Costs: \$5,000,000 Not to Exceed
Funding Source: Various
Action Requested: Consider and act on draft resolution

Background -The Central Texas Regional Mobility Authority (the Authority) has a continuing need to monitor traffic and revenue (T&R) for its existing toll projects and for new projects. The studies the Authority receives as a result of T&R consulting services contain a variety of elements related to our toll facility's traffic and revenue including corridor travel demands, future growth characteristics, market capture and demand share. The Authority's Debt Indenture also requires T&R services. These services are used throughout the life of projects from planning, feasibility, financing, construction, and monitoring. The resulting studies vary in confidence levels from sketch level to investment grade. Investment grade studies are required for project financing.

Previous Actions/Brief History of the Project/Program - A Request for Qualifications to identify and obtain the services of a qualified engineering firm(s) to provide traffic and revenue engineering services was released on July 21, 2020. Three firms submitted responses to the RFQ. On August 26, 2020 the Board authorized the Executive Director to negotiate separate contracts for traffic and revenue engineering services with all qualified firms that submitted responses to the RFQ: C&M Associates, Inc., CDM Smith, and Stantec.

Staff Recommendation - Staff recommends approving a contract with CDM Smith for traffic and revenue engineering services for a term of 5 years with a not to exceed cumulative payment obligation of \$5,000,000.

Funding - Funding for the traffic and revenue consulting services will come from a variety of sources including the Operating Budget and Project Funding depending on the purpose of the T&R study.

Backup Provided: Draft Contract
 Draft Resolution

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

RESOLUTION NO. 20-0XX

**APPROVING A CONTRACT WITH CDM SMITH INC. FOR
TRAFFIC AND REVENUE ENGINEERING SERVICES**

WHEREAS, the Central Texas Regional Mobility Authority (Mobility Authority) has an ongoing need for traffic and revenue engineering services on its existing toll projects and to develop new toll projects; and

WHEREAS, by Resolution No. 20-051, dated August 29, 2020, the Board of Directors awarded a contract to CDM Smith Inc. for traffic and revenue engineering services and authorized the Executive Director to negotiate a contract with CDM Smith Inc.; and

WHEREAS, the Executive Director and CDM Smith Inc. have negotiated a proposed contract for traffic and revenue engineering services in an amount not to exceed \$5,000,000 which is attached hereto as Exhibit A and sets forth the scope of services, compensation and other terms; and

WHEREAS, the Executive Director recommends that the Board approve the contract with CDM Smith Inc. for traffic and revenue engineering services in the form or substantially the same form attached hereto as Exhibit A.

NOW THEREFORE, BE IT RESOLVED that the Board of Directors hereby approves the contract with CDM Smith Inc. for traffic and revenue engineering services; and

BE IT FURTHER RESOLVED that the Executive Director is hereby authorized to finalize and execute the contract with CDM Smith Inc. on behalf of the Mobility Authority 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 30th day of September 2020.

Submitted and reviewed by:

Approved:

Geoffrey Petrov, General Counsel

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

Exhibit A

**CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY
AGREEMENT FOR
TRAFFIC AND REVENUE ENGINEERING SERVICES**

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**CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY
AGREEMENT FOR
TRAFFIC AND REVENUE ENGINEERING SERVICES**

This Professional Services Agreement (the “Agreement”) is made and entered into by and between the Central Texas Regional Mobility Authority (the “Authority” or “CTRMA”), a regional mobility authority and a political subdivision of the State of Texas, and CDM Smith, Inc (the “Consultant”) to be effective as of the 1st day of October, 2020 (the “Effective Date”) with respect to traffic and revenue engineering services to be performed by the Consultant, as an independent contractor, for the CTRMA.

WITNESSETH:

WHEREAS, pursuant to that certain Request for Qualifications dated July 22, 2020 (the “RFQ”), the CTRMA sought to identify and obtain the services of qualified engineering firm(s) to provide traffic and revenue engineering services for the CTRMA; and WHEREAS, three (3) firms submitted responses setting forth their respective qualifications for the work; and

WHEREAS, on August 26, 2020 the CTMRA Board authorized the Executive Director to negotiate separate contracts for Traffic and Revenue engineering services with each of the three (3) qualified providers; and

WHEREAS, this Agreement has been negotiated and finalized between those parties whereby the services shall be provided by the Consultant to the Authority at a fair and reasonable price;

NOW, THEREFORE, in consideration of payments hereinafter stipulated to be made to the Consultant by the Authority, the parties do hereby agree as follows:

**ARTICLE 1
THE SERVICES**

The Authority agrees to and hereby retains the Consultant, as an independent contractor, and the Consultant agrees to provide services to the Authority upon the terms and conditions provided in this Agreement. The Authority is the sole and exclusive client of the Consultant for the purposes of this Agreement, and this Agreement is exclusively between the Authority and the Consultant. The scope of services (the “Services”), which is described in detail in Appendix A attached hereto and incorporated herein, shall include, but not be limited to, rate/revenue analysis, traffic modeling, technical assistance, problem resolution assistance, project management duties, and duties imposed on the Traffic Consultant by Authority trust agreements. As directed by the Authority by separate Work Authorization, the Consultant shall perform such Services in relation to all CTRMA turnpike projects and potential projects, which may include, but are not limited to (1) the 183-A Turnpike; (2) 290 East Toll; (3) SH 71 Toll; (4) SH 45 Southwest Toll (5) 183 South Toll; and (6) 183 North Toll; (7) MoPac Express; and (8) MoPac South Toll.

The Consultant, as part of the Services, also shall assist the Authority in achieving the goals established in the CTRMA’s Strategic Plan, as adopted pursuant to Texas Transportation Code § 370.261 and as it may be amended from time to time by the CTRMA Board of Directors. For specific aspects of the Services, to the extent required by any trust agreement, the Consultant shall be expected to operate

independently from the Authority and without extensive oversight and direction. The Consultant shall commit the personnel and resources reasonably required to respond promptly and fully to the responsibilities and tasks assigned by the CTRMA throughout the term of the Consultant's performance of the Services described in this Agreement.

By written notice or order, Authority may, from time to time, order work suspension and/or make changes in the general scope of this Agreement, including, but not limited to, the services furnished to Authority by Consultant as described in the Scope of Work contained in the Work Authorization. If any such work suspension or change causes an increase or decrease in the price of said Work Authorization, or in the time required for its performance, Consultant shall promptly notify Authority thereof and assert its claim for adjustment within ten (10) calendar days after the change or work suspension is ordered, and an equitable adjustment shall be negotiated.

ARTICLE 2

"TRAFFIC CONSULTANTS" UNDER TRUST AGREEMENTS

Without limiting the provision of Article 1 above, and subject to a Work Authorization and the Work Authorization requirements found in subsection 3.b. herein, the Consultant shall perform the obligations of the "Traffic Consultants" under the Authority's current Master Trust Indenture, as amended, and, as agreed by the Parties, all supplemental, superceding, or additional trust agreements (collectively the "Trust Agreements"). The Authority has covenanted in Section 714 of the current Trust Agreement that, until the bonds issued in accordance with that Trust Agreement and the interest thereon shall have been paid or provision for such payment shall have been made, it will employ the Traffic Consultants for the purpose of performing and carrying out the duties imposed on it by the Trust Agreement. Those duties are summarized in the Scope of Services and provide a general, but not comprehensive, listing of the types of obligations the Consultant will be requested to perform under the Trust Agreements.

ARTICLE 3

COMPENSATION

Authorization for Consultant to perform the Services, compensation for Consultant's work, and other aspects of the mutual obligations concerning Consultant's work and payment therefore are as follows:

- a) Notwithstanding any provisions of this Agreement to the contrary, AUTHORITY and CONSULTANT mutually agree that AUTHORITY's maximum cumulative payment obligation (including obligation for CONSULTANT's profit) shall be Five Million and No/100 Dollars (\$5,000,000.00) which shall include all amounts payable to CONSULTANT for its subcontracts, leases, materials and costs arising from, or due to termination of this Agreement.
- b) BASIS FOR COMPENSATION. Subject to the terms of a Work Authorization issued pursuant to subsection 3.c. below, the Authority agrees to pay, and the Consultant agrees to accept as full and sufficient compensation and reimbursement for the performance of all Services as set forth in this Agreement, hourly rates for the staff working on the assignment computed as follows:

$$\text{Direct Labor Cost} \times (1.0 + \text{FAR}) \times 1.10$$

where Direct Labor Cost equals salary divided by 2080; FAR equals Consultant's most recent audited overhead rate under 48 C.F.R. Part 31, Federal Acquisition Regulations (FAR 31); and 1.10 reflects a 10 percent (10%) profit. Representative rates computed through this methodology as of the Effective Date of this Agreement are reflected in Appendix B. Rates will be revised annually to reflect adjustments to the Direct Labor Costs and audited FAR rates; no adjustment shall be made to the specified profit percentage. The first adjustment shall be considered in January 2021. All adjustments shall be agreed to by the parties prior to implementation, and the Authority shall have the right to review and/or audit Consultant's Direct Labor Costs and FAR rates upon written request and as provided in subsection (f) hereto. During the term of this Agreement Consultant shall provide to the Authority, prior to requesting any adjustment to rates, a copy of the report establishing a new FAR rate for Consultant.

The payment of the hourly rates and allowed costs shall constitute full payment for all Services, liaisons, products, materials, and equipment required to deliver the Services.

- c) **COMPENSATION FOR WORK AUTHORIZATIONS.** The Services to be performed by the Consultant pursuant to this Agreement shall be assigned by the Executive Director or designee and documented in a manner appropriate for the size and complexity of the specific tasks. Each activity, task, or project shall be performed pursuant to a separate Work Authorization, signed by the Executive Director or designee and the Consultant. Work shall be in accordance with the scope, schedule, and budget set forth in said Work Authorization. The standard form of Work Authorization is attached hereto and incorporated herein as Appendix C, which standard form may be modified during the term of this Agreement upon the reasonable request of the Executive Director or designee and agreement of the Consultant. Upon written directive from the Executive Director or designee (which may occur via electronic mail), the Consultant shall prepare the Work Authorization for the specific task, to be submitted for the Executive Director or designee's approval. No work shall begin on the activity until the Work Authorization is approved and fully executed. The basis for payment on each Work Authorization will be either (i) lump sum or (ii) hourly rate as computed pursuant to subsection 3.b. above, as stipulated in the Work Authorization. In neither case will the maximum be exceeded without prior written approval from the Authority. The costs associated with work performed on any Work Authorization will be tracked and reported to the Authority separately from other work performed by the Consultant. The monthly invoice to the Authority will include a progress summary of the work performed the previous month on each ongoing Work Authorization.
- d) **EXPENSES.** As indicated above, the compensation computed in accordance with subsections 3.b. and 3.c. is anticipated by the Authority and the Consultant to be full and sufficient compensation and reimbursement for the Services. Notwithstanding the foregoing, the Consultant shall be entitled to reimbursement for reasonable out-of-pocket expenses actually incurred by the Consultant that are necessary for the performance of its duties under this Agreement, said expenses being limited to travel costs incurred in conformance with the Authority's travel policy, printing costs, automobile expenses being reimbursed at the federal mileage rates for travel originating from the office of the applicable Consultant employee or subconsultant, application fees, delivery charges, and

other expenses directly approved, in advance, by the Authority. Except for automobile expenses paid at the federal mileage rate and travel paid at state approved rates (if available), all such reimbursement shall be at one-hundred percent (100%) of the actual cost thereof paid by the Consultant to unaffiliated entities; provided, however, that all non-travel related amounts in excess of \$2,000 for which the Consultant intends to seek reimbursement pursuant to this subsection 3.d. must be approved in advance and in writing by the Authority, except when such advance approval is impractical due to a bona fide emergency situation. The Authority shall not reimburse the Consultant for travel, lodging, and similar expenses incurred by the Consultant to bring additional staff to its local office or to otherwise reassign personnel to provide basic engineering and technical support of the Consultant's performance of the Services. The Consultant shall take all reasonable steps to acquire all goods and services subject to reimbursement by the Authority under this Agreement on a tax-free basis pursuant to the Authority's tax-exempt status described in subsection 3.i.

- e) **NON-COMPENSABLE TIME.** Time spent by the Consultant's employees or subconsultants to perform Services or functions capable of being carried out by other, subordinate personnel with a lower hourly rate shall be billed at a rate equivalent to that of the applicable qualified subordinate personnel. Time spent by the Consultant's personnel or subconsultants in an administrative or supervisory capacity not related to the performance of the Services shall not be compensable. Time spent on work that is in excess of what would reasonably be considered appropriate for the performance of such Services shall not be compensable. No compensation shall be made for revisions to the Consultant's or subconsultants' Services or deliverables required due in any way to the error, omission, or fault of the Consultant, its employees, agents, subconsultants, or contractors.

- f) **INVOICES AND RECORDS.** The Consultant shall submit two (2) copies of its monthly invoices certifying the fees charged and expenses incurred in providing the Services under this Agreement during the previous month, and shall also present a reconciliation of monthly invoices and the Work Authorization (and related estimates) to which the work relates. Each invoice shall be in such detail as is required by the Authority and, if the work is eligible for payment through a financial assistance agreement with the Texas Department of Transportation ("TxDOT"), in such detail as required by TxDOT, including a breakdown of Services provided on a project-by-project basis and/or pursuant to specified Work Authorizations, together with other Services requested by the Authority. Upon request of the Authority, the Consultant shall also submit certified time and expense records and copies of invoices that support the invoiced fees and expense figures. All invoices must be consistent with the rates represented in Appendix B, and direct labor costs for employees performing work for the Authority but not shown on Appendix B must be provided with any invoice reflecting such work. Unless waived in writing by the Executive Director or his designee, no invoice may contain, and the Authority will not be required to pay, any charge which is more than three (3) months old at the time of invoicing. All books and records relating to the Consultant's or subconsultants' time, out-of-pocket expenses, materials, or other services or deliverables invoiced to the Authority under this Agreement shall be made available during the Consultant's normal business hours to the Authority and its representatives for review, copying, and auditing throughout the term of this Agreement

and, after completion of the work, for three (3) years, or such period as is required by Texas or Federal law, whichever is longer.

- g) EFFECT OF PAYMENTS. No payment by the Authority shall relieve the Consultant of its obligation to deliver timely the Services required under this Agreement. If after approving or paying for any Service, product or other deliverable, the Authority determines that said Service, product or deliverable does not satisfy the requirements of this Agreement, the Authority may reject same and, if the Consultant fails to correct or cure same within a reasonable period of time and at no additional cost to the Authority, the Consultant shall return any compensation received therefore. In addition to all other rights provided in this Agreement, the Authority shall have the right to set off any amounts owed by the Consultant pursuant to the terms of this Agreement upon providing the Consultant prior written notice thereof.
- h) PLACE OF PAYMENT. Payments owing under this Agreement will be made by the Authority within thirty (30) days after receipt of the monthly invoice therefore, together with suitable supporting information, provided that if the payment is one eligible for reimbursement to the Authority from TxDOT, payment will be made within fifteen (15) business days of receipt by the Authority of the TxDOT payment. In the event the Authority disputes payment, the Authority will pay the undisputed portion when due. Payment shall be forwarded to the address shown for the Consultant:

CDM Smith Inc.
15036 Collections Center Drive,
Chicago, IL 60693

- i) TAXES. All payments to be made by the Authority to the Consultant pursuant to this Agreement are inclusive of federal, state, or other taxes, if any, however designated, levied, or based. The Authority acknowledges and represents that it is a tax-exempt entity under Sections 151.309, et seq., of the Texas Tax Code. Title to any consumable items purchased by the Consultant in performing this Agreement shall be deemed to have passed to the Authority at the time the Consultant takes possession or earlier, and such consumable items shall immediately be marked, labeled, or physically identified as the property of the Authority, to the extent practicable.
- j) AS-NEEDED BASIS. As provided for above, the Authority shall request that the Consultant perform specific Services on an as-needed basis and through the issuance of Work Authorizations. No representation or assurance has been made on behalf of the Authority to the Consultant as to the total compensation to be paid to the Consultant under this Agreement.
- k) COMPENSATION OF SUBCONSULTANTS. As noted in the Consultant's response to the RFQ, the Consultant will employ subconsultants providing Services under this Agreement. All subconsultants providing Services under this Agreement shall be subject

to, and compensated or reimbursed in accordance with, all requirements of this Article 3, provided that each subconsultant shall utilize its own actual hourly rates (computed using its own multiplier based on actual audited FAR rates or audited overhead rates if FAR rates are not available) provided that no such rates shall exceed the corresponding rates paid by the Consultant for its personnel of comparable grade, category and experience, and further provided that no Subconsultant's FAR rate or audited overhead rate may exceed that of the Consultant without the prior written consent of the Authority. The Consultant agrees to pay its subconsultants for satisfactory performance of their contracts no later than thirty (30) days from its receipt of payment from the CTRMA. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the CTRMA. This clause applies to payments to all subconsultants. Consultant is authorized to use those subconsultants identified in Appendix D attached hereto and incorporated herein, being those subconsultants identified in the response of Consultant to the RFQ. Additional subconsultants may only be utilized with the prior written consent of the Executive Director of the Authority.

- 1) **MOST FAVORED CUSTOMER.** The Consultant shall voluntarily and promptly disclose to the Authority, and immediately provide the Authority with, the benefits of any discounted hourly fees and rates offered by the Consultant to any public entity customer in the State of Texas for comparable traffic and revenue studies. The Consultant hereby represents to the Authority, as of the effective date of this Agreement and throughout the term thereof, that except as previously disclosed in writing it has and will have no contract or arrangement with any public entity customer in the State of Texas for comparable traffic and revenue studies that provides such customer with fees, or rates that are more favorable than those afforded the Authority under this Agreement. The Consultant shall make available to the Authority for review, copying, and auditing throughout the term of this Agreement and for three (3) years or such period as is required by Texas or Federal law, whichever is longer, after the expiration thereof all such books and records as shall be necessary for the Authority or its representatives to determine compliance with this provision.

ARTICLE 4 TIME OF PERFORMANCE

It is understood and agreed that the term of this Agreement shall be a maximum of five (5) years, commencing October 1, 2020, and concluding October 1, 2025, (the "Expiration Date") subject to the earlier termination of this Agreement pursuant to Articles 5 or 6 below or further extension upon agreement of both parties. The initial period of performance is three (3) years commencing on the Effective Date, and there shall be two (2) successive and (1) year renewal terms following the expiration of the initial three (3) year period. In addition to any termination rights set forth in this Agreement, either party may elect not to extend the term of one or both of the renewal years by providing sixty (60) days written notice to the other prior to the end of the initial term of the first renewal term. Absent such notice or termination pursuant to other provisions of this Agreement, the renewal terms will automatically take effect. If at any time during the contract term the Consultant cannot provide the requested Services within the time required by the CTRMA or for any other reason, the Authority reserves the unilateral right to procure the Services from any other source it deems capable of providing those Services.

ARTICLE 5
TERMINATION FOR DEFAULT

Time is of the essence with respect to the performance and completion of all the Services to be furnished by the Consultant pursuant to Work Authorizations issued and which specify an agreed-upon completion or delivery date. Without limiting the foregoing, the Consultant shall furnish all Services in such a manner and at such times as the development schedules of the Projects require so that no delay in the progression of the evaluation, funding, design, or construction of the Projects will be caused by or be in any way attributable to the Consultant. Should the Consultant at any time, in the reasonable opinion of the Authority, not carry out its obligations under this Agreement or not be progressing toward completion of the Services to be rendered hereunder in an expeditious manner, or if the Consultant shall fail in any manner to discharge any other of its obligations under this Agreement, the Authority may, upon providing the Consultant with thirty (30) days prior written notice pursuant to Article 5 hereof and opportunity to cure, terminate this Agreement effective on the date following said 30-day notice and cure period (the "Termination Date"). Such termination shall not constitute a waiver or release by the Authority of any claims for damages, claims for additional costs incurred by the Authority to complete and/or correct the work described in this Agreement, or any other claims or actions arising under this Agreement or available at law or equity which it may have against the Consultant for its failure to perform satisfactorily any obligation hereunder, nor shall such termination pursuant to this Article 5 or Article 6 below abrogate or in any way affect the indemnification obligations of the Consultant set forth in Article 17 hereof.

If the Authority shall terminate this Agreement as, provided either in this Article 5 or Article 6, no fees of any type, other than fees due and payable pursuant to Article 3 hereof for work performed and acceptable to the Authority, as of the Termination Date or Optional Termination Date, as applicable, shall thereafter be paid to the Consultant, and the Authority shall have a right to set off or otherwise recover any damages incurred by reason of the Consultant's breach hereof, together with the right to set off amounts owed to the Consultant pursuant to the indemnity provisions. In determining the amount of any payments owed to the Consultant, the value of the work performed by the Consultant prior to termination shall be no greater than the value that would result by compensating the Consultant in accordance with Article 3 hereof for all Services performed and expenses reimbursable in accordance with this Agreement.

ARTICLE 6
OPTIONAL TERMINATION

In addition to the process for termination described above, this Agreement may also be terminated as follows:

- a. **GENERALLY.** The Authority has the right to terminate this Agreement at its sole option, at any time with or without cause, by providing thirty (30) days written notice of such intention to terminate pursuant to this subsection 6.a. hereof and by stating in said notice the "Optional Termination Date". Upon such termination, the Authority shall enter into a settlement with the Consultant upon an equitable basis as determined by the Authority, which shall fix the value of the work performed by the Consultant prior to the Optional Termination Date. In determining the value of the work performed, the Authority in all events shall compensate the Consultant for any reasonable costs or expenses attributable to the exercise of the Authority's optional termination, including reasonable costs related to developing a transition plan and providing data as provided for in Article 7, provided, however, that no

consideration will be given to anticipated profit which the Consultant might possibly have made on the uncompleted portion of the Services.

- b. **NO FURTHER RIGHTS, ETC.** Termination of this Agreement and payment of an amount in settlement as described in this Article 6 shall extinguish all rights, duties, obligations, and liabilities of the Authority and the Consultant under this Agreement, and this Agreement shall be of no further force and effect, provided, however, such termination shall not act to release the Consultant from liability for any previous default either under this Agreement or under any standard of conduct set by common law or statute. Requirements that survive termination are outlined in Article 35.
- c. **NO FURTHER COMPENSATION.** If the Authority shall terminate this Agreement as provided in this Article 6, no fees of any type, other than fees due and payable as of the Optional Termination Date, shall thereafter be paid to the Consultant, provided that the Authority shall not waive any right to damages incurred by reason of the Consultant's breach thereof. The Consultant shall not receive any compensation for Services performed or expenses incurred by the Consultant after the Optional Termination Date, and any such Services performed or expenses incurred shall be at the sole risk and expense of the Consultant.

ARTICLE 7 TERMINATION, GENERALLY

The Authority's rights and options to terminate this Agreement, as provided in any provision of this Agreement, shall be in addition to, and not in lieu of, any and all rights, actions, options, and privileges otherwise available under law or equity to the Authority by virtue of this Agreement or otherwise. Failure of the Authority to exercise any of its said rights, actions, options, and privileges to terminate this Agreement as provided in any provision of this Agreement or otherwise shall not be deemed a waiver of any of said rights, actions, options, or privileges or of any rights, actions, options, or privileges otherwise available under law or equity with respect to any continuing or subsequent breaches of this Agreement or of any other standard of conduct set by common law or statute.

Upon request by the Executive Director of the Authority, and subject to Article 13 hereto, The Consultant shall develop a transition plan to be implemented upon termination of this Agreement with the Consultant for any reason or upon the release of any subconsultant so as to ensure a smooth, efficient, and uninterrupted transition to any successor Consultant or subconsultant. The plan shall anticipate the steps necessary to transfer documents, computerized data, plans, work tasks, etc. in possession of or to be provided by the Consultant or its subconsultant(s), as the case may be, and include a schedule of events necessary to complete the transition. The plan should include, but not be limited to, a list of original documents/data being held on behalf of the Authority by the Consultant or its subconsultants; the manner and form in which information is being held; accessibility to the information; the Consultant's records retention policy and/or plan; and strategy to minimize disruption of Services in the event of the release of a subconsultant. A copy of the plan shall be given to the Executive Director for review and approval within thirty (30) days of receipt of the Executive Director's request and shall be updated as necessary to reflect any changes in Consultant activity.

ARTICLE 8
SUSPENSION OR MODIFICATION OF SERVICES; DELAYS AND DAMAGES

In addition to the foregoing rights and options to terminate this Agreement, the Authority may elect to suspend any portion of the Services of the Consultant hereunder, but not terminate this Agreement, by providing the Consultant with prior written notice to that effect. Thereafter, the suspended Services may be reinstated and resumed in full force and effect upon receipt from the Authority of thirty (30) days prior written notice requesting same. Similarly, the Authority may expand, limit, or cancel any portion of the Services previously assigned to the Consultant in accordance with this Agreement. The Consultant shall not be entitled to any damages or other compensation of any form in the event that the Authority exercises its rights to suspend or modify the Services pursuant to this Article 8, provided, however, that any time limits established by the parties in any Work Authorization or otherwise for the completion of specific portions of the Services suspended pursuant to this Article 8 shall be extended to allow for said suspension or modifications thereof. Without limiting the foregoing, the Consultant agrees that no claims for damages or other compensation shall be made by the Consultant for any delays or hindrances occurring during the progress of any portion of the Services specified in this Agreement as a result of any suspension or modification of the Services or otherwise. Such delays or hindrances, if any, shall be provided for by an extension of time for such reasonable periods as the Authority may decide. It is acknowledged, however, that permitting the Consultant to proceed to complete any Services or any part of them after the originally specified date for completion, or after the date to which the time for completion may have been extended, shall in no way operate as a waiver on the part of the Authority or any of its rights herein.

ARTICLE 9
PERSONNEL, EQUIPMENT AND MATERIAL, GENERALLY

Consultant shall provide personnel and equipment as follows:

- a. **ADEQUATE PERSONNEL, ETC.** The Consultant shall furnish and maintain, at its own expense, adequate and sufficient personnel (drawn from its own employees or from approved subconsultants) and equipment, in the reasonable opinion of the Authority, to perform the Services with due and reasonable diligence customary of an engineering firm enjoying a favorable national reputation, and in all events without delays attributable to the Consultant which have a reasonable likelihood of adversely affecting the progress of others involved with one or more of the Projects or the progress of the feasibility evaluation, design or construction of any such Project. All persons, whether employees of the Consultant or of an approved subconsultant, providing the Services shall be fully licensed to the extent required by their professional discipline associations' codes or otherwise by law.
- b. **REMOVAL OF PERSONNEL.** All persons providing the Services, whether employees of the Consultant or of an approved subconsultant, shall have such knowledge and experience as will enable them, in the Consultant's reasonable belief, to perform the duties assigned to them. Any such person who, in the opinion of the Authority, is incompetent or by his/her conduct becomes detrimental to the provision of the Services shall, upon request of the Authority, immediately be removed from the Services. The Consultant shall furnish the Authority with a fully qualified candidate for the removed person within ten (10) days thereafter, provided, however, said candidate shall not begin work under this Agreement unless and until approved by the Authority.

- c. CONSULTANT FURNISHES EQUIPMENT, ETC. Except as otherwise specified or agreed to by the CTRMA, the Consultant shall furnish all equipment, transportation, supplies, and materials required for its Services under this Agreement.

ARTICLE 10 KEY PERSONNEL

The Consultant acknowledges and agrees that the individual(s) identified on Appendix E attached hereto and incorporated herein are key and integral to the satisfactory performance of the Consultant under this Agreement. Throughout the term of this agreement, the Consultant agrees that the identified individual(s), whether employee(s) of the Consultant or of an approved subconsultant, will remain in charge of the performance of the Services and shall devote substantial and sufficient time and attention thereto. The death or disability of any such individual, his/her disassociation from the Consultant or the approved subconsultant, or his/her failure or inability to devote sufficient time and attention to the Services shall require the Consultant promptly to replace said individual with a person suitably qualified and otherwise acceptable to the Authority. In no event shall the Consultant remove, transfer, or reassign any individual identified on Appendix E except as instructed by, or with the prior written consent of, the Authority, which consent shall not be reasonably withheld. The Consultant shall use its best efforts to enhance continuity in the key personnel, subconsultants, and other employees regularly performing the Services. Individuals may be added to Appendix E with the mutual consent of the Consultant and the Authority.

ARTICLE 11 BUSINESS OPPORTUNITY PROGRAM AND POLICY COMPLIANCE

It is the policy of the Authority's Board of Directors that disadvantaged and small business have the maximum practicable opportunity to participate in the awarding of Authority contracts and related subcontracts. To do so the Authority has developed a Business Opportunity Program and Policy ("BOPP"), which is incorporated herein by reference for all purposes. The Authority requires contractors to comply with the BOPP. The Consultant acknowledges that certain Services to be performed under this Agreement are subcontractable and will be subcontracted in accordance with the BOPP and as represented in Consultant's proposal in response to the RFQ. Consultant agrees to submit monthly subcontracting reports as part of its monthly invoices.

ARTICLE 12 PLANNING AND PERFORMANCE REVIEWS; INSPECTIONS

As directed by the Authority, key personnel shall meet with the Authority's Executive Director and/or his designee(s) upon request (a) to assess the Consultant's progress under this Agreement and performance of the Services; and (b) to plan staffing levels to be provided by the Consultant to the Authority for the upcoming calendar year. The Consultant shall permit inspections of its Services and work by the Authority or others, when requested by the Authority. Nothing contained in this Agreement shall prevent the Authority from scheduling such other planning and performance reviews with the Consultant or inspections as the Authority determines necessary.

ARTICLE 13
OWNERSHIP OF REPORTS

Ownership of reports and related materials prepared by Consultant (or any subconsultant) at the direction of the Authority shall be as follows:

- a. **GENERALLY.** All of the documents, reports, plans, surveys, estimates, computer records, discs and tapes, proposals, sketches, diagrams, charts, calculations, correspondence, memoranda, survey notes, opinions, maps, photographs, drawings, data, analyses and other data and materials, and any part thereof, created, compiled or to be compiled by or on behalf of the Consultant solely under this Agreement (“work product”), including all information prepared for or posted on the Authority’s website and together with all materials and data furnished to it by the Authority, shall at all times be and remain the property of the Authority and, for a period of three (3) years from completion of the Services or such period as is required by law, whichever is longer, if at any time demand be made by the Authority for any of the above materials, records, and documents, whether after termination of this Agreement or otherwise, such shall be turned over to the Authority without delay. The Authority hereby grants the Consultant a revocable license to retain and utilize the foregoing materials, said license to terminate and expire upon the earlier to occur of (a) the completion of Services described in this Agreement or (b) the termination of this Agreement, at which time the Consultant shall deliver to the Authority all such materials and documents. If the Consultant or a subconsultant desires later to use any of the data generated or obtained by it in connection with the Projects or any other portion of the work product resulting from the Services, it shall secure the prior written approval of the Authority. Notwithstanding anything contained herein to the contrary, the Consultant shall have the right to retain a copy of the above materials, records, and documents for its archives.
- b. **SEPARATE ASSIGNMENT.** If for any reason the agreement of the Authority and the Consultant set forth in subsection 13.a. above regarding the ownership of work product and other materials is determined to be unenforceable, either in whole or in part, the Consultant hereby assigns and agrees to assign to the Authority all right, title, and interest that Consultant may have or at any time acquire in said work product and other materials which are prepared solely for this Agreement, without royalty, fee or other consideration of any sort, and without regard to whether this Agreement has terminated or remains in force. The Authority hereby acknowledges, however, that all documents and other work product provided by the Consultant to the Authority and resulting from the Services performed under this Agreement are intended by the Consultant solely for the use for which they were originally prepared. Notwithstanding anything contained herein to the contrary, the Consultant shall have no liability for the use by the Authority of any work product generated by the Consultant under this Agreement on any project other than for the specific purpose and Project for which the work product was prepared. Any other reuse of such work product without the prior written consent of the Consultant shall be at the sole risk of the Authority.
- c. **USE OF CONSULTANT WORK PRODUCT.** Except for final versions of reports which are prepared in connection with project financings, the Authority will provide Consultant written advance notice prior to releasing Consultant’s work product to any third party. Upon

receipt of notice, Consultant will have a reasonable amount of time to review such disclosure and provide the Authority written notice of the completion of review prior to release.

The Authority acknowledges that the Consultant's work product will be developed using data that is available at the time of the execution of a given work order, and will not constitute any guarantee or other assurance of future events. The Consultant will prepare work product using practices that are standard procedures in the industry.

ARTICLE 14 SUBLETTING

The Consultant shall not sublet, assign, or transfer any part of the work or obligations included in this Agreement without the prior written approval of the Authority, which approval shall not be reasonably withheld. Responsibility for sublet, assigned or transferred work shall remain with the Consultant.

ARTICLE 15 APPEARANCE AS WITNESS AND ATTENDANCE AT MEETINGS

Consultant shall cooperate with the Authority and requests for attendance at meetings and in various types of proceedings as follows:

- a. **WITNESS.** If requested by the Authority or on its behalf, the Consultant shall prepare such traffic engineering, feasibility, or other exhibits as may be requested for all hearings and trials related to any of the Projects, the Services, or the Authority's activities generally and, further, it shall prepare for and appear at conferences at the offices of legal counsel and shall furnish competent expert engineering witnesses to provide such oral testimony and to introduce such demonstrative evidence as may be needed throughout all trials and hearings with reference to any litigation relating to the Projects, the Services, or the Authority's activities.
- b. **MEETINGS.** At the request of the Authority, the Consultant shall provide appropriate personnel for conferences at its offices, or attend meetings and conferences at (a) the various offices of the Authority, (b) at the district headquarters or offices of TxDOT, (c) the offices of the Authority's legal counsel, bond counsel, and/or financial advisors, (d) at the site of any Project, or (e) any reasonably convenient location. Without limiting the foregoing, the Consultant shall provide personnel for periodic meetings with underwriters, rating agencies, and other parties when requested by the Authority.
- c. **WORK AUTHORIZATION.** In the event that services under this section are not covered by an existing Work Authorization, the Authority will issue a Work Authorization, pursuant to Article 3 hereto, to cover such services.

ARTICLE 16 COMPLIANCE WITH LAWS AND AUTHORITY POLICIES

The Consultant shall comply with all applicable federal, state, and local laws, statutes, ordinances, rules, regulations, codes and with the orders and decrees of any courts or administrative bodies or tribunals

in any matter affecting the performance under this Agreement, including, without limitation, workers' compensation laws, antidiscrimination laws, environmental laws, minimum and maximum salary and wage statutes and regulations, health and safety codes, licensing laws and regulations, the Authority's enabling legislation (Chapter 370 of the Texas Transportation Code), and all amendments and modifications to any of the foregoing, if any. The Consultant shall also comply with the Authority's policies and procedures related to operational and administrative matters, such as, but not limited to, security of and access to CTRMA information and facilities. When requested the Consultant shall furnish the Authority with satisfactory proof of compliance with said laws, statutes, ordinances, rules, regulations, codes, orders, and decrees above specified.

ARTICLE 17 AUTHORITY INDEMNIFIED

THE CONSULTANT SHALL INDEMNIFY AND SAVE HARMLESS THE AUTHORITY AND ITS OFFICERS, DIRECTORS, EMPLOYEES, AND AGENTS (WHICH, FOR PURPOSES OF THIS AGREEMENT, SHALL INCLUDE THE AUTHORITY'S GENERAL COUNSEL, BOND COUNSEL, AND FINANCIAL ADVISOR (S)), FROM ANY CLAIMS, COSTS OR LIABILITIES OF ANY TYPE OR NATURE AND BY OR TO ANY PERSONS WHOMSOEVER, ARISING FROM THE CONSULTANT'S NEGLIGENT ACTS, ERRORS OR OMISSIONS WITH RESPECT TO THE CONSULTANT'S PERFORMANCE OF THE WORK TO BE ACCOMPLISHED UNDER THIS AGREEMENT, WHETHER SUCH CLAIM OR LIABILITY IS BASED IN CONTRACT, TORT OR STRICT LIABILITY. IN SUCH EVENT, THE CONSULTANT SHALL ALSO INDEMNIFY AND SAVE HARMLESS THE AUTHORITY, ITS OFFICERS, DIRECTORS, EMPLOYEES, AND AGENTS (WHICH, FOR PURPOSES OF THIS AGREEMENT, SHALL INCLUDE THE AUTHORITY'S GENERAL COUNSEL, BOND COUNSEL, AND FINANCIAL ADVISOR (S)) FROM ANY AND ALL EXPENSES, INCLUDING REASONABLE ATTORNEYS' FEES, INCURRED BY THE INDEMNIFIED ENTITY (S) IN LITIGATING OR OTHERWISE RESISTING SAID CLAIMS, COSTS OR LIABILITIES. IN THE EVENT THE AUTHORITY, ITS OFFICERS, DIRECTORS, EMPLOYEES, AND AGENTS (WHICH, FOR PURPOSES OF THIS AGREEMENT, SHALL INCLUDE THE AUTHORITY'S GENERAL COUNSEL, BOND COUNSEL, AND FINANCIAL ADVISOR (S)) IS/ARE FOUND TO BE PARTIALLY AT FAULT, THE CONSULTANT SHALL, NEVERTHELESS, INDEMNIFY THE INDEMNIFIED ENTITY (S) FROM AND AGAINST THE PERCENTAGE OF NEGLIGENCE ATTRIBUTABLE TO THE CONSULTANT, ITS OFFICERS, DIRECTORS, EMPLOYEES, AGENTS, SUBCONSULTANTS, AND CONTRACTORS OR TO THEIR CONDUCT.

NOTWITHSTANDING THE FOREGOING, THE CONSULTANT SHALL NOT BE RESPONSIBLE FOR (A) CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, OR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE PROJECT UNLESS DEVELOPMENT OR OVERSIGHT OF SUCH MATTERS IS SPECIFICALLY ASSIGNED TO THE CONSULTANT; (B) THE FAILURE OF ANY CONTRACTOR, SUBCONTRACTOR, VENDOR, OR OTHER PROJECT PARTICIPANT, NOT UNDER CONTRACT TO THE CONSULTANT, TO FULFILL CONTRACTUAL RESPONSIBILITIES TO THE AUTHORITY OR TO COMPLY WITH FEDERAL, STATE OR LOCAL LAWS, REGULATIONS AND CODES; OR (C) PROCURING PERMITS, CERTIFICATES AND LICENSES REQUIRED FOR ANY CONSTRUCTION UNLESS SUCH PROCUREMENT RESPONSIBILITIES ARE SPECIFICALLY ASSIGNED TO THE CONSULTANT IN ACCORDANCE WITH THIS AGREEMENT.

**ARTICLE 18
CONFLICTS OF INTEREST**

The Consultant represents and warrants to the Authority, as of the effective date of this Agreement and throughout the term hereof, that it, its employees and subconsultants (a) have no financial or other beneficial interest in any contractor, engineer, product or service evaluated or recommended by the Consultant, except as expressly disclosed in writing to the Authority, (b) shall discharge their consulting engineering responsibilities under this Agreement professionally, impartially and independently, and after considering all relevant information related thereto, and (c) are under no contractual or other restriction or obligation, the compliance with which is inconsistent with the execution of this Agreement or the performance of their respective obligations hereunder. In the event that a firm (individually or as a member of a consortium) submits a proposal to work for the Authority, Consultant shall comply with the Authority's conflict of interest policies and shall make disclosures as if it were one of the key personnel designated under such policies.

**ARTICLE 19
INSURANCE**

Prior to beginning the Services designated in this Agreement, the Consultant shall obtain and furnish certificates to the Authority for the following minimum amounts of insurance:

- a. **WORKERS' COMPENSATION INSURANCE.** In accordance with the laws of the State of Texas, and employer's liability coverage with a limit of not less than \$500,000. A "Waiver of Subrogation" in favor of the Authority shall be provided.
- b. **COMMERCIAL GENERAL LIABILITY INSURANCE.** With limits not less than \$1,000,000 for bodily injury, including those resulting in death, and property damage on account of any one occurrence, with an aggregate limit of \$1,000,000. A "Waiver of Subrogation" in favor of the Authority shall be provided.
- c. **BUSINESS AUTOMOBILE LIABILITY INSURANCE.** Applying to owned, non-owned, and hired automobiles in an amount not less than \$1,000,000 for bodily injury, including death, to any one person, and for property damage on account of any one occurrence. This policy shall not contain any limitation with respect to a radius of operation for any vehicle covered and shall not exclude from the coverage of the policy any vehicle to be used in connection with the performance of the Consultant's obligations under this Agreement. A "Waiver of Subrogation" in favor of the Authority shall be provided.
- d. **ARCHITECTS AND/OR ENGINEERS PROFESSIONAL LIABILITY INSURANCE.** In the amounts normally carried for its own protection in the practice of providing general consulting services, but in no event less than \$3,000,000 per claim and aggregate. Coverage must be continuously maintained for a period of three (3) years beyond the Consultant's completion of the Services.
- e. **EXCESS UMBRELLA LIABILITY.** With minimum limits of \$1,000,000 per claim and in the aggregate, annually, as applicable excess of the underlying policies required at a.-d.

above. The Umbrella Policy shall contain the provision that it will continue in force as an underlying insurance in the event of exhaustion of underlying aggregate policy limits.

- f. **GENERAL FOR ALL INSURANCE.** The Consultant shall promptly, upon execution of this Agreement, furnish certificates of insurance to the Authority indicating compliance with the above requirements. Certificates shall indicate the name of the insured, the name of the insurance company, the name of the agency/agent, the policy number, the term of coverage, and the limits of coverage.

All policies are to be written through companies (a) registered to do business in the State of Texas; (b) rated: (i), with respect to the companies providing the insurance under subsections 19.a. through d., above, by A. M. Best Company as “A-X” or better (or the equivalent rating by another nationally recognized rating service) and (ii) with respect to the company providing the insurance under subsections 19.d. and e., a rating by A. M. Best Company or similar rating service satisfactory to the Authority and/or its insurance consultant; and (c) otherwise acceptable to the Authority.

All policies are to be written through companies registered to do business in the State of Texas. Such insurance shall be maintained in full force and effect during the life of this Agreement or for a longer term as may be otherwise provided for hereunder. Insurance furnished under subsections 19.b., and c., above, shall name the Authority additional insureds and shall protect the Authority, the Consultant, their officers, employees, directors, agents, and representatives from claims for damages for bodily injury and death and for damages to property arising in any manner from the negligent or willful wrongful acts or failures to act by the Consultant, its officers, employees, directors, agents, and representatives in the performance of the Services rendered under this Agreement. Applicable Certificates shall also indicate that the contractual liability assumed in Article 17, above, is included.

The insurance carrier shall include in each of the insurance policies required under subsections 19.a., b., c., d., and e., the following statement: “This policy will not be canceled or non-renewed during the period of coverage without at least thirty (30) days prior written notice addressed to the Central Texas Regional Mobility Authority, 301 Congress, Suite 650, Austin, TX 78701, Attention: Executive Director.”

ARTICLE 20 COORDINATION OF CONTRACT DOCUMENTS

The Statement of Qualifications for Traffic and Revenue Engineering Services and Appendices thereto, dated August 17, 2020, submitted by CDM Smith to the Authority (“Statement of Qualification”) is attached hereto and incorporated herein as Appendix F for all purposes, provided, however, that in the event of any conflict between said Statement of Qualifications and any other provision of, appendices or exhibits to this Agreement, the Statement of Qualifications shall be subordinate and the provision, appendices, or exhibits of this Agreement shall control.

ARTICLE 21
RELATIONSHIP BETWEEN THE PARTIES

Notwithstanding the anticipated collaboration between the parties hereto, or any other circumstances, the relationship between the Authority and the Consultant shall be one of an independent contractor. The Consultant acknowledges and agrees that neither it nor any of its employees, subconsultants, or subcontractors shall be considered an employee of the Authority for any purpose. The Consultant shall have no authority to enter into any contract binding upon the Authority, or to create any obligation on behalf of the Authority. As an independent contractor, neither the Consultant nor its employees shall be entitled to any insurance, pension, or other benefits customarily afforded to employees of the Authority. Under no circumstances shall the Consultant, or its employees, subconsultants, or subcontractors, represent to suppliers, contractors or any other parties that it is employed by the Authority or serves the Authority in any capacity other than as an independent contractor. The Consultant shall clearly inform all suppliers, contractors and others that it has no authority to bind the Authority. Nothing contained in this Agreement shall be deemed or construed to create a partnership or joint venture, to create the relationship of employee-employer or principal-agent, or to otherwise create any liability for the Authority whatsoever with respect to the liabilities, obligations or acts of the Consultant, its employees, subconsultants, or subcontractors, or any other person.

ARTICLE 22
DELIVERY OF NOTICES, ETC.

In each instance under this Agreement in which one party is required or permitted to give notice to the other, such notice shall be deemed given either (a) when delivered by hand; (b) one (1) business day after being deposited with a reputable overnight air courier service; or (c) three (3) business days after being mailed by United States mail, registered or certified mail, return receipt requested, and postage prepaid. Any notices provided under this Agreement must be sent or delivered to:

In the case of the Consultant:

CDM Smith Inc.
9430 Research Blvd., Suite 1-200, Austin, TX 78759

Attn: Christopher E. Mwalwanda, Vice President

In the case of the CTRMA:

Central Texas Regional Mobility Authority
3300 N. IH 35
Suite 300
Austin, TX 78705

Attn: Mike Heiligenstein, Executive Director

Either party hereto may from time to time change its address for notification purposes by giving the other party prior written notice of the new address and the date upon which it will become effective.

ARTICLE 23
REPORTS OF ACCIDENTS, ETC.

Within twenty-four (24) hours after occurrence of any accident or other event which results in, or might result in, injury to the person or property of any third person (including an employee or subconsultant or employee of a subconsultant of the Consultant) which results from or involves any action or failure to act of the Consultant or any employee, subconsultant, employee of a subconsultant, or agent of the Consultant or which arises in any manner from the performance of this Agreement, the Consultant shall send a written report of such accident or other event to the Authority, setting forth a full and concise statement of the facts pertaining thereto. The Consultant also shall immediately send the Authority a copy of any summons, subpoena, notice, or other documents served upon the Consultant, its agents, employees, subconsultants, or representatives, or received by it or them, in connection with any matter before any court arising in any manner from the Consultant's performance of the Services under this Agreement.

ARTICLE 24
AUTHORITY'S ACTS

Anything to be done under this Agreement by the Authority may be done by such persons, corporations, firms, or other entities as the Authority may designate.

ARTICLE 25
LIMITATIONS

Notwithstanding anything herein to the contrary, all covenants and obligations of the Authority under this Agreement shall be deemed to be valid covenants and obligations only to the extent authorized by Chapter 370 of the Texas Transportation Code and permitted by the laws and the Constitution of the State of Texas, and no officer, director, or employee of the Authority shall have any personal obligations or liability thereunder.

The Consultant is obligated to comply with applicable standards of professional care in the performance of the Services. The Consultant makes no other representation or warranty, whether express or implied, and no warranty or guarantee is included or intended in this Agreement or in any "work product" or otherwise.

The Consultant shall be entitled to rely, without requirement of further investigation, on all information supplied to the Consultant by the Authority, together with any other materials, such as prior reports or analyses prepared by or on behalf of or for the benefit of Authority.

Neither Authority nor the Consultant shall in any event be liable for any consequential, incidental, indirect, punitive, exemplary or special damages including, without limitation; loss of profits, business or goodwill of any kind from any causes of action (whether arising in contract, tort or otherwise) unless caused by their willful misconduct, negligent act or omission, or other wrongful conduct. Each party to this Agreement is obligated to take commercially reasonable steps to mitigate any damages that it may incur. Nothing herein shall constitute a waiver of any other defenses that either party may have at law or in equity.

ARTICLE 26
CAPTIONS NOT A PART HEREOF

The captions or subtitles of the several articles, subsections, and divisions of this Agreement are inserted only as a matter of convenience and for reference, and in no way define, limit or describe the scope of this Agreement or the scope or content of any of its articles, subsections, divisions, or other provisions.

ARTICLE 27
CONTROLLING LAW, VENUE

This Agreement shall be governed and construed in accordance with the laws of the State of Texas. The parties hereto acknowledge that venue is proper in Travis County, Texas, for all disputes arising hereunder and waive the right to sue and be sued elsewhere.

ARTICLE 28
COMPLETE AGREEMENT

This Agreement sets forth the complete agreement between the parties with respect to the Services and, except as provided for in Article 20 above, expressly supersedes all other agreements (oral or written) with respect thereto. Any changes in the character, agreement, terms and/or responsibilities of the parties hereto must be enacted through a written amendment. No amendment to this Agreement shall be of any effect unless in writing and executed by the Authority and the Consultant. This Agreement may not be orally canceled, changed, modified or amended, and no cancellation, change, modification or amendment shall be effective or binding, unless in writing and signed by the parties to this Agreement. This provision cannot be waived orally by either party.

ARTICLE 29
TIME OF ESSENCE

As set forth in Article 5, with respect to any specific delivery or performance date or other deadline provided hereunder, time is of the essence in the performance of the provisions of this Agreement. The Consultant acknowledges the importance to the Authority of the project schedule and will perform its obligations under this Agreement with all due and reasonable care and in compliance with that schedule.

ARTICLE 30
SEVERABILITY

If any provision of this Agreement, or the application thereof to any person or circumstance, is rendered or declared illegal for any reason and shall be invalid or unenforceable, the remainder of this Agreement and the application of such provision to other persons or circumstances shall not be affected thereby but shall be enforced to the greatest extent permitted by applicable law.

ARTICLE 31
AUTHORIZATION

Each party to this Agreement represents to the other that it is fully authorized to enter into this Agreement and to perform its obligations hereunder, and that no waiver, consent, approval, or authorization

from any third party is required to be obtained or made in connection with the execution, delivery, or performance of this Agreement.

**ARTICLE 32
SUCCESSORS**

This Agreement shall be binding upon and inure to the benefit of the Authority, the Consultant, and their respective heirs, executors, administrators, successors, and permitted assigns.

**ARTICLE 33
INTERPRETATION**

No provision of this Agreement shall be construed against or interpreted to the disadvantage of any party by any court, other governmental or judicial authority, or arbiter by reason of such party having or being deemed to have drafted, prepared, structured, or dictated such provision.

**ARTICLE 34
BENEFITS INURED**

This Agreement is solely for the benefit of the parties hereto and their permitted successors and assigns. Nothing contained in this Agreement is intended to, nor shall be deemed or construed to, create or confer any rights, remedies, or causes of action in or to any other persons or entities, including the public in general.

**ARTICLE 35
SURVIVAL**

The parties hereby agree that each of the provisions in the Agreement are important and material and significantly affect the successful conduct of the business of the Authority, as well as its reputation and goodwill. Any breach of the terms of this Agreement, including but not limited to the provisions of Articles 13 and 18, is a material breach of this Agreement, from which the Consultant may be enjoined and for which the Consultant also shall pay to the Authority all damages which arise from said breach. The Consultant understands and acknowledges that the Consultant's responsibilities under Articles 13, 17, 18, and all other obligations of this Agreement related to maintaining records outlined in Article 3 shall continue in full force and effect after the Consultant's contractual relationship with the Authority ends for any reason.

**ARTICLE 36
FORCE MAJEURE**

Either party shall be excused from performing its obligations under this Agreement during the time and to the extent that it is prevented from performing by an unforeseeable cause beyond its control, including but not limited to: any incidence of fire, flood; acts of God; commandeering of material, products, plants or facilities by the federal, state or local government; national fuel shortage; or a material act or omission by the other party; when satisfactory evidence of such cause is presented to the other party, and provided further that such nonperformance is unforeseeable, beyond the control and is not due to the fault or negligence of the party not performing.

IN WITNESS WHEREOF, the parties have executed this Agreement effective on the date and year first written above.

CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

CDM SMITH

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

APPENDIX A

SCOPE OF SERVICES

I. Purpose

The Consultant shall be expected to support the Authority in its communications and interactions with the Authority's accountants, rating agencies, bond insurers and underwriters, governmental entities, and the public in accordance with the highest professional standards.

The Consultant shall provide qualified technical and professional personnel to perform the duties and responsibilities assigned under the terms of this Agreement. The Authority, at its option, may elect to expand, reduce, or delete the extent of each work element described in this Scope of Services document, provided such action does not alter the intent of this Agreement.

The Authority shall request Services on an as-needed basis. There is no guarantee that any or all of the Services described in this Agreement will be assigned during the term of this Agreement. Further, the Consultant is providing these Services on a nonexclusive basis. The Authority, at its option, may elect to have any of the Services set forth herein performed by other consultants or by the Authority's staff.

II. Services

The Consultant shall be responsible for conducting complex traffic modeling and forecasting, including forecasting of revenues for bond-financed toll projects, and rendering opinions and other analyses concerning traffic and revenue projections as required under the trust agreements governing CTRMA's revenue bond financing for current and future projects.

The Scope of Services to be provided by the Consultant may include, but not be limited to, the following:

- A. Perform all duties imposed on the Traffic Consultant by the Authority's current Trust Agreement, as amended, and all supplemental, superseding, or additional trust agreements, including providing certificates and opinions related to annual reviews, proposed changes in toll rate schedules or toll classifications, and periodic bond issuances.
- B. Develop traffic and revenue projections for the existing CTRMA projects annually and for proposed new projects as requested.
- C. Monitor traffic and toll revenue performance of all facilities open to traffic and respond to questions and inquiries from the Authority; develop pro forma models which would enable the estimation of traffic and toll revenue levels on these facilities on a plaza-by-plaza or gantry-by-gantry basis.
- D. Prepare evaluations, studies, and opinions as necessary to determine recommended toll rates and periodic toll rate adjustments for the Authority's turnpike projects.

- E. Provide and maintain traffic modeling tools pertinent to the CTRMA's projects and potential projects, working closely with the Capital Metropolitan Planning Organization ("CAMPO"), the Texas Department of Transportation ("TxDOT"), and other local planning organizations as necessary, to update economic, demographic, and land use data.
- F. Perform special studies or reports as requested, including peer review analyses, regarding traffic, toll revenues, mobility, toll collection methods, and strategies and related technology and industry trends.
- G. Monitor major economic and other activities which would have an effect of the Authority's traffic and toll revenue estimates; major resources that are consulted on a daily basis include local news, Internet websites, rating agency reports, and economic reports.
- H. Present reports and findings to the CTRMA Board of Directors, rating agencies and investors, local interested parties, or otherwise upon request.
- I. Work at the direction and supervision of the authority's Executive Director, Deputy Executive Director, Chief Financial Officer, and Director of Engineering. The Consultant will also be required to work cooperatively and collaboratively with other firms serving the Authority, including but not limited to the authority's General Engineering Consultant), General Counsel, financial advisors, and Bond Counsel.

III. Subcontracting

Services assigned to subconsultants must be approved in advance by the Authority. Notwithstanding said approval, all responsibility for subcontracted work shall remain strictly with the Consultant. The subconsultants must be qualified by the Authority to perform all work assigned to them.

In the event services of a subconsultant are authorized, the Consultant shall obtain a schedule of rate, and the Authority shall review and must approve, in its discretion, any rates, including overhead, to be paid to the subconsultant.

The Consultant shall be responsible for submitting monthly reports regarding its subcontracting activity including required BOPP reporting.

APPENDIX B

RATE SCHEDULE

PRIME PROVIDER NAME:

CDM Smith Inc.

Labor/Staff Classification	Year 1* Average Hourly Wage Rate (A)	Overhead G & A (B) 168.77%	Profit (C) 10%	Fully Burdened Hourly Labor Rate (Columns A+B+C)
Project Principal/Senior Advisor (15+ Yrs)	\$128.00	\$216.03	\$34.40	\$378.43
Project Director (12+ Yrs)	\$112.00	\$189.02	\$30.10	\$331.12
Project Manager (10+ Yrs)	\$96.00	\$162.02	\$25.80	\$283.82
Engineer III (15+ Yrs)	\$82.00	\$138.39	\$22.04	\$242.43
Engineer II (8-14 Yrs)	\$70.00	\$118.14	\$18.81	\$206.95
Engineer I (1-7 Yrs)	\$36.00	\$60.76	\$9.68	\$106.44
Senior GIS/CADD Technician III (15+ Yrs)	\$49.00	\$82.70	\$13.17	\$144.87
GIS/CADD Technician II (9-14 Yrs)	\$42.00	\$70.88	\$11.29	\$124.17
GIS/CADD Technician I (0-8 Yrs)	\$32.00	\$54.01	\$8.60	\$94.61
Planner/Modeler III (15 + yrs)	\$89.00	\$150.21	\$23.92	\$263.13
Planner/Modeler II (9 -15 yrs)	\$66.00	\$111.39	\$17.74	\$195.13
Planner/Modeler I (0 - 8 yrs)	\$35.00	\$59.07	\$9.41	\$103.48
Senior Toll System Specialist (> 10 yrs)	\$80.00	\$135.02	\$21.50	\$236.52
Toll System Specialist (< 10 yrs)	\$59.00	\$99.57	\$15.86	\$174.43
Senior Project Controls Specialist (>10 yrs)	\$64.00	\$108.01	\$17.20	\$189.21
Project Controls Specialist (1-10 yrs)	\$46.00	\$77.63	\$12.36	\$135.99
Senior Project Administrator/Contract Manager (>10 yrs)	\$46.00	\$77.63	\$12.36	\$135.99
Project Administrator/Contract Manager (1-10 Yrs)	\$40.00	\$67.51	\$10.75	\$118.26
Admin/Clerical (1-5 Yrs)	\$27.00	\$45.57	\$7.26	\$79.83

*Year 1 is from January 1, 2020 through December 31, 2020.

Negotiated Offsite Year 1 OH Rate:	168.77%
Negotiated Profit Rate:	10.00%

SUBPROVIDER NAME:

C J Hensch and Associates, Inc.

Labor/Staff Classification	Year 1*	Overhead G & A (B) 120.00%	Profit (C) 10%	Fully Burdened Hourly Labor Rate (Columns A+B+C)
	Average Hourly Wage Rate (A)			
Support Project Manager (10-20 Yrs)	\$55.00	\$66.00	\$12.10	\$133.10
Senior Traffic Technician (15+ Yrs)	\$25.00	\$30.00	\$5.50	\$60.50
Traffic Technician (5-15 Yrs)	\$20.00	\$24.00	\$4.40	\$48.40
Junior Traffic Technician (0-5 Yrs)	\$17.50	\$21.00	\$3.85	\$42.35
Admin/Clerical	\$22.00	\$26.40	\$4.84	\$53.24

*Year 1 is from January 1, 2020 through December 31, 2020.

Negotiated Offsite OH Rate: 120.00%
 Negotiated Profit Rate: 10.00%

Data Collection Expenses	Unit of Measure	Average Rates (1)
Turning Movement Counts		
2-hour Turning Movement Count, Major Intersection, Weekday	per intersection	\$ 405.00
2-hour Turning Movement Count, Major Intersection, Weekend	per intersection	\$ 425.00
2-hour Turning Movement Count, Minor Intersection, Weekday	per intersection	\$ 230.00
2-hour Turning Movement Count, Minor Intersection, Weekend	per intersection	\$ 250.00
13-hour Turning Movement Count Major Intersection	per intersection	\$ 1,300.00
13-hour Turning Movement Count Minor Intersection	per intersection	\$ 750.00
24-Hour Video System Classification Counts - Major Intersection	per intersection	\$ 1,500.00
24-Hour Video System Classification Counts - Minor Intersection	per intersection	\$ 1,000.00
Intersection Turning Movement Counts - Minor (additional turning movement count hours)	per hour	\$ 200.00
Intersection Turning Movement Counts - Major (additional turning movement count hours)	per hour	\$ 110.00
Intersection Video	per day	\$ 250.00
24-Hour Counts		
24-Hour Automated Tube Counts - Volume	per direction/ per counter/day	\$ 180.00
24-Hour Automated Tube Counts - Speed or Class	per direction/ per counter/day	\$ 275.00
24-Hour Volume Mainlane Video/Radar Count	per lane/day	\$ 175.00
24-Hour 3 Vehicle Classification Main Lane Count	per lane/day	\$ 250.00
24-Hour 13 Vehicle Classification Main Lane Count	per lane/day	\$ 360.00
Additional Traffic Control (no lane closures/detour)	day	\$ 1,500.00
Additional Traffic Control (lane closures/detour)	day	\$ 2,500.00
Speed Surveys		
Curve Speed Survey	per curve	\$ 500.00
Spot Speed Survey	per location	\$ 210.00
Travel Times		
Travel Time Runs in DMI-Equipped Vehicle (Includes labor and mileage on site; processing labor not included)	hour	\$ 210.00
Travel Time- MAC Address Capture	per hour/unit	\$ 90.00
Origin Destination		
72-Hour Bluetooth O/D Main Lane	per unit	\$ 1,100.00
72-Hour Bluetooth O/D Arterial	per unit	\$ 550.00

(1) Calendar Year 2020 rates, which will be updated to include annual escalation for subsequent years.

SUBPROVIDER NAME:

GRAM Traffic North Texas, Inc.

Labor/Staff Classification	Year 1*	Overhead G & A (B)	Profit (C)	Fully Burdened Hourly Labor Rate (Columns A+B+C)
	Average Hourly Wage Rate (A)			
Principal	\$35.00	\$50.75	\$8.58	\$94.33
Field Supervisor (10+ Yrs)	\$35.00	\$50.75	\$8.58	\$94.33
Senior Traffic Technician (15+ Yrs)	\$30.00	\$43.50	\$7.35	\$80.85
Traffic Technician (5-15 Yrs)	\$25.00	\$36.25	\$6.13	\$67.38
Junior Traffic Technician (0-5 Yrs)	\$25.00	\$36.25	\$6.13	\$67.38
Admin/Clerical	\$28.00	\$40.60	\$6.86	\$75.46

*Year 1 is from January 1, 2020 through December 31, 2020.

Negotiated Offsite OH Rate: 145.00%
 Negotiated Profit Rate: 10.00%

Direct Expenses:	Unit of Measure	Average Rates
Mileage	Per Mile	\$ 0.575
Data Collection Expenses	Unit of Measure	Average Rates (1)
One-Way Volume Tube Count (24-hrs)	per location	\$ 120.00
Additional 24-hrs One-Way Volume Tube Count	per location	\$ 80.00
Bi-directional Volume Tube Count (24-hrs)	per location	\$ 140.00
Additional 24-hrs Bi-directional Volume Tube Count	per location	\$ 90.00
Speed, Gap or Classification Tube Counts (24-hrs)	per counter	\$ 150.00
Additional 24-hrs Speed, Gap or Classification Tube Counts	per counter	\$ 100.00
Speed, Gap or Classification Tube Counts - Rural Highways	per direction/per day	\$ 500.00
Video ATRs - basic classification (2-lane road)	per location/per day	\$ 215.00
Video ATRs - basic classification - each additional lane	per lane/per day	\$ 80.00
Video ATRs - premium classification (2-lane road)	per location/per day	\$ 275.00
Video ATRs - premium classification - each additional lane	per lane/per day	\$ 110.00
Video ATRs - Hwy Mainlane - basic classification	per lane/per day	\$ 110.00
Video ATRs - Hwy Mainlane - premium classification	per lane/per day	\$ 165.00
Pedestrian/Bicycle Pathway count (bi-directional)	per day	\$ 240.00
24-Hr Video TMC w/ Bi-D ATR Data - basic class	per intersection	\$ 795.00
24-Hr Video TMC w/ Bi-D ATR Data - premium class	per intersection	\$ 895.00
Additional 24-hrs of bicycles & pedestrians	per intersection	\$ 110.00
Turning Movement Counts - basic class	per hour	\$ 60.00
Turning Movement Counts - basic class with Ped. Junction count	per hour	\$ 90.00
Turning Movement Counts - premium class	per hour	\$ 70.00
Turning Movement Counts - premium class with Ped. Junction count	per hour	\$ 100.00
Pedestrian Pathway Junction count (stand-alone)	per hour	\$ 40.00
Roundabouts - small	per hour	\$ 85.00
Roundabouts - small	per 24-hr	\$ 1,400.00
Roundabouts - large (added Supervisor for >= 5intersections)	per hour	\$ 170.00
Roundabouts - large (added Supervisor for >= 5intersections)	per 24-hr	\$ 1,700.00
Other manual counts	per hour/per counter	\$ 60.00
Speed Studies (Radar or Tube)	per direction	\$ 150.00
Speed Studies (freeway tubes) - additional	per lane	\$ 100.00
Digital Photographs	per intersection	\$ 40.00
Travel Time Runs	per hour	\$ 75.00
Travel Time Runs (GPS TTRs with Video)	per hour	\$ 125.00
Video License Plate Capture with O-D	per lane/per hour	\$ 400.00
Video Traffic Surveillance	per hour	\$ 25.00
Expedited Processing - Video data collection (24-hr) - additional	per hour	\$ 15.00

(1) Calendar Year 2020 rates, which will be updated to include annual escalation for subsequent years.

SUBPROVIDER NAME:**Baez Consulting, LLC**

Labor/Staff Classification	Year 1*	Overhead G & A (B)	Profit (C)	Fully Burdened Hourly Labor Rate (Columns A+B+C)
	Average Hourly Wage Rate (A)			
Senior Advisor	\$111.82	\$174.27	\$28.61	\$314.70
Senior Transportation Modeler	\$70.19	\$109.39	\$17.96	\$197.54
Administration/Clerical	\$26.50	\$41.30	\$6.78	\$74.58

*Year 1 is from January 1, 2020 through December 31, 2020.

Negotiated Offsite OH Rate: 155.85%
 Negotiated Profit Rate: 10.00%

SUBPROVIDER NAME:

Bomba Consulting, LLC

Labor/Staff Classification	Year 1*	Overhead G & A (B)	Profit (C)	Fully Burdened Hourly Labor Rate (Columns A+B+C)
	Average Hourly Wage Rate (A)			
Senior Economist/Demographer	\$78.00	120.00%	\$17.16	\$188.76
Planner	\$40.00	\$48.00	\$8.80	\$96.80

*Year 1 is from January 1, 2020 through December 31, 2020.

Negotiated Offsite OH Rate: 120.00%
Negotiated Profit Rate: 10.00%

SUBPROVIDER NAME:

Resource Systems Group

Labor/Staff Classification	Year 1*	Overhead G & A (B) 180.71%	Profit (C) 10%	Fully Burdened Hourly Labor Rate (Columns A+B+C)
	Average Hourly Wage Rate (A)			
Senior Advisor	\$137.41	\$248.31	\$38.57	\$424.29
Senior Director	\$97.63	\$176.43	\$27.41	\$301.47
Director	\$76.87	\$138.91	\$21.58	\$237.36
Senior Consultant	\$50.08	\$90.50	\$14.06	\$154.64
Consultant	\$41.08	\$74.24	\$11.53	\$126.85
Senior Analyst	\$35.94	\$64.95	\$10.09	\$110.98
Analyst	\$28.32	\$51.18	\$7.95	\$87.45

*Year 1 is from January 1, 2020 through December 31, 2020.

Negotiated Offsite OH Rate: 180.71%
Negotiated Profit Rate: 10.00%

APPENDIX C

WORK AUTHORIZATION (WORK AUTHORIZATION NO. _____)

This Work Authorization is made as of this ____ day of _____, _____, under the terms and conditions established in the AGREEMENT FOR TRAFFIC AND REVENUE ENGINEERING SERVICES, dated as of _____, _____ (the "Agreement"), between the Central Texas Regional Mobility Authority ("Authority"), represented by the Executive Director or designee, and _____ ("Consultants"). This Work Authorization is made for the following purpose, consistent with the services defined in the Agreement:

[Brief description of the Project elements to which this Work Authorization applies]

Section A. – Scope of Services

A.1. Consultant shall perform the following Services:

Refer to attached scope letter.

- A.2. The following Services are not included in this Work Authorization, but shall be provided as Additional Services if authorized or confirmed in writing by the Executive Director or designee.
- A.3. In conjunction with the performance of the foregoing Services, Consultant shall provide the following submittals/deliverables (Documents) to the Executive Director or designee: To be determined.

Section B. – Schedule

Consultant shall perform the Services and deliver the related Documents (if any) according to the following schedule: To be determined.

Section C. – Compensation

- C.1. In return for the performance of the foregoing obligations, the Authority shall pay to Consultant the amount not to exceed \$_____, based on the attached fee estimate. Compensation shall be in accordance with the Agreement.
- C.2. Compensation for Additional Services (if any) shall be paid by the Authority to Consultant according to the terms of a future Contract Amendment.

Section D. – Authority’s Responsibilities

The Authority shall perform and/or provide the following in a timely manner so as not to delay the Services of the Consultant. Unless otherwise provided in this Work Authorization, the Authority shall bear all costs incident to compliance with the following:

Section E. – Other Provisions

The parties agree to the following provisions with respect to this specific Work Authorization:

Except to the extent expressly modified herein, all terms and conditions of the Agreement shall continue in full force and effect.

AUTHORITY:

CONSULTANT:

CENTRAL TEXAS REGIONAL

CDM SMITH

MOBILITY AUTHORITY

By: _____
 Name: _____
 Title: _____
 Date: _____

By: _____
 Name: _____
 Title: _____
 Date: _____

APPENDIX D

SUBCONSULTANTS

C J Hensch & Associates:

*Carol Hensch
President
5215 Sycamore Avenue
Pasadena, TX 77503
Ph: (281) 487-5417*

Gram Traffic NTX:

*Stephanie Swenson
President
1120 W Lovers Ln
Arlington, TX 76013
Ph: (817) 265-8968*

Baez Consulting, LLC:

*Gustavo A. Baez
President
706 Nocona Court
Allen, TX 75013
Ph: (214) 864-9619*

Bomba Consulting, LLC:

*Michael S. Bomba, Ph.D.
President
3410 Far West Blvd., Suite - 254
Austin, TX 78731
Ph: (512) 217-8411*

Resource Systems Group:

*Mark Fowler
Director
180 Battery St., Suite - 350
Burlington, VT 05401
Ph: (802) 861-0504*

APPENDIX E

KEY PERSONNEL

Title	Employee Name
Principal in Charge/Project Director	Christopher E. Mwalwanda
Project Manager	Phani Rama Jammalamadaka
QA/QC Director	Hugh W. Miller
Technical Advisor	Kamran A. Khan
Principal Modeler	Mustafa Kamal
Investment Grade Advisor	Kamran A. Khan
Task Manager/T&R Forecasting	Bikash Gautam

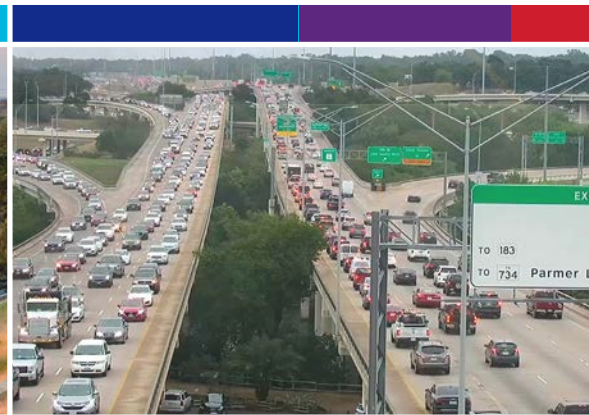
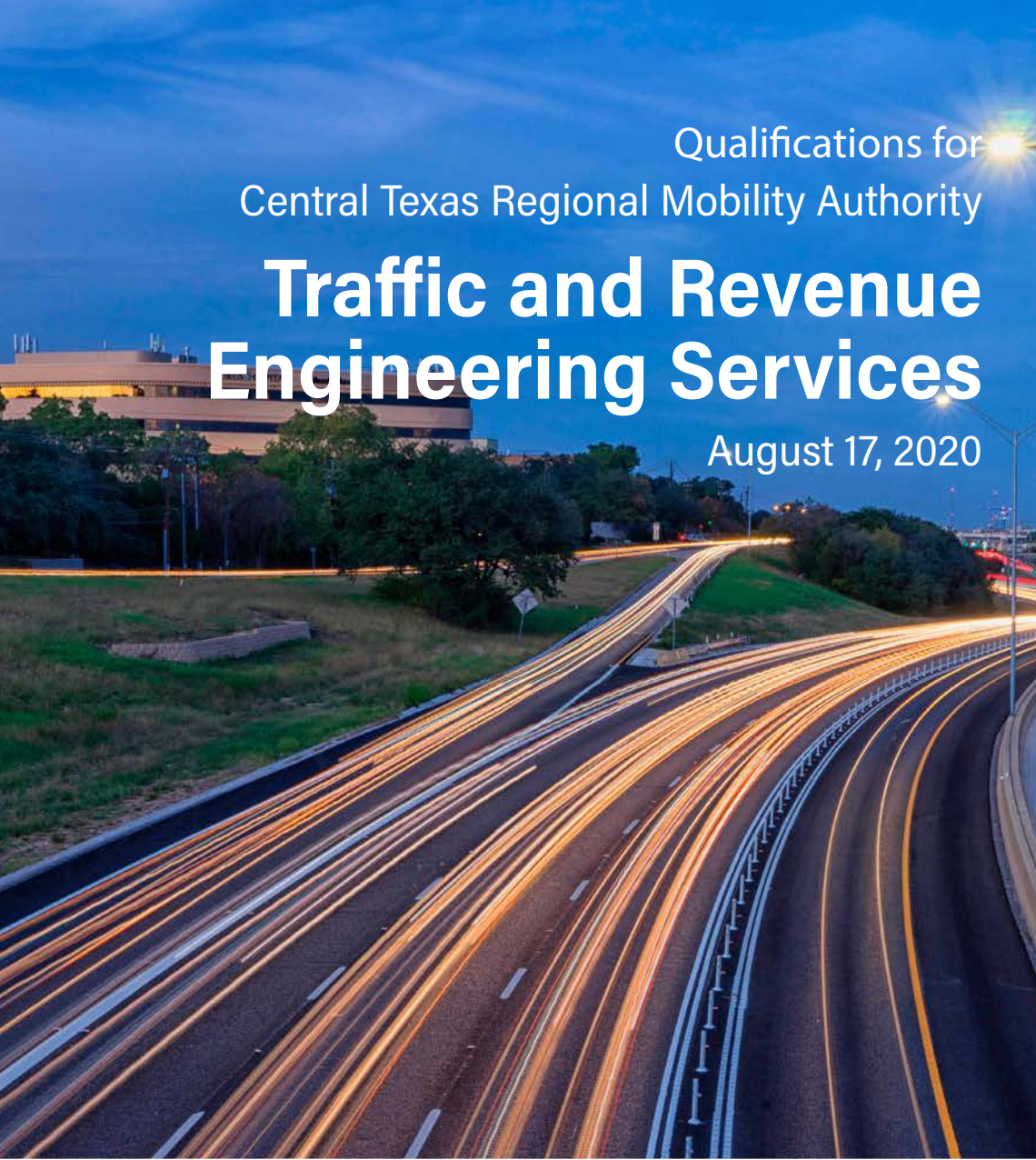
APPENDIX F

CONSULTANT STATEMENT OF QUALIFICATION

Qualifications for
Central Texas Regional Mobility Authority

Traffic and Revenue Engineering Services

August 17, 2020



**CDM
Smith**

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August 17, 2020

Mr. William Chapman
Central Texas Regional Mobility Authority (CTRMA)
3300 N IH 35, Suite 300, Austin, TX 78705

Subject: Traffic and Revenue (T&R) Engineering Services

Dear Mr. Chapman,

Thank you for the opportunity to submit our response to the RFQ for T&R consulting and traffic engineering services for the CTRMA. As a toll industry leader, CDM Smith believes we are the best team for the job. For more than six decades, CDM Smith has been providing our toll agency clients with reliable information and thoughtful solutions. Our T&R forecasts have **supported more than \$120B** in critical transportation improvements worldwide. We provide trust indenture services and routine monitoring and traffic engineering services to several public toll agencies across the U.S. **We have worked closely with CTRMA over the past 11 years, supporting several T&R studies within the Central Texas region, traffic engineering and T&R monitoring services, dynamic pricing evaluation, express lanes operation analysis, and technical assistance, and we look forward to building upon this successful relationship.**

We understand that fulfillment of your mission necessitates the retention of a nationally-recognized T&R engineer for independent T&R studies and certifications supporting toll revenue bond sales, refundings, and refinancings to finance the agency's operations, maintenance, and capital programs. The T&R Engineer also plays a critical role in annual budgeting, financial reporting, traffic operations and safety, and certification of all changes in toll rates. We recognize that the T&R Engineer role extends well beyond these responsibilities. As your current T&R engineer, we bring many of the warranted attributes and we place a high value on serving as CTRMA's trusted advisor—providing a link to the world of transportation finance and

policy, forecasting, planning, and innovations in technology and operations. In this capacity, we provide independent, objective advice with the benefit of national expertise, while being mindful of the local and regional context—we are locally-based, regionally-focused, with a national reach.

An effective T&R Engineer must be able to quickly respond to the rapidly-evolving challenges and opportunities presented to CTRMA. This can only be achieved through effective communication between the T&R Engineer and CTRMA. The T&R Engineer must be a partner and source of reliable information primarily for the Finance Department, while supporting the Project Delivery, Communications/Public Affairs, and Maintenance Departments. We bring to you a team that has been effective and successful in achieving this. The strong working relationships we have built are made possible by having a team of transportation and tolling professionals located near your headquarters. With local tolling staff in the Austin region with reliable and relevant expertise, we will continue to offer CTRMA the dependable level of service you have come to trust in supporting your program.

LEADERS IN TRANSPORTATION

CDM Smith is a regionally-located, global engineering firm with experts who work together—in teams and in partnership with our clients—to solve transportation challenges. Our breadth of services enables us to take transportation projects from conceptual ideas to constructed reality.

BENEFITS OF THE CDM SMITH TEAM TO CTRMA



PROVEN T&R SERVICE

Trusted partners with nationwide successes and lessons learned.



INSTITUTIONAL KNOWLEDGE

More than 11 years of dependable regional support.



FINANCIAL CREDIBILITY

Reliable forecast methodologies that instill confidence.



TRUSTED LEADERSHIP

Proven and direct CTRMA experience.



LOCAL RESOURCES

Dedicated to quality and timely delivery.



DELIVERED INNOVATION

Creative tools and processes for T&R services.

CDM Smith's local, trusted team's deep understanding of the region, technical expertise, national tolling experience, and thought leadership will help ensure successful delivery of CTRMA programs. We will support CTRMA to position itself to meet future challenges and achieve your vision.

Our History: In 1947, Camp Dresser & McKee Inc. was formed to serve clients with high-quality engineering services. Over time, our firm has grown, and joined forces with Wilbur Smith Associates in 2012 to expand our capabilities and resources as a leader in the transportation industry. With a combined 140 years of engineering excellence, we now provide multidisciplinary consulting, engineering, operations, and construction services with a staff of nearly 5,200 across 125 offices worldwide.

Our Proven Track Record: Since entering the toll industry in the 1950s, we have performed tolling services in 46 states for dozens of transportation clients. As the national leader in T&R forecasting and managed lane projects, we have [completed T&R studies for bond issuances representing 60 percent of the industry and supported more than \\$120 billion in bond issuances.](#)



Our Staff Capabilities: With more than 85 staff devoted almost exclusively to the US toll industry, our tolling capabilities span the gamut of CTRMA's needs. This includes

T&R forecasting, economics and finance, and toll technology and operations planning to develop regional strategies, toll facility planning, and evaluating pricing mechanisms to manage congestion and improve mobility.

Project Plan, Methodology & Approach

The majority of our services will be provided by our Austin and other Texas office staff—our local transportation experts encompass transportation finance, forecasting, technology and operations, and traffic engineering. A majority of our staff that assist CTRMA are long-time residents of the area with a deep understanding of transportation issues in Central Texas. Estimation of future travel demand is greatly aided by this knowledge of the local transportation network, economics, land use, and political influences. Our long-term relationships with municipalities and local and regional transportation authorities result in an exceptional understanding of local technical resources and challenges. Overall, CDM Smith employs more than

CDM Smith has Served as CTRMA's Trusted Partner for More than 11 Years

RESPONSIVE

Whether asked for a traffic impact estimate in just days or a T&R report in months, we produce memos, white papers, and reports with the accuracy and quality that you deserve and expect. This is made possible due to our dedicated local expertise and national industry perspective, which allows us to respond quickly and with confidence.

TRUSTWORTHY

We are viewed favorably by toll bond underwriters, rating agencies, and other transportation agencies, meaning that when CTRMA needs a reliable representative, you can trust our independent, expert opinions. Having supported more than half of all U.S. toll revenue bond sales over the last decade, our T&R forecasts continue to be trustworthy in the financial community.

VERSATILE

We provide extensive services outside of the traditional T&R Engineer role, including commercial vehicle usage evaluations, public outreach assistance, and traffic operations analyses. We have a strong track record of fulfilling your specific needs, and we will continue to meet or exceed your expectations for product quality and technical expertise.



INNOVATIVE

We remain at the forefront of technological advances for mobility alternatives and transportation options in the near future. We are part of the national conversation regarding advancements in transportation funding solutions and delivery. In addition, we are involved in studying the broader-scale implementation of connected and autonomous vehicles and are building those impacts into our traffic projections and analyses.

ACCURATE

Drawing upon decades of experience in the tolling industry with dozens of agencies, CDM Smith delivers dependable forecasts that build trust with rating agencies and investors. The accuracy of our forecasts provides a strong foundation upon which CTRMA develops budgets and plans for capital programs, which enhances CTRMA's infrastructure and operations.

85 nationally-recognized toll industry experts in Texas, Washington, Florida, Illinois, and Connecticut—more toll experts than our competitors combined.

SPECIFIC SERVICES—CONTINUOUSLY DELIVERED

Your RFQ identifies several key areas in which the T&R engineer is expected to support CTRMA. As one of your current T&R engineers, CDM Smith successfully carries out all duties prescribed under the scope of work, while supporting CTRMA's frequent/day-to-day services, periodic/routine services, and long-term/specialized services.

Commitment to Business Diversity

We are committed to meeting CTRMA's DBE/HUB commitments. GRAM NTX, C J Hensch & Associates, and Baez Consulting are DBE/HUB firms on our team. In addition, several key staff on this contract are women and/or minorities.

Summary

As you review the enclosed response, we encourage you to consider the following differentiators that set CDM Smith apart:

- Local Austin and Texas team with a deep regional understanding and a bench of more than 85 T&R consulting experts dedicated to this unique field
- Technical excellence and knowledge having supported more than 1,000 tolling studies nationwide, including more than 200 investment grade studies for existing and start-up toll facilities
- Unparalleled express lane T&R, pricing, and operational analyses support having supported more than half of operating express lane facilities

Office from which the project will be managed:

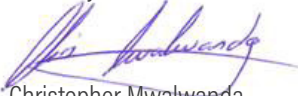
9430 Research Boulevard, Suite 1-200, Austin, TX 78759
Phone: 512.346.1100

- Financial community credibility having supported approximately 60 percent of all toll revenue bond issues in the U.S. over the last decade
- A team that supports all the major toll agencies within the state of Texas and has been instrumental in the financing of the majority of toll infrastructure within the state

CDM Smith has assembled a team of which you will have immediate and unlimited access. These professionals will provide CTRMA with responsive, high-quality advice and services, leveraging lessons learned from previous successes within the region and the state. Our diverse staff, broad scope of service offerings, and teaming partners allow us to adapt quickly as your needs evolve.

We sincerely appreciate the opportunity to submit our qualifications and look forward to assisting CTRMA in planning and building sustainable transportation infrastructure to help meet anticipated demand, provide economic stability, and benefit future generations. I will serve as the primary contact for this response. Should you have any questions or concerns, please do not hesitate to contact me at mwalwandace@cdmsmith.com or 512.652.5355.

Sincerely,



Christopher Mwalwanda
Vice President
CDM Smith Inc.

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Statement of Qualifications

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Section I The Firm

For 60+ years, CDM Smith has provided consulting engineering services to tolling agencies across the country for planning, design, construction, and operations projects. The depth of our tolling experience—totaling 1,000+ studies—and the successful delivery of comprehensive T&R analyses is unparalleled in the industry.

CDM Smith is an employee-owned corporation providing lasting and integrated solutions in transportation, water, environment, energy, and facilities to public and private clients worldwide. As a full-service consulting, engineering, construction, and operations firm, we deliver exceptional client service, quality results, and value across the entire project life-cycle.

In T&R specifically, we have a strong record of accomplishments spanning more than six decades of toll facility support, totaling more than \$120B in bond finance.

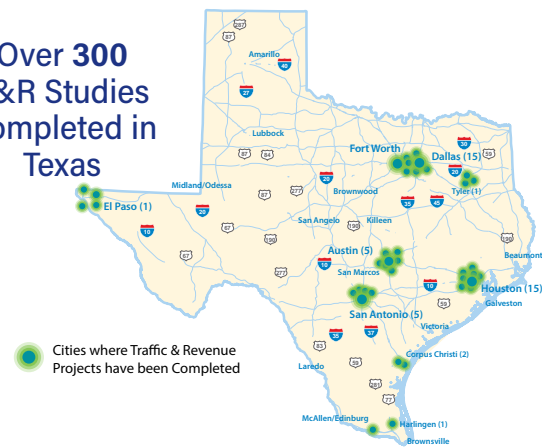
We provide independent forecasts and maintain respect and credibility with rating agencies and the financial community. Our T&R expertise involves a range of services covering economics, travel profiles, detailed travel modeling, behavioral research, and much more.

PROVEN T&R SERVICE

CDM SMITH: 60+ Years of Transportation/Tolling Experience

We are the nation's leading T&R expert, serving the country's largest tolling agencies and supporting multi-million-dollar capital budgets. CDM Smith has worked with 50+ tolling agencies for more than 1,000 T&R activities. Our efforts with these clients inform our national perspective for peer toll systems and the industry. We are working in many states to help address transportation funding challenges—we assist DOTs and tolling agencies in developing statewide strategies and toll facility planning and in evaluating pricing mechanisms to manage congestion and improve mobility. Our public-private partnership (P3) division has played a role in nearly every major toll privatization initiative in the U.S. since 1980, with P3 experience in 20 states. We have staff members who are industry leaders and experts in all modes of transportation.

Over 300 T&R Studies Completed in Texas

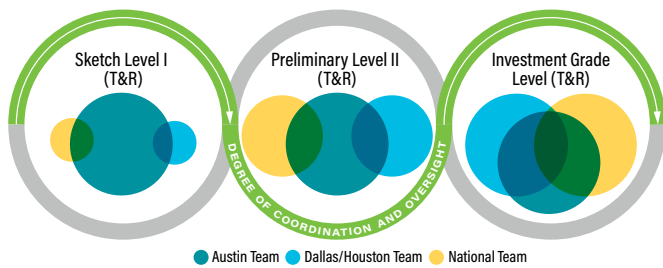


CDM Smith is also considered a leader in toll industry innovations—we supported our clients in pioneering many firsts that include the ETC systems implemented, followed by open road tolling, high-occupancy toll (HOT) lanes, variable pricing, and conversion to cashless toll collections.

In addition, CDM Smith has provided services for nearly all the operational managed lanes in the country. **We have tolling service experience in 46 states, with bonds issued using CDM Smith studies in 25 states. We have evaluated over 300 T&R studies in Texas, with work on a majority of toll road and express lane facilities in Texas.**

A. Capabilities and Resources of Principal Office and Personnel

Our Austin office will serve as the principal office responsible for performing this work. This office consists of over 10 T&R experts and is part of a large nationwide division with more than 85 staff members dedicated to providing specialized services to the toll industry located in Dallas, and Houston in Texas; California/Washington; Hartford, Connecticut; Lisle, Illinois; and Maitland, Florida. Our T&R staff deal exclusively in T&R analysis and bring a broad range of experience in the areas of complex travel demand modeling, toll revenue estimation, toll sensitivity analyses, toll rate adjustment analyses, congestion pricing assessments, traffic engineering, economic trending, and data collection and analysis that includes speed and delay, traffic counts, origin/destination, and behavioral stated preference surveys. On investment grade studies, where more detailed coordination to meet the quality and expectations of the financial community is needed, staff from various offices will be involved, while sketch and preliminary level analyses are predominately performed by our Austin office.



This represents the level of coordination anticipated between the regional Texas offices and other various CDM Smith offices and the level of oversight that will be implemented for each project as it moves through the toll feasibility levels.

Christopher Mwalwanda, the designated project principal/director in Austin, has a master's degree in traffic modeling with more than 20 years of experience in traffic engineering, complex travel demand modeling, traffic simulation, report writing, public presentations, and creation of innovative tools for toll traffic demand modeling applications and has supported over \$18 billion in T&R bond financing. Our project manager **Phani Jammalamadaka**, currently serving as PM for the existing CTRMA T&R contract, has a master's degree in transportation and more than 16 years of experience in leading complex toll road and express lane projects across the nation, supporting more than \$15 billion in toll road financing/refinancing for both public and private agencies for numerous toll projects including the MoPac North and MoPac South Express Lanes, NTTA System facilities, HCTRA System facilities, Grand Parkway System, several express lane facilities in Florida, E-470 in Denver and Oklahoma Turnpike System.

The CDM Smith team has also worked on many projects within the state, including the MoPac North Express Lanes, MoPac South Express Lanes, CTTS Peer Review, US 183 Express Lanes, US 290 Peer Review, SH 130 Segments 5 & 6, Trans-Texas Corridor 35 (TTC-35), and RM 2222 and many more within the Central Texas region, the I-35E Express Lanes, LBJ Express Lanes, North Texas Tollway Authority System, and North Tarrant Expressway (NTE) in the Dallas region; Toll 49 initial system and Segment 4 projects in Tyler; and the bulk of all major corridors within the Houston region. **An organizational chart and details of key Texas office personnel is provided in Section II.**

B. Experience Providing Complex Traffic Modeling and Forecasting Tools

The firm is currently involved in a similar capacity as being sought by CTRMA with the following major Texas toll authorities: HCTRA,

NTTA, NET RMA, BCTRA, MCTRA, FBCTRA, and the Texas Department of Transportation (TxDOT). As traffic consultants to these agencies, CDM Smith has performed a wide variety of traffic and revenue related services that include: traffic modeling and annual toll revenue forecasting and monitoring, trust indenture reviews and certification, toll rate structure recommendations, toll covenant safeguards, peer review services for Transportation Infrastructure Finance and Innovation Act (TIFIA) applications, local technical coordination, and overall transportation system monitoring. The support for more than \$120 billion in toll bond finance, including bond issuance for start-up and mature systems, is a testament to CDM Smith's continued success.

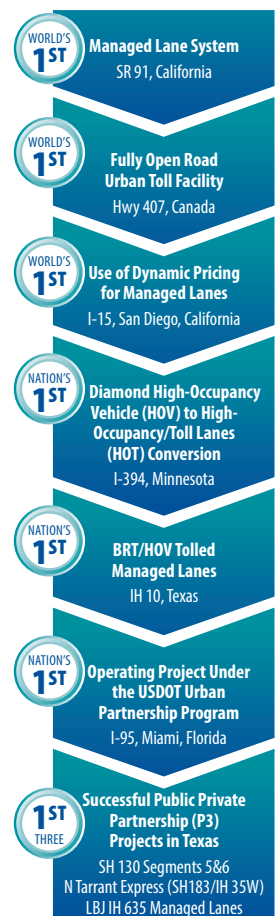
CDM Smith has extensive experience in Texas and other states across the nation in corridor traffic studies, to assist with the environmental assessment and project design support. Our expertise is in modeling and evaluation of design options for express and general use lane improvements and express lane access, environmental studies of mobile source air toxics, and project and regional environmental justice toll impact assessments.

CDM SMITH BRINGS INNOVATION TO EVERY TASK UNDERTAKEN

The comprehensive CDM Smith tolling experience from planning concepts to final implementation and monitoring nationally, has enabled CDM Smith to develop state-of-the-art techniques, tools, and databases necessary to support financing of toll facilities and bring innovation and efficiencies into every aspect of CDM Smith's T&R services.

CDM Smith takes pride in being widely recognized as a leader for confronting an ever-changing environment with innovation. Current corporate leadership continue to blaze new trails, particularly in the areas of next

CDM Smith is committed to continuously advancing the state-of-the-practice to higher levels to better serve the industry as shown by this list of many firsts we have supported.



generation tolling applications—from all-electronic toll collection conversions to vehicle-miles-traveled tolling research—CDM Smith remains committed to the toll industry and our clients. We have developed and undertaken many special studies and reports to highlight critical and relevant findings of trends within the toll industry and have presented these in multiple industry forums, including IBTTA, TRB, ARTBA, WTS, and other regional conferences. Our team brings to CTRMA:

- **Comprehensive understanding of regional travel patterns:** The CDM Smith team has undertaken numerous toll studies within the greater Austin region and thus has a solid understanding of the regional demographics, key movements and distribution of traffic throughout the region, for example our work on MoPac North/South Express Lanes and US 183A.
- **Unmatched understanding of the toll behavioral characteristics:** Our current work pertaining to toll market behavioral assessments for other tolled and express lane facilities nationwide and in the region provides some unique perspectives on the value-of-time/value-of-reliability distributions and factors affecting the traveling markets willingness-to-pay characteristics and state-of-the-art procedures in the collection of these.
- **Unique toll diversion, toll setting, and risk analysis methodologies:** We have pioneered many of the industry standard methodologies being implemented for toll feasibility assessments to bring to CTRMA a state of the practice perspective in the development of the models and tools to assist in effectively informing decision makers. Our toll diversion methodologies are anchored in our observation of many express lane and tolled facilities around the country to lend further credibility to the developed and modeled results. Our dynamic pricing tools assist to improve the operational characteristics and/or to maximize the toll revenue of toll facilities and express lanes projects. Our cutting-edge risk analysis tools, techniques, and processes informed decisions regarding potential new tolling projects using Monte Carlo simulation. Our participation with IBTTA/TRB informs many special reports/white papers discussing all-electronic tolling (AET) conversion waterfall leakage models, impacts related to emerging technology initiatives for interoperability, autonomous /connected vehicles (AV/CV), and scenario planning for other disruptive technologies.
- **New tools for toll express lane operational analysis:** We have worked with every operational model platform and bring specialized approaches to incorporate these into feedback loops with the overall regional travel demand models. Development of VISSIM, CORSIM, and mesoscopic or alternative queue accumulator operational model to capture and refine the weaving and merging frictional characteristics associated with a project configuration. These specialized tools assist in the evaluation of operational characteristics of express lane projects and elasticities to toll rates and various project configurations.
- **Innovative use of data sources and analytics techniques:** We are constantly exploring new and innovative methods to collect and support our various assessments. This ranges from data sources such as INRIX for speed and delay profiles to StreetLight Data and AirSage data for origin-destination patterns. Our market research firm Resource Systems Group Inc. uses innovative capture techniques to evaluate and identify the key markets and drivers influencing values-of-time and travel characteristics of various user groups such as commuters, recreational travelers, carpoolers, transit riders, and commercial vehicles. We use cutting-edge software platforms to analyze very large datasets and interactive HTML-based dashboard interfaces and use Artificial Intelligence (AI) and machine learning to support monitoring and data processing elements.
- **Exemplary understanding of key influential drivers:** The levels and approaches to evaluating the diverse and different markets as it pertains to commuter traffic versus long-distance through-trip markets is something that the CDM Smith team has undertaken across the country. We have a unique understanding of the key influential factors that must be evaluated and the source databases that must be referenced in supporting the development and correlations to traffic generation. This understanding provides CTRMA with the confidence that the CDM Smith team will bring a defensible and robust assessment.
- **Full service thought leaders and pioneers:** The CDM Smith team provides a full cadre of specialized expertise to support the many needs that may arise in support of the CTRMA's T&R service needs. Our project principal and project manager and key

staff members have the unique background and longstanding experience having performed multiple T&R studies within Austin and other metropolitan areas in Texas and the nation. Our team is also skilled in the toll technology implementation process and back office support needed for electronic collection, video billing, pay-by-mail, and other toll payment alternatives.

- **COVID-19 Related T&R Impacts Modeling:** To address the uncertainty and quantify potential T&R impacts of the COVID-19 pandemic, CDM Smith developed and applied scenario planning models to assist several toll agencies to assist with budgeting, bond refinancings and discussions with rating agencies/financial community. These models include scenarios based on our best understanding of travel restrictions that are mandated, followed by different phases of activity that will gradually be permitted. Given the uncertainty related to how this pandemic will play out, multiple scenarios are being developed assuming different phases of recovery, varying the duration and severity of impacts. COVID-19 related T&R impacts assessment is being done for the following clients: Illinois Tollway, E-470, TxDOT, MDTA, HCTRA, MDX, CFX, Pennsylvania Turnpike, New Jersey Turnpike, South Jersey Turnpike, NET RMA, and Oklahoma Turnpike.

C. Firm's Traffic and Revenue Engineering Experience

CDM Smith has supported many toll authorities for trust indentures and has developed procedures and dashboard tools to assist with system monitoring. These tools assist in evaluating various factors that may affect CTRMA's traffic and toll revenues. We have extensive experience in providing annual reviews, short- (monthly/quarterly) and long-term forecasts as required by trust indentures for distribution to the bond holders. CDM Smith has issued T&R certificates in support of the financing or refinancing efforts of more than \$120 billion in bonds, \$33 billion for tolled facilities within Texas. As part of an agency's annual budgeting process, the monitoring tools we use support the short-term forecasting of system revenues. They help us understand national, regional, and local transportation trends and, more specifically, toll road trends. **Our team brings extensive experience and a deep understanding of how to meet the financial community's expectations**, which is invaluable as CTRMA pursues innovative financing delivery mechanisms. In addition,

CDM Smith has supported toll agency clients with TIFIA application process. **Appendix A** table A-1 shows a recent representative projects that obtained a TIFIA loan based on CDM Smith T&R estimates. Additional services rendered as part of the trust indenture requirements may include capital improvement plan changes, toll rate policy changes, system connectivity changes, project scope changes or enhancements, and facility widening projects. Our T&R experience ranges from initial screening/conceptual all the way through to investment grade T&R studies - that includes traffic count collection, stated preference surveys, origin-destination surveys, economic land use and socioeconomic tracking, model refinements, T&R estimation, and sensitivity testing and risk analysis. CDM Smith has extensive experience in the use and enhancement of existing planning models to facilitate the evaluation of toll facilities at various levels of feasibility, as illustrated in **Appendix A** table A-2.

The combination of our experience, knowledge, and innovative analysis methods will assist CTRMA in presenting to investors, implementing new projects, and maintaining existing operations.

D. Firm's Traffic Modeling Experience

The firm's Texas toll finance professionals are continually refining or developing new and innovative tools to monitor, forecast and analyze T&R projections for existing and proposed toll road projects. These tools have increased our data processing efficiency and helped summarize origin/destination and stated preference survey databases. We have also developed mechanisms to streamline the interaction between modeling and simulation software packages as well as complete comprehensive evaluations of historical socioeconomic trends. The CDM Smith team is extremely proficient in advanced technology and complex transportation engineering software programs including Synchro/SimTraffic, CORSIM, VISSIM, TransCAD, and CUBE Voyager.

CDM Smith was involved with the very first express lane system, SR 91 in California, and has performed services on over 50 percent of the nation's express lane systems. Backed by this wealth of experience, we know the kinds of data to be collected, including traffic counts, travel times, economic data, historical growth, etc., as well as how to develop, calibrate, and analyze models to determine the appropriate balance for reduced congestion and revenue potential. CDM Smith's approach to forecasting express lanes usage, toll rates, and revenue

is a proven method, with years of experience on real projects. Our express lane approach combines the broader elements of global demand patterns and growth with a more focused corridor model and simulation model that can properly analyze and respond to the unique interactions between the general purpose lanes and the parallel express lanes over a variety of demand levels. We clearly understand the data needed to form a solid foundation from which to calibrate and base our modeling approach on. We also understand the policy trade-offs that can materially affect revenue generation (positively and negatively) for a express lane facility.

The 4-step travel demand modeling expertise our team brings from working with many regional MPO models across Texas will provide the benefit of first-hand experience as key enhancements as CTRMA continues the development of projects such as the MoPac South Express Lanes project.

CDM Smith has also led several projects on the planning, design, testing, evaluation, and deployment of technology. We are leading the advanced connected and autonomous vehicle (CV/AV) platooning deployment program in Columbus, Ohio under the Smart City Columbus initiatives where our team is modeling the impacts of CV/AV on multimodal travel behavior and the transportation infrastructure. As new advancements, such as CV/AV and shared mobility, are implemented on a wider scale, they pose new challenges to transportation planners. In anticipation of emerging trends, CDM Smith is developing scenario planning models to assist transportation agencies to better prepare for uncertainties and make smarter investments for future mobility.

E. Firm's Toll Rate Analysis Experience

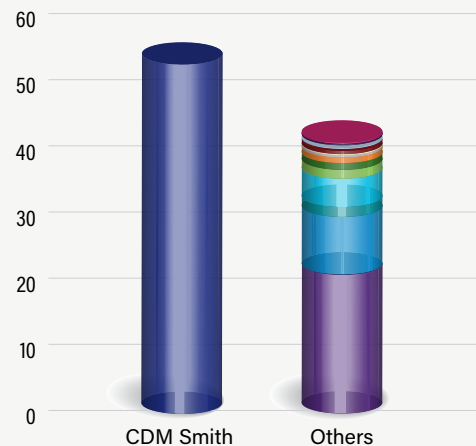
By drawing upon our diverse toll industry experience both nationally and around the globe, CDM Smith staff has provided innovative expert opinions to help clients make informed decisions. Databases compiled through our many clients allow us to evaluate trends and patterns to establish historical benchmarks and tools upon which we can draw when undertaking studies and formulating opinions. CDM Smith has developed computer software designed specifically to estimate motorists' sensitivity to toll charges, an invaluable tool in any comprehensive toll sensitivity analysis that includes periodic toll rate adjustment analysis. Innovation in our analyses has also led to the development of a toll rate database and the tracking of toll traffic characteristics from around the country informs our recommendations



FINANCIAL CREDIBILITY

CDM Smith's Record of Over \$120B in Bond Issues Outranks the Competition

With the CDM Smith name, CTRMA gains recognition and confidence from the rating agencies and markets, which is often important for bond sales.



Total Value of Revenue/Refunding Bonds Issued (01/2010–7/2020)

Data Chart Sources: MuniOS, EMMA, Official Statements

to our toll agency clients on potential refinements to the tolling policies or dynamic pricing algorithms to achieve the required mobility or revenue objectives.

CDM Smith's continuous innovation and expansive expertise will assist CTRMA to ensure timely and on budget delivery of high quality results that are defensible and are accepted by the financial community. Specifically, our toll rate evaluation is unmatched, given the advice we provide to a majority of the public toll agencies in the US.

F. Summary of Professional Fees

Every aspect of our operation is designed to provide CTRMA with the greatest value through the highest quality products, the highest level of customer service, and the highest level of responsiveness without any wasted effort or extraneous expenses. Our work authorizations have been and will continue to be based upon actual labor costs multiplied by the firm's audited overhead rate resulting in a loaded labor cost figure. The loaded labor is then multiplied by the agreed upon profit percentage resulting in the total labor fee. We will work closely with CTRMA to develop the scope, schedule, and budget for each new work order that establishes the appropriate level of effort and cost for each new work assignment based on what CTRMA is trying to accomplish and will be subject to final approval by CTRMA

before issuance of a formal notice to proceed or before any work commences. We will recommend services and the appropriate level of effort for the proposed assignment and work closely with CTRMA to ensure the fee works within your budgetary constraints under a lump sum for well-defined and scoped requests, cost plus fixed fee for typical complex preliminary or investment grade studies, or specified rates for meeting support and technical services as needed.

A schedule of professional fees will be negotiated and will include an average and a maximum hourly rate for each respective labor classification. Both the average and maximum hourly rates will be subject to annual adjustments accounting for annual salary adjustments. The average hourly rates will be used in the calculation of work authorization fee estimates based upon the anticipated level of effort required for each classification. Staff charged time to a particular project will be invoiced on a monthly basis, maintaining the maximum amount agreed upon for each work authorization. Our hourly rate, multiplied by the number of hours worked determines the raw labor cost. The raw labor is then multiplied by the firm's audited overhead rate resulting in a loaded labor cost figure. Direct expenses and outside professionals (subconsultants) costs are then added arriving at the final invoiced amount. CDM Smith typically invoices all active contracts on a monthly basis.

G. Conflicts of Interest

CDM Smith is not aware of any conflicts or potential conflicts of interest.

PRIOR/EXISTING RELATIONSHIPS WITH CTRMA

As the current T&R consultant to CTRMA, CDM Smith has professional

working relationships with all CTRMA staff, board members, consultant team members, and the executive director. CDM Smith has a variety of contractual relationships with both Atkins and WSP through existing contracts with TxDOT, NET RMA, and various other clients.

OTHER PRIOR/EXISTING RELATIONSHIPS

CDM Smith provides extensive planning, engineering, and consulting services to TxDOT on several contracts throughout the state, including within CTRMA's member area. CDM Smith also provides services to the cities of Austin, Georgetown and Round Rock, and Brazos River Authority. In addition, CDM Smith is on the bench contract for T&R study peer reviews for TIFIA.

CTRMA'S CONFLICT OF INTEREST POLICY

CDM Smith has reviewed and will comply with CTRMA's Conflict of Interest disclosures policy adopted by the CTRMA Board.

Section II

Firm Organization, Staffing, and Procedures

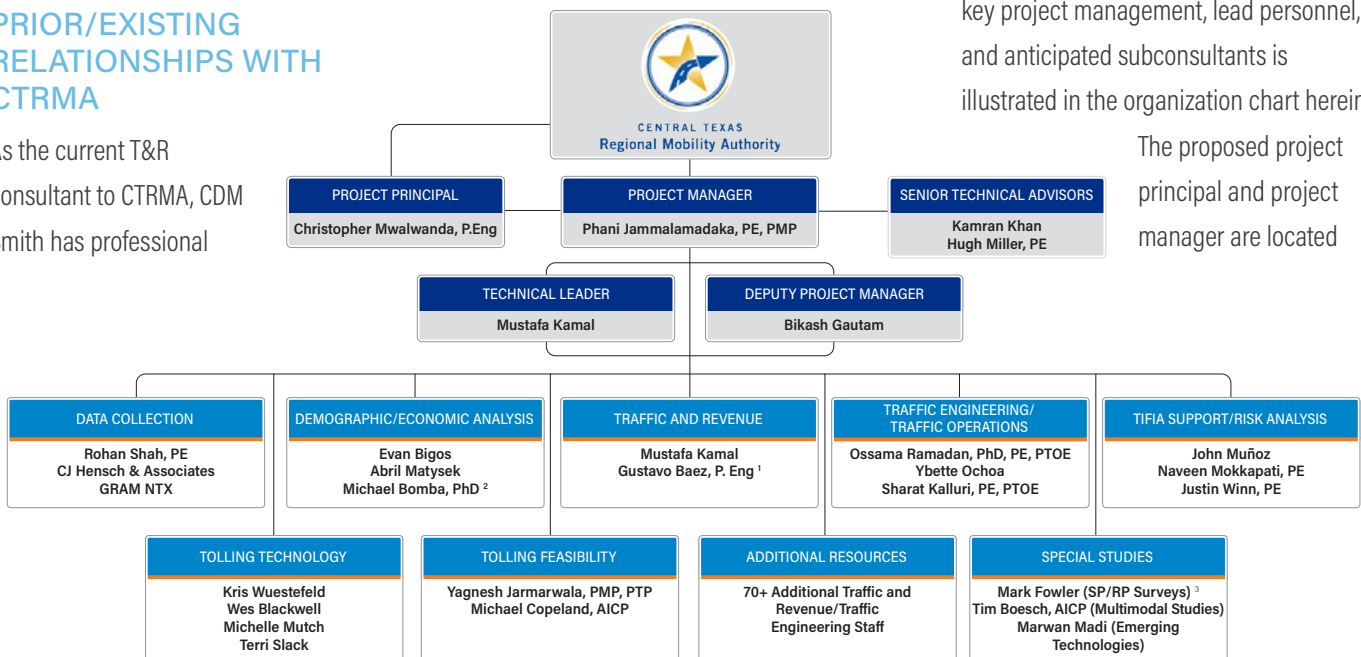
For more than 11 years, CDM Smith has diligently partnered with CTRMA's staff, board of directors, and customers. Our key personnel have been working for you for nearly 11 years and are committed to continuing to provide you with industry-leading T&R consulting services.

A. Organizational Chart

The proposed organizational structure for the CTRMA contract with

key project management, lead personnel, and anticipated subconsultants is illustrated in the organization chart herein.

The proposed project principal and project manager are located



LEGEND: Baez Consulting ¹ | Bomba Consulting ² | RSG ³

in CDM Smith's Austin and Dallas offices, respectively. Austin will be designated as the principal office reporting directly to CTRMA. Phani Jammalamadaka, project manager, will be assisted by Bikash Gautam and Mustafa Kamal, who will serve as deputy project manager and technical leader, respectively, to provide the day-to-day contact and interface with the CTRMA staff. Phani, Bikash and Mustafa have experience in managing large and complex toll projects and bring an extensive knowledge base and expertise regarding T&R services.

CDM Smith personnel located in our Illinois, California, Florida, Washington, and Connecticut offices will be used as warranted, based upon the scope and the complexity of the individual projects and the schedule requirements of CTRMA. **Christopher Mwalwanda, as a vice president, has full authority to obligate the company contractually and to mobilize and commit resources to assure appropriate staffing levels for all assignments.**

OUR SUBCONSULTANTS WILL LEVERAGE LOCAL AND INSTITUTIONAL KNOWLEDGE TO SUPPORT THIS CONTRACT

We have enlisted the support of the following subconsultants:

BAEZ CONSULTING: 20+ YEARS OF TRANSPORTATION/TOLLING EXPERIENCE

Baez Consulting, LLC (Baez) specializes in forecasting traffic and toll revenue for transportation projects. Gustavo A. Baez, president, has 21 years of experience in toll feasibility studies, travel demand modeling, congestion pricing, risk analysis, economic growth evaluation and traffic simulation. He has participated in more than \$20B in bond financing for toll projects in the USA. Gustavo has managed, directed, and evaluated toll projects for public entities such as NTTA, ArDOT, LaDOTD, CTRMA, Alamo RMA, NET RMA, TxDOT's TTA Division, the Hidalgo County RMA, and OTA.

C J HENSCH & ASSOCIATES: 23 YEARS OF TRAFFIC DATA COLLECTION EXPERIENCE

Established in 1995, C J Hensch & Associates is a Houston-based corporation. The firm specializes in traffic data collection and provides engineering studies for governmental agencies, engineering firms, and developers. C J Hensch has well-qualified staff and modern equipment available to conduct multiple data collection efforts simultaneously.

GRAM TRAFFIC NTX: 15 YEARS OF TRANSPORTATION DATA COLLECTION EXPERIENCE

GRAM NTX provides traffic data collection services for projects that range from small intersection analyses to large-scale, area-wide data collection programs. Specific services provided include video license plate surveys, ATR counts, turning movement counts, parking surveys, radar speed studies, ball-bank studies, and travel time studies.

BOMBA CONSULTING: 25 YEARS OF DEMOGRAPHIC/ECONOMIC ANALYSIS EXPERIENCE

Bomba Consulting prepares transportation planning and economic development studies. The primary focus of the firm is to support T&R studies that assess the feasibility of proposed toll road projects and that fund their construction. Specifically, Bomba Consulting independently reviews and adjusts the socioeconomic data incorporated into travel demand models that predict future traffic and toll revenue on a facility. Recent projects have included supporting a \$1.2B debt refinance for TxDOT for the Central Texas Turnpike System (CTTS) and acquiring roughly \$500M from federal loans and municipal bonds for the CTRMA construction of the US 183 South project. Bomba Consulting's staff have completed socioeconomic reviews for more than 40 T&R studies.

RESOURCE SYSTEMS GROUP: 29 YEARS OF SP SURVEYS/MARKETING RESEARCH

Founded in 1986, Resource Systems Group (RSG) is a consulting firm that specializes in market research and travel demand model estimation and has been partnering with CDM Smith on toll studies since 1991 and have worked on more than two dozen projects, including the MoPac North Express Lanes, NTTA Systems facilities, and Grand Parkway Segments D through I. RSG will support the conduct of special surveys, such as stated and revealed preference surveys, and provide support related to toll division refinements. This work has included extensive qualitative research, design, and administration of stated and revealed preference surveys; use of those data in the development of multinomial and nested logit route, time-of-day, express lane type, and payment method choice models; and use of those models for estimating willingness-to-pay and traveler choice for aggregate segments or distributions of individual values.



TRUSTED LEADERSHIP

EXPERIENCE OF KEY PERSONNEL - TRAFFIC AND TOLL REVENUE STUDIES



PROJECT MANAGER: PHANI JAMMALAMADAKA, PE, PMP

Phani is a tolling professional who has worked with major agencies such as CTRMA, TxDOT, NET RMA, NTTA, E-470, and FDOT. He has supported successful issuance of \$15B+

in toll bond financing/refinancing.

Phani serves as your current project manager and has more than 16 years of experience in T&R studies. He leads and assists many of the firm's key tolling projects, and specializes in project coordination, T&R studies, toll diversion modeling, travel demand modeling, risk analysis, and computer programming. Phani brings project management experience on all levels of T&R studies for toll roads and express lane facilities and has served as the project manager for various T&R studies. He has undertaken more than 25 conceptual/sketch-level T&R studies, seven Level 2 T&R studies, nine investment-grade T&R studies. Phani supported several rating agency/investor/TIFIA presentations and due diligence discussions for project financing. He was also instrumental in the development of risk analysis methodologies using Monte-Carlo simulation procedures which supported the assessment of equity/bidder risk ranges. He is currently serving as the project manager for T&R studies CDM Smith performs for NET RMA, CTRMA, E-470, and FDOT/FTE. **Since late 2017, Phani has been serving as project manager for the CTRMA MoPac North and MoPac South T&R and traffic evaluations.**



PROJECT PRINCIPAL: CHRISTOPHER MWALWANDA

Christopher has spent nearly two decades helping public and private clients secure the funds needed to rebuild and maintain their transportation systems, including more

than \$18B in toll project financing. He has served as the project director on all T&R studies performed for CTRMA since 2008.

Christopher is a vice president with 21 years of experience in traffic modeling, revenue forecasting, financial feasibility assessments, traffic simulation, public outreach, presentations to rating agencies,

strategic privatization and market valuation support, creation of innovative tools for toll traffic demand modeling applications, and peer reviews. Christopher has been serving as the project director for T&R services we offer for several agencies, including CTRMA, TxDOT, and NET RMA. He has directly supported as project manager over \$18 billion in traditional and P3 toll financing for projects such as the greenfield SH 130 Segment 5 and 6 in Austin, SH 99 Grand Parkway, SH 288 Express Lanes in Houston, North Tarrant Express (Segment 1&2W, Segments 3A&3B, and Segment 3C), IH 635 LBJ Express Lanes, IH 35E Express Lanes, SH 183/SH 114/Loop 12, SH 121, SH 161 in Dallas/Fort Worth, the Gordie Howe International Bridge in Windsor/Detroit, several Oklahoma Turnpike Authority bond issues, and many other multi-billion dollar mega-projects. **Christopher has been the project director on the T&R studies for MoPac North, including the ongoing Level 3 T&R Study, and the MoPac South related T&R analyses and traffic analyses for ongoing environmental studies.**



DEPUTY PROJECT MANAGER: BIKASH GAUTAM

Bikash has been involved in all CTRMA T&R studies since 2010—he has an intimate knowledge of the background models, assumptions, and T&R trends associated

with all the Austin toll roads and supported the MoPac North and MoPac South express lanes projects.

Bikash has more than 17 years of experience in general civil engineering and more than 13 years of experience in the development of travel demand and revenue forecasting models and T&R analysis. His areas of interest include toll diversion modeling and financial analysis, urban, intercity and statewide regional travel demand forecasting, urban and statewide emergency mass evacuation modeling, dynamic and static traffic assignment modeling and analysis. He has been providing technical support and task management support for work with several agencies, including CTRMA, TxDOT, NET RMA, and Alamo RMA. **He continues to serve as a deputy PM on the ongoing CTRMA MoPac North Express Lanes T&R study, existing MoPac North Express Lanes T&R monitoring, and the MoPac South corridor traffic forecast development for environmental evaluation.**



TECHNICAL LEADER: MUSTAFA KAMAL

Mustafa has been involved with travel demand modeling and T&R forecasting for various CTRMA projects for over 10 years and has developed various levels

of T&R forecasts for MoPac North, MoPac South and US 183 express lanes as well as US 290E toll road. He has also developed T&R forecasts to evaluate financial feasibility of the proposed IH 35 managed lanes, Oak Hill Parkway and SH 45 Southeast toll corridors for TxDOT.

Mustafa has 31 years of experience in the development of traffic and toll revenue forecasts for proposed managed lanes and toll roads. He is also experienced in travel demand modeling for large multimodal projects, including regional planning studies, major investment studies, roadway improvements, and corridor studies. He has worked on travel forecasting and T&R studies using over a dozen MPO models for major metropolitan areas throughout the country. In addition to Austin, he has also been involved with the development of T&R forecasts for various toll roads and managed lanes projects throughout Texas, including Dallas-Fort Worth, Houston, San Antonio, El Paso, Tyler and Brownsville. These T&R forecasts were conducted for various levels of analysis, from sketch-level studies to investment-grade studies which were used to secure bond financing and TIFIA loans. He has developed various enhancements to T&R modeling for tolled managed lanes, including incorporation of reliability measures and simultaneous application of different tolling

algorithms to estimate demand for toll roads and managed lanes within a regional travel demand model. His areas of interest also include traffic simulation modeling for planning studies and dynamic traffic simulation.



SENIOR ADVISOR: KAMRAN KHAN

Kamran has been providing senior technical oversight to our clients for 29 years and is one of the most experienced and strongest T&R leaders in the industry and our firm.

Kamran is a senior vice president and is currently the National Practice Leader for CDM Smith's national tolling services. He has more than 32 years of professional experience, the last 29 years with CDM Smith, and has an extensive background in toll-related studies. He has made numerous presentations to rating agencies, investors roadshows, and to the FHWA's Transportation Infrastructure Finance and Innovation Act program. Most recently, Kamran has served as senior advisor and project principal for several major toll agencies, including Illinois State Toll Highway Authority, New Jersey Turnpike, Miami Dade Expressway, and Washington State Toll Division. In the role of lead senior advisor, Kamran brings not only his many years of experience, but also his national tolling perspective and expertise.

B. Names and Experience Resumes

Members of the CDM Smith team are available to dedicate their time to CTRMA contract work as required. Detailed resumes of the key task members of the CDM Smith team are shown in **Appendix B**, and the following highlights the experience of the key Texas-based staff.

Additional Key Texas Staff

Yagnesh Jarmarwala, PMP, PTP - Traffic & Revenue / Tolling Feasibility

- Leads and assists many of the firm's key tolling projects, and specializes in project coordination, T&R studies, toll diversion modeling, travel demand modeling, risk analysis, financial analysis and computer programming
- Has served in project management and task leader roles for numerous T&R studies, including having served as the project manager to evaluate corridor performance and perform routine monitoring along the I-35E Express Lanes in the Dallas area, and the Grand Parkway System and HCTRA System of facilities in Houston

Abril Matysek - Development/Economic Analysis

- Transportation planning experience in analysis, modeling, data collection and summarization, and research

Rohan Shah, PE - Data Collection

- Planner with experience in T&R studies for toll projects, macroscopic and microscopic travel models, managed lane studies, urban planning and environmental analysis, and transportation public policy
- Skilled in travel demand model development, calibration/validation, traffic assignment modeling, traffic microsimulation, network development, traffic surveys and counts, data analysis and computation

Michael Bomba, PhD (Bomba) - Development/Economic Analysis

- 26 years of experience assessing the reasonableness of MPO's population/employment estimates/forecasts for various T&R and toll road planning studies, adjusting the forecasts as necessary
- Has worked on more than 40 T&R studies, mostly throughout the state of Texas; to date, these studies have supported the successful sale of approximately \$7B of municipal bonds for green field projects, reconstructing roadways as toll roads, or to refinance existing debt

Additional Key Texas Staff

Gustavo Baez, P.Eng. (Baez) - Traffic & Revenue

- 20+ years of experience in toll feasibility studies, travel demand modeling, congestion pricing, risk analysis, economic growth evaluation, and traffic simulation
- Has participated in more than \$20B in bond financing for toll projects in the U.S.
- Managed and directed projects for public entities, private investors, and financial advisors
- During his 5-year tenure with the NCTCOG, led several travel demand modeling projects, including the region's first managed lane project

Ossama Ramadan, PhD, PE, PTOE - Traffic Engineering/Traffic Operations

- Nationally recognized traffic engineering expert with a demonstrated record of publications and presentations
- 20 years' experience in traffic engineering studies; traffic engineering design; traffic control design; intersection control evaluation; microscopic and mesoscopic traffic simulation modeling; data-driven highway safety; transportation performance measurement; connected vehicle (CV) data analysis; corridor and subarea planning; ITS planning; Mobility as a Service (MaaS) system planning; and sustainability rating

Ybette Ochoa - Traffic Engineering / Traffic Operations

- 8 years of experience in a variety of transportation planning, traffic operations, and ITS projects, including safety assessments, crash reports, speed limit studies, and development of dynamic message sign prototypes for the Illinois Toll Authority
- Proficient in VISSIM, HCS, Synchro, SimTraffic, ArcGIS, AutoCAD

John Muñoz - TIFIA Support/Risk Analysis

- P3 Practice Leader supporting several clients with P3 contracts with construction values totaling \$14B
- 14+ years of P3 experience leading technical, financial, and legal advisors in the completion of P3 procurements
- Assisted with securing five TIFIA loans for a total of \$3.3B
- 25 years at TxDOT; led their competitive P3 procurements and development of related credit agreements; successfully developed over \$13B in P3 and DB projects and procured multiple alternatively delivery projects using various financing mechanisms

Justin Winn - TIFIA Support/Risk Analysis

- Experienced with modern methods of toll collection, including automatic vehicle identification, video tolling, cash toll collection, as well as single point and point-to-point collection
- Currently serves as project manager for CDM Smith's current contract with NTTA, as well as for various ongoing toll studies in Texas and Oklahoma
- Has developed an executive dashboard tool facilitating efficient and ongoing review of key toll system and economic parameters

Michelle Mutch - Tolling Technology

- 30+ years of experience in tolling and transportation industry
- Specializes in toll violations and enforcement customer service centers, business rules, strategy and planning, project controls, procurement, and contract management

Michael Copeland, AICP - Tolling Feasibility

- More than 32 years of experience in transportation planning, ranging from data collection and analysis to managing comprehensive T&R studies for multi-billion dollar toll road bond financing efforts

C. Number of Staff by Location

CDM Smith maintains an entire division of 85+ staff members dedicated to providing specialized services to the toll industry. The staff distribution by geographic location and by specialty is shown in Table 1. These toll industry specialists are supported by many additional planners, engineers, and economists throughout the firm.

Table 1: CDM Smith Staff Specialties and Locations

Texas	
Project Principal	Miscellaneous Tasks:
Project Manager	1 Sr. Technical Advisor
Deputy Project Manager	1 Sr. Toll Technology Consultant
Technical Leader	1 Sr. TIFIA Advisor
T&R, Analytics, Modeling Tasks:	1 Project Controls Specialist
7 Jr. Engineers/Planners	3 Administrative Professionals
2 Engineers/Planners	
2 Sr. Engineers/Planners	
Illinois	Satellite (FL, WA, CA, GA, CT)
1 Sr. Technical Advisor	5 Sr. Toll Tech. Consultants
1 Jr. Engineer/Planner	3 Jr. Engineers/Planners
1 Engineer/Planner	3 Engineers/Planners
2 Sr. Engineers/Planners	9 Sr. Engineers/Planners
1 Sr. Toll Tech. Consultant	2 Sr. Toll Technology Consultants
	1 Economist

Section III

Experience

A, B, C, D. Relevant Projects Included in Official Statements

It should be noted that there is considerable uncertainty inherent in forecasting T&R for any toll facility. Our techniques and expertise help to identify the key risk elements associated with global economic issues, changing political climate and regional policies that may influence future outcomes. Table 2 presents a representative listing

Table 2 - Projects CDM Smith Provided T&R Engineering and General Bond Support for Since January 1, 2017

COMPARISON OF OFFICIAL STATEMENT (OS) ESTIMATES VS ACTUAL OPENING YEAR REVENUE						
Project Name / Location / Description	OS Date	First/Opening Year	First/Opening Year Revenue (000s)		Actual vs Est. Revenues	Client Contact
			OS Estimate	Actual		
North East Texas Regional Mobility Authority (NET RMA) - Toll 49 Comprehensive T&R Study Texas. Comprehensive Study with System T&R Report related to then existing Toll 49 (Segment 1, 2, 3A, 3B and 5) and the Segment 4 Project. *1	5/24/16	2019	\$19,931	\$19,006	-4.6%	Everett Owen (NET RMA) 1001 ESE Loop 323, #420, Tyler TX 75701 903.630.7894
North Texas Tollway Authority (NTTA) Texas. September 2017 T&R Study involved a detailed evaluation of Mobility 2040 - the new metropolitan transportation plan adopted by the North Central Texas Council of Governments (NCTCOG), and incorporated updated travel demand model networks	10/20/17	2018	\$843,189	\$841,491	-0.2%	Horatio Porter (NTTA) 5900 West Plano Pkwy., #100, Plano, TX 75093 214.224.2247
Grand Parkway Transportation Cooperation Texas. Grand Parkway System (SH 99) Segments D through I Comprehensive Study (September 2017) and Bringdown Letter (March 2018) prepared to evaluate the T&R potential of Segments D (Harris County), E, F-1, F-2, G, H, I-1. I-2. *2	5/23/18	2019	\$176,428	\$200,599	13.7%	Sara Ulbrich (TxDOT) 125 E. 11th Street Austin, TX 78701 512.334.3827
E-470 Public Highway Authority - Bring Down Letter Colorado. 2018 Bring Down Letter to review and update the 2018 Comprehensive T&R Study titled E-470 T&R Study: New Toll Structure	2/21/19	2019	\$248,626	\$249,013	0.2%	Jason Mayers (E-470 Public Highway Authority) 22470 East 6th Parkway Aurora, CO 80018 303.537.3715
Central Florida Expressway Authority (CFX) - General Traffic and Earnings Consultants Annual Report Florida. FY 2016 General Traffic and Earnings Consultant's Annual Report: provides annual forecasts for each of the six facilities constituting the CFX System - SR 528, SR 408, SR 417, SR 429, SR 414, SR 453 - over a 30-year period and reflecting the new toll rate policy	12/13/17	2018	\$430,500	\$441,768	2.6%	Lisa Lumbard (CFX) 4974 ORL Tower Road Orlando, Florida 32807 407.690.5000
Illinois State Toll Highway Authority (ISTHA) - T&R Update Study Illinois. Updated T&R estimates to support the 2017 Series A bond sale and replace the May 2016 update, and extending the forecasts through 2041 *3	11/15/17	2018	\$1,454,439	\$1,424,809	-2.0%	Michael Colsch (ISTHA) 2700 Ogden Avenue Downers Grove, IL 60515 630.241.6800 x 4000
Maryland Transportation Authority (MDTA) - Systemwide T&R Study Update Maryland. High-level update of systemwide T&R projections for the seven Legacy bridges, tunnels and highways operated by MDTA, based on actual FY 2017 in-lane transaction and revenue data contained within the Traffic Volume and Toll Income (TVI) reports *4	7/12/17	2018	\$718,930	\$719,700	0.1%	Deborah Sharpless (MDTA) 2310 Broening Highway, Baltimore, MD 21224 410.537.1004
North Carolina Turnpike Authority - Monroe Expressway Toll Revenue Bonds North Carolina. Study performed in November 2016 to develop a forty-year annual T&R forecast for the proposed Monroe Expressway from its assumed opening year (2019) through 2059, and support bond financing *5	1/25/17	2019	\$6,420	\$5,710	-11.1%	David Roy (NCDOT) 1 South Wilmington St. 1578 Mail Service Center Raleigh, NC 27699-1578 919.707.2729
New Jersey Turnpike Authority New Jersey. Provide traffic and toll revenue forecasts for the New Jersey Turnpike and Garden State Parkway of the NJTA. *6	12/18/17	2018	\$1,601,251	\$1,612,326	0.7%	Donna Manuelli (New Jersey Turnpike Authority) P.O.Box 5042 Woodbridge, NJ 07095 732.750.5300
South Jersey Transportation Authority (SJTA) New Jersey. SJTA 5 year T&R Forecast 2019-2024 (September 2019); 2019 Estimates of Atlantic City Expressway T&R and Certification of 2019 Debt Coverage/Net Revenue Requirements (September 2019); Atlantic City Expressway 2019-2020 T&R Estimates (September 2019) *7	10/10/19	2019	\$82,955	\$83,474	0.6%	Karen Davis (SJTA) P.O. Box 351 Hammonton, NJ 08037 609.965.6060
Oklahoma Turnpike Authority (OTA) Oklahoma. November 2017 OTA System Comprehensive T&R Letter Update to the January 2017 forecasts, including a comprehensive assessment of economic conditions and demographic growth projections, to support the issuance of Series 2017CDE bonds	12/13/17	2018	\$310,588	\$317,716	2.3%	Wendy Smith (OTA) 3500 N Martin Luther King Ave Oklahoma City, OK 73111 405.425.7431

- (1) T&R study was conducted to include Segment 4 which opened November 2018. For comparison, we considered the 2019 full year of operation for the entire Toll 49 System
- (2) Revenues shown also include estimated collected revenues from Pay by Mail transactions
- (3) Actual revenues from Illinois State Toll Highway Authority
- (4) Estimated OS forecasts do not include the I-95 ETLs

- (5) Facility still in ramp-up and FY 2019 comparison is only for six months
- (6) Actual revenues from New Jersey Turnpike Authority Traffic Statistics and Revenue Reports
- (7) Excluding revenue concessions

of the recent projects that have been supported by CDM Smith for successful financing/refinancing and bond issuance.

CDM SMITH EXCEEDS YOUR MINIMUM REQUIREMENTS

CDM Smith team members service the majority of toll agencies within Texas and around the nation. The following projects are detailed with relevant items that represent the scope of work identified as minimum requirements in your RFQ.

INSTITUTIONAL KNOWLEDGE

CENTRAL TEXAS REGIONAL EXPERIENCE

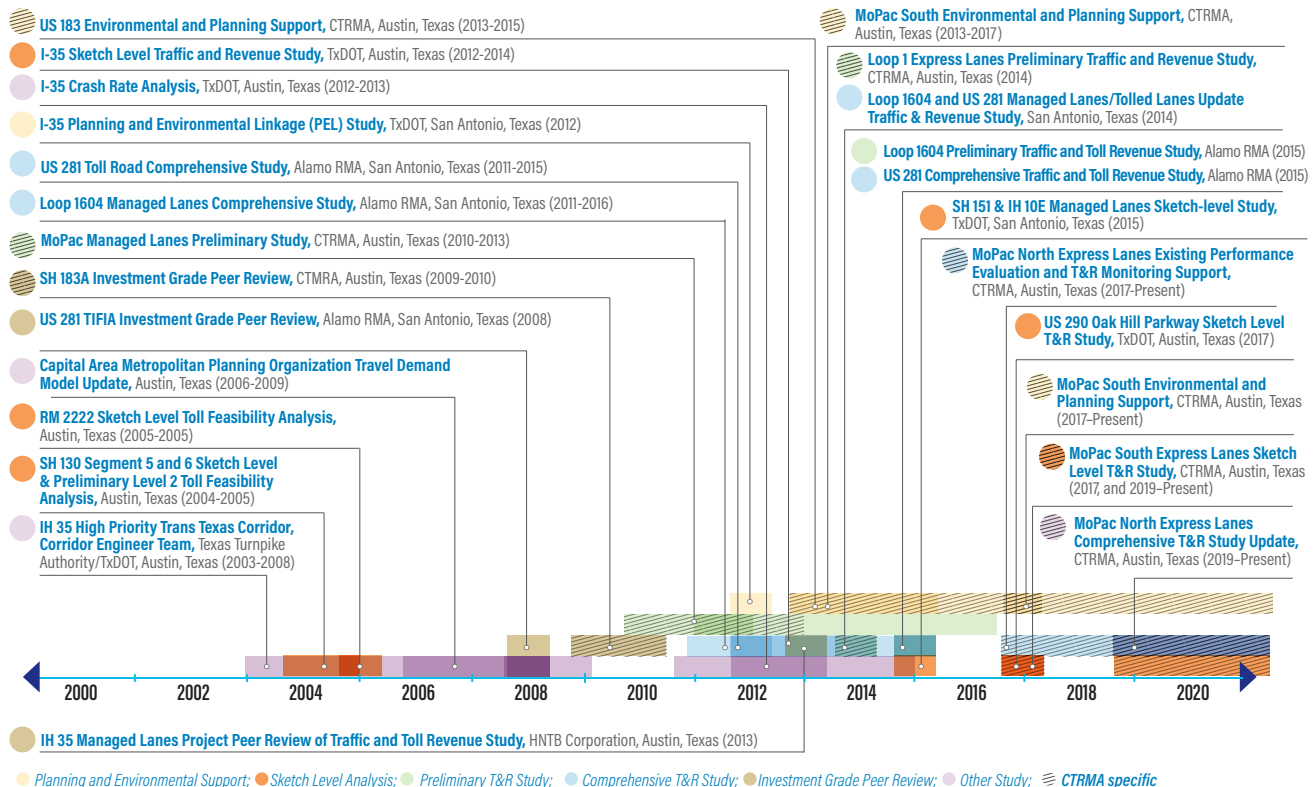
CDM Smith has extensive T&R experience within the Central Texas region including our work for CTRMA, TxDOT, and other regional agencies, as illustrated below. This established history proves that we are the best team to help you with future regional challenges, such as congestion management, operational needs, capacity improvements system expansions, and alternative tolling solutions. The following outlines some key tasks undertaken as part of planning and pre-operational toll traffic impact analyses for the MoPac North/South project express lanes in Austin between 2010 to present.

- Key planning tasks performed included traffic data collection (traffic counts, vehicle classification and origin-destination

patterns), traffic analysis support for highway design, policy analysis for the public involvement process, development of a corridor calibrated travel demand model for performance measures, traffic simulation analysis, conceptual toll T&R forecasts, development of tolling schemes, evaluation of design options for express and general use lane improvements and express lane access, environmental studies of mobile source air toxics, and both project and regional environmental justice toll impact assessments.

- Key tasks during the pre-operational stage included assessment of managed lane policies (minimum toll rates, incentive discounts, opening toll rates), coordination with the toll integrator to review the dynamic toll pricing algorithm, review of alternative technical concepts provided by the contractors, signage considerations (locations, formats and frequency of change), access point and feeder roadway considerations (signal timing and traffic redistribution), review of in-corridor express bus/transit utilization and toll rate adjustment considerations, and coordination of before and after studies to quantify observed travel pattern changes and project benefits.

Important considerations that enable successful outcomes include the ability to present complex express lane concepts to stakeholders



in a simplified way to facilitate consensus building during the concept development phases and to help them understand the impacts that their decisions have on the facility operations. Our team worked with CTRMA and their extended project staff to support a myriad of operational assessments that included support of the environmental process to determine the preferred concept, project concept refinements involving access points and downtown ramp connections, optimization of toll revenue generation, support of financing and pre-operational activities such as determination of toll plaza locations and toll collection concepts.

The toll operation concept developed as part of the MoPac North planning phase warranted the development of dynamic pricing algorithms that carefully consider zonal based pricing and maintenance of reserve capacity on the single lane facility. The team worked closely with the CTRMA staff and the toll integrator to develop toll operational models to emulate the dynamic pricing envisioned for the project. The coordination allowed the development of toll pricing procedures that closely reflected the T&R studies used to secure project financing.

Several changes were made to the original MoPac North project concept including the connection to downtown. This required a reassessment of corridor toll operations and revised connections to feeding facilities. The tools and procedures already developed during the planning phase allowed for a seamless assessment of the impacts and streamlined the concept development evaluation process.

We are currently performing a Level 3 T&R Study on the MoPac North express lanes project to assist with a potential refinancing of the debt. In addition, we are performing a traffic forecast analysis to assist the environmental evaluation of the MoPac South express lanes project.

T&R Engineering Consultant, North Texas Tollway Authority (1960s-Present)



CDM Smith has solidified its position as the NTTA's trusted tolling

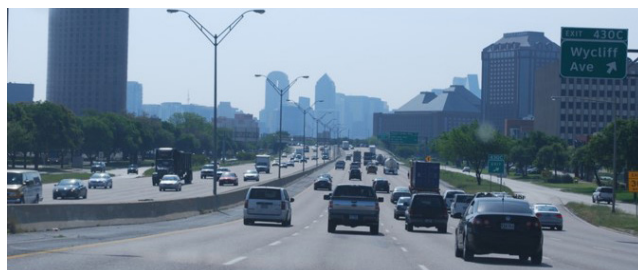
partner with 50+ years of planning and operational analysis support that has grown into a comprehensive partnership, including fulfillment of Trust Agreement requirements; successful financing/refinancing of over \$13B in toll revenue bonds; investment-grade T&R studies; AET conversion assistance; strategic planning support for toll collection, rate changes, and revenue recovery; annual budgeting-related toll revenue estimation; and development of 140+ centerline miles of operational toll roads, two bridges, and one tunnel.

Bonding: We assisted in the completion of investment-grade studies and bring-down letters for each of NTTA's tolling facilities to secure toll revenue bonds. Our long-range, comprehensive T&R estimates have been used in these bond financings.

T&R Studies: Throughout our history with NTTA, CDM Smith has completed T&R studies for long-term transportation planning, bond financing, and demographic forecasting, including NTTA System 2017 (supporting the merger of the CTP and PGBT-WE into the NTTA System); Chisholm Trail Parkway (2011); PGBT-EE (2008); and SH 121/Sam Rayburn Tollway (2007).

Comprehensive, Strategic Tolling Initiatives: We have always been dedicated to NTTA's varied needs, supporting more than just T&R studies to ensure the toll roads continue to serve travelers with efficient and safe movement.

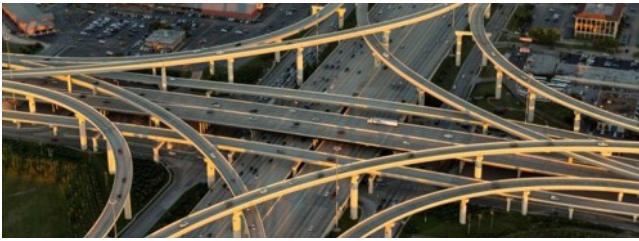
Texas Statewide Tolling Program, Texas Department of Transportation (2002-Present)



CDM Smith was retained by TxDOT to support their statewide T&R services that range from conceptual planning to investment grade studies. The support included statewide toll feasibility efforts to provide a broad range of services for projects that range in size from small network improvements to statewide initiatives. The toll feasibility work undertaken as part of this contract included support of several TxDOT Regional Districts that include Dallas, Fort Worth, Tyler, Houston, Corpus Christi, El Paso and Austin. CDM Smith also served as trusted advisors in regards to public private partnership (P3) concessions projects in the

Dallas Fort Worth Region related to the North Tarrant Express (Segments 1 and 2W), North Tarrant Express (Segments 3A&3B), IH 635 LBJ Express Lanes, North Tarrant Express (Segment 3C), the SH 121, and SH 161. More recent examples of project financing being support by CDM Smith T&R services within the DFW region includes the IH35E express lanes and the Midtown Express Lanes (SH183, SH 114, and Loop 12).

T&R Advisor, Harris County Toll Road Authority (1980s-Present)



CDM Smith has served as the T&R advisor for HCTRA since its inception in the early 1980s. Over the past 30+ years, the HCTRA system has expanded to almost 83 miles of toll roads and operates three AET systems and a managed lane facility. Our work has extended to all levels of T&R services such as toll model development, calibration, operations analysis, and simulation; risk analysis; and bonding support. Our services for HCTRA have included T&R forecasting and updates; toll rate policy setting and studies; congestion management and value pricing; managed lane evaluations; travel demand modeling; and systems advisory services. Throughout our partnership, CDM Smith has delivered annual T&R estimates and impacts of toll rate changes. To determine future toll rate policy, we analyzed pricing strategies such as toll rate adjustments, advised on the potential mechanics of toll policy modifications, and prepared toll policy documents. Specific T&R work has included Comprehensive Systemwide Investment Grade T&R Studies and the Tomball Tollway T&R Study. We also performed a variety of preliminary studies for the Sam Houston Tollway-Northeast segment, which is now open to traffic as an AET facility.

E. Summary of Regulatory/Legal Proceedings

Because of its size and volume of business, over the years CDM Smith Inc. has occasionally been involved in legal proceedings. **There are no past or currently outstanding legal proceedings, judgments, or contingent liabilities that could adversely affect the financial position or ability of CDM Smith to perform its contractual**

commitments. CDM Smith will provide a 5-year litigation history upon the execution of a confidentiality agreement by the party requesting the information.

Section IV

HUB and DBE Participation

A. Provisions Made for HUB and/or DBE Participation

We are fully committed to support CTRMA's business diversity program. Our team understands CTRMA's commitment to the development and growth of HUB/DBE and small businesses through the encouragement of inclusion and opening new opportunities. We have developed a solid business diversity plan designed to, first and foremost, provide CTRMA with superior professional service, and second, support CTRMA's business diversity initiatives of inclusion and building the capacities of HUB/DBE firms. Achieving the program goals is not viewed as merely an obligation, but a true opportunity to expand the capacities of professional firms who desire to serve CTRMA as well as other sophisticated clients in the Central Austin area, across the state of Texas, and to points beyond our state borders. Partnering with small firms, mentoring start-up enterprises, and opening doors ensures a much stronger transportation consulting industry well into the future. We understand how an investment of our time and resources now will pay long-lasting dividends.

We have a long history of working closely with subcontracting firms that we have proposed to partner in this contract, including CJ Hensch and Associates (DBE/HUB), Gram NTX (DBE/HUB), Bomba Consulting, and Resource Systems Group. We are excited to add Baez Consulting (DBE/HUB) to the team. We have partnered with Baez Consulting on several other T&R contracts in Texas, and have been mentoring this firm as part of NTTA's Relationships and Opportunities Advancing Diversity (ROAD) program.

B. Women/Minority Employees by CDM Smith

CDM Smith values and embraces diversity in our own workforce. We have sought out and built a team of highly qualified individuals from a variety of cultural backgrounds. At CDM Smith, it is not a requirement – it is simply the right thing to do to foster a vibrant and diverse team of the best and brightest in the industry.

The CDM Smith Texas team is comprised of professional staff with diverse backgrounds. Women and minorities are expected to hold more than 15 key staff positions for the CTRMA contract. Their roles in this contract will include the project manager, deputy project manager, project principal, senior technical advisors, data collection, T&R task leader, traffic engineering/traffic operations task leader, TIFIA support task leader, tolling technology support, and special studies support. A list of CDM Smith's women/minority employees to be assigned to the CTRMA T&R contract is located in table A-3 in Appendix A.

C, D. Work to be Subcontracted and Women/Minority Participation within Subcontracting Firms

CDM Smith will subcontract CTRMA work to HUB/DBE firms whenever there is an opportunity. The CDM Smith team subconsultants each employ women and minorities in varying roles and responsibilities throughout their respective firms. It is anticipated that a minimum of 15 percent of work will be contracted to HUB/DBE firms. The following is a summary:

BAEZ CONSULTING (DBE/HUB)

They specialize in forecasting traffic and toll revenue for transportation projects. **Gustavo A. Baez**, president of Baez Consulting, and his team will provide assistance with toll feasibility studies, travel demand modeling, congestion pricing, risk analysis, economic growth evaluation, peer review support and traffic simulation. Expected utilization on the contract: 7%

C J HENSCH & ASSOCIATES (WBE/HUB)

The firm specializes in traffic data collection and provides engineering studies. **Carol Hensch**, principal of the firm, and the team will provide assistance with traffic counts, speeds and Origin/Destination and other data collection efforts. Expected utilization on the contract: 4%

GRAM TRAFFIC NTX (WBE/HUB)

The firm specializes in traffic data collection and provides engineering studies. **Stephanie Swenson**, president/owner, and the team will provide assistance with traffic counts, speeds and origin/destination and other data collection efforts. Expected utilization on the contract: 4%

Even though Bomba Consulting and RSG are not DBE or HUB certified, they employ women/minorities in their firms. Bomba Consulting has 50% women employees, and RSG's employees are 35% female and 13% minorities.

E. Affirmative Action Plan



It is, and will continue to be, the policy of CDM Smith to provide equal employment opportunity to all employees and candidates for employment. The firm will assure that qualified applicants who are recruited and hired, and employees at

all levels, are not discriminated against because of their race, color, religion, creed, sex, pregnancy and pregnancy-related conditions, sexual orientation, gender identity, national origin, age, marital status, disability, protected veteran status, citizenship status, genetics, or any other characteristic protected by applicable law. CDM Smith will continue to promote the full realization of equal employment through a positive continuing program.

F. Conformance with CTRMA's Policy on the Participation of HUBs

CDM Smith will conform with the requirements of CTRMA's Business Opportunity Program and Policy on the participation of HUB/DBE firms and will evaluate opportunities for HUB/DBE participation. CDM Smith is committed to helping CTRMA meet its overall HUB/DBE goals. Previous experience has shown that CDM Smith typically exceeds the HUB/DBE utilization policy guidelines set by public agencies.

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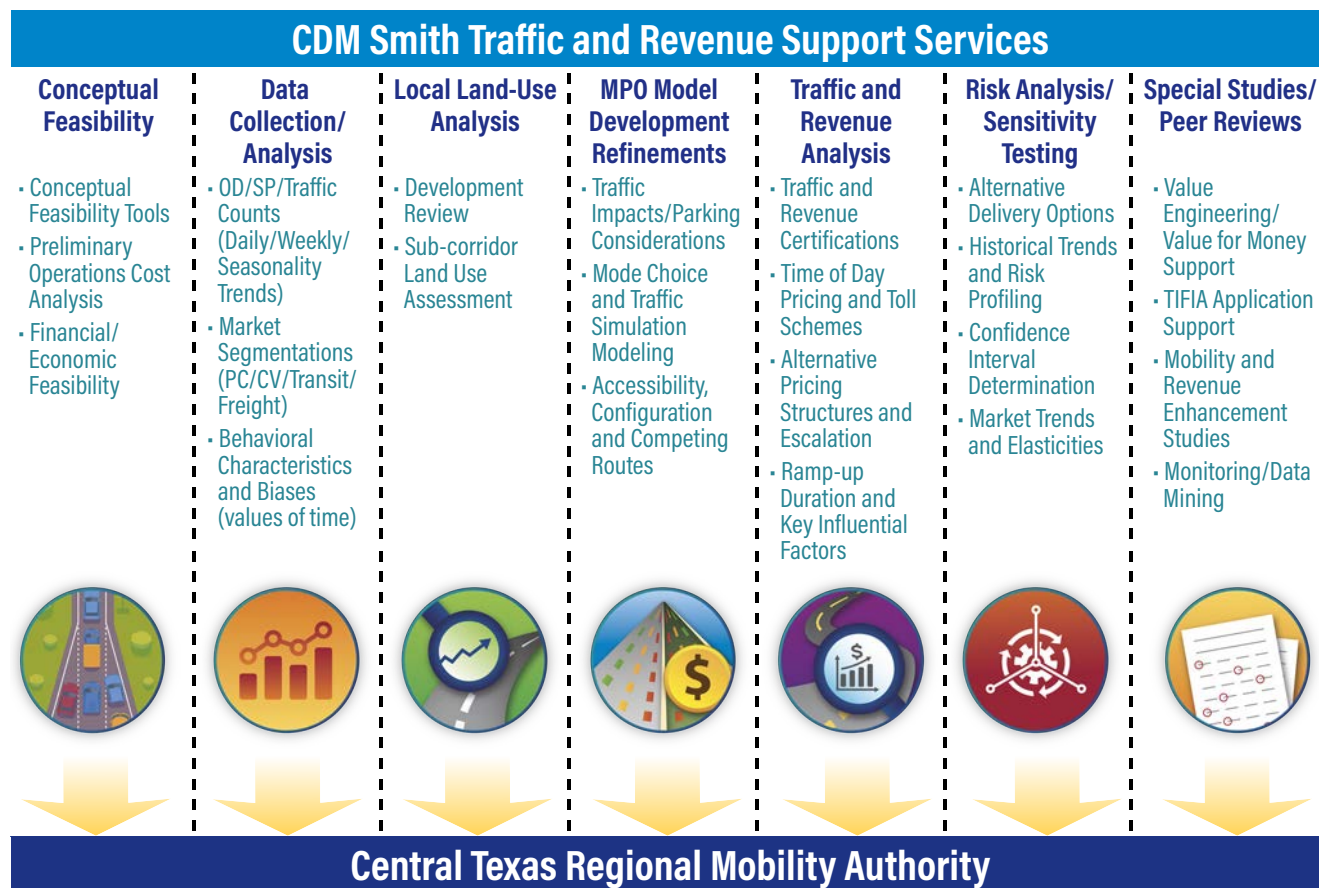
Appendix A

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TABLE A-1: RECENT TIFIA APPLICATIONS SUPPORTED BY CDM SMITH

Project (State)	TIFIA Loan Amount	Total Project Cost	Duration	Requirements/Challenges/Issues
Complete 540 Phase 1 (NC)	\$502M	\$1,520M	Fall 2018– Dec 2019	<ul style="list-style-type: none"> Support initial loan application summary of project benefits Rating agency presentation support
Monroe Expressway (NC)	\$166.5M	\$800M	Fall 2016– Nov 2018	<ul style="list-style-type: none"> Support initial loan application summary of project benefits Rating agency presentation support
Grand Parkway Segments H&I (TX)	\$605.33M	\$1.924B	Fall 2016– Nov 2018	<ul style="list-style-type: none"> Support initial loan application summary of project benefits Extensive due diligence to support assessment of traffic and revenue Rating agency presentation support
SBCTA I-10 Express Lanes (CA)	\$225M	\$928.9M	Fall 2016– Aug 2018	<ul style="list-style-type: none"> Support initial loan application summary of project benefits Rating agency presentation support
I-35E Express Lanes (TX)	\$285M	\$1.4B	Fall 2013– Nov 2016	<ul style="list-style-type: none"> Support initial loan application summary of project benefits Extensive due diligence to support assessment of traffic and revenue Rating agency presentation support
Wekiva Parkway (FL)	\$194M	\$587M	Fall 2013– Mar 2015	<ul style="list-style-type: none"> Worked through extensive sensitivity test to support risk assessments of traffic and revenue Required annual rating of bonds
Dulles Corridor Metrorail (VA)	\$1,867.6M (3 loans)	\$5.7B	Fall 2012– Aug 2014	<ul style="list-style-type: none"> Extensive due diligence to support assessment of traffic and revenue Requires an annual update to the traffic and revenue streams for duration of project to the rating agency
Grand Parkway D-G (TX)	\$841M	\$2.9B	Fall 2011– Feb 2014	<ul style="list-style-type: none"> Support initial loan application summary of project benefits Extensive due diligence to support assessment of traffic and revenue Requires a two-year update to the traffic and revenue streams for duration of project

TABLE A-2



The CDM Smith team will work closely with all parties and bring its T&R expertise, tools, and experience to meet CTRMA's needs.

TABLE A-3: CDM SMITH T&R CONTRACT - PROPOSED MINORITY/WOMEN EMPLOYEES

Employee	Responsibility/Classification	Level of Commitment
Adams, Lauren M	Administrative	10%
Belfi, Barbara J	Administrative/Project Controls	20%
Gutierrez Pena, Anny S	Administrative	2%
Kummerle, Julie	Administrative	2%
Kwong, Alison N	Administrative	2%
Mitchell, Lawanda	Administrative	2%
Parks, Meredith R	Administrative	2%
Wolfe, Julia	Administrative	2%
Bedi, Karan Yeshkumar	Junior Engineer/Planner	40%
Chen, Szu-han	Junior Engineer/Planner	5%
Du, Yucong	Junior Engineer/Planner	2%
Ghandour, Houssam	Junior Engineer/Planner	2%
Haque, Khademul	Junior Engineer/Planner	40%
Jadhav, Ajay	Junior Engineer/Planner	5%
Kalakuntla, Sai	Junior Engineer/Planner	2%
Lin, Laurent	Junior Engineer/Planner	50%
Matysek, Abril E	Junior Engineer/Planner	40%
McGrath, Nicole	Junior Engineer/Planner	2%
Shabaanzaadeh Minaei, Negaar	Junior Engineer/Planner	2%
Naidu, Yugesh	Junior Engineer/Planner	20%
Narsaria, Isha	Junior Engineer/Planner	20%
Patel, Parth	Junior Engineer/Planner	20%
Sarikonda, Vishal	Junior Engineer/Planner	2%
Shah, Rohan J	Junior Engineer/Planner	40%
Singh, Kunal	Junior Engineer/Planner	20%
Zhang, Boyang	Junior Engineer/Planner	5%
Jammalamadaka, Phani Rama	Project Manager	50%
Khan, Kamran A	Senior Advisor	10%
Slack, Terri	Senior Advisor	5%
Mwalwanda, Christopher E	Project Principal	40%
Cavusoglu, Ozge	Engineer/Planner	5%
Amar, Elizabeth Runey (Liza)	Senior Engineer/Planner	5%
Gautam, Bikash	Deputy Project Manager	50%
Kamal, Mustafa	Technical Leader	50%
Kanike, Om Prakash	Senior Engineer/Planner	2%
Jarmarwala, Yagnesh	Senior Engineer/Planner	5%
Lam, Chi Ping	Senior Engineer/Planner	20%
Lu, Yandan	Senior Engineer/Planner	20%
Mokkapati, Naveen	Senior Engineer/Planner	20%
Murphy, Gina Louise	Senior Engineer/Planner	2%
Narayanasamy, Madhusudhanan	Senior Engineer/Planner	5%
Ochoa, Ybette	Senior Engineer/Planner	5%
Ramadan, Ossama	Senior Engineer/Planner	5%
Rima, Tarannum	Senior Engineer/Planner	10%
Mutch, Michelle	Senior Technology Consultant	10%

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Appendix B

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Phani Jammalamadaka, PE, PMP

Project Manager

Mr. Jammalamadaka has more than 17 years of experience in toll T&R studies. He leads and assists many of the firm's key tolling projects, and specializes in project coordination, toll T&R studies, toll diversion modeling, travel demand modeling, risk analysis, and computer programming. His experience includes serving in project management and quality assurance roles for numerous toll T&R studies, as well as the development and use of computerized modeling techniques for traffic planning analysis. Mr. Jammalamadaka has served as the project manager for various T&R studies, which were utilized for the successful issuance of more than \$15 billion in toll road financing/refinancing bonds.

Project Manager, MoPac North IG T&R Study, and MoPac South T&R Study and Traffic Analysis for Environmental Support, CTRMA (2018-present). Serving as a project manager on an IG T&R Study of the MoPac North and MoPac South express lanes traffic forecasting studies in Austin, Texas. These studies include detailed counts, speeds and origin-destination (OD) data collection. In addition, a revealed/stated preference survey was performed to estimate the values of time of the users of the MoPac North express lanes. An independent socioeconomic review was also performed. Toll rate optimization was performed in addition to the estimation of long-term T&R along the MoPac North express lanes. After the MoPac North express lanes opened, detailed evaluation of the toll rates, speeds and volumes was performed, along with the traffic sensor locations and dynamic tolling policies. Recommendations were provided to CTRMA to improve the traffic operational performance, sensor location changes and possible pricing updates. Traffic estimates are also being developed along the MoPac South express lanes to support environmental evaluation and design. In addition, a sketch level T&R evaluation was also performed for the proposed MoPac South express lanes.

Project Manager, Annual T&R Updates for 95-Express Lanes and 595-Express Lanes Projects, Florida Department of Transportation (FDOT), Miami/Fort Lauderdale, Florida (2017-2019). Mr. Jammalamadaka led a team to develop an annual update by evaluating the performance of the existing and future phases of 95-Express managed lane project in the Miami area. Analyzed historical toll traffic data, including toll and speeds trend data along the open sections of the 95-Express managed lanes project. In addition, led toll diversion modeling, incorporation of results of a previously developed VISSIM model by the team, and identification of performance and operational improvement opportunities.

Project Manager, I-4 Beyond the Ultimate South Express Lanes Planning Level T&R and Risk Analysis Study, FDOT, Orlando, Florida (2015-2016). Mr. Jammalamadaka served as a project manager for a planning level T&R study for the proposed express lanes on I-4 in Orlando. As part of this study, traffic counts, speed/delay were collected and a stated preference (SP) survey was administered to estimate the traveler values of time. An up-to-date traffic count profile was prepared for use as a key input in the calibration process for both the global demand and sub-area express lanes modeling efforts. A baseline set of T&R forecasts were developed. Also, the P75 forecasts, which correspond to a 75 percent probability that the actual revenue will be greater than or equal to the forecasted revenue, were developed. Mr. Jammalamadaka managed the internal resources,

Education

MS - Transportation,
Massachusetts Institute
of Technology, 2003

BTech - Civil Engineering,
Indian Institute of
Technology, Madras,
2001

Registration

Professional Engineer:
Texas, 2011 (#108661)

Project Management
Professional (PMP),
2150967

Years of Experience

Total: 17
CDM Smith: 16

Computer Skills

TransCAD (GISDK),
TRANPLAN, MS Excel
VBA, C/C++, @Risk

led the coordination efforts with the FDOT staff and several consultants, and led quality reviews that were performed on all deliverables submitted to the client.

Project Manager, Tampa Bay Express Lanes, FDOT District 7, Tampa, Florida (2015-2016). Mr. Jammalamadaka served as a project manager for a planning level T&R study for the proposed express lanes on I-275, SR-60 and I-4 in Tampa, FL. As part of this study, traffic counts, speed/delay, Bluetooth origin/destination (OD) data were collected and a stated preference (SP) survey was administered to estimate the traveler values of time. An up-to-date traffic count profile was prepared for use as a key input in the calibration process for both the global demand and sub-area express lanes modeling efforts. A baseline set of T&R forecasts were developed for four configuration scenarios. Also, the P75 forecasts, which correspond to a 75 percent probability that the actual revenue will be greater than or equal to the forecasted revenue, were developed. These P75 estimates were developed by performing a Monte-Carlo risk analysis.

Project Manager, Grand Parkway Segments H and I Level 2 T&R Study, Houston, Texas (2015). The Grand Parkway is planned to be Houston's third circumferential highway, around the metropolitan area. Segments H and I of the Grand Parkway traverse Montgomery, Harris, Liberty, and Chambers counties over a distance of approximately 53 miles. These two segments are to the north and east of downtown Houston, providing connectivity between US 59, US 90, IH 10, and SH 146. The proposed segments H and I-1 will be constructed as a two-lane controlled access toll road with discontinuous frontage roads along its alignment. The proposed segment I-2 will be constructed as a four-lane controlled access toll road. For the purposes of this T&R study, tolls were assumed to be collected by electronic toll collection (ETC) across the Grand Parkway corridor. This study involved detailed traffic count data collection, speed data collection using INRIX, an independent socio-economic review, toll sensitivity analyses and evaluation of T&R estimates under several project configurations. A base-case T&R forecast was developed and a Monte-Carlo simulation based project risk analysis was also performed to ascertain the projects of T&R probability ranges.

Project Manager, Investment Grade T&R Study, NTTA, Texas (2011). Mr. Jammalamadaka served as project manager for a comprehensive T&R study of all NTTA System toll facilities. This study involved a detailed evaluation of the new Mobility 2035 demographics, updated travel demand networks, assessment of current economic conditions and outlook, and other key factors influencing forecasted T&R on NTTA System facilities. This effort included an independent economic review of the Mobility 2035 demographics along NTTA System corridors, and incorporation of the 2011 NTTA travel survey results, latest traffic counts and travel time runs data. CDM Smith provided the client with 50-year T&R projections suitable for issuing long-term debt. Toll sensitivity analyses were performed to estimate the T&R impacts due to increased tolls and to estimate the revenue maximization tolls for current and future conditions. In addition, sensitivities to key input variables such as demographics and travelers' value of time were also estimated. He also provided oversight and quality assurance/quality control review of the written report, which was successfully utilized to finance over \$268.6M series 2011 revenue refunding bonds by the NTTA. He provided support to NTTA for Rating Agency and investor presentations in relation to the bond financing. In addition, he reviewed the official statements and provided traffic engineer certificates in relation to the bond sale.

Christopher Mwalwanda, P.Eng.

Project Principal

Mr. Mwalwanda is a vice president and serves as a project director/principal on T&R consultant contracts with toll agencies and DOTs. He has extensive experience in managing toll feasibility analyses and travel demand modeling projects for both private and public agencies. His areas of specialization include toll diversion modeling and financial analysis; urban, intercity, and statewide regional travel demand forecasting; AET feasibility analysis; new mode modeling and analysis; traveler's behavioral theory; discrete choice models; stated preference and revealed preference survey design and implementation; and software interface development.

Project Director, Loop 1 Express Lanes Preliminary (Level 2) T&R Study, CTRMA, Austin, Texas. Mr. Mwalwanda served as project director for the evaluation of an 11-mile express lane facility that extends from Lady Bird Lake in the south to Parmer Lane in the north in Austin, Texas. The preliminary study included various enhancements to the CAMPO travel demand model and the coordination of a comprehensive traffic count program to collect traffic counts, stated preference data, origin/destination data and speed and delay information within the corridor. The analysis included the evaluation of various toll pricing, project phasing and configurations to evaluate the financial feasibility of the corridor taking into consideration various transportation demand management objectives. The models developed as part of this effort also support the environment assessment of the corridor.

Project Director, US 183A Investment Grade Peer Review, CTRMA, Austin, Texas. Mr. Mwalwanda served as the project director performing a peer review in support of the USDOT TIFIA application by the CTRMA. The review included a study of all key variables likely to affect the investment grade T&R analysis that was performed.

Project Director, Toll 49 Comprehensive (Level 3) Traffic and Toll Revenue Study, NET RMA, Tyler, Texas. Mr. Mwalwanda served as the project director for the comprehensive Level 3 Traffic and Toll Revenue Study to evaluate the feasibility of the corridor. His responsibilities included coordination of several subconsultants that are performed the origin/destination surveys, stated preference surveys, traffic count collection and independent economic reviews, and presentations to the client, stakeholder, and bankers and lenders. He provided quality control and technical oversight for the development of the final report and participated in client discussions and presentations. An early assessment was undertaken to evaluate the feasibility of cash plazas compared to the AET facility options that were ultimately implemented.

Project Director, Grand Parkway SH 99 Segments E, F and G Investment Grade T&R Study, Houston, Texas. Mr. Mwalwanda serves as the project director for the implementation of the T&R study to support design-build financing efforts for the Grand Parkway SH 99 advisor for TxDOT. In this role, he has assisted in finalizing the investment grade study and the preparation of presentation to the rating agencies for the successful \$2.9 billion financing of the project. Mr. Mwalwanda provided risk analyses and technical reviews of the procurement documents and reports. The facility was first opened as a tag

Education

MASc – Transportation Engineering, University of Toronto, Toronto, Canada, 1999

BASc – Civil Engineering, University of Toronto, Toronto, Canada, 1997

only facility but subsequently converted to a pay-by-mail/video user facility that warranted reanalysis and presentation to the investor community and TIFIA.

Project Director, IH 35E Managed Lanes Comprehensive (Level 3) T&R Study, Texas Turnpike Authority/TxDOT, Dallas, Texas. Mr. Mwalwanda oversaw the evaluation of a 30-mile managed lane facility. The analysis included the evaluation of various toll pricing, project phasing and configurations to assess the financial feasibility of the corridor taking into consideration various transportation demand management objectives. Mr. Mwalwanda supported the financing of the project including multiple rating agency and TIFIA presentations.

T&R Advisor, T&R CDA Evaluator, Texas Turnpike Authority/TxDOT, Dallas, TX. Christopher serves as the T&R advisor to TxDOT as part of their Comprehensive Development Agreement (CDA) procurement (Public Private Partnership (P3) procurements). In this role, he is assisting in evaluating proposals submitted by developers for the multi-billion dollar IH 35E Managed Lane Project, SH 183 Managed Lane Project, and the North Tarrant Express (IH 35W/IH 820) in Dallas and Fort Worth, and the next segments of 184-mile SH 99 Grand Parkway project in Houston. Christopher provides risk analyses and technical reviews of the bidder's T&R reports and provides summary presentations of the finding to the evaluation committees.

Project Manager/Principal, I-105 Express Lanes Comprehensive and I-605 Express Lanes Level 2 T&R Studies, Los Angeles County METRO, Los Angeles County, California. Mr. Mwalwanda is serving as the project manager/principal for the ongoing T&R assessment of the I-105 and I-605 express lane corridors. The analyses will include the evaluation of various toll pricing, project phasing and configurations to assess the financial feasibility of the corridors and presentations of findings to key project stakeholders and board members.

T&R Advisor, T&R, Orange County Transportation Authority/ OCTA, Orange County, California. Mr. Mwalwanda serves as T&R advisor to OCTA as part of the SR 241 Express Direct Connector Peer Review Study. He evaluated the work undertaken by the OCTA consultant team and provided technical feedback on the analysis and made recommendations for further consideration. The advisory also included presentation of findings to key project stakeholders.

Project Manager/Principal, High Desert Multipurpose Corridor Level 2 T&R Study, Los Angeles County METRO, Los Angeles County, California. The analysis included the evaluation of various toll pricing, project phasing and configurations to assess the financial feasibility of the corridor taking into consideration various transportation demand management objectives. The advisory also included presentations of findings to key project stakeholders and board members.

Project Principal, Oklahoma Turnpike System, Oklahoma Turnpike Authority, Oklahoma. Mr. Mwalwanda serves as the project principal for the evaluation of the Oklahoma Turnpike System revenues and the consideration of AET conversions to support the Oklahoma Turnpike Authority (OTA). His involvement with the agency has historically included direct support of project financing and participation in rating agencies, presentations of recommendations to the OTA board and as a technical senior advisor in the assessment of AET conversion considerations and pilot study initiatives as several plazas within the system.

Bikash Gautam

Deputy Project Manager

Mr. Gautam is a transportation planner and has extensive experience while working on managerial role as well as technical role for several travel demand modeling projects and traffic and toll revenue studies ranging from toll feasibility analysis to investment grade level studies. His technical expertise includes data collection program development, network modeling and calibration, traffic and toll revenue analysis including technical report writing for traditional toll road projects, concurrent and reversible express lane projects with variable congestion pricing and under different toll collection strategies. His areas of interest include toll diversion modeling and financial analysis, urban, intercity and statewide regional travel demand forecasting, urban and statewide emergency mass evacuation modeling, dynamic and static traffic assignment modeling and analysis. He is skilled at various GIS based travel demand modeling tools, programming languages, and traffic modeling software.

Planning Analyst, MoPac Managed Lanes Level-2 Study, CTRMA, Austin, Texas. CDM Smith was retained by CTRMA to conduct an Intermediate Level-2 Traffic and Toll Revenue study for the proposed MoPac (Loop 1) Express Lane corridor. The project corridor is about 11.2 miles between W. Parmer Lane in the north to Cesar Chavez Street in the south. The MoPac Express Lane Improvement Project was proposed to better serve the highly congested traffic on the general purpose lanes with express lanes access using congestion pricing strategy. Mr. Gautam directed data collection encompassing socio-economic data, traffic counts, license plate capture, and data analyses, including leading development of model estimates for T&R and operational analyses; sensitivity analysis and optimum toll rates; select link analyses; development of T&R projections using travel demand model and operational analyses of selected locations. Several alternatives were tested for operational performance using VISSIM and recommendations were made to enhance the operational performance.

Deputy Project Manager/Task Leader, MoPac North Express Lanes Comprehensive T&R Study, MoPac South Environmental and Planning Support, and Ongoing T&R Monitoring Support, CTRMA, Austin, Texas. CDM Smith is under contract with CTRMA for the Level 3 comprehensive traffic and toll revenue study and T&R monitoring support for the MoPac North express lanes, and environmental and planning support for MoPac South corridor. The project limits for MoPac North is from W. Parmer Lane to Lake Austin Boulevard with approximately 11.2-miles and for MoPac South is from Lake Austin Boulevard to Slaughter Lane with approximately 8.2 miles. The study considered recent traffic and demographic growth trends within the Greater Austin region, origin-destination survey and stated preference survey to better understand the traffic characteristics along MoPac corridor and within the region. As a deputy project manager and task leader, Mr. Gautam supported in managing data collection program and traffic surveys, is performing comprehensive T&R analysis and several scenario evaluations including ongoing T&R trend monitoring for the MoPac North corridor and supported several traffic analysis for the MoPac South corridor.

Technical Analyst/Task Manager, Loop 1604 Managed Lanes Level-2 Study, Alamo RMA & TxDOT, San Antonio, Texas. CDM Smith was retained by the Alamo RMA and

Education

MS – Civil Engineering, University of Texas at El Paso, 2006

BS – Civil Engineering, Tribhuvan University, Nepal, 2002

Years of Experience

CDM Smith: 13
Total: 17

Training

AutoCAD and AutoLISP, Tribhuvan University

Visual Basic, PENTASOFT Nepal Centre

TxDOT to conduct an Intermediate Level-2 traffic and toll revenue study and subsequent scenarios testing for the proposed 33.5-mile managed lanes along Loop 1604 corridor between US 90 and Nacogdoches Road, in San Antonio region. This analysis was part of Alamo RMA's ongoing efforts to evaluate the financial feasibility of the proposed SL 1604 managed lanes project. Mr. Gautam served as the Technical Analyst for this managed lanes study and analyzed data collection program encompassing traffic counts, speed and delay, origin-destination data, license plate capture, socioeconomic review, stated preference data and technical analyses to develop T&R projections including review of San Antonio-Bexar County Metropolitan Planning Organization's socioeconomic data. He also managed the project budget, project schedule, and deliverables, and interaction with the client.

Project Technical Leader/Deputy Project Manager, NET RMA – Existing Toll 49 System T&R Monitoring Support and Proposed Segment 6 Environmental Support, Tyler, Texas. CDM Smith is retained by NET RMA to monitor the T&R trend for the existing Toll 49 System and present the summary to NET RMA staff and board members on a quarterly basis. CDM Smith is also assisting NET RMA and its consultants with the proposed Segment 6 Environmental Support task. Mr. Gautam oversees the tasks' progress and schedule, shares technical expertise and communicates with client and their consultants on a regular basis.

Task Manager, Midtown Express (SH 183, SH 114, and Loop 12 Managed Lanes) Sketch Level, Sketch-Level Plus, Level-2 and Level-3 T&R Studies, TxDOT Dallas, Texas. CDM Smith, under contract with TxDOT, provided procurement support to include several studies ranging between sketch-level, sketch-level plus, Level-2 studies and subsequently a Level-3 comprehensive T&R study for the SH 183, SH 114 and Loop 12 Managed Lanes projects in the Dallas region. These studies were in support of TxDOT's efforts to evaluate the financial feasibility of the project including technical support for the

\$285M Transportation Infrastructure Finance and Innovation Act (TIFIA) Financial Loan Application from TxDOT. Mr. Gautam served as the task manager for this managed lanes study from Sketch-level Plus and ultimately to a Level-3 study and analyzed data collection program encompassing traffic counts, speed and delay, origin-destination data, socioeconomic review, stated preference data and technical analyses to develop T&R projections including review of NCTCOG socioeconomic data. He managed the project budget, project schedule, and deliverables, and interaction with the client and project procurement team.

Task Leader, Toll 49 Level-3 T&R Study, NETRMA, Tyler, Texas. CDM Smith conducted a comprehensive traffic and toll revenue (Level-3) study for the NETRMA in 2010, to secure a Toll Equity Loan of \$50M and State Infrastructure Bank loan of \$39.2M. The study corridor is a two-lane limited access facility that would provide connection from US 69 north to IH 20 and SH 110S. CDM Smith updated the bring down report to evaluate the financing options for the proposed Segment 4 extension in 2014 and developed a Level-3 update in 2016 for the existing 25.6-mile segment and proposed 6.6-mile Segment 4 of the Toll 49 corridor in Smith County, Texas. This support included Moody's & S&P presentations and sale of \$200M in revenue bonds in June 2016. Mr. Gautam served as the Task Leader to oversee data collection, developing optimum toll rates, select link analysis, and T&R technical analyses using travel demand model and sensitivity analyses.

Mustafa Kamal

Technical Leader

With more than over 31 years of experience, Mr. Kamal offers extensive expertise in the development of traffic and toll revenue forecasts for proposed managed-lanes and toll roads. He is also experienced in travel demand modeling for large multimodal projects including regional planning studies, major investment studies, roadway improvements and corridor studies. He is experienced in developing demand forecasts using various software packages such as Cube/Voyager and TransCAD as well as Paramics simulation software. Currently, he serves as a project technical leader on many toll forecasts, responsible for ensuring quality performance.

Project Technical Leader, Modeling Task Leader, Mopac North (Loop 1) Express Lanes Investment-Grade Traffic and Toll Revenue Study, CTRMA, Austin, Texas. CDM Smith conducted this investment-grade traffic and toll revenue study for the Mopac (Loop 1) express lanes in Austin, Texas for CTRMA. The project limits were from W. Parmer Lane to Lake Austin Boulevard with an approximate length of 11.2 miles. Mr. Kamal served as PTL and lead modeler for this study and developed traffic and toll revenue forecasts for the express lanes. These forecasts were based on benchmarked models and behavioral data and included updated value-of-time (VOT) and reliability measures shown to have a significant impact on the demand for the Mopac North express lanes.

Senior Modeler and Project Technical Leader, Mopac South (Loop 1) Traffic Support for Environmental Analyses, CTRMA, Austin, Texas. CDM Smith was retained by CTRMA to provide environmental traffic support for the Mopac South corridor. The project limits for Mopac South are from Cesar Chavez Street to Slaughter Lane (approximately 8 miles). The project included providing traffic data for air quality and noise analyses, Mobile Source Air Toxics (MSAT), Regional Toll Analysis (RTA), Project-Level Toll Analysis (PLTA) and developing measures of effectiveness (MOEs) for five different alternative configurations for the corridor as well as the No-Build alternative. Mr. Kamal is serving as PTL and senior modeler for this project.

Senior Transportation Planner and Modeling Lead, Mopac South (Loop 1) and US 183 North Express Lanes, CTRMA, Austin, Texas. CDM Smith conducted sketch-level traffic and toll revenue studies for various alternative configurations for the Mopac South and US 183 North express lanes in Austin, Texas for CTRMA. The project limits for Mopac South were from Cesar Chavez Street to Slaughter Lane (approximately 8 miles) and from SH 45 North to Mopac (Loop 1) for US 183 North (also approximately 8 miles). These two express lanes corridors will connect to and extend the Mopac express lanes currently under construction in central Austin. Mr. Kamal served as the senior modeler for this project and also developed the conceptual toll feasibility of the proposed express lanes.

Senior Transportation Planner and Modeling Lead, Mopac North (Loop 1) Express Lanes Intermediate Traffic and Toll Revenue Study, CTRMA, Austin, Texas. CDM Smith conducted this intermediate traffic and toll revenue study for the Mopac (Loop 1) express lanes in Austin, Texas for CTRMA. The project limits were from W. Parmer Lane to Lake Austin Boulevard with an approximate length of 11.2 miles. Mr. Kamal served as the senior

Education

MS - Transportation Engineering, University of Wisconsin, Madison, Wisconsin, 1988

BE - Civil Engineering,

NED University of Engineering and Technology, Karachi, Pakistan, 1987

Years of Experience

Total Years: 31

CDM Smith: 10

modeler for this project and also developed the conceptual toll feasibility of the proposed express lanes. The express lanes opened to traffic in the Fall of 2017.

Senior Modeler, IH 35E Managed Lanes Investment-Grade Traffic and Toll Revenue Study, TxDOT, Dallas, Texas. CDM Smith was retained by TxDOT to conduct an investment-grade traffic and toll revenue study for the IH 35E managed lanes project. The traffic and toll revenue estimates from this study were used to successfully close on a \$285 million TIFIA loan for this project in November 2016. Mr. Kamal served as the senior modeler responsible for developing traffic and toll revenue forecasts as well as providing support for rating agency reviews. The managed lanes opened to traffic in Spring 2017.

Senior Modeler, SH 183 /SH 114/ Loop 12 Managed Lanes Investment-Grade Traffic and Toll Revenue Study, Dallas, Texas. This investment-grade traffic and toll revenue study for the managed lanes along SH 183, SH 114 and Loop 12 in the vicinity of Dallas Fort Worth (DFW) International Airport, connects both downtowns and provides access to the airport. For this innovative financing project, comprehensive data collection was conducted, including traffic counts, speed and delay data, as well as OD and SP surveys. Mr. Kamal served as the senior modeler. He also participated in meetings and presentations to Fitch rating agency in support of a TIFIA loan application for this project. This project opened to traffic in the fall of 2018.

Senior Modeler, I-605 Managed Lanes Intermediate Traffic and Toll Revenue Study, Los Angeles Metropolitan Transportation Authority, Los Angeles, California. CDM Smith was contracted by LA Metro for this intermediate traffic and toll revenue study for the proposed tolled managed lanes along I-605 in Los Angeles. The project includes 14 miles of managed lanes along I-605 between I-10 and SR-91. Mr. Kamal served as the senior modeler for this project responsible for the development and calibration of a detailed 11-period travel demand model with five different modes; SOV, HOV2, HOV3+ CAV (clean-air vehicles) and Trucks. The model was used to forecast traffic and toll revenue for several different HOV discount and operational scenarios for the project corridor.

Senior Modeler, I-64 HRBT HOT Lanes Intermediate Traffic and Toll Revenue Study, Virginia Department of Transportation, Hampton /Norfolk, Virginia. CDM Smith was contracted by the Virginia Department of Transportation for this intermediate traffic and toll revenue study for the proposed HOT lanes along I-64 through the Hampton Roads Bridge-Tunnel (HRBT) complex. The project includes 12 miles of HOT lanes along I-64 between I-664 and I-564. Mr. Kamal is served as the senior modeler for this project responsible for the development and calibration of a detailed 15-period travel demand model which is being used to forecast traffic and toll revenue for the project corridor.

Kamran A. Khan

Senior Advisor

Mr. Khan is a senior vice president leading CDM Smith's Transportation Finance and Technology group. He has more than 32 years of professional experience, the last 29 years with CDM Smith, and has an extensive background in pricing studies. Mr. Khan is familiar with travel data compilation, toll travel demand modeling for existing/new toll facilities, interstates and managed lanes, toll revenue forecasting, financial feasibility, and cost-benefit studies. Mr. Khan serves as a senior advisor and reviewer for major revenue and pricing studies within the national practice. Mr. Khan has been involved in major privatization studies of transportation infrastructure assets in Colorado, Florida, Illinois, Indiana, Oregon and Texas working for both public and private sector clients.

Project Principal, Illinois State Toll Highway Authority Annual Retainer. Senior management oversight on services provided to the Authority including traffic and revenue studies, traffic operations, ITS, and toll collection systems. Conducted various studies and tasks for the Authority including preparation of Comprehensive Traffic and Revenue Studies used for project financings for capital programs; providing guidance and recommendations with respect to toll rates, toll sensitivity, and toll collection systems; managing preparation of the annual traffic and revenue report by identifying traffic and revenue trends, economic conditions, and construction impacts; conducting interchange feasibility studies; assessing development impacts to the tollway; and evaluating mainline/arterial and toll plaza traffic operations using traffic simulation models.

Project Principal, E470 Toll Road. Project principal for investment grade study for the toll road. Study included data collection, review of annual transactions by plaza and account activity, independent economic corridor analysis, stated preference surveys, review of long-range needs and review of various pricing options, toll sensitivity analysis. Extensive use of DRCOG model data sets. Developed scenarios to reflect COVID-19, with presentation to rating agencies and investors. One of the first successful toll road bond transactions in the COVID-19 environment.

Project Principal, Osceola County Expressway. Project principal for investment grade study for the toll road. Study included extensive data collection, conduct of stated preference surveys, independent economic corridor analysis, review of long-range needs and review of various pricing options, toll sensitivity analysis. Extensive use of CFRPM model data sets. Made presentations to rating agencies and investors.

Project Principal, North Texas Tollway Authority, Traffic Engineering Retainer Services, Texas. Responsible for systemwide traffic and revenue monitoring of traffic and revenue for existing facilities as well as investment-grade studies for extensions including PGBT Eastern Extension, S.H. 161, and Southwest Parkway.

Project Principal, MWAA Dulles Toll Road. Project principal for ongoing traffic and revenue retainer services, includes monitoring of traffic and revenue performance, comprehensive traffic and revenue studies in support of project financings for the Silver Line Metrorail Service. Conducted extensive traffic data compilation, including stated preference surveys to measure values of time. Utilized MWCOG model data sets, to

Education

M.S. -
Transportation
Engineering and
Planning,
University of
Southampton,
UK, 1989

Bachelor of
Engineering,
Civil
Engineering,
Kingston
Polytechnic, UK,
1986

Experience

Total Years: 32
CDM Smith 29

2007-Present

Senior Vice
President

Transportation,
Finance and
Technology
Group

2003-2007

Vice President

Transportation,
Finance and
Technology
Group

Lisle, Illinois

estimate transit and highway demand, and incorporated tolling algorithms to simulate the impact of pricing.

Lead Practitioner, SH 183/SH 114/Loop 12 Managed Lane Investment Grade Study.

The Study team developed large freeway simulation model to evaluate existing and future traffic operations, and identification of bottlenecks. Travel demand model used to simulate new managed lane configurations, developed optimum tolls and toll revenue estimates. Extensive use of NCTCOG model data sets.

Project Principal, Interstate Tolling Project Planning and NEPA Services, Indiana

Department of Transportation. Leading CDM's Smith project team in assessing the impact of tolling on four interstate corridors. Initial efforts are focused on developing traffic and revenue forecasts, and diversion estimates on local routes. Study involves extension data collection, video surveys and analysis of current travel patterns and trip distributions. In addition, study team is developing a technical approach to traffic forecasting in support of future NEPA studies.

Project Principal, Miami Dade Expressway Traffic and Revenue Study, Florida.

Project Principal for investment grade study. Study evaluated the impacts of new toll collection system and conversion to an 'all-electronic tolling' scheme. In addition, provided annual retainer services, including monthly monitoring of facilities, short range and long-range planning.

Project Principal, SR520 Investment Grade Study, Washington DOT.

Project Principal for investment grade study for early tolling of existing and proposed bridge expansion for SR520. Work included extensive data collection, video surveys, and stated preference surveys to estimate values of time. The CDM team utilized the PSRC model, incorporating pricing algorithms to simulate time of day pricing. Participated in rating agency and TIFIA presentations.

Project Principal, Columbia River Crossing Investment Grade Study, Washington

DOT. Project Principal for investment grade study for the exiting I-5 bridge crossing. Work included extensive data collection, video surveys, and stated preference surveys to estimate values of time. The CDM team utilized the Metro model, incorporating pricing algorithms to simulate time of day pricing.

Project Principal Chicago Regional Congestion Pricing Study.

Project principal for a regional value pricing study to determine and quantify the potential for road pricing to improve regional mobility in the Chicago area. The project was jointly guided by the Metropolitan Planning Council (MPC) and the Illinois Tollway under the auspices of the Chicago Metropolitan Agency for Planning (CMAP). The project included an extensive public and stakeholder outreach effort to assess the level of support and feasibility of various pricing strategies.

Gustavo A. Baez has extensive experience in managed lanes evaluation, data analytics, travel demand forecasting, congestion pricing, risk analysis, electronic toll collection impact analysis, toll feasibility studies, and traffic simulation. He has participated in more than \$20 billion in bond financing for toll projects in the USA. Mr. Baez has more than twenty years of experience in transportation planning in the USA and Canada. Gustavo has managed and directed the analysis of toll projects for public entities such as the Arkansas Department of Transportation, the Central Texas Regional Mobility Authority (CTRMA), The Alamo Regional Mobility Authority, the North Texas Tollway Authority (NTTA), the Texas Turnpike Authority Division (TTA) of TxDOT, and the Oklahoma Turnpike Authority (OTA); for private investors such as OHL Infrastructure, CINTRA Developments, Zachary Construction, Macquarie Infrastructure Investment, Kiewit Development Company, Skanska Infrastructure Development, and ACS Infrastructure; and for financial advisors such as RBC Capital Markets, Estrada Hinojosa, and First Southwest Company.

Baez Consulting, LLC, President, 2007 – Present

Responsible and project director for managed lane optimization analysis, traffic and toll revenue forecast studies, traffic simulation, travel demand modeling, traffic and revenue auditing, and traffic data analytics for several projects such as:

I-35E, I-30, Midtown Express, and DFW Connector Managed Lanes Monitoring, Texas Department of Transportation, Dallas, Texas. January 2016; End Date: Ongoing

Gustavo is serving as a senior project manager evaluating and monitoring the I-35E, I-30, Dallas Fort Worth Connector (DFWC) and Midtown Expressway managed lanes corridors. He is analyzing the daily traffic data and performing traffic trend analysis for four managed lane facilities consisting of 34 gantries. The analysis included not only evaluating the traffic trend of the managed lanes but also the traffic trend of the general-purpose lanes for each managed lane corridor. Associated activities implemented to improve the operation of the managed facilities include: modified traffic operation information to optimize throughput or toll revenue incorporated into the dynamic pricing algorithm; customized decision-making tables to instruct managed lane operators to minimize speed reduction in the managed lanes; created computer programs in statistical packages and Excel to be able to summarize millions of transaction records produced by the managed lanes and general purpose lanes; developed a process to select the most optimum aggregation period in the dynamic pricing algorithm to optimize revenue considering the operation characteristics of the corridor such as peak-hour factor; truck percentage variations and managed lanes geometric configurations; selected the most appropriate AVI locations to summarize speed along the managed lane corridors; selected the most appropriate LoneStar general purpose lanes operation system locations to compare speed of the managed lanes with the general purpose lanes; created a data analytics system which allow to respond efficiently to questions from decision makers about the performance of the managed lanes; and created a monthly summary report for each of the managed lanes corridors.

Education

M.Eng. - Civil Engineering, University of Toronto, Canada, 1993

B. Eng. - Civil Engineering, Universidad Technologica de Panama, Panama, 1982

Registration

Professional Engineer: Ontario, Canada, #90219940

Expertise

Managed Lanes Analysis

Data Analytics

ETC Conversion Impact

Traffic and Revenue Forecast

Traffic Simulation

Travel Demand Modeling

Congestion Pricing

Feasibility Studies

Transportation Planning

North Texas Tollway Authority System (NTTAS), North Texas Tollway Authority, Dallas, Texas, January 2001; End Date: Ongoing

Gustavo is project manager in evaluating the daily traffic for the North Texas Tollway Authority System composed of nine operating toll facilities and one hundred and three toll gantries. He analyzed historical toll traffic data and performed traffic trend analyses on the performance and operation of the nine toll facilities. He has used several statistical techniques such as time-series trend algorithms, box-plot techniques, and coefficient of variation process to optimize the operation and revenue collection of the toll facilities. These statistical techniques have been used to forecast short-term revenue; correlate special events with revenue leakage; evaluate revenue risks and estimate expected forecast error.

I-66 Outside the Loop Managed Lanes, Skanska Infrastructure Development Inc, Alexandria, Virginia, 2016

Gustavo served as traffic and revenue advisor to Skanska for preparing a private offer to acquire the right to build and operate the I-66 Outside the Loop managed lane corridor. The analysis consisted doing trend analysis in existing managed lanes facilities such as the I-495 and I-95 in Virginia; I-95 in Florida; and SR 91 in California. The trend analysis of historical data from those managed lanes was used to calibrate toll revenue parameters in order to develop revenue risks profiles.

183A Extension Investment Grade Traffic and Toll Revenue Study Auditing and US 290E Investment Grade Traffic and Toll Revenue Study Auditing, Austin, Texas, 2008

Mr. Baez implemented a comprehensive review of the investment grades studies for the 183A and 290E proposed toll facilities. The final letter report recommended reviewing several assumptions in order to optimize the toll revenue for the facilities.

Wilbur Smith Associates (WSA), Vice-President, 2000 – 2007

In charge and responsible for all WSA traffic and toll revenue projects in Texas and Oklahoma. Managed the traffic and revenue contracts for NTTA, TxDOT, Oklahoma Turnpike and private concessionaries. Evaluated the feasibility of many toll projects in Texas and Oklahoma. Major highlights are:

NTTA Traffic and Toll Revenue Contract, Project Director: Responsible for all the projects evaluated for NTTA under the traffic and toll revenue contract including doing rating agency presentations, NTTA Board presentations, due diligence meetings and public meetings. Several VISSIM microsimulation projects were evaluated under this contract to evaluate operational impact of proposed improvements for the NTTA seven toll facilities.

TTA (TxDOT) Traffic and Toll Revenue Contracts, Project Director: Responsible for three five-million dollar contracts to evaluate toll projects around the State of Texas. More than 200 toll project-alternatives were evaluated under these contracts including many managed lanes projects such as the I-635 managed lanes and the North Tarrant Expressway managed lanes which are open to traffic and successfully operating in the Dallas-Fort Worth region.

Demographic/Economic Analysis

Mr. Bigos is a senior economist specializing in analyzing transportation, with responsibilities that include developing and applying economic and econometric models, conducting economic and financial feasibilities, and identifying fiscal impacts and funding requirements. Mr. Bigos is experienced with various economic modeling software, including IMPLAN and REMI, as well as forecasting and feasibility models. He has analyzed all major transportation modes and for both passenger and freight-related considerations.

Economist, Presidio Regional Freight Mobility Plan, Presidio, Texas. Mr. Bigos compiled a freight profile for the seven-county Presidio region in west Texas using data from IHS Transearch, and the BTS' TransBorder freight databases and conducted an economic impact of such freight movements and supply chain relationships.

Economist, US 190/IH 10 Feasibility Study, Texas. Mr. Bigos evaluated the economic feasibility (through a BCA) and the economic impacts (through a REMI application) of ten corridor alternatives, as well as various individual corridor sections, for the proposed US 190/IH 10 corridor improvement that traverses the width of Texas from El Paso to the Louisiana state line. Economic feasibility was conducted through a consumer surplus-based travel efficiency analysis, and the economic impacts were conducted for both the applicable efficiency benefits and the construction/operating expenditure activities.

Economist, Grand Parkway (Update), Houston, Texas. Mr. Bigos conducted an economic impact analysis of the proposed Grand Parkway segments H and I1, located in northeast Houston (Montgomery, Liberty, Harris, and Chambers counties), utilizing REMI PI+ modeling software. Impact included construction and travel-efficiency related considerations.

Economist, Central Florida Expressway Authority (CFX), Florida. Mr. Bigos updated a socioeconomic profile for the seven counties in Central Florida and the State; a historical and forecast compilation of population, employment, gross regional products, etc. for travel demand modeling and forecasting traffic and revenue.

Economist, Illinois Tollway, Illinois. Mr. Bigos conducted a socioeconomic profile for the Chicago area and the Nation, including compiling various short-terms forecasts for real Gross Domestic Product and national unemployment.

Economist, West Virginia Parkways Authority Traffic and Revenue Study. Mr. Bigos developed and updated growth forecasts through an econometric analysis for the three mainline plazas and side plaza for both passenger and commercial vehicles. A baseline, and optimistic and pessimistic alternatives were derived. Also, a quantitative and qualitative assessment of the socioeconomic data for West Virginia was conducted.

Economist, Socioeconomic Profile, Lee County, Florida. Mr. Bigos conducted a socioeconomic profile update for Lee County, FL, in comparison with Florida and the Nation, as a historical and forecast compilation of population, employment, gross regional products, etc. socioeconomic variables for purposes of use in travel demand modeling exercises and forecasting traffic and revenue in the county.

Education

BA - Economics, State University of New York at Buffalo, 2004

MBA - Rollins College, Florida, 2014

Technical Specialties

Economic Impact Analysis

Economic Feasibility

Input-Output Economic Modeling

Econometric Modeling

Financial Analysis

Return on Investment (ROI)

Benefit Cost Analysis (BCA)

Breakeven Analysis

Freight Analysis

Market Research

Socioeconomic Profiling/Forecasting

Impact Software

Impact Analysis for Planning (IMPLAN)

Policy Insight® (PI+) and TranSight, produced by Regional Economic Models, Inc. (REMI)

Wesley T. Blackwell, PMP

Tolling Technology

Mr. Blackwell is a detail oriented PMP Senior project/technical manager with over 24 years of experience in the tolling industry. His areas of tolling system project experience include AET, cordon zone pricing, managed lanes, electronic toll collection system operations and equipment design, ticketing and coin machine equipment design and integration, toll system procurement, toll system testing, business rules development, and systems analysis.

Toll System Technical Engineer, Texas Turnpike Authority Statewide Tolling Project, Statewide, Texas. Mr. Blackwell provided technical inputs to the team for developing comprehensive toll system technical provisions that were used as the basis for the comprehensive development agreement for the TTA Statewide Tolling Project. Additional work activities included toll system contractor oversight, design document review, testing, system commissioning oversight, and field performance testing.

Project Manager, NTTA ACM Supply Project North Region, Texas. Mr. Blackwell served as project manager for the supply of 198 lanes of new ACM equipment for the North Texas Tollway Authority. His responsibilities included confirmation of system requirement adherence to the RFP, contract monitoring, equipment installation oversight, equipment factory and field testing, documentation, training, and future warranty period monitoring.

Project Manager, Harris County Toll Road Authority ACM Supply Project, Harris County, Texas. Mr. Blackwell served as project manager for the supply of 118 lanes of new ACM equipment for the Harris County Toll Road Authority. His responsibilities included confirmation of system requirement adherence to the RFP, contract monitoring, equipment installation oversight, equipment factory and field testing, documentation, training, and future warranty period monitoring.

Project Manager, Santa Clara Valley Transportation Authority SR 85 Express Lanes, San Jose, California. Mr. Blackwell was responsible for the system design and development of procurement documentation for the SR 85 Express Lanes Extension (Phase 2) project. His responsibilities have included toll system design coordination with the authority, review and evaluation of technical and cost proposals, toll contract monitoring, factory and field-testing, assisting staff during system deployment and commissioning, and system performance evaluation. Prepared Systems Engineering Management Plans and Concept Of Operations Plans.

Project Manager, Minnesota Department of Transportation (MnPass) I-394 and I-35 West HOV/SOV Lanes, Minneapolis, Minnesota. Mr. Blackwell was responsible for the oversight and coordination of the project's operations/customer service subcontractor on the all-electronic toll collection system for HOV/SOV lanes on I-394 and I-35W in Minneapolis. His duties included coordination with the project's systems and operations subcontractors for daily operation and system expansion as well as directing day-to-day project activities. Coordinated media buys with marketing and advertising subcontractors to promote and educate the public. Provided and supervised personnel for MnPASS public outreach events. Oversight of toll system maintenance and maintenance subcontractor. Presented quarterly operations and system reports to MnDOT for use in reports to FHWA.

Education

BS - Electrical Engineering Technology, Southern Polytechnic University, Marietta, Georgia, 1988

Certifications

Project Management Professional (PMP), 2019

Timothy J. Boesch, AICP

Multimodal Studies

Tim Boesch has over 20 years of transportation planning experience. Over the course of his career, Mr. Boesch has supported a wide range of services regarding toll collection technology, traffic and toll revenue forecasting, downtown circulation, highway corridor analysis, and transit corridor planning. He is skilled at providing expert testimony for public agencies, solid analytical analysis for transportation planning, and translating complicated material for stakeholder comprehension.

Project Staff, Loop 1604 and US 281 Tolled/Managed Lanes Level-2 Intermediate T&R Study, Alamo Regional Mobility Authority/TxDOT, San Antonio, Texas. Mr. Boesch oversaw existing conditions review for multiple corridor tolling study. The work included review of hundreds of traffic counts, traffic class counts, origin-destination surveys, speed and delay studies, and traveler characteristics. Mr. Boesch wrote extensive existing conditions chapter based on data collected.

Deputy Project Manager, Roosevelt to Downtown High Capacity Transit Study, Seattle Department of Transportation, Washington. This project examined existing transit, traffic, and alternative mode conditions, current and expected sociodemographics, and high crash locations. Rapid streetcar vs. bus rapid transit mode choice analysis was developed and executed with BRT being selected. Alternatives were developed for analysis including center and side running full BRT, basic King County Metro RapidRide service, and targeted investments designed to align with project budget.

Project Manager, Rapid Ride BRT Branding and Facilities Design, King County Metro, Seattle, Washington. Mr. Boesch was involved in all aspects of the planning and design process. This project involved brand identity development; brand application to transit vehicle design, signage, information documents, and passenger facilities; architectural schematic design services; cost estimation for passenger facilities including civil work; and a significant public and jurisdictional involvement process. A second phase included preliminary, intermediate, pre-final, and final architectural, structural engineering, civil and electrical engineering, and lighting design, as well as construction period services.

Project Manager, Washington State Bike Facilities and Pedestrian Plan, Washington State Department of Transportation (WSDOT), Bellevue, Washington. Mr. Boesch oversaw the development of Washington's statewide pedestrian and bicycle plan. Responsibilities included managing client contacts, quality control, staff coordination, participation in steering committee meetings, and public outreach.

Project Manager, SR 520 Investment Grade Traffic and Toll Revenue Update 2015, WSDOT. This project includes analysis of detailed actual tolling experience data, revised economic forecast, and revision of toll travel demand model to update 40+ year forecast reflecting tolling experience to date. The updated model and forecast is being used for continued financing including meeting bonding requirements, TIFIA loan requirements, monthly and quarterly T&R performance monitoring, support for additional bonds issuance, and developing and testing multiple scenarios for toll rate setting by the Washington State Transportation Commission.

Education

MS - Transportation,
Massachusetts
Institute of
Technology, 1996

BS - Mechanical
Engineering, The Ohio
State University, 1991

Certifications

American Institute of
Certified Planners
(AICP # 024138)

Years of Experience

Total Years: 20
CDM Smith: 15

Professional Activities

Women's
Transportation
Seminar Puget Sound –
CDM Smith
Representative, Board
member 2015-16

Transportation
Choices Coalition –
CDM Smith
Representative

Seattle Chamber –
Transportation Task
Force

Member, American
Planning Association

Member, Institute of
Transportation
Engineers

Michael S. Bomba, Ph.D.

Bomba Consulting, LLC

Professional Experience

- Managing Member, Bomba Consulting, LLC, 2013-Present
- Research Associate Professor, Center for Logistics & Supply Chain Management, University of North Texas, 2016-Present
- Research Scientist and Associate Director, Center for Economic Development and Research, University of North Texas, 2013-2016
- Research Associate and Adjunct Professor, Center for Economic Development and Research, University of North Texas, 2008-2013
- Alliance Transportation Group, Inc., Senior Associate, 2007-2013
- Bomba & Associates, Inc., Principal, 2004-2007
- Research Associate, Center for Transportation Research, University of Texas at Austin, 2003-2005.
- Independent Consultant, 1998-2004
- Applied Economics Consulting Group, Inc., Data Analyst, 1999-2000
- Hicks & Company, Environmental Planner, 1994-1998

Education

- Ph.D., University of Texas at Austin, Public Policy
- M.S., University of Texas at Austin, Community and Regional Planning
- B.A., University of Texas at Austin, Economics and Government

Additional Courses

- Training on GTAP computable general equilibrium model, Purdue University, 2017.

BACKGROUND AND EXPERIENCE

Dr. Michael S. Bomba has more than 20 years of professional experience contributing to traffic & revenue studies. In a support role to the project engineers, Dr. Bomba has assessed the reasonableness of metropolitan planning organization's (MPO's) population and employment estimates and forecasts at the zonal level, adjusting them as necessary. To date, he has completed almost 50 studies and these model inputs have been used to successfully sell approximately \$8 billion of municipal bonds for green field projects, major facility upgrades, building connecting ramps, and refinancing existing municipal bonds. Toll road projects in the Austin, Texas region that have been financed and constructed using these studies include: SH 130 (Segments 1 through 4), SH 45, Loop 1 North, US 183-A, US 290 East, SH 45 Southwest, and US 183 South. Dr. Bomba's efforts have included participating in presentations to rating agencies (Moody's, S&P, and Fitch) in New York City and presentations to major institutional investors (e.g. BlackRock, PIMCO, Vanguard, etc.) in New York City, Philadelphia, and Boston.

Past projects include:

- 2020 Central Texas Regional Mobility Authority Demographic Update. 2019-2020. Central Texas Regional Mobility Authority.
- MoPac Connector Feasibility Study. 2019. Central Texas Regional Mobility Authority.
- Loop 1 North/Loop 1 South Managed Lanes. 2018-2019. Central Texas Regional Mobility Authority.
- Cibolo Parkway Project. 2018-2019. Cibolo Turnpike LP.
- U.S. 183 North Managed Lanes Investment Grade Study. 2018. Central Texas Regional Mobility Authority.
- 2017 Central Texas Turnpike Project Update (Level II study). 2017. Texas Department of Transportation.
- Cibolo Turnpike Investment Grade Study. 2017. Cibolo Turnpike L.P.
- US 290 Direct Connectors Investment Grade Study. 2016. Central Texas Regional Mobility Authority.
- LBJ East Managed Lanes Study. 2016. Texas Department of Transportation.
- 2016 CTRMA Bond Refinance. 2016. Central Texas Regional Mobility Authority.
- Commercial Truck Toll Rate Study for the Tornillo-Guadalupe Bridge. 2015. El Paso County.

Michael S. Bomba, Ph.D.

Bomba Consulting, LLC

Professional Organizations

- North American Working Group, George W. Bush Institute. Member. 2016-Present.
- North American Strategy for Competitiveness (NASCO). Board Member, 2018-Present.
- Transportation Research Board – National Research Council, National Academies – 1999-Present
Committee Memberships:
 - Agricultural and Food Transportation - AT030 (Past Member — 3 years)
 - International Trade and Transportation – AT020 (Immediate Past Chair — 6 years)
 - Freight Systems Group Executive Committee – AT000 (Member - 6 years)
 - Intermodal Freight Terminal Design and Operations – AT050 (Past Member and Secretary – 11 years)
 - Ports and Channels – AW010 (Past Member – 9 years)
- American Planning Association – 2009-2013, American Institute of Certified Planners (AICP) #24082

- US 183 South Investment Grade Traffic and Revenue Study. 2014. Central Texas Regional Mobility Authority.
- Second South Padre Island Bridge Level 2 Traffic and Revenue Study. 2014. Texas Department of Transportation.
- Loop 1604 Corridor (Bexar County) Level 2 Traffic and Revenue Study. 2014. Texas Department of Transportation.
- IH 10 Corridor (Bexar County) Level 2 Traffic and Revenue Study. 2014. Texas Department of Transportation.
- IH 35 Corridor (Bexar County) Level 2 Traffic and Revenue Study. 2014. Texas Department of Transportation.
- 2014 US 281 Toll Road Investment Grade Study. 2014. Bexar County.
- 2014 Central Texas Turnpike Project Update (Bond refinance study). 2014. Texas Department of Transportation.
- Southern Gateway Level 2 Traffic and Revenue Study. 2013-2014. Texas Department of Transportation.
- Regional Demographic Update for the North Texas Tollway Authority's Service Area. 2013. North Texas Tollway Authority.
- US 183-A Toll Road Investment Grade Study Update. 2013. Central Texas Regional Mobility Authority.
- SH 288 Level 2 Traffic and Revenue Study. 2012. Texas Turnpike Authority.
- Loop 1604/US 281 Toll Road Investment Grade Study. 2012. Alamo Regional Mobility Authority.
- 2012 Central Texas Turnpike Project Update (Bond refinance study). 2012. Texas Turnpike Authority.
- SR 125 Toll Road Evaluation Study (Border traffic study). 2011. San Diego Association of Governments.
- 2010 US 301 Toll Road Investment Grade Study Update. 2010. Delaware Department of Transportation.
- 2010 Central Texas Turnpike Project Update (Bond refinance study). 2010. Texas Turnpike Authority.
- SH 130 Truck Toll Study. 2010 (Toll rate adjustment study). Texas Turnpike Authority.
- US 290E Toll Road Investment Grade Study Update. 2010. Central Texas Regional Mobility Authority.
- US 183-A Toll Road Extension Investment Grade Study Update. 2009. Central Texas Regional Mobility Authority.

Michael W. Copeland, AICP

Tolling Feasibility

Mr. Copeland has more than 31 years of experience in transportation planning ranging from data collection and analysis to managing investment grade traffic and revenue studies for multi-billion-dollar toll road bond financing efforts. Mr. Copeland has managed a team of engineers and planners conducting a variety transportation and toll project feasibility analyses; provided on-going traffic monitoring services that included weekly, monthly, and quarterly reporting activities; conducted and managed a myriad of special studies such as alternative toll rates, congestion pricing, occupancy-based tolling, speed limit analyses, fuel-price impacts/effects, capacity and widening analyses, ramp improvement and modification analyses, economic analyses and origin/destination studies.

Project Director, NTTA System Comprehensive T&R Study. Mr. Copeland guided and directed a team of professional engineers and planners in conducting a complex T&R study. This study provided the traffic projections and the toll revenue estimates for an expanded NTTA System (five toll roads, two toll bridges, and one toll tunnel). The resulting NTTA system included adding two toll facilities that were originally constructed and operated as a separate toll road system called the Special Projects System (SPS). This T&R study supported a major bond sale to refund the SPS toll bonds and refinance NTTA System bonds. At \$2.5 billion, this bond sale was the second largest municipal bond sale in the US market in 2017.

Project Director, HCTRA Systemwide T&R Study. This comprehensive T&R study included all of the necessary steps and procedures employed to develop 40-year traffic projections and toll revenue estimates. Mr. Copeland provided senior oversight regarding all phases of the project. This study included extensive data collection as well as a detailed population and employment growth projection review, which were both conducted by independent subconsultants. The study included the development and calibration of a travel demand model based upon the H-GAC's regional travel demand model.

Project Director, OTA System Comprehensive T&R Study. Mr. Copeland provided senior guidance and oversight to the project team throughout all phase of this T&R study. Working daily with the project manager and various project team members, Mr. Copeland helped ensure that the project had the necessary resources, that the client remained informed regarding the progress of the project, and that the work being done met CDM Smith's standard T&R procedures and quality control requirements. Mr. Copeland led the effort to present the results to the client, which also included subsequent presentations to credit rating agencies in support of bond financing efforts. This also included joining the client on a multi-city investor tour, presenting the findings of the T&R study to several current and potential future toll road bond investors. The client was extremely appreciative of our efforts to support their very successful bond sale.

Project Director, PGBT-EE Investment Grade T&R Study, Texas. Mr. Copeland directed the development of traffic and toll revenue projections for a proposed 10-mile extension of the PGBT. The study consisted of analysis of existing demographic projections, proposed parallel transportation improvements and current travel demand in the project corridor.

Education

Master of City and Regional Planning, University of Texas – Arlington, 1992

BS – Environmental Design, Texas A&M University, 1986

Certifications

American Institute of Certified Planners
#018333

Years of Experience

Total: 31

CDM Smith: 10



MARK FOWLER

Director

EXPERIENCE | 16 Years

EDUCATION | BS, Physics, Bates College

BIO

Mark Fowler helps clients understand how travelers will respond to the pricing of transportation infrastructure. Mark has managed dozens of research projects focused on the behavioral response of travelers to road pricing and congestion management techniques, including toll roads and bridges, managed/HOT lanes, area/cordon pricing, congestion pricing, VMT fees, and parking fees. The results of these studies are used to support investment-grade traffic and revenue forecasts for transportation infrastructure projects across the United States and Canada. His focus includes the design and implementation of survey questionnaires as well as data collection and statistical analysis.

PROJECT EXPERIENCE

Road Pricing Studies

Virginia DOT, Elizabeth River Tunnels. Directed a stated preference survey to estimate willingness to pay for travel time savings and willingness to pay for travel time reliability of users who travel between Portsmouth and Norfolk, VA using the Downtown and/or Midtown Tunnels. The stated preference survey results supported an investment-grade traffic and revenue forecast for the facilities. (2019)

Florida's Turnpike Enterprise, Colonial Parkway, Orlando, FL. Directed a stated preference survey to understand how travelers would respond to the proposed Colonial Parkway project, a seven-mile facility along SR-50 with two toll lanes and three local travel lanes in each direction. The survey estimated travelers' value of time and propensity to use the proposed new toll lanes under various conditions. The results of the survey were used to support estimates of traffic and revenue for the corridor. (2018)

Texas Department of Transportation, Houston Grand Parkway Segments H&I, Houston, TX. Directed a stated preference survey to evaluate proposed segments H&I of the Grand Parkway, a new circumferential highway around the city of Houston, TX. The results of the survey were incorporated into the regional travel forecasting model to support estimates of traffic and revenue in the corridor. (2015)

Texas Department of Transportation, Houston SH 249, Houston, TX. Directed a stated preference survey to evaluate the proposed tolled extension of State Highway 249 Northwest of Houston, TX. The proposed facility would link Montgomery and Grimes Counties to Northwest Harris County, TX. The results of the survey were incorporated into the regional travel forecasting model to support estimates of traffic and revenue in the corridor. (2015)

Northeast Texas RMA, Tyler Toll 49, Tyler, TX. Directed a stated preference survey to evaluate the traffic and revenue potential of Toll 49, a partially completed circumferential highway around the city of Tyler, TX. The results of the survey were incorporated into the regional travel forecasting model to support estimates of traffic and revenue in the corridor. (2015)

Florida's Turnpike Enterprise, Wellness Way Parkway, Orlando, FL.

Directed a stated preference survey to evaluate the traffic and revenue potential of the Wellness Way Parkway, a proposed toll facility southwest of Orlando in Lake County, Florida. The proposed toll facility is unique in that it will be a four-lane, rural, arterial with a 55 mile per hour design speed limit and several traffic lights at intersections with roads used to access the proposed development along the corridor. The survey was used to estimate the willingness to pay for travel time savings and the willingness to pay to access proposed residential, commercial, and retail development along the corridor. Estimates of travelers' willingness to pay for travel time savings or willingness to pay to access the proposed development will be used by Florida's Turnpike Enterprise to forecast traffic and revenue in the corridor. (2014)

Florida's Turnpike Enterprise, Orlando I-4 Beyond the Ultimate, Orlando, FL.

Directed a stated preference survey to evaluate proposed express lanes in the I-4 corridor between Kirkman Road and US 27 in Polk County and between SR 434 and SR 472 in Volusia County. RSG conducted a stated preference survey in the I-4 corridor to estimate travelers' willingness to pay for travel-time savings and their propensity to use the proposed express lanes under different travel conditions. The results of the survey were used to support estimates of traffic and revenue for the proposed express lanes. (2014)

Texas Department of Transportation, Dallas/Fort Worth Regional Managed Lanes, Dallas/Fort Worth, TX.

Directed a stated preference survey for a proposed system of express lanes in the Dallas/Fort Worth region, including SH 183, SH 114, Loop 12, I-820, and I-35W. Separate values of time were estimated for each corridor by trip purpose and time of day. Estimates of values of time were used to support investment-grade traffic and revenue estimates for the proposed lanes. (2014)

North Texas Tollway Authority, Chisholm Trail Parkway, Fort Worth, TX.

Managed a stated preference survey to estimate the value of time of travelers in the Chisholm Trail Parkway corridor in the Fort Worth, TX region. The survey collected data from travelers who currently use the Chisholm Trail Parkway as well as travelers who use competing toll free routes. Estimates of values of time were used to update traffic and revenue forecasts for the newly-opened toll facility. (2014)

Mark.Fowler@rsginc.com

Yagnesh Jarmarwala, PMP, PTP

Traffic and Revenue / Tolling Feasibility

Mr. Jarmarwala is a senior transportation planner and a senior project manager with more than 15 years of experience in transportation planning and engineering. He is a PMI certified Project Management Professional (PMP) and ITE certified Professional Transportation Planner. He leads and assists many of the firm's key tolling projects, and specializes in project coordination, toll T&R studies, toll diversion modeling, travel demand modeling, risk analysis, financial analysis and computer programming. He has experience serving in project management roles for numerous toll T&R studies, as well as the development and use of computerized modeling techniques for traffic planning analysis and financial analysis. Mr. Jarmarwala has also supported several rating agency/investor/TIFIA presentations and due diligence discussions in support of project financings in more than \$8.5B in toll road financing/refinancing bonds.

Project Manager – Harris County Toll Road Authority (HCTRA) Investment Grade T&R Study. Mr. Jarmarwala serves as a project manager working with project team to develop investment grade T&R forecasts for HCTRA System. This includes review of toll violations, leakage assumptions and determine the T&R impacts of the removal of cash.

Project Manager, Midtown Express Managed Lanes TIFIA Financing Support, TxDOT, Dallas, Texas. Mr. Jarmarwala is managing TxDOT T&R program. This is one of the five work authorizations that Mr. Jarmarwala is managing under the TxDOT contract. This project is to provide assistance to TxDOT in securing financing and TIFIA loan for this project.

Project Manager, North Tarrant Expressway Segment 3A, 3B, 3C T&R in support of negotiations with private developer, TxDOT. As a project manager, Mr. Jarmarwala is responsible for managing work for Traffic Forecasting and Traffic Operations Analysis. This requires coordination with various parties and negotiations with the private developer for change orders.

Project Manager, SH 288 Managed Lanes, BCTRA, Houston, Texas. Mr. is involved with the forecasting that will support the TIFIA financing of the project.

Project Manager, TxDOT Monitoring. Mr. Jarmarwala serves as a project manager and is responsible for analyzing transaction data and preparing dashboard to present the results of actual performance data in comparison to the forecast. Review of toll rates, tag penetration, video transaction shares, truck shares, weekday transactions, peak period transactions, monthly revenues and economic factors

Project Manager, Grand Parkway SH 99 Segments E, F and G Investment Grade T&R Study, Houston, Texas. Mr. Jarmarwala serves as the project manager for the investment grade T&R study to support design build financing efforts of Grand Parkway. Mr. Jarmarwala led various sensitivity tests analysis requested by the rating agencies and preparation of the presentation to the rating agency for the financing of \$2.9B in revenue bonds. Analyzed impact of pay-by-mail implementation by TxDOT with various surcharge scenarios.

Education

MS - City and Regional Planning, University of Texas at Arlington, 2004

Diploma in Construction Technology, Construction Management, 2001

Certifications

Project Management Professional (PMP)

Geographic Information System Professional (GISP)

Years of Experience

Total Years: 17
CDM Smith: 15

Areas of Specialization

Project Management, Transportation Planning, Geographic Information System (GIS), Demographic Analysis & Statistical Analysis, Risk Analysis

Sharat K. Kalluri, PE, PTOE, PMP

Traffic Engineering/Traffic Operations

Mr. Kalluri has extensive experience in traffic engineering and transportation planning, completing assignments for both public and private clients that include conducting traffic impact studies, corridor studies, developing context sensitive solutions, pedestrian and school related studies, traffic calming, access management, and traffic simulation modeling. He has taught courses in traffic engineering and traffic/simulation modeling at the University of Connecticut.

Senior Traffic Engineer, MoPac Traffic Operations Analysis, Austin, Texas. Mr. Kalluri evaluated the traffic operational issues associated with the construction of a managed lane along the MoPac corridor. Six operational models were developed in VISSIM to evaluate the freeway merging, diverging, and weaving operations. Mr. Kalluri was involved with the operational evaluation of the MoPac/183 interchange and the MoPac South corridor. As part of this effort, he was responsible for the evaluation of a diverging diamond interchange at Slaughter Lane.

Senior Traffic Engineer, SL 1604 and US 281 Managed Lanes Study, San Antonio, Texas. Mr. Kalluri evaluated the traffic operations along Loop 1604 and US 281 corridors associated with the construction of a managed lane. A 40-mile-long VISSIM model was built for this effort.

Traffic Engineer, LBJ Freeway (I-635) Investment Grade/HOT Lanes Study, Dallas, Texas. Mr. Kalluri developed a VISSIM model to measure impacts associated with the introduction of HOV toll lanes/managed lanes between Luna Road and I-30. A comprehensive analysis was undertaken to evaluate various roadway concepts associated with the managed lanes and effect in travel speeds as a result of the managed lanes.

Rhode Island Turnpike and Bridge Authority (RITBA) On-call Services, Rhode Island. Mr. Kalluri provided traffic study services to RITBA on several tasks including serving as senior technical reviewer of the traffic operations analysis and the final report addressing safety along the Pell Bridge.

Project Manager, U.S. Route 1/CT Route 53 Intersection Improvements, Norwalk, Connecticut. Mr. Kalluri serves as the project manager for the preliminary and final design for improvements on U.S. Route 1, primarily for the addition of a left turn lane at the intersection of Route 1 and CT Route 53. The purpose of the project is to provide safety and traffic operational improvements at the intersection.

Project Manager, Traffic Diversion Plans for I-84, Routes 7 and 8, Connecticut. Mr. Kalluri was project manager on a study to develop traffic diversion plans for I-84, US Route 7, and CT Route. Tasks undertaken in this study are the development of GIS based diversion plans, stakeholder outreach, and the development of implementation guidelines for the diversion plans.

Traffic Engineer, Route 28/Route 625 Interchange Traffic Study, Virginia. Mr. Kalluri developed a NETSIM traffic flow model for the Route 28/Route 625 corridor with the help of Synchro 3.2 and ITRAF software packages to evaluate different alternatives for an interchange at the intersection of Route 28 and Route 625.

Education

MS - Transportation Engineering, University of Connecticut, 1996

BS - Civil Engineering, Regional Engineering College, Tiruchirapalli, India, 1992

Registration

Professional Engineer: Connecticut and North Carolina

Certifications

Professional Traffic Operations Engineer

Project Management Professional

Emerging Technologies

Mr. Madi has more than 16 years of experience in management consulting and transportation management. He leads CDM Smith's global technology practice. His work focuses on the planning, design, testing, evaluation, and deployment of technology. He is a nationally-recognized thought leader on emerging technologies and innovation and is leading the development of a cutting-edge, multimodal platform that will include big data capabilities and analyses in Rhode Island, Montana, Illinois, and Jordan. Marwan also serves as National Chair for the IBTTA Big Data Committee.

Administrative Project Manager, USDOT, Office of the Secretary, Smart City Challenge Truck Platooning Deployment. Mr. Madi is leading the development of a concept of operations for a truck platooning initiative (planning, design, demonstration, evaluation). in Columbus, Ohio. The City of Columbus is the winner of the USDOT and Vulcan Foundation Smart City Challenge. CDM Smith is leading the engineering firms that are supporting the Smart Columbus Program Office deploying ITS as well as the electrification projects. These deployment projects will be staged into three parts: planning, design/test, and deploy/operate. Many of these advanced transportation technologies are not COTS equipment and they will operate as a system by sharing critical information.

Task Lead, Greater Amman Municipality (GAM) Smart City Roadmap and Traffic Monitoring Platform, Amman, Jordan. Consistent with the accelerated global adoption of smart platforms and data-driven urban planning, Mr. Madi is leading and assisting GAM is preparing a strategic roadmap to define how smart city technologies can help meet the municipality's public service objectives.

Data Specialist, Montana DOT Data Architecture Plan, Montana. Mr. Madi is working with the Montana DOT to develop new protocols and architectures for sharing and receiving data with third parties including OEMs, traveler information applications, commercial vehicles, and others.

Task Lead, Illinois Tollway CV/AV Testing Guidelines, Illinois. Mr. Madi developed CV/AV Testing Guidelines for the Illinois Tollway to maximize potential benefits and minimize potential threats. Recommended strategies and implementation actions centered around 1) ensuring that CV/AV advance the Tollway Authority's multiple transportation goals and policies, including vision zero, climate pollution reduction and cleaner air, equity, physical activity, economic opportunity, great places, cost-effectiveness, mode share, and reducing vehicle mile traveled; and 2) Using a full range of tools to ensure that CV/AV and private data communications devices installed on Tollway Authority right of way contribute to achieving transportation system plan goals and policies.

Program Manager, Ohio DOT Impact Evaluation of CAV on Multimodal Transportation Systems and Infrastructure, Columbus, Ohio. Mr. Madi is leading this project that requires the framing of CAV scenarios and modeling to understand the potential impacts on travel behavior and infrastructure capacity from the implementation of new CAV technologies. CDM Smith is developing new and expanding existing planning and modeling tools to help better understand the uncertain behavioral and infrastructure impacts of emerging technologies in Ohio.

Education

MS - Transportation Systems and Public Policy, University of Texas, Austin, Texas, 2001

BE - Civil Engineering, American University of Beirut

Relevant Expertise

- Program, Project and Contract Management
- Advanced Transportation Deployment and Operations
- Program Evaluation
- Data Analytics
- Stakeholder Engagement/ Outreach/Training
- Systems Engineering
- Freight and logistics
- Transportation operations
- Public-Private Partnership
- ITS Planning, Design, Operations, Deployment
- ITS policy

Abril Estefania Matysek, EIT

Development/Economic Analysis

A recent graduate of Texas A&M, Abril Matysek joined CDM Smith, a full-service engineering and construction firm, as a transportation planner, following an internship with the Texas toll practice – one of the firm’s largest toll teams. As an EIT, she offers direct experience with transportation planning tasks such as analysis, modeling, data collection and summarization, and research specifically in the Houston, Dallas, and El Paso regions. With demonstrated leadership skills, Abril takes an active role in her community, looking for opportunities to combine her fluency in Spanish and diverse outreach abilities to advance personal and professional growth.

SH 249 Comprehensive Study, Texas DOT, Toll Operations Division, 2016-2018. Ms. Matysek provided a variety of transportation planning tasks for this study, which was part of an on-call Traffic & Revenue contract. As an active member of this project team, CDM Smith’s role includes management and coordination of all procurement related efforts for TxDOT, its consultants and partner agencies, advising TxDOT on its procurement processes and procedures, development of the procurement documents and selection criteria, support in the selection process, transition to award, and implementation.

SH 31 Traffic Analysis and Planning Study, TxDOT, 2017-2019. Ms. Matysek served as the engineer/analyst for the SH 31 study in Tyler, Texas. Such work included analyzing and summarizing traffic data, developing existing conditions balanced profiles, identifying growth trends from travel demand models and preparing a traffic projections memorandum to then perform an operations analysis for the corridor.

Horizon Boulevard (FM 1281) Corridor Master Plan, TxDOT, 2017-Present. The Horizon Boulevard Corridor Master Plan will identify current and future transportation needs along Horizon Boulevard to enhance efficiency, safety, and mobility. As part of this ongoing study, Ms. Matysek has assisted with the traffic data collection program, analyzing the traffic count data and developing an existing conditions balanced profile for the corridor to use for modeling purposes. Ms. Matysek has also been part of the public involvement process for this study.

US 67 Corridor Master Plan, TxDOT, 2017-Present. The US 67 Corridor Master Plan consists of a 142-mile stretch of US 67 from the Presidio Port of Entry to I-10 in Fort Stockton. As part of this study, Ms. Matysek has assisted by analyzing existing conditions and preparing traffic projections along the corridor. This work consisted of observing traffic conditions as well as performing a safety analysis along the corridor. Ms. Matysek has also been part of the public outreach and involvement for this study by helping create maps, presentations, and using her fluency in Spanish to better convey the project goals to the residents of the project area.

Education

BS – Civil Engineering,
Texas A&M University,
2017

Languages

Spanish

Certifications

EIT, Certificate no.
59553

Hugh W. Miller, Jr. PhD, PE

Senior Advisor

Dr. Miller has extensive experience in transportation engineering and planning, working in consulting and academic positions. His management experience ranges from project management to the supervision of large, diverse professional groups. Dr. Miller has a proven ability in marketing, sales and business development. He has a varied technical background in toll studies, travel demand modeling, traffic engineering, multimodal/corridor planning, preliminary engineering, environmental studies, and land use modeling.

Technical Expert, Manor Expressway T&R Study, Central Texas Regional Mobility Authority, Austin, Texas. Dr. Miller served as technical expert on the investment-grade traffic and revenue study for the Manor Expressway. This included a thorough review of travel demand modeling and toll revenue calculations, as well as contributions to the Traffic and Earnings Report. He made technical presentations to bond rating agencies, bond insurers and other analysts from the investment community.

Technical Reviewer, Alamo Regional Mobility Authority-Texas Turnpike Authority Division, Texas. Dr. Miller provided an independent technical review of this investment-grade traffic and revenue forecasting study for Texas Department of Transportation and the Alamo Regional Mobility Authority (ARMA). The study products included 40-year traffic and revenue estimates for an 8-mile toll road in northern San Antonio.

Quality Manager, Traffic and Revenue Services for Miami-Dade Expressway Authority (MDX), Miami-Dade County, Florida. CDM Smith has been instrumental in the implementation of the MDX All-Electronic Tolling (AET) system, SunPass® at all toll plazas. CDM Smith is also supporting financing for the first series of improvements under MDX's significant Five Year Work Program. Our team has served MDX as a General T&R consultant for several years. As part of this partnership, our firm has performed extensive traffic and revenue studies for some of MDX's most significant project work. In the early years, we conducted a T&R study that supported financing the first series of improvements in MDX's Five Year Work Program, including the implementation of MDX's all-electronic system, SunPass at all toll plazas. As quality manager, Dr. Miller is responsible for implementing requirements of CDM Smith's Quality Management System (QMS) for the work performed under this contract.

Project Manager, General Traffic and Earning's Consultant, Central Florida Expressway Authority (CFX), Orlando, Florida. Dr. Miller leads the team performing T&R studies for CFX. This work includes the preparation of an annual report with updated T&R estimates, support for project and program financing (e.g., revenue refunding bonds and TIFIA application and BANs for the Wekiva Parkway), construction and maintenance of the CFX Model v2, studies that contribute to CFX planning activities (e.g., 2040 Master Plan and the SR 408 Eastern Extension PD&E Study), review of various proposals (e.g., the developer-sponsored Marden Road Interchange and an agreement with All Aboard Florida), and review of products produced by other agencies (e.g., Osceola Parkway Extension). Contract Amount: \$1M per year.

Education

PhD and MA – City and Regional Planning, University of Pennsylvania, 1987

MS – Transportation Engineering, University of Connecticut, 1976

BS – Civil Engineering, Rensselaer Polytechnic Institute, 1972

Registration

Professional Engineer: Florida (1995), Georgia (1999), Alabama (1999), Pennsylvania (1979), and Connecticut (1977)

Naveen Mokkapati, PE

TIFIA Support/Risk Analysis

Mr. Mokkapati began his professional career in 2007 as a transportation analyst and modeler responsible for traffic and revenue research and analysis and financial feasibility studies. His experience includes working with state agencies, tollway authorities, metropolitan planning organizations, and others on projects from sketch level traffic and revenue studies to highly detailed investment grade traffic and revenue studies that are used for selling bonds.

Analyst, NTTA System Comprehensive Traffic and Toll Revenue Study. Mr. Mokkapati led the project to develop traffic and revenue estimates on NTTA System. The major responsibilities include calibration of base year model, reviewing demographic updates done by independent economist, developing traffic and revenue estimates and conducting sensitivity analysis to understand the impacts of various input assumptions.

Analyst, VMT Estimation on NTTA Facilities. Mr. Mokkapati estimated Vehicle Miles traveled (VMT) on the NTTA toll roads in Dallas-Fort Worth region. The VMT estimates are computed by creating a balanced daily traffic schematic using the transactions data on the toll gantries and traffic counts collected on non-toll ramps.

Analyst, Fort Bend County Toll Road Authority Systemwide Comprehensive Level Traffic & Toll Revenue Study. Mr. Mokkapati assisted in developing traffic and revenue estimates on Fort Bend parkway and West park toll roads. The key tasks involved reviewing the model output from future year travel demand model and estimating traffic and revenue for various alternatives using toll assignment algorithms and conducting risk modeling to understand the high and low estimates for traffic and revenue. Other responsibilities include evaluating toll sensitivity, understanding the impact of various assumptions like revenue recovery, value of time, ramp-up, revenue days, opening date, etc.

Analyst, NTTA System Investment Grade Study Update, Texas. Mr. Mokkapati assisted in reviewing and updating traffic and revenue estimates on NTTA System which includes DNT, PGBT, AATT, MCLB, LLTB, SRT, and PGBT EE. The key events considered in this updated study included impact of adoption of new mobility plan, changes to project schedule, updated stated preference survey, and revenue recovery assumptions.

Analyst, Chisholm Trail Parkway Investment Grade Study Update, Dallas, Texas. Mr. Mokkapati assisted in reviewing and updating traffic and revenue estimates on Chisholm Trail Parkway. The key changes incorporated in this updated study included adoption of mobility plan 2035, updated independent economic review, and revenue recovery assumptions.

Analyst, President George Bush Turnpike Access Ramp Alternatives, Texas. Mr. Mokkapati evaluated the traffic and revenue impacts of the proposed access ramps on PGBT under different toll alternatives. The responsibilities included forecasting the future year traffic based on CDM Smith traffic assignment model, examining the reasonableness of the projected traffic volume effects, and providing the traffic and revenue impact estimates.

Education

MS – Civil Engineering,
Texas A&M University,
2007

B. Tech – Civil
Engineering, Indian
Institute of Technology,
Madras, 2005

Registration

Professional Engineer:
Texas, 2012
(License #107570)

Years of Experience

Total Years: 13
CDM Smith: 11

TIFIA Support/Risk Analysis

Mr. Muñoz is a practice leader for Public-Private Partnerships (P3), supporting clients in navigating the complex world of P3 project delivery. He has successfully procured five P3 contracts with construction values totaling over \$8.2 billion, and four design build contracts with construction values totaling over \$5.7 billion. Mr. Muñoz has over 25 years of state government experience moving up the ranks of TxDOT.

Advisor, Alaska Department of Transportation and Public Facilities (ADOT&PF), Knik Arm Crossing Project. Mr. Muñoz provided advice to ADOT&PF on a design-build procurement and obtaining a \$350 million TIFIA loan for a \$900 million bridge project. He provided advice on the TIFIA loan process, the design-build with long-term capital maintenance procurement process including document development, negotiation and selection.

Advisor, TxDOT, Programmatic Support. Mr. Muñoz has been extensively involved over the last year with the updating of programmatic contract documents, developing guidelines and commercial and technical documents that utilizes lessons learned from previous procurements as well as experiences in other jurisdictions. Mr. Muñoz has also prepared multiple white papers to help supplement training activities for personnel who are implementing P3 and design-build contracts. Mr. Muñoz also worked on the standardization of the cost estimating process across projects through development of an Excel-based model and instruction guide for cost estimators.

Deputy Director, Innovative Financing/Debt Management Office, TxDOT, Austin, Texas. Mr. Muñoz successfully led the financing legal and technical advisory teams in the delivery of design-build and P3 projects for TxDOT's innovative project delivery program. Under his leadership, Texas successfully developed over \$13 billion in P3 and design-build projects and procured multiple alternatively delivery projects using a variety of financing mechanisms. Mr. Muñoz also led a team that secured over \$3.3 billion of TIFIA loans for 5 projects and over \$1 billion of private activity bonds (PABs) for three projects. As a leader of procurements for innovatively delivered projects, Mr. Muñoz' responsibilities included confirming the availability of federal, state and local funding needed to advance projects; reviewing and approving drafts of documents for commercial reasonableness and consistency with the direction of executive leadership.

North Tarrant Express Phase I Project. Mr. Muñoz led the procurement team that successfully procured a 52-year P3 concession project with revenue risk transfer. The project scope rebuilt 13 miles of Tarrant County's most congested highways. This project leveraged a \$573 million TxDOT investment into a \$2.05 billion project that reaches from north Fort Worth to near the DFW Airport.

Lyndon Baines Johnson (LBJ) /IH-635 Project. Mr. Muñoz led the procurement team and negotiated terms and conditions for financial and technical documents for the delivery of this P3 concession project with revenue risk transfer. The joint project with LBJ Infrastructure Group (LBJIG) leveraged a \$490 million TxDOT investment into \$2.6 billion project. The LBJ Express project rebuilds one of the busiest and most congested highways in North Texas in September 2015.

Education

BA – Business Administration, University of Texas at Austin, 1986

Certifications

Certified Public Accountant

Certified Internal Auditor

Honors/Awards

2011 Luther DeBerry Award recipient for outstanding contributions to the field of transportation in Texas presented by the Texas Transportation Institute and TxDOT

Michelle Mutch

Tolling Technology

Ms. Mutch has more than 30 years of experience in the tolling and transportation industry. Skilled in tolling customer service management and administration, she specializes in designing and implementing program improvement processes. She is an expert in toll violations and enforcement customer service centers, business rules, strategy and planning, project controls, procurement, and contract management.

Senior Business Systems Analyst, Tollplus, LLC, Plano, Texas. Ms. Mutch assisted with the development and delivery of the Tollplus back office tolling system to the North Texas Tollway Authority. She participated in the development of functional specification to align the current system with the client's business needs.

Project Manager/Business Systems Analyst, Austin, Texas. Ms. Mutch developed and implemented successful operational project offices, including nationwide call centers and tolling back office, that optimized the efficiency and effectiveness of administration of Toll operations for several toll and transportation agencies. She led the complete startup and operations of customer service centers and violation processing centers, as well as developed violation court processes, including civil and administrative hearings. She oversaw the following projects:

Contract Manager, Texas Department of Transportation Procurement Engineering. Ms. Mutch managed two, five-year contracts with a total value of \$45million, and a \$20 million general construction consultant contact. She developed and maintained project budgets, and was responsible for procurement, establishing contracts, instituting contractor procedures, and ensuring contractor contract compliance. She developed and implemented improvement processes, and led contract negotiations.

Project Manager, Statewide Customer Service Center and Toll Implementation Programs, Washington Department of Transportation and TxDOT. Ms. Mutch led the development and implementation of a new statewide customer service center and back office operations for each of the states. She focused on developing a new administrative adjudication process, and the integration of a third-party collection agency and a Lockbox service provider. She established standards and procedures, including spreadsheets and a wide variety of routine cost analyses, cash flow, and other cost-related evaluations. Ms. Mutch also assisted with the authority's customer service operations, which included developing the business requirements, customer service systems development, violation processing, and system testing. She also provided review and oversight of the functional availability and performance requirements and quality assurance and control. She developed scope, oversaw the project lifecycle, and reviewed milestones for client vendors.

Customer Service Center Manager, North Texas Tollway Authority, Plano, Texas. Ms. Mutch Managed assigned services and activities of TollTag and Violation Process and Enforcement systems, including procurement of goods, services and materials. She developed and maintained budget information, expenditure information, commitments, and forecasts into the cost reporting system(s). She also negotiated and maintained contracts for services providers. She served all TollTag and Violation customers in all service areas of customer walk-up, call center, support services, and website.

Education

High School
Diploma

Traffic Engineering/Traffic Operations

With broad experience across the U.S., Ms. Ochoa offers over 12 years of professional experience, serving in leading roles for complex projects with DOTs, toll authorities, and transit agencies. Understanding that today's challenges require data-driven, modern solutions founded on a blend of technical skill and a long-view of technology and mobility options, her work spans a wide variety of transportation planning, traffic operations, and ITS projects. Her technical skills include extensive knowledge in conducting signal timing and optimization studies, transit mobility planning and operations, traffic analysis of freeways, tolled facilities and arterial networks, traffic simulation of large networks and database management using SQL. She is proficient in Vissim, HCS, Synchro, SimTraffic, and ArcGIS. She is a previous recipient of the Institute of Transportation Engineers (ITE) Young Engineers' Award and proudly supports improving mobility options and quality of life for all transportation users.

Traffic Engineer, US 183/MoPac Interchange Study, CTRMA, Austin, Texas. This study included 12 interchanges located along 3 miles of US 183 and 6 miles on MoPac. Ms. Ochoa developed and calibrated Vissim models for existing conditions and two future scenarios that included different managed lane configurations. She also developed a database and excel spreadsheets to automate modeling output post-processing to optimize the process and provide results more efficiently.

Traffic Engineer, US 183/ SH 114 and Loop 12 Managed Lanes, TxDOT, Austin, Texas. This project is a Level 3 comprehensive traffic and revenue study for the US-183, SH-114, and Loop 12 in the Dallas-Fort Worth region. As part of this project, managed lanes are planned along 16 miles of US 183, 3 miles along Loop 12, and 11-mile SHs along 114. Ms. Ochoa assisted the project team in post processing the traffic data counts and INRIX speed data, and evaluating traffic operations of the existing corridor and the future scenarios with the implementation of the managed lanes using VISSIM.

ITS Engineer, I-35 ITS Plan, City of Austin, Texas. Ms. Ochoa was responsible for supporting the development of an ITS plan for the City of Austin, TX. This includes drafting the Goals and Objectives (G&O) for the City of Austin's ITS department, recommend projects that fulfill the proposed G&O and can be implemented in the short term.

Lead Traffic Engineer, Grand Parkway Traffic Analysis, TxDOT, Houston, Texas. When fully built, the 184-mile Grand Parkway will encircle the greater Houston metropolitan area. In addition to helping relieve traffic congestion in some of the area's fastest-growing communities, the Grand Parkway will provide additional hurricane and emergency evacuation routes. This comprehensive traffic study specifically measured the impact of the proposed alternatives to alleviate the known recurrent congestion between I-45 and Kuykendahl Road. As part of this, Ms. Ochoa led the traffic analysis of a 5-mile section of this corridor. She performed the traffic analysis in Vissim, modeling Existing, 2025 and 2035 No Build and five build scenarios in the PM peak. Ms. Ochoa also prepared the final traffic report.

Education

MS – Civil Engineering
University of Idaho, Moscow, Idaho, 2007

BS – Civil Engineering,
Universidad Nacional San Antonio Abad del Cusco, Perú, 2004

Registration

Texas EIT No. 68957

Languages

English

Spanish

Honors/Awards

ITE Amy Polk Young Engineer of the Year, 2010

Ossama Ramadan, PhD, PE, PTOE, ENV SP, PMP

Traffic Engineering/Traffic Operations

Dr. Ramadan is a project technical leader and subject matter expert for traffic engineering and transportation planning projects. He is a nationally recognized expert with a demonstrated record of publications and presentations. His 20 years of extensive and varied experience include over 12 years managing projects and leading the technical delivery. His technical areas of expertise include traffic engineering studies; traffic engineering design; traffic control design; intersection control evaluation; microscopic and mesoscopic traffic simulation modeling; work zone traffic control; data-driven highway safety; transportation performance measurement; connected vehicle (CV) data analysis; corridor and subarea planning; ITS planning; Mobility as a Service (MaaS) system planning; and sustainability rating.

Subject Matter Expert, US 183 North Mobility Project, TxDOT, Austin, Texas. Dr. Ramadan performed a Subject Matter Expert review of a traffic microsimulation model in VISSIM. He prepared a technical memorandum detailing the review method and key findings. In addition, Dr. Ramadan conducted a Subject Matter Expert review for alternative technical concepts.

Project Technical Leader, North Houston Highway Improvement Project (NHHIP) Segment 1 Traffic Engineering Study, TxDOT, Houston, Texas. Dr. Ramadan is leading the study team in conducting a traffic engineering study for a 9-mile corridor along I-45 in support of an Interstate Access Justification Report (IAJR).

Project Technical Leader, El Paso 4-Year Safety Study, TxDOT, El Paso, Texas. Dr. Ramadan is leading the study team in performing a data-driven highway safety study for the 6-county El Paso district, to identify crashes hotspots, crash types, contributing factors, and recommended improvements to address identified safety issues. In addition, Dr. Ramadan is leading the development of HSIP-compliant prioritized safety project list.

Project Technical Leader, Houston Urban Core Planning Study, TxDOT, Houston, Texas. Dr. Ramadan is leading the study team in developing, analyzing, and reporting on 25 mesoscopic traffic simulation scenarios in DynusT/DynuStudio to determine the performance/resiliency of the transportation network within the Houston urban core.

Project Technical Leader, Horizon Boulevard Corridor Planning Study, TxDOT, El Paso, Texas. Dr. Ramadan led the study team in preparing a Corridor Master Plan to determine needed improvements for a 9.42 mile section of FM 1281 between SH 20 and Ascension Street. He supervised the development of alternatives, signal warrant analysis, intersection control evaluation, and operational analysis.

Subject Matter Expert, US 67 Corridor Planning Study, TxDOT, El Paso to Odessa, Texas. Dr. Ramadan guided the development of, and reviewed, a traffic microsimulation model in CORSIM for the section of US 67 passing through Alpine, TX and a corridor-wide mesoscopic model in DynusT/DynuStudio in support of a plan to determine needed improvements for a 142-mile-long section of US 67 between the I-10 intersection near Fort Stockton and the Presidio International Bridge.

Education

PhD – Civil Engineering, University of Alabama at Birmingham, Birmingham, Alabama, 2016, GPA 4.0

MS – Civil Engineering, Carleton University, Canada, 2003

Hons BEng – Construction Engineering, Arab Academy for Science, Technology and Maritime Transport, Egypt, 1999, GPA 4.0

Registration

Professional Engineer (**PE**), Civil – Transportation: KY, LA, TX

International Professional Engineer (**IntPE**), NCEES IRPE, USA

Registered Engineer (**RE**), Civil: Egypt

Certifications

Professional Traffic Operations Engineer (**PTOE**)

Envision Sustainability Professional (**ENV SP**)

Project Management Professional (**PMP**)

Florida's Turnpike Enterprise and the Florida Department of Transportation, Turnpike Integrated Congestion Pricing Plan, Florida.

Conducted a stated preference survey for travelers in the Southwest, Central, and South Florida regions to evaluate proposed congestion pricing alternatives on Turnpike facilities. Developed and implemented a stated preference survey and estimated discrete choice models to provide estimates of values of time. Supported implementation of the survey results into the traffic and revenue forecasting model. (2013)

Florida's Turnpike Enterprise and the Florida Department of Transportation, 95 Express Phase 3 and 4, Palm Beach and Broward Counties, Florida.

Conducted a stated preference survey for travelers in Palm Beach and Broward Counties to understand travel behavior related to proposed express lanes on a 70-mile section of I-95 between Ives Dairy Road and West Indiantown Road. Developed and implemented a stated preference survey, estimated discrete choice models, and supported implementation of the survey results into the traffic and revenue forecasting model. (2013)

Florida Department of Transportation, Florida's Future Corridors – Tampa to Jacksonville, Florida.

Conducted a stated preference survey for travelers making long-distance trips in the region between Tampa, FL and Jacksonville, FL to understand travel behavior related to proposed new toll corridor between these cities. Developed and implemented a stated preference survey, synthesized the data with data from several other value-of-time studies that had been recently been conducted in Tampa, Orlando, and Jacksonville, estimated discrete choice models, and supported implementation of the survey results into the traffic and revenue forecasting model. (2013)

West Baton Rouge Parish, Louisiana Route 1 / I-10 Connector.

Conducted a stated preference survey to forecast the behavioral response of passenger and commercial vehicle travelers to a potential new 1.5-mile bypass between Louisiana Route 1 and Interstate 10 in West Baton Rouge Parish, LA. The survey data were used to estimate the value of time of travelers making trips within the corridor. The estimates of value of time were incorporated into the travel forecasting model to forecast traffic and toll revenue. (2012)

Louisiana Department of Transportation and Development, Louisiana Route 1, Port Fourchon, Louisiana.

Managed a survey effort to forecast the behavioral response of passenger and commercial vehicle travelers to potential changes to the toll structure on Louisiana Route 1 (LA1) between Golden Meadow and Port Fourchon. The survey data were used to estimate the suppression of vehicle trips on LA1 by vehicle type and trip purpose for three different toll rate increases. The estimates of trip suppression were incorporated into the travel forecasting model to forecast changes in traffic and toll revenue. (2012)

Harris County Toll Road Authority, SH 288 Managed Lanes, Houston, Texas.

Managed a stated preference survey of travelers on SH 288 south of Houston, TX to support a traffic and revenue forecast for proposed managed lanes in the corridor. (2012)

Florida's Turnpike Enterprise and the Florida Department of Transportation, South Florida Managed Lanes System, Miami-Dade and Broward Counties, Florida.

Conducted a joint stated and revealed preference survey for travelers in South Florida to understand existing

travel behavior on the I-95 Express Lanes as well as potential travel behavior related to proposed express lanes on I-75 and the Palmetto Expressway. Developed and implemented a joint stated and revealed preference survey, estimated discrete choice models, collected origin-destination data using Bluetooth scanners, and validated and calibrating the choice models using the Bluetooth origin-destination data and I-95 Express volume and toll information provided by FDOT. (2012)

Georgia Department of Transportation, Georgia Statewide Pricing Study, Georgia.

Conducted a statewide stated preference survey for automobile and commercial vehicle drivers in Georgia to evaluate behavioral response to potential future pricing projects, including the addition of express lanes to existing facilities as well as the construction of new toll roads between major population centers. RSG developed and implemented survey questionnaires for automobile and freight traffic and estimated discrete choice models to support feasibility analysis for the potential pricing projects. (2011)

North Texas Tollway Authority, System-wide Update, Dallas, Texas.

Senior technical advisor for a stated preference survey effort to support updates to the North Texas Tollway Authority's (NTTA) travel forecasting model. Recent evidence in the Dallas area suggests that actual values of time of travelers using the North NTTA system may be higher than the values that are currently used in the model. In order to verify the actual value of time, RSG conducted a computer-based origin-destination, revealed preference, and stated preference travel survey, the results of which will be used to update the system-wide travel demand model for the toll road system to forecast traffic and revenue. The survey also sought to identify factors other than travel time and toll cost that influence travelers choice of route and mode. (2011)

Harris County Toll Road Authority, Fort Bend Grand Parkway Toll Road Authority, Grand Parkway, Houston, Texas.

Managed a stated preference survey to support estimates of traffic and revenue for State Highway 99 (Grand Parkway), a proposed circumferential highway traversing seven counties and encircling the Greater Houston region over a distance of approximately 180 miles. Conducted a stated preference survey for passenger vehicles to estimate the value of travel time savings (VTTS) of travelers who are candidates for using segments D through G of the Grand Parkway. Estimates of travelers' time and cost sensitivities were used to support estimates of highway traffic and toll revenue. (2011)

Texas Department of Transportation, SH 183 Managed Lanes, Dallas, Texas.

Conducted a stated preference survey for passenger vehicle drivers to estimate values of time for the proposed addition of managed lanes along a 10 mile section of SH 183 in Dallas, TX. (2009)

Texas Department of Transportation, Tyler Loop 49, Tyler, Texas.

Supported a stated preference survey for passenger and commercial vehicle travelers to estimate values of time for a proposed 22 mile bypass that will be built South and West of Tyler, TX. (2009)

Texas Turnpike Authority, SH 161, Dallas and Tarrant Counties, Texas.

A stated preference survey of potential users of the planned extension of SH 161 south through Western Dallas County. Designed and programmed interactive geocoding section of stated preference survey for computer-based administration. Estimated discrete choice models to obtain values of time for the corridor. (2006)

Rohan Shah

Data Collection

Mr. Shah is a transportation planner, analyst, and modeler. His specific experience includes working on T&R studies for toll projects, macroscopic and microscopic travel models, managed lane studies, urban planning and environmental analysis, and transportation public policy. He offers skills in travel demand model development, calibration and validation, traffic assignment modeling, traffic microsimulation, network development, traffic surveys and counts, data analysis, and computation. Since joining the firm, he has successfully delivered client reports and products, performed presentations, conducted new research, and participated in several enterprise research and development efforts to further advance the firm's toll practice and transportation services.

Modeler, Mopac South Express Lanes Project, CTRMA, Austin. This project proposes tolled express lanes and capacity expansion to improve travel time reliability along Texas Loop 1 (MoPac) from downtown Austin to Slaughter Lane. Mr. Shah is a traffic modeler responsible for analyzing the traffic operations using VISSIM microsimulation; assisting with the demand and traffic model calibration; performing on-field surveys and collecting data; modeling and recommending design alternatives based on traffic operations and congestion patterns; and preparing client deliverables, technical memorandums and exhibits for coordination meetings and workshops with clients and project partners.

Modeler, 183 North Mobility Project, CTRMA, Austin. This project includes tolled express lanes and operations improvements on the most congested eight-mile segment of US 183 between SH 45 North and MoPac. Mr. Shah was responsible for assisting with modeling traffic operations using VISSIM microsimulation; assisting with the demand and traffic model calibration; recommending design alternatives based on traffic operations analysis and congestion patterns; computing and analyzing traffic performance metrics; data analysis; and preparing client deliverables, technical memorandums and exhibits for coordination meetings and workshops with clients and project partners.

Analyst, Tyler Toll 49 System Comprehensive (Level-3) Study, North East Texas Regional Mobility Authority and TxDOT. CDM Smith has previously conducted various T&R studies for Toll 49 and has been retained again for a 2015 Level-3 Study. Mr. Shah analyzed regional traffic count data obtained from a comprehensive ongoing data collection program for the metropolitan Tyler area. He also assisted with count data, QA/QC and management, automating Excel procedures for big data sets, tracking development of background transportation facilities in the influence region; and helping with project report schematics.

Analyst, SH 151 and I-10 East Sketch-Level Traffic and Toll Revenue Studies, TxDOT San Antonio District. CDM Smith conducted a Sketch Level-1 T&R study for proposed managed lanes along SH 151 (between Loop 1604 and US 90), and along the I-10 East corridors (from North Foster Road/I-410 to SH 130). Mr. Shah researched and summarized historical traffic trends, extracted congestion profiles, created aerial maps, and helped produce additional schematics including line diagrams and functional plans to serve as visual aids in client presentations and discussion on future traffic operations and access planning.

Education

MS – Transportation Engineering, University of Texas-Austin, 2014

B Eng – Civil Engineering, University of Mumbai, India, 2012

Certifications

MOVES for Modelers: US Environmental Protection Agency, Office of Transportation and Air Quality, Ann Arbor, MI

Introduction to ArcGIS: University of Texas 6th Annual Summer Statistics Institute 2013

Tolling Technology

Terri Slack has over 21 years of experience in the public sector, having served in leadership and executive management roles, as well as over 9 years of experience in the private sector supporting public agencies across the U.S. She has served on the Board of Directors for IBTTA, as well as serving as its Vice Chairman of Audit Committee and is a current member of the Finance Committee. She is recognized as a leader in the tolling industry with experience presenting to various professional organizations in transportation and tolling and has achieved successful bond sales resulting in excellent ratings from the Bond Rating Agencies. Ms. Slack has extensive knowledge of budgetary oversight with demonstrated experience in the implementation of organizational, process, and operational improvements, as well as experience in negotiations and management of large contracts.

Project Manager, Consulting Services Contract, Los Angeles International Airport (LAWA) for North Airfield Safety Improvement Program (NASIP). CDM Smith was engaged by LAWA to provide environmental technical and expert consulting services. Ms. Slack is responsible for oversight and successful project delivery of material in supporting LAWA for project advancement into the environmental review and entitlement processes.

Technical Support, Traffic Engineering Retainer Contract, New Jersey Turnpike Authority (NJTA), New Jersey. CDM Smith has been asked by the NJTA to provide a scope of work to determine if the current process of handling Image Tolls (iToll), Violation Tolls (vToll), and Violations can be improved. With Ms. Slack's expertise in toll operations and process improvements, she is assisting in analyzing the data to determine if and where improvements can be made. CDM Smith will prepare a "long list" of policy alternatives that could be utilized to limit the iToll, vToll, and Violations related revenue losses.

Technical Support, Traffic Engineering Annual Retainer, Illinois Tollway, Downers Grove, Illinois. CDM Smith has been asked by the Tollway to conduct an analysis of various approaches to revenue collection. Ms. Slack has knowledge and experience in assisting toll agencies in revenue collection and is overseeing the analysis being conducted to assist the Tollway in reviewing current revenue collection methods.

Technical Support, All Electronic Conversion Cost Analysis - November T&R Forecasting Services, Maryland Transportation Authority (MDTA) Toll Facilities, Maryland. Ms. Slack has extensive knowledge of budgetary oversight for toll authorities with demonstrated experience in the implementation of organizational, process, and operational improvements. She is providing technical oversight and management for the work in the All Electronic Tolling Conversion Cost Estimates.

National Toll and Finance Program Manager, Seattle, Washington. Ms. Slack was the program manager for the WSDOT General Toll Consultant (GTC) project providing a broad spectrum of management and technical services. The GTC team replicated the Toll Division with Ms. Slack serving in the leadership role supporting the WSDOT Assistant Secretary, Toll Division. Under her leadership, the various services were provided to WSDOT to complement and augment the WSDOT Toll Division to include HOV to HOT conversion program and feasibility study to replace the back-office systems and customer service center operations resulting in a client-funded \$28 million project.

Education

MBA – Southern New Hampshire University (formerly New Hampshire College), Hookset, NH, 1986

BA – Political Science, University of Pittsburgh, Pittsburgh, PA, 1982

BA – Economics, University of Pittsburgh, Pittsburgh, PA, 1982

Accounting courses – Florida Southern College, Orlando, FL, 1997-1999

Accounting courses – Florida Atlantic University, Boca Raton, FL, 1995-1996

Years of Experience

Total: 30

CDM Smith: 1+

Justin R. Winn, PE

TIFIA Support/Risk Analysis

Mr. Winn is experienced with all modern methods of toll collection, including automatic vehicle identification, video tolling, cash toll collection, as well as single point and point-to-point collection. He has been involved in the generation of T&R estimates to be used as a basis for financing toll projects, both by private entities and public agencies. He currently serves as a project manager for various ongoing toll studies, offering clients experience with modern methods of toll collection, as well as traffic and revenue estimation for financing public and private-funded toll projects. He has developed toll feasibility analyses for a variety of proposed toll facilities in Texas, Oklahoma, Louisiana, Iowa and Ohio.

Project Manager, East Texas Hourglass, Tyler/Longview Area, Texas. Mr. Winn served as project manager for traffic and revenue evaluation of the proposed East Texas Hourglass toll project connecting the Tyler and Longview metropolitan areas.

Project Manager, North Texas Tollway Authority Traffic Engineer Services. Mr. Winn is serving as project manager for on-call traffic and revenue support services including system monitoring, long-term traffic and revenue forecasts and short-term forecasts for budgeting purposes.

Project Manager, Oklahoma Turnpike Authority Traffic Engineer Services. Mr. Winn serves as project manager for on-call traffic and revenue support services including system monitoring, long-term traffic and revenue forecasts and short-term forecasts for budgeting purposes.

Project Manager, I-49 South Traffic and Revenue Study, Louisiana. Mr. Winn served as project manager for the development of preliminary traffic and revenue forecasts for the proposed I-49 South toll highway between Lafayette and New Orleans, Louisiana.

Project Manager, Ohio Toll Corridor Feasibility Assessment. Mr. Winn served as project manager for assessment of toll feasibility as a funding option for new projects in Ohio. Tasks included a review of standard practices and current experience around the country, development of a screening methodology for evaluating potential projects and completion of sketch level traffic and revenue forecasts for certain corridors.

Project Manager, Southern Dallas County Infrastructure Analysis, Texas. Mr. Winn developed assessment of existing and needed transportation infrastructure for the southern Dallas County area, including the cities of Dallas, Ferris, Hutchins, Lancaster and Wilmer.

Project Manager, SH 360 Sketch Level Traffic and Revenue Analysis, Texas. As the project manager, Mr. Winn monitored daily tasks and successfully kept the project on schedule and on budget, conducted quality assurance reviews, and developed a draft report for this sketch level traffic and revenue analysis in the Dallas/Fort Worth metropolitan area.

Project Manager, SH 170 Schematic Traffic and Sketch Level Traffic and Revenue Analysis, Texas. As the project manager, Mr. Winn monitored daily tasks and successfully kept the project on schedule and on budget, conducted quality assurance reviews, and developed a draft report.

Education

BS - Civil Engineering,
Texas A&M University,
2003

MS - Civil Engineering,
Texas A&M University,
2005

Registration

Professional Engineer:
Texas, 2011 (#108964)

Years of Experience

Total Years: 15
CDM Smith: 12

TxDOT Precertifications

1.3.1 Subarea/ Corridor
Planning

1.4.1 Land Planning/
Engineering

1.5.1 Feasibility Studies

1.6.1 Major Investment
Studies

7.1.1 Traffic Engineering
Studies

Kris N. Wuestefeld

Tolling Technology

As a CDM Smith vice president, Mr. Wuestefeld is responsible for managing the electronic toll collection (ETC), all electronic tolling (AET), electronic road pricing (ERP), and the intelligent transportation and parking systems design group. Major areas of project experience include ETC, open road tolling (ORT), and ERP system planning, evaluation, design, development of specifications, contractor selection, and implementation oversight. He is also experienced in overall contract and project management, system design documentation review, factory and field testing of systems, system implementation planning, and system performance evaluation.

Project Director, Texas Statewide Tolling Program, Texas. Mr. Wuestefeld provided managerial and technical support to the team in developing the comprehensive toll system technical provisions and other contract requirements that were used as the basis for the Comprehensive Development Agreement for the TTA statewide tolling project. Additional work activities included toll system contractor oversight, system design document review, factory and field testing, system deployment oversight, and system performance testing.

Deputy Project Director, MassDOT All Electronic Tolling System (AETS). MassDOT replaced their entire toll system with a new, state-of-the-art AET system under a design-build contract. He served as the deputy project manager for this Raytheon-lead \$130 million contract. Responsibilities included program administrative support to the Raytheon PM, coordination of the civil design effort, toll system design, development and testing work, as well as the integration with the back office system and review of the program schedule.

Project Director, Maryland Toll Facilities Electronic Toll Collection, Maryland. Mr. Wuestefeld is responsible for the system design and development of procurement documentation for the next generation ETC, ORT, and video tolling systems. His responsibilities include toll system design coordination with the authority, review and evaluation of technical and cost proposals, contract monitoring, factory and field testing, technical support of staff during system commissioning, and system performance evaluation.

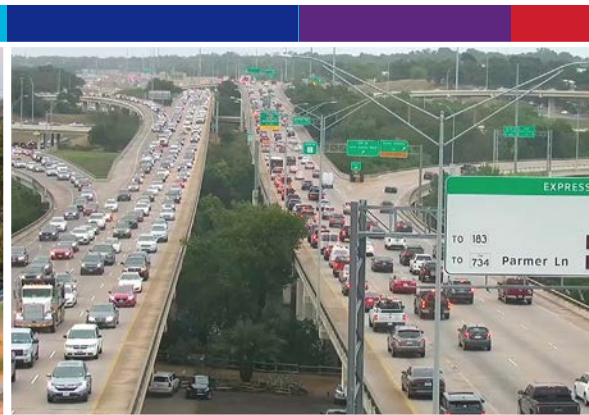
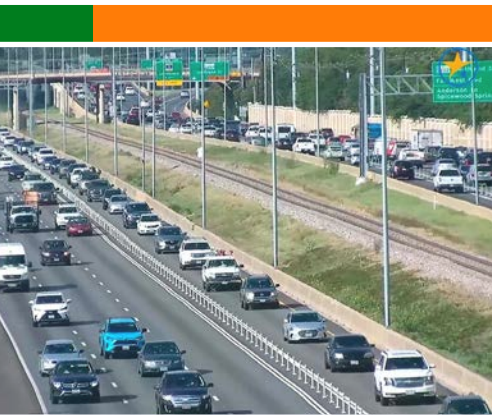
Project Director, Eastbound I-580 Express Lanes, Oakland, California. Mr. Wuestefeld provided managerial and technical support for the project's preliminary toll technology planning, system design, development of the concept of operations (including the systems engineering management plan [SEMP]), and development of the systems integrator RFP. Additional tasks included selection of the systems integrator and overseeing the contract via system design documentation review, participation in system design meetings, equipment/system testing, and system deployment oversight.

Project Director, I-680 Northbound Express High-Occupancy Toll (HOT) Lane, Alameda County, California. Mr. Wuestefeld provided managerial and technical support for the project planning, system design, development of the concept of operations and other system documents including the SEMP, and development of the procurement document. Additional work tasks included assisting in the proposal review and evaluation and selection of the electronic toll system (ETS) contractor.

Education

BA University of Connecticut, Storrs-Mansfield, 1982

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CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

September 30, 2020
AGENDA ITEM #8

Discuss and consider approving a contract with
C&M Associates, Inc. to perform traffic and
revenue engineering services

Strategic Plan Relevance: Regional Mobility
Department: Finance
Contact: Bill Chapman, Chief Financial Officer
Associated Costs: \$2,500,000 Not to Exceed
Funding Source: Various
Action Requested: Consider and act on draft resolution

Background -The Central Texas Regional Mobility Authority (the Authority) has a continuing need to monitor traffic and revenue (T&R) for its existing toll projects and for new projects. The studies the Authority receives as a result of T&R consulting services contain a variety of elements related to our toll facility's traffic and revenue including corridor travel demands, future growth characteristics, market capture and demand share. The Authority's Debt Indenture also requires T&R services. These services are used throughout the life of projects from planning, feasibility, financing, construction, and monitoring. The resulting studies vary in confidence levels from sketch level to investment grade. Investment grade studies are required for project financing.

Previous Actions/Brief History of the Project/Program - A Request for Qualifications to identify and obtain the services of a qualified engineering firm(s) to provide traffic and revenue engineering services was released on July 21, 2020. Three firms submitted responses to the RFQ. On August 26, 2020 the Board authorized the Executive Director to negotiate separate contracts for traffic and revenue engineering services with all qualified firms that submitted responses to the RFQ: C&M Associates, Inc., CDM Smith, and Stantec.

Staff Recommendation - Staff recommends approving a contract with C&M Associates, Inc. for traffic and revenue engineering services for a term of 5 years with a not to exceed cumulative payment obligation of \$2,500,000.

Funding - Funding for the traffic and revenue consulting services will come from a variety of sources including the Operating Budget and Project Funding depending on the purpose of the T&R study.

Backup Provided: Draft Contract
 Draft Resolution

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

RESOLUTION NO. 20-0XX

**APPROVING A CONTRACT WITH C&M ASSOCIATES, INC. FOR
TRAFFIC AND REVENUE ENGINEERING SERVICES**

WHEREAS, the Central Texas Regional Mobility Authority (Mobility Authority) has an ongoing need for traffic and revenue engineering services on its existing toll projects and to develop new toll projects; and

WHEREAS, by Resolution No. 20-051, dated August 29, 2020, the Board of Directors awarded a contract to C&M Associates, Inc. for traffic and revenue engineering services and authorized the Executive Director to negotiate a contract with C&M Associates, Inc.; and

WHEREAS, the Executive Director and C&M Associates, Inc. have negotiated a proposed contract for traffic and revenue engineering services in an amount not to exceed \$2,500,000 which is attached hereto as Exhibit A and sets forth the scope of services, compensation and other terms; and

WHEREAS, the Executive Director recommends that the Board approve the contract with C&M Associates, Inc. for traffic and revenue engineering services in the form or substantially the same form attached hereto as Exhibit A.

NOW THEREFORE, BE IT RESOLVED that the Board of Directors hereby approves the contract with C&M Associates, Inc. for traffic and revenue engineering services; and

BE IT FURTHER RESOLVED that the Executive Director is hereby authorized to finalize and execute the contract with C&M Associates, Inc. on behalf of the Mobility Authority 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 30th day of September 2020.

Submitted and reviewed by:

Approved:

Geoffrey Petrov, General Counsel

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

Exhibit A

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY
AGREEMENT FOR
TRAFFIC AND REVENUE ENGINEERING SERVICES

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**CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY
AGREEMENT FOR
TRAFFIC AND REVENUE ENGINEERING SERVICES**

This Professional Services Agreement (the “Agreement”) is made and entered into by and between the Central Texas Regional Mobility Authority (the “Authority” or “CTRMA”), a regional mobility authority and a political subdivision of the State of Texas, and C&M Associated, Inc (the “Consultant”) to be effective as of the 1st day of October, 2020 (the “Effective Date”) with respect to traffic and revenue engineering services to be performed by the Consultant, as an independent contractor, for the CTRMA.

WITNESSETH:

WHEREAS, pursuant to that certain Request for Qualifications dated July 22, 2020 (the “RFQ”), the CTRMA sought to identify and obtain the services of qualified engineering firm(s) to provide traffic and revenue engineering services for the CTRMA; and WHEREAS, three (3) firms submitted responses setting forth their respective qualifications for the work; and

WHEREAS, on August 26, 2020 the CTMRA Board authorized the Executive Director to negotiate separate contracts for Traffic and Revenue engineering services with each of the three (3) qualified providers; and

WHEREAS, this Agreement has been negotiated and finalized between those parties whereby the services shall be provided by the Consultant to the Authority at a fair and reasonable price;

NOW, THEREFORE, in consideration of payments hereinafter stipulated to be made to the Consultant by the Authority, the parties do hereby agree as follows:

**ARTICLE 1
THE SERVICES**

The Authority agrees to and hereby retains the Consultant, as an independent contractor, and the Consultant agrees to provide services to the Authority upon the terms and conditions provided in this Agreement. The Authority is the sole and exclusive client of the Consultant for the purposes of this Agreement, and this Agreement is exclusively between the Authority and the Consultant. The scope of services (the “Services”), which is described in detail in Appendix A attached hereto and incorporated herein, shall include, but not be limited to, rate/revenue analysis, traffic modeling, technical assistance, problem resolution assistance, project management duties, and duties imposed on the Traffic Consultant by Authority trust agreements. As directed by the Authority by separate Work Authorization, the Consultant shall perform such Services in relation to all CTRMA turnpike projects and potential projects, which may include, but are not limited to (1) the 183-A Turnpike; (2) 290 East Toll; (3) SH 71 Toll; (4) SH 45 Southwest Toll (5) 183 South Toll; and (6) 183 North Toll; (7) MoPac Express; and (8) MoPac South Toll.

The Consultant, as part of the Services, also shall assist the Authority in achieving the goals established in the CTRMA’s Strategic Plan, as adopted pursuant to Texas Transportation Code § 370.261 and as it may be amended from time to time by the CTRMA Board of Directors. For specific aspects of the Services, to the extent required by any trust agreement, the Consultant shall be expected to operate

independently from the Authority and without extensive oversight and direction. The Consultant shall commit the personnel and resources reasonably required to respond promptly and fully to the responsibilities and tasks assigned by the CTRMA throughout the term of the Consultant's performance of the Services described in this Agreement.

By written notice or order, Authority may, from time to time, order work suspension and/or make changes in the general scope of this Agreement, including, but not limited to, the services furnished to Authority by Consultant as described in the Scope of Work contained in the Work Authorization. If any such work suspension or change causes an increase or decrease in the price of said Work Authorization, or in the time required for its performance, Consultant shall promptly notify Authority thereof and assert its claim for adjustment within ten (10) calendar days after the change or work suspension is ordered, and an equitable adjustment shall be negotiated.

ARTICLE 2

“TRAFFIC CONSULTANTS” UNDER TRUST AGREEMENTS

Without limiting the provision of Article 1 above, and subject to a Work Authorization and the Work Authorization requirements found in subsection 3.b. herein, the Consultant shall perform the obligations of the “Traffic Consultants” under the Authority's current Master Trust Indenture, as amended, and, as agreed by the Parties, all supplemental, superceding, or additional trust agreements (collectively the “Trust Agreements”). The Authority has covenanted in Section 714 of the current Trust Agreement that, until the bonds issued in accordance with that Trust Agreement and the interest thereon shall have been paid or provision for such payment shall have been made, it will employ the Traffic Consultants for the purpose of performing and carrying out the duties imposed on it by the Trust Agreement. Those duties are summarized in the Scope of Services and provide a general, but not comprehensive, listing of the types of obligations the Consultant will be requested to perform under the Trust Agreements.

ARTICLE 3

COMPENSATION

Authorization for Consultant to perform the Services, compensation for Consultant's work, and other aspects of the mutual obligations concerning Consultant's work and payment therefore are as follows:

- a) Notwithstanding any provisions of this Agreement to the contrary, AUTHORITY and CONSULTANT mutually agree that AUTHORITY's maximum cumulative payment obligation (including obligation for CONSULTANT's profit) shall be Two Million, five hundred thousand and No/100 Dollars (\$2,500,000.00) which shall include all amounts payable to CONSULTANT for its subcontracts, leases, materials and costs arising from, or due to termination of this Agreement.
- b) BASIS FOR COMPENSATION. Subject to the terms of a Work Authorization issued pursuant to subsection 3.c. below, the Authority agrees to pay, and the Consultant agrees to accept as full and sufficient compensation and reimbursement for the performance of all Services as set forth in this Agreement, hourly rates for the staff working on the assignment computed as follows:

$$\text{Direct Labor Cost} \times (1.0 + \text{FAR}) \times 1.10$$

where Direct Labor Cost equals salary divided by 2080; FAR equals Consultant's most recent audited overhead rate under 48 C.F.R. Part 31, Federal Acquisition Regulations (FAR 31); and 1.10 reflects a 10 percent (10%) profit. Representative rates computed through this methodology as of the Effective Date of this Agreement are reflected in Appendix B. Rates will be revised annually to reflect adjustments to the Direct Labor Costs and audited FAR rates; no adjustment shall be made to the specified profit percentage. The first adjustment shall be considered in January 2021. All adjustments shall be agreed to by the parties prior to implementation, and the Authority shall have the right to review and/or audit Consultant's Direct Labor Costs and FAR rates upon written request and as provided in subsection (f) hereto. During the term of this Agreement Consultant shall provide to the Authority, prior to requesting any adjustment to rates, a copy of the report establishing a new FAR rate for Consultant.

The payment of the hourly rates and allowed costs shall constitute full payment for all Services, liaisons, products, materials, and equipment required to deliver the Services.

- c) **COMPENSATION FOR WORK AUTHORIZATIONS.** The Services to be performed by the Consultant pursuant to this Agreement shall be assigned by the Executive Director or designee and documented in a manner appropriate for the size and complexity of the specific tasks. Each activity, task, or project shall be performed pursuant to a separate Work Authorization, signed by the Executive Director or designee and the Consultant. Work shall be in accordance with the scope, schedule, and budget set forth in said Work Authorization. The standard form of Work Authorization is attached hereto and incorporated herein as Appendix C, which standard form may be modified during the term of this Agreement upon the reasonable request of the Executive Director or designee and agreement of the Consultant. Upon written directive from the Executive Director or designee (which may occur via electronic mail), the Consultant shall prepare the Work Authorization for the specific task, to be submitted for the Executive Director or designee's approval. No work shall begin on the activity until the Work Authorization is approved and fully executed. The basis for payment on each Work Authorization will be either (i) lump sum or (ii) hourly rate as computed pursuant to subsection 3.b. above, as stipulated in the Work Authorization. In neither case will the maximum be exceeded without prior written approval from the Authority. The costs associated with work performed on any Work Authorization will be tracked and reported to the Authority separately from other work performed by the Consultant. The monthly invoice to the Authority will include a progress summary of the work performed the previous month on each ongoing Work Authorization.
- d) **EXPENSES.** As indicated above, the compensation computed in accordance with subsections 3.b. and 3.c. is anticipated by the Authority and the Consultant to be full and sufficient compensation and reimbursement for the Services. Notwithstanding the foregoing, the Consultant shall be entitled to reimbursement for reasonable out-of-pocket expenses actually incurred by the Consultant that are necessary for the performance of its duties under this Agreement, said expenses being limited to travel costs incurred in conformance with the Authority's travel policy, printing costs, automobile expenses being reimbursed at the federal mileage rates for travel originating from the office of the applicable Consultant employee or subconsultant, application fees, delivery charges, and

other expenses directly approved, in advance, by the Authority. Except for automobile expenses paid at the federal mileage rate and travel paid at state approved rates (if available), all such reimbursement shall be at one-hundred percent (100%) of the actual cost thereof paid by the Consultant to unaffiliated entities; provided, however, that all non-travel related amounts in excess of \$2,000 for which the Consultant intends to seek reimbursement pursuant to this subsection 3.d. must be approved in advance and in writing by the Authority, except when such advance approval is impractical due to a bona fide emergency situation. The Authority shall not reimburse the Consultant for travel, lodging, and similar expenses incurred by the Consultant to bring additional staff to its local office or to otherwise reassign personnel to provide basic engineering and technical support of the Consultant's performance of the Services. The Consultant shall take all reasonable steps to acquire all goods and services subject to reimbursement by the Authority under this Agreement on a tax-free basis pursuant to the Authority's tax-exempt status described in subsection 3.i.

- e) **NON-COMPENSABLE TIME.** Time spent by the Consultant's employees or subconsultants to perform Services or functions capable of being carried out by other, subordinate personnel with a lower hourly rate shall be billed at a rate equivalent to that of the applicable qualified subordinate personnel. Time spent by the Consultant's personnel or subconsultants in an administrative or supervisory capacity not related to the performance of the Services shall not be compensable. Time spent on work that is in excess of what would reasonably be considered appropriate for the performance of such Services shall not be compensable. No compensation shall be made for revisions to the Consultant's or subconsultants' Services or deliverables required due in any way to the error, omission, or fault of the Consultant, its employees, agents, subconsultants, or contractors.

- f) **INVOICES AND RECORDS.** The Consultant shall submit two (2) copies of its monthly invoices certifying the fees charged and expenses incurred in providing the Services under this Agreement during the previous month, and shall also present a reconciliation of monthly invoices and the Work Authorization (and related estimates) to which the work relates. Each invoice shall be in such detail as is required by the Authority and, if the work is eligible for payment through a financial assistance agreement with the Texas Department of Transportation ("TxDOT"), in such detail as required by TxDOT, including a breakdown of Services provided on a project-by-project basis and/or pursuant to specified Work Authorizations, together with other Services requested by the Authority. Upon request of the Authority, the Consultant shall also submit certified time and expense records and copies of invoices that support the invoiced fees and expense figures. All invoices must be consistent with the rates represented in Appendix B, and direct labor costs for employees performing work for the Authority but not shown on Appendix B must be provided with any invoice reflecting such work. Unless waived in writing by the Executive Director or his designee, no invoice may contain, and the Authority will not be required to pay, any charge which is more than three (3) months old at the time of invoicing. All books and records relating to the Consultant's or subconsultants' time, out-of-pocket expenses, materials, or other services or deliverables invoiced to the Authority under this Agreement shall be made available during the Consultant's normal business hours to the Authority and its representatives for review, copying, and auditing throughout the term of this Agreement

and, after completion of the work, for three (3) years, or such period as is required by Texas or Federal law, whichever is longer.

- g) EFFECT OF PAYMENTS. No payment by the Authority shall relieve the Consultant of its obligation to deliver timely the Services required under this Agreement. If after approving or paying for any Service, product or other deliverable, the Authority determines that said Service, product or deliverable does not satisfy the requirements of this Agreement, the Authority may reject same and, if the Consultant fails to correct or cure same within a reasonable period of time and at no additional cost to the Authority, the Consultant shall return any compensation received therefore. In addition to all other rights provided in this Agreement, the Authority shall have the right to set off any amounts owed by the Consultant pursuant to the terms of this Agreement upon providing the Consultant prior written notice thereof.
- h) PLACE OF PAYMENT. Payments owing under this Agreement will be made by the Authority within thirty (30) days after receipt of the monthly invoice therefore, together with suitable supporting information, provided that if the payment is one eligible for reimbursement to the Authority from TxDOT, payment will be made within fifteen (15) business days of receipt by the Authority of the TxDOT payment. In the event the Authority disputes payment, the Authority will pay the undisputed portion when due. Payment shall be forwarded to the address shown for the Consultant:

Information for Payments by Wire transfer is as follows :

Beneficiary: C&M Associates Inc

JPMorgan Chase Bank, N.A

ABA# 111000614 Acct. # 742262413

- i) TAXES. All payments to be made by the Authority to the Consultant pursuant to this Agreement are inclusive of federal, state, or other taxes, if any, however designated, levied, or based. The Authority acknowledges and represents that it is a tax-exempt entity under Sections 151.309, et seq., of the Texas Tax Code. Title to any consumable items purchased by the Consultant in performing this Agreement shall be deemed to have passed to the Authority at the time the Consultant takes possession or earlier, and such consumable items shall immediately be marked, labeled, or physically identified as the property of the Authority, to the extent practicable.
- j) AS-NEEDED BASIS. As provided for above, the Authority shall request that the Consultant perform specific Services on an as-needed basis and through the issuance of Work Authorizations. No representation or assurance has been made on behalf of the Authority to the Consultant as to the total compensation to be paid to the Consultant under this Agreement.

- k) **COMPENSATION OF SUBCONSULTANTS.** As noted in the Consultant’s response to the RFQ, the Consultant will employ subconsultants providing Services under this Agreement. All subconsultants providing Services under this Agreement shall be subject to, and compensated or reimbursed in accordance with, all requirements of this Article 3, provided that each subconsultant shall utilize its own actual hourly rates (computed using its own multiplier based on actual audited FAR rates or audited overhead rates if FAR rates are not available) provided that no such rates shall exceed the corresponding rates paid by the Consultant for its personnel of comparable grade, category and experience, and further provided that no Subconsultant’s FAR rate or audited overhead rate may exceed that of the Consultant without the prior written consent of the Authority. The Consultant agrees to pay its subconsultants for satisfactory performance of their contracts no later than thirty (30) days from its receipt of payment from the CTRMA. Any delay or postponement of payment from the above referenced time frame may occur only for good cause following written approval of the CTRMA. This clause applies to payments to all subconsultants. Consultant is authorized to use those subconsultants identified in Appendix D attached hereto and incorporated herein, being those subconsultants identified in the response of Consultant to the RFQ. Additional subconsultants may only be utilized with the prior written consent of the Executive Director of the Authority.
- l) **MOST FAVORED CUSTOMER.** The Consultant shall voluntarily and promptly disclose to the Authority, and immediately provide the Authority with, the benefits of any discounted hourly fees and rates offered by the Consultant to any public entity customer in the State of Texas for comparable traffic and revenue studies. The Consultant hereby represents to the Authority, as of the effective date of this Agreement and throughout the term thereof, that except as previously disclosed in writing it has and will have no contract or arrangement with any public entity customer in the State of Texas for comparable traffic and revenue studies that provides such customer with fees, or rates that are more favorable than those afforded the Authority under this Agreement. The Consultant shall make available to the Authority for review, copying, and auditing throughout the term of this Agreement and for three (3) years or such period as is required by Texas or Federal law, whichever is longer, after the expiration thereof all such books and records as shall be necessary for the Authority or its representatives to determine compliance with this provision.

ARTICLE 4
TIME OF PERFORMANCE

It is understood and agreed that the term of this Agreement shall be a maximum of five (5) years, commencing October 1, 2020, and concluding October 1, 2025, (the “Expiration Date”) subject to the earlier termination of this Agreement pursuant to Articles 5 or 6 below or further extension upon agreement of both parties. The initial period of performance is three (3) years commencing on the Effective Date, and there shall be two (2) successive one (1) year renewal terms following the expiration of the initial three (3) year period. In addition to any termination rights set forth in this Agreement, either party may elect not to extend the term of one or both of the renewal years by providing sixty (60) days written notice to the other prior to the end of the initial term of the first renewal term. Absent such notice or termination pursuant to other provisions of this Agreement, the renewal terms will automatically take effect. If at any time during

the contract term the Consultant cannot provide the requested Services within the time required by the CTRMA or for any other reason, the Authority reserves the unilateral right to procure the Services from any other source it deems capable of providing those Services.

ARTICLE 5 TERMINATION FOR DEFAULT

Time is of the essence with respect to the performance and completion of all the Services to be furnished by the Consultant pursuant to Work Authorizations issued and which specify an agreed-upon completion or delivery date. Without limiting the foregoing, the Consultant shall furnish all Services in such a manner and at such times as the development schedules of the Projects require so that no delay in the progression of the evaluation, funding, design, or construction of the Projects will be caused by or be in any way attributable to the Consultant. Should the Consultant at any time, in the reasonable opinion of the Authority, not carry out its obligations under this Agreement or not be progressing toward completion of the Services to be rendered hereunder in an expeditious manner, or if the Consultant shall fail in any manner to discharge any other of its obligations under this Agreement, the Authority may, upon providing the Consultant with thirty (30) days prior written notice pursuant to Article 5 hereof and opportunity to cure, terminate this Agreement effective on the date following said 30-day notice and cure period (the "Termination Date"). Such termination shall not constitute a waiver or release by the Authority of any claims for damages, claims for additional costs incurred by the Authority to complete and/or correct the work described in this Agreement, or any other claims or actions arising under this Agreement or available at law or equity which it may have against the Consultant for its failure to perform satisfactorily any obligation hereunder, nor shall such termination pursuant to this Article 5 or Article 6 below abrogate or in any way affect the indemnification obligations of the Consultant set forth in Article 17 hereof.

If the Authority shall terminate this Agreement as, provided either in this Article 5 or Article 6, no fees of any type, other than fees due and payable pursuant to Article 3 hereof for work performed and acceptable to the Authority, as of the Termination Date or Optional Termination Date, as applicable, shall thereafter be paid to the Consultant, and the Authority shall have a right to set off or otherwise recover any damages incurred by reason of the Consultant's breach hereof, together with the right to set off amounts owed to the Consultant pursuant to the indemnity provisions. In determining the amount of any payments owed to the Consultant, the value of the work performed by the Consultant prior to termination shall be no greater than the value that would result by compensating the Consultant in accordance with Article 3 hereof for all Services performed and expenses reimbursable in accordance with this Agreement.

ARTICLE 6 OPTIONAL TERMINATION

In addition to the process for termination described above, this Agreement may also be terminated as follows:

- a. **GENERALLY.** The Authority has the right to terminate this Agreement at its sole option, at any time with or without cause, by providing thirty (30) days written notice of such intention to terminate pursuant to this subsection 6.a. hereof and by stating in said notice the "Optional Termination Date". Upon such termination, the Authority shall enter into a settlement with the Consultant upon an equitable basis as determined by the Authority, which shall fix the value of the work performed by the Consultant prior to the Optional Termination Date. In

determining the value of the work performed, the Authority in all events shall compensate the Consultant for any reasonable costs or expenses attributable to the exercise of the Authority's optional termination, including reasonable costs related to developing a transition plan and providing data as provided for in Article 7, provided, however, that no consideration will be given to anticipated profit which the Consultant might possibly have made on the uncompleted portion of the Services.

- b. **NO FURTHER RIGHTS, ETC.** Termination of this Agreement and payment of an amount in settlement as described in this Article 6 shall extinguish all rights, duties, obligations, and liabilities of the Authority and the Consultant under this Agreement, and this Agreement shall be of no further force and effect, provided, however, such termination shall not act to release the Consultant from liability for any previous default either under this Agreement or under any standard of conduct set by common law or statute. Requirements that survive termination are outlined in Article 35.
- c. **NO FURTHER COMPENSATION.** If the Authority shall terminate this Agreement as provided in this Article 6, no fees of any type, other than fees due and payable as of the Optional Termination Date, shall thereafter be paid to the Consultant, provided that the Authority shall not waive any right to damages incurred by reason of the Consultant's breach thereof. The Consultant shall not receive any compensation for Services performed or expenses incurred by the Consultant after the Optional Termination Date, and any such Services performed or expenses incurred shall be at the sole risk and expense of the Consultant.

ARTICLE 7 TERMINATION, GENERALLY

The Authority's rights and options to terminate this Agreement, as provided in any provision of this Agreement, shall be in addition to, and not in lieu of, any and all rights, actions, options, and privileges otherwise available under law or equity to the Authority by virtue of this Agreement or otherwise. Failure of the Authority to exercise any of its said rights, actions, options, and privileges to terminate this Agreement as provided in any provision of this Agreement or otherwise shall not be deemed a waiver of any of said rights, actions, options, or privileges or of any rights, actions, options, or privileges otherwise available under law or equity with respect to any continuing or subsequent breaches of this Agreement or of any other standard of conduct set by common law or statute.

Upon request by the Executive Director of the Authority, and subject to Article 13 hereto, The Consultant shall develop a transition plan to be implemented upon termination of this Agreement with the Consultant for any reason or upon the release of any subconsultant so as to ensure a smooth, efficient, and uninterrupted transition to any successor Consultant or subconsultant. The plan shall anticipate the steps necessary to transfer documents, computerized data, plans, work tasks, etc. in possession of or to be provided by the Consultant or its subconsultant(s), as the case may be, and include a schedule of events necessary to complete the transition. The plan should include, but not be limited to, a list of original documents/data being held on behalf of the Authority by the Consultant or its subconsultants; the manner and form in which information is being held; accessibility to the information; the Consultant's records retention policy and/or plan; and strategy to minimize disruption of Services in the event of the release of a subconsultant. A copy of the plan shall be given to the Executive Director for review and approval within

thirty (30) days of receipt of the Executive Director's request and shall be updated as necessary to reflect any changes in Consultant activity.

ARTICLE 8 SUSPENSION OR MODIFICATION OF SERVICES; DELAYS AND DAMAGES

In addition to the foregoing rights and options to terminate this Agreement, the Authority may elect to suspend any portion of the Services of the Consultant hereunder, but not terminate this Agreement, by providing the Consultant with prior written notice to that effect. Thereafter, the suspended Services may be reinstated and resumed in full force and effect upon receipt from the Authority of thirty (30) days prior written notice requesting same. Similarly, the Authority may expand, limit, or cancel any portion of the Services previously assigned to the Consultant in accordance with this Agreement. The Consultant shall not be entitled to any damages or other compensation of any form in the event that the Authority exercises its rights to suspend or modify the Services pursuant to this Article 8, provided, however, that any time limits established by the parties in any Work Authorization or otherwise for the completion of specific portions of the Services suspended pursuant to this Article 8 shall be extended to allow for said suspension or modifications thereof. Without limiting the foregoing, the Consultant agrees that no claims for damages or other compensation shall be made by the Consultant for any delays or hindrances occurring during the progress of any portion of the Services specified in this Agreement as a result of any suspension or modification of the Services or otherwise. Such delays or hindrances, if any, shall be provided for by an extension of time for such reasonable periods as the Authority may decide. It is acknowledged, however, that permitting the Consultant to proceed to complete any Services or any part of them after the originally specified date for completion, or after the date to which the time for completion may have been extended, shall in no way operate as a waiver on the part of the Authority or any of its rights herein.

ARTICLE 9 PERSONNEL, EQUIPMENT AND MATERIAL, GENERALLY

Consultant shall provide personnel and equipment as follows:

- a. **ADEQUATE PERSONNEL, ETC.** The Consultant shall furnish and maintain, at its own expense, adequate and sufficient personnel (drawn from its own employees or from approved subconsultants) and equipment, in the reasonable opinion of the Authority, to perform the Services with due and reasonable diligence customary of an engineering firm enjoying a favorable national reputation, and in all events without delays attributable to the Consultant which have a reasonable likelihood of adversely affecting the progress of others involved with one or more of the Projects or the progress of the feasibility evaluation, design or construction of any such Project. All persons, whether employees of the Consultant or of an approved subconsultant, providing the Services shall be fully licensed to the extent required by their professional discipline associations' codes or otherwise by law.
- b. **REMOVAL OF PERSONNEL.** All persons providing the Services, whether employees of the Consultant or of an approved subconsultant, shall have such knowledge and experience as will enable them, in the Consultant's reasonable belief, to perform the duties assigned to them. Any such person who, in the opinion of the Authority, is incompetent or by his/her conduct becomes detrimental to the provision of the Services shall, upon request of the Authority, immediately be removed from the Services. The Consultant shall furnish the

Authority with a fully qualified candidate for the removed person within ten (10) days thereafter, provided, however, said candidate shall not begin work under this Agreement unless and until approved by the Authority.

- c. **CONSULTANT FURNISHES EQUIPMENT, ETC.** Except as otherwise specified or agreed to by the CTRMA, the Consultant shall furnish all equipment, transportation, supplies, and materials required for its Services under this Agreement.

ARTICLE 10 KEY PERSONNEL

The Consultant acknowledges and agrees that the individual(s) identified on Appendix E attached hereto and incorporated herein are key and integral to the satisfactory performance of the Consultant under this Agreement. Throughout the term of this agreement, the Consultant agrees that the identified individual(s), whether employee(s) of the Consultant or of an approved subconsultant, will remain in charge of the performance of the Services and shall devote substantial and sufficient time and attention thereto. The death or disability of any such individual, his/her disassociation from the Consultant or the approved subconsultant, or his/her failure or inability to devote sufficient time and attention to the Services shall require the Consultant promptly to replace said individual with a person suitably qualified and otherwise acceptable to the Authority. In no event shall the Consultant remove, transfer, or reassign any individual identified on Appendix E except as instructed by, or with the prior written consent of, the Authority, which consent shall not be reasonably withheld. The Consultant shall use its best efforts to enhance continuity in the key personnel, subconsultants, and other employees regularly performing the Services. Individuals may be added to Appendix E with the mutual consent of the Consultant and the Authority.

ARTICLE 11 BUSINESS OPPORTUNITY PROGRAM AND POLICY COMPLIANCE

It is the policy of the Authority's Board of Directors that disadvantaged and small business have the maximum practicable opportunity to participate in the awarding of Authority contracts and related subcontracts. To do so the Authority has developed a Business Opportunity Program and Policy ("BOPP"), which is incorporated herein by reference for all purposes. The Authority requires contractors to comply with the BOPP. The Consultant acknowledges that certain Services to be performed under this Agreement are subcontractable and will be subcontracted in accordance with the BOPP and as represented in Consultant's proposal in response to the RFQ. Consultant agrees to submit monthly subcontracting reports as part of its monthly invoices.

ARTICLE 12 PLANNING AND PERFORMANCE REVIEWS; INSPECTIONS

As directed by the Authority, key personnel shall meet with the Authority's Executive Director and/or his designee(s) upon request (a) to assess the Consultant's progress under this Agreement and performance of the Services; and (b) to plan staffing levels to be provided by the Consultant to the Authority for the upcoming calendar year. The Consultant shall permit inspections of its Services and work by the Authority or others, when requested by the Authority. Nothing contained in this Agreement shall prevent the Authority from scheduling such other planning and performance reviews with the Consultant or inspections as the Authority determines necessary.

ARTICLE 13
OWNERSHIP OF REPORTS

Ownership of reports and related materials prepared by Consultant (or any subconsultant) at the direction of the Authority shall be as follows:

- a. **GENERALLY.** All of the documents, reports, plans, surveys, estimates, computer records, discs and tapes, proposals, sketches, diagrams, charts, calculations, correspondence, memoranda, survey notes, opinions, maps, photographs, drawings, data, analyses and other data and materials, and any part thereof, created, compiled or to be compiled by or on behalf of the Consultant solely under this Agreement (“work product”), including all information prepared for or posted on the Authority’s website and together with all materials and data furnished to it by the Authority, shall at all times be and remain the property of the Authority and, for a period of three (3) years from completion of the Services or such period as is required by law, whichever is longer, if at any time demand be made by the Authority for any of the above materials, records, and documents, whether after termination of this Agreement or otherwise, such shall be turned over to the Authority without delay. The Authority hereby grants the Consultant a revocable license to retain and utilize the foregoing materials, said license to terminate and expire upon the earlier to occur of (a) the completion of Services described in this Agreement or (b) the termination of this Agreement, at which time the Consultant shall deliver to the Authority all such materials and documents. If the Consultant or a subconsultant desires later to use any of the data generated or obtained by it in connection with the Projects or any other portion of the work product resulting from the Services, it shall secure the prior written approval of the Authority. Notwithstanding anything contained herein to the contrary, the Consultant shall have the right to retain a copy of the above materials, records, and documents for its archives.
- b. **SEPARATE ASSIGNMENT.** If for any reason the agreement of the Authority and the Consultant set forth in subsection 13.a. above regarding the ownership of work product and other materials is determined to be unenforceable, either in whole or in part, the Consultant hereby assigns and agrees to assign to the Authority all right, title, and interest that Consultant may have or at any time acquire in said work product and other materials which are prepared solely for this Agreement, without royalty, fee or other consideration of any sort, and without regard to whether this Agreement has terminated or remains in force. The Authority hereby acknowledges, however, that all documents and other work product provided by the Consultant to the Authority and resulting from the Services performed under this Agreement are intended by the Consultant solely for the use for which they were originally prepared. Notwithstanding anything contained herein to the contrary, the Consultant shall have no liability for the use by the Authority of any work product generated by the Consultant under this Agreement on any project other than for the specific purpose and Project for which the work product was prepared. Any other reuse of such work product without the prior written consent of the Consultant shall be at the sole risk of the Authority.
- c. **USE OF CONSULTANT WORK PRODUCT.** Except for final versions of reports which are prepared in connection with project financings, the Authority will provide Consultant written advance notice prior to releasing Consultant’s work product to any third party. Upon

receipt of notice, Consultant will have a reasonable amount of time to review such disclosure and provide the Authority written notice of the completion of review prior to release.

The Authority acknowledges that the Consultant's work product will be developed using data that is available at the time of the execution of a given work order, and will not constitute any guarantee or other assurance of future events. The Consultant will prepare work product using practices that are standard procedures in the industry.

ARTICLE 14 SUBLETTING

The Consultant shall not sublet, assign, or transfer any part of the work or obligations included in this Agreement without the prior written approval of the Authority, which approval shall not be reasonably withheld. Responsibility for sublet, assigned or transferred work shall remain with the Consultant.

ARTICLE 15 APPEARANCE AS WITNESS AND ATTENDANCE AT MEETINGS

Consultant shall cooperate with the Authority and requests for attendance at meetings and in various types of proceedings as follows:

- a. **WITNESS.** If requested by the Authority or on its behalf, the Consultant shall prepare such traffic engineering, feasibility, or other exhibits as may be requested for all hearings and trials related to any of the Projects, the Services, or the Authority's activities generally and, further, it shall prepare for and appear at conferences at the offices of legal counsel and shall furnish competent expert engineering witnesses to provide such oral testimony and to introduce such demonstrative evidence as may be needed throughout all trials and hearings with reference to any litigation relating to the Projects, the Services, or the Authority's activities.
- b. **MEETINGS.** At the request of the Authority, the Consultant shall provide appropriate personnel for conferences at its offices, or attend meetings and conferences at (a) the various offices of the Authority, (b) at the district headquarters or offices of TxDOT, (c) the offices of the Authority's legal counsel, bond counsel, and/or financial advisors, (d) at the site of any Project, or (e) any reasonably convenient location. Without limiting the foregoing, the Consultant shall provide personnel for periodic meetings with underwriters, rating agencies, and other parties when requested by the Authority.
- c. **WORK AUTHORIZATION.** In the event that services under this section are not covered by an existing Work Authorization, the Authority will issue a Work Authorization, pursuant to Article 3 hereto, to cover such services.

ARTICLE 16 COMPLIANCE WITH LAWS AND AUTHORITY POLICIES

The Consultant shall comply with all applicable federal, state, and local laws, statutes, ordinances, rules, regulations, codes and with the orders and decrees of any courts or administrative bodies or tribunals

in any matter affecting the performance under this Agreement, including, without limitation, workers' compensation laws, antidiscrimination laws, environmental laws, minimum and maximum salary and wage statutes and regulations, health and safety codes, licensing laws and regulations, the Authority's enabling legislation (Chapter 370 of the Texas Transportation Code), and all amendments and modifications to any of the foregoing, if any. The Consultant shall also comply with the Authority's policies and procedures related to operational and administrative matters, such as, but not limited to, security of and access to CTRMA information and facilities. When requested the Consultant shall furnish the Authority with satisfactory proof of compliance with said laws, statutes, ordinances, rules, regulations, codes, orders, and decrees above specified.

ARTICLE 17 AUTHORITY INDEMNIFIED

THE CONSULTANT SHALL INDEMNIFY AND SAVE HARMLESS THE AUTHORITY AND ITS OFFICERS, DIRECTORS, EMPLOYEES, AND AGENTS (WHICH, FOR PURPOSES OF THIS AGREEMENT, SHALL INCLUDE THE AUTHORITY'S GENERAL COUNSEL, BOND COUNSEL, AND FINANCIAL ADVISOR (S)), FROM ANY CLAIMS, COSTS OR LIABILITIES OF ANY TYPE OR NATURE AND BY OR TO ANY PERSONS WHOMSOEVER, ARISING FROM THE CONSULTANT'S NEGLIGENT ACTS, ERRORS OR OMISSIONS WITH RESPECT TO THE CONSULTANT'S PERFORMANCE OF THE WORK TO BE ACCOMPLISHED UNDER THIS AGREEMENT, WHETHER SUCH CLAIM OR LIABILITY IS BASED IN CONTRACT, TORT OR STRICT LIABILITY. IN SUCH EVENT, THE CONSULTANT SHALL ALSO INDEMNIFY AND SAVE HARMLESS THE AUTHORITY, ITS OFFICERS, DIRECTORS, EMPLOYEES, AND AGENTS (WHICH, FOR PURPOSES OF THIS AGREEMENT, SHALL INCLUDE THE AUTHORITY'S GENERAL COUNSEL, BOND COUNSEL, AND FINANCIAL ADVISOR (S)) FROM ANY AND ALL EXPENSES, INCLUDING REASONABLE ATTORNEYS' FEES, INCURRED BY THE INDEMNIFIED ENTITY (S) IN LITIGATING OR OTHERWISE RESISTING SAID CLAIMS, COSTS OR LIABILITIES. IN THE EVENT THE AUTHORITY, ITS OFFICERS, DIRECTORS, EMPLOYEES, AND AGENTS (WHICH, FOR PURPOSES OF THIS AGREEMENT, SHALL INCLUDE THE AUTHORITY'S GENERAL COUNSEL, BOND COUNSEL, AND FINANCIAL ADVISOR (S)) IS/ARE FOUND TO BE PARTIALLY AT FAULT, THE CONSULTANT SHALL, NEVERTHELESS, INDEMNIFY THE INDEMNIFIED ENTITY (S) FROM AND AGAINST THE PERCENTAGE OF NEGLIGENCE ATTRIBUTABLE TO THE CONSULTANT, ITS OFFICERS, DIRECTORS, EMPLOYEES, AGENTS, SUBCONSULTANTS, AND CONTRACTORS OR TO THEIR CONDUCT.

NOTWITHSTANDING THE FOREGOING, THE CONSULTANT SHALL NOT BE RESPONSIBLE FOR (A) CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, OR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE PROJECT UNLESS DEVELOPMENT OR OVERSIGHT OF SUCH MATTERS IS SPECIFICALLY ASSIGNED TO THE CONSULTANT; (B) THE FAILURE OF ANY CONTRACTOR, SUBCONTRACTOR, VENDOR, OR OTHER PROJECT PARTICIPANT, NOT UNDER CONTRACT TO THE CONSULTANT, TO FULFILL CONTRACTUAL RESPONSIBILITIES TO THE AUTHORITY OR TO COMPLY WITH FEDERAL, STATE OR LOCAL LAWS, REGULATIONS AND CODES; OR (C) PROCURING PERMITS, CERTIFICATES AND LICENSES REQUIRED FOR ANY CONSTRUCTION UNLESS SUCH PROCUREMENT RESPONSIBILITIES ARE SPECIFICALLY ASSIGNED TO THE CONSULTANT IN ACCORDANCE WITH THIS AGREEMENT.

**ARTICLE 18
CONFLICTS OF INTEREST**

The Consultant represents and warrants to the Authority, as of the effective date of this Agreement and throughout the term hereof, that it, its employees and subconsultants (a) have no financial or other beneficial interest in any contractor, engineer, product or service evaluated or recommended by the Consultant, except as expressly disclosed in writing to the Authority, (b) shall discharge their consulting engineering responsibilities under this Agreement professionally, impartially and independently, and after considering all relevant information related thereto, and (c) are under no contractual or other restriction or obligation, the compliance with which is inconsistent with the execution of this Agreement or the performance of their respective obligations hereunder. In the event that a firm (individually or as a member of a consortium) submits a proposal to work for the Authority, Consultant shall comply with the Authority's conflict of interest policies and shall make disclosures as if it were one of the key personnel designated under such policies.

**ARTICLE 19
INSURANCE**

Prior to beginning the Services designated in this Agreement, the Consultant shall obtain and furnish certificates to the Authority for the following minimum amounts of insurance:

- a. **WORKERS' COMPENSATION INSURANCE.** In accordance with the laws of the State of Texas, and employer's liability coverage with a limit of not less than \$500,000. A "Waiver of Subrogation" in favor of the Authority shall be provided.
- b. **COMMERCIAL GENERAL LIABILITY INSURANCE.** With limits not less than \$1,000,000 for bodily injury, including those resulting in death, and property damage on account of any one occurrence, with an aggregate limit of \$1,000,000. A "Waiver of Subrogation" in favor of the Authority shall be provided.
- c. **BUSINESS AUTOMOBILE LIABILITY INSURANCE.** Applying to owned, non-owned, and hired automobiles in an amount not less than \$1,000,000 for bodily injury, including death, to any one person, and for property damage on account of any one occurrence. This policy shall not contain any limitation with respect to a radius of operation for any vehicle covered and shall not exclude from the coverage of the policy any vehicle to be used in connection with the performance of the Consultant's obligations under this Agreement. A "Waiver of Subrogation" in favor of the Authority shall be provided.
- d. **ARCHITECTS AND/OR ENGINEERS PROFESSIONAL LIABILITY INSURANCE.** In the amounts normally carried for its own protection in the practice of providing general consulting services, but in no event less than \$3,000,000 per claim and aggregate. Coverage must be continuously maintained for a period of three (3) years beyond the Consultant's completion of the Services.
- e. **EXCESS UMBRELLA LIABILITY.** With minimum limits of \$1,000,000 per claim and in the aggregate, annually, as applicable excess of the underlying policies required at a.-d.

above. The Umbrella Policy shall contain the provision that it will continue in force as an underlying insurance in the event of exhaustion of underlying aggregate policy limits.

- f. **GENERAL FOR ALL INSURANCE.** The Consultant shall promptly, upon execution of this Agreement, furnish certificates of insurance to the Authority indicating compliance with the above requirements. Certificates shall indicate the name of the insured, the name of the insurance company, the name of the agency/agent, the policy number, the term of coverage, and the limits of coverage.

All policies are to be written through companies (a) registered to do business in the State of Texas; (b) rated: (i), with respect to the companies providing the insurance under subsections 19.a. through d., above, by A. M. Best Company as “A-X” or better (or the equivalent rating by another nationally recognized rating service) and (ii) with respect to the company providing the insurance under subsections 19.d. and e., a rating by A. M. Best Company or similar rating service satisfactory to the Authority and/or its insurance consultant; and (c) otherwise acceptable to the Authority.

All policies are to be written through companies registered to do business in the State of Texas. Such insurance shall be maintained in full force and effect during the life of this Agreement or for a longer term as may be otherwise provided for hereunder. Insurance furnished under subsections 19.b., and c., above, shall name the Authority additional insureds and shall protect the Authority, the Consultant, their officers, employees, directors, agents, and representatives from claims for damages for bodily injury and death and for damages to property arising in any manner from the negligent or willful wrongful acts or failures to act by the Consultant, its officers, employees, directors, agents, and representatives in the performance of the Services rendered under this Agreement. Applicable Certificates shall also indicate that the contractual liability assumed in Article 17, above, is included.

The insurance carrier shall include in each of the insurance policies required under subsections 19.a., b., c., d., and e., the following statement: “This policy will not be canceled or non-renewed during the period of coverage without at least thirty (30) days prior written notice addressed to the Central Texas Regional Mobility Authority, 301 Congress, Suite 650, Austin, TX 78701, Attention: Executive Director.”

ARTICLE 20 COORDINATION OF CONTRACT DOCUMENTS

The Statement of Qualifications for Traffic and Revenue Engineering Services and Appendices thereto, dated August 17, 2020, submitted by C&M Associates, Inc to the Authority (“Statement of Qualification”) is attached hereto and incorporated herein as Appendix F for all purposes, provided, however, that in the event of any conflict between said Statement of Qualifications and any other provision of, appendices or exhibits to this Agreement, the Statement of Qualifications shall be subordinate and the provision, appendices, or exhibits of this Agreement shall control.

ARTICLE 21
RELATIONSHIP BETWEEN THE PARTIES

Notwithstanding the anticipated collaboration between the parties hereto, or any other circumstances, the relationship between the Authority and the Consultant shall be one of an independent contractor. The Consultant acknowledges and agrees that neither it nor any of its employees, subconsultants, or subcontractors shall be considered an employee of the Authority for any purpose. The Consultant shall have no authority to enter into any contract binding upon the Authority, or to create any obligation on behalf of the Authority. As an independent contractor, neither the Consultant nor its employees shall be entitled to any insurance, pension, or other benefits customarily afforded to employees of the Authority. Under no circumstances shall the Consultant, or its employees, subconsultants, or subcontractors, represent to suppliers, contractors or any other parties that it is employed by the Authority or serves the Authority in any capacity other than as an independent contractor. The Consultant shall clearly inform all suppliers, contractors and others that it has no authority to bind the Authority. Nothing contained in this Agreement shall be deemed or construed to create a partnership or joint venture, to create the relationship of employee-employer or principal-agent, or to otherwise create any liability for the Authority whatsoever with respect to the liabilities, obligations or acts of the Consultant, its employees, subconsultants, or subcontractors, or any other person.

ARTICLE 22
DELIVERY OF NOTICES, ETC.

In each instance under this Agreement in which one party is required or permitted to give notice to the other, such notice shall be deemed given either (a) when delivered by hand; (b) one (1) business day after being deposited with a reputable overnight air courier service; or (c) three (3) business days after being mailed by United States mail, registered or certified mail, return receipt requested, and postage prepaid. Any notices provided under this Agreement must be sent or delivered to:

In the case of the Consultant:

C&M Associates, Inc.
15770 Dallas Parkway, Suite 870
Dallas, Texas 75248
Attn: Sam Bohluli, Vice President

In the case of the CTRMA:

Central Texas Regional Mobility Authority
3300 N. IH 35
Suite 300
Austin, TX 78705

Attn: Mike Heiligenstein, Executive Director

Either party hereto may from time to time change its address for notification purposes by giving the other party prior written notice of the new address and the date upon which it will become effective.

ARTICLE 23
REPORTS OF ACCIDENTS, ETC.

Within twenty-four (24) hours after occurrence of any accident or other event which results in, or might result in, injury to the person or property of any third person (including an employee or subconsultant or employee of a subconsultant of the Consultant) which results from or involves any action or failure to act of the Consultant or any employee, subconsultant, employee of a subconsultant, or agent of the Consultant or which arises in any manner from the performance of this Agreement, the Consultant shall send a written report of such accident or other event to the Authority, setting forth a full and concise statement of the facts pertaining thereto. The Consultant also shall immediately send the Authority a copy of any summons, subpoena, notice, or other documents served upon the Consultant, its agents, employees, subconsultants, or representatives, or received by it or them, in connection with any matter before any court arising in any manner from the Consultant's performance of the Services under this Agreement.

ARTICLE 24
AUTHORITY'S ACTS

Anything to be done under this Agreement by the Authority may be done by such persons, corporations, firms, or other entities as the Authority may designate.

ARTICLE 25
LIMITATIONS

Notwithstanding anything herein to the contrary, all covenants and obligations of the Authority under this Agreement shall be deemed to be valid covenants and obligations only to the extent authorized by Chapter 370 of the Texas Transportation Code and permitted by the laws and the Constitution of the State of Texas, and no officer, director, or employee of the Authority shall have any personal obligations or liability thereunder.

The Consultant is obligated to comply with applicable standards of professional care in the performance of the Services. The Consultant makes no other representation or warranty, whether express or implied, and no warranty or guarantee is included or intended in this Agreement or in any "work product" or otherwise.

The Consultant shall be entitled to rely, without requirement of further investigation, on all information supplied to the Consultant by the Authority, together with any other materials, such as prior reports or analyses prepared by or on behalf of or for the benefit of Authority.

Neither Authority nor the Consultant shall in any event be liable for any consequential, incidental, indirect, punitive, exemplary or special damages including, without limitation; loss of profits, business or goodwill of any kind from any causes of action (whether arising in contract, tort or otherwise) unless caused by their willful misconduct, negligent act or omission, or other wrongful conduct. Each party to this Agreement is obligated to take commercially reasonable steps to mitigate any damages that it may incur. Nothing herein shall constitute a waiver of any other defenses that either party may have at law or in equity.

ARTICLE 26
CAPTIONS NOT A PART HEREOF

The captions or subtitles of the several articles, subsections, and divisions of this Agreement are inserted only as a matter of convenience and for reference, and in no way define, limit or describe the scope of this Agreement or the scope or content of any of its articles, subsections, divisions, or other provisions.

ARTICLE 27
CONTROLLING LAW, VENUE

This Agreement shall be governed and construed in accordance with the laws of the State of Texas. The parties hereto acknowledge that venue is proper in Travis County, Texas, for all disputes arising hereunder and waive the right to sue and be sued elsewhere.

ARTICLE 28
COMPLETE AGREEMENT

This Agreement sets forth the complete agreement between the parties with respect to the Services and, except as provided for in Article 20 above, expressly supersedes all other agreements (oral or written) with respect thereto. Any changes in the character, agreement, terms and/or responsibilities of the parties hereto must be enacted through a written amendment. No amendment to this Agreement shall be of any effect unless in writing and executed by the Authority and the Consultant. This Agreement may not be orally canceled, changed, modified or amended, and no cancellation, change, modification or amendment shall be effective or binding, unless in writing and signed by the parties to this Agreement. This provision cannot be waived orally by either party.

ARTICLE 29
TIME OF ESSENCE

As set forth in Article 5, with respect to any specific delivery or performance date or other deadline provided hereunder, time is of the essence in the performance of the provisions of this Agreement. The Consultant acknowledges the importance to the Authority of the project schedule and will perform its obligations under this Agreement with all due and reasonable care and in compliance with that schedule.

ARTICLE 30
SEVERABILITY

If any provision of this Agreement, or the application thereof to any person or circumstance, is rendered or declared illegal for any reason and shall be invalid or unenforceable, the remainder of this Agreement and the application of such provision to other persons or circumstances shall not be affected thereby but shall be enforced to the greatest extent permitted by applicable law.

ARTICLE 31
AUTHORIZATION

Each party to this Agreement represents to the other that it is fully authorized to enter into this Agreement and to perform its obligations hereunder, and that no waiver, consent, approval, or authorization

from any third party is required to be obtained or made in connection with the execution, delivery, or performance of this Agreement.

**ARTICLE 32
SUCCESSORS**

This Agreement shall be binding upon and inure to the benefit of the Authority, the Consultant, and their respective heirs, executors, administrators, successors, and permitted assigns.

**ARTICLE 33
INTERPRETATION**

No provision of this Agreement shall be construed against or interpreted to the disadvantage of any party by any court, other governmental or judicial authority, or arbiter by reason of such party having or being deemed to have drafted, prepared, structured, or dictated such provision.

**ARTICLE 34
BENEFITS INURED**

This Agreement is solely for the benefit of the parties hereto and their permitted successors and assigns. Nothing contained in this Agreement is intended to, nor shall be deemed or construed to, create or confer any rights, remedies, or causes of action in or to any other persons or entities, including the public in general.

**ARTICLE 35
SURVIVAL**

The parties hereby agree that each of the provisions in the Agreement are important and material and significantly affect the successful conduct of the business of the Authority, as well as its reputation and goodwill. Any breach of the terms of this Agreement, including but not limited to the provisions of Articles 13 and 18, is a material breach of this Agreement, from which the Consultant may be enjoined and for which the Consultant also shall pay to the Authority all damages which arise from said breach. The Consultant understands and acknowledges that the Consultant's responsibilities under Articles 13, 17, 18, and all other obligations of this Agreement related to maintaining records outlined in Article 3 shall continue in full force and effect after the Consultant's contractual relationship with the Authority ends for any reason.

**ARTICLE 36
FORCE MAJEURE**

Either party shall be excused from performing its obligations under this Agreement during the time and to the extent that it is prevented from performing by an unforeseeable cause beyond its control, including but not limited to: any incidence of fire, flood; acts of God; commandeering of material, products, plants or facilities by the federal, state or local government; national fuel shortage; or a material act or omission by the other party; when satisfactory evidence of such cause is presented to the other party, and provided further that such nonperformance is unforeseeable, beyond the control and is not due to the fault or negligence of the party not performing.

IN WITNESS WHEREOF, the parties have executed this Agreement effective on the date and year first written above.

CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

C&M Associates, Inc

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

APPENDIX A

SCOPE OF SERVICES

I. Purpose

The Consultant shall be expected to support the Authority in its communications and interactions with the Authority's accountants, rating agencies, bond insurers and underwriters, governmental entities, and the public in accordance with the highest professional standards.

The Consultant shall provide qualified technical and professional personnel to perform the duties and responsibilities assigned under the terms of this Agreement. The Authority, at its option, may elect to expand, reduce, or delete the extent of each work element described in this Scope of Services document, provided such action does not alter the intent of this Agreement.

The Authority shall request Services on an as-needed basis. There is no guarantee that any or all of the Services described in this Agreement will be assigned during the term of this Agreement. Further, the Consultant is providing these Services on a nonexclusive basis. The Authority, at its option, may elect to have any of the Services set forth herein performed by other consultants or by the Authority's staff.

II. Services

The Consultant shall be responsible for conducting complex traffic modeling and forecasting, including forecasting of revenues for bond-financed toll projects, and rendering opinions and other analyses concerning traffic and revenue projections as required under the trust agreements governing CTRMA's revenue bond financing for current and future projects.

The Scope of Services to be provided by the Consultant may include, but not be limited to, the following:

- A. Perform all duties imposed on the Traffic Consultant by the Authority's current Trust Agreement, as amended, and all supplemental, superseding, or additional trust agreements, including providing certificates and opinions related to annual reviews, proposed changes in toll rate schedules or toll classifications, and periodic bond issuances.
- B. Develop traffic and revenue projections for the existing CTRMA projects annually and for proposed new projects as requested.
- C. Monitor traffic and toll revenue performance of all facilities open to traffic and respond to questions and inquiries from the Authority; develop pro forma models which would enable the estimation of traffic and toll revenue levels on these facilities on a plaza-by-plaza or gantry-by-gantry basis.
- D. Prepare evaluations, studies, and opinions as necessary to determine recommended toll rates and periodic toll rate adjustments for the Authority's turnpike projects.

- E. Provide and maintain traffic modeling tools pertinent to the CTRMA's projects and potential projects, working closely with the Capital Metropolitan Planning Organization ("CAMPO"), the Texas Department of Transportation ("TxDOT"), and other local planning organizations as necessary, to update economic, demographic, and land use data.
- F. Perform special studies or reports as requested, including peer review analyses, regarding traffic, toll revenues, mobility, toll collection methods, and strategies and related technology and industry trends.
- G. Monitor major economic and other activities which would have an effect of the Authority's traffic and toll revenue estimates; major resources that are consulted on a daily basis include local news, Internet websites, rating agency reports, and economic reports.
- H. Present reports and findings to the CTRMA Board of Directors, rating agencies and investors, local interested parties, or otherwise upon request.
- I. Work at the direction and supervision of the authority's Executive Director, Deputy Executive Director, Chief Financial Officer, and Director of Engineering. The Consultant will also be required to work cooperatively and collaboratively with other firms serving the Authority, including but not limited to the authority's General Engineering Consultant), General Counsel, financial advisors, and Bond Counsel.

III. Subcontracting

Services assigned to subconsultants must be approved in advance by the Authority. Notwithstanding said approval, all responsibility for subcontracted work shall remain strictly with the Consultant. The subconsultants must be qualified by the Authority to perform all work assigned to them.

In the event services of a subconsultant are authorized, the Consultant shall obtain a schedule of rate, and the Authority shall review and must approve, in its discretion, any rates, including overhead, to be paid to the subconsultant.

The Consultant shall be responsible for submitting monthly reports regarding its subcontracting activity including required BOPP reporting.

APPENDIX B

RATE SCHEDULE

Title	Employee Name	Base Hourly Wage Rate (A)	Overhead, G & A (B) 157.20%	Profit (C) 10%	Fully Burdened Hourly Labor Rate (Columns A+B+C)
Principal in Charge	Carlos Contreras, M.B.A.	\$ 114.53	\$ 180.05	\$ 29.46	\$ 324.04
Contract Director	Sam Bohluli, Ph.D., P.E.	\$ 101.06	\$ 158.87	\$ 25.99	\$ 285.92
Senior Advisor	Ali Soroush, Ph.D.	\$ 89.75	\$ 141.08	\$ 23.08	\$ 253.91
Senior Project Manager	Behruz Paschai, Ph.D, P.E.	\$ 74.86	\$ 117.68	\$ 19.25	\$ 211.79
Project Manager II	Chao Huang, Ph.D., P.E.	\$ 55.29	\$ 86.92	\$ 14.22	\$ 156.43
Project Manager I	Axel Herrmann, M.S.	\$ 47.26	\$ 74.29	\$ 12.16	\$ 133.71
Traffic and Revenue Modeler II	Arezoo Memarian, Ph.D., P.E.	\$ 44.13	\$ 69.37	\$ 11.35	\$ 124.85
Traffic and Revenue Modeler I	Sabrina Li, M.Eng, P.E.	\$ 40.00	\$ 62.88	\$ 10.29	\$ 113.17
Senior Modeler	Ricardo Pezo, M.S.	\$ 39.75	\$ 62.49	\$ 10.22	\$ 112.47
Data Collection Analyst	Luis Fernando Escobar B.S.	\$ 34.62	\$ 54.42	\$ 8.90	\$ 97.93
GIS Analyst	Rui Zhang, MPL	\$ 33.65	\$ 52.90	\$ 8.65	\$ 95.20
Documentation Manager	James Liddle, M.A.	\$ 32.05	\$ 50.39	\$ 8.24	\$ 90.68
Operations Simulation Analyst	Juan Pablo Zimbron, M.S.	\$ 29.81	\$ 46.86	\$ 7.67	\$ 84.33

Gram Rates

Title	Employee Name	Base Hourly Wage Rate (A)	Overhead, G & A (B) 140.00%	Profit (C) 10%	Fully Burdened Hourly Labor Rate (Columns A+B+C)
Project Manager I	Ben Flores	\$ 28.70	\$ 40.18	\$ 6.89	\$ 75.77
Quality Manager	Stacie Bittner	\$ 29.05	\$ 40.67	\$ 6.97	\$ 76.69
Admin/Clerical	Cindy Hubbard	\$ 23.50	\$ 32.90	\$ 5.64	\$ 62.04
Traffic Technician	Anthony Renteria	\$ 16.80	\$ 23.52	\$ 4.03	\$ 44.35

RSG Rates

Title	Employee Name	Base Hourly Wage Rate (A)	Overhead, G & A (B)	Profit (C)	Fully Burdened Hourly Labor Rate (Columns A+B+C)
			180.71%	10%	
Senior Advisor	Adler, Thomas J	\$ 137.41	\$ 248.31	\$ 38.57	\$ 424.30
Senior Director	Freedman, Joel	\$ 97.63	\$ 176.43	\$ 27.41	\$ 301.47
Director	Fowler, Mark D	\$ 76.87	\$ 138.91	\$ 21.58	\$ 237.35
Senior Consultant	Fessel, Florian	\$ 50.08	\$ 90.51	\$ 14.06	\$ 154.65
Consultant	Lee, Aaron P	\$ 41.08	\$ 74.24	\$ 11.53	\$ 126.85
Senior Analyst	Kelly, Megan	\$ 35.94	\$ 64.94	\$ 10.09	\$ 110.97
Analyst	Goldhammer, Claire	\$ 28.32	\$ 51.18	\$ 7.95	\$ 87.45

EPS Rates

Title	Employee Name	Base Hourly Wage Rate (A)	Overhead, G & A (B)	Profit (C)	Fully Burdened Hourly Labor Rate (Columns A+B+C)
			197.00%	10%	
Principal	David Schwartz	\$ 73.37	\$ 144.54	\$ 21.79	\$ 239.70
Managing Principal	Andrew Knudtsen	\$ 96.30	\$ 189.71	\$ 28.60	\$ 314.61
Principal	Daniel Guimond	\$ 92.54	\$ 182.30	\$ 27.48	\$ 302.33
Exec Vice President	Brian Duffany	\$ 55.29	\$ 108.92	\$ 16.42	\$ 180.63
Vice President	Matt Prosser	\$ 45.74	\$ 90.11	\$ 13.58	\$ 149.43
Vice President	Tim Morzel	\$ 44.23	\$ 87.13	\$ 13.14	\$ 144.50
Senior Associate	Rachel Shindman	\$ 38.46	\$ 75.77	\$ 11.42	\$ 125.65
Associate	Sarah Dunmire	\$ 30.29	\$ 59.67	\$ 9.00	\$ 98.96
Research Analyst 2	Adam Illig	\$ 25.48	\$ 50.20	\$ 7.57	\$ 83.24
Research Analyst 2	Carson Bryant	\$ 25.48	\$ 50.20	\$ 7.57	\$ 83.24
Support Staff	Lisa Marie Eytcheson	\$ 39.83	\$ 78.47	\$ 11.83	\$ 130.12
Support Staff	Helena Soister	\$ 31.01	\$ 61.09	\$ 9.21	\$ 101.31

CJ H rates

Turning Movement Counts		
2-hour Turning Movement Count, Major Intersection, Weekday	per intersection	405
2-hour Turning Movement Count, Major Intersection, Weekend	per intersection	425
2-hour Turning Movement Count, Minor Intersection, Weekday	per intersection	230
2-hour Turning Movement Count, Minor Intersection, Weekend	per intersection	250
13-hour Turning Movement Count Major Intersection	per intersection	1300
13-hour Turning Movement Count Minor Intersection	per intersection	750
24-Hour Video System Classification Counts - Major Intersection	per intersection	1500
24-Hour Video System Classification Counts - Minor Intersection	per intersection	1000
Intersection Turning Movement Counts - Minor (additional turning movement count hours)	per hour	200
Intersection Turning Movement Counts - Major (additional turning movement count hours)	per hour	110
Intersection Video	per day	250
24-Hour Counts		
24-Hour Automated Tube Counts - Volume	per direction/per counter/day	180
24-Hour Automated Tube Counts - Speed or Class	per direction/per counter/day	275
24-Hour Volume Mainlane Video/Radar Count	per lane/day	175
24-Hour 3 Vehicle Classification Main Lane Count	per lane/day	250
24-Hour 13 Vehicle Classification Main Lane Count	per lane/day	360
Additional Traffic Control (no lane closures/detour)	day	1500
Additional Traffic Control (lane closures/detour)	day	2500
Speed Surveys		
Curve Speed Survey	per curve	500
Spot Speed Survey	per location	210
Travel Times		
Travel Time Runs in DMI-Equipped Vehicle (Includes labor and mileage on site; processing labor not included)	hour	210
Travel Time- MAC Address Capture	per hour/unit	90
Origin Destination		
72-Hour Bluetooth O/D Main Lane	per unit	1100
72-Hour Bluetooth O/D Arterial	per unit	550

APPENDIX C

**WORK AUTHORIZATION
(WORK AUTHORIZATION NO. _____)**

This Work Authorization is made as of this ____ day of _____, _____, under the terms and conditions established in the AGREEMENT FOR TRAFFIC AND REVENUE ENGINEERING SERVICES, dated as of _____, _____ (the “Agreement”), between the Central Texas Regional Mobility Authority (“Authority”), represented by the Executive Director or designee, and _____ (“Consultants”). This Work Authorization is made for the following purpose, consistent with the services defined in the Agreement:

[Brief description of the Project elements to which this Work Authorization applies]

Section A. – Scope of Services

A.1. Consultant shall perform the following Services:

Refer to attached scope letter.

A.2. The following Services are not included in this Work Authorization, but shall be provided as Additional Services if authorized or confirmed in writing by the Executive Director or designee.

A.3. In conjunction with the performance of the foregoing Services, Consultant shall provide the following submittals/deliverables (Documents) to the Executive Director or designee: To be determined.

Section B. – Schedule

Consultant shall perform the Services and deliver the related Documents (if any) according to the following schedule: To be determined.

Section C. – Compensation

C.1. In return for the performance of the foregoing obligations, the Authority shall pay to Consultant the amount not to exceed \$_____, based on the attached fee estimate. Compensation shall be in accordance with the Agreement.

C.2. Compensation for Additional Services (if any) shall be paid by the Authority to Consultant according to the terms of a future Contract Amendment.

Section D. – Authority’s Responsibilities

The Authority shall perform and/or provide the following in a timely manner so as not to delay the Services of the Consultant. Unless otherwise provided in this Work Authorization, the Authority shall bear all costs incident to compliance with the following:

Section E. – Other Provisions

The parties agree to the following provisions with respect to this specific Work Authorization:

Except to the extent expressly modified herein, all terms and conditions of the Agreement shall continue in full force and effect.

AUTHORITY:

CONSULTANT:

CENTRAL TEXAS REGIONAL

C&M Associates, Inc.

MOBILITY AUTHORITY

By: _____

By: _____

Name: _____

Name: _____

Title: _____

Title: _____

Date: _____

Date: _____

APPENDIX D

SUBCONSULTANTS

Economic and Planning Systems, Inc.

730 17th St., Suite 630
Denver, Colorado 80202
David Schwartz M.C.R.P.
dschwartz@epsdenver.com
(303) 929-0931

Resource Systems Group, Inc.

180 Battery St., Suite 350
Burlington, Vermont 05401
Mark Fowler B.S.
mark.fowler@rsginc.com
(802) 345-5750

C J Hensch & Associates, Inc.

5215 Sycamore Avenue
Pasadena, TX 77503
Roger Allen, B.S.
rogerallen@cjhensch.com
(713) 376-1453

GRAM Traffic Counting, Inc.

3751 FM 1105, Building A
Georgetown, TX 78626
Ben Flores, B.A.
(512) 659-0438

APPENDIX E

KEY PERSONNEL

Title	Employee Name
Principal in Charge	Carlos Contreras, M.B.A.
Contract Director	Sam Bohluli, Ph.D., P.E.
Senior Advisor	Ali Soroush, Ph.D.
Project Manager I	Axel Herrmann, M.S.
Traffic and Revenue Modeler II	Arezoo Memarian, Ph.D., P.E.
Traffic and Revenue Modeler I	Sabrina Li, M.Eng, P.E.
Senior Modeler	Ricardo Pezo, M.S.
Data Collection Analyst	Luis Fernando Escobar B.S.
Documentation Manager	James Liddle, M.A.

APPENDIX F

CONSULTANT STATEMENT OF QUALIFICATION



Traffic and Revenue
Engineering Services

Statement of Qualifications

Submitted by: 
C&M Associates, Inc.

Submitted to: 
CENTRAL TEXAS
Regional Mobility Authority

August 17, 2020

This proposal has been formatted for double-sided printing.

Cover page images were obtained from the following sources:

Jay Janner, Austin American-Statesman: <https://www.statesman.com/news/20190426/after-long-winding-road-texas-45-southwest-set-to-open>

Laura Skelding, Austin American-Statesman (via Stephenville Empire-Tribune): <https://www.yourstephenvilletx.com/news/20191029/ctrma-to-consider-adding-bastrop-hays-counties-to-regional-transportation-board>



C&M Associates, Inc.

15770 North Dallas Parkway, Suite 870
Dallas, TX 75248
Tel: 214-245-5300
www.candm-associates.com

Cover Letter

Date: August 17, 2020

To: William Chapman
Central Texas Regional Mobility Authority
3300 N IH 35 Suite 300
Austin, TX 78705

Subject: **Central Texas Regional Mobility Authority – Traffic and Revenue Engineering Services
Statement of Qualifications**

Dear Mr. Chapman,

C&M Associates, Inc. (C&M) is pleased to submit this response to the Central Texas Regional Mobility Authority's (CTRMA) Request for Qualifications to provide Traffic and Revenue (T&R) Engineering Services.

C&M is a Texas-based corporation founded by local investors and Cal y Mayor y Asociados, S.C., a premier Latin-American engineering firm with offices and operations in 13 countries. C&M specializes in T&R studies of toll facilities and has completed over 100 T&R studies since 2004, including over 30 Investment Grade T&R studies that have supported \$18 billion in debt plus equity in U.S. and international financial markets.

We have carefully reviewed the RFQ issued on July 20, 2020 and have responded with the assurance that our experience and qualifications fully meet the CTRMA's needs. We have provided a Proposal Criteria Checklist on the next page for the CTRMA's convenience that summarizes how C&M's response meets the criteria outlined in the RFQ.

We greatly appreciate the opportunity to submit this response. Please feel free to contact me with any questions you may have.

Respectfully,

A handwritten signature in black ink, appearing to read "Carlos M. Contreras", with a long horizontal stroke extending to the right.

Carlos M. Contreras, M.B.A.

President

(916) 760-7418 x405

cmcontreras@candm-associates.com

Table 1. Response Criteria Checklist

Criteria	Summary
Demonstrated Competence	<p>As presented in B. Forecasting Experience (p. 2), working for toll authorities in Texas, C&M has provided T&R consulting services to the CTRMA, the Texas Department of Transportation (TxDOT), the North Texas Tollway Authority (NTTA), the Cameron County Regional Mobility Authority (CCRMA), and the Hidalgo County Regional Mobility Authority (HCRMA). Our proposed Project Manager, Axel Herrmann, has recently led investment grade studies for the proposed 365 TOLL road on behalf of the HCRMA, the Donna International Bridge in Donna, TX and the Laredo 4-5 International Bridge in Laredo, TX.</p> <p>Throughout its experience performing T&R Consulting Services, the C&M staff has demonstrated its capability to perform every aspect of the T&R Engineering process—from data collection and survey design to traffic modeling, economic forecasting and the creation, delivery presentation and support of its T&R projections at high level of reliability and quality. C&M has a proven history of providing reliable traffic forecasts for Greenfield and Brownfield projects, for individual toll facilities, and for toll systems working closely with different agents involved in the successful placement of bonds or loan syndications.</p>
Experience	<p>C&M has 16 years of experience conducting T&R studies in Texas and throughout the U.S. and Latin America, comprising over 100 T&R studies (summarized in Figure 1) and over 30 investment grade studies that have supported \$18 billion in debt plus equity in U.S. and international financial markets.</p> <p>C&M’s T&R experience is presented in more detail in sections B. Forecasting Experience, C. Traffic and Revenue Engineering Experience under Trust Indentures, D. Modeling Experience, and Section III – Experience (pp. 12–14)</p>
Knowledge	<p>As described in E. Evaluations, Opinions, and Other Toll-Related Studies, C&M has developed a state-of-the-practice forecast analysis technique to evaluate and assess the expected probability of a project achieving its forecasted T&R.</p> <p>Additionally, C&M has the unique experience of both helping clients obtain financing and helping USDOT assess the risk of providing such financing through the Infrastructure Finance and Innovation Act (TIFIA). These has given C&M outside and inside perspectives of TIFIA-related requirements, sensitivity testing, and risk analysis.</p> <p>C&M has also developed a framework to analyze the effects of the COVID-19 pandemic on T&R forecasts. The framework includes close monitoring of observed traffic trends around the country and its relationship to epidemiological/health developments and economic stimulus responses. Working for clients around the country, C&M has developed estimates regarding the depth of T&R reductions, their duration, and expected recoveries under various scenarios. As part of this work, C&M has developed an understanding of how tolled facilities—even within the same regional network—have uniquely reacted to the pandemic.</p>
Firm Resources	<p>C&M has the largest team of T&R professionals based in Texas. The experienced personnel available for this contract are presented in the Organizational Chart (p. 10) and the Summary of Personnel Committed for Availability to the CTRMA (p. 11), with professional resumes of key personnel provided in Appendix A.</p>
HUB/DBE Participation	<p>As summarized in Section IV (p. 15), C&M is a certified DBE in Texas; Additionally, the C&M Team proposed for this contract includes firms C J Hensch & Associates, Inc., and GRAM Traffic Counting, Inc., which are both woman-owned Texas-certified DBEs and HUBs.</p>

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SECTION I: C&M ASSOCIATES, INC.



C&M Associates, Inc. (C&M) was founded in 2004 by Carlos M. Contreras and Cal y Mayor y Asociados, S.C., a major provider of international Traffic and Revenue (T&R) services.

Headquartered in Dallas, TX, C&M's primary area of expertise is in T&R studies for tolled facilities, having completed **over 100 T&R forecasting studies**, including **over 30 investment grade T&R studies** that have supported **\$18 billion** in debt plus equity in U.S. and international financial markets. C&M's expertise includes the following:

Excellent Forecasted vs. Actual Traffic Record

C&M has a proven history of providing **reliable traffic forecasts** for Greenfield and Brownfield projects, for individual toll facilities, and for toll systems.

C&M works closely with different agents involved in the successful placement of bonds or loan syndications. These agents include **underwriting institutions, rating agencies, and credit enhancers, among others.**

Financial Community Experience

Electronic Toll Collection Expertise

C&M has produced roughly 70 T&R studies that have **electronic toll collection** as the primary toll collection mechanism, the majority of which are for **all-electronic tolling.**

C&M has experience in the complex **microscopic simulation** of transportation projects for studying the efficiency of operations and for presentation purposes.

Toll Facility Microsimulation

Managed Lanes Experience

C&M has ample experience with **managed lane projects** in Texas, Virginia, Florida, Colorado, and Georgia, for both private and public entities. Recent managed lane projects include I-66 HOT lanes in VA, I-77 managed lanes in NC, and SH 288 managed lanes in TX.

C&M has developed a **state-of-the-practice forecast analysis technique** to assess the expected probability of a project achieving its forecasted T&R. This methodology incorporates feedback from underwriters, credit enhancers, commercial banks, and rating agencies in the United States, Latin America, and Europe.

T&R Risk Analysis

Public-Private Project Experience

C&M has analyzed the feasibility of toll road projects involving **financing from public, private, and hybrid sources** for turnpike authorities, private developers, and concessionaires at all levels.

Just as technology affects NTTA's business, so too has it affected T&R forecasting. In recent years, C&M has successfully implemented **machine learning** techniques involving **neural networks** to forecast toll road traffic on the Chisholm Trail Parkway. Combined with traditional T&R techniques, machine learning can **improve the reliability of short-term forecasts** in the budgeting process.

Using the Latest Technology

Prepared for the Future

As a young and dynamic firm, C&M is energized by the innovations and changes coming to the toll industry. The advent of **autonomous and connected vehicles** will change the behavior of CTRMA toll road users. C&M's proposed Principal in Charge, Carlos Contreras, has engaged with rating agencies on the effect these changes will have on toll road capacity, travel demand, and toll road users' value of time. C&M's proposed Project Director, Sam Bohluli, has considered these changes in previous T&R forecasts and can answer rating agency questions on these impacts.

A. Capabilities of Principal Assigned Office

The principal office responsible for performing CTRMA work is C&M's headquarters in Dallas, TX. This office has 16 full-time personnel dedicated exclusively to T&R consulting services. The personnel proposed for the CTRMA contract include: **Carlos Contreras, MBA** (President/Principal-in-Charge), **Shahram Bohluli, PE, PhD** (Project Director), and **Axel Herrmann, Dipl.-Eng.** (Project Manager). Axel will be supported by the seasoned staff presented in Table 2.

Table 2. Principal Office Personnel Assigned to CTRMA Work

Name, Title	Role	Year of Experience
Carlos M. Contreras, MBA – President	Principal in Charge	25
Sam Bohluli, PhD, PE – Vice President	Contract Director	20
Axel Herrmann, MS – Principal Transportation Planner	Project Manager	15
Ricardo Pezo, MS – Senior Transportation System Modeler	Senior Modeler	19
Arezo Memarian, PhD, PE – Senior Transportation System Modeler	Traffic and Revenue Modeler	12
Sabrina Li, MEng, PE – Transportation System Modeler	Traffic and Revenue Modeler	8
Juan Pablo Zimbron, MS – Transportation Engineer	Operations Simulation	7
Luis Fernando Escobar, B.A. – Transportation Engineer	Data Collection Analysis	16
Rui Zhang, MPL – Analyst	GIS Analyst	2
James Liddle, MA – Technical Writer/Document Control	Documentation Manager	5

B. Forecasting Experience

C&M has successfully completed **over 100 T&R studies**, (see Figure 1), with a combined total of \$18 billion in bonds and loans backed by C&M's 30+ Investment Grade T&R studies in the U.S. and Latin America.

Working for toll authorities in Texas, C&M has provided T&R consulting services to the **CTRMA**, the Texas Department of Transportation (**TxDOT**), the North Texas Tollway Authority (**NTTA**), the Cameron County Regional Mobility Authority (**CCRMA**), and the Hidalgo County Regional Mobility Authority (**HCRMA**). Our proposed Project Manager has recently led investment grade studies for the proposed **365 TOLL** road on behalf of the HCRMA, the **Donna International Bridge** in Donna, TX and the **Laredo 4-5 International Bridge** in Laredo, TX.

C&M's reputation and forecast reliability has made it one of the few firms in the U.S. and Latin America recognized by the transportation and financial communities as an investment grade T&R consultant.

C&M has provided T&R analyses to numerous public and private entities and has supported the successful financing of many infrastructure projects. C&M's extensive experience includes: executing tasks as delineated by Trust agreements, preparing T&R projections at various levels, studying proposed plans (e.g., toll plans, changes in operational procedures), developing and maintaining travel demand models, interacting with and peer-reviewing other involved agents, and preparing and presenting official reports financiers and governing bodies.

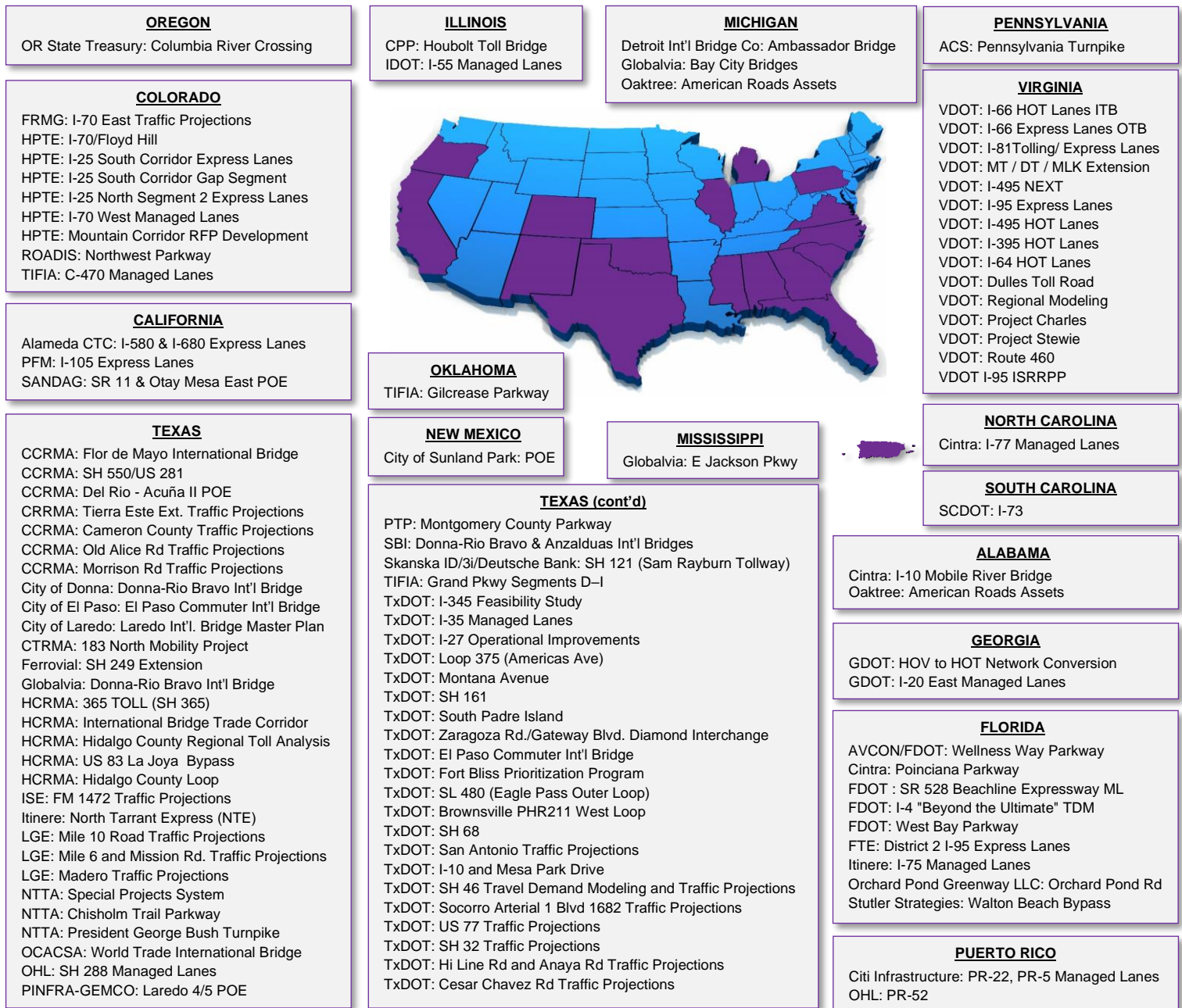


Figure 1. C&M's U.S. T&R Experience

Throughout its experience performing T&R Consulting Services, the C&M staff has demonstrated its capability to perform every aspect of the Traffic and Revenue Engineering process—from data collection and survey design to traffic modeling, economic forecasting and the creation, delivery presentation and support of its T&R projections at high level of reliability and quality. C&M has a proven history of providing reliable traffic forecasts for Greenfield and Brownfield projects, for individual toll facilities, and for toll systems working closely with different agents involved in the successful placement of bonds or loan syndications.

C&M's demonstrated success in T&R forecasting includes the following:

- In February 2016, the Virginia Department of Transportation (VDOT) obtained an indicative private rating from Fitch for senior private activity bonds and subordinate TIFIA loan in the hundreds of millions of dollars using C&M's T&R forecasts.
- The Official Statement of the \$100 million in PABS that was published in September 20, 2015, for the **I-77 HOT lanes project** in North Carolina can be accessed [here](#). The offering has been made by the North Carolina Department of Transportation (NCDOT), pledging revenue from the managed lanes. In addition, the financial close included a \$189 million TIFIA loan. The offering was rated BBB- by Fitch and BBB by DBRS.
- The December 2012 Official Statement of \$231 million in Current Interest Bonds and \$62 million in Capital Appreciation Bonds issued by the **Route 460** Funding Corporation of Virginia, Authorized by the Commonwealth Transportation Board of the Commonwealth of Virginia, can be accessed [here](#). The issuance was assigned a Baa3 rating by Moody's Investor Service and a BBB- rating by Standard & Poor's Rating Services.

C. Traffic and Revenue Engineering Experience under Trust Indentures

C&M is well-versed in performing duties imposed on transportation engineers under requirements of Trust Indentures for bond financing, including providing opinions related to annual reviews and bond issuances. Specifically, C&M has served as Traffic and Revenue Engineer for the **NTTA's Special Projects System (SPS)**, comprising the Chisholm Trail Parkway (CTP) and the President George Bush Turnpike-Western Extension (PGBT-WE). As **Prime T&R Consultant for the SPS** from 2012 to 2017, C&M conducted the following tasks for the NTTA:

- Periodic Update of SPS Gantry Toll Rates
- Quarterly TIGER Discretionary Grant Performance Report for the PGBT-WE
- SPS Annual Budget Estimates
- Quarterly/Monthly/Weekly SPS Performance Reports
- Level 2 T&R Update for the PGBT-WE (2013)
- Level 2 T&R study for the CTP (2013)
- Traffic Impact Study of I-20 and SH 161 on the T&R of the PGBT-WE (2013)
- Investment Grade T&R Study for the CTP (2014)
- NCTCOG 2040 Demographic Forecast Review (2014)
- CTP T&R Alternative Scenario Analysis (2015)
- CTP Toll Discount Analysis (2015)
- Investment Grade T&R Study for the SPS (2016)
- Periodic presentations to the Board and staff
- Opinions and analysis regarding toll policies and operations

During the performance of these tasks for the SPS, C&M also monitored the performance of the **NTTA System** to ensure consistency with the SPS and understanding of its operations and trends.

D. Modeling Experience

C&M's Dallas-based modeling staff of highly qualified individuals, led by Sam Bohluli, P.E., PhD., has been responsible for the modeling component of C&M's T&R studies and has adopted, calibrated, and validated dozens of travel demand models (TDM) in Texas, Georgia, Virginia, Colorado, Mississippi, South Carolina, North Carolina, Pennsylvania, Maryland, Illinois, and Florida. With over 20 and 13 years of experience, respectively, **Sam Bohluli** and **Axel Herrmann** have been responsible for the modeling component of a variety of tolling studies, ranging from preliminary feasibility to investment grade level. Recently, Axel led his team in developing a four-step TDM for a T&R study on behalf of the HCRMA in southern Texas.

*C&M's staff has expertise in multiple modeling platforms, including **Cube**, **EMME** and **TransCAD**, the Capital Area Metropolitan Planning Organization (CAMPO) platform of choice.*

C&M assists clients in adopting more sophisticated toll demand forecast approaches in their travel demand modeling framework, providing decision makers with better tools. In this regard, C&M has experience in complex mesoscopic and microscopic simulations of transportation projects, which is useful for studying operational efficiency, analyzing traffic impacts, and providing support for stakeholder presentations. C&M has performed several studies involving dynamic tolling and developed a mesoscopic modeling methodology that dynamically assigns traffic to the tolled facilities to provide a particular Level of Service (LOS), taking into consideration the varying traffic flows and producing more realistic estimates of speeds, queue lengths, delays, and congestion. Micro-simulation can then be used to verify that the facility operates within a certain LOS at specific locations.

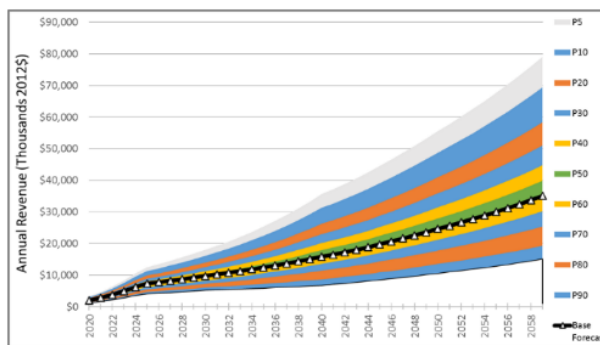
C&M is familiar with the **CAMPO TDM**, a sequential four-step, trip-based model. The CAMPO TDM uses daily generation and distribution of person trips prior to mode choice. However, for the assignment step, the daily trip tables are separated into four time periods—a welcome feature for estimating managed lane T&R. An iterative feedback technique is used to resolve travel times within the sequential trip-based model. The TDM covers six counties—Bastrop, Burnet, Caldwell, Hays, Travis, and Williamson—with 2,102 internal traffic analysis zones (TAZ) and 59 external stations.

One specific example of the C&M staff's modeling capabilities (among the dozens of models they have developed or updated) is a **regional TDM developed for the Washington, D.C. area** including all the tolled facilities in Northern Virginia and Maryland and their interaction as a regional system. The model is currently being used to produce **investment grade T&R studies** for five express lane corridors, including I-66 Inside the Beltway, 495 Express, 495 NEXT, and I-395 as well as the Dulles and Greenway Toll Roads.

The C&M staff's modeling record is impressive, with models developed for regions ranging from large cities like Washington, D.C. and Dallas/Fort Worth to smaller metropolitan areas like Laredo–Nuevo Laredo and others similar in size to Austin.

E. Evaluations, Opinions, and Other Toll-Related Studies

C&M has developed a state-of-the-practice forecast analysis technique to evaluate and assess the expected probability of a project achieving its forecasted T&R. This methodology has incorporated feedback from underwriters, credit enhancers, commercial banks, and rating agencies in the United States, Latin America, and Europe. The methodology has been utilized by C&M to conduct **risk analysis** of C&M's own forecasts and those of others C&M has peer reviewed.



C&M has the unique experience of both helping clients obtain financing and helping USDOT assess the risk of providing such financing through the Infrastructure Finance and Innovation Act (TIFIA). These has given C&M outside and inside perspectives of TIFIA-related requirements, sensitivity testing, and risk analysis.

Outside Perspective: I-66 express lanes 2016 indicative private rating from Fitch for senior Private Activity Bonds and subordinate TIFIA loan in the hundreds of millions of dollars obtained by VDOT using C&M's T&R forecasts, as well as the I-77 HOT lanes referenced earlier.

Inside Perspective: C-470 express lanes 2016 T&R review and risk analysis, Grand Parkway 2017 T&R review and risk analysis, and Gilcrease Expressway 2018 T&R review and risk analysis conducted on behalf of TIFIA.

COVID-19 Pandemic Analysis

C&M has developed a framework to analyze the effects of the COVID-19 pandemic on T&R forecasts. The framework includes close monitoring of observed traffic trends around the country and its relationship to epidemiological/health developments and economic stimulus responses. Working for clients around the country, C&M has developed estimates regarding the depth of T&R reductions, their duration, and expected recoveries under various scenarios. As part of this work, C&M has developed an understanding of how tolled facilities—even within the same regional network—have uniquely reacted to the pandemic depending on the socioeconomic and market characteristics of their user base as well as their vehicle class composition. Nevertheless, C&M recognizes that its understanding of the T&R response will continue to evolve due to the fluid nature of the pandemic and national/regional policy responses.

C&M is currently preparing Pandemic T&R scenarios for several investment grade studies in Virginia and Texas.

F. Fee Calculation Method

C&M will charge monthly following this formula:

$$\text{Invoice} = (\text{Direct Labor} + \text{Overhead}) * (1 + \text{Profit Rate}) + \text{Direct Expenses}$$

Direct Labor: Will be charged based on the established hourly rates for each staff member and subcontractor. Rates are based on dividing annual salaries by 2,080 hours. C&M does not add surcharges to subcontractor fees.

Overhead: C&M's accounting system identifies time and materials expended on a per-project basis. The system tracks expenses not attributable to projects and categorizes them in expense accounts separated into overhead allowable and non-allowable accounts under FAR regulations. An external auditor reviews and certifies accounting practices and overhead cost calculations.

Profit Rate: C&M will negotiate with the CTRMA regarding the profit rate that will apply to this assignment.

Direct Expenses: C&M will charge the actual cost of direct expenses, such as travel and field data collection expenses.

C&M prepares the budgets for the tasks based on time estimated to complete them and the approved rates for the professionals involved in the project. Submitted to the CTRMA monthly, invoices will document actual time spent on the project by personnel, direct expenses associated with the project, and a progress report of the task. Individual rates for each professional and the number of hours dedicated to each task will be those approved in advance by the CTRMA. Over-head rates and profit rates will also be those disclosed and agreed upon during the procurement and negotiation process and will follow Federal Acquisition Regulations (FAR).

G. Disclosures

C&M Associates, Inc. currently has two T&R contracts with TxDOT: One with the Toll Operations Division (TOD) and one with the Project Finance, Debt and Strategic Contracts Division (PFD) to perform T&R Engineering Services statewide, including the geographic area encompassed by the CTRMA. In addition, C&M has been selected as part of the GEC team that will advise TxDOT's Austin District on the Mobility 35 program. Otherwise, C&M has no additional contractual or informal business arrangements/agreements, including fee arrangements, consulting agreements, or any other kind of legal representation, with (i) the CTRMA staff and/or any of its Board members., or with (ii) any governmental entity or political subdivision (with the exception of the TxDOT as described above) within the geographic area encompassed by the CTRMA.

Additionally, subconsultant Resource Systems Group, Inc. is currently reviewing CTRMA's T&R forecast conducted by Stantec as part of a TIFIA loan application for the 183A and 183N projects. RSG is contracted with FHWA to perform this work.

SECTION II: FIRM ORGANIZATION, STAFFING, AND PROCEDURES

A. Organization of the C&M Team

C&M's principal office for CTRMA work will be its Dallas, TX headquarters, with Project Manager Axel Herrmann directly responsible for potential CTRMA projects. Figure 2 presents the C&M Team's organizational chart, indicating the roles of proposed lead personnel and support staff available for this contract.

C&M has assembled a team that ensures expert participation in each phase of the T&R process, with in-depth understanding of transportation issues in Texas, T&R analysis practices, and financial community interaction. The C&M Team includes the following subconsultants, with which C&M has a successful track record working together on T&R engagements:



Resource Systems Group, Inc. (RSG) is an internationally prominent transportation consulting firm specializing in stated preference surveys, travel demand modeling, data analysis, and market research for toll facilities. RSG has a long history of supporting T&R work through their extensive experience in stated preference survey design, behavioral modeling, and travel forecasting. RSG has developed traveler choice models to support new road pricing projects and pricing/operations changes for existing facilities

throughout the U.S., Canada, South America, Asia, and Europe. This work has included extensive qualitative research, the design and administration of stated and revealed preference surveys, and the use of those data in

RSG has worked extensively with TxDOT, tollway authorities, and regional mobility authorities in Texas on T&R forecasting across the state over the past 20 years, including the design and implementation of 30 stated preference surveys in Austin, Dallas/Fort Worth, Houston, San Antonio, Tyler, McAllen, and South Padre Island.

the development of multinomial and nested logit route, lane, time-of-day, and payment method choice models. RSG has participated in several pioneering pricing projects such as California's SR-91 Express Lanes, Singapore's Area Pricing program, and Toronto's Hwy 407 all-electronic/video tolling, as well as more recent projects such as express lanes projects for US 36 and I-25 in Colorado, the I-395 and I-495 Express Lanes in northern Virginia, the I-4 Beyond the Ultimate express lanes in Orlando, Miami's 95 Express, and a regional system of express lanes in Dallas, TX.



Economic & Planning Systems (EPS) has extensive experience providing socioeconomic data analysis and recalibration of demographic and economic forecast data in the context of investment grade studies, managed lane studies, corridor growth assessments, transportation plans, and economic impact analyses. Since 1983, EPS has provided consulting services to hundreds of public- and private-sector clients in Colorado and throughout the United States.

EPS has been providing third-party Traffic Analysis Zone (TAZ) projections of socioeconomic variables in the context of Investment Grade T&R forecasts for toll authorities and regional transportation and planning organizations throughout the U.S. for more than 30 years. We have presented our methodologies, analysis, and findings to public planning agencies, Boards and ratings agencies. We understand the importance that providing robust independent socioeconomic projections has on building credibility for the travel demand modeling and its revenue projection outputs.

EPS's socioeconomic projection models include both econometric and geospatial components, generating outputs on the basis of relationships that are calibrated to actual local and regional economic and demographic trends, as well as land use information such as geographic or land use constraints.



C J Hensch & Associates, Inc. (CJH) is a Texas-based DBE and HUB founded in 1995 that has been providing data collection for T&R studies for public and private clients over the past 25 years. CJH has experience collecting traffic data for regional planning and engineering studies, the technical knowledge required to complete the work, and an experienced staff capable of completing several studies simultaneously.

During the past year, CJH has conducted over 700 intersection turning movement counts in connection with signal warrant studies and signal timing and phasing in the Houston District and approximately 250 in the Dallas/Fort Worth Districts. Also, approximately 6,000 classification counts have been performed statewide for the TxDOT Technical Services Group as well as over 1,000 volume and classification counts last year throughout the state of Texas.



GRAM Traffic Counting, Inc. (GTC) is a Texas-based DBE and HUB founded in 1998 that specializes in planning and executing projects ranging from small intersections to large-scale, statewide data collection programs, including automated traffic record counts (ATR), pedestrian counts, turning movement counts (TMC), origin-destination surveys, and video license plate capture.

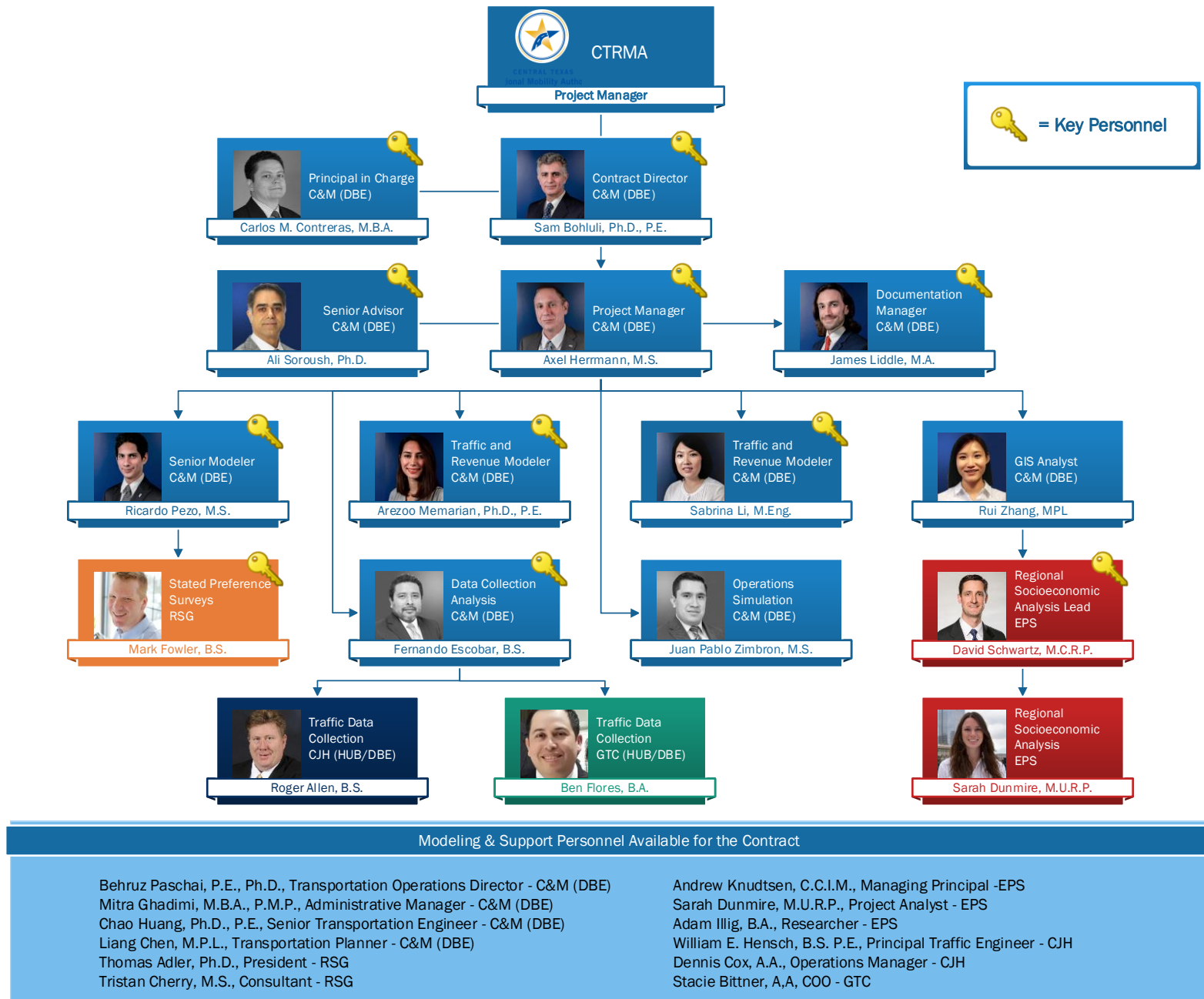







Figure 2. Organizational Chart

B. Assigned Personnel

Table 3 summarizes the personnel committed for availability to the CTRMA (totaling 19 professionals), including their role, geographic location, woman/minority status, expertise relevant to T&R engineering services, and percent commitment for the duration of the contract, understanding that services may extend for a term of 5 years plus two options for 2-year extensions.

Professional resumes detailing the qualifications and T&R experience of key personnel are provided in Appendix A.

Table 3. Summary of Personnel Committed for Availability to the CTRMA

Name, Credentials ( = Key Personnel)	Firm	Role	Office Location	Woman (W) or Minority (M)	Years of Experience	Traffic and Revenue Areas of Expertise								% Commitment for Contract Duration
						Managed Lanes	Complex Traffic Modeling	Toll Rate Optimization	Microsimulation	Stated Preference Surveys	Socioeconomic Analysis	Data Collection & Analysis	Project Financing	
 Carlos Contreras, M.B.A.	C&M	Principal in Charge	Dallas, TX	M	25	✓		✓		✓	✓	✓	✓	35%
 Sam Bohluli, Ph.D., P.E.	C&M	Contract Director	Dallas, TX	M	20	✓	✓	✓	✓	✓	✓	✓	✓	25%
 Axel Herrmann, M.S.	C&M	Project Manager	Dallas, TX		15	✓	✓	✓	✓	✓	✓	✓	✓	70%
 Ali Soroush, Ph.D.	C&M	Senior Advisor	Arlington, VA	M	17	✓	✓	✓	✓	✓	✓	✓	✓	10%
 Ricardo Pezo, M.S.	C&M	Senior Modeler	Dallas, TX	M	19	✓	✓	✓	✓	✓	✓	✓	✓	75%
 Juan Pablo Zimbron, M.S.	C&M	Operations Simulation	Dallas, TX	M	7		✓	✓	✓			✓		75%
 Arezoo Memarian, Ph.D., P.E.	C&M	Traffic and Revenue Modeler	Dallas, TX	W, M	12		✓	✓	✓		✓	✓		50%
 Sabrina Li, M.Eng, P.E.	C&M	Traffic and Revenue Modeler	Dallas, TX	W, M	8	✓	✓	✓	✓		✓	✓		50%
 Luis Fernando Escobar B.S.	C&M	Data Collection Analysis	Dallas, TX	M	16	✓	✓	✓			✓	✓		75%
 Rui Zhang, MPL	C&M	GIS Analyst	Dallas, TX	W, M	2		✓				✓	✓		50%
 James Liddle, M.A.	C&M	Documentation Manager	Dallas, TX		5							✓		25%
 Mark Fowler, B.S.	RSG	Stated Preference Survey	Burlington, VT		16					✓		✓	✓	25%
 Tristan Cherry, M.S.	RSG	Stated Preference Survey	Burlington, VT		8					✓		✓	✓	35%
 David Schwartz, M.C.R.P.	EPS	Socioeconomic Analysis	Denver, CO		15						✓	✓	✓	25%
 Sarah Dunmire, M.U.R.P.	EPS	Socioeconomic Analysis	Denver, CO	W	4						✓	✓	✓	25%
 William E Hensch, P.E.	CJH	Traffic Data Collection	Pasadena, CA		50							✓		76%
 Roger Allen, B.S.	CJH	Traffic Data Collection	Pasadena, CA		17							✓		30%
 Ben Flores, B.A.	GTC	Traffic Data Collection	Georgetown, TX	M	6							✓		75%
 Stacie Bittner, A.A.	GTC	Traffic Data Collection	Georgetown, TX	W	4							✓		75%

SECTION III: EXPERIENCE

Table 4 presents a summary of projects for which C&M has provided T&R engineering services since January 1, 2017.

The remainder of this section presents a sampling of these projects in more detail.

Table 4. C&M T&R Engineering Services, 2017–2020

Year	Project Name, Location	T&R Level	Client
Ongoing	I-70 Mountain Corridor Floyd Hill T&R Study, CO	2	CDOT HPTE
Ongoing	365 TOLL Investment Grade T&R Study, TX	3	HCRMA
Ongoing	Dulles Regional Modeling and Investment Grade T&R Study, VA	3	VDOT
Ongoing	I-495 Investment Grade T&R Study, VA	3	VDOT
Ongoing	Project Charles Investment Grade T&R Study, VA	3	VDOT
2020	Donna-Rio Bravo International Bridge Investment Grade T&R Study, TX	3	City of Donna
2020	I-25 North Segment 2 Level 2 T&R Study, CO	2	CDOT HPTE
2020	I-66 Inside the Beltway Level 2 T&R Study, VA	3	VDOT
2020	I-580 Express Lanes Level 2 T&R Study, CA	2	Alameda CTC
2020	I-680 Express Lanes Level 2 T&R Study, CA	2	Alameda CTC
2019	Midtown Tunnel/Downtown Tunnel/MLK Extension T&R Study, VA	3	VDOT
2019	I-10 Mobile River Bridge and Bayway Traffic and Revenue Peer Review, AL	PR	Cintra
2019	I-105 Express Lane Traffic & Revenue Peer Review, CA	PR	CTC
2019	I-55 T&R Peer Review, IL	PR	IDOT
2019	Camino Real de Tierra Adentro POE Presidential Permit Support Study, NM	2	City of Sunland Park
2019	I-66 Inside the Beltway Level 2 T&R Update Study, VA	2	VDOT
2019	Bay City Bridges T&R Analysis, MI	1	Globalvia
2019	495 NEXT Level 2 T&R Study, VA	2	VDOT
2019	PR-52 T&R Study, Puerto Rico	1	OHL Concesiones
2019	Flor de Mayo POE Sketch-Level T&R Feasibility Study	1	CCRMA
2019	183 North Mobility Project T&R Peer Review	PR	CTRMA
2019	Gilcrease Expressway-West Segment T&R Peer Review and Risk Assessment	PR	USDOT TIFIA
2018	I-95 Jacksonville Express Lanes T&R Study, FL	2	FDOT
2018	I-495 Express Lanes T&R Study, VA	2	VDOT
2018	I-81 Pass-Through Trip Tolling T&R Study, VA	2	VDOT
2018	I-25 South Corridor Level 2 T&R Study, CO	2	CDOT HPTE
2018	Sunland Park International Bridge Intermediate T&R Study, NM	2	City of Sunland Park
2018	Riyadh Tolling Roadways Intermediate T&R Study, Saudi Arabia	2	ADA
2018	Walton Beach Bypass Sketch Level T&R Study, FL	1	Confidential
2018	American Roads Assets T&R Study, MI & AL	3	Confidential
2017	Midtown Tunnel/Downtown Tunnel T&R Update, VA	2	VDOT
2017	I-35 Managed Lanes T&R Study, TX	2	TxDOT
2017	VA Truck Corridor Sketch Level T&R Study, VA	1	VDOT
2017	Donna-Rio Bravo and Anzalduas POEs T&R Study, TX	2	City of Donna
2017	SR 528/Beachline East Sketch-Level T&R Peer Review, FL	PR	FDOT
2017	Laredo 4-5 POE T&R Study, TX	3	PINFRA-GEMCO
2017	Grand Parkway Segments D-I T&R Peer Review and Risk Assessment, TX	PR	USDOT TIFIA
2017	I-66 HOT Lanes Inside the Beltway Investment Grade T&R Study, VA	3	VDOT

365 TOLL Investment Grade Traffic and Revenue Study (Ongoing)

The Hidalgo County Regional Mobility Authority (HCRMA) has engaged C&M to prepare an Investment Grade T&R study for the proposed 365 TOLL facility (the Project). The aim of the study is to develop an update to C&M's 2016 Investment Grade T&R forecast for the Project, with results expressed in annual toll transactions and toll revenue over a 40-year period beginning in 2025, the first year in which the facility will be tolled. The T&R forecast methods and practices utilized for this study meet common standards and are accepted within the T&R industry.

- **Location:** Hidalgo County, TX
- **Contact:** Pilar Rodriguez, HCRMA – 203 W Newcombe Ave, Pharr, TX 78577; (956) 402-4762
- **Official Statement Date:** N/A
- **Forecasted Opening Year Revenue:** Under Development
- **Observed Opening Year Revenue:** N/A
- **Regulatory/Legal Proceedings:** None

I-580 and I-680 Express Lanes Level 2 Traffic and Revenue Analysis (2020)

On behalf of the Alameda County Transportation Commission (Alameda CTC), C&M conducted a Level 2 T&R study regarding express lanes on I-580 and I-680, providing 20-year T&R forecasts to support Alameda CTC's expenditure plans. In addition to adopting the latest version of the Alameda Countywide TDM and calibrating a subarea model, C&M developed a microscopic simulation model for the I-580 and I-680 corridors in the VISSIM platform to evaluate potential operational issues with the forecasted trip tables from the TDM. Additionally, C&M developed a machine learning model to validate the short-term traffic demand forecasts for the project corridors.

- **Location:** Alameda County, CA
- **Contact:** Liz Rutman, Alameda CTC - 1111 Broadway, Suite 800, Oakland, CA 94607; (510) 208-7483
- **Official Statement Date:** N/A
- **Forecasted First Year Revenue:**
I-580: \$15,421,000
I-680: \$7,542,000
- **Observed Opening Year Revenue:** N/A
- **Regulatory/Legal Proceedings:** None

183 North Mobility Project Traffic and Revenue Peer Review (2019)

Traffic congestion along US 183 between SH 45 North and the MoPac Expressway is a major issue, especially during peak rush hour periods. CTRMA has proposed development along this segment of US 183 (i.e., the 183 North Mobility Project) to add two express lanes from SH 45 to the MoPac Expressway ramp, as well as a non-tolled lane to expand US 183 from three to four lanes. C&M reviewed the project's forecasted T&R as

- **Location:** Austin, TX
- **Contact:** Bill Chapman, CTRMA – 3300 N IH-35 Suite 300, Austin, TX 78705; (512) 450-6284
- **Official Statement Date:** N/A
- **Forecasted Opening Year Revenue:** N/A
- **Observed Opening Year Revenue:** N/A
- **Regulatory/Legal Proceedings:** None

presented in a study by Stantec to determine whether it follows industry-accepted methodologies, incorporates reasonable assumptions, is consistent with the project's design and objectives, and is supported by the existing and forecasted socioeconomic and traffic conditions within the study area.

Laredo 4/5 International Bridge Investment Grade Traffic and Revenue Study (2018)

C&M conducted a T&R study of the proposed Laredo 4/5 international bridge in Webb County, TX to produce T&R forecasts of sufficient quality to assess the project's feasibility, conduct financial planning, and meet the requirements for advancing the project's Presidential Permit application. The results of this study were also intended to support plans to accommodate the forecasted commercial and passenger vehicle demand, such as determining the project's number of lanes, inspection booths, and other border facility features.

- **Location:** Texas
- **Contact:** Glaforo E. Montemayor
Quintanilla, GEMCO – 5610 Mann Cir,
Laredo, TX 78041; (956) 206-3633
- **Forecasted Opening Year Revenue:**
\$13,936,800
- **Observed Opening Year Revenue:** N/A
- **Regulatory/Legal Proceedings:** None

C&M developed a four-step TDM for the city of Nuevo Laredo to use in combination with an existing TDM for the Laredo MPO area to develop the Binational Assignment Model in the TransCAD 7.0 Build 12390 platform. C&M evaluated all four TDM steps based on current transportation data, observed traffic patterns within the study area, and expected future road network improvements. The final Binational Assignment Model was calibrated to existing traffic conditions within the study area and used to develop traffic forecasts for 2025 and 2045.

I-66 Inside the Capital Beltway Investment Grade Traffic and Revenue Study (2017)

C&M conducted an investment grade T&R study to aid the Virginia Department of Transportation's (VDOT) scope definition and financing of a project to convert a 9.1-mile segment of I-66 Inside the Capital Beltway into HOT lanes. C&M assisted in public and multi-agency outreach, participated in VDOT management meetings, and presented preliminary findings to cities along the corridor whose political support was critical to advancing the project. C&M also crafted responses to state legislator concerns and press inquiries, making complex technical concepts accessible to larger audiences.

- **Location:** Virginia
- **Contact:** Jacqueline Cromwell, 1401 E.
Broad Street, Suite 1306, Richmond, VA
23219; (804) 786-7209
- **Forecasted Opening Year Revenue:**
\$24,483,000
- **Observed Opening Year Revenue:**
\$25,293,677
- **Regulatory/Legal Proceedings:** None

Utilizing MWCOG's regional travel demand model, C&M performed the modeling in two phases: regional modeling and sub-area modeling. C&M extracted and further calibrated a sub-area model based on the project's area of influence. C&M performed a traffic operations analysis along the project corridor in future years via a DTA mesoscopic traffic simulation approach.

The project was successfully built and opened to tolled traffic in December 2017. Observed toll rates and traffic have been in line with C&M's forecast.

SECTION IV: HUB AND DBE PARTICIPATION

A. C&M's HUB/DBE Participation

Based on self-performance and subcontracting, C&M's HUB/DBE participation is intended to be in excess of 80% of the work performed for the CTRMA. **C&M is a certified DBE** by the North Central Texas Regional Certification Agency with Certification Number HMDB57382N1019. C&M intends to make its best effort to subcontract DBE firms as part of the CTRMA contract.

B. Women/Minority Employees (C&M)

As per the Woman/Minority column in Table 3, 82% of C&M's staff committed to the CTRMA are minorities, and 26% of the staff are women. Their proposed roles and level of involvement are outlined in Table 3 and the organizational chart (see Figure 2).

C. Subcontractor HUB/DBE Participation

C&M intends to subcontract a significant portion of the work under this contract to Texas-certified W/DBE firms **GRAM Traffic Counting, Inc.** (Principal: Audrey Bielss) and **C J Hensch & Associates, Inc.** (Principal: Roger Allen). Both firms have been subcontractors for C&M-led teams in the past.

D. Women/Minority Employees within other Subcontracting Firms

C&M includes within its standard subcontracting agreements language requiring subcontracting firms to comply with Title VI of the Civil Right Act of 1964, The Age Discrimination Act of 1975 and Titles II and III of the American with Disabilities Act. Subconsultant EPS has included a woman as a key task leader for socioeconomic analysis, and both GRAM Traffic Counting, Inc. and C J Hensch & Associates, Inc. are woman-owned businesses.

E. Affirmative Action Plan

C&M Associates, Inc has fewer than 50 employees and is thus not required by Federal regulations to have a documented Affirmative Action Plan (AAP). However, the firm has set standards for the recruiting, hiring, and promotion of women and minorities without detriment to the hiring and promotion of others. These standards include sustained efforts to attain diversity in our workforce by widely publicizing open positions, provide equal opportunity in our employee selection processes, and promoting employee training. Our current employee makeup is 92% minority with a broad diversity of backgrounds; we believe this reflects, at least in part, the success of our policies.

F. CTRMA Business Opportunity Program and Policy: Compliance

C&M has reviewed the CTRMA's Business Opportunity Program and Policy and the HUB Policy Statement available at the agency's website (www.mobilityauthority.com), and we confirm that C&M will conform with the requirements of CTRMA's policy on participation of HUB firms in CTRMA professional services and contracting opportunities.

APPENDIX A: RESUMES

This appendix includes the professional resumes of the key personnel identified in Table 3 and the organizational chart (see Figure 2).



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cmcontreras@candm-associates.com

Mr. Contreras has been involved in the transportation industry in the United States and Latin America since 1994. As President of C&M Associates, Inc. since 2004, he is responsible for strategic advice and project quality. Since the founding of the firm, Mr. Contreras has overseen contracts with toll authorities such as the North Texas Tollway Authority, Florida's Turnpike Enterprise, the Hidalgo County Regional Mobility Authority, and the Departments of Transportation of Colorado, Texas, Virginia, Georgia, South Carolina, Maryland, and Washington State, as well as leading Toll Road Concessionaires, for the development of Travel Demand Feasibility and Traffic and Revenue studies. Internationally, he has promoted transportation infrastructure projects in Mexico and Peru, and he has led a consortium of international players in the pursuit of transportation projects. Mr. Contreras has also overseen the development of corridor and cordon pricing studies in Riyadh, Saudi Arabia.

Professional Career

- President, C&M Associates, Inc. (2004–Present)
- President, Contreras International, LLC (2003–2004)
- Vice President, International Markets Blackboard, Inc. (1999–2003)
- Business Development Director, CICSAs, SA de CV (1994–1999)
- Finance and Project Evaluation Professor, ITAM and UP Universities (1994–1996)

Education

- M.B.A., Harvard University (1994)
- B.S., Industrial Engineering, Universidad Panamericana, Mexico (1991)

Continuing Education

- Public-Private Partnership Financial Modeling and Legal Analysis, Vair Training LLC, Toronto, Canada (2009)
- Model Validation and Reasonableness Checking, FHWA, Washington, D.C. (2004)
- Activity- and Tour-Based Modeling, FHWA, Washington, D.C. (2004)

Areas of Expertise

- Traffic and Revenue Forecasting
- Public-Private Partnerships
- Project Evaluation
- Financial Community Interaction
- Business Strategy
- Market Analysis

Professional Experience

I-70 Mountain Corridor Floyd Hill Traffic and Revenue Analysis, CO (Ongoing) – Principal in Charge of T&R feasibility analysis and subsequent Level 2 T&R analysis considering the improvement alternatives addressed in the I-70 Mountain Corridor Record of Decision, including providing three-lane capacity for westbound I-70 from Floyd Hill to the Veterans Memorial Tunnels; a multimodal trail and frontage road between US 6 and Idaho Springs; and physical and/or operational improvements to four interchanges. The T&R analysis aims to assist the HPTE in evaluating tolling schemes (short of all tolled lane scenarios) that could fill in the current funding gap for implementing the required improvements to the corridor.

365 TOLL Investment Grade Traffic and Revenue Study, TX (Ongoing) – Principal in Charge for developing a Level 3 T&R study of the proposed 365 TOLL facility to support the HCRMA in their effort to finance the project by providing an investment grade T&R forecast.

I-580 and I-680 Express Lanes Level 2 Traffic and Revenue Studies, CA (2020) – Principal in Charge of intermediate (Level 2) T&R studies prepared on behalf of the Alameda CTC regarding express lanes along I-580 and I-680. Developed 20-year T&R forecasts complemented by machine learning based short-term T&R forecasts to support Alameda CTC's expenditure plans.

I-25 North Segment 2 Level 2 Traffic and Revenue Study, CO (2020) – Principal in Charge for conducting a T&R analysis considering the construction of one additional general purpose lane on I-25 North Segment 2 (between US 36 and 120th Ave.) in each direction and evaluating the effect of this expansion on the forecasted revenue of Segment 2 express lanes.

Donna-Rio Bravo International Bridge Investment Grade Traffic and Revenue Study, TX (2020) – Principal in Charge of developing a Level 3 T&R study of proposed extensions to accommodate northbound commercial vehicles on the Donna–Rio Bravo International Bridge. This study aimed to support the city of Donna in their effort to finance the project by providing a 40-year investment grade T&R forecast.

President

Professional Experience, cont'd.

I-25 South Managed Lanes Intermediate Traffic and Revenue Study, CO (2019) – Principal in Charge for developing T&R forecasts on behalf of the Colorado DOT's High-Performance Transportation Enterprise (HPTE) for the possible implementation of managed lanes and other transportation improvements on the I-25 South corridor.

I-81 Pass-Through Trip Tolling Level 2 Traffic and Revenue Study, VA (2019) – Principal in Charge for conducting a level 2 T&R study on behalf of VDOT to evaluate a tolling scenario on I-81 in Virginia.

Gilcrease Expressway–West Segment Traffic and Revenue Peer Review and Risk Assessment, OK (2019) – Principal in Charge for the analysis. The review consisted of identifying key inputs, comparing data with other projects, evaluating the methodology, assessing consistency with industry practices and the reasonableness of the forecast, and conducting a risk analysis to determine the probability of various revenue scenarios. Based on its review, C&M developed a TIFIA Base Case that included adjustments to demographic forecasts and other inputs.

I-495 Extension Level 2 Traffic and Revenue Study, VA (2018) – Principal in Charge for conducting a level 2 T&R study to assist VDOT in its project development efforts. The project is a 1.7-mile extension to the existing I-495 express lanes, adding two HOT lanes per direction to the corridor.

Riyadh Tolling Roadways Intermediate Traffic and Revenue Study, Riyadh, Saudi Arabia (2018) – Principal in Charge for developing a T&R forecast for two existing primary freeway corridors in Riyadh being converted to toll roads.

Sunland Park Port of Entry Intermediate Traffic and Revenue Study, NM (2018) – Principal in Charge for developing a T&R forecast of a new land port of entry along the U.S./Mexico border to support the project's financing and Presidential Permit application process.

D2 95 Express Planning-Level Traffic and Revenue Study, FL (2018) – Principal in Charge for a Level 2 T&R study of four segments of I-95 near Jacksonville, FL.

Southwebb Port of Entry / Laredo Bridge 4/5 Traffic and Revenue Study, TX (2018) – Principal in Charge for developing a T&R forecast of a new land port of entry along the U.S. Mexico border to support the project's financing and Presidential Permit application process.

Grand Parkway Segments D through I T&R Peer Review and Risk Assessment and Update, TX (2017, 2018) – Principal in Charge for the analysis. The review consisted of identifying key inputs, comparing data with other projects,

evaluating the methodology, assessing consistency with industry practices and the reasonableness of the forecast, and conducting a risk analysis to determine the probability of various revenue scenarios. Based on its review, C&M developed a TIFIA Base Case that included adjustments to leakage rates and other inputs.

I-35 Managed Lanes Study, TX (2017) – Principal in Charge for the analysis. C&M conducted a T&R analysis for five scenarios related to I-35 managed lanes in San Antonio, TX. Using an existing model, C&M adopted and replicated the results, performed a toll sensitivity analysis, and estimated the number of transactions and revenue for each scenario.

Donna-Rio Bravo and Anzalduas International Bridges Traffic Assessment Study, TX (2017) – Principal in Charge for the development of a traffic assessment to forecast commercial vehicle traffic demand and capacity of Hidalgo County land ports of entry and to update regional truck traffic projections for the forecast period. This study aimed to support plans to accommodate the forecasted truck demand, including the addition of lanes, inspection booths, and other facilities, as well as provide an estimate of the number of users willing to use the new commercial land ports of entry.

I-66 HOT Lanes Inside the Capital Beltway Intermediate and Investment Grade Traffic and Revenue Studies, VA (2015, 2017) – Principal in Charge for the analysis of converting all lanes on I-66 during peak periods to HOT lanes in Northern Virginia.

I-70 East Traffic Projections Study, CO (2017) – Principal in Charge for developing traffic projections and estimating equivalent single axle load (ESAL) forecasts to assist in the client's bid for the project's pavement design.

NTTA Special Projects System Comprehensive Traffic and Revenue Update, TX (2016) – Principal in Charge for performing an investment grade T&R study for the SPS over a 50-year period, which served as an update to studies performed by C&M in 2014. C&M worked closely with NTTA to reliably forecast Toll Tag penetration, leakage, and Pay-By-Plate parameters.

Houbolt Toll Bridge Investment Grade Traffic and Revenue Study, IL (2016) – Principal in Charge for the analysis. C&M assisted CenterPoint Properties with T&R advisory services for a proposed toll bridge across the Des Plaines River. The bridge will provide the CenterPoint Intermodal Center (CIC) in Joliet/Elwood, Will County with improved access to I-80 and I-55. C&M utilized a sub-area network extracted from the CMAP regional model.



Dr. Bohluli has over 20 years of toll facility modeling, transportation planning, and engineering experience within private consulting and public planning organizations. His experience includes developing sophisticated models for the production of Investment Grade Traffic and Revenue studies and various toll feasibility projects throughout the United States. In his current position, he manages staff—from junior level to project managers—regarding their technical and administrative activities. He is an expert in the use of Cube and TransCAD (GIS and transportation macroscopic modeling software) in combination with meso- and microscopic simulation models, @Risk for risk analysis, and SPSS, ALOGIT and Biogeme for discrete choice modeling.

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sbohluli@candm-associates.com

Professional Career

- Vice President, C&M Associates, Inc., Dallas, TX (2006–Present)
- Senior Transportation Engineer, Wilbur Smith Associates, Dallas, TX (2004–2006)
- Senior Transportation Planner, North Central Texas Council of Governments, Arlington, TX (2001–2004)
- Transportation Planner II, North Central Texas Council of Governments, Arlington, TX (1999–2001)

Qualifications

- Ph.D., Civil Engineering – Specialization in Transportation Engineering, The University of Texas at Arlington (2003)
- Registered Professional Engineer (P.E.) in the states of Arizona, Colorado, Florida, Kentucky, Maryland, Massachusetts, North Carolina, Pennsylvania, Texas, Virginia, and Washington

Areas of Expertise

- Traffic and Revenue Studies
 - Toll Roads
 - Toll Bridges
 - Managed Lanes
 - HOT Lanes
- Risk Analysis
- Discrete Choice Modeling
- Travel Demand Modeling
- Traffic Forecasting
- Congestion Management

Professional Experience

I-70 Mountain Corridor Floyd Hill Traffic and Revenue Analysis, CO (Ongoing) – Project Manager of T&R feasibility analysis and subsequent Level 2 T&R analysis considering the improvement alternatives addressed in the I-70 Mountain Corridor Record of Decision, including providing three-lane capacity for westbound I-70 from Floyd Hill to the Veterans Memorial Tunnels; a multimodal trail and frontage road between US 6 and Idaho Springs; and physical and/or operational improvements to four interchanges. The T&R analysis aims to assist the HPTA in evaluating tolling schemes (short of all tolled lane scenarios) that could fill in the current funding gap for implementing the required improvements to the corridor.

365 TOLL Investment Grade Traffic and Revenue Study, TX (Ongoing) – QA/QC Manager for developing a Level 3 T&R study of the proposed 365 TOLL facility to support the HCRMA in their effort to finance the project by providing an investment grade T&R forecast.

I-580 and I-680 Express Lanes Level 2 Traffic and Revenue Studies, CA (2020) – Project Manager of intermediate (Level 2) T&R studies prepared on behalf of the Alameda CTC regarding express lanes along I-580 and I-680. Responsible for developing 20-year T&R forecasts complemented by machine learning based short-term T&R forecasts to support Alameda CTC's expenditure plans.

I-25 North Segment 2 Level 2 Traffic and Revenue Study, CO (2020) – Project Manager for conducting a T&R analysis considering the construction of one additional general purpose lane on I-25 North Segment 2 (between US 36 and 120th Ave.) in each direction and evaluating the effect of this expansion on the forecasted revenue of Segment 2 express lanes

183 North Mobility Project Traffic and Revenue Peer Review, TX (2019) – Project Manager for the analysis. The review consists of identifying key inputs, comparing data with other projects, evaluating the methodology, and assessing consistency with industry practices and the reasonableness of the forecast.

Vice President

Professional Experience, cont'd.

I-25 South Managed Lanes Intermediate Traffic and Revenue Study, CO (2019) – Project Manager responsible for developing T&R forecasts on behalf of the Colorado DOT's High-Performance Transportation Enterprise (HPTE) for the possible implementation of managed lanes and other transportation improvements on the I-25 South corridor. Responsibilities included reviewing work performed regarding the project, developing a traffic count and data collection plan to update the available traffic database, developing a microscopic traffic simulation model to address current and future operational issues and determine solutions, and developing a 40-year T&R forecast.

Gilcrease Expressway–West Segment Traffic and Revenue Peer Review and Risk Assessment, OK (2019) – Project Manager for the analysis. The review consisted of identifying key inputs, comparing data with other projects, evaluating the methodology, assessing consistency with industry practices and the reasonableness of the forecast, and conducting a risk analysis to determine the probability of various revenue scenarios. Based on its review, C&M developed a TIFIA Base Case that adjusted demographic forecasts and other inputs.

I-81 Pass-Through Trip Tolling Level 2 Traffic and Revenue Study, VA (2019) – QA/QC Manager for conducting a level 2 T&R study on behalf of VDOT to evaluate a tolling scenario on I-81 in Virginia.

Riyadh Tolling Roadways Intermediate Traffic and Revenue Study, Riyadh, Saudi Arabia (2018) – Project Manager for the development of a traffic and revenue forecast for two existing primary freeway corridors in Riyadh being converted to toll roads.

D2 95 Express Planning-Level Traffic and Revenue Study, FL (2018) – QA/QC Manager for a Level 2 T&R study of four segments of I-95 near Jacksonville, FL.

I-495 Extension Level 2 Traffic and Revenue Study, VA (2018) – QA/QC Manager for a level 2 T&R study to assist VDOT in its project development efforts. The project is a 2.3-mile extension to the existing I-495 express lanes, adding two HOT lanes per direction.

Sunland Park Port of Entry Intermediate Traffic and Revenue Study, NM (2018) – QA/QC Manager for developing the traffic and revenue forecast of a new land port of entry along the U.S./Mexico border to assist in the Presidential Permit process.

Southwebb Port of Entry / Laredo Bridge 4/5 Traffic and Revenue Study, TX (2018) – QA/QC Manager supervising the development of a traffic and revenue forecast for a new port of entry along the U.S./ Mexican border to assist in the presidential permit process.

Grand Parkway Segments D through I T&R Peer Review and Risk Assessment and Update, TX (2017, 2018) – Project Manager responsible for the analysis. The review consisted of identifying key inputs, comparing data with other projects, evaluating the methodology, assessing consistency with industry practices and the reasonableness of the forecast, and conducting a risk analysis to determine the probability of various revenue scenarios. Based on its review, C&M developed a TIFIA Base Case that included adjustments to leakage rates and other inputs.

I-66 HOT Lanes Inside the Capital Beltway Investment Grade Traffic and Revenue Study, VA (2017) – QA/QC Manager in charge of reviewing travel demand modeling and T&R forecasts. The project involved evaluating the conversion of existing HOV lanes to HOT lanes during peak periods. Reviewed model validation results, report production, and responses to client and involved stakeholders.

I-35 Managed Lanes Traffic and Revenue Analysis, TX (2017) – Project Manager for a T&R analysis of five scenarios related to I-35 managed lanes in San Antonio, TX. Using an existing model, C&M adopted and replicated the results, performed a toll sensitivity analysis, and estimated transactions and revenue for each scenario.

Donna-Rio Bravo and Anzalduas International Bridges Traffic Assessment Study, TX (2017) – QA/QC Manager responsible for reviewing the development of a traffic assessment to forecast commercial vehicle traffic demand and capacity of Hidalgo County land ports of entry and to update regional truck traffic projections for the forecast period. This study aimed to support plans to accommodate the forecasted truck demand, including the addition of lanes, inspection booths, and other facilities, as well as provide an estimate of the number of users willing to use the new commercial land ports of entry.

Houbolt Toll Bridge Investment Grade Traffic and Revenue Study, IL (2016) – QA/QC Manager supervising the development of investment grade T&R forecasts. C&M assisted CenterPoint Properties with T&R advisory services for a proposed toll bridge across the Des Plaines River. The bridge will provide the CenterPoint Intermodal Center (CIC) in Joliet/Elwood, Will County with improved access to I-80 and I-55. C&M utilized a sub-area network extracted from the CMAP regional model.

Principal Transportation Planner



Mr. Herrmann has 15 years of public and private consulting engineering experience in the fields of travel demand modeling, traffic and revenue analysis of toll roads, traffic and revenue forecast development, and transportation planning for projects in the United States, Europe, and Latin America. He obtained his Master of Civil Engineering (Dipl.-Ing.) in Braunschweig, Germany. His role at C&M as project manager includes the supervision of modeling activities, ranging from the development and analysis of travel demand models to estimating final project traffic and revenue. He is an expert in the use of several travel demand modeling software packages, the design and implementation of traffic data collection programs, traffic forecasting, and statistical data analysis.

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Professional Career

- Principal Transportation Planner, C&M Associates, Inc., Dallas, TX (2019–Present)
- Senior Transportation System Modeler, C&M Associates, Inc., Dallas, TX (2007–Present)
- Project Manager, Ayesa Infrastructure, Seville, Spain (2006–2007)
- Research Assistant, Technische Universität Braunschweig, Germany (2005–2006)

Education

- Master of Civil Engineering, Diplom-Ingenieur, Technische Universität Braunschweig, Germany (2005)

Areas of Expertise

- Traffic and Revenue Studies
 - Toll Roads
 - Toll Bridges
 - Managed/HOT Lanes
 - Border Ports of Entry
- Travel Demand Modeling
- Traffic Forecasting
- Traffic Engineering Studies
- Expert in modeling software
 - CUBE (Citilabs)
 - TransCAD (Caliper)
 - VISSIM (PTV)
- Advanced user in modeling software
 - EMME (Inro)
 - TransModeler (Caliper)

Professional Experience

365 TOLL Investment Grade Traffic and Revenue Study, TX (Ongoing) – Project Manager responsible for developing a Level 3 T&R study of the proposed 365 TOLL facility to support the HCRMA in their effort to finance the project by providing an investment grade T&R forecast.

Donna-Rio Bravo International Bridge Investment Grade Traffic and Revenue Study, TX (2020) – Project Manager responsible for developing an Investment Grade traffic and revenue forecast for the commercial expansion of the Rio-Bravo International Bridge at the U.S./ Mexican border to support the city of Donna in their effort to finance the Project. Supervised the development of a binational travel demand model. Designed and administered several surveys at the border, including origin and destination and company stated preference surveys to estimate the VOT for commercial vehicles. Together with city staff, led several public outreaches and stakeholder interviews.

I-25 South Managed Lanes Intermediate Traffic and Revenue Study, CO (2019) – Task Leader responsible for data collection and socioeconomic analysis on behalf of the Colorado DOT's High-Performance Transportation Enterprise (HPTE) for the possible implementation of managed lanes and other transportation improvements on the I-25 South corridor.

Camino Real de Tierra Adentro POE Presidential Permit Support Study, NM (2019) – Project Manager for developing an update to C&M's Level 2 T&R study of the proposed POE in support of the project's Presidential Permit application.

Gilcrease Expressway–West Segment Traffic and Revenue Peer Review and Risk Assessment, OK (2019) – Technical lead for the analysis. The review consisted of identifying key inputs, comparing data with other projects, evaluating the methodology, assessing consistency with industry practices and the reasonableness of the forecast, and conducting a risk analysis to determine the probability of various revenue scenarios. Based on its review, C&M developed a TIFIA Base Case that adjusted demographic forecasts and other inputs.

Principal Transportation Planner

Professional Experience, cont'd.

Flor de Mayo International Bridge Sketch-Level Traffic and Revenue Feasibility Study, TX (2019) – Project Manager responsible to conduct a traffic and revenue feasibility study of the proposed Flor de Mayo International Bridge/Port of Entry in the city of Brownsville, Cameron County, Texas. The results of this study were intended to support plans by the Cameron County Regional Mobility Authority (CCRMA) to accommodate the forecasted southbound passenger vehicle demand, such as determining the specific location of the Project, the number of lanes, the number of inspection booths, and other Project specifications.

Riyadh Tolling Roadways Intermediate Traffic and Revenue Study, Riyadh, Saudi Arabia (2018) – Deputy Project Manager supervising the development of a traffic and revenue forecast for two existing primary freeway corridors in Riyadh being converted to toll roads. Analyzing the effect on future congestion by tolling these two corridors as an incentive for travelers to use the new Riyadh Metro system.

Sunland Park Port of Entry Intermediate Traffic and Revenue Study, NM (2018) – Project Manager responsible for developing the traffic and revenue forecast of a new land port of entry along the U.S./Mexico border to assist in the Presidential Permit process. Supervised the development of a binational travel demand model, including the development of a multinomial discrete choice model in the software Biogeme and the use of Big-Data (cell phone GPS trajectories) for border crossing the origin and destination survey.

Southwebb Port of Entry and International Bridge (Laredo Bridge 4/5) Traffic and Revenue Study, TX (2018) – Project Manager responsible for developing the traffic and revenue forecast of a new port of entry along the U.S./ Mexican border to assist in the presidential permit process. Supervised the development of a binational travel demand model, designed and administered several surveys at the border, including origin and destination and stated preference surveys for passenger and commercial vehicles.

I-25 South Gap Segment Intermediate Traffic and Revenue Study, CO (2018) – Task Leader responsible for data collection and socioeconomic analysis on behalf of the Colorado DOT's High-Performance Transportation Enterprise (HPTE) for the possible implementation of managed lanes and other transportation improvements on the 18-mile Gap segment of the I-25 South corridor.

American Roads Assets Traffic and Revenue Analysis, AL, MI (2018) – Project Manager responsible for

developing traffic and revenue forecasts for several toll bridges, including one land port of entry at the U.S./Canadian border. Supervised the development of the travel demand and econometric models to support the traffic and revenue forecasting.

North Texas Tollway Authority (NTTA) Special Project System (SPS) Annual Budget Forecast, TX (2012–2017) – Responsible for the annual monthly budget forecast, including monthly traffic and revenue estimates for each fiscal year by traffic type. Monitoring transaction and revenue trends of the SPS on a weekly basis. Supervising the C&M NTTA dashboard system and machine learning processes to estimate the short-term annual budget forecast.

SH 365 Investment Grade Traffic and Revenue Analysis, TX (2016) – Managed all technical aspects of this project, including the design and execution of the Bluetooth origin-destination survey and the border stated preference survey, calibrating the four-step binational travel demand model, and forecasting future traffic and revenue. Assisted with answers to the financial community and managed the peer review process.

I-66 Express Lanes Outside the Capital Beltway Investment Grade Traffic and Revenue Study, VA (2016) – Responsible for quality assurance and quality control of the travel demand model inputs, including the socioeconomic data forecast and the development of the toll diversion multinomial logit model.

I-73 Intermediate Traffic and Revenue Study, SC (2016) – Leader of modeling group. Utilized the SCDOT state-wide travel demand model and developed an I-73 corridor model to account for the regional tourist peak season. Served as field data collection manager. Assisted in designing and administering an auto and truck origin-destination survey and a stated preference survey.

I-4 "Beyond the Ultimate" Travel Demand Model Calibration, FL (2015) – Leader of modeling group. Responsible for developing future model years for the I-4 corridor, documentation, and traffic forecasting. Managed the implementation of future road projects, public transport routes, special generators, and I-4 corridor configurations.

Chisholm Trail Parkway Investment Grade Traffic and Revenue Study, TX (2014) – Leader of modeling group. Supervised the implementation of the North Central Texas Council of Governments (NCTCOG) travel demand model to be used within the traffic and revenue forecasting process. Responsible for data collection, travel demand model calibration at the corridor level, documentation, and traffic and revenue forecasting.



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Dr. Soroush has 17 years of experience in transportation planning and travel demand modeling for traffic and revenue studies of tolled facilities. Through his Ph.D., he researched stochastic and pseudo-probabilistic volume assignment methods and their applications within static and dynamic transportation network assignments. Presently, he is the manager of C&M's Virginia office, supervising all aspects of travel demand modeling. In his most recent task as project manager, he took on a very challenging timetable to develop traffic and revenue projections to support the financing of an investment grade P3 project. He is a professional user of Cube Voyager, Avenue, and Cargo as well as TransCAD, TransModeler, and ArcGIS. He is experienced in designing stated preference surveys and developing toll choice functions to be used within travel demand modeling procedures. He is also experienced in Mesoscopic traffic simulation for projects involving dynamic traffic assignment, congestion pricing, and variable tolling concepts.

Professional Career

- Director, C&M Associates, Inc. (2019–Present)
- Transportation Modeling Manager, C&M Associates, Inc. (2007–Present)
- Graduate Research Assistant, University of Texas at Arlington (2003–2007)
- GIS Analyst, National Cartographic Center, Tehran, Iran (1994–1999)

Qualifications

- Ph.D., Civil Engineering – Specialization in Transportation Engineering, The University of Texas at Arlington (2010)
- M.S., Civil Engineering – Specialization in Transportation Engineering, The University of Texas at Arlington (2005)
- B.S., Civil Engineering, Azad University, Tehran, Iran (1999)
- Technical Degree in Land Surveying, National Cartographic Center, Tehran, Iran (1993)

Areas of Expertise

- Traffic and Revenue Forecasting
- Toll Diversion Function Development
- Managed Lanes
- Travel Demand Modeling
 - Dynamic Traffic Assignment
 - Congestion Pricing
 - Cargo Modeling
- Discrete Choice Modeling
- Stated Preference Survey Design

Professional Experience

Dulles Regional Modeling and Investment Grade T&R Study, VA (Ongoing) – Project Manager responsible for developing a regional model that includes the integrated tolled facilities within the region and conducting a tolling strategy scenario analysis and a Level 3 T&R study of the Dulles Toll Road, Dulles Airport Access Highway, and Dulles Greenway (collectively, the Dulles Roadways) and segments of I-95, I-395, and I-495 on behalf of VDOT.

I-495 Investment Grade Traffic and Revenue Study, MD (Ongoing) – Project Manager responsible for developing a Level 3 T&R study on behalf of VDOT that considers a 2.3-mile extension to the I-495 Express Lanes in Montgomery County, MD.

I-66 Inside the Capital Beltway Level 2 Traffic and Revenue Study, VA (2020) – Project Manager of a Level 2 T&R study to assist VDOT in its development of the project.

Midtown Tunnel/Downtown Tunnel/MLK Extension Investment Grade Traffic and Revenue Study, VA (2019) – Project Manager of a level 3 T&R study on behalf of VDOT to evaluate travel behavior, T&R projections, and potential tolling strategies on Elizabeth River crossings in Hampton Roads.

I-495 North Extension Level 2 Traffic and Revenue Study Update, VA (2019) – Project Manager of a level 2 T&R study to assist VDOT in its assessment of the effects of the Maryland Traffic Relief Plan—including I-495 and I-270 Express Lanes—on the I-495 North Extension project. The project is a 1.7-mile extension to the existing I-495 express lanes, adding two HOT lanes per direction to the corridor under an existing dynamic pricing policy.

I-25 South Managed Lanes Intermediate Traffic and Revenue Study, CO (2019) – Task Leader of a T&R study conducted on behalf of the Colorado DOT's High-Performance Transportation Enterprise (HPTE) for the possible implementation of dynamically priced managed lanes and other transportation improvements on the I-25 South corridor. Responsibilities included reviewing work performed to date regarding the project and overseeing the development, distribution, and analysis of a stated preference survey.

Professional Experience, cont'd.

I-81 Pass-Through Trip Tolling Level 2 Traffic and Revenue Study, VA (2019) – Project Manager of a level 2 T&R study on behalf of VDOT to evaluate a tolling scenario on I-81 in Virginia.

D2 95 Express Planning-Level Traffic and Revenue Study, FL (2018) – Project Manager for an intermediate T&R study assessing the implementation of managed lanes along the I-95 Corridor in St. Johns and Duval Counties, FL.

I-495 Extension Level 2 Traffic and Revenue Study, VA (2018) – Project Manager of a level 2 T&R study to assist VDOT in its project development efforts. The project is a 1.7-mile extension to the existing I-495 express lanes, adding two HOT lanes per direction to the corridor under a dynamic tolling policy.

I-66 HOT Lanes Inside the Capital Beltway Intermediate and Investment Grade Traffic and Revenue Studies, VA (2015, 2017) – Project Manager responsible for travel demand modeling and traffic and revenue forecasts. The project involved evaluating the conversion of existing HOV lanes to HOT lanes with dynamic tolling during peak periods. Conducted a stated preference survey, vehicle occupancy survey, socioeconomic analysis, time-of-day model disaggregation, project corridor calibration, and a VISSIM microscopic simulation to determine future flow rates after roadway improvements. Responsible for meetings and communication, supervising the data collection plan and travel demand modeling, communication with sub-consultants—including close collaboration for stated preference survey design and development of the choice models—designing a project-specific choice model structure, developing traffic and revenue forecasts, report production, preparing responses to client and involved stakeholders, and progress reports.

I-66 Express Lanes Outside the Capital Beltway Intermediate and Investment Grade Traffic and Revenue Studies, VA (2015, 2016) – Project Manager and travel demand modeling supervisor responsible for developing traffic and revenue forecasts to support a P3 project development. The project included the conversion/construction of a 25-mile dynamically tolled managed lane system within the I-66 corridor in Northern Virginia. Responsible for meetings and communication, supervising the data collection plan and travel demand modeling, communication with sub-consultants regarding surveys and data analysis—including close collaboration for stated preference survey design and development of the choice models—optimizing the project's configuration, and developing the traffic and revenue forecasts.

I-77 HOT Lanes Investment Grade Traffic and Revenue Study, NC (2015) – Task Manager and travel demand modeling supervisor responsible for developing traffic and revenue forecasts to support a bid by Cintra to the North Carolina DOT. The project included converting HOV lanes to dynamically tolled HOT lanes and constructing additional HOT lanes along a 26-mile corridor. Responsible for developing and implementing the modeling methodology, including traffic assignment and value of time estimation for different market segments. Also in charge of task management, traffic and revenue estimations, and preparing responses to rating agencies and financial groups.

West Bay Parkway Planning-Level Traffic and Revenue Study, FL (2015) – Tolling specialist and project advisor responsible for quality control and review of travel demand modeling and traffic and revenue forecasts. Project involved evaluating a proposed tolled connector offering travel time savings to access downtown and other tourist attraction areas in Panama City. Project also offered time savings for traveling to/from the local airport. Responsibilities included direct involvement in developing the stated preference survey to estimate travelers' value of time and willingness to pay, as well as reviewing project data, the toll diversion methodology, special trip generators, external-internal trips, airport trips, tourist activities and travel demand, and the traffic and revenue projections.

Wellness Way Parkway Planning-Level Traffic and Revenue Study, FL (2014) – Project Manager responsible for travel demand modeling and traffic and revenue forecasts. Project involved evaluating a tolled facility serving as a land bridge to connect two major roadways with high traffic volume passing through an area with very low population density. Responsible for meetings and communication, supervising the data collection plan and travel demand modeling, estimating value-of-time, customizing the toll diversion functions to the project area, and estimating the traffic and revenue forecasts. The study included various alternative scenario analyses to evaluate different levels of land development within the project area, as well as various scenarios considering the construction of an alternative roadway competing with the project.

Orchard Pond Road Level 2 Traffic and Revenue Study, FL (2012) – Modeling Manager for a comprehensive traffic and revenue forecast study to support financing by Florida's State Infrastructure Bank for the proposed construction of a five-mile roadway.

Senior Transportation System Modeler



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Mr. Pezo is an experienced international consultant in transportation engineering with a Master of Science in Systems Engineering and a specialization in Land Transportation. He has over 19 years of experience in transport and mobility planning, travel demand modeling, and data collection and analysis. He has worked extensively on urban and regional transportation projects involving toll roads, traffic and revenue forecasts, international border crossings, and various transportation systems such as transit, mass rapid transit (Heavy Rail Transit, Light Rail Transit, Bus Rapid Transit), non-motorized transport, and sustainable transport in the United States and Latin America. Mr. Pezo has extensive experience collecting data for different surveys and for transportation planning analysis. He also has expertise in utilizing specialized software for GIS and transportation network modeling and simulation. He is an advanced user of EMME, and he has given training courses in different countries as a PTV Certified Trainer.

Professional Career

- Senior Transportation System Modeler, C&M Associates, Inc. (2015–Present)
- Modeling Area Coordinator / Senior Transportation Modeler / Planning Management, Cal y Mayor y Asociados S.C., Mexico (2006–2015)
- Specialist in Demand Modeling / Development Management, Electric Train Autonomous Authority, Ministry of Transport, Peru (2002–2006)

Qualifications

- Post Graduate Specialization in Land Transport, Universidad Politecnica de Madrid, Spain (2007)
- M.S., System Engineering, Universidad Nacional de Ingenieria, Peru (2004)
- B.S., Transportation Engineering, Universidad Nacional Federico Villarreal, Peru (1999)

Areas of Expertise

- Traffic and Revenue Studies
 - Toll Roads/Bridges/Ports of Entry
 - Managed/HOT Lanes
- Transportation Planning
- Travel Demand Modeling
- Traffic Forecasting
- Traffic Engineering Studies
- Transit Modeling (LRT, HVT, BRT, etc.)
- Advanced user in CUBE, TransCAD, EMME, VISUM, Promodel, VISSIM, TransModeler
 - PTV Certified Trainer 111

Professional Experience

Tolling Strategy Scenario Analysis and Traffic and Revenue Studies for Toll Roads in Virginia, VA (Ongoing) – As Senior Transportation System Modeler, participating in the development of a four-step regional transportation model merging three different regions in one unified regional model that includes all tolled facilities within the region as an integrated and combined toll system with patterns and features adapted from the original MPO models. Developing a toll diversion model and T&R forecasts for Dulles Toll Road L3 Study, I-495 Next L3 Study, I-395 / I-95 Study, Stewie L3 Study, DTR TDM Study, Charles L3 Study, and I-66 HOT Lanes inside Capital Beltway L2 Study in Virginia. The model estimates the traffic shares expected to use the proposed full corridors and the integration with each one, considering the different types of demand segments.

Donna-Rio Bravo International Bridge L3 T&R Study, TX (2020) – As Senior Transportation System Modeler, developed a four-step binational travel demand model that includes a multinomial logit model with parameters calibrated in Biogeme. Developed a T&R forecasts for the proposed Donna - Rio Bravo International Bridge and Port of Entry (POE) on the Texas/Mexico border. The project involved developing a model on both sides of the border. The model estimated the shares of traffic expected to use the proposed crossing. Considering the delays experienced at the existing crossings, C&M estimated the traffic diversion from existing border crossings in the area. A binational econometric model was also developed to match and predict total outbound border crossings in the area for passenger vehicles and commercial vehicles.

Camino Real de Tierra Adentro Port of Entry – Presidential Permit Support, NM (2019) – As Senior Transportation System Modeler, developing a traffic and revenue (T&R) forecast model of a new land port of entry along the U.S./Mexico border to assist in the Presidential Permit process. Developed a binational travel demand model with updated information that includes a multinomial logit model with parameters calibrated in Biogeme and the use of Big Data (cell phone GPS trajectories) for vehicles crossing the border from an origin to a destination.

Senior Transportation System Modeler

Professional Experience, cont'd.

I-25 South Managed Lanes Intermediate Traffic and Revenue Study, CO (2019) – As Senior Transportation System Modeler, developed a toll diversion model and T&R forecasts for the proposed I-25 South Managed Lane in Colorado. The model estimated the share of traffic expected to use the proposed full corridor, considering the different types of demand segments, Single Occupancy Vehicle (SOV/DA), High Occupancy Vehicle with 2 passengers (HOV2/SR2), High Occupancy Vehicle with 3 or more passengers (HOV3+/SR3+). Estimated new trip tables based on iterative proportional fitting (IPF) methods based on EPS' proposed demographics.

Sunland Park Port of Entry Intermediate Traffic and Revenue Study, NM (2018) – As Senior Transportation System Modeler, traffic and revenue forecast model of a new land port of entry along the U.S./Mexico border to assist in the Presidential Permit process. Developed a binational travel demand model that includes a multinomial logit model in Biogeme and the use of Big-Data (cell phone GPS trajectories) for vehicles crossing the border from an origin to a destination.

I-81 Pass-Through Trip Tolling Level 2 Traffic and Revenue Study, VA (2018) – As Senior Transportation System Modeler, served the project team for travel demand modeling for a level 2 T&R study on behalf of VDOT to evaluate a tolling scenario on I-81 in Virginia. Responsible for data analysis and developed a post-processing model for the different scenarios evaluated in the study.

Riyadh Tolling Roadways Intermediate Traffic and Revenue Study, Riyadh, Saudi Arabia (2018) – As Senior Transportation System Modeler, developed a toll diversion model and T&R forecasts for two existing primary freeway corridors being converted to toll roads in Riyadh, Saudi Arabia by using TransCAD. Analyzed the effect on future congestion by tolling the two corridors as an incentive for travelers to use the new Riyadh Metro System by utilizing the Riyadh Metropolitan Area Transportation Model in EMME.

Southwebb Proposed Port of Entry and International Bridge, TX (2018) – As Senior Transportation System Modeler, developed a four-step binational travel demand model and T&R forecasts for the proposed Laredo 4/5 International Bridge and Port of Entry (POE) on the Texas/Mexico border. The project involved developing a model for the border cities of Laredo, TX and Nuevo Laredo in Mexico. The model estimated the share of traffic expected to use the proposed crossing. Considering the delays experienced at the existing crossings, C&M

estimated the traffic diversion from existing border crossings in the area. A binational econometric model was also developed to match and predict total outbound border crossings in the area for passenger vehicles and commercial vehicles.

365 TOLL Optimization Scenario Analysis, TX (2017) – As Senior Transportation System Modeler, developed the travel demand model to analyze the toll optimization scenario of the project including socioeconomic forecasts, external station traffic data, origin-destination survey data, to develop internal and external travel demand inputs for the travel demand modeling process, and estimated the resulting Equivalent Single Axle Loads (ESAL). C&M considered a review of existing data, forecasted traffic volumes, the scenario-related 365 TOLL T&R forecast, and the resulting ESAL for the pavement design.

Midtown Tunnel/Downtown Tunnel Truck Tolling Analysis, VA (2017) – As Senior Transportation System Modeler, developed T&R Assumptions for the travel demand model and T&R forecasts for the proposed Project, building upon the "Midtown Tunnel / Downtown Tunnel / MLK Extension PPTA Project. C&M utilized updated demographic data as well as a limited amount of existing transaction and toll data for the tunnels.

I-35 Traffic & Revenue Study: Scenario Analysis Data Request, TX (2017) – As Senior Transportation System Modeler, developed a toll diversion model and T&R forecasts for the proposed I-35 Managed Lane in San Antonio, TX. based on the travel demand model developed in June 2015 by Stantec Consulting Services, Inc. The model estimated the share of traffic expected to use the proposed corridor. C&M estimated the traffic diversion from existing highway.

Donna & Anzalduas Land Ports of Entry T&R Study, TX (2017) – As Senior Transportation System Modeler, developed truck traffic forecasts at sketch level. The objective of C&M's study was to estimate the Alliance International Bridge's potential to capture a portion of truck traffic crossing between Mexico and Hidalgo County. The analysis considered the potential increase in demand that may arise from the completion of the Mazatlan-Matamoros corridor in Mexico.

Investment Grade Traffic and Revenue Analysis for SH 365 and the IBTC, TX (2016) – Developed the four-step binational travel demand model to analyze the different scenarios of the project, including socioeconomic forecasts, external station traffic data, and origin-destination survey data, and to develop internal and external travel demand inputs for the four-step travel demand modeling process.

Senior Transportation System Modeler



Mrs. Memarian has 12 years of experience in transportation planning, network modeling, travel demand modeling/forecasting, simulation modeling, traffic impact studies, and highway design. She has worked as a Transportation Planner/Modeler for both public organizations and private consulting companies. She is well-versed in manuals such as AASHTO, HCM, and MUTCD, and she is an expert user of traffic/transportation software such as Synchro, VISSIM, and TransCAD. She is also familiar with TransModeler, CORSIM, and ArcGIS. She is capable of developing applications in programming platforms such as Java and VBA, and she is experienced in automating the computation process by writing required scripts in excel macros and other programming languages.

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Professional Career

- Senior Transportation System Modeler, C&M Associates, Inc., Dallas, TX (2017–Present)
- Graduate Teaching Assistant and Lecturer, University of Texas at Arlington, Arlington, TX (2011–2016)
- Transportation System Modeler, C&M Associates, Inc. Dallas, TX (2013–2014)
- Transportation Planner, Department of Planning, Road Maintenance & Transportation Organization (RMTO), Tehran, Iran (2008–2011)
- Graduate Research Assistance, Institute of Transportation Studies Research (ITSR), Sharif University of Technology, Tehran, Iran (2007–2008)

Qualifications

- Professional Engineer (P.E.), Texas
- Ph.D., Civil Engineering, Transportation Engineering, University of Texas at Arlington, Arlington, TX (2016)
- M.S., Civil Engineering, Transportation Engineering & Planning, Sharif University of Technology, Tehran, Iran (2008)

Professional Activities

- President, Institute of Transportation Engineers (ITE) student chapter, University of Texas at Arlington (2013)
- Secretary/Treasurer, ITE student chapter, University of Texas at Arlington (2012)

Professional Experience

I-580 and I-680 Express Lanes Level 2 Traffic and Revenue Studies, CA (2020) – Developing the toll diversion microscopic simulation model in VISSIM for I-580 and I-680 corridor to provide toll revenue forecast to support current and future toll revenue expenditure plans.

I-345 Feasibility Study, TX (2018-2020) – Performing data collection plan, evaluating collected data, data cleaning, and developing and maintaining the corridor database. Reviewing and modifying the NCTCOG regional travel demand model network. Developing a calibrated model for the project area base on the traffic counts and travel time data, developing future trip tables, and evaluating the feasibility of several alternatives for the I-345 corridor.

Camino Real de Tierra Adentro POE Presidential Permit Support Study, NM (2019) – Traffic projection and Level of Service (LOS) analysis of the project's surrounding road network. Developed traffic projections based on the available counts and the model results and conducted LOS analysis of the project's surrounding road network via Synchro.

I-27 Operational Improvements Study, TX (2019) – Developed traffic projections for No-Build and Build scenarios for years 2018, 2021, and 2041. Developed the microscopic simulation model in VISSIM for No-Build and Build scenarios. Extracted roadway densities and intersection delay from the VISSIM outputs. Provided LOS based on HCM criteria to evaluate the operational improvements along the I-27 corridor in Amarillo, TX.

Sunland Park Port of Entry Intermediate Traffic and Revenue Study, NM (2018) – Responsible for Border-Crossing Demand Forecasting. Tested several forecasting methods to estimate passenger and commercial vehicle traffic demand for existing POEs within the study area and choose Multiple Linear Regression. Developed, validated, and implemented an econometric multiple linear regression model to forecast passenger and commercial vehicle traffic demand.

Senior Transportation System Modeler

Professional Experience (Cont'd.)

International Bridge Trade Corridor (IBTC) Traffic Analysis for Highway Design Tabulations, TX (2018) –

Responsible for preparing the traffic analysis for highway design (TAHD) tabulations with Equivalent 18k Single Axle Load (ESAL) estimates and average daily traffic projections to be used in the air and noise analysis.

Loop 375 Traffic Analysis Report Update, TX (2018) –

Developed traffic projections for No-Build and Build scenarios. Performed traffic operations model in HCS and Synchro, and traffic analysis for No-Build and Build scenarios.

Boerne Relief Route Feasibility Study- SH 46 Travel Demand Modeling, TX (2017) –

Performed travel demand modeling to forecast traffic volume on the roadway network in and around the project area for a No-Build scenario, and the three provided alignments. Evaluating and comparing the alternatives via several measure of effectiveness (MOE).

Montana Avenue Traffic Analysis Report Update, TX (2017) –

Responsible for developing peak-hour traffic projections for Montana Avenue between Global Reach Drive and Zaragoza for No-Build and Build scenarios for years 2020 and 2040. Performed travel demand modeling using the MPO model (Horizon Model). Developing the microscopic simulation model in VISSIM for No-Build and Build scenarios. Extracted roadway densities and intersection delay from the VISSIM outputs and provided LOS based on HCM criteria.

Developing a Decision Support System for Traffic Diversion around Construction Closures (2013–2016) –

Studied the impact of work zones on traffic network congestion. Developed an optimization-based algorithm to provide alternative routes for travelers while maximizing network performance. The developed model was integrated with an application-based Decision Support System (DSS) to assist traffic network managers in diverting traffic around the work zone. The traffic diversion model was applied to the Tarrant County network in north Texas to determine the effectiveness of the system.

Traffic and Revenue Studies for the Chisholm Trail Parkway (CTP) and the President George Bush Turnpike-Western Extension (PGBT-WE), TX (2014) –

Responsible for developing travel demand models, geographically representing the results from travel demand model using ArcGIS, performing a preliminary socioeconomic evaluation, analyzing historical traffic data, and model calibration/validation efforts. Also involved in periodic traffic data analysis for the traffic and revenue forecast studies.

Evaluation and Analysis of the Rural Road Network of Iran (2008-2010) –

Responsible for developing an assessment system to identify critical road segments in the rural traffic network based on their safety and operational issues. This system was used to record traffic road attributes such as speed and traffic volume, as well as the number of crashes and road geometric design characteristics. The data were aggregated to present level of service and road safety status in homogeneous traffic zoning. The project aimed to direct future planning decisions to remove bottlenecks and improve safety along the roads.

Graduate Research Assistance, ITS, Sharif University of Technology, Tehran, Iran (2007–2008) –

Conducted intersection design and safety studies for the City of Shiraz.

Transportation System Modeler



Ms. Li has a diverse background in transportation engineering, planning, and policy. She has 8 years of experience in traffic and revenue analysis, having served as a Traffic & Revenue Analyst and a Traffic & Revenue Manager while employed at Cintra US. During her tenure with Cintra US concession companies at Dallas, TX and Charlotte, NC, Ms. Li gained extensive working experience and knowledge of P3 bidding and operations interacting with different teams to improve traffic and revenue forecast development. After joining C&M, Ms. Li applied and expanded her expertise gained from industry to the consultancy work.

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Professional Career

- Transportation System Modeler, C&M Associates, Inc., Dallas, TX (2018–Present)
- Traffic & Revenue Manager, CINTRA US, NC (2017–2018)
- Traffic & Revenue Analyst, CINTRA US, TX (2012–2017)
- Assistant Civil Engineer, Pepe Engineering, TX (2011–2012)
- Graduate Engineer Intern, City of Houston, TX (2010)

Qualifications

- Registered Professional Engineer (P.E.) in Texas – License #136991
- Master of Engineering (M.Eng.), Transportation Engineering, Texas A&M University, College Station, TX (2011)
- B.A., International Business, Dalian University of Technology, Dalian, China (2006)

Areas of Expertise

- Traffic and Revenue Studies
- Transportation Engineering
- Transportation Planning
- Sketch Modeling
- Demand Forecasting
- Toll Pricing
- GIS (ArcGIS, QGIS)
- SAS, SPSS, JMP, Stata, R, Tableau
- TransCAD, AutoCAD, HCS, CORSIM, Synchro

Professional Experience

I-495 NEXT Level 3 Traffic and Revenue Study Update, VA (2020 Ongoing) – Task lead developing a post-processing model to analyze the Cube model outputs and produce the T&R streams for the forecast years and for different tolling scenarios.

I-66 Inside the Capital Beltway Level 2 Traffic and Revenue Study, VA (2020) – Task lead conducting analyses to estimate the toll policy curves. Developed a post-processing model to analyze the Cube model outputs and produce the T&R streams for the forecast years and for Base, High, Low, Recession, Both Direction Tolling and Throughput Maximization scenarios.

IBTC Traffic Project, TX (2020) – Task lead developing traffic projections for the project following TxDOT/TP&P guidelines. Produced equivalent single axle load (ESAL) calculation for Phase I and Phase II, respectively.

I-25 North Segment 2 Level 2 Traffic and Revenue Study, CO (2020) – Task Lead analyzing socioeconomic (SE) data for the study area and validating if the regional model has the correct SE inputs. Analyzed real traffic data collected by the ITS devices to calibrate the toll diversion model.

I-495 NEXT Level 2 Traffic and Revenue Study Update, VA (2019) – Task lead analyzing socioeconomic data for the study area and updated the travel demand model's (TDM) zone files using the new SE forecasts for all scenarios. Reviewed the base year network coding. Estimated Value of Time using the most recent income data.

International Bridge Trade Corridor (IBTC) Traffic Projections and Traffic Analysis for Highway Design Tabulations, TX (2019) – Task lead preparing versions of the Traffic Analysis for Highway Design (TAHD) tabulations for the IBTC with Equivalent 18k Single Axle Load (ESAL) estimates and average daily traffic projections included.

Transportation System Modeler

Professional Experience, cont'd.

Gilcrease Expressway – West Segment Traffic and Revenue Review, OK (2019) – Task lead evaluating travel demand modeling methodology, including traffic growth, tolling policy, VOT assumptions, and T&R forecasting assumptions. Developed Base Case and T&R forecasts for the associated concession period of operation. Performed a Monte Carlo simulation for risk analysis to quantify the uncertainties of the forecast.

Morrison Road Traffic Projections, TX (2019) – Task lead developing traffic projections based on Texas Department of Transportation (TxDOT) Transportation Planning and Programming Division (TPP) methodology for tabulations of Equivalent 18k Single Axle Load (ESAL) value.

Old Alice Road and Naranjo Road Traffic Projections, TX (2019) – Task lead developing traffic projections based on Texas Department of Transportation (TxDOT) Transportation Planning and Programming Division (TPP) methodology for tabulations of Equivalent 18k Single Axle Load (ESAL) value.

I-25 South Managed Lanes Intermediate Traffic and Revenue Study, CO (2019) – Task lead analyzing StreetLight Data's location-based services (LBS) dataset to obtain meaningful origin-destination trip tables to support the travel demand modeling process.

I-27 Operational Improvements Study, TX (2019) – Task lead analyzing and summarizing the historical accident/crash data to assist with an Interstate Access Justification Report in support of evaluating the operational improvements along the I-27 corridor in Amarillo, TX.

Flor de Mayo International Bridge Traffic and Revenue Feasibility Study, TX (2019) – Task lead summarizing existing traffic and revenue information of the international toll bridges in Brownsville, TX. Developed a binational econometric model to forecast future border crossings of passenger and commercial vehicles for 33 years. Developed a route choice model to obtain the origin-destination trip tables across the U.S./Mexico border.

I-81 Pass-Through Trip Tolling Level 2 Traffic and Revenue Study, VA (2019) – Task lead analyzing existing traffic patterns along the corridor and summarizing the socioeconomic information around the project area.

Southwebb Port of Entry / Laredo Bridge 4/5 Traffic and Revenue Study, TX (2018) – Task lead calibrating a binational travel demand model and assisting with a binational econometric model to forecast future border

crossings of passenger and commercial vehicles for a traffic and revenue forecast of a new port of entry along the U.S./Mexico border.

D2 95 Express Planning-Level Traffic and Revenue Study, FL (2018) – Task member involved in various tasks including summarizing existing traffic, analyzing historical and forecasted socioeconomic data, and assisting with the post-modeling process of the toll diversion model and the traffic and revenue forecasts.

I-77 Mobility Partners, NC (2017–2018) – As Traffic & Revenue Manager, responsibilities included the following:

- Proactively understood project traffic performance, operational requirements, customer expectations, and revenue needs.
- Calibrated and operated Toll Setting Model software to establish toll rates in accordance with Business Rules.
- Conveyed complex information to stakeholders about project performance in terms of traffic and revenue (T&R).
- Coordinated with the CEO, COO, Public Relations, Marketing, Toll Operations, and other internal teams to develop novel and effective ways to improve T&R through design, signage, and communication changes.
- Oversaw development of T&R forecasts for the project, including for annual budgets and for quarterly revisions.
- Prepared quarterly reports and presentations summarizing the project's traffic, revenue, and economic conditions.
- Coordinated the T&R Department workload to ensure accountability, reliability, and accuracy by delegating necessary tasks and responsibilities to ensure department goals were met.

NTE Mobility Partners, TX (2012–2017) – As Traffic & Revenue Analyst, responsibilities included the following:

- Analyzed T&R data of the concession companies and their area of influence; identified traffic patterns and areas of improvement.
- Operated Business Intelligence tools, created reports and dashboards, and ran queries to extract data from databases.
- Developed and operated spreadsheet-based models and network (micro or macro simulation) models to estimate traffic impacts and future T&R.
- Operated the company's Toll Setting Module software to establish toll rates in accordance with Business Rules.



Mr. Escobar has over 13 years of experience working in traffic and transit projects for private and public sectors clients. His experience covers the areas of travel demand modeling and data collection and analysis. he has worked on traffic and revenue studies for roadway projects at national and international levels, as well as survey design and data collection for transportation planning studies.

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Professional Career

- Transportation Engineer, C&M Associates, Inc. (2020 – Present)
- Transportation Specialist, Cal y Mayor y Asociados, S.C. (2007-2019)

Qualifications

- B.S., Industrial Mechanics Engineer, Instituto Politecnico Nacional. (2005)

Areas of Expertise

- Travel demand Modeling
 - Visum
- Simulation
 - Promodel
 - Parkcad
- Geographical Information System
 - ArcMap

Professional Experience

Responsibilities include serving as analyst and travel demand modeler, particularly for traffic and revenue (T&R) studies of tolled facilities. Relevant projects include the following:

Traffic and Revenue Study Update for Otay Mesa II international Bridge Project, Tijuana, Mexico (2019) – Responsibilities included updating the information in the travel demand model such as fare and traffic counts, calibration of the simulation model, estimation of environmental impact, and estimation of the demand forecast.

Traffic and Revenue Study for On-Ramp “D1” and Off-Ramp to Assembly Plans Volkswagen Project for Bypass of Puebla City, Puebla, Mexico (2019) – Responsibilities included localization of station field, calibration of the travel demand model, and estimation of the demand forecast.

Bus Rapid Transit Project for the Naucalpan Ecatepec Highway, Mexico (2019) – Developed the travel demand model, analyzed future scenarios, and estimated the demand forecast.

Traffic and Revenue Study for an Unsolicited Proposal of the Nichupte Bridge Project (2019) – Developed the travel demand model, analyzed future scenarios, and estimated the demand forecast.

Update of the traffic and revenue study of the infrastructure assets of network highway of the Occident. (2019) – Updated the information in the travel demand model such as fare and traffic counts, recalibrated the simulation model, estimated environmental impact, and estimated the demand forecast.

Traffic and Revenue Study Update for the Puente de Vigas-Lomas Verdes- Chamapa Highway Project, Mexico City (2019) – Updated the information in the travel demand model such as fare and traffic counts, calibrated the travel demand model, environmental analysis, and estimated the demand forecast.

Transportation Engineer

Professional Experience, cont'd.

Traffic and Revenue Study for the Tepic – Compostela Highway Project, Nayarit, Mexico (2018) – Reviewed secondary information, field work formats, developed supply and demand models, calibrated the travel demand model, and estimated the demand forecast.

Traffic and Transport Study for the Freight and Goods and Passengers Train between the Provinces of Panamá and Chiriquí, Panama (2018) – Reviewed secondary information, field work formats, business interviews, developed a supply model, developed and calibrated the travel demand model for estimating the impact of the new train, number of passengers and goods for the project, and the demand forecast for future years.

Technical, Economic, and Financial Feasibility Study of the Cable Car System in Municipal Naucalpan, Mexico (2018) – Reviewed secondary information, developed a supply model and reviewed the inputs used in the travel demand model.

Traffic and Revenue Study Update for Bypass Puebla, Puebla, Mexico (2018) – Analyzed primary information to be used in updating the base year estimation.

Optimization of LOS of the Toll booth “La Hortaliza”, Toluca-Zitácuaro Highway, Mexico (2017) – Reviewed the inputs used in the simulation of operations of the toll booth, developed the simulation model, evaluated alternative solutions, and prepared the technical report.

Mobility Study for CETRAM Observatorio at Mexico City, Mexico City (2017) – Developed a supply model, developed the travel demand model to estimate the impact of new infrastructure in the principal station of the subway and its demand forecast.

Traffic and Revenue Study Update of Bypass Puebla, Puebla (2017) – Calibrated the travel demand model, estimated the base year for the asset and its demand forecast.

Update of traffic and revenue study of Peñón-Textcoco, Ecatepec-Pirámides, Peñón-Piramides highways and the viaduct 602 project, Mexico City (2017) – Analysis of primary information to be used in updating the estimation of the base year for the asset.

Traffic and Revenue Study Update of San M. Texmelucan – Tlaxcala highway, Puebla Mexico (2017) – Analysis of primary information to be used in updating the estimation of the base year for the asset.

Traffic and Revenue Study for 4/5 International Bridge, Nuevo Laredo, Mexico (2017) – Conducted a traffic and revenue study for 4/5 international bridge project.

Impact on the vehicle traffic of the northwest bypass of Saltillo, Saltillo – Monterrey highway and viaduct Santa Catarina, Monterrey Mexico (2016) – Developed travel demand model, analyzed price elasticity of demand for the asset, LOS analysis, and estimated environmental impact.

Traffic and revenue study and Cost-Benefit study for Acapulco – Zihuatanejo highway, Mexico (2016) – Developed the travel demand model, generated inputs to socioeconomic evaluation, analyzed junctions, analyzed price elasticity of demand and its demand forecast.

Updated Traffic Study and Economic Feasibility of the Bypass East of Acapulco and Traffic Study of Chichicalco junction, Mexico (year) – Developed travel demand model, generated inputs to socioeconomic evaluation, and conducted LOS analysis.

Sustainable Urban Mobility Plan of Metropolitan Zone of Panamá – PIMUS Stage II, Panama (2015) – Developed freight transport model.

Traffic and Revenue Study of highways of Cuernavaca, Morelos Mexico (2016) – Developed travel demand model, analyzed proposals, estimated base year of Atlixcáyotl and Atlixco – Jantetelco motorway and its revenue.

Traffic and revenue study of Elevated Viaduct of Puebla City project, Puebla Mexico (2015) – Developed supply, demand, and transport model, designed field formats, estimated environmental impact, LOS analysis, and forecasted travel demand and revenue.

Traffic and revenue study of Hueyetlaco tunnel project, Mexico City (2015) – Developed supply, demand, and transport model, estimated environmental impact, and forecasted travel demand and revenue.

Traffic and revenue study and analysis of capacity for segments and toll booth of Guadalajara – Colima highway and Analysis of alternative solutions for reducing the pay toll evasion, Mexico (2014) – Developed supply, demand, and transport model, estimated environmental impact, analyzed price elasticity of demand, and forecasted travel demand and revenue.



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Mr. Liddle has 6 years of experience in document control coordination for C&M and is responsible for organizing, tracking, and archiving project-related documents. He has 12 years of professional writing experience and is responsible for preparing and/or reviewing all reports, memoranda, and proposals produced by C&M, including document template design, website design, and other graphic design elements. Prior to working for C&M, he published 13 manuscripts in a variety of peer-reviewed journals, such as *Behavioral and Brain Sciences*, *Review of General Psychology*, and *Wiley Interdisciplinary Reviews: Cognitive Science*. He has also written several chapters for academic handbooks from highly regarded publishers, and he is the Senior Editor of a volume soon to be published by Oxford University Press. He has 7 years of experience copy editing manuscripts for the online academic journal *Evolutionary Psychology*, for which he served as Production Manager for 2 years.

Professional Career

- Technical Writer / Document Control, C&M Associates, Inc., Dallas, TX (2014–Present)
- Production Manager, *Evolutionary Psychology*, ISSN 1474-7049 (2014–2015)
- Copy Editor, Cactus Communications Center of Excellence for Psychology and Psychosocial Healthcare (2014)
- Senior Editorial Assistant, *Evolutionary Psychology*, ISSN 1474-7049 (2013–2014)
- Assistant to the Managing Editor, *Evolutionary Psychology*, ISSN 1474-7049 (2009–2013)

Education

- M.A., Experimental Psychology, Florida Atlantic University (2014)
- B.A., Psychology, State University of New York at Oswego (2006)

Areas of Expertise

- Writing/Editing
 - Technical Writing
 - Academic Writing
 - Copy Editing/Proofreading
- Report Production
- Proposal Production
- Graphic Design
 - Adobe Creative Cloud
- Web Design
- Data Analysis & Statistics
 - SPSS

Professional Experience

Mr. Liddle has coordinated documentation—and prepared draft and final reports—for the following projects:

- I-25 North Segment 2 Level 2 Traffic and Revenue Study, CO (2020)
- I-580 Express Lanes Level 2 Traffic and Revenue Study, CA (2020)
- I-680 Express Lanes Level 2 Traffic and Revenue Study, CA (2020)
- Donna-Rio Bravo International Bridge Investment Grade Traffic and Revenue Study, TX (2020)
- I-25 South Managed Lanes Level 2 Traffic and Revenue Study, CO (2019)
- I-81 Pass-Through Trip Tolling Level 2 Traffic and Revenue Study, VA (2019)
- Southwebb Port of Entry and International Bridge Traffic and Revenue Study, TX (2019)
- I-495 Level 2 Traffic and Revenue Study, VA (2018)
- D2 95 Express Planning-Level Traffic and Revenue Study, FL (2018)
- King Fahd and King Abdullah Toll Roads Traffic and Revenue Study, Saudi Arabia (2018)
- Sunland Park International Bridge Intermediate Traffic and Revenue Study, NM (2018)
- Grand Parkway Segments D through I T&R Peer Review and Risk Assessment Update, TX (2018)
- Mile 6 Road Traffic Projections, TX (2018)
- I-25 South Corridor Gap Segment Level 2 Traffic and Revenue Study, CO (2018)

Technical Writer/Document Control

Professional Experience, cont'd.

- American Roads Assets Traffic and Revenue Study, MI, AL (2018)
- Cesar Chavez Road Traffic Projections Study, TX (2018)
- SH 32 Traffic Projections Study, TX (2017)
- I-35 Managed Lanes Traffic and Revenue Study, TX (2017)
- Midtown Tunnel/Downtown Tunnel T&R Update, VA (2017)
- Grand Parkway Segments D through I T&R Peer Review and Risk Assessment, TX (2017)
- Walton Beach Bypass Sketch-Level Traffic and Revenue Study, FL (2017)
- I-81 Sketch-Level Traffic and Revenue Study, VA (2017)
- Donna-Rio Bravo and Anzalduas International Bridges Traffic Assessment Study, TX (2017)
- SR 528/Beachline East Sketch-Level Traffic and Revenue Peer Review, FL (2017)
- SH 249 Extension Due Diligence Study, TX (2017)
- Montana Avenue Traffic Analysis Report, TX (2017)
- I-70 East Traffic Projections Study, CO (2017)
- I-66 HOT Lanes Inside the Capital Beltway Intermediate and Investment Grade Traffic and Revenue Studies, VA (2015, 2017)
- Northwest Parkway Traffic and Revenue Study, CO (2016)
- Houbolt Toll Bridge Investment Grade Traffic and Revenue Study, IL (2016)
- C-470 Managed Lanes Traffic and Revenue Review, CO (2016)
- El Paso Loop 375 Managed Lanes Traffic Evaluation, TX (2016)
- Del Rio-Acuña II International Port of Entry Level 2 Traffic and Revenue Study, TX (2016)
- SH 365 Investment Grade Traffic and Revenue Study, TX (2016)
- I-66 Express Lanes Outside the Beltway Intermediate and Investment Grade Traffic and Revenue Studies, VA (2015, 2016)
- NTTA Special Projects System Comprehensive Traffic and Revenue Update, TX (2016)
- I-73 Intermediate Traffic and Revenue Study, SC (2015)
- SH 288 Managed Lanes Investment Grade Traffic and Revenue Study, TX (2015)
- I-4 "Beyond the Ultimate" Planning-Level Traffic and Revenue Study, FL (2015)
- West Bay Parkway Planning-Level Traffic and Revenue Study, FL (2015)
- I-77 Managed Lanes Investment Grade Traffic and Revenue Study, NC (2015)
- Montana Avenue Corridor Management Study, TX (2015)
- Fort Bliss Program Traffic Projections and Analysis, TX (2015)
- Traffic and Revenue Study for the Alliance International Bridge, TX (2015)
- Investment Grade Traffic and Revenue Analysis for SH 365 and the IBTC, TX (2014)
- Comprehensive Traffic and Revenue Study for the Chisholm Trail Parkway, TX (2014)
- Intermediate Level Traffic and Revenue Update for the President George Bush Turnpike-Western Extension, TX (2014)
- Wellness Way Parkway Planning-Level Traffic and Revenue Study, FL (2014)



MARK FOWLER

Director

EXPERIENCE | 16 Years

EDUCATION | BS, Physics, Bates College

BIO

Mark Fowler helps clients understand how travelers will respond to the pricing of transportation infrastructure. Mark has managed dozens of research projects focused on the behavioral response of travelers to road pricing and congestion management techniques, including toll roads and bridges, managed/HOT lanes, area/cordon pricing, congestion pricing, VMT fees, and parking fees. The results of these studies are used to support investment-grade traffic and revenue forecasts for transportation infrastructure projects across the United States and Canada. His focus includes the design and implementation of survey questionnaires as well as data collection and statistical analysis.

PROJECT EXPERIENCE

Road Pricing Studies

Virginia DOT, Elizabeth River Tunnels. Directed a stated preference survey to estimate willingness to pay for travel time savings and willingness to pay for travel time reliability of users who travel between Portsmouth and Norfolk, VA using the Downtown and/or Midtown Tunnels. The stated preference survey results supported an investment-grade traffic and revenue forecast for the facilities. (2019)

Florida's Turnpike Enterprise, Colonial Parkway, Orlando, FL. Directed a stated preference survey to understand how travelers would respond to the proposed Colonial Parkway project, a seven-mile facility along SR-50 with two toll lanes and three local travel lanes in each direction. The survey estimated travelers' value of time and propensity to use the proposed new toll lanes under various conditions. The results of the survey were used to support estimates of traffic and revenue for the corridor. (2018)

Texas Department of Transportation, Houston Grand Parkway Segments H&I, Houston, TX. Directed a stated preference survey to evaluate proposed segments H&I of the Grand Parkway, a new circumferential highway around the city of Houston, TX. The results of the survey were incorporated into the regional travel forecasting model to support estimates of traffic and revenue in the corridor. (2015)

Texas Department of Transportation, Houston SH 249, Houston, TX. Directed a stated preference survey to evaluate the proposed tolled extension of State Highway 249 Northwest of Houston, TX. The proposed facility would link Montgomery and Grimes Counties to Northwest Harris County, TX. The results of the survey were incorporated into the regional travel forecasting model to support estimates of traffic and revenue in the corridor. (2015)

Northeast Texas RMA, Tyler Toll 49, Tyler, TX. Directed a stated preference survey to evaluate the traffic and revenue potential of Toll 49, a partially completed circumferential highway around the city of Tyler, TX. The results of the survey were incorporated into the regional travel forecasting model to support estimates of traffic and revenue in the corridor. (2015)

Florida's Turnpike Enterprise, Wellness Way Parkway, Orlando, FL.

Directed a stated preference survey to evaluate the traffic and revenue potential of the Wellness Way Parkway, a proposed toll facility southwest of Orlando in Lake County, Florida. The proposed toll facility is unique in that it will be a four-lane, rural, arterial with a 55 mile per hour design speed limit and several traffic lights at intersections with roads used to access the proposed development along the corridor. The survey was used to estimate the willingness to pay for travel time savings and the willingness to pay to access proposed residential, commercial, and retail development along the corridor. Estimates of travelers' willingness to pay for travel time savings or willingness to pay to access the proposed development will be used by Florida's Turnpike Enterprise to forecast traffic and revenue in the corridor. (2014)

Florida's Turnpike Enterprise, Orlando I-4 Beyond the Ultimate, Orlando, FL.

Directed a stated preference survey to evaluate proposed express lanes in the I-4 corridor between Kirkman Road and US 27 in Polk County and between SR 434 and SR 472 in Volusia County. RSG conducted a stated preference survey in the I-4 corridor to estimate travelers' willingness to pay for travel-time savings and their propensity to use the proposed express lanes under different travel conditions. The results of the survey were used to support estimates of traffic and revenue for the proposed express lanes. (2014)

Texas Department of Transportation, Dallas/Fort Worth Regional Managed Lanes, Dallas/Fort Worth, TX.

Directed a stated preference survey for a proposed system of express lanes in the Dallas/Fort Worth region, including SH 183, SH 114, Loop 12, I-820, and I-35W. Separate values of time were estimated for each corridor by trip purpose and time of day. Estimates of values of time were used to support investment-grade traffic and revenue estimates for the proposed lanes. (2014)

North Texas Tollway Authority, Chisholm Trail Parkway, Fort Worth, TX.

Managed a stated preference survey to estimate the value of time of travelers in the Chisholm Trail Parkway corridor in the Fort Worth, TX region. The survey collected data from travelers who currently use the Chisholm Trail Parkway as well as travelers who use competing toll free routes. Estimates of values of time were used to update traffic and revenue forecasts for the newly-opened toll facility. (2014)

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Florida's Turnpike Enterprise and the Florida Department of Transportation, Turnpike Integrated Congestion Pricing Plan, Florida.

Conducted a stated preference survey for travelers in the Southwest, Central, and South Florida regions to evaluate proposed congestion pricing alternatives on Turnpike facilities. Developed and implemented a stated preference survey and estimated discrete choice models to provide estimates of values of time. Supported implementation of the survey results into the traffic and revenue forecasting model. (2013)

Florida's Turnpike Enterprise and the Florida Department of Transportation, 95 Express Phase 3 and 4, Palm Beach and Broward Counties, Florida.

Conducted a stated preference survey for travelers in Palm Beach and Broward Counties to understand travel behavior related to proposed express lanes on a 70-mile section of I-95 between Ives Dairy Road and West Indiantown Road. Developed and implemented a stated preference survey, estimated discrete choice models, and supported implementation of the survey results into the traffic and revenue forecasting model. (2013)

Florida Department of Transportation, Florida's Future Corridors – Tampa to Jacksonville, Florida.

Conducted a stated preference survey for travelers making long-distance trips in the region between Tampa, FL and Jacksonville, FL to understand travel behavior related to proposed new toll corridor between these cities. Developed and implemented a stated preference survey, synthesized the data with data from several other value-of-time studies that had been recently been conducted in Tampa, Orlando, and Jacksonville, estimated discrete choice models, and supported implementation of the survey results into the traffic and revenue forecasting model. (2013)

West Baton Rouge Parish, Louisiana Route 1 / I-10 Connector.

Conducted a stated preference survey to forecast the behavioral response of passenger and commercial vehicle travelers to a potential new 1.5-mile bypass between Louisiana Route 1 and Interstate 10 in West Baton Rouge Parish, LA. The survey data were used to estimate the value of time of travelers making trips within the corridor. The estimates of value of time were incorporated into the travel forecasting model to forecast traffic and toll revenue. (2012)

Louisiana Department of Transportation and Development, Louisiana Route 1, Port Fourchon, Louisiana.

Managed a survey effort to forecast the behavioral response of passenger and commercial vehicle travelers to potential changes to the toll structure on Louisiana Route 1 (LA1) between Golden Meadow and Port Fourchon. The survey data were used to estimate the suppression of vehicle trips on LA1 by vehicle type and trip purpose for three different toll rate increases. The estimates of trip suppression were incorporated into the travel forecasting model to forecast changes in traffic and toll revenue. (2012)

Harris County Toll Road Authority, SH 288 Managed Lanes, Houston, Texas.

Managed a stated preference survey of travelers on SH 288 south of Houston, TX to support a traffic and revenue forecast for proposed managed lanes in the corridor. (2012)

Florida's Turnpike Enterprise and the Florida Department of Transportation, South Florida Managed Lanes System, Miami-Dade and Broward Counties, Florida.

Conducted a joint stated and revealed preference survey for travelers in South Florida to understand existing

travel behavior on the I-95 Express Lanes as well as potential travel behavior related to proposed express lanes on I-75 and the Palmetto Expressway. Developed and implemented a joint stated and revealed preference survey, estimated discrete choice models, collected origin-destination data using Bluetooth scanners, and validated and calibrating the choice models using the Bluetooth origin-destination data and I-95 Express volume and toll information provided by FDOT. (2012)

Georgia Department of Transportation, Georgia Statewide Pricing Study, Georgia.

Conducted a statewide stated preference survey for automobile and commercial vehicle drivers in Georgia to evaluate behavioral response to potential future pricing projects, including the addition of express lanes to existing facilities as well as the construction of new toll roads between major population centers. RSG developed and implemented survey questionnaires for automobile and freight traffic and estimated discrete choice models to support feasibility analysis for the potential pricing projects. (2011)

North Texas Tollway Authority, System-wide Update, Dallas, Texas.

Senior technical advisor for a stated preference survey effort to support updates to the North Texas Tollway Authority's (NTTA) travel forecasting model. Recent evidence in the Dallas area suggests that actual values of time of travelers using the North NTTA system may be higher than the values that are currently used in the model. In order to verify the actual value of time, RSG conducted a computer-based origin-destination, revealed preference, and stated preference travel survey, the results of which will be used to update the system-wide travel demand model for the toll road system to forecast traffic and revenue. The survey also sought to identify factors other than travel time and toll cost that influence travelers choice of route and mode. (2011)

Harris County Toll Road Authority, Fort Bend Grand Parkway Toll Road Authority, Grand Parkway, Houston, Texas.

Managed a stated preference survey to support estimates of traffic and revenue for State Highway 99 (Grand Parkway), a proposed circumferential highway traversing seven counties and encircling the Greater Houston region over a distance of approximately 180 miles. Conducted a stated preference survey for passenger vehicles to estimate the value of travel time savings (VTTS) of travelers who are candidates for using segments D through G of the Grand Parkway. Estimates of travelers' time and cost sensitivities were used to support estimates of highway traffic and toll revenue. (2011)

Texas Department of Transportation, SH 183 Managed Lanes, Dallas, Texas.

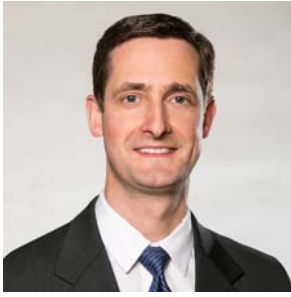
Conducted a stated preference survey for passenger vehicle drivers to estimate values of time for the proposed addition of managed lanes along a 10 mile section of SH 183 in Dallas, TX. (2009)

Texas Department of Transportation, Tyler Loop 49, Tyler, Texas.

Supported a stated preference survey for passenger and commercial vehicle travelers to estimate values of time for a proposed 22 mile bypass that will be built South and West of Tyler, TX. (2009)

Texas Turnpike Authority, SH 161, Dallas and Tarrant Counties, Texas.

A stated preference survey of potential users of the planned extension of SH 161 south through Western Dallas County. Designed and programmed interactive geocoding section of stated preference survey for computer-based administration. Estimated discrete choice models to obtain values of time for the corridor. (2006)



David Schwartz

Principal



Education

MCRP, The Ohio State University, 2006

B.M., University of Cincinnati, 1999

Also attended: B.A., Miami University, 1994-1997

Employment

2019-present
Principal, EPS

2017-2019
Executive V.P., EPS

2014-2017
Vice President, EPS

2009-2014
Senior Associate, EPS

2006-2009
Associate, EPS

2004-2006
Planner, Dublin, Ohio

2002-2004
Technical Assistant, Citizens for Civic Renewal, Cincinnati, Ohio

Affiliations

American Planning Association

Denver Association of Business Economists, member since 2007; board (2007-13)

ULI Housing Taskforce

Colorado Symphony Sustainability Committee, 2011

Publications

"The Importance of Affordable Housing to Economic Competitiveness" Economic Development Journal: Vol. 15, No. 1, Winter 2016

ABOUT

David specializes in the impact analysis, cost-benefit analysis, forecasting, and economic analysis. His background in mathematics, statistics, urban economics, and familiarity with the implications of land use controls guide his approaches. He has completed economic impact studies for airports, public highways, toll authorities, commuter rail and light rail investments, as well as industries, energy-related activities, affordable housing investment, the nonprofit sector, public/private land use developments, and environmental efforts. David has also managed numerous studies to produce socioeconomic projections in support of investment grade transportation infrastructure financing, local public financing options, long-range transportation plans, and impact statements in support of federal financing applications.

SELECTED PROJECT EXPERIENCE

E-470 Investment Grade T&R Socioeconomic Projections, Denver Metro, CO

Market demand and development potential analysis of office, residential, and retail uses for 10 communities along the 47-mile toll-way. Evaluated and recalibrated DRCOG TAZ level population, household, and employment forecasts accordingly. Findings were used to evaluate demand and toll revenues relative to capital improvement expenditures.

365 Toll Road Investment Grade T&R Socioeconomic Projections, Hidalgo County, TX

In the process of evaluating land use demand and development growth potentials for construction and operation of a new toll road crossing the US-Mexico border.

On-Call T&R Socioeconomic Projections Services, Alameda County, CA

On-call services to evaluate land use demand and development growth potentials and recalibration of socioeconomic projections for the Alameda CTC.

On-Call T&R Socioeconomic Projections Services, TXDOT

On-call services to evaluate land use demand and development growth potentials and recalibration of socioeconomic projections, provide third-party peer review, etc.

US-36 Investment Grade T&R Socioeconomic Projections, Denver Metro, CO

Evaluated land use demand and development potentials for the existing and proposed HOV corridor. Calibrated geospecific level population, household, and employment forecasts for the nine-county metro area. Produced upside and downside forecasts and presented to ratings agency for TIFIA loan approval.

South I-25 Managed Lanes Investment Grade T&R Socioeconomic Projections, Denver Metro, CO

Evaluated land use demand and development growth potentials for construction and operation of managed lanes between southern point of Denver MSA to northern point of Colorado Springs.

Economic Impacts of the North Texas Tollway Authority, Dallas/Ft. Worth, TX

Quantified economic contributions between 2007 and 2017 in travel time savings, value of time, regional productivity enhancement, land use and regional GRP dependence, property valuation and tax revenue, and the economic costs of traffic accident avoidance for NTTA's Public Affairs Division.

Recalibration of TAZ-Level Socioeconomic Data, Brazos-College Station, TX

Recalibrated current and projected geospatial socioeconomic data for the MPO.

I-70 Corridor T&R Socioeconomic Projections, Denver Metro, CO

Evaluated land use demand and development growth potentials for construction and operation of managed lanes on the heavily-traveled I-70 inter-mountain corridor.

San Antonio International Airport Economic Impacts, San Antonio, TX

(Currently underway) Quantify, through primary and secondary data analysis, the direct, indirect, and induced impacts of the airport's operations, pass-through and destination traffic, cargo, and FBO activities.

Northwest Parkway Investment Grade T&R Socioeconomic Projections, Denver Metro, CO

Evaluated land use demand and development potentials for the metro area. Calibrated geospecific level population, household, and employment forecasts for the metro area. Produced probability-based sensitivity forecasts.

General Aviation Airport Economic Impact, Truckee-Tahoe, CA

Determining the economic impact of the KTRK to the overall region. Using a range of different impacts, including employment and wage, spending, lodging, retail, and real estate impacts. Calculating impacts based on a traditional input-output modeling framework, but supplementing and augmenting this standard modeling using on-ground data collected from the airport and through surveys.

Economic Contributions of the E-470 Toll Authority, Denver MSA, CO

Modeled household and job travel dependency (with traffic modeling), estimated property values, taxes, jobs, households, total spending, gross regional product, as well as travel time savings and the economic benefits of traffic accident avoidance.

Economic & Fiscal Impacts of Transit Investment, Colorado Springs, CO

Quantified the economic and fiscal benefits that would accrue to the City with higher levels of transit investment to offset the looming fiscal crisis of annual funding needed just to maintain existing and future roadway networks.

North I-25 Managed Lanes T&R Socioeconomic Projections, Denver Metro, CO

Evaluated land use demand and development growth potentials for construction and operation of managed lanes between the northern edge of Denver and the Weld County line.

Sales Tax Infrastructure Financing Options, Durango, CO

Assessed available public finance tools under Colorado state law, assessed the regional retail market and leakage, and estimated revenue sources using net new incremental sales tax revenues to fund construction of the road.

SW2NE Corridor Impact & TOD Market Potentials, Ft. Worth, TX

Extensive analysis of market conditions, trends, projections, and impacts of the proposed alignment alternatives and stations in fulfillment of NEPA requirements.

MRCOG Rail Runner TOD Market Potentials, Albuquerque, NM

Market demand forecasts for station areas along the Rail Runner commuter rail line.

Socioeconomic Impacts and Forecasts, Montrose County, CO

Regional economic driver analysis, estimation of socio-economic impacts from new uranium mining, manufacturing, other industrial activity, and proposed new transportation corridor. Estimated dispersion of economic and fiscal impacts within County and employment and population forecasts.

RTD North Metro EIS and TOD, Denver Metro, CO

Extensive economic impact analysis of conditions, trends, and projections of the proposed alignment alternatives and stations in fulfillment of NEPA requirements. Additional work included a TOD analysis assessing commercial and residential market conditions, development patterns, and opportunity sites and scales for TOD.

RTD US-36 Corridor FasTracks PE/DEIS, Denver-Boulder, CO

Determined land use and economic impacts of commuter rail, bus rapid transit (BRT), HOV, and toll lanes alternatives between downtown Denver and downtown Boulder for RTD Denver. Also identified TOD opportunities within the corridor.

Economic Impact and TOD Market Potentials for "The T", Fort Worth, TX

Extensive analysis of market conditions, trends, projections, and impacts of the proposed alignment alternatives and stations in fulfillment of NEPA requirements.



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

September 30, 2020 AGENDA ITEM #9

Authorize the Issuance, Sale and Delivery of Central Texas Regional Mobility Authority Senior Lien Revenue Bonds, Subordinate Lien Revenue Bond Anticipation Notes, and Subordinate Lien Revenue Refunding Bonds, in accordance with specified parameters for improvements and extensions to the System, including the 183A Phase III Project, and the refunding of certain outstanding Obligations

Strategic Plan Relevance:	Regional Mobility
Department:	Finance
Contact:	Bill Chapman, Chief Financial Officer
Associated Costs:	N/A
Funding Source:	N/A
Action Requested:	Consider and act on the draft resolution

Background -The Mobility Authority is authorized to issue revenue bonds, notes, certificates or other obligations for the purposes of (i) financing and refinancing all or a portion of the cost of the acquisition, construction, improvement, extension or expansion of one or more turnpike projects, (ii) refunding, defeasing and redeeming any such obligations previously issued by the Authority and (iii) paying the expenses of issuing such revenue bonds, notes, certificates or other obligations.

Project Description - The Mobility Authority is proposing to extend 183A north from Hero Way to north of SH 29 to accommodate forecasted traffic volumes along the US 183 corridor. The 6.6-mile Phase III proposed tollway project will initially have two tolled lanes in each direction and will ultimately be widened to three lanes in the future. The proposed tollway will be located mostly in the existing right-of-way within the median of the US 183 corridor. The extension will also feature a shared use path north from Hero Way to the proposed Seward Junction Loop project. Other project costs include renewal and replacement for elements of the existing 183A Turnpike Project, operational improvements, and System improvements.

Project Financing - The Mobility Authority is proposing to issue System revenue obligations to (i) finance the design and construction of improvements to the 183A Turnpike Project, including the 6.6-mile 183A Phase III proposed tollway project and (ii) refinance and refund the Mobility Authority's outstanding Subordinate Lien Revenue Bonds, Taxable Series 2015D and Series 2015E (the "Refunded Bonds"). The financing will include the issuance, sale and delivery of Central Texas Regional Mobility Authority Senior Lien Revenue Bonds, Subordinate Lien Revenue Bond Anticipation Notes (BANS) and Subordinate Lien Revenue Refunding Bonds in accordance with specified parameters; and authorizing the execution and delivery of any and all documents, certificates, agreements and instruments necessary or desirable to be executed and delivered in connection with the foregoing; and enacting other provisions relating to the subject.

The resolution delegates to the Board Chairman, the Executive Director and the Chief Financial Officer the authority to approve the financing transaction under the parameters set forth in the resolution. It is expected that the Subordinate Lien BANS will be refunded by long-term revenue bonds upon substantial completion of the project.

2020 Senior Lien Bonds and Subordinate Lien BANS - Senior Lien Revenue Bonds, and Subordinate Lien BANS will be issued to (i) pay the Costs of improvements and extensions to the 183A Turnpike Project, including, without limitation, the design and construction of the 183A Phase III Project, (ii) pay capitalized interest on the Senior Lien Bonds, (iii) make any necessary deposits to senior lien and subordinate lien reserve funds and (iv) pay the costs of issuance.

2020 Subordinate Lien Refunding Bonds - Subordinate Lien Bonds will be issued to (i) refund the Refunded Bonds, (ii) make any necessary deposits to reserve funds and (iii) pay costs of issuance.

Parameters Resolution - A parameters resolution authorizes the Board's designated Authorized Officer (Chairman, Executive Director, or Chief Financial Officer) to act on behalf of the Board to determine the final terms and conditions of the 2020 Obligations, to authorize and approve the forms of a preliminary official statement and a final official statement, and authorize and approve all other matters relating to the issuance, sale and delivery of the 2020 Obligations; provided, that the following conditions (parameters) can be satisfied:

- i. the aggregate principal amount of the Senior Lien Bonds to be issued shall not exceed \$310,000,000; and
- ii. the aggregate principal amount of the Subordinate Lien BANS to be issued shall not

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

RESOLUTION NO. 20-0XX

RESOLUTION AUTHORIZING THE ISSUANCE, SALE AND DELIVERY OF CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY (I) SENIOR LIEN REVENUE BONDS, (II) SUBORDINATE LIEN REVENUE BOND ANTICIPATION NOTES, AND (III) SUBORDINATE LIEN REVENUE REFUNDING BONDS (COLLECTIVELY, THE “2020 OBLIGATIONS”), IN ACCORDANCE WITH SPECIFIED PARAMETERS; APPROVING THE FORM OF, AND AUTHORIZING THE EXECUTION AND DELIVERY OF, ONE OR MORE SENIOR LIEN SUPPLEMENTAL TRUST INDENTURES AND ONE OR MORE SUBORDINATE LIEN SUPPLEMENTAL TRUST INDENTURES; APPOINTING AN AUTHORIZED OFFICER TO AUTHORIZE, APPROVE AND DETERMINE CERTAIN TERMS AND PROVISIONS OF THE 2020 OBLIGATIONS AND THE FORM OF EACH OF THE 2020 OBLIGATIONS; APPROVING AND AUTHORIZING THE TERMS AND CONDITIONS OF ONE OR MORE PURCHASE CONTRACTS PERTAINING TO THE 2020 OBLIGATIONS AND THE EXECUTION AND DELIVERY OF SUCH PURCHASE CONTRACTS; APPROVING THE PREPARATION OF ONE OR MORE PRELIMINARY OFFICIAL STATEMENTS AND OFFICIAL STATEMENTS IN CONNECTION WITH THE OFFERING AND SALE OF THE 2020 OBLIGATIONS; AUTHORIZING THE EXECUTION AND DELIVERY OF ANY AND ALL DOCUMENTS, INSTRUMENTS, CERTIFICATES, AGREEMENTS, CLOSING INSTRUCTIONS, AND INSTRUMENTS NECESSARY OR DESIRABLE TO BE EXECUTED AND DELIVERED IN CONNECTION WITH THE FOREGOING AND ENACTING OTHER PROVISIONS RELATING TO THE SUBJECT;

WHEREAS, the Central Texas Regional Mobility Authority (the “Authority”) has been created and organized pursuant to and in accordance with the provisions of Chapter 361, Texas Transportation Code, and operates pursuant to the Constitution and laws of the State, including, particularly, Chapter 370, Texas Transportation Code (the “Act”), for the purposes of constructing, maintaining and operating transportation projects, including turnpike projects, in Travis and Williamson Counties, Texas; and

WHEREAS, pursuant to the Act, the Authority is authorized to: (i) study, evaluate, design, finance, acquire, construct, maintain, repair and operate transportation projects (as defined in the Act), individually or as a system (as defined in the Act); (ii) issue bonds, certificates, notes or other obligations payable from the revenues of a transportation project or system, including tolls, fees, fares or other charges, to pay all or part of the cost of a transportation project and to refund any bonds previously issued for a transportation project; and (iii) impose tolls, fees, fares or other charges for the use of each of its transportation projects and the different parts or sections of each of its transportation projects; and

WHEREAS, pursuant to the Act and other applicable laws, the Authority is authorized to issue revenue bonds, notes, certificates or other obligations for the purposes of (i) financing and refinancing all or a portion of the cost of the acquisition, construction, improvement, extension or expansion of one or more turnpike projects (as defined in the Act), (ii) refunding, refinancing,

defeasing and redeeming any such obligations previously issued by the Authority and (iii) paying the expenses of issuing such revenue bonds, notes, certificates or other obligations; and

WHEREAS, the Authority has previously executed and delivered that certain Master Trust Indenture (the “Master Indenture”), between the Authority and Regions Bank, as successor in trust to JPMorgan Chase Bank, National Association, as trustee (the “Trustee”), providing for the issuance from time to time by the Authority of one or more series of its revenue obligations (collectively, the “Obligations”), as supplemented by that certain (i) First Supplemental Trust Indenture (the “First Supplement”), Second Supplemental Trust Indenture (the “Second Supplement”), and Third Supplemental Trust Indenture (the “Third Supplement”), each between the Authority and the Trustee and dated as of February 1, 2005; (ii) Fourth Supplemental Trust Indenture (the “Fourth Supplement”), between the Authority and the Trustee and dated as of May 1, 2009; (iii) Fifth Supplemental Trust Indenture (the “Fifth Supplement”) and Sixth Supplemental Trust Indenture (the “Sixth Supplement”), each between the Authority and the Trustee and dated as of March 1, 2010; (iv) Seventh Supplemental Trust Indenture (the “Seventh Supplement”), between the Authority and the Trustee and dated as of August 1, 2010; (v) Eighth Supplemental Trust Indenture (the “Eighth Supplement”) and the Ninth Supplemental Trust Indenture (the “Ninth Supplement”), each between the Authority and the Trustee and dated as of June 1, 2011; (vi) Tenth Supplemental Trust Indenture (the “Tenth Supplement”) and Eleventh Supplemental Trust Indenture (the “Eleventh Supplement”), each between the Authority and the Trustee and dated as of May 1, 2013; (vii) Twelfth Supplemental Trust Indenture (the “Twelfth Supplement”), Thirteenth Supplemental Trust Indenture (the “Thirteenth Supplement”), Fourteenth Supplemental Trust Indenture (the “Fourteenth Supplement”) and Fifteenth Supplemental Trust Indenture (the “Fifteenth Supplement”), each between the Authority and the Trustee and dated as of November 1, 2015; (viii) Sixteenth Supplemental Trust Indenture (the “Sixteenth Supplement”), between the Authority and the Trustee and dated as of June 1, 2016; (ix) Seventeenth Supplemental Trust Indenture (the “Seventeenth Supplement”) between the Authority and the Trustee and dated as of August 1, 2016; (x) Eighteenth Supplemental Trust Indenture (the “Eighteenth Supplement”) and Nineteenth Supplemental Trust Indenture (the “Nineteenth Supplement”), each between the Authority and the Trustee and dated as of November 1, 2018; (xi) Twentieth Supplemental Trust Indenture (the “Twentieth Supplement”), between the Authority and the Trustee and dated as of March 1, 2019; (xii) Twenty-First Supplemental Trust Indenture (the “Twenty-First Supplement”), between the Authority and the Trustee and dated as of January 1, 2020; and (xiii) Twenty-Second Supplemental Trust Indenture (the “Twenty-Second Supplement”) and Twenty-Third Supplemental Trust Indenture (the “Twenty-Third Supplement”), each between the Authority and the Trustee and dated as of September 1, 2020 (the Master Indenture, as supplemented by the First Supplement, the Second Supplement, the Third Supplement, the Fourth Supplement, the Fifth Supplement, the Sixth Supplement, the Seventh Supplement, the Eighth Supplement, the Ninth Supplement, the Tenth Supplement, the Eleventh Supplement, the Twelfth Supplement, the Thirteenth Supplement, the Fourteenth Supplement, the Fifteenth Supplement, the Sixteenth Supplement, the Seventeenth Supplement, the Eighteenth Supplement, the Nineteenth Supplement, the Twentieth Supplement, the Twenty-First Supplement, the Twenty-Second Supplement and the Twenty-Third Supplement is referred to herein as the “Indenture”); and

WHEREAS, Sections 301, 302, 706, 708 and 1002 of the Master Indenture authorize the Authority and the Trustee to execute and deliver supplemental indentures authorizing the issuance

of Obligations, including Additional Senior Lien Obligations and Additional Subordinate Lien Obligations, and to include in such supplemental indentures the terms of such Additional Senior Lien Obligations and Additional Subordinate Lien Obligations, respectively, and any other matters and things relative to the issuance of such Obligations that are not inconsistent with or in conflict with the Indenture, to add to the covenants of the Authority, and to pledge other moneys, securities or funds as part of the Trust Estate; and

WHEREAS, pursuant to the Act, Chapter 1371, Texas Government Code, as amended, and Chapter 1207, Texas Government Code, as amended, the Board of Directors (the “Board”) of the Authority has determined to authorize the issuance of (i) one or more series of Additional Senior Lien Obligations (the “2020 Senior Lien Obligations”), pursuant to the Master Indenture and one or more Senior Lien Supplemental Trust Indentures (each, a “Senior Lien Supplement” and, collectively, the “Senior Lien Supplements”) between the Authority and the Trustee, for the purposes specified herein and (ii) (a) one or more series of Additional Subordinate Lien Obligations to be issued as bond anticipation notes (the “2020 Subordinate Lien BANs”) and (b) one or more series of Additional Subordinate Lien Obligations to be issued as refunding bonds (the “2020 Subordinate Lien Refunding Bonds” and, together with the 2020 Subordinate Lien BANs, the “2020 Subordinate Lien Obligations” and, together with the 2020 Senior Lien Obligations, the “2020 Obligations”) pursuant to the Master Indenture and one or more Subordinate Lien Supplemental Trust Indentures (each a “Subordinate Lien Supplement” and, collectively, the “Subordinate Lien Supplements” and, together with any Senior Lien Supplements, the “2020 Supplements”) between the Authority and the Trustee, each 2020 Supplement being dated as of the date specified in one or more Award Certificates (as hereinafter defined), for the purposes specified herein, all under and in accordance with the Constitution and the laws of the State; and

WHEREAS, the Board has determined to refund and redeem (i) all of the Authority’s Outstanding Subordinate Lien Revenue Bond, Taxable Series 2015D (the “2015D Refunded Bonds”), and (ii) all of the Authority’s Outstanding Subordinate Lien Revenue Bond, Taxable Series 2015E (the “2015E Refunded Bonds” and, together with the 2015D Refunded Bonds, the “Refunded Bonds”); and

WHEREAS, the Board has been presented with and examined proposed forms of a Senior Lien Supplement, a Subordinate Lien Supplement and an escrow agreement and the Board finds that the form and substance of such documents are satisfactory and the recitals and findings contained therein are true, correct and complete, and hereby adopts and incorporates by reference such recitals and findings as if set forth in full in this Resolution, and finds that it is in the best interest of the public and the Authority to issue the 2020 Obligations and to authorize the execution and delivery of one or more of each such documents as provided herein; and

WHEREAS, the Board now desires to appoint one or more officers of the Authority to act on behalf of the Authority to determine the final terms and conditions of the 2020 Obligations, as provided herein, and to make such determinations and findings as may be required by the related Senior Lien Supplement and Subordinate Lien Supplement, as applicable, and to carry out the purposes of this Resolution and execute one or more Award Certificates setting forth such determinations and authorizing and approving all other matters relating to the issuance, sale and delivery of the 2020 Obligations; and

WHEREAS, the Board desires to authorize the execution and delivery of one or more Senior Lien Supplements providing for the issuance of and setting forth the terms and provisions relating to the 2020 Senior Lien Obligations and the pledge and security therefor; and

WHEREAS, the 2020 Senior Lien Obligations shall be issued as Additional Senior Obligations and Long-Term Obligations pursuant to and in accordance with the provisions of the Master Indenture and one or more Senior Lien Supplements; and

WHEREAS, the Board desires to authorize the execution and delivery of one or more Subordinate Lien Supplements providing for the issuance of and setting forth the terms and provisions relating to the 2020 Subordinate Lien Obligations, and the pledge and security therefore; and

WHEREAS, the 2020 Subordinate Lien Obligations shall be issued as Additional Subordinate Lien Obligations and Long-Term Obligations pursuant to and in accordance with the provisions of the Master Indenture and one or more Subordinate Lien Supplements; and

WHEREAS, the Authority currently intends to refinance the 2020 Subordinate Lien BANs with Obligations issued at a later date; and

WHEREAS, the Board desires to approve, ratify and confirm the preparation and distribution of one or more preliminary official statements and one or more official statements relating to the offering and sale of the 2020 Obligations; and

WHEREAS, the Board desires to provide for the issuance of the 2020 Obligations in accordance with the requirements of the Master Indenture and the Senior Lien Supplements and the Subordinate Lien Supplements, as applicable, and to authorize the execution and delivery of the 2020 Obligations and such certificates, agreements, instruction letters and other instruments as may be necessary or desirable in connection therewith; and

WHEREAS, the Board desires to authorize the execution and delivery of one or more Purchase Contracts (the "Purchase Contracts" or "Purchase Contract" as applicable), between the Authority and the underwriters named therein relating to the 2020 Obligations, as determined by the Authorized Officer (as hereinafter defined) in an Award Certificate relating thereto;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY THAT:

ARTICLE I

FINDINGS AND DETERMINATIONS

Section 1.1. Findings and Determinations. (a) The findings and determinations set forth in the preamble hereof are hereby incorporated herein for all purposes as though such findings and determinations were set forth in full herein. Capitalized terms used herein and not otherwise defined herein shall have the meanings assigned thereto in the Master Indenture, the Senior Lien Supplement and the Subordinate Lien Supplement, as applicable.

(b) The Board has found and determined that the 2020 Obligations may be issued in part as one or more series of Additional Senior Lien Obligations and in part as one or more series of Additional Subordinate Lien Obligations, as designated by the Authorized Officer in one or more Award Certificates (the “Award Certificates” or “Award Certificate,” as applicable), and as Long-Term Obligations.

(c) It is officially found, determined and declared that the meeting at which this Resolution has been adopted was open to the public and public notice of the time, place and subject matter of the public business to be considered and acted upon at said meeting, including this Resolution was given, all as required by the applicable provisions of Chapter 551, Texas Government Code, as amended.

(d) The Board hereby finds and determines that the issuance of the 2020 Obligations is in the best interest of the Authority.

ARTICLE II

ISSUANCE OF 2020 SENIOR LIEN OBLIGATIONS; APPROVAL OF DOCUMENTS

Section 2.1. Issuance, Execution and Delivery of 2020 Senior Lien Obligations; Approval of Senior Lien Supplement. The Authority hereby authorizes, approves and directs the issuance of the 2020 Senior Lien Obligations in accordance with the terms of this Resolution, the Master Indenture and one or more Senior Lien Supplements, a draft of which was presented to the Authority and its counsel, the form, terms and provisions of such Senior Lien Supplement being hereby authorized and approved with such changes as may be approved by the Authorized Officer, such approval to be evidenced by the execution thereof. The Authorized Officer is hereby authorized to execute each such Senior Lien Supplement and the Secretary of the Board is hereby authorized to attest the signature of the Authorized Officer. Each Senior Lien Supplement shall have such supplement number as shall be deemed appropriate by the Authorized Officer and may include such terms and provisions as are necessary or desirable to reflect the final terms and conditions of the 2020 Senior Lien Obligations.

Section 2.2. The Issuance of the 2020 Senior Lien Obligations. (a) The issuance, execution and delivery of the 2020 Senior Lien Obligations, which shall be issued in the aggregate principal amounts, in one or more series of Additional Senior Lien Obligations and bearing interest in accordance with the terms of the applicable Senior Lien Supplement, all as determined by the Authorized Officer and set forth in one or more Award Certificates, to provide funds to (i) pay the Costs of improvements and extensions to the System, including, without limitation, the design and construction of the 183A Phase III Project, consisting generally of an approximately 6.6 mile extension of the existing controlled access, grade separated tolled mainlanes from the current terminus thereof to north of SH29, together with associated access ramps and frontage roads (all such Costs described in this clause (i) shall be referred to herein as the “2020 Project”), (ii) pay capitalized interest on the 2020 Senior Lien Obligations, (iii) make any necessary deposits to a reserve fund, and (iv) pay the costs of issuance for the 2020 Senior Lien Obligations, all pursuant to and in accordance with the Master Indenture and the applicable Senior Lien Supplement, are hereby authorized and approved.

(b) Notwithstanding any other provision of this Resolution to the contrary, if the Authorized Officer determines pursuant to Section 4.2 that the 2020 Obligations to be issued for the purpose of refunding the Refunded Bonds will be issued as Senior Lien Obligations, (i) the issuance of the 2020 Senior Lien Obligations for such purpose is hereby approved and such purpose is deemed to be included in the purposes set forth in Section 2.2(a) above, and (ii) all provisions of this Resolution relating to the issuance of 2020 Subordinate Lien Refunding Bonds for the purpose of refunding the Refunded Bonds shall be deemed to relate to the issuance of the 2020 Senior Lien Obligations for such purpose.

ARTICLE III

ISSUANCE OF 2020 SUBORDINATE LIEN OBLIGATIONS; APPROVAL OF DOCUMENTS

Section 3.1. Issuance, Execution and Delivery of 2020 Subordinate Lien Obligations; Approval of Subordinate Lien Supplement. The Authority hereby authorizes, approves and directs the issuance of the 2020 Subordinate Lien Obligations in accordance with the terms of this Resolution, the Master Indenture and one or more Subordinate Lien Supplements, a draft of which was presented to the Authority and its counsel, the form, terms and provisions of such Subordinate Lien Supplement being hereby authorized and approved with such changes as may be approved by the Authorized Officer, such approval to be evidenced by the execution thereof. The Authorized Officer is hereby authorized to execute each such Subordinate Lien Supplement and the Secretary of the Board is hereby authorized to attest the signature of the Authorized Officer. Each Subordinate Lien Supplement shall have such supplement number as shall be deemed appropriate by the Authorized Officer and may include such terms and provisions as are necessary or desirable to reflect the final terms and conditions of the 2020 Subordinate Lien Obligations.

Section 3.2. The Issuance of the 2020 Subordinate Lien BANs. The issuance, execution and delivery of the 2020 Subordinate Lien BANs, which shall be issued in the aggregate principal amounts and bearing interest in accordance with the terms of the applicable Subordinate Lien Supplement, all as determined by the Authorized Officer and set forth in one or more Award Certificates, to provide funds to (i) pay the Costs of the 2020 Project, (ii) make any necessary deposits to a reserve fund, and (iii) pay the costs of issuance for the 2020 Subordinate Lien BANs, all pursuant to and in accordance with the Master Indenture and the applicable Subordinate Lien Supplement, are hereby authorized and approved.

Section 3.3. The Issuance of the 2020 Subordinate Lien Refunding Bonds. Subject to Section 2.2(b), the issuance, execution and delivery of the 2020 Subordinate Lien Refunding Bonds, which shall be issued in the aggregate principal amounts and bearing interest in accordance with the terms of the applicable Subordinate Lien Supplement, all as determined by the Authorized Officer and set forth in one or more Award Certificates, to provide funds to (i) refund the Refunded Bonds, (ii) make any necessary deposits to a reserve fund, and (iii) pay the costs of issuance for the 2020 Subordinate Lien Refunding Bonds, all pursuant to and in accordance with the Master Indenture and the applicable Subordinate Lien Supplement, are hereby authorized and approved.

ARTICLE IV

APPOINTMENT OF AUTHORIZED OFFICER; DELEGATION OF AUTHORITY

Section 4.1. Appointment of Authorized Officer. The Board hereby appoints the Chairman of the Board, the Executive Director, the Chief Financial Officer and any such person serving in an interim capacity for any such position, severally and each of them, to act as an authorized officer (the "Authorized Officer") on behalf of the Board and to perform all acts authorized and required of an Authorized Officer set forth in this Resolution and each Senior Lien Supplement and Subordinate Lien Supplement. The Authorized Officer is hereby authorized and directed to execute one or more Award Certificates setting forth the information authorized to be stated therein pursuant to this Resolution and required to be stated therein pursuant to each Senior Lien Supplement and Subordinate Lien Supplement.

Section 4.2. Delegation of Authority. (a) The Board hereby authorizes and directs that the Authorized Officer act on behalf of the Authority to determine the final terms and conditions of the 2020 Obligations, the supplement number and dated date for each Senior Lien Supplement and Subordinate Lien Supplement, the dated dates for the 2020 Obligations, the method of sale for the 2020 Obligations, the prices at which the 2020 Obligations will be sold, any different or additional designation or title of each series of the 2020 Obligations, the principal amounts and maturity dates therefor, the per annum interest rates for the 2020 Obligations (including whether such interest rates will be variable rates or fixed rates), the aggregate principal amount of 2020 Obligations to be issued as Senior Lien Obligations, the aggregate principal amount of 2020 Obligations to be issued as Subordinate Lien Obligations, the respective aggregate principal amounts of each series of 2020 Senior Lien Obligations and each series of 2020 Subordinate Lien Obligations, the redemption provisions, dates and prices for the 2020 Obligations, the final forms of the 2020 Obligations, to determine whether each respective series of 2020 Senior Lien Obligations and each respective series of 2020 Subordinate Lien Obligations will be issued as taxable bonds or tax-exempt bonds, to determine whether the 2020 Obligations issued to refund the Refunded Bonds will be issued as Senior Lien Obligations or Subordinate Lien Obligations and such other terms and provisions that shall be applicable to the 2020 Obligations, to select the Refunded Bonds to be refunded, to designate one or more escrow agents in connection therewith, to approve the form and substance of an escrow agreement in connection therewith, to designate the underwriters of the 2020 Obligations, to approve the form and substance of one or more Purchase Contracts providing for the sale of the 2020 Obligations, to authorize and approve the form of one or more preliminary official statements and one or more final official statements and to make such findings and determinations as are otherwise authorized herein or as may be required by each Senior Lien Supplement and Subordinate Lien Supplement to carry out the purposes of this Resolution and to execute one or more Award Certificates setting forth such determinations, such other matters as authorized herein, and authorizing and approving all other matters relating to the issuance, sale and delivery of the 2020 Obligations; provided, that the following conditions can be satisfied:

- (i) the aggregate principal amount of the 2020 Senior Lien Obligations to be issued shall not exceed \$310,000,000; and

- (ii) the aggregate principal amount of the 2020 Subordinate Lien BANs to be issued shall not exceed \$125,000,000; and
- (iii) the aggregate principal amount of the 2020 Subordinate Lien Refunding Bonds to be issued shall not exceed \$75,000,000; and
- (iv) each series of 2020 Obligations shall not bear interest at a true interest rate greater than 5.00%; and
- (v) each series of 2020 Obligations shall mature not later than January 1, 2050; and
- (vi) the refunding of the Refunded Bonds shall result in a net present value savings.

all based on bond market conditions and available rates for the 2020 Obligations on the date of sale of the 2020 Obligations and on the terms, conditions and provisions negotiated by the Authority for the issuance, sale and delivery of 2020 Obligations.

(b) The 2020 Senior Lien Obligations may be issued as one or more series of 2020 Senior Lien Obligations and the 2020 Subordinate Lien Obligations may be issued as one or more series of 2020 Subordinate Lien Obligations, all as specified in the Award Certificates.

Section 4.3. Limitation on Delegation of Authority. The authority granted to the Authorized Officer under Article IV of this Resolution shall expire at 5:00 p.m. Central Time on September 29, 2021, unless otherwise extended by the Board by separate Resolution. Any 2020 Obligations, with respect to which an Award Certificate is executed prior to 5:00 p.m. Central Time on September 29, 2021, may be delivered to the initial purchaser(s) thereof after such date.

ARTICLE V

APPROVAL OF SALE OF 2020 OBLIGATIONS

Section 5.1. Approval of Sale of 2020 Obligations. The sale of the 2020 Obligations in one or more series, in the aggregate principal amounts, bearing interest at the rates and at the prices set forth in one or more Purchase Contracts between the Authority and the underwriters named therein, all as determined by the Authorized Officer on the date of sale of the 2020 Obligations, is hereby authorized and approved. The Authorized Officer is hereby authorized and directed to execute and deliver such Purchase Contracts on behalf of the Authority providing for the sale of the 2020 Obligations in such form as determined by the Authorized Officer, to be dated as of the date of its execution and delivery by the Authority and the underwriters named therein. The Authorized Officer is hereby authorized and directed to approve the final terms and provisions of such Purchase Contracts and to approve and to execute and deliver such Purchase Contracts on behalf of the Authority, such approval to be conclusively evidenced by the execution thereof.

Section 5.2. Sale on Best Terms Available. The 2020 Obligations shall be sold at the prices, bearing interest at the rates and having such other terms and provisions, that, based on then current market conditions, result in the best terms reasonably available and advantageous to the

Authority, as is determined by the Authorized Officer on the date of sale of each series of the 2020 Obligations. The Authorized Officer is hereby authorized and directed to make such findings and determinations in the Award Certificates regarding the terms of the sale of the 2020 Obligations and the benefit of such sale to the Authority.

ARTICLE VI APPROVAL OF ESCROW AGREEMENT; NOTICE OF REDEMPTION

Section 6.1. Approval of Escrow Agreement. To provide for the security and investment of a portion of the proceeds of the 2020 Obligations issued to refund the Refunded Bonds until such time as such proceeds are to be paid to the registered owners of the Refunded Bonds the Authority hereby approves the form and substance of an escrow deposit agreement, substantially in the form of the Escrow Agreement (the “Escrow Agreement”), between the Authority and Regions Bank, as escrow agent (the “Escrow Agent”), dated as of the date set forth in an Award Certificate, a draft of which was presented to the Board and its counsel, the form, terms and provisions of such Escrow Agreement being hereby authorized and approved. The Authorized Officer is hereby authorized and directed to determine whether the execution and delivery of an Escrow Agreement is necessary or desirable to effectuate the refunding of the Refunded Bonds and, if so determined, to execute and deliver one or more Escrow Agreements, as determined by the Authorized Officer, in the name and on behalf of the Authority, with such changes therein as the Authorized Officer may approve, such approval to be conclusively evidenced by such Authorized Officer’s execution thereof.

Section 6.2. Notice of Redemption to Owners of Refunded Bonds. The Board hereby authorizes and calls for the redemption of the 2015D Refunded Bonds and 2015E Refunded Bonds, respectively, to be refunded on the dates and at the prices determined by the Authorized Officer and set forth in an Award Certificate. The Authorized Officer shall cause notice of redemption to be given to the registered owners of such 2015D Refunded Bonds and 2015E Refunded Bonds, respectively, in accordance with the Master Indenture and the supplemental trust indenture to which such 2015D Refunded Bonds and 2015E Refunded Bonds, respectively, were issued.

ARTICLE VII APPROVAL OF OFFICIAL STATEMENT

Section 7.1. Approval of Official Statement. The Authorized Officer is hereby authorized and directed to authorize and approve the form and substance of one or more Preliminary Official Statements prepared in connection with the public offering of the 2020 Obligations, together with any addenda, supplement or amendment thereto (the “Preliminary Official Statement”), and the preparation, use and distribution of such Preliminary Official Statements in the marketing of the 2020 Obligations. The Authorized Officer is authorized to “deem final” each Preliminary Official Statement as of its date (except for the omission of pricing and related information) within the meaning and for the purposes of paragraph (b)(1) of Rule 15c2-12 under the Securities Exchange Act of 1934, as amended. The Authorized Officer is hereby further authorized and directed to use and distribute or authorize the use and distribution of, one or more final official statements and any addenda, supplement or amendment thereto (the “Official Statement”). The use thereof in the public offering and sale of the 2020 Obligations is hereby authorized and approved. The Chairman of the Board is hereby authorized and directed to execute

and the Authorized Officer to deliver each Official Statement in accordance with the terms of the Purchase Contracts. The Secretary of the Board is hereby authorized and directed to include and maintain copies of each Preliminary Official Statement and each Official Statement in the permanent records of the Authority.

ARTICLE VIII

USE AND APPLICATION OF PROCEEDS; LETTERS OF INSTRUCTION; POWER TO REVISE DOCUMENTS

Section 8.1. Use and Application of Proceeds; Letters of Instruction. The proceeds from the sale of the 2020 Obligations shall be used for the respective purposes set forth in and in accordance with the terms and provisions of the related Senior Lien Supplement and Subordinate Lien Supplement, as applicable, and the related Award Certificates. The deposit and application of the proceeds from the sale of the 2020 Obligations shall be set forth in Letters of Instruction of the Authority executed by the Authorized Officer.

Section 8.2. Execution and Delivery of Other Documents. The Authorized Officer is hereby authorized and directed to execute and deliver from time to time and on an ongoing basis such other documents and agreements, including amendments, modifications, supplements or consents to existing agreements (including any agreements with the Texas Department of Transportation and the United States Department of Transportation), assignments, certificates, instruments, releases, financing statements, written requests, filings with the Internal Revenue Service and letters of instruction, whether or not mentioned herein, as may be necessary or convenient to carry out or assist in carrying out the purposes of this Resolution and to comply with the requirements of the Indenture, any Senior Lien Supplement, any Subordinate Lien Supplement, the Award Certificates and the Purchase Contracts.

Section 8.3. Power to Revise Form of Documents. Notwithstanding any other provision of this Resolution, the Authorized Officer is hereby authorized to make or approve such revisions in the form of the documents presented at this meeting and any other document, certificate or agreement pertaining to the issuance and delivery of the 2020 Obligations in accordance with the terms of the Master Indenture and any Senior Lien Supplement, any Subordinate Lien Supplement as, in the judgment of such person, may be necessary or convenient to carry out or assist in carrying out the purposes of this Resolution, such approval to be evidenced by the execution thereof.

ARTICLE IX

APPROVAL AND RATIFICATION OF CERTAIN ACTIONS

Section 9.1. Approval of Submission to the Attorney General of Texas. The Authority's Bond Counsel is hereby authorized and directed to submit to the Attorney General, for his approval, transcripts of the legal proceedings relating to the issuance, sale and delivery of the 2020 Obligations as required by law, and to the Comptroller of Public Accounts of the State of Texas for registration. In connection with the submission of the records of proceedings for the 2020 Obligations to the Attorney General of the State of Texas for examination and approval of such 2020 Obligations, the Authorized Officer is hereby authorized and directed to issue one or more checks or other forms of payment of the Authority payable to the Attorney General of the State of

Texas as a nonrefundable examination fee in the amount required by Chapter 1202, Texas Government Code. The initial 2020 Obligations shall be delivered to the Trustee for delivery to the underwriters thereof against payment therefor and upon satisfaction of the requirements of the Indenture, the related Senior Lien Supplement and Subordinate Lien Supplement, as applicable, and the Purchase Contracts relating thereto.

Section 9.2. Certification of the Minutes and Records. The Secretary and any Assistant Secretary of the Board are each hereby severally authorized to certify and authenticate minutes and other records on behalf of the Authority for the issuance of the 2020 Obligations and for all other Authority activities.

Section 9.3. Ratifying Other Actions. All other actions taken or to be taken by the Executive Director, the Chief Financial Officer, the Authorized Officer, the Controller and the Authority's staff in connection with the issuance of the 2020 Obligations are hereby approved, ratified and confirmed.

Section 9.4. Authority to Invest Funds. The Executive Director, the Chief Financial Officer and the Controller are each hereby severally authorized on an ongoing basis to undertake all appropriate actions and to execute such documents, agreements or instruments as they deem necessary or desirable under the Indenture and the related Senior Lien Supplement and Subordinate Lien Supplement, as applicable, with respect to the investment of proceeds of the 2020 Obligations and other funds of the Authority.

Section 9.5. Federal Tax Considerations. In addition to any other authority provided under this Resolution, each Authorized Officer is hereby further expressly authorized, acting for and on behalf of the Authority, to determine and designate in the Award Certificate for each series of 2020 Obligations whether such bonds will be issued as taxable bonds or tax-exempt bonds for federal income tax purposes and to make all appropriate elections under the Internal Revenue Code of 1986, as amended. Each Authorized Officer is hereby further expressly authorized and empowered from time to time and at any time to perform all such acts and things deemed necessary or desirable and to execute and deliver any agreements, certificates, documents or other instruments, whether or not herein mentioned, to carry out the terms and provisions of this section, including but not limited to, the preparation and making of any filings with the Internal Revenue Service.

ARTICLE X

GENERAL PROVISIONS

Section 10.1. Changes to Resolution. The Executive Director, the Chief Financial Officer and the Authorized Officer, and any of them, singly and individually, are hereby authorized to make such changes to the text of this Resolution as may be necessary or desirable to carry out the purposes hereof or to comply with the requirements of the Attorney General of Texas in connection with the issuance of the 2020 Obligations herein authorized.

Section 10.2. Effective Date. This Resolution shall be in full force and effect from and upon its adoption.

Adopted, passed and approved by the Board of Directors of the Central Texas Regional Mobility Authority on the 30th day of September 2020.

Submitted and reviewed by:

Approved:

Geoffrey Petrov, General Counsel

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

TWENTY-FOURTH SUPPLEMENTAL TRUST INDENTURE

BETWEEN

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

AND

REGIONS BANK, TRUSTEE

AUTHORIZING

SENIOR LIEN REVENUE BONDS, SERIES 2020E

Dated as of _____ 1, 2020

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TWENTY-FOURTH SUPPLEMENTAL TRUST INDENTURE

THIS TWENTY-FOURTH SUPPLEMENTAL TRUST INDENTURE, dated as of November 1, 2020E (this “Supplemental Indenture” or “Twenty-Fourth Supplemental Indenture”), is made by and between the CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY (together with any successor to its rights, duties, and obligations hereunder, the “Authority”), a body politic and corporate and a political subdivision of the State of Texas (the “State”) duly created, organized and existing under the laws of the State, and REGIONS BANK, an Alabama state banking corporation, as successor in trust to JPMorgan Chase Bank, National Association, as trustee (together with any successor trustee hereunder, the “Trustee”). Capitalized terms used herein and not otherwise defined shall have the meanings provided in Section 1.2 of this Supplemental Indenture.

RECITALS

WHEREAS, the Authority has been created and organized pursuant to and in accordance with the provisions of Chapter 361, Texas Transportation Code, and operates pursuant to the Constitution and laws of the State, including, particularly, Chapter 370, Texas Transportation Code, as amended (the “Act”), for the purposes of constructing, maintaining and operating transportation projects in Travis and Williamson Counties, Texas; and

WHEREAS, pursuant to the Act, the Authority is authorized to: (i) study, evaluate, design, finance, acquire, construct, maintain, repair and operate transportation projects (as defined in the Act), individually or as a system (as defined in the Act); and (ii) issue bonds, certificates, notes or other obligations payable from the revenues of a transportation project or system, including tolls, fees, fares or other charges, to pay all or part of the cost of a transportation project and to refund any bonds previously issued for a transportation project; and (iii) impose tolls, fees, fares or other charges for the use of each of its transportation projects and the different parts or sections of each of its transportation projects; and

WHEREAS, pursuant to the Act and other applicable laws, the Authority is authorized to issue revenue bonds, notes, certificates or other obligations as hereinafter provided, and to enter into this Supplemental Indenture; and

WHEREAS, the Authority and the Trustee have executed and delivered the Master Indenture, providing for the issuance from time to time by the Authority of one or more series of its revenue obligations (collectively, the “Obligations”); and

WHEREAS, Section 1002 of the Master Indenture authorizes the Authority and the Trustee to execute and deliver a supplemental indenture, authorizing Obligations of a Series, to include any other matters and things relative to such Obligations which are not inconsistent with or contrary to the Master Indenture, to add to the covenants of the Authority, and to pledge other moneys, securities or funds as part of the Trust Estate; and

WHEREAS, pursuant to the authority granted in the Act and Chapter 1371, Texas Government Code, as amended, the Authority has determined to authorize the issuance of its Senior Lien Revenue Bonds, Series 2020E (the “Series 2020E Bonds”), pursuant to the Master Indenture and this Supplemental Indenture for the purpose of providing funds (i) to pay a portion

of the Costs of the 2020 Project (as defined herein), and (ii) for the other purposes specified herein; and

WHEREAS, the Board hereby finds and determines that the issuance of the Series 2020E Bonds is in the best interest of the Authority; and

WHEREAS, pursuant to the Bond Resolution, the Authority has authorized the Authorized Officer to make such findings and determinations as may be required in connection with the issuance of the Series 2020E Bonds and to set forth such findings and determinations in the Award Certificate; and

WHEREAS, the execution and delivery of this Supplemental Indenture and the issuance of the Series 2020E Bonds have been in all respects duly and validly authorized by the Bond Resolution; and

WHEREAS, the Trustee has accepted the trusts created by the Master Indenture and this Supplemental Indenture and in evidence thereof has joined in the execution and delivery hereof; and

WHEREAS, except as provided herein, all acts and conditions and things required by the laws of the State to happen, exist and be performed precedent to execution and delivery of this Supplemental Indenture have happened, exist and have been performed as so required in order to make the Indenture, as supplemented by this Supplemental Indenture, a valid, binding and legal instrument for the security of the Series 2020E Bonds and a valid and binding agreement in accordance with its terms;

NOW, THEREFORE, in consideration of the premises, the acceptance by the Trustee of the trusts hereby created, the purchase and acceptance of the Series 2020E Bonds by the holders thereof, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and for the further purpose of fixing and declaring the terms and conditions upon which the Series 2020E Bonds are to be issued, authenticated, delivered and accepted by the holders thereof, the Authority and the Trustee do hereby mutually covenant and agree, for the equal and proportionate benefit of the respective Holders from time to time of the Obligations, including the Series 2020E Bonds, as follows:

ARTICLE I.

DEFINITIONS AND STATUTORY AUTHORITY

Section 1.1. Supplemental Indenture. This Supplemental Indenture is supplemental to the Master Indenture and is adopted in accordance with Article III and Article X thereof.

Section 1.2. Definitions. Unless the context shall require otherwise, all defined terms contained in the Master Indenture shall have the same meanings in this Supplemental Indenture as such defined terms are given in Section 101 of the Master Indenture.

As used in this Supplemental Indenture, unless the context shall otherwise require, the following terms shall have the following respective meanings:

“Arbitrage Analyst” shall mean any nationally recognized firm of certified public accountants or any other nationally recognized firm or Person approved by the Authority and expert in the area of verification of arbitrage calculations related to tax-exempt bonds.

“Authorized Denomination” shall mean, with respect to Series 2020E Bonds, \$5,000 principal amount or any integral multiple thereof.

“Authorized Officer” shall mean the Chairman of the Board of Directors of the Authority, the Executive Director of the Authority and the Chief Financial Officer of the Authority, severally and each of them, as provided in the Bond Resolution.

“Award Certificate” shall mean the Award Certificate executed and delivered by an Authorized Officer pursuant to Section 2.1 hereof in connection with initial issuance and delivery of the Series 2020E Bonds authorized to be issued hereunder.

“Bond Form” shall mean the Form of Series 2020E Bond attached to the Award Certificate, with such changes and modifications as shall be appropriate to conform to the terms of the Award Certificate.

“Bond Proceeds Clearance Fund SR LIEN 2020E” shall mean the “Bond Proceeds Clearance Fund Senior Lien 2020E” established pursuant to Section 3.5(a) hereof, and any Accounts established therein pursuant to a Letter of Instructions signed by an Authorized Officer.

“Bond Proceeds Funded Account” shall mean the Account by that name established pursuant to the Twelfth Supplemental Indenture as part of the Senior Lien Debt Service Reserve Fund.

“Bond Resolution” shall mean Resolution No. 20-____, adopted by the Board of Directors of the Authority on September 30, 2020.

“Bond Year” shall mean each one-year period that ends at the close of business on the day that is each anniversary of the Issuance Date and on the date of final maturity of the Series 2020E Bonds. The last Bond Year may be a short period.

“CAP I Subaccount SR LIEN 2020E DSA” shall mean the “Capitalized Interest Subaccount 2020E Senior Lien Debt Service Account” established in Section 3.4 hereof as part of the Debt Service Account 2020E SR LIEN.

“CAP I Subaccount SR LIEN 2020E Project” shall mean the “Capitalized Interest Subaccount 2020E Senior Lien Project” established in Section 3.3 hereof as part of the 2020E SR LIEN Project Subaccount.

“Capitalized Interest Period” shall mean, for each portion of the improvements and extensions to the 2020 Project financed with the proceeds of the Series 2020E Bonds with a separate placed-in-service date, the period commencing on the Issuance Date and ending on the date that is the later of (i) three years from the Issuance Date and (ii) one year after the applicable portion of the improvements and extensions to the 2020 Project financed with the proceeds of the

Series 2020E Bonds (A) has reached a degree of completion which would permit its operation at substantially its design level and (B) is, in fact, in operation at such level.

“Code” shall mean the Internal Revenue Code of 1986, as amended, and, with respect to a specific section thereof, such reference shall be deemed to include (a) the Regulations promulgated under such section, (b) any successor provision of similar import hereafter enacted, (c) any corresponding provision of any subsequent Internal Revenue Code and (d) the regulations promulgated under the provisions described in (b) and (c).

“COI 2020E Fund SR LIEN” shall mean the “2020E Costs of Issuance Fund Senior Lien” established pursuant to Section 3.5(b) hereof.

“Computation Date” shall mean each Installment Computation Date and the Final Computation Date.

“Debt Service Account 2020E SR LIEN” shall mean the “Debt Service Account 2020E Senior Lien” established in Section 3.4 hereof as part of the Senior Lien Debt Service Fund and any subaccounts established therein pursuant to this Supplemental Indenture or a Letter of Instructions signed by an Authorized Officer.

“Depository Participant” shall mean a broker, dealer, bank, other financial institution or any other Person for whom from time to time a Securities Depository effects book-entry transfers and pledges of securities deposited with such Securities Depository.

“Designated Payment/Transfer Office” shall mean, initially, the office of the Trustee located in Houston, Texas, or such other office designated by the Trustee from time to time as the place of payment and transfer of registration of ownership of the Series 2020E Bonds.

“DTC” shall mean The Depository Trust Company, its successors and assigns.

“Final Computation Date” shall mean the date on which the last bond of the Series 2020E Bonds is discharged.

“First Supplemental Indenture” shall mean the First Supplemental Trust Indenture, dated as of February 1, 2005, between the Authority and the Trustee.

“Indenture” shall mean the Master Indenture, as amended or supplemented (i) by each Supplemental Indenture (as defined in the Master Indenture) heretofore executed and delivered by the Authority and the Trustee in accordance with the terms of the Master Indenture, prior to the date of this Twenty-Fourth Supplemental Indenture; (ii) by this Twenty-Fourth Supplemental Indenture; (iii) by the Twenty-Fifth Supplemental Trust Indenture dated as of the date first written above, between the Authority and the Trustee; and (iv) hereafter from time to time in accordance with the terms of the Master Indenture.

“Initial Series 2020E Bonds” shall mean the Initial Series 2020E Bonds, as described in Section 2.4 hereof.

“Installment Computation Date” shall mean the last day of the fifth Bond Year and each succeeding fifth Bond Year.

“Interest Payment Date” shall mean, with respect to the Series 2020E Bonds, each July 1 and January 1, commencing on the date specified in the Award Certificate.

“Issuance Date” shall mean the date of initial issuance and delivery of the Series 2020E Bonds to the Underwriters, or the representative thereof, against payment therefor.

“Letter of Representations” shall mean that certain Blanket Issuer Letter of Representations between the Authority and DTC, as the Securities Depository.

“Master Indenture” shall mean the Master Trust Indenture, dated as of February 1, 2005, between the Authority and the Trustee, without regard to supplements and amendments thereto.

“Official Statement” shall mean the Authority’s final official statement prepared in connection with the public offering and sale of the Series 2020E Bonds, together with any addenda, supplements and amendments thereto.

“Purchase Agreement” shall mean the Bond Purchase Agreement between the Authority and the respective Underwriters providing for the purchase of the Series 2020E Bonds by the Underwriters.

“Rebate Amount” shall mean that amount, as of each respective Computation Date, described in section 1.148-3(b) of the Regulations and generally means the excess as of any date of the future value of all receipts on nonpurpose investments over the future value of all payments on nonpurpose investments all as determined in accordance with section 1.148-3 of the Regulations.

“Record Date” shall mean with respect to the Series 2020E Bonds, the fifteenth (15th) calendar day of the month preceding each Interest Payment Date.

“Regulations” shall mean the applicable proposed, temporary or final Treasury Regulations promulgated under the Code or, to the extent applicable to the Code, under the Internal Revenue Code of 1954, as such regulations may be amended or supplemented from time to time.

“Revenue Funded Account” shall mean the Account by that name established pursuant to the Twelfth Supplemental Indenture as part of the Senior Lien Debt Service Reserve Fund.

“Securities Depository” shall mean The Depository Trust Company, a limited purpose trust company organized under the laws of the State of New York, and any successor Securities Depository appointed pursuant to Section 913 of the Master Indenture and Section 2.7 of this Supplemental Indenture.

“Senior Lien Debt Service Reserve Requirement” shall mean an amount equal to the least of (i) the maximum Annual Debt Service on all Outstanding Senior Lien Obligations, (ii) 1.25 times the Average Annual Debt Service on all Outstanding Senior Lien Obligations, or (iii) ten

percent (10%) of the aggregate amount of the Outstanding Senior Lien Obligations, as determined on the date each Series of Senior Lien Obligations is issued.

“Series 2020E Bonds” shall mean the Authority’s Senior Lien Revenue Bonds, Series 2020E, authorized pursuant to this Supplemental Indenture and designated as such in the Award Certificate.

“Special Payment Date” shall mean the date that is fifteen (15) days after the Special Record Date.

“Special Record Date” shall mean the new record date for interest payment established in the event of a nonpayment of interest on a scheduled payment date, and for thirty (30) days thereafter.

“Springing Lien Account” shall have the meaning given to such term in the Twelfth Supplemental Indenture.

“Springing Lien Obligation” shall have the meaning given to such term in the Twelfth Supplemental Indenture.

“Stated Maturity” shall mean the date on which a Series 2020E Bond is scheduled to mature, as set forth in the Award Certificate.

“Supplemental Indenture” or “Twenty-Fourth Supplemental Indenture” shall mean this Twenty-Fourth Supplemental Trust Indenture by and between the Authority and the Trustee, dated as of the date first above written, together with any amendments hereto.

“Treasury” shall mean the United States Department of the Treasury, or any successor department or agency to the obligations thereof.

“Twelfth Supplemental Indenture” shall mean the Twelfth Supplemental Trust Indenture, dated as of November 1, 2015, between the Authority and the Trustee.

“2020 Project” shall mean improvements and extensions to the System, including, without limitation, the design and construction of the 183A Phase III Project, all as more particularly described in [INSERT REFERENCE TO GEC REPORT].

“2020 Project Account” shall mean the account by that name established pursuant to Section 3.1 hereof as part of the Construction Fund.

“2020E SR LIEN Project Subaccount” shall mean the “2020E Senior Lien Project Subaccount” established pursuant to Section 3.2 hereof as part of the 2020 Project Account.

“2020E Senior Lien Rebate Account” shall mean the account by that name established pursuant to Section 5.2 hereof and such subaccounts as may be established therein pursuant to a Letter of Instructions signed by an Authorized Officer.

“Underwriters” shall mean the underwriters named in the Purchase Agreement.

Section 1.3. Authority for This Supplemental Indenture. This Supplemental Indenture is adopted pursuant to the provisions of the Act and the Master Indenture, particularly Section 1002(a) of the Master Indenture.

Section 1.4. Rules of Construction.

(a) For all purposes of this Supplemental Indenture unless the context requires otherwise, all references to designated Articles, Sections and other subdivisions are to the articles, sections and other subdivisions of this Supplemental Indenture.

(b) Except where the context otherwise requires, terms defined in this Supplemental Indenture to impart the singular number shall be considered to include the plural number and vice versa.

(c) Unless the context requires otherwise, words of the masculine gender shall be construed to include correlative words of the feminine and neuter genders and vice versa.

(d) This Supplemental Indenture and all the terms and provisions hereof shall be liberally construed to effectuate the purposes set forth herein and to sustain the validity of this Supplemental Indenture and the Master Indenture which it supplements.

Section 1.5. Interpretation. The Table of Contents, titles and headings of the Articles and Sections of this Supplemental Indenture have been inserted for convenience of reference only and are not to be considered a part hereof and shall not in any way modify or restrict the terms or provisions hereof.

Section 1.6. Indenture to Remain in Force. Except as amended by this Supplemental Indenture, the Indenture shall remain in full force and effect as to the matters covered therein.

Section 1.7. Successors and Assigns. All covenants and agreements in this Supplemental Indenture by the Authority and the Trustee shall bind their respective successors and assigns, whether so expressed or not.

Section 1.8. Separability Clause. In case any provision in this Supplemental Indenture shall be determined to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

Section 1.9. Benefits of Supplemental Indenture. Subject to the terms of the Master Indenture and the terms hereof, nothing in this Supplemental Indenture or in the Series 2020E Bonds, express or implied, shall give to any Person, other than the parties hereto, their successors hereunder, and the Holders of Series 2020E Bonds, any benefit or any legal or equitable right, remedy or claim under this Supplemental Indenture.

Section 1.10. Governing Law. This Supplemental Indenture shall be construed in accordance with and governed by the laws of the State.

Section 1.11. Miscellaneous. Every “request,” “order,” “demand,” “application,” “notice,” “statement,” “certificate,” “consent,” “instruction,” or similar action hereunder shall,

unless the form thereof is specifically provided herein, be in writing, and in the case of the Authority signed by an Authorized Representative or Authorized Officer of the Authority or in the case of any other Person signed by its President or Vice President, or other officer serving in similar capacities specifically authorized to execute such writing on behalf of any other Person, as the case may be.

ARTICLE II.

AUTHORIZATION AND TERMS OF SERIES 2020E BONDS

Section 2.1. Authorization, Principal Amounts, Designation of Series, Terms and Provisions to Apply.

(a) In accordance with and subject to the terms, conditions and limitations established in the Indenture and this Supplemental Indenture, the Series 2020E Bonds are hereby authorized to be issued pursuant to and in accordance with the provisions of the Bond Resolution, the Master Indenture, Chapter 1371, Texas Government Code, as amended, and the Act. The Authorized Officer shall determine the aggregate principal amount of Series 2020E Bonds to be issued for the purposes identified in Section 2.2 of this Supplemental Indenture and shall make such findings as required by law, as authorized by the Bond Resolution or as otherwise deemed appropriate by the Authorized Officer, all of which shall be set forth in the Award Certificate. The terms of the Series 2020E Bonds shall be as set forth in the Master Indenture, this Supplemental Indenture and the Award Certificate. All terms and provisions of the Award Certificate relating to the Series 2020E Bonds shall be deemed to be incorporated into and shall become a part of this Twenty-Fourth Supplemental Indenture.

(b) The Authorized Officer shall determine and shall set forth in the Award Certificate the aggregate principal amount of Series 2020E Bonds to be issued, the maturity dates, the per annum interest rates, the redemption provisions and any other terms and provisions determined by the Authorized Officer as necessary or desirable with respect to the terms of the Series 2020E Bonds.

Section 2.2. Purposes. The Series 2020E Bonds are issued in accordance with Section 302(a) of the Master Indenture for the purpose of providing funds to: (i) pay a portion of the Costs of the 2020 Project; (ii) pay capitalized interest on the Series 2020E Bonds; (iii) make required deposits, if any, to the Senior Lien Debt Service Reserve Fund; and (iv) pay certain costs of issuance for the Series 2020E Bonds, all under and in accordance with the Constitution and the laws of the State.

Section 2.3. Pledge; Limited Obligations.

(a) The Series 2020E Bonds are designated as Senior Lien Obligations, Current Interest Bonds and as Long-Term Obligations under the Master Indenture.

(b) The Series 2020E Bonds shall be limited obligations of the Authority constituting Senior Lien Obligations payable from and secured solely by a first lien on, pledge of and security interest in the Trust Estate; provided, that the interest of the Series 2020E Bonds in the Construction Fund shall be limited to amounts on deposit in the 2020E SR LIEN Project

Subaccount. The Series 2020E Bonds, as Senior Lien Obligations, shall constitute a valid claim of the Holder thereof against the Trust Estate, which is pledged to secure the payment of the principal of, redemption premium, if any, and interest on the Series 2020E Bonds. The Series 2020E Bonds shall not constitute a general obligation of the Authority and under no circumstances shall the Series 2020E Bonds be payable from, nor shall the Holder thereof have any rightful claim to, any income, revenues, funds or assets of the Authority other than those pledged hereunder and under the Master Indenture as security for the payment of the Senior Lien Obligations.

NONE OF THE STATE OF TEXAS OR ANY OTHER AGENCY OR POLITICAL SUBDIVISION OF THE STATE OF TEXAS OTHER THAN THE AUTHORITY IS OBLIGATED TO PAY THE PRINCIPAL OF, PREMIUM, IF ANY, OR INTEREST ON THE SERIES 2020E BONDS. THE SERIES 2020E BONDS ARE PAYABLE SOLELY FROM THE TRUST ESTATE AND CERTAIN FUNDS CREATED UNDER THE INDENTURE. NEITHER THE FAITH AND CREDIT NOR THE TAXING POWER OF THE STATE OF TEXAS OR ANY POLITICAL SUBDIVISION THEREOF IS PLEDGED TO THE PAYMENT OF THE PRINCIPAL OF, PREMIUM, IF ANY, OR INTEREST ON THE SERIES 2020E BONDS. THE AUTHORITY HAS NO TAXING POWER.

NO RECOURSE UNDER THE SERIES 2020E BONDS SHALL BE HAD AGAINST ANY PAST, PRESENT OR FUTURE OFFICER OF THE AUTHORITY. THE SERIES 2020E BONDS SHALL NEVER BE PAID IN WHOLE OR IN PART OUT OF ANY FUNDS RAISED OR TO BE RAISED BY TAXATION OR OUT OF ANY OTHER REVENUES OF THE AUTHORITY, EXCEPT THOSE REVENUES ASSIGNED BY THE INDENTURE.

By its purchase and acceptance of the Series 2020E Bonds, each holder thereof acknowledges that, the Authority has previously issued and there is currently outstanding, and the Authority has reserved the right pursuant to the Master Indenture to issue in the future, one or more series of Subordinate Lien Obligations that, upon the occurrence of an Event of Default described in Section 801(d) of the Master Indenture, will be deemed to be and will automatically become a Senior Lien Obligation in accordance with the provisions of the Supplemental Indenture (as defined in the Master Indenture) authorizing such Subordinate Lien Obligations.

Section 2.4. Date, Denomination, Numbers, and Letters.

(a) The Series 2020E Bonds shall be dated as provided in the Award Certificate and shall be issued in Authorized Denominations.

(b) Unless the Authority shall direct otherwise, each Series 2020E Bond shall be lettered and numbered separately from 1 upward. The Series 2020E Bonds registered by the Comptroller of Public Accounts of the State of Texas (the "Initial Series 2020E Bonds") shall be lettered and numbered separately from T-1 upward.

Section 2.5. Interest Payment Dates, Interest Rates and Maturity Dates of the Series 2020E Bonds.

(a) The Series 2020E Bonds shall bear interest from the later of the Issuance Date or the most recent Interest Payment Date to which interest has been paid or provided for until the principal of such Series 2020E Bonds has been paid or provided for either at Stated Maturity or

the prior redemption thereof. Interest on the Series 2020E Bonds shall be calculated on the basis of a 360-day year composed of twelve 30-day months and shall be payable on each Interest Payment Date.

(b) The Series 2020E Bonds shall mature on January 1 in the years, in the respective principal amounts and shall bear interest at the per annum rates set forth in the Award Certificate.

Section 2.6. Paying Agent; Method and Place of Payment.

(a) The Trustee is hereby appointed as Paying Agent for the Series 2020E Bonds.

(b) The principal of the Series 2020E Bonds shall be payable on the due date thereof (whether at Stated Maturity or, if applicable, prior redemption date) upon the presentation and surrender thereof at the Designated Payment/Transfer Office.

(c) Interest payable on each Series 2020E Bond shall be paid by check dated as of the Interest Payment Date and mailed by the Trustee to the Holder in whose name such Series 2020E Bond is registered at the close of business on the Record Date, by mail, first class postage prepaid, to the address of the Holder as it appears in the registration books kept by the Trustee, or such other customary banking arrangements acceptable to the Trustee and the Person to whom interest is to be paid; provided, however, that such Person shall bear all risk and expenses of such other customary banking arrangements. In the event of nonpayment of interest on a scheduled Interest Payment Date, and for 30 days thereafter, a new record date for such interest payment (defined in Section 1.2 hereof as a “Special Record Date”) will be established by the Trustee, if and when funds for the payment of such interest have been received from the Authority. Notice of the Special Record Date and of the scheduled payment date of the past due interest (defined in Section 1.2 hereof as the “Special Payment Date,” which shall be 15 days after the Special Record Date) shall be sent at least five Business Days prior to the Special Record Date by United States mail, first class postage prepaid, to the address of each Holder of a Series 2020E Bond appearing on the books of the Trustee at the close business on the last Business Day preceding the date of mailing of such notice.

Section 2.7. Securities Depository; Book-Entry System.

(a) Pursuant to Section 913 of the Master Indenture, the Authority hereby appoints The Depository Trust Company (“DTC”) as Securities Depository for the Series 2020E Bonds. In accordance with the Letter of Representations, the Authority shall cause the Series 2020E Bonds to be registered in the name of Cede & Co., as nominee for DTC, and to be delivered by the Underwriters to DTC on the Issuance Date.

(b) With respect to Series 2020E Bonds registered in the registration books maintained by the Trustee in the name of Cede & Co., or a nominee of any successor Securities Depository, pursuant to Section 913 of the Master Indenture, the Authority and the Trustee shall have no responsibility or obligation to any Depository Participant or to any Person on behalf of whom such Depository Participant holds an interest in Series 2020E Bonds. The Authority and the Trustee may treat and consider the Holder of any Series 2020E Bond as the absolute owner of such Series 2020E Bond for the purpose of payment of the principal of, premium, if any, and interest on such Series 2020E Bond, for the purpose of giving notices of redemption and other matters with respect

to such Series 2020E Bond, for the purpose of registering transfers and exchanges with respect to such Series 2020E Bond, and for all other purposes whatsoever. The Trustee shall pay the principal of, premium, if any, and interest on the Series 2020E Bonds only to or upon the order of the respective Holders of the Series 2020E Bonds and all such payments shall be valid and effective with respect to such payments to the extent of the sum or sums so paid. The Authority and the Trustee shall have no responsibility or obligation with respect to (i) the accuracy of the records of DTC, any successor Securities Depository or any Depository Participant with respect to any ownership interest in Series 2020E Bonds, (ii) the delivery to any Depository Participant or any other Person, other than a Holder of a Series 2020E Bond as shown in the registration books for Obligations required to be kept and maintained pursuant to the Master Indenture, of any notice with respect to the Series 2020E Bonds, including any notice of redemption, or (iii) the payment to any Depository Participant or any other Person, other than a Holder of a Series 2020E Bond, of any amount with respect to any Series 2020E Bond. The rights of Depository Participants and Persons on behalf of whom any Depository Participant holds a beneficial interest in Series 2020E Bonds shall be limited to those established by law and agreements between such Depository Participants and other Persons and the applicable Securities Depository.

(c) In the event that either (i) the Securities Depository that is, directly or through a nominee, the Holder of all of the Outstanding Series 2020E Bonds notifies the Trustee and the Authority that it is no longer willing or able to discharge its responsibilities as a Securities Depository or (ii) the Authority determines that continuance of the existing book-entry system for ownership of interests in the Series 2020E Bonds is not in the best interest of such owners of beneficial interests in the Series 2020E Bonds, then the Authority shall direct the Securities Depository to terminate the existing book-entry system for ownership of interests in the Series 2020E Bonds. Upon such termination, the Authority shall promptly select a substitute Securities Depository (and shall notify the Trustee in writing of such selection) to provide a system of book-entry ownership of beneficial interests in the Series 2020E Bonds, if one is available satisfactory to the Authority, and the ownership of all Series 2020E Bonds shall be transferred on the registration books for the Series 2020E Bonds to such successor Securities Depository, or its nominee. In the alternative, the Authority may direct the Trustee to, and if the Authority fails to promptly designate a successor Securities Depository the Trustee, without further direction, shall, notify the Depository Participants, through the Securities Depository for the Series 2020E Bonds, of the availability of Series 2020E Bonds registered in the names of such Persons as are owners of beneficial interests in the Series 2020E Bonds and, upon surrender to the Trustee of the Outstanding Series 2020E Bonds held by the Securities Depository, accompanied by registration instructions from the Securities Depository, the Trustee shall, at the expense of the transferees, cause to be printed and authenticated Series 2020E Bonds, in Authorized Denominations, to the owners of beneficial interests in the Series 2020E Bonds as of the date of the termination of the existing book-entry ownership system for the Series 2020E Bonds. Neither the Authority nor the Trustee shall be liable for any delay in delivery of such instructions and may conclusively rely on, and shall be protected in relying upon, such instructions. So long as the Authority has designated a Securities Depository to provide a system of book-entry ownership of the Series 2020E Bonds, all of the Series 2020E Bonds must be held under such book-entry system.

(d) Notwithstanding any other provisions in Article II hereof, the Authority and the Trustee may, but shall not be required to, enter into separate agreements with one or more

Securities Depositories which may provide for alternative or additional provisions with respect to the delivery of notices, payment of interest and/or principal, or any other matters.

Section 2.8. Redemption Prices and Terms. The Series 2020E Bonds shall be subject to redemption prior to Stated Maturity only as provided in the Award Certificate for the Series 2020E Bonds and in this Supplemental Indenture.

Section 2.9. Selection of Bonds to be Redeemed; Notice of Redemption.

(a) Unless otherwise specified herein or in the Award Certificate, the terms and provisions of Article IV of the Master Indenture relating to the selection of Obligations for redemption and the giving of notice therefor shall apply to the Series 2020E Bonds. In addition, if the Series 2020E Bonds are registered in the name of the nominee of the Securities Depository, the Trustee shall deliver notice of such redemption to the Securities Depository at the times and in the manner required by the operational procedures of such Securities Depository in order to timely effect the redemption of such Series 2020E Bonds.

(b) Any notice mailed or transmitted as provided in this Section shall be conclusively presumed to have been duly given, whether or not the registered owner of such Series 2020E Bonds receives the notice.

ARTICLE III.

ACCOUNTS; APPLICATION OF PROCEEDS

Section 3.1. Establishment of 2020 Project Account.

(a) Pursuant to the provisions of Section 504(c) of the Master Indenture, there is hereby established within the Construction Fund the “2020 Project Account.”

(b) All amounts on deposit in the 2020 Project Account shall be applied to the payment of the Costs of the 2020 Project, in accordance with and subject to the provisions of Section 519 of the Master Indenture and this Twenty-Fourth Supplemental Indenture.

Section 3.2. 2020E SR LIEN Project Subaccount.

(a) There is hereby established within the 2020 Project Account a subaccount designated “2020E Senior Lien Project Subaccount” (“2020E SR LIEN Project Subaccount”).

(b) On the Issuance Date, a portion of the proceeds of the Series 2020E Bonds shall be deposited to the 2020E SR LIEN Project Subaccount, as directed in a Letter of Instructions of the Authority.

(c) Amounts on deposit in the 2020E SR LIEN Project Subaccount (other than amounts on deposit in the CAP I Subaccount SR LIEN 2020E Project) shall be used for the purpose of paying a portion of the Costs of the 2020 Project, in accordance with and subject to the provisions of Section 519 of the Master Indenture and this Supplemental Indenture.

(d) The Authority shall submit written requisition requests in the form of Exhibit A to this Supplemental Indenture to request disbursements from the 2020E SR LIEN Project Subaccount in accordance with Section 519 of the Master Indenture.

Section 3.3. Capitalized Interest Subaccount 2020E Senior Lien Project.

(a) There is hereby established within the 2020E SR LIEN Project Subaccount the “Capitalized Interest Subaccount 2020E Senior Lien Project” (“CAP I Subaccount SR LIEN 2020E Project”). On the Issuance Date, a portion of the proceeds of the Series 2020E Bonds shall be deposited to the CAP I Subaccount SR LIEN 2020E Project, as directed in a Letter of Instructions of the Authority.

(b) Amounts on deposit in the CAP I Subaccount SR LIEN 2020E Project shall be used to pay interest accrued during each Capitalized Interest Period on the Series 2020E Bonds. On or prior to each Interest Payment Date for the Series 2020E Bonds, the Trustee shall transfer to the CAP I Subaccount SR LIEN 2020E DSA, after giving effect to the amount, if any, on deposit therein, the amount required to pay accrued but unpaid interest accrued during each Capitalized Interest Period on the Series 2020E Bonds on such Interest Payment Date.

(c) Any amount remaining in the CAP I Subaccount SR 2020E LIEN Project after the Interest Payment Date occurring immediately after the end of the final Capitalized Interest Period shall be transferred to the 2020E SR LIEN Project Subaccount.

Section 3.4. Debt Service Account 2020E Senior Lien.

(a) There is hereby established within the Senior Lien Debt Service Fund an account designated “Debt Service Account 2020E Senior Lien” (“Debt Service Account 2020E SR LIEN”). Moneys on deposit in the Debt Service Account 2020E SR LIEN shall be used to pay debt service on the Series 2020E Bonds when due.

(b) There is hereby established within the Debt Service Account 2020E SR LIEN a subaccount designated “Capitalized Interest Subaccount 2020E Senior Lien Debt Service Account” (“CAP I Subaccount SR LIEN 2020E DSA”). Amounts on deposit in the CAP I Subaccount SR LIEN 2020E DSA shall be used to pay interest on the Series 2020E Bonds during the applicable Capitalized Interest Period.

(c) On or prior to each Interest Payment Date with respect to the Series 2020E Bonds, the Trustee shall deposit to the Debt Service Account 2020E SR LIEN from Revenues, after giving effect to the any amounts on deposit in the CAP I Subaccount SR LIEN 2020E DSA, an amount sufficient to pay debt service then due on the Series 2020E Bonds.

Section 3.5. Bond Proceeds Clearance Fund; Costs of Issuance Fund; Initial Deposits.

(a) The Trustee is hereby authorized and directed to establish a special temporary Fund designated “Bonds Proceeds Clearance Fund Senior Lien 2020E” (the “Bond Proceeds Clearance Fund SR LIEN 2020E”). On the Issuance Date, the proceeds from the sale of the Series 2020E Bonds shall be deposited to the Bond Proceeds Clearance Fund SR LIEN 2020E and shall be applied and disbursed as set forth in a Letter of Instructions signed by an Authorized Officer. The

Trustee shall create within the Bond Proceeds Clearance Fund SR LIEN 2020E such accounts as shall be authorized in a Letter of Instructions signed by an Authorized Officer and deposit the proceeds of the Series 2020E Bonds as shall be directed in such Letter of Instructions. The Bond Proceeds Clearance Fund SR LIEN 2020E shall be closed upon disbursement of all amounts deposited thereto.

(b) There is hereby established with the Trustee the “2020E Costs of Issuance Fund Senior Lien” (“COI 2020E Fund SR LIEN”), relating to the Series 2020E Bonds. There shall be deposited to the COI 2020E Fund SR LIEN from the proceeds of the Series 2020E Bonds deposited to the Bond Proceeds Clearance Fund SR LIEN 2020E, together with other lawfully available funds of the Authority, if any, the amounts set forth in a Letter of Instructions from the Authority. Such amounts shall be disbursed as set forth in a Letter of Instructions from the Authority. Amounts remaining in the COI 2020E Fund SR LIEN on the date which is 90 days after the Issuance Date of the Series 2020E Bonds shall be transferred to the Debt Service Account 2020E SR LIEN. Following such transfer, the COI 2020E Fund SR LIEN shall be closed.

Section 3.6. Senior Lien Debt Service Reserve Requirement. The Senior Lien Debt Service Reserve Requirement established in the First Supplemental Indenture is hereby confirmed and reestablished with respect to the Series 2020E Bonds as if set forth in full in this Supplemental Indenture. The provisions of Sections 3.9 and 3.10 of the Twelfth Supplemental Indenture relating to the establishment and operation of certain Accounts within the Senior Lien Debt Service Reserve Fund (including, but not limited to, the Bond Proceeds Funded Account, the Revenue Funded Account and the Springing Lien Account) are hereby ratified and affirmed, shall apply to and benefit the Series 2020E Bonds and Springing Lien Obligations generally, and shall survive the payment or defeasance of any Senior Lien Obligations issued pursuant to the Twelfth Supplemental Indenture.

Section 3.7. 2005 TxDOT Grant Fund. The 2005 TxDOT Grant Fund, established and created pursuant to the First Supplemental Indenture, is hereby reestablished, recreated and affirmed. The 2005 TxDOT Grant Fund shall be established with, and held and maintained by, the Trustee in accordance with the provisions of the Indenture and this Section 3.7. Until transferred in accordance with this Section 3.7, amounts on deposit in the 2005 TxDOT Grant Fund shall be invested by the Trustee in accordance with the provisions of the Indenture. Interest earned from the investment of any amounts in the 2005 TxDOT Grant Fund or any profits realized from any Permitted Investment of amounts in the 2005 TxDOT Grant Fund shall remain in such Fund. Amounts on deposit in the 2005 TxDOT Grant Fund shall be transferred by the Trustee from time to time in accordance with a Letter of Instruction from the Authority to the Operating Fund or the Senior Lien Debt Service Fund.

ARTICLE IV.

FORM OF BONDS

Section 4.1. Form of Series 2020E Bonds. The form of the Series 2020E Bonds, including any Series 2020E Bonds issued in exchange or replacement for any other Series 2020E Bond or portion thereof, including the form of the Trustee’s Authentication Certificate, the Registration Certificate of the Comptroller of Public Accounts of the State of Texas with respect

to Initial Series 2020E Bonds and the Form of Assignment, shall be substantially as set forth in or attached to the Award Certificate, with such omissions, insertions, modifications and variations as permitted or required by the Master Indenture, this Supplemental Indenture and the Award Certificate.

Section 4.2. Initial Series 2020E Bonds. The Initial Series 2020E Bonds, as described in Section 2.4, may be in the form of a single Series 2020E Bond representing the entire principal amount of Series 2020E Bonds, payable in stated installments to the order of the representative of the Underwriters or its designee, executed by the manual or facsimile signature of the Chairman of the Board of Directors of the Authority and attested by manual or facsimile signature of the Secretary of the Board of Directors of the Authority, approved by the Attorney General of Texas, and registered and manually signed by the Comptroller of Public Accounts of the State of Texas.

Section 4.3. Additional Provisions Regarding Bonds.

(a) The Series 2020E Bonds may have such letters, numbers, or other marks of identification (including identifying numbers and letters of the Committee on Uniform Securities Identification Procedures of the American Bankers Association) and such legends and endorsements (including any reproduction of an opinion of bond counsel) thereon as, consistent herewith, may be determined by the officers executing the Series 2020E Bonds, as evidenced by their execution thereof.

(b) The definitive Series 2020E Bonds shall be typewritten, printed, lithographed, or engraved and may be produced by any combination of such methods or produced in any other similar manner, all as determined by the officers executing such Series 2020E Bonds, as evidenced by their execution thereof.

(c) The Initial Series 2020E Bonds submitted to the Attorney General of the State of Texas may be typewritten or photocopied or otherwise produced or reproduced.

ARTICLE V.

TAX MATTERS; REBATE

Section 5.1. Federal Income Tax Matters Relating to Series 2020E Bonds.

(a) General. The Authority covenants not to take any action or omit to take any action that, if taken or omitted would cause the interest on the Series 2020E Bonds to be includable in gross income for federal income tax purposes. In furtherance thereof, the Authority covenants to comply with sections 103 and 141 through 150 of the Code and the provisions set forth in the Federal Tax Certificate executed by the Authority in connection with the Series 2020E Bonds.

(b) No Private Activity Bonds. The Authority covenants that it will use the proceeds of the Series 2020E Bonds (including investment income) and the property financed, directly or indirectly, with such proceeds so that the Series 2020E Bonds will not be “private activity bonds” within the meaning of section 141 of the Code. Furthermore, the Authority will not take a deliberate action (as defined in section 1.141-2(d)(3) of the Regulations) that causes the Series

2020E Bonds to be a “private activity bond” unless it takes a remedial action permitted by section 1.141-12 of the Regulations.

(c) No Federal Guarantee. The Authority covenants not to take any action or omit to take any action that, if taken or omitted, would cause the Series 2020E Bonds to be “federally guaranteed” within the meaning of section 149(b) of the Code, except as permitted by section 149(b)(3) of the Code.

(d) No Hedge Bonds. The Authority covenants not to take any action or omit to take action that, if taken or omitted, would cause the Series 2020E Bonds to be “hedge bonds” within the meaning of section 149(g) of the Code.

(e) No Arbitrage Bonds. The Authority covenants that it will make such use of the proceeds of the Series 2020E Bonds (including investment income) and regulate the investment of such proceeds of the Series 2020E Bonds so that the Series 2020E Bonds will not be “arbitrage bonds” within the meaning of section 148(a) of the Code.

(f) Required Rebate. The Authority covenants that, if the Authority does not qualify for an exception to the requirements of section 148(f) of the Code, the Authority will comply with the requirement that certain amounts earned by the Authority on the investment of the gross proceeds of the Series 2020E Bonds, be rebated to the United States.

(g) Information Reporting. The Authority covenants to file or cause to be filed with the Secretary of the Treasury an information statement concerning the Series 2020E Bonds in accordance with section 149(e) of the Code.

(h) Record Retention. The Authority covenants to retain all material records relating to the expenditure of the proceeds (including investment income) of the Series 2020E Bonds and the use of the property financed, directly or indirectly, thereby until three years after the last Series 2020E Bond is redeemed or paid at maturity (or such other period as provided by subsequent guidance issued by the Department of the Treasury) in a manner that ensures their complete access throughout such retention period.

(i) Registration. The Series 2020E Bonds will be issued in registered form.

(j) Favorable Opinion of Bond Counsel. Notwithstanding the foregoing, the Authority will not be required to comply with any of the federal tax covenants set forth above if the Authority has received an opinion of nationally recognized bond counsel that such noncompliance will not adversely affect the excludability of interest on the Series 2020E Bonds from gross income for federal income tax purposes.

(k) Continuing Compliance. Notwithstanding any other provision of this Supplemental Indenture, the Authority’s obligations under the federal tax covenants set forth above will survive the defeasance and discharge of the Series 2020E Bonds for as long as such matters are relevant to the excludability of interest on the Series 2020E Bonds from gross income for federal income tax purposes.

Section 5.2. 2020E Senior Lien Rebate Account.

(a) There is hereby established within the Rebate Fund, but not as part of the Trust Estate, a special account designated “2020E Senior Lien Rebate Account.” Amounts deposited to the 2020E Senior Lien Rebate Account shall be applied to the payment of the Rebate Amount pursuant to a Letter of Instructions from the Authority. The 2020E Senior Lien Rebate Account and amounts on deposit therein are not security for the Series 2020E Bonds and are not part of the Trust Estate.

(b) The Authority will deliver to the Trustee, within 55 days after each Computation Date:

(i) a statement, signed by an officer of the Authority, stating the Rebate Amount as of such Computation Date; and

(ii) (1) if such Computation Date is an Installment Computation Date, an amount that, together with any amount then held for the credit of the 2020E Senior Lien Rebate Account, is equal to at least 90% of the Rebate Amount as of such Installment Computation Date, less any “previous rebate payments” (determined in accordance with section 1.148-3(f)(1) of the Regulations), made to the United States of America or (2) if such Computation Date is the Final Computation Date, an amount that, together with any amount then held for the credit of the 2020E Senior Lien Rebate Account, is equal to the Rebate Amount as of such Final Computation Date, less any “previous rebate payments” (determined in accordance with section 1.148-3(f)(1) of the Regulations) made to the United States of America; and

(iii) an Internal Revenue Service Form 8038-T properly signed and completed as of such Computation Date.

(c) Not later than 60 days after each Computation Date, the Trustee shall withdraw from the 2020E Senior Lien Rebate Account and remit to the United States of America the Rebate Amount required to be paid on such respective dates to the United States of America in accordance with written instructions from the Authority, which shall be in compliance with sections 1.148-1 through 1.148-8 of the Regulations or any successor regulation. Each payment required to be made to the United States of America pursuant to this Section shall be submitted to the Internal Revenue Service Center, Ogden, Utah 84201-0027 or such other address as provided by law or regulation and shall be accompanied by Internal Revenue Service Form 8038-T properly completed by the Authority with respect to the Series 2020E Bonds.

(d) If the Authority discovers or is notified as of any date that any amount required to be paid to the United States of America pursuant to this Section 5.2 has not been paid as required or that any payment paid to the United States of America pursuant to this Section 5.2 will have failed to satisfy any requirement of section 148(f) of the Code or 1.148-3 of the Regulations (whether or not such failure will be due to any default by the Authority or the Trustee), the Authority will (1) deliver to the Trustee (for deposit to the 2020E Senior Lien Rebate Account) and cause the Trustee to pay to the United States of America from the 2020E Senior Lien Rebate Account (A) the Rebate Amount that the Authority failed to pay, plus any interest specified in

section 1.148-3(h)(2) of the Regulations, if such correction payment is delivered to and received by the Trustee within 175 days after such discovery or notice, or (B) if such correction payment is not delivered to and received by the Trustee within 175 days after such discovery or notice, the amount determined in accordance with clause (A) of this subparagraph plus the fifty percent penalty required by section 1.148-3(h)(1) of the Regulations, and (2) deliver to the Trustee an Internal Revenue Service Form 8038-T completed as of such date. If such Rebate Amount, together with any penalty and/or interest due, is not paid to the United States of America in the amount and manner and by the time specified in the Regulations the Authority will take such steps as are necessary to prevent the Series 2020E Bonds from becoming “arbitrage bonds,” within the meaning of section 148 of the Code.

(e) The Authority will retain calculations, made in preparing the statements described in this Section 5.2, whether prepared by the Authority or the Arbitrage Analyst, for at least three years after the later of (1) the final maturity of the Series 2020E Bonds or (2) the first date on which no Series 2020E Bonds are outstanding.

(f) The Authority will not indirectly pay any amount otherwise payable to the federal government pursuant to the foregoing requirements to any person other than the federal government by entering into any investment arrangement with respect to the gross proceeds of the Series 2020E Bonds that is not purchased at fair market value or includes terms that the Authority would not have included if the Series 2020E Bonds were not subject to section 148(f) of the Code.

(g) Notwithstanding the foregoing, the Authority will not be required to perform the obligations set forth in this Section 5.2 (except for the obligation to retain accounting records as described in Section 5.2(e)) if the Authority has not earned any rebatable arbitrage and, therefore, is not subject to the rebate obligation set forth in section 148(f) of the Code. To the extent that the Authority will not be required to perform such obligations, the Authority will send written notice to the Trustee within 55 days after the applicable Computation Date.

ARTICLE VI.

CONTINUING DISCLOSURE

Section 6.1. Definitions. As used in this Article, the following terms have the meanings assigned to such terms below:

“Financial Obligation” means a (a) debt obligation; (b) derivative instrument entered into in connection with, or pledged as security or a source of payment for, an existing or planned debt obligation; or (c) guarantee of a debt obligation or any such derivative instrument; provided that “Financial Obligation” shall not include municipal securities (as defined in the Securities Exchange Act of 1934, as amended) as to which a final official statement (as defined in the Rule) has been provided to the MSRB consistent with the Rule.

“MSRB” means the Municipal Securities Rulemaking Board.

“Rule” means SEC Rule 15c2-12, as amended from time to time.

“SEC” means the United States Securities and Exchange Commission.

Section 6.2. Annual Reports.

(a) The Authority shall provide annually to the MSRB, in an electronic format as prescribed by the MSRB, within six (6) months after the end of each fiscal year, financial information and operating data with respect to the Authority and the System of the general type included in the final Official Statement, being the information described in Exhibit B hereto. Any financial statements so to be provided shall be (i) prepared in accordance with the accounting principles described in Exhibit B hereto, and (ii) audited, if the Authority commissions an audit of such statements and the audit is completed within the period during which they must be provided. If the audit of such financial statements is not complete within such period, then the Authority shall provide notice that audited financial statements are not available and shall provide unaudited financial statements for the applicable fiscal year to the MSRB. Thereafter, when and if audited financial statements become available, the Authority shall provide such audited financial statements as required to the MSRB. In addition to the annual information described above, the Authority will provide certain information on a quarterly basis, as described in Exhibit B hereto.

(b) If the Authority changes its fiscal year, it will notify the MSRB of the change (and of the date of the new fiscal year end) prior to the next date by which the Authority otherwise would be required to provide financial information and operating data pursuant to this Section.

(c) The financial information and operating data to be provided pursuant to this Section may be set forth in full in one or more documents or may be included by specific reference to any document (including an official statement or other offering document, if it is available from the MSRB) that theretofore has been provided to the MSRB or filed with the SEC.

Section 6.3. Event Notices.

(a) As used in this Section, the term “obligated person” shall mean any person, including the Authority, who is either generally or through an enterprise, fund, or account of such person committed by contract or other arrangement to support payment of all or part of the obligations on the Series 2020E Bonds (other than providers of municipal bond insurance, letters of credit, or other liquidity facilities). The Authority shall provide notice of any of the following events with respect to the Series 2020E Bonds to the MSRB, in an electronic format as prescribed by the MSRB, in a timely manner and not more than 10 business days after the occurrence of the event:

- (i) principal and interest payment delinquencies;
- (ii) nonpayment related defaults, if material;
- (iii) unscheduled draws on debt service reserves reflecting financial difficulties;
- (iv) unscheduled draws on credit enhancements reflecting financial difficulties;
- (v) substitution of credit or liquidity providers, or their failure to perform;
- (vi) adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701-

TEB) or other material notices or determinations with respect to the tax status of the Series 2020E Bonds, or other material events affecting the tax status of the Series 2020E Bonds;

- (vii) modifications to rights of Owners, if material;
- (viii) bond calls, if material and tender offers;
- (ix) defeasances;
- (x) release, substitution, or sale of property securing repayment of the Series 2020E Bonds, if material;
- (xi) rating changes;
- (xii) bankruptcy, insolvency, receivership, or similar event of any obligated person, which shall occur as described below;
- (xiii) the consummation of a merger, consolidation, or acquisition involving an obligated person or the sale of all or substantially all of the assets of the obligated person, other than in the ordinary course of business, the entry into of a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material;
- (xiv) appointment of a successor or additional Trustee or the change of name of a Trustee, if material;
- (xv) incurrence of a Financial Obligation of the Authority, if material, or agreement to covenants, events of default, remedies, priority rights, or other similar terms of a Financial Obligation of the Authority, any of which affect security holders, if material; and
- (xvi) default, event of acceleration, termination event, modification of terms, or other similar events under the terms of a Financial Obligation of the Authority, any of which reflect financial difficulties.

For these purposes, (A) any event described in the immediately preceding clause (xii) is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent, or similar officer for an obligated person in a proceeding under the United States Bankruptcy Code or in any other proceeding under state or federal law in which a court or governmental authority has assumed jurisdiction over substantially all of the assets or business of the obligated person, or if such jurisdiction has been assumed by leaving the existing governing body and officials or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement, or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of the obligated person, and (B) the Authority intends the words used in the immediately preceding clauses (xv) and (xvi) in this Section and in the definition of Financial Obligation in this Section to have the meanings ascribed to them in SEC Release No. 34-83885 dated August 20, 2018.

The Authority shall notify the MSRB, in a timely manner, of any failure by the Authority to provide financial information or operating data in accordance with Section 6.2 of this Supplemental Indenture by the time required by such Section.

All documents provided to the MSRB shall be accompanied by identifying information as prescribed by the MSRB.

Section 6.4. Limitations, Disclaimers and Amendments. The Authority shall be obligated to observe and perform the covenants specified in this Article for so long as, but only for so long as, the Authority remains an “obligated person” with respect to the Series 2020E Bonds within the meaning of the Rule, except that the Authority in any event will give notice of any deposit of funds that causes Series 2020E Bonds no longer to be Outstanding.

(a) The provisions of this Article are for the sole benefit of the Holders and beneficial owners of the Series 2020E Bonds, and nothing in this Article, express or implied, shall give any benefit or any legal or equitable right, remedy, or claim hereunder to any other person. The Authority undertakes to provide only the financial information, operating data, financial statements, and notices which it has expressly agreed to provide pursuant to this Article and does not hereby undertake to provide any other information that may be relevant or material to a complete presentation of the Authority’s financial results, condition, or prospects or hereby undertake to update any information provided in accordance with this Article or otherwise, except as expressly provided herein. The Authority does not make any representation or warranty concerning such information or its usefulness to a decision to invest in or sell Series 2020E Bonds at any future date.

UNDER NO CIRCUMSTANCES SHALL THE AUTHORITY BE LIABLE TO THE HOLDER OR BENEFICIAL OWNER OF ANY SERIES 2020E BONDS OR ANY OTHER PERSON, IN CONTRACT OR TORT, FOR DAMAGES RESULTING IN WHOLE OR IN PART FROM ANY BREACH BY THE AUTHORITY, WHETHER NEGLIGENT OR WITHOUT FAULT ON ITS PART, OF ANY COVENANT SPECIFIED IN THIS ARTICLE, BUT EVERY RIGHT AND REMEDY OF ANY SUCH PERSON, IN CONTRACT OR TORT, FOR OR ON ACCOUNT OF ANY SUCH BREACH SHALL BE LIMITED TO AN ACTION FOR MANDAMUS OR SPECIFIC PERFORMANCE.

(b) No default by the Authority in observing or performing its obligations under this Article shall comprise a breach of or default under the Indenture for purposes of any other provisions of this Supplemental Indenture.

(c) Nothing in this Article is intended or shall act to disclaim, waive, or otherwise limit the duties of the Authority under federal and state securities laws.

(d) The provisions of this Article may be amended by the Authority from time to time to adapt to changed circumstances that arise from a change in legal requirements, a change in law, or a change in the identity, nature or status of the Authority, or type of business or operations conducted by the Authority, but only if (1) the provisions of this Article, as so amended, would have permitted an underwriter to purchase or sell Series 2020E Bonds in the primary offering of the Series 2020E Bonds in compliance with the Rule, taking into account any amendments or

interpretations of the Rule to the date of such amendment, as well as such changed circumstances, and (2) either (a) the Holders of a majority in aggregate principal amount (or any greater amount required by any other provisions of this Supplemental Indenture that authorizes such an amendment) of the Outstanding Series 2020E Bonds consent to such amendment or (b) a person that is unaffiliated with the Authority (such as nationally recognized bond counsel) determines that such amendment will not materially impair the interests of the Holders and beneficial owners of the Series 2020E Bonds. If the Authority so amends the provisions of this Article, it shall include with any amended financial information or operating data next provided in accordance with Section 6.2 an explanation, in narrative form, of the reasons for the amendment and of the impact of any change in the type of financial information or operating data so provided.

ARTICLE VII.

OTHER MATTERS

Section 7.1. Execution in Several Counterparts. This Supplemental Indenture may be simultaneously executed in several counterparts, all of which shall constitute one and the same instrument and each of which shall be, and shall be deemed to be, an original.

Section 7.2. Confirmation of Funds and Accounts. The establishment of Funds and Accounts heretofore established in the Indenture is hereby ratified and confirmed.

Section 7.3. No Boycott of Israel. The Trustee represents that it and its parent company, wholly- or majority-owned subsidiaries, and other affiliates, if any, do not boycott Israel and, to the extent this Supplemental Indenture is a contract for goods or services, will not boycott Israel during the term of this Supplemental Indenture. The foregoing verification is made solely to comply with Section 2270.002, Texas Government Code, and to the extent such Section does not contravene applicable Federal law or regulation. As used in the foregoing verification, “boycott Israel” means refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action made for ordinary business purposes. The Trustee understands “affiliate” to mean an entity that controls, is controlled by, or is under common control with the Trustee and exists to make a profit.

Section 7.4. Iran, Sudan and Foreign Terrorist Organizations. The Trustee represents that neither it nor any of its parent company, wholly- or majority-owned subsidiaries, and other affiliates is a company identified on a list prepared and maintained by the Texas Comptroller of Public Accounts under Section 2252.153 or Section 2270.0201, Texas Government Code, and posted on any of the following pages of such officer's internet website:

<https://comptroller.texas.gov/purchasing/docs/sudan-list.pdf>,
<https://comptroller.texas.gov/purchasing/docs/iran-list.pdf>, or
<https://comptroller.texas.gov/purchasing/docs/fto-list.pdf>.

The foregoing representation is made solely to comply with Section 2252.152, Texas Government Code, and to the extent such Section does not contravene applicable Federal law or regulation and

excludes the Trustee and each of its parent company, wholly- or majority-owned subsidiaries, and other affiliates, if any, that the United States government has affirmatively declared to be excluded from its federal sanctions regime relating to Sudan or Iran or any federal sanctions regime relating to a foreign terrorist organization. The Trustee understands “affiliate” to mean an entity that controls, is controlled by, or is under common control with the Trustee and exists to make a profit.

[Execution Pages Follow]

IN WITNESS WHEREOF, the Authority and the Trustee have caused this Supplemental Indenture to be signed and attested on their behalf by their duly authorized representatives, all as of the date first hereinabove written.

CENTRAL TEXAS REGIONAL MOBILITY
AUTHORITY

By _____
Chief Financial Officer

Attest:

Secretary

REGIONS BANK, Trustee

By _____
Authorized Officer

EXHIBIT A
FORM OF REQUISITION
CONSTRUCTION FUND
2020E SENIOR LIEN PROJECT SUBACCOUNT
CERTIFICATE AND REQUISITION FOR PAYMENT

DATE: [Month], [Year]

DRAW REQUEST NO.: _____

<u>DESCRIPTION SUMMARY</u> ¹	<u>AMOUNT</u>
	\$ _____
TOTAL AMOUNT REQUESTED	\$ _____

The Authority does hereby certify to the Trustee that: (i) each item submitted herewith is a proper charge against the 2020E Senior Lien Project Subaccount of the 2020 Project Account of the Construction Fund and has not been paid, (ii) such requisition contains no item representing payment on account of any retainage which the Authority is as of the date of this requisition not entitled to release, (iii) no default exists under the Indenture which has not been disclosed to the Trustee and the Authority will use its best efforts to cure any default if it exists and (iv) there has not been filed with or served upon the Authority legal notice of any lien, right to lien, attachment or other claim, which is valid in the opinion of counsel to the Authority and affects the right to receive payment of any of the moneys payable to any of the Persons, firms or corporations named herein which has not been released or will not be released simultaneously with such payment.

Please remit funds by wire transfer to the Authority [Wiring instructions for disbursement].

CENTRAL TEXAS REGIONAL MOBILITY
AUTHORITY

By: _____
Authorized Representative

¹ Attach appropriate information indicating the name of the Person, Firm or Corporation to whom payment is due, the amount to be paid and the purpose for which such obligation was incurred.

CERTIFICATION OF GENERAL ENGINEERING CONSULTANT

As General Engineering Consultant for the 2020 Project, we hereby certify the following in connection with 2020E Senior Lien Project Subaccount of the 2020 Project Account of the Construction Fund Certificate and Requisition for Payment Draw Request No. _____:

- (i) such requisition is approved;
- (ii) the amount requisitioned is due and has not previously been paid from the 2020 Project Account of the Construction Fund;
- (iii) insofar as the payment is to be made for work, material, supplies or equipment, the work has been performed and the materials, supplies or equipment have been installed as part of the improvement and extension of the 2020 Project or have been delivered at the site;
- (iv) all work material, supplies and equipment for which payment is to be made are, in our opinion, substantially in accordance with the plans and specifications or duly approved change orders; and

[If an item for payment includes real property:

- (v) acquisition of such property is necessary or advisable in connection with the construction or operation of the 2020 Project.]

as General Engineering Consultant

By: _____
Title: _____

EXHIBIT B

CONTINUING DISCLOSURE

DESCRIPTION OF ANNUAL DISCLOSURE OF FINANCIAL INFORMATION

The following information is referred to in Article VI of this Supplemental Indenture.

Annual Financial Information and Operating Data

The financial information and operating data with respect to the Authority and the System to be provided in accordance with such Article are as specified below:

1. All quantitative financial information and operating data with respect to the Authority and the System of the general type included in the Official Statement under the headings “AUTHORITY FINANCIAL INFORMATION – System Historical Cash Flow and Debt Service Coverage,” “– Toll Rates,” and “SCHEDULE I – DEBT SERVICE REQUIREMENTS,” and APPENDIX A – AUDITED FINANCIAL STATEMENTS OF THE AUTHORITY.”

2. In the annual filing for each Fiscal Year through the Substantial Completion (as defined in the Master Indenture) of the 2020 Project, the Authority will furnish a copy of the General Engineering Consultant’s construction progress report relating to the 2020 Project for the last quarter of the Fiscal Year.

3. In the annual filing, the Authority will also furnish a copy of each General Engineering Consultant’s annual report relating to its inspection of the System, which reports may be provided as one report prepared jointly by more than one General Engineering Consultant.

The Authority will update and provide the foregoing information within six (6) months after the end of each Fiscal Year. In addition to the annual information described above, the Authority will furnish on a quarterly basis, within 60 days after the end of each quarter of the Fiscal Year, (i) through the Substantial Completion (as defined in the Master Indenture) of the 2020 Project, a copy of the General Engineering Consultant’s construction progress report relating to the 2020 Project for the previous quarter of the Fiscal Year, and (ii) unaudited information regarding the number of toll transactions for the System and the Revenues generated by such toll transactions for the previous quarter of the Fiscal Year.

Accounting Principles

The accounting principles referred to in such Article are the accounting principles described in the notes to the financial statements referred to in Paragraph 1 above.

TWENTY-FIFTH SUPPLEMENTAL TRUST INDENTURE

BETWEEN

CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

AND

REGIONS BANK, TRUSTEE

AUTHORIZING

SUBORDINATE LIEN REVENUE BOND ANTICIPATION NOTES, SERIES 2020F

AND

SUBORDINATE LIEN REVENUE REFUNDING BONDS, SERIES 2020G

Dated as of _____ 1, 2020

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TWENTY-FIFTH SUPPLEMENTAL TRUST INDENTURE

THIS TWENTY-FIFTH SUPPLEMENTAL TRUST INDENTURE, dated as of _____ 1, 2020 (this “Supplemental Indenture” or “Twenty-Fifth Supplemental Indenture”), is made by and between the CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY (together with any successor to its rights, duties, and obligations hereunder, the “Authority”), a body politic and corporate and a political subdivision of the State of Texas (the “State”) duly created, organized and existing under the laws of the State, and REGIONS BANK, an Alabama state banking corporation, as successor in trust to JPMorgan Chase Bank, National Association, as trustee (together with any successor trustee hereunder, the “Trustee”). Capitalized terms used herein and not otherwise defined shall have the meanings provided in Section 1.2 of this Supplemental Indenture.

RECITALS

WHEREAS, the Authority has been created and organized pursuant to and in accordance with the provisions of Chapter 361, Texas Transportation Code, and operates pursuant to the Constitution and laws of the State, including, particularly, Chapter 370, Texas Transportation Code, as amended (the “Act”), for the purposes of constructing, maintaining and operating transportation projects in Travis and Williamson Counties, Texas; and

WHEREAS, pursuant to the Act, the Authority is authorized to: (i) study, evaluate, design, finance, acquire, construct, maintain, repair and operate transportation projects (as defined in the Act), individually or as a system (as defined in the Act); and (ii) issue bonds, certificates, notes or other obligations payable from the revenues of a transportation project or system, including tolls, fees, fares or other charges, to pay all or part of the cost of a transportation project and to refund any bonds previously issued for a transportation project; and (iii) impose tolls, fees, fares or other charges for the use of each of its transportation projects and the different parts or sections of each of its transportation projects; and

WHEREAS, pursuant to the Act and other applicable laws, the Authority is authorized to issue revenue bonds, notes, certificates or other obligations as hereinafter provided, and to enter into this Supplemental Indenture; and

WHEREAS, the Authority and the Trustee have executed and delivered the Master Indenture, providing for the issuance from time to time by the Authority of one or more series of its revenue obligations (collectively, the “Obligations”); and

WHEREAS, Section 1002 of the Master Indenture authorizes the Authority and the Trustee to execute and deliver a supplemental indenture, authorizing Obligations of a Series, to include any other matters and things relative to such Obligations which are not inconsistent with or contrary to the Master Indenture, to add to the covenants of the Authority, and to pledge other moneys, securities or funds as part of the Trust Estate; and

WHEREAS, pursuant to the authority granted in the Act and Chapter 1371, Texas Government Code, as amended, the Authority has determined to authorize the issuance of its Subordinate Lien Revenue Bond Anticipation Notes, Series 2020F (the “Series 2020F BANs”), pursuant to the Master Indenture and this Supplemental Indenture for the purpose of providing

funds (i) to pay a portion of the Costs of the 2020 Project (as defined herein) and (ii) for the other purposes specified herein; and

WHEREAS, pursuant to the authority granted in the Act, Chapter 1371, Texas Government Code, and Chapter 1207, Texas Government Code, the Authority has determined to authorize the issuance of its Subordinate Lien Revenue Refunding Bonds, Series 2020G (the “Series 2020G Bonds” and, together with the Series 2020F BANs, the “2020 Subordinate Lien Obligations”), pursuant to the Master Indenture and this Supplemental Indenture for the purpose of providing funds (i) to refund all of the Authority’s Outstanding Subordinate Lien Revenue Bond, Taxable Series 2015D (the “2015D Refunded Bonds”) and Subordinate Lien Revenue Bond, Taxable Series 2015E (the “2015E Refunded Bonds” and, together with the 2015D Refunded Bonds, the “Refunded Obligations”), and (ii) for the other purposes specified herein; and

WHEREAS, the Authority is authorizing the refunding of the Refunded Obligations for the purpose of realizing a debt service savings through such refunding; and

WHEREAS, the Board hereby finds and determines that the issuance of the 2020 Subordinate Lien Obligations is in the best interest of the Authority; and

WHEREAS, pursuant to the Bond Resolution, the Authority has authorized the Authorized Officer to make such findings and determinations as may be required in connection with the issuance of the 2020 Subordinate Lien Obligations and the refunding of the Refunded Obligations and to set forth such findings and determinations in one or more Award Certificates; and

WHEREAS, the execution and delivery of this Supplemental Indenture and the issuance of the 2020 Subordinate Lien Obligations have been in all respects duly and validly authorized by the Bond Resolution; and

WHEREAS, the Authority currently intends to refinance the Series 2020F BANs with Obligations issued at a later date; and

WHEREAS, the Trustee has accepted the trusts created by the Master Indenture and this Supplemental Indenture and in evidence thereof has joined in the execution and delivery hereof; and

WHEREAS, except as provided herein, all acts and conditions and things required by the laws of the State to happen, exist and be performed precedent to execution and delivery of this Supplemental Indenture have happened, exist and have been performed as so required in order to make the Indenture, as supplemented by this Supplemental Indenture, a valid, binding and legal instrument for the security of the 2020 Subordinate Lien Obligations and a valid and binding agreement in accordance with its terms;

NOW, THEREFORE, in consideration of the premises, the acceptance by the Trustee of the trusts hereby created, the purchase and acceptance of the 2020 Subordinate Lien Obligations by the holders thereof, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and for the further purpose of fixing and declaring the terms and conditions upon which the 2020 Subordinate Lien Obligations are to be issued, authenticated, delivered and accepted by the holders thereof, the Authority and the Trustee do hereby mutually

covenant and agree, for the equal and proportionate benefit of the respective Holders from time to time of the Obligations, including the 2020 Subordinate Lien Obligations, as follows:

ARTICLE I.

DEFINITIONS AND STATUTORY AUTHORITY

Section 1.1. Supplemental Indenture. This Supplemental Indenture is supplemental to the Master Indenture and is adopted in accordance with Article III and Article X thereof.

Section 1.2. Definitions. Unless the context shall require otherwise, all defined terms contained in the Master Indenture shall have the same meanings in this Supplemental Indenture as such defined terms are given in Section 101 of the Master Indenture.

As used in this Supplemental Indenture, unless the context shall otherwise require, the following terms shall have the following respective meanings:

“Arbitrage Analyst” shall mean any nationally recognized firm of certified public accountants or any other nationally recognized firm or Person approved by the Authority and expert in the area of verification of arbitrage calculations related to tax-exempt bonds.

“Authorized Denomination” shall mean, with respect to 2020 Subordinate Lien Obligations, \$5,000 principal amount or any integral multiple thereof.

“Authorized Officer” shall mean the Chairman of the Board of Directors of the Authority, the Executive Director of the Authority and the Chief Financial Officer of the Authority, severally and each of them, as provided in the Bond Resolution.

“Award Certificate” shall mean the Award Certificate executed and delivered by an Authorized Officer pursuant to Section 2.1 hereof in connection with initial issuance and delivery of the 2020 Subordinate Lien Obligations authorized to be issued hereunder.

“Bond Forms” shall mean, collectively, the substantially final forms of the Series 2020B Bond Form and the Taxable Series 2020C Bond Form, as applicable, attached to the Award Certificate, with such changes and modifications as shall be appropriate to conform to the terms of the Award Certificate.

“Bond Proceeds Clearance Fund SUB LIEN 2020F” shall mean the “Bond Proceeds Clearance Fund Subordinate Lien 2020F” established pursuant to Section 3.7(a) hereof, and any Accounts established therein pursuant to a Letter of Instructions signed by an Authorized Officer.

“Bond Proceeds Clearance Fund SUB LIEN 2020G” shall mean the “Bond Proceeds Clearance Fund Subordinate Lien 2020G” established pursuant to Section 3.7(b) hereof, and any Accounts established therein pursuant to a Letter of Instructions signed by an Authorized Officer.

“Bond Resolution” shall mean Resolution No. 20-____, adopted by the Board of Directors of the Authority on September 30, 2020.

“Bond Year” shall mean each one-year period that ends at the close of business on the day that is each anniversary of the Issuance Date and on the date of final maturity of the 2020 Subordinate Lien Obligations. The last Bond Year may be a short period.

“Code” shall mean the Internal Revenue Code of 1986, as amended, and, with respect to a specific section thereof, such reference shall be deemed to include (a) the Regulations promulgated under such section, (b) any successor provision of similar import hereafter enacted, (c) any corresponding provision of any subsequent Internal Revenue Code and (d) the regulations promulgated under the provisions described in (b) and (c).

“COI 2020F Fund SUB LIEN” shall mean the “2020F Costs of Issuance Fund Subordinate Lien” established pursuant to Section 3.7(c) hereof.

“COI 2020G Fund SUB LIEN” shall mean the “2020G Costs of Issuance Fund Senior Lien” established pursuant to Section 3.7(d) hereof.

“Computation Date” shall mean each Installment Computation Date and the Final Computation Date.

“Debt Service Account 2020F SUB LIEN” shall mean the “Debt Service Account 2020F Subordinate Lien” established in Section 3.3 hereof as part of the Subordinate Lien Debt Service Fund and any subaccounts established therein pursuant to this Supplemental Indenture or a Letter of Instructions signed by an Authorized Officer.

“Debt Service Account 2020G SUB LIEN” shall mean the “Debt Service Account 2020G Subordinate Lien” established in Section 3.4 hereof as part of the Subordinate Lien Debt Service Fund and any subaccounts established therein pursuant to this Supplemental Indenture or a Letter of Instructions signed by an Authorized Officer.

“Debt Service Reserve Account 2020G SUB LIEN” shall mean the “Debt Service Reserve Account 2020G Subordinate Lien” established as part of the Subordinate Lien Debt Service Reserve Fund pursuant to Section 3.5 hereof.

“Depository Participant” shall mean a broker, dealer, bank, other financial institution or any other Person for whom from time to time a Securities Depository effects book-entry transfers and pledges of securities deposited with such Securities Depository.

“Designated Payment/Transfer Office” shall mean, initially, the office of the Trustee located in Houston, Texas, or such other office designated by the Trustee from time to time as the place of payment and transfer of registration of ownership of the 2020 Subordinate Lien Obligations.

“DTC” shall mean The Depository Trust Company, its successors and assigns.

“Final Computation Date” shall mean the date on which the last of the 2020 Subordinate Lien Obligations is discharged.

“First Supplemental Indenture” shall mean the First Supplemental Trust Indenture, dated as of February 1, 2005, between the Authority and the Trustee.

“Indenture” shall mean the Master Indenture, as amended or supplemented (i) by each Supplemental Indenture (as defined in the Master Indenture) heretofore executed and delivered by the Authority and the Trustee in accordance with the terms of the Master Indenture, prior to the date of this Twenty-Fifth Supplemental Indenture; (ii) by the Twenty-Fourth Supplemental Indenture and this Twenty-Fifth Supplemental Indenture; and (iii) hereafter from time to time in accordance with the terms of the Master Indenture.

“Initial 2020 Subordinate Lien Obligations” shall mean, collectively, the Initial Series 2020F BANs and Initial Series 2020G Bonds, as described and defined in Section 2.4 hereof.

“Installment Computation Date” shall mean the last day of the fifth Bond Year and each succeeding fifth Bond Year.

“Interest Payment Date” shall mean, with respect to the 2020 Subordinate Lien Obligations, each July 1 and January 1, commencing on the date specified in the Award Certificate.

“Issuance Date” shall mean the date of initial issuance and delivery of the 2020 Subordinate Lien Obligations to the Underwriters, or the representative thereof, against payment therefor.

“Letter of Representations” shall mean that certain Blanket Issuer Letter of Representations between the Authority and DTC, as the Securities Depository.

“Master Indenture” shall mean the Master Trust Indenture, dated as of February 1, 2005, between the Authority and the Trustee, without regard to supplements and amendments thereto.

“Official Statement” shall mean the Authority’s final official statement prepared in connection with the public offering and sale of the 2020 Subordinate Lien Obligations, together with any addenda, supplements and amendments thereto.

“Purchase Agreement” shall mean the Bond Purchase Agreement between the Authority and the respective Underwriters providing for the purchase of the 2020 Subordinate Lien Obligations by the Underwriters.

“Rebate Amount” shall mean that amount, as of each respective Computation Date, described in section 1.148-3(b) of the Regulations and generally means the excess as of any date of the future value of all receipts on nonpurpose investments over the future value of all payments on nonpurpose investments all as determined in accordance with section 1.148-3 of the Regulations.

“Record Date” shall mean with respect to the 2020 Subordinate Lien Obligations, the fifteenth (15th) calendar day of the month preceding each Interest Payment Date.

“Refunded Obligations” shall have the meaning given to such term in the recitals of this Twenty-Fifth Supplemental Indenture.

“Regulations” shall mean the applicable proposed, temporary or final Treasury Regulations promulgated under the Code or, to the extent applicable to the Code, under the Internal Revenue Code of 1954, as such regulations may be amended or supplemented from time to time.

“Securities Depository” shall mean The Depository Trust Company, a limited purpose trust company organized under the laws of the State of New York, and any successor Securities Depository appointed pursuant to Section 913 of the Master Indenture and Section 2.7 of this Supplemental Indenture.

“Series 2020F BANs” shall mean the Authority’s Subordinate Lien Revenue Bond Anticipation Notes, Series 2020F, authorized pursuant to this Supplemental Indenture and designated as such in the Award Certificate.

“Series 2020G Bonds” shall mean the Authority’s Subordinate Lien Revenue Refunding Bonds, Series 2020G, authorized pursuant to this Supplemental Indenture and designated as such in the Award Certificate.

“Special Payment Date” shall mean the date that is fifteen (15) days after the Special Record Date.

“Special Record Date” shall mean the new record date for interest payment established in the event of a nonpayment of interest on a scheduled payment date, and for thirty (30) days thereafter.

“Stated Maturity” shall mean the date on which a 2020 Subordinate Lien Obligation is scheduled to mature, as set forth in the Award Certificate.

“Supplemental Indenture” or “Twenty-Fifth Supplemental Indenture” shall mean this Twenty-Fifth Supplemental Trust Indenture by and between the Authority and the Trustee, dated as of the date first above written, together with any amendments hereto.

“Treasury” shall mean the United States Department of the Treasury, or any successor department or agency to the obligations thereof.

“Twenty-Fourth Supplemental Indenture” shall mean the Twenty-Fourth Supplemental Trust Indenture dated as of the date first written above between the Authority and the Trustee.

“2020F SUB LIEN Project Subaccount” shall mean the “2020F Subordinate Lien Project Subaccount” established pursuant to Section 3.2 hereof as part of the 2020 Project Account.

“2020G SUB LIEN DSR Requirement” or “DSR Requirement” shall mean the “2020G Bonds Debt Service Reserve Requirement” which shall be an amount equal to the least of (i) the maximum Annual Debt Service on the Series 2020G Bonds, (ii) 1.25 times the Average Annual Debt Service on the Series 2020G Bonds, or (iii) ten percent (10%) of the stated principal amount of the Series 2020G Bonds determined as of the Issuance Date thereof.

“2020 Project” shall mean improvements and extensions to the System, including, without limitation, the design and construction of the 183A Phase III Project, all as more particularly described in [INSERT REFERENCE TO GEC REPORT].

“2020 Project Account” shall mean the account by that name established in the Twenty-Fourth Supplemental Indenture as part of the Construction Fund.

“2020 Subordinate Lien Obligations” shall mean, collectively, the Series 2020F BANs and the Series 2020G Bonds.

“2020 Subordinate Lien Rebate Account” shall mean the account by that name established pursuant to Section 5.2 hereof and such subaccounts as may be established therein pursuant to a Letter of Instructions signed by an Authorized Officer.

“Underwriters” shall mean the underwriters named in the Purchase Agreement.

Section 1.3. Authority for This Supplemental Indenture. This Supplemental Indenture is adopted pursuant to the provisions of the Act and the Master Indenture, particularly Section 1002(a) of the Master Indenture.

Section 1.4. Rules of Construction.

(a) For all purposes of this Supplemental Indenture unless the context requires otherwise, all references to designated Articles, Sections and other subdivisions are to the articles, sections and other subdivisions of this Supplemental Indenture.

(b) Except where the context otherwise requires, terms defined in this Supplemental Indenture to impart the singular number shall be considered to include the plural number and vice versa.

(c) Unless the context requires otherwise, words of the masculine gender shall be construed to include correlative words of the feminine and neuter genders and vice versa.

(d) This Supplemental Indenture and all the terms and provisions hereof shall be liberally construed to effectuate the purposes set forth herein and to sustain the validity of this Supplemental Indenture and the Master Indenture which it supplements.

Section 1.5. Interpretation. The Table of Contents, titles and headings of the Articles and Sections of this Supplemental Indenture have been inserted for convenience of reference only and are not to be considered a part hereof and shall not in any way modify or restrict the terms or provisions hereof.

Section 1.6. Indenture to Remain in Force. Except as amended by this Supplemental Indenture, the Indenture shall remain in full force and effect as to the matters covered therein.

Section 1.7. Successors and Assigns. All covenants and agreements in this Supplemental Indenture by the Authority and the Trustee shall bind their respective successors and assigns, whether so expressed or not.

Section 1.8. Separability Clause. In case any provision in this Supplemental Indenture shall be determined to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

Section 1.9. Benefits of Supplemental Indenture. Subject to the terms of the Master Indenture and the terms hereof, nothing in this Supplemental Indenture or in the 2020 Subordinate Lien Obligations, express or implied, shall give to any Person, other than the parties hereto, their successors hereunder, and the Holders of 2020 Subordinate Lien Obligations, any benefit or any legal or equitable right, remedy or claim under this Supplemental Indenture.

Section 1.10. Governing Law. This Supplemental Indenture shall be construed in accordance with and governed by the laws of the State.

Section 1.11. Miscellaneous. Every “request,” “order,” “demand,” “application,” “notice,” “statement,” “certificate,” “consent,” “instruction,” or similar action hereunder shall, unless the form thereof is specifically provided herein, be in writing, and in the case of the Authority signed by an Authorized Representative or Authorized Officer of the Authority or in the case of any other Person signed by its President or Vice President, or other officer serving in similar capacities specifically authorized to execute such writing on behalf of any other Person, as the case may be.

ARTICLE II.

AUTHORIZATION AND TERMS OF 2020 SUBORDINATE LIEN OBLIGATIONS

Section 2.1. Authorization, Principal Amounts, Designation of Series, Terms and Provisions to Apply.

(a) General. In accordance with and subject to the terms, conditions and limitations established in the Indenture and this Supplemental Indenture, (i) the Series 2020F BANs are hereby authorized to be issued pursuant to and in accordance with the provisions of the Bond Resolution, the Master Indenture, Chapter 1371, Texas Government Code, as amended, and the Act and (ii) the Series 2020G Bonds are hereby authorized to be issued pursuant to and in accordance with the provisions of the Bond Resolution, the Master Indenture, Chapter 1207, Texas Government Code, as amended, Chapter 1371, Texas Government Code, as amended, and the Act. The Authorized Officer shall determine the aggregate principal amount of 2020 Subordinate Lien Obligations to be issued for each of the purposes identified in Section 2.2 of this Supplemental Indenture and shall make such findings as required by law, as authorized by the Bond Resolution or as otherwise deemed appropriate by the Authorized Officer, all of which shall be set forth in the Award Certificate. The terms of the 2020 Subordinate Lien Obligations shall be as set forth in the Master Indenture, this Supplemental Indenture and the Award Certificate. All terms and provisions of the Award Certificate relating to the 2020 Subordinate Lien Obligations shall be deemed to be incorporated into and shall become a part of this Twenty-Fifth Supplemental Indenture.

(b) Series 2020F BANs. The Authorized Officer shall determine and shall set forth in the Award Certificate the aggregate principal amount of Series 2020F BANs to be issued, the

maturity dates, the per annum interest rates, the redemption provisions and any other terms and provisions determined by the Authorized Officer as necessary or desirable with respect to the terms of the Series 2020F BANs.

(c) Series 2020G Bonds. The Authorized Officer shall determine and shall set forth in the Award Certificate the aggregate principal amount of Series 2020G Bonds to be issued, the maturity dates, the per annum interest rates, the redemption provisions and any other terms and provisions determined by the Authorized Officer as necessary or desirable with respect to the terms of such Series 2020G Bonds.

Section 2.2. Purposes. (a) The Series 2020F BANs are issued in accordance with Section 302(a) of the Master Indenture for the purpose of providing funds to: (i) pay a portion of the Costs of the improvements and extensions to the 2020 Project; and (ii) pay certain costs of issuance for the Series 2020F BANs, all under and in accordance with the Constitution and the laws of the State.

(b) The Series 2020G Bonds are issued in accordance with Section 302(b) of the Master Indenture for the purpose of providing funds to: (i) refund the Refunded Obligations; (ii) make required deposits, if any, to the Debt Service Reserve Account 2020G SUB LIEN; and (iii) pay certain costs of issuance for the Series 2020G Bonds, all under and in accordance with the Constitution and the laws of the State.

Section 2.3. Pledge; Limited Obligations.

(a) The 2020 Subordinate Lien Obligations are designated as Subordinate Lien Obligations, Current Interest Bonds and as Long-Term Obligations under the Master Indenture.

(b) The 2020 Subordinate Lien Obligations shall be limited obligations of the Authority constituting Subordinate Lien Obligations payable from and secured solely by a lien on, pledge of and security interest in the Trust Estate, which lien and pledge are junior and subordinate to the Senior Lien Obligations and the Junior Lien Obligations, and from the proceeds of any bonds, notes or other obligations issued to retire or refinance the 2020 Subordinate Lien Obligations; provided, that the interest of the Series 2020F BANs in the Construction Fund shall be limited to amounts on deposit in the 2020F SUB LIEN Project Subaccount. The 2020 Subordinate Lien Obligations, as Subordinate Lien Obligations, shall constitute a valid claim of the Holder thereof against the Trust Estate, which is pledged to secure the payment of the principal of, redemption premium, if any, and interest on the 2020 Subordinate Lien Obligations. The 2020 Subordinate Lien Obligations shall not constitute a general obligation of the Authority and under no circumstances shall the 2020 Subordinate Lien Obligations be payable from, nor shall the Holder thereof have any rightful claim to, any income, revenues, funds or assets of the Authority other than those pledged hereunder and under the Master Indenture as security for the payment of the Subordinate Lien Obligations.

NONE OF THE STATE OF TEXAS OR ANY OTHER AGENCY OR POLITICAL SUBDIVISION OF THE STATE OF TEXAS OTHER THAN THE AUTHORITY IS OBLIGATED TO PAY THE PRINCIPAL OF, PREMIUM, IF ANY, OR INTEREST ON THE 2020 SUBORDINATE LIEN OBLIGATIONS. THE 2020 SUBORDINATE LIEN

OBLIGATIONS ARE PAYABLE SOLELY FROM THE TRUST ESTATE AND CERTAIN FUNDS CREATED UNDER THE INDENTURE, WHICH LIEN AND PLEDGE ARE JUNIOR AND SUBORDINATE TO THE SENIOR LIEN OBLIGATIONS AND THE JUNIOR LIEN OBLIGATIONS, AND FROM THE PROCEEDS OF ANY BONDS, NOTES OR OTHER OBLIGATIONS ISSUED TO RETIRE OR REFINANCE THE 2020 SUBORDINATE LIEN OBLIGATIONS. NEITHER THE FAITH AND CREDIT NOR THE TAXING POWER OF THE STATE OF TEXAS OR ANY POLITICAL SUBDIVISION THEREOF IS PLEDGED TO THE PAYMENT OF THE PRINCIPAL OF, PREMIUM, IF ANY, OR INTEREST ON THE 2020 SUBORDINATE LIEN OBLIGATIONS. THE AUTHORITY HAS NO TAXING POWER.

NO RECOURSE UNDER THE 2020 SUBORDINATE LIEN OBLIGATIONS SHALL BE HAD AGAINST ANY PAST, PRESENT OR FUTURE OFFICER OF THE AUTHORITY. THE 2020 SUBORDINATE LIEN OBLIGATIONS SHALL NEVER BE PAID IN WHOLE OR IN PART OUT OF ANY FUNDS RAISED OR TO BE RAISED BY TAXATION OR OUT OF ANY OTHER REVENUES OF THE AUTHORITY, EXCEPT THOSE REVENUES ASSIGNED BY THE INDENTURE.

By its purchase and acceptance of the 2020 Subordinate Lien Obligations, each holder thereof acknowledges that, the Authority has previously issued and there is currently outstanding, and the Authority has reserved the right pursuant to the Master Indenture to issue in the future, one or more series of Subordinate Lien Obligations that, upon the occurrence of an Event of Default described in Section 801(d) of the Master Indenture, will be deemed to be and will automatically become a Senior Lien Obligation in accordance with the provisions of the Supplemental Indenture (as defined in the Master Indenture) authorizing such Subordinate Lien Obligations.

Section 2.4. Date, Denomination, Numbers, and Letters.

(a) The 2020 Subordinate Lien Obligations shall be dated as provided in the Award Certificate and shall be issued in Authorized Denominations.

(b) Unless the Authority shall direct otherwise, each Series 2020F BAN shall be lettered and numbered separately from F-1 upward. The Series 2020F BANs registered by the Comptroller of Public Accounts of the State of Texas (the “Initial Series 2020F BANs”) shall be lettered and numbered separately from FT-1 upward.

(c) Unless the Authority shall direct otherwise, each Series 2020G Bond shall be lettered and numbered separately from G-1 upward. The Series 2020G Bonds registered by the Comptroller of Public Accounts of the State of Texas (the “Initial Series 2020G Bonds”), if any, shall be lettered and numbered separately from GT-1 upward.

Section 2.5. Interest Payment Dates, Interest Rates and Maturity Dates of the 2020 Subordinate Lien Obligations.

(a) The 2020 Subordinate Lien Obligations shall bear interest from the later of the Issuance Date or the most recent Interest Payment Date to which interest has been paid or provided for until the principal of such 2020 Subordinate Lien Obligations has been paid or provided for either at Stated Maturity or the prior redemption thereof. Interest on the 2020 Subordinate Lien

Obligations shall be calculated on the basis of a 360-day year composed of twelve 30-day months and shall be payable on each Interest Payment Date.

(b) The 2020 Subordinate Lien Obligations shall mature on January 1 in the years, in the respective principal amounts and shall bear interest at the per annum rates set forth in the Award Certificate.

Section 2.6. Paying Agent; Method and Place of Payment.

(a) The Trustee is hereby appointed as Paying Agent for the 2020 Subordinate Lien Obligations.

(b) The principal of the 2020 Subordinate Lien Obligations shall be payable on the due date thereof (whether at Stated Maturity or, if applicable, prior redemption date) upon the presentation and surrender thereof at the Designated Payment/Transfer Office.

(c) Interest payable on each 2020 Subordinate Lien Obligations shall be paid by check dated as of the Interest Payment Date and mailed by the Trustee to the Holder in whose name such 2020 Subordinate Lien Obligations is registered at the close of business on the Record Date, by mail, first class postage prepaid, to the address of the Holder as it appears in the registration books kept by the Trustee, or such other customary banking arrangements acceptable to the Trustee and the Person to whom interest is to be paid; provided, however, that such Person shall bear all risk and expenses of such other customary banking arrangements. In the event of nonpayment of interest on a scheduled Interest Payment Date, and for 30 days thereafter, a new record date for such interest payment (defined in Section 1.2 hereof as a "Special Record Date") will be established by the Trustee, if and when funds for the payment of such interest have been received from the Authority. Notice of the Special Record Date and of the scheduled payment date of the past due interest (defined in Section 1.2 hereof as the "Special Payment Date," which shall be 15 days after the Special Record Date) shall be sent at least five Business Days prior to the Special Record Date by United States mail, first class postage prepaid, to the address of each Holder of a 2020 Subordinate Lien Obligations appearing on the books of the Trustee at the close business on the last Business Day preceding the date of mailing of such notice.

Section 2.7. Securities Depository; Book-Entry System.

(a) Pursuant to Section 913 of the Master Indenture, the Authority hereby appoints The Depository Trust Company ("DTC") as Securities Depository for the 2020 Subordinate Lien Obligations. In accordance with the Letter of Representations, the Authority shall cause the 2020 Subordinate Lien Obligations to be registered in the name of Cede & Co., as nominee for DTC, and to be delivered by the Underwriters to DTC on the Issuance Date.

(b) With respect to 2020 Subordinate Lien Obligations registered in the registration books maintained by the Trustee in the name of Cede & Co., or a nominee of any successor Securities Depository, pursuant to Section 913 of the Master Indenture, the Authority and the Trustee shall have no responsibility or obligation to any Depository Participant or to any Person on behalf of whom such Depository Participant holds an interest in 2020 Subordinate Lien Obligations. The Authority and the Trustee may treat and consider the Holder of any 2020 Subordinate Lien Obligation as the absolute owner of such 2020 Subordinate Lien Obligation for

the purpose of payment of the principal of, premium, if any, and interest on such 2020 Subordinate Lien Obligation, for the purpose of giving notices of redemption and other matters with respect to such 2020 Subordinate Lien Obligation, for the purpose of registering transfers and exchanges with respect to such 2020 Subordinate Lien Obligation, and for all other purposes whatsoever. The Trustee shall pay the principal of, premium, if any, and interest on the 2020 Subordinate Lien Obligations only to or upon the order of the respective Holders of the 2020 Subordinate Lien Obligations and all such payments shall be valid and effective with respect to such payments to the extent of the sum or sums so paid. The Authority and the Trustee shall have no responsibility or obligation with respect to (i) the accuracy of the records of DTC, any successor Securities Depository or any Depository Participant with respect to any ownership interest in 2020 Subordinate Lien Obligations, (ii) the delivery to any Depository Participant or any other Person, other than a Holder of a 2020 Subordinate Lien Obligation as shown in the registration books for Obligations required to be kept and maintained pursuant to the Master Indenture, of any notice with respect to the 2020 Subordinate Lien Obligations, including any notice of redemption, or (iii) the payment to any Depository Participant or any other Person, other than a Holder of a 2020 Subordinate Lien Obligation, of any amount with respect to any 2020 Subordinate Lien Obligation. The rights of Depository Participants and Persons on behalf of whom any Depository Participant holds a beneficial interest in 2020 Subordinate Lien Obligations shall be limited to those established by law and agreements between such Depository Participants and other Persons and the applicable Securities Depository.

(c) In the event that either (i) the Securities Depository that is, directly or through a nominee, the Holder of all of the Outstanding 2020 Subordinate Lien Obligations notifies the Trustee and the Authority that it is no longer willing or able to discharge its responsibilities as a Securities Depository or (ii) the Authority determines that continuance of the existing book-entry system for ownership of interests in the 2020 Subordinate Lien Obligations is not in the best interest of such owners of beneficial interests in the 2020 Subordinate Lien Obligations, then the Authority shall direct the Securities Depository to terminate the existing book-entry system for ownership of interests in the 2020 Subordinate Lien Obligations. Upon such termination, the Authority shall promptly select a substitute Securities Depository (and shall notify the Trustee in writing of such selection) to provide a system of book-entry ownership of beneficial interests in the 2020 Subordinate Lien Obligations, if one is available satisfactory to the Authority, and the ownership of all 2020 Subordinate Lien Obligations shall be transferred on the registration books for the 2020 Subordinate Lien Obligations to such successor Securities Depository, or its nominee. In the alternative, the Authority may direct the Trustee to, and if the Authority fails to promptly designate a successor Securities Depository the Trustee, without further direction, shall, notify the Depository Participants, through the Securities Depository for the 2020 Subordinate Lien Obligations, of the availability of 2020 Subordinate Lien Obligations registered in the names of such Persons as are owners of beneficial interests in the 2020 Subordinate Lien Obligations and, upon surrender to the Trustee of the Outstanding 2020 Subordinate Lien Obligations held by the Securities Depository, accompanied by registration instructions from the Securities Depository, the Trustee shall, at the expense of the transferees, cause to be printed and authenticated 2020 Subordinate Lien Obligations, in Authorized Denominations, to the owners of beneficial interests in the 2020 Subordinate Lien Obligations as of the date of the termination of the existing book-entry ownership system for the 2020 Subordinate Lien Obligations. Neither the Authority nor the Trustee shall be liable for any delay in delivery of such instructions and may conclusively rely on, and shall be protected in relying upon, such instructions. So long as the Authority has designated

a Securities Depository to provide a system of book-entry ownership of the 2020 Subordinate Lien Obligations, all of the 2020 Subordinate Lien Obligations must be held under such book-entry system.

(d) Notwithstanding any other provisions in Article II hereof, the Authority and the Trustee may, but shall not be required to, enter into separate agreements with one or more Securities Depositories which may provide for alternative or additional provisions with respect to the delivery of notices, payment of interest and/or principal, or any other matters.

Section 2.8. Redemption Prices and Terms. The 2020 Subordinate Lien Obligations shall be subject to redemption prior to Stated Maturity only as provided in the Award Certificate for the 2020 Subordinate Lien Obligations and in this Supplemental Indenture.

Section 2.9. Selection of Bonds to be Redeemed; Notice of Redemption.

(a) Unless otherwise specified herein or in the Award Certificate, the terms and provisions of Article IV of the Master Indenture relating to the selection of Obligations for redemption and the giving of notice therefor shall apply to the 2020 Subordinate Lien Obligations. In addition, if the 2020 Subordinate Lien Obligations are registered in the name of the nominee of the Securities Depository, the Trustee shall deliver notice of such redemption to the Securities Depository at the times and in the manner required by the operational procedures of such Securities Depository in order to timely effect the redemption of such 2020 Subordinate Lien Obligations.

(b) Any notice mailed or transmitted as provided in this Section shall be conclusively presumed to have been duly given, whether or not the registered owner of such 2020 Subordinate Lien Obligations receives the notice.

ARTICLE III.

ACCOUNTS; APPLICATION OF PROCEEDS

Section 3.1. 2020 Project Account. The 2020 Project Account established pursuant to Section 3.1(a) of the Twenty-Fourth Supplemental Indenture is hereby ratified and confirmed.

Section 3.2. 2020F SUB LIEN Project Subaccount.

(a) There is hereby established within the 2020 Project Account a subaccount designated “2020F Subordinate Lien Project Subaccount” (“2020F SUB LIEN Project Subaccount”).

(b) On the Issuance Date, a portion of the proceeds of the Series 2020F BANs shall be deposited to the 2020F SUB LIEN Project Subaccount, as directed in a Letter of Instructions of the Authority.

(c) Amounts on deposit in the 2020F SUB LIEN Project Subaccount shall be used for the purpose of paying a portion of the Costs of the 2020 Project, in accordance with and subject to the provisions of Section 519 of the Master Indenture and this Supplemental Indenture.

(d) The Authority shall submit written requisition requests in the form of Exhibit A to this Supplemental Indenture to request disbursements from the 2020F SUB LIEN Project Subaccount in accordance with Section 519 of the Master Indenture.

Section 3.3. Debt Service Account 2020F Subordinate Lien.

(a) There is hereby established within the Subordinate Lien Debt Service Fund an account designated “Debt Service Account 2020F Subordinate Lien” (“Debt Service Account 2020F SUB LIEN”). Moneys on deposit in the Debt Service Account 2020F SUB LIEN shall be used to pay debt service on the Series 2020F BANs when due.

(b) On or prior to each Interest Payment Date with respect to the Series 2020F BANs, the Trustee shall deposit to the Debt Service Account 2020F SUB LIEN from Revenues an amount sufficient to pay debt service then due on the Series 2020F BANs.

Section 3.4. Debt Service Account 2020G Subordinate Lien.

(a) There is hereby established within the Subordinate Lien Debt Service Fund an account designated “Debt Service Account 2020G Subordinate Lien” (“Debt Service Account 2020G SUB LIEN”). Moneys on deposit in the Debt Service Account 2020G SUB LIEN shall be used to pay debt service on the Series 2020G Bonds when due.

(b) On or prior to each Interest Payment Date with respect to the Series 2020G Bonds, the Trustee shall deposit to the Debt Service Account 2020G SUB LIEN from Revenues an amount sufficient to pay debt service then due on the Series 2020G Bonds.

Section 3.5. Debt Service Reserve Account 2020G Subordinate Lien.

(a) There is hereby established within the Subordinate Lien Debt Service Reserve Fund an account designated “Debt Service Reserve Account 2020G Subordinate Lien” (“Debt Service Reserve Account 2020G SUB LIEN”).

(b) On the Issuance Date, from the proceeds of the sale of the Series 2020G Bonds and other available funds of the Authority, if any, an amount equal to the 2020G SUB LIEN DSR Requirement shall be deposited to the Debt Service Reserve Account 2020G SUB LIEN, as directed in a Letter of Instructions of the Authority.

(c) Amounts on deposit in the Debt Service Reserve Account 2020G SUB LIEN are hereby pledged to the payment of the Series 2020G Bonds. Under no circumstances shall any previously issued Subordinate Lien Obligations have any rights to monies on deposit in the Debt Service Reserve Account 2020G SUB LIEN. Any Additional Subordinate Lien Obligations issued after the Issuance Date shall only have such rights to monies on deposit in the Subordinate Lien Debt Service Reserve Fund, including amounts on deposit in the Debt Service Reserve Account 2020G SUB LIEN, as is specifically set forth in the Supplemental Indenture relating to such Additional Subordinate Lien Obligations and, with respect to the Debt Service Reserve Account 2020G SUB LIEN, with the consent of the Holders of 100% of the aggregate principal amount of the Series 2020G Bonds.

(d) Notwithstanding Section 513 of the Master Indenture, the Authority will not utilize a Subordinate Lien DSRF Security with respect to the Debt Service Reserve Account 2020G SUB LIEN without the prior written consent of Holders of 100% of the principal amount of the then Outstanding 2020G Bonds.

Section 3.6. No Debt Service Reserve Requirement for Series 2020F BANs. No Subordinate Lien Debt Service Reserve Requirement will be established with respect to the Series 2020F BANs and the Series 2020F BANs shall have no rights to any monies on deposit in the Subordinate Lien Debt Service Reserve Fund or any Account created therein.

Section 3.7. Bond Proceeds Clearance Fund; Costs of Issuance Fund; Initial Deposits.

(a) The Trustee is hereby authorized and directed to establish a special temporary Fund designated “Bonds Proceeds Clearance Fund Subordinate Lien 2020F” (the “Bond Proceeds Clearance Fund SUB LIEN 2020F”). On the Issuance Date, the proceeds from the sale of the Series 2020F BANs shall be deposited to the Bond Proceeds Clearance Fund SUB LIEN 2020F and shall be applied and disbursed as set forth in a Letter of Instructions signed by an Authorized Officer. The Trustee shall create within the Bond Proceeds Clearance Fund SUB LIEN 2020F such accounts as shall be authorized in a Letter of Instructions signed by an Authorized Officer and deposit the proceeds of the Series 2020F BANs as shall be directed in such Letter of Instructions. The Bond Proceeds Clearance Fund SUB LIEN 2020F shall be closed upon disbursement of all amounts deposited thereto.

(b) The Trustee is hereby authorized and directed to establish a special temporary Fund designated “Bonds Proceeds Clearance Fund Subordinate Lien 2020G” (the “Bond Proceeds Clearance Fund SUB LIEN 2020G”). On the Issuance Date, the proceeds from the sale of the Series 2020G Bonds shall be deposited to the Bond Proceeds Clearance Fund SUB LIEN 2020G and shall be applied and disbursed as set forth in a Letter of Instructions signed by an Authorized Officer. The Trustee shall create within the Bond Proceeds Clearance Fund SUB LIEN 2020G such accounts as shall be authorized in a Letter of Instructions signed by an Authorized Officer and deposit the proceeds of the Series 2020G Bonds as shall be directed in such Letter of Instructions. The Bond Proceeds Clearance Fund SUB LIEN 2020G shall be closed upon disbursement of all amounts deposited thereto.

(c) There is hereby established with the Trustee the “2020F Costs of Issuance Fund Subordinate Lien” (“COI 2020F Fund SUB LIEN”), relating to the Series 2020F BANs. There shall be deposited to the COI 2020F Fund SUB LIEN from the proceeds of the Series 2020F BANs deposited to the Bond Proceeds Clearance Fund SUB LIEN 2020F, together with other lawfully available funds of the Authority, if any, the amounts set forth in a Letter of Instructions from the Authority. Such amounts shall be disbursed as set forth in a Letter of Instructions from the Authority. Amounts remaining in the COI 2020F Fund SUB LIEN on the date which is 90 days after the Issuance Date of the Series 2020F BANs shall be transferred to the Debt Service Account 2020F SUB LIEN. Following such transfer, the COI 2020F Fund SUB LIEN shall be closed.

(d) There is hereby established with the Trustee the “2020G Costs of Issuance Fund Subordinate Lien” (“COI 2020G Fund SUB LIEN”), relating to the Series 2020G Bonds. There shall be deposited to the COI 2020G Fund SUB LIEN from the proceeds of the Series 2020G

Bonds deposited to the Bond Proceeds Clearance Fund SUB LIEN 2020G, together with other lawfully available funds of the Authority, if any, the amounts set forth in a Letter of Instructions from the Authority. Such amounts shall be disbursed as set forth in a Letter of Instructions from the Authority. Amounts remaining in the COI 2020G Fund SUB LIEN on the date which is 90 days after the Issuance Date of the Series 2020G Bonds shall be transferred to the Debt Service Account 2020G SUB LIEN. Following such transfer, the COI 2020G Fund SUB LIEN shall be closed.

Section 3.8. 2005 TxDOT Grant Fund. The 2005 TxDOT Grant Fund, established and created pursuant to the First Supplemental Indenture, is hereby reestablished, recreated and affirmed. The 2005 TxDOT Grant Fund shall be established with, and held and maintained by, the Trustee in accordance with the provisions of the Indenture and this Section 3.6. Until transferred in accordance with this Section 3.6, amounts on deposit in the 2005 TxDOT Grant Fund shall be invested by the Trustee in accordance with the provisions of the Indenture. Interest earned from the investment of any amounts in the 2005 TxDOT Grant Fund or any profits realized from any Permitted Investment of amounts in the 2005 TxDOT Grant Fund shall remain in such Fund. Amounts on deposit in the 2005 TxDOT Grant Fund shall be transferred by the Trustee from time to time in accordance with a Letter of Instruction from the Authority to the Operating Fund or the Senior Lien Debt Service Fund.

ARTICLE IV.

FORMS OF OBLIGATIONS

Section 4.1. Form of 2020 Subordinate Lien Obligations. The forms of the 2020 Subordinate Lien Obligations, including any 2020 Subordinate Lien Obligations issued in exchange or replacement for any other 2020 Subordinate Lien Obligations or portion thereof, including the form of the Trustee's Authentication Certificate, the Registration Certificate of the Comptroller of Public Accounts of the State of Texas with respect to Initial 2020 Subordinate Lien Obligations and the Form of Assignment, shall be substantially as set forth in or attached to the Award Certificate, with such omissions, insertions, modifications and variations as permitted or required by the Master Indenture, this Supplemental Indenture and the Award Certificate.

Section 4.2. Initial 2020 Subordinate Lien Obligations. The Award Certificate may provide for the use of Initial 2020 Subordinate Lien Obligations, as described in Section 2.4, representing the entire principal amount of Series 2020F BANs and Series 2020G Bonds, respectively, payable in stated installments to the order of the representative of the Underwriters or its designee, executed by the manual or facsimile signature of the Chairman of the Board of Directors of the Authority and attested by manual or facsimile signature of the Secretary of the Board of Directors of the Authority, approved by the Attorney General of Texas, and registered and manually signed by the Comptroller of Public Accounts of the State of Texas.

Section 4.3. Additional Provisions Regarding 2020 Subordinate Lien Obligations.

(a) The 2020 Subordinate Lien Obligations may have such letters, numbers, or other marks of identification (including identifying numbers and letters of the Committee on Uniform Securities Identification Procedures of the American Bankers Association) and such legends and

endorsements (including any reproduction of an opinion of bond counsel) thereon as, consistent herewith, may be determined by the officers executing the 2020 Subordinate Lien Obligations, as evidenced by their execution thereof.

(b) The definitive 2020 Subordinate Lien Obligations shall be typewritten, printed, lithographed, or engraved and may be produced by any combination of such methods or produced in any other similar manner, all as determined by the officers executing such 2020 Subordinate Lien Obligations, as evidenced by their execution thereof.

(c) The Initial 2020 Subordinate Lien Obligations submitted to the Attorney General of the State of Texas may be typewritten or photocopied or otherwise produced or reproduced.

ARTICLE V.

TAX MATTERS; REBATE

Section 5.1. Federal Income Tax Matters Relating to 2020 Subordinate Lien Obligations.

(a) General. The Authority covenants not to take any action or omit to take any action that, if taken or omitted would cause the interest on the 2020 Subordinate Lien Obligations to be includable in gross income for federal income tax purposes. In furtherance thereof, the Authority covenants to comply with sections 103 and 141 through 150 of the Code and the provisions set forth in the Federal Tax Certificate executed by the Authority in connection with the 2020 Subordinate Lien Obligations.

(b) No Private Activity Bonds. The Authority covenants that it will use the proceeds of the 2020 Subordinate Lien Obligations (including investment income) and the property financed, directly or indirectly, with such proceeds so that the 2020 Subordinate Lien Obligations will not be “private activity bonds” within the meaning of section 141 of the Code. Furthermore, the Authority will not take a deliberate action (as defined in section 1.141-2(d)(3) of the Regulations) that causes the 2020 Subordinate Lien Obligations to be a “private activity bond” unless it takes a remedial action permitted by section 1.141-12 of the Regulations.

(c) No Federal Guarantee. The Authority covenants not to take any action or omit to take any action that, if taken or omitted, would cause the 2020 Subordinate Lien Obligations to be “federally guaranteed” within the meaning of section 149(b) of the Code, except as permitted by section 149(b)(3) of the Code.

(d) No Hedge Bonds. The Authority covenants not to take any action or omit to take action that, if taken or omitted, would cause the 2020 Subordinate Lien Obligations to be “hedge bonds” within the meaning of section 149(g) of the Code.

(e) No Arbitrage Bonds. The Authority covenants that it will make such use of the proceeds of the 2020 Subordinate Lien Obligations (including investment income) and regulate the investment of such proceeds of the 2020 Subordinate Lien Obligations so that the 2020 Subordinate Lien Obligations will not be “arbitrage bonds” within the meaning of section 148(a) of the Code.

(f) Required Rebate. The Authority covenants that, if the Authority does not qualify for an exception to the requirements of section 148(f) of the Code, the Authority will comply with the requirement that certain amounts earned by the Authority on the investment of the gross proceeds of the 2020 Subordinate Lien Obligations, be rebated to the United States.

(g) Information Reporting. The Authority covenants to file or cause to be filed with the Secretary of the Treasury an information statement concerning the 2020 Subordinate Lien Obligations in accordance with section 149(e) of the Code.

(h) Record Retention. The Authority covenants to retain all material records relating to the expenditure of the proceeds (including investment income) of the Refunded Obligations and the 2020 Subordinate Lien Obligations and the use of the property financed, directly or indirectly, thereby until three years after the last 2020 Subordinate Lien Obligation is redeemed or paid at maturity (or such other period as provided by subsequent guidance issued by the Department of the Treasury) in a manner that ensures their complete access throughout such retention period.

(i) Registration. The 2020 Subordinate Lien Obligations will be issued in registered form.

(j) Favorable Opinion of Bond Counsel. Notwithstanding the foregoing, the Authority will not be required to comply with any of the federal tax covenants set forth above if the Authority has received an opinion of nationally recognized bond counsel that such noncompliance will not adversely affect the excludability of interest on the 2020 Subordinate Lien Obligations from gross income for federal income tax purposes.

(k) Continuing Compliance. Notwithstanding any other provision of this Supplemental Indenture, the Authority's obligations under the federal tax covenants set forth above will survive the defeasance and discharge of the 2020 Subordinate Lien Obligations for as long as such matters are relevant to the excludability of interest on the 2020 Subordinate Lien Obligations from gross income for federal income tax purposes.

Section 5.2. 2020 Subordinate Lien Rebate Account.

(a) There is hereby established within the Rebate Fund, but not as part of the Trust Estate, a special account designated "2020 Subordinate Lien Rebate Account." Amounts deposited to the 2020 Subordinate Lien Rebate Account shall be applied to the payment of the Rebate Amount pursuant to a Letter of Instructions from the Authority. The 2020 Subordinate Lien Rebate Account and amounts on deposit therein are not security for the 2020 Subordinate Lien Obligations and are not part of the Trust Estate.

(b) The Authority will deliver to the Trustee, within 55 days after each Computation Date:

(i) a statement, signed by an officer of the Authority, stating the Rebate Amount as of such Computation Date; and

(ii) (1) if such Computation Date is an Installment Computation Date, an amount that, together with any amount then held for the credit of the 2020 Subordinate

Lien Rebate Account, is equal to at least 90% of the Rebate Amount as of such Installment Computation Date, less any “previous rebate payments” (determined in accordance with section 1.148-3(f)(1) of the Regulations), made to the United States of America or (2) if such Computation Date is the Final Computation Date, an amount that, together with any amount then held for the credit of the 2020 Subordinate Lien Rebate Account, is equal to the Rebate Amount as of such Final Computation Date, less any “previous rebate payments” (determined in accordance with section 1.148-3(f)(1) of the Regulations) made to the United States of America; and

(iii) an Internal Revenue Service Form 8038-T properly signed and completed as of such Computation Date.

(c) Not later than 60 days after each Computation Date, the Trustee shall withdraw from the 2020 Subordinate Lien Rebate Account and remit to the United States of America the Rebate Amount required to be paid on such respective dates to the United States of America in accordance with written instructions from the Authority, which shall be in compliance with sections 1.148-1 through 1.148-8 of the Regulations or any successor regulation. Each payment required to be made to the United States of America pursuant to this Section shall be submitted to the Internal Revenue Service Center, Ogden, Utah 84201-0027 or such other address as provided by law or regulation and shall be accompanied by Internal Revenue Service Form 8038-T properly completed by the Authority with respect to the 2020 Subordinate Lien Obligations.

(d) If the Authority discovers or is notified as of any date that any amount required to be paid to the United States of America pursuant to this Section 5.2 has not been paid as required or that any payment paid to the United States of America pursuant to this Section 5.2 will have failed to satisfy any requirement of section 148(f) of the Code or 1.148-3 of the Regulations (whether or not such failure will be due to any default by the Authority or the Trustee), the Authority will (1) deliver to the Trustee (for deposit to the 2020 Subordinate Lien Rebate Account) and cause the Trustee to pay to the United States of America from the 2020 Subordinate Lien Rebate Account (A) the Rebate Amount that the Authority failed to pay, plus any interest specified in section 1.148-3(h)(2) of the Regulations, if such correction payment is delivered to and received by the Trustee within 175 days after such discovery or notice, or (B) if such correction payment is not delivered to and received by the Trustee within 175 days after such discovery or notice, the amount determined in accordance with clause (A) of this subparagraph plus the fifty percent penalty required by section 1.148-3(h)(1) of the Regulations, and (2) deliver to the Trustee an Internal Revenue Service Form 8038-T completed as of such date. If such Rebate Amount, together with any penalty and/or interest due, is not paid to the United States of America in the amount and manner and by the time specified in the Regulations the Authority will take such steps as are necessary to prevent the 2020 Subordinate Lien Obligations from becoming “arbitrage bonds,” within the meaning of section 148 of the Code.

(e) The Authority will retain calculations, made in preparing the statements described in this Section 5.2, whether prepared by the Authority or the Arbitrage Analyst, for at least three years after the later of (1) the final maturity of the 2020 Subordinate Lien Obligations or (2) the first date on which no 2020 Subordinate Lien Obligations are outstanding.

(f) The Authority will not indirectly pay any amount otherwise payable to the federal government pursuant to the foregoing requirements to any person other than the federal government by entering into any investment arrangement with respect to the gross proceeds of the 2020 Subordinate Lien Obligations that is not purchased at fair market value or includes terms that the Authority would not have included if the 2020 Subordinate Lien Obligations were not subject to section 148(f) of the Code.

(g) Notwithstanding the foregoing, the Authority will not be required to perform the obligations set forth in this Section 5.2 (except for the obligation to retain accounting records as described in Section 5.2(e)) if the Authority has not earned any rebatable arbitrage and, therefore, is not subject to the rebate obligation set forth in section 148(f) of the Code. To the extent that the Authority will not be required to perform such obligations, the Authority will send written notice to the Trustee within 55 days after the applicable Computation Date.

ARTICLE VI.

CONTINUING DISCLOSURE

Section 6.1. Definitions. As used in this Article, the following terms have the meanings assigned to such terms below:

“Financial Obligation” means a (a) debt obligation; (b) derivative instrument entered into in connection with, or pledged as security or a source of payment for, an existing or planned debt obligation; or (c) guarantee of a debt obligation or any such derivative instrument; provided that “Financial Obligation” shall not include municipal securities (as defined in the Securities Exchange Act of 1934, as amended) as to which a final official statement (as defined in the Rule) has been provided to the MSRB consistent with the Rule.

“MSRB” means the Municipal Securities Rulemaking Board.

“Rule” means SEC Rule 15c2-12, as amended from time to time.

“SEC” means the United States Securities and Exchange Commission.

Section 6.2. Annual Reports.

(a) The Authority shall provide annually to the MSRB, in an electronic format as prescribed by the MSRB, within six (6) months after the end of each fiscal year, financial information and operating data with respect to the Authority and the System of the general type included in the final Official Statement, being the information described in Exhibit B hereto. Any financial statements so to be provided shall be (i) prepared in accordance with the accounting principles described in Exhibit B hereto, and (ii) audited, if the Authority commissions an audit of such statements and the audit is completed within the period during which they must be provided. If the audit of such financial statements is not complete within such period, then the Authority shall provide notice that audited financial statements are not available and shall provide unaudited financial statements for the applicable fiscal year to the MSRB. Thereafter, when and if audited financial statements become available, the Authority shall provide such audited financial

statements as required to the MSRB. In addition to the annual information described above, the Authority will provide certain information on a quarterly basis, as described in Exhibit B hereto.

(b) If the Authority changes its fiscal year, it will notify the MSRB of the change (and of the date of the new fiscal year end) prior to the next date by which the Authority otherwise would be required to provide financial information and operating data pursuant to this Section.

(c) The financial information and operating data to be provided pursuant to this Section may be set forth in full in one or more documents or may be included by specific reference to any document (including an official statement or other offering document, if it is available from the MSRB) that theretofore has been provided to the MSRB or filed with the SEC.

Section 6.3. Event Notices.

(a) As used in this Section, the term “obligated person” shall mean any person, including the Authority, who is either generally or through an enterprise, fund, or account of such person committed by contract or other arrangement to support payment of all or part of the obligations on the 2020 Subordinate Lien Obligations (other than providers of municipal bond insurance, letters of credit, or other liquidity facilities). The Authority shall provide notice of any of the following events with respect to the 2020 Subordinate Lien Obligations to the MSRB, in an electronic format as prescribed by the MSRB, in a timely manner and not more than 10 business days after the occurrence of the event:

- (i) principal and interest payment delinquencies;
- (ii) nonpayment related defaults, if material;
- (iii) unscheduled draws on debt service reserves reflecting financial difficulties;
- (iv) unscheduled draws on credit enhancements reflecting financial difficulties;
- (v) substitution of credit or liquidity providers, or their failure to perform;
- (vi) adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701-TEB) or other material notices or determinations with respect to the tax status of the 2020 Subordinate Lien Obligations, or other material events affecting the tax status of the 2020 Subordinate Lien Obligations;
- (vii) modifications to rights of Owners, if material;
- (viii) bond calls, if material and tender offers;
- (ix) defeasances;
- (x) release, substitution, or sale of property securing repayment of the 2020 Subordinate Lien Obligations, if material;

- (xi) rating changes;
- (xii) bankruptcy, insolvency, receivership, or similar event of any obligated person, which shall occur as described below;
- (xiii) the consummation of a merger, consolidation, or acquisition involving an obligated person or the sale of all or substantially all of the assets of the obligated person, other than in the ordinary course of business, the entry into of a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material;
- (xiv) appointment of a successor or additional Trustee or the change of name of a Trustee, if material;
- (xv) incurrence of a Financial Obligation of the Authority, if material, or agreement to covenants, events of default, remedies, priority rights, or other similar terms of a Financial Obligation of the Authority, any of which affect security holders, if material; and
- (xvi) default, event of acceleration, termination event, modification of terms, or other similar events under the terms of a Financial Obligation of the Authority, any of which reflect financial difficulties.

For these purposes, (A) any event described in the immediately preceding clause (xii) is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent, or similar officer for an obligated person in a proceeding under the United States Bankruptcy Code or in any other proceeding under state or federal law in which a court or governmental authority has assumed jurisdiction over substantially all of the assets or business of the obligated person, or if such jurisdiction has been assumed by leaving the existing governing body and officials or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement, or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of the obligated person, and (B) the Authority intends the words used in the immediately preceding clauses (xv) and (xvi) in this Section and in the definition of Financial Obligation in this Section to have the meanings ascribed to them in SEC Release No. 34-83885 dated August 20, 2018.

The Authority shall notify the MSRB, in a timely manner, of any failure by the Authority to provide financial information or operating data in accordance with Section 6.2 of this Supplemental Indenture by the time required by such Section.

All documents provided to the MSRB shall be accompanied by identifying information as prescribed by the MSRB.

Section 6.4. Limitations, Disclaimers and Amendments. The Authority shall be obligated to observe and perform the covenants specified in this Article for so long as, but only for so long as, the Authority remains an “obligated person” with respect to the 2020 Subordinate Lien

Obligations within the meaning of the Rule, except that the Authority in any event will give notice of any deposit of funds that causes 2020 Subordinate Lien Obligations no longer to be Outstanding.

(a) The provisions of this Article are for the sole benefit of the Holders and beneficial owners of the 2020 Subordinate Lien Obligations, and nothing in this Article, express or implied, shall give any benefit or any legal or equitable right, remedy, or claim hereunder to any other person. The Authority undertakes to provide only the financial information, operating data, financial statements, and notices which it has expressly agreed to provide pursuant to this Article and does not hereby undertake to provide any other information that may be relevant or material to a complete presentation of the Authority's financial results, condition, or prospects or hereby undertake to update any information provided in accordance with this Article or otherwise, except as expressly provided herein. The Authority does not make any representation or warranty concerning such information or its usefulness to a decision to invest in or sell 2020 Subordinate Lien Obligations at any future date.

UNDER NO CIRCUMSTANCES SHALL THE AUTHORITY BE LIABLE TO THE HOLDER OR BENEFICIAL OWNER OF ANY 2020 SUBORDINATE LIEN OBLIGATIONS OR ANY OTHER PERSON, IN CONTRACT OR TORT, FOR DAMAGES RESULTING IN WHOLE OR IN PART FROM ANY BREACH BY THE AUTHORITY, WHETHER NEGLIGENT OR WITHOUT FAULT ON ITS PART, OF ANY COVENANT SPECIFIED IN THIS ARTICLE, BUT EVERY RIGHT AND REMEDY OF ANY SUCH PERSON, IN CONTRACT OR TORT, FOR OR ON ACCOUNT OF ANY SUCH BREACH SHALL BE LIMITED TO AN ACTION FOR MANDAMUS OR SPECIFIC PERFORMANCE.

(b) No default by the Authority in observing or performing its obligations under this Article shall comprise a breach of or default under the Indenture for purposes of any other provisions of this Supplemental Indenture.

(c) Nothing in this Article is intended or shall act to disclaim, waive, or otherwise limit the duties of the Authority under federal and state securities laws.

(d) The provisions of this Article may be amended by the Authority from time to time to adapt to changed circumstances that arise from a change in legal requirements, a change in law, or a change in the identity, nature or status of the Authority, or type of business or operations conducted by the Authority, but only if (1) the provisions of this Article, as so amended, would have permitted an underwriter to purchase or sell 2020 Subordinate Lien Obligations in the primary offering of the 2020 Subordinate Lien Obligations in compliance with the Rule, taking into account any amendments or interpretations of the Rule to the date of such amendment, as well as such changed circumstances, and (2) either (a) the Holders of a majority in aggregate principal amount (or any greater amount required by any other provisions of this Supplemental Indenture that authorizes such an amendment) of the Outstanding 2020 Subordinate Lien Obligations consent to such amendment or (b) a person that is unaffiliated with the Authority (such as nationally recognized bond counsel) determines that such amendment will not materially impair the interests of the Holders and beneficial owners of the 2020 Subordinate Lien Obligations. If the Authority so amends the provisions of this Article, it shall include with any amended financial information or operating data next provided in accordance with Section 6.2 an explanation, in narrative form,

of the reasons for the amendment and of the impact of any change in the type of financial information or operating data so provided.

ARTICLE VII.

OTHER MATTERS

Section 7.1. Execution in Several Counterparts. This Supplemental Indenture may be simultaneously executed in several counterparts, all of which shall constitute one and the same instrument and each of which shall be, and shall be deemed to be, an original.

Section 7.2. Confirmation of Funds and Accounts. The establishment of all Funds and Accounts heretofore established in the Indenture is hereby confirmed and ratified.

Section 7.3. No Boycott of Israel. The Trustee represents that it and its parent company, wholly- or majority-owned subsidiaries, and other affiliates, if any, do not boycott Israel and, to the extent this Supplemental Indenture is a contract for goods or services, will not boycott Israel during the term of this Supplemental Indenture. The foregoing verification is made solely to comply with Section 2270.002, Texas Government Code, and to the extent such Section does not contravene applicable Federal law or regulation. As used in the foregoing verification, “boycott Israel” means refusing to deal with, terminating business activities with, or otherwise taking any action that is intended to penalize, inflict economic harm on, or limit commercial relations specifically with Israel, or with a person or entity doing business in Israel or in an Israeli-controlled territory, but does not include an action made for ordinary business purposes. The Trustee understands “affiliate” to mean an entity that controls, is controlled by, or is under common control with the Trustee and exists to make a profit.

Section 7.4. Iran, Sudan and Foreign Terrorist Organizations. The Trustee represents that neither it nor any of its parent company, wholly- or majority-owned subsidiaries, and other affiliates is a company identified on a list prepared and maintained by the Texas Comptroller of Public Accounts under Section 2252.153 or Section 2270.0201, Texas Government Code, and posted on any of the following pages of such officer's internet website:

<https://comptroller.texas.gov/purchasing/docs/sudan-list.pdf>,
<https://comptroller.texas.gov/purchasing/docs/iran-list.pdf>, or
<https://comptroller.texas.gov/purchasing/docs/fto-list.pdf>.

The foregoing representation is made solely to comply with Section 2252.152, Texas Government Code, and to the extent such Section does not contravene applicable Federal law or regulation and excludes the Trustee and each of its parent company, wholly- or majority-owned subsidiaries, and other affiliates, if any, that the United States government has affirmatively declared to be excluded from its federal sanctions regime relating to Sudan or Iran or any federal sanctions regime relating to a foreign terrorist organization. The Trustee understands “affiliate” to mean an entity that controls, is controlled by, or is under common control with the Trustee and exists to make a profit.

[Execution Pages Follow]

IN WITNESS WHEREOF, the Authority and the Trustee have caused this Supplemental Indenture to be signed and attested on their behalf by their duly authorized representatives, all as of the date first hereinabove written.

CENTRAL TEXAS REGIONAL MOBILITY
AUTHORITY

By _____
Chief Financial Officer

Attest:

Secretary

REGIONS BANK, Trustee

By _____
Authorized Officer

Signature Page to Twenty-Fifth Supplemental Trust Indenture

EXHIBIT A
FORM OF REQUISITION
CONSTRUCTION FUND
2020F SUBORDINATE LIEN PROJECT SUBACCOUNT
CERTIFICATE AND REQUISITION FOR PAYMENT

DATE: [Month], [Year]

DRAW REQUEST NO.: _____

<u>DESCRIPTION SUMMARY¹</u>	<u>AMOUNT</u>
	\$ _____
TOTAL AMOUNT REQUESTED	\$ _____

The Authority does hereby certify to the Trustee that: (i) each item submitted herewith is a proper charge against the 2020F Subordinate Lien Project Subaccount of the 2020 Project Account of the Construction Fund and has not been paid, (ii) such requisition contains no item representing payment on account of any retainage which the Authority is as of the date of this requisition not entitled to release, (iii) no default exists under the Indenture which has not been disclosed to the Trustee and the Authority will use its best efforts to cure any default if it exists and (iv) there has not been filed with or served upon the Authority legal notice of any lien, right to lien, attachment or other claim, which is valid in the opinion of counsel to the Authority and affects the right to receive payment of any of the moneys payable to any of the Persons, firms or corporations named herein which has not been released or will not be released simultaneously with such payment.

Please remit funds by wire transfer to the Authority [Wiring instructions for disbursement].

CENTRAL TEXAS REGIONAL MOBILITY
AUTHORITY

By: _____
Authorized Representative

¹ Attach appropriate information indicating the name of the Person, Firm or Corporation to whom payment is due, the amount to be paid and the purpose for which such obligation was incurred.

CERTIFICATION OF GENERAL ENGINEERING CONSULTANT

As General Engineering Consultant for the 2020 Project, we hereby certify the following in connection with 2020F Subordinate Lien Project Subaccount of the 2020 Project Account of the Construction Fund Certificate and Requisition for Payment Draw Request No. _____:

- (i) such requisition is approved;
- (ii) the amount requisitioned is due and has not previously been paid from the 2020 Project Account of the Construction Fund;
- (iii) insofar as the payment is to be made for work, material, supplies or equipment, the work has been performed and the materials, supplies or equipment have been installed as part of the improvement and extension of the 2020 Project or have been delivered at the site;
- (iv) all work material, supplies and equipment for which payment is to be made are, in our opinion, substantially in accordance with the plans and specifications or duly approved change orders; and

[If an item for payment includes real property:

- (v) acquisition of such property is necessary or advisable in connection with the construction or operation of the 2020 Project.]

as General Engineering Consultant

By: _____
Title: _____

EXHIBIT B

CONTINUING DISCLOSURE

DESCRIPTION OF ANNUAL DISCLOSURE OF FINANCIAL INFORMATION

The following information is referred to in Article VI of this Supplemental Indenture.

Annual Financial Information and Operating Data

The financial information and operating data with respect to the Authority and the System to be provided in accordance with such Article are as specified below:

1. All quantitative financial information and operating data with respect to the Authority and the System of the general type included in the Official Statement under the headings “AUTHORITY FINANCIAL INFORMATION – System Historical Cash Flow and Debt Service Coverage,” “– Toll Rates,” and “SCHEDULE I – DEBT SERVICE REQUIREMENTS,” and APPENDIX A – AUDITED FINANCIAL STATEMENTS OF THE AUTHORITY.”

2. In the annual filing for each Fiscal Year through the Substantial Completion (as defined in the Master Indenture) of the 2020 Project, the Authority will furnish a copy of the General Engineering Consultant’s construction progress report relating to the 2020 Project for the last quarter of the Fiscal Year.

3. In the annual filing, the Authority will also furnish a copy of each General Engineering Consultant’s annual report relating to its inspection of the System, which reports may be provided as one report prepared jointly by more than one General Engineering Consultant.

The Authority will update and provide the foregoing information within six (6) months after the end of each Fiscal Year. In addition to the annual information described above, the Authority will furnish on a quarterly basis, within 60 days after the end of each quarter of the Fiscal Year, (i) through the Substantial Completion (as defined in the Master Indenture) of the 2020 Project, a copy of the General Engineering Consultant’s construction progress report relating to the 2020 Project for the previous quarter of the Fiscal Year, and (ii) unaudited information regarding the number of toll transactions for the System and the Revenues generated by such toll transactions for the previous quarter of the Fiscal Year.

Accounting Principles

The accounting principles referred to in such Article are the accounting principles described in the notes to the financial statements referred to in Paragraph 1 above.



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

September 30, 2020
AGENDA ITEM #10

Discuss and consider approving a Project
Development Agreement with the Texas
Department of Transportation for the 183A
Phase III

Strategic Plan Relevance:	Regional Mobility
Department:	Engineering
Contact:	Justin Word, P.E., Director of Engineering
Associated Costs:	No financial liability at this stage
Funding Source:	Plan of finance includes toll revenue bonds and Transportation Infrastructure Finance and Innovation Act (TIFIA) funds.
Action Requested:	Consider and act on the draft resolution

Project Description – The Mobility Authority is proposing to extend 183A north from Hero Way to north of SH 29 to accommodate forecasted traffic volumes along the US 183 corridor. The 6.6-mile Phase III proposed tollway project will initially have two tolled lanes in each direction and will ultimately be widened to three lanes in the future. The proposed tollway will be located mostly in the existing right-of-way within the median of the US 183 corridor. The extension will also feature a shared use path north from Hero Way to the proposed Seward Junction Loop project.

Previous Actions/Brief History of the Project/Program –

- November 30, 2016 - the Authority approved Work Authorization No. 5 with WSP USA Inc. for schematic design and environmental services on the 183A Phase III Tollway Project.
- April 2017 - the Authority negotiated and executed the interim (design phase) Project Development Agreement (PDA) with the Texas Department of Transportation (TxDOT).
- January 2019 - the Authority approved a contract with Rodriguez Transportation Group for professional engineering design services.
- June 13, 2019 - public hearing was held.
- August 19, 2019 - Finding of No Significant Impact (FONSI) was issued for the

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

RESOLUTION NO. 20-0XX

**APPROVING A PROJECT DEVELOPMENT AGREEMENT WITH THE TEXAS
DEPARTMENT OF TRANSPORTATION FOR THE 183A PHASE III PROJECT**

WHEREAS, the Central Texas Regional Mobility Authority (Mobility Authority) received environmental approval for the development of an approximately 6.6-mile extension of 183A north from Hero Way to north of SH 29 consisting of two initial tolled lanes in each direction that will ultimately be widened to three-tolled lanes in each direction in the future (the “183A Phase III Project”) through the issuance of a Finding of No Significant Impact by the Texas Department of Transportation (TxDOT), dated August 19, 2019; and

WHEREAS, by Resolution No. 19-059, dated October 30, 2019, the Board exercised its option as a local toll project entity to develop, finance, construct, and operate the 183A Phase III Project; and

WHEREAS, by Resolution No. 19-060, dated October 30, 2019, the Board added the 183A Phase III Project to the Mobility Authority Turnpike System; and

WHEREAS, pursuant to Transportation Code, §370.187 and 43 TAC §26.31, the Mobility Authority must receive approval from the Texas Transportation Commission for a transportation project that will connect to the state highway system; and

WHEREAS, in accordance with 43 TAC §26.34, the Mobility authority and TxDOT shall enter into an agreement governing the development of the 183A Phase III Project; and

WHEREAS, by Minute Order No. 115815, dated August 27, 2020, the Texas Transportation Commission approved connection of the 183A Phase III Project to the state highway system and authorized TxDOT’s executive director to negotiate and execute a project development agreement with the Mobility Authority for the 183A Phase III Project; and

WHEREAS, the Executive Director has negotiated a proposed project development agreement with TxDOT for the 183A Phase III Project which is attached hereto as Exhibit A; and

WHEREAS, the Executive Director recommends that the Board approve the project development agreement with TxDOT for the 183A Phase III Project in the form or substantially the same form attached hereto as Exhibit A.

NOW THEREFORE, BE IT RESOLVED, that the Board hereby approves the project development agreement with TxDOT for the 183A Phase III Project; and

BE IT FURTHER RESOLVED that the Executive Director is hereby authorized to finalize and execute the project development agreement with TxDOT for the 183A Phase III Project on behalf of the Mobility Authority 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 30th day of September 2020.

Submitted and reviewed by:

Approved:

Geoffrey Petrov, General Counsel

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

Exhibit A

**PROJECT DEVELOPMENT AGREEMENT FOR
CONSTRUCTION, OPERATION, AND MAINTENANCE**

183A PHASE III PROJECT

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Exhibits

- Exhibit “A” 183A Phase III Project and TxDOT Improvements Limits
- Exhibit “B” Operations and Maintenance Responsibilities after Opening to Traffic
- Exhibit “C” Debarment Certificate
- Exhibit “D” Lower Tier Participation Debarment Certification

**183A PHASE III
PROJECT DEVELOPMENT AGREEMENT FOR CONSTRUCTION, OPERATION,
AND MAINTENANCE**

STATE OF TEXAS §

COUNTY OF TRAVIS §

THIS AGREEMENT, by and between the **TEXAS DEPARTMENT OF TRANSPORTATION**, an agency of the State of Texas, as authorized by the Texas Transportation Commission, hereinafter identified as “TxDOT,” and the **CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY**, a political subdivision of the State of Texas, hereinafter identified as the “Authority” (each a “Party” and jointly referred to as the “Parties”), is executed to be effective this ___ day of _____, 2020 (the “Effective Date”).

WITNESSETH

WHEREAS, on September 3, 2002, Travis and Williamson Counties (the “Counties”) petitioned the Texas Transportation Commission (the “Commission”) for authorization to form the Central Texas Regional Mobility Authority pursuant to provisions of the Texas Transportation Code; and

WHEREAS, in Minute Order No. 109052 adopted by the Commission on October 31, 2002, the Commission authorized the creation of the Authority; and

WHEREAS, the Authority now operates pursuant to Chapter 370 of the Texas Transportation Code (the “RMA Act”) and 43 TEX. ADMIN. CODE (TAC) § 26.11 *et seq.* (the “RMA Rules”), as well as its own policies and procedures; and

WHEREAS, the Authority is charged with funding and developing transportation projects throughout the region to provide innovative transportation solutions, promote economic development, and improve the quality of life for residents of the region; and

WHEREAS, the Authority has been developing the third phase of the 183A project, a 6.6 mile extension of 183A from north of SH 29 to Hero Way in Williamson County, comprised of: (1) the Authority’s toll project consisting of two tolled main-lanes in each direction (the “Authority Improvements”) and (2) improvements to existing US 183 owned and maintained by TxDOT from approximately the junction of the existing 183A and US 183 northward to just north of SH 29, along with new non-tolled US 183 general purpose lanes north of SH 29 (the “TxDOT Improvements”) (the Authority Improvements and the TxDOT Improvements are collectively called the “Project”), all as more fully described in Exhibit “A”; and

WHEREAS, the Authority and TxDOT are parties to that certain Interim Project Development Agreement, 183A Phase III Project, effective as of July 18, 2018, between TxDOT and the Authority, which provides for the Authority’s design of the Project and responsibility for environmental permits and compliance required for the Project (the “Interim Project Development Agreement”); and

WHEREAS, subsequent to the construction of the Authority Improvements, the Authority ultimately intends to add an additional toll lane in each direction, which would be the subject of a new project development agreement between TxDOT and the Authority; and

WHEREAS, in its Resolution No. 19-059 adopted on October 30, 2019, the Authority took appropriate action as required by Transportation Code § 373.052 and exercised its option to develop, finance, construct, and operate the Authority Improvements; and

WHEREAS, the Authority intends to (i) develop, finance, construct, operate and maintain the Authority Improvements, and (ii) intends to develop, finance, and construct the TxDOT Improvements, all through a single contract (the “Contract”), and will procure the services of a contractor (the “Contractor”) pursuant to the RMA Act; and

WHEREAS, in Minute Order No. 115815 dated August 27, 2020, the Commission (i) approved connection of the Authority Improvements to the state highway system pursuant to Transportation Code § 370.187 and 43 TAC §§ 26.32 and 11.58; (ii) authorized the Authority to use state owned right-of-way as necessary to develop, construct, operate, and maintain the Authority Improvements; (iii) authorized the Authority, pursuant to Transportation Code § 370.033(f), to develop and construct the TxDOT Improvements; and (iv) authorized the Executive Director of TxDOT or designee to enter into agreements and take all actions necessary to carry out the provisions of the minute order, while ensuring that funding from sources designated for non-tolled purposes will not be used on either the Authority Improvements or the TxDOT Improvements; and

WHEREAS, following construction, subject to the conditions and requirements set forth in this Agreement, the Authority Improvements shall be owned, operated and maintained by the Authority off of the state highway system, and the TxDOT Improvements and associated right-of-way shall be owned, operated and maintained by the TxDOT as part of the state highway system; and

WHEREAS, pursuant to Resolution No. _____, adopted on _____, 2020, the Authority’s Board of Directors authorized the execution of this Agreement; and

WHEREAS, final environmental clearance on the Project was received on August 19, 2019; and

WHEREAS, this Agreement is necessary and desirable to clarify the relationships between TxDOT and the Authority in connection with the development, design, construction, operation and maintenance of the Project.

A G R E E M E N T

NOW, THEREFORE, in consideration of these premises and of the mutual covenants and agreements of the Parties hereto to be by them respectively kept and performed as hereinafter set forth, TxDOT and the Authority agree as follows:

1. Performance of Obligations.

Time is of the essence in the performance of the obligations under this Agreement. TxDOT and the Authority agree to use good faith efforts to timely resolve issues that arise between the Parties during the development of the Project.

2. Acquisition, Transfer, and Use of Right-of-Way.

The Authority shall own, operate, and maintain the Authority Improvements. The Authority has designed the Project (pursuant to the Interim Project Development Agreement), and will construct, and deliver, the TxDOT Improvements, which, will be owned, operated and maintained by TxDOT. The Authority shall be responsible for acquiring any additional right-of-way necessary for the Project, and will acquire any such right-of-way in the name of the Authority with provision for subsequent transfer to the State of Texas for that portion of the right-of-way to be used for the TxDOT Improvements. The portion of the right-of-way that is not used for the TxDOT Improvements shall remain in the name of the Authority (such right-of-way, whether currently owned or hereafter acquired by the Authority, shall be referred to as the “Authority ROW”). The Authority will prepare right of way maps and documents describing the limits of the new right of way for the Project.

During such time that the Authority or any contractor working on the Authority’s behalf is developing, constructing, operating, or maintaining the Authority Improvements, or is developing and constructing the TxDOT Improvements, it shall have a right to use and occupy as necessary and in accordance with applicable law all TxDOT owned property, including property acquired by TxDOT subsequent to this Agreement, within the Project corridor as depicted on Exhibit “A” attached hereto (the “Property”) as necessary for the development, construction, operation, or maintenance of the Authority Improvements or the development and construction of the TxDOT Improvements, in accordance with applicable law.

The Authority shall have, and TxDOT hereby grants to the Authority, a license and right of entry on, over, and under such portions of the Property owned by, subsequently acquired by, and otherwise under TxDOT’s control as necessary to enable the Authority to cause the Authority Improvements to be constructed, maintained, and operated, and to cause the TxDOT Improvements to be developed and constructed. For the Authority Improvements, such license and right of entry shall remain in effect unless and until responsibility for construction, maintenance, or operation of the Authority Improvements reverts to TxDOT by operation of law or is otherwise acquired and assumed by TxDOT with the consent of the Authority, and, for the TxDOT Improvements, until Final Acceptance of the TxDOT Improvements. For purposes of this Agreement, “Final Acceptance” means, for the Authority Improvements, the determination by the Authority, and for the TxDOT Improvements, the mutual determination by the Authority and TxDOT, that all requirements for Final Acceptance as set forth in the Contract have been fully satisfied (including the completion or other satisfaction of punch list items) and the Authority has issued a Certificate of Final Acceptance to the Contractor. In the event a third party requests evidence of authorization for the Authority to use TxDOT owned right-of-way pursuant to this Agreement, TxDOT agrees to execute a license, right-of-entry, easement, or other document in a form reasonably acceptable to TxDOT and the Authority and which evidences the rights granted herein.

TxDOT waives any requirement that the Authority reimburse TxDOT for the use of the TxDOT right-of-way permitted in this agreement.

Notwithstanding anything else in this Agreement, and without otherwise limiting the rights of the Authority to access and utilize the Property for the purposes described in this Section, TxDOT shall maintain ownership of its existing right-of-way and control of access points. TxDOT will notify the Authority regarding all access requests prior to TxDOT's consideration of any request for access. The Authority will notify TxDOT of any request to authorize connection to the Authority Improvements which will impact the TxDOT Improvements. If allowing access impacts the maintenance and operations of the Authority Improvements, TxDOT shall coordinate with the Authority to mitigate the impacts prior to TxDOT's approval of any request for access.

For the portion of the Property solely required for the construction of the Authority Improvements, the Authority acknowledges that it enters the Property "AS IS" with all faults, including but not limited to any and all pollutants, asbestos, underground storage tanks and/or any other hazardous materials, and that TxDOT has not made any representations or warranties as to the condition of the Property. TxDOT will provide to the Authority information TxDOT may have concerning the environmental status of the Property. Except with respect to the portion of the Property upon which the TxDOT Improvements are located, the Authority hereby waives any and all causes of action, claims, demands, and damages based on any warranty, express or implied, including but not limited to any implied warranty of suitability for a particular purpose, any and all warranties of habitability, and any other implied warranties not expressly set forth in this Agreement. Except with respect to the portion of the Property upon which the TxDOT Improvements are located, the Authority acknowledges and agrees that it has fully exercised the right to inspect the Property for any defects as to its suitability for the purpose to which the Authority intends to put it. This Agreement is subject to all covenants, easements, reservations, restrictions and other matters applicable to the Property, and the Authority is using the Property subject to rights, if any, of any other persons or entities, including utilities authorized to be in the right-of-way of a state highway.

For the portion of the Property upon which the TxDOT Improvements are located, the Authority has made no inspection of the Property and assumes no liability for any faults, including but not limited to the presence of any and all pollutants, asbestos, underground storage tanks and/or any other hazardous materials.

3. Interim Project Development Agreement.

Except as expressly set forth in this Agreement, the Interim Project Development Agreement remains effective in accordance with its terms. To the extent of any conflict or inconsistency between this Agreement and the Interim Project Development Agreement, the Parties shall construe them, to the extent possible, to give full effect to both agreements. To the extent a conflict between the two exists which is irreconcilable, the terms of this Agreement shall control.

4. Architectural and Engineering Services.

The responsibility for the performance of architectural and engineering services are set forth in the Interim Project Development Agreement.

5. Construction, Operation, and Maintenance.

- a) **Responsibilities.** The Authority shall be responsible for construction, operation, and maintenance of the Project, and (except as set forth in Section 2) associated right-of-way, from the time of commencement of construction activities through opening to traffic, after which the Authority shall have no further responsibility for operation and maintenance of the TxDOT Improvements. The Authority shall use its approved contract letting and award procedures to let and award the construction and construction engineering and inspection contracts. Except as set forth otherwise herein, the Authority shall adhere to all applicable Federal Highway Administration (“FHWA”) and TxDOT rules, regulations, policies, procedures, and standards for the design and construction of the Project, except as specifically stated in this Agreement. The Authority has obtained the approval of the Commission as required by Section 370.187 of the Texas Transportation Code and in accordance with the requirements of 43 TAC §§ 11.58 and 26.32. The Authority shall monitor Contractor to ensure the Contractor prosecutes its scope of work in compliance with all applicable state and federal laws, rules, regulations, policies, procedures, and standards. Without limiting any of its other obligations under this Agreement, and, with respect to the TxDOT Improvements, subject to TxDOT’s general authority over roads on the state highway system, the Authority shall have sole authority and responsibility for: (a) the selection of construction contractor(s); (b) the commencement, sequencing and timing of construction activities and other work; (c) the installation of temporary traffic control devices and maintenance of traffic; (d) construction oversight and inspection, and materials testing and inspection; and (e) the acceptance or rejection of work, materials, or other deliverables performed under a contract let by the Authority.

NEITHER TXDOT NOR THE AUTHORITY WAIVES, RELINQUISHES, LIMITS OR CONDITIONS ITS GOVERNMENTAL IMMUNITY OR ANY OTHER RIGHT TO AVOID LIABILITY WHICH IT OTHERWISE MIGHT HAVE TO THIRD PARTIES. NOTHING IN THIS AGREEMENT SHALL BE CONSTRUED AS CREATING ANY LIABILITY IN FAVOR OF ANY THIRD PARTY OR PARTIES AGAINST EITHER TXDOT OR THE AUTHORITY, NOR SHALL IT EVER BE CONSTRUED AS RELIEVING ANY THIRD PARTY OR PARTIES FROM ANY LIABILITIES OF SUCH THIRD PARTY OR PARTIES TO TXDOT OR THE AUTHORITY.

- b) **Change Orders and Amendments to Contract.** Change orders, amendments and other revisions to the Contract will be submitted to TxDOT for approval as required by 43 TAC § 26.33(h)(6). In addition to the foregoing, all change orders, amendments, and other revisions related to the TxDOT Improvements must be approved by TxDOT prior to the Authority’s issuance of the change order, revision or amendment. The Authority shall submit, or shall cause Contractor to submit, proposed change orders, amendments, or revisions to the Contract described above to TxDOT for approval. TxDOT shall promptly complete its review and the TxDOT Executive Director or designee shall notify the Authority of approval or disapproval of the Contract revision within twenty (20) Business Days. As used in this Agreement, “Business Day” means any day that is not a federal holiday and that the TxDOT administrative office is open. In the event TxDOT withholds approval of the information submitted, it shall notify the Authority of the reasons therefore in writing within such twenty (20) day period.

The Authority will have an opportunity to correct or submit additional information to cure any defects or deviations identified by TxDOT. TxDOT shall review and respond to any such re-submittal within five (5) business days. All change orders related to the connections to the state highway system shall comply with the applicable federal or state criteria and manuals and shall be submitted to TxDOT for its records.

- c) **Signage.** Prior to or at such time that all or a portion of the Authority Improvements or the TxDOT Improvements opens to traffic, the Parties shall work cooperatively to determine appropriate signage, provided that the Authority shall have the right to install and maintain such signage as it reasonably deems necessary and in such locations to maximize the safe and efficient operation of the tolled lanes and the toll collection system, provided that said structures and their installation shall conform to all applicable safety codes and standards (including, if applicable, the Texas Manual on Uniform Traffic Control Devices, as amended or revised) and further provided that the signage and/or illumination does not conflict with the operation of TxDOT facilities. The signage may be revised, relocated, or supplemented from time-to-time as the Authority deems necessary to assure safe operations or to enhance efficiency of the operations of the tolled lanes or the aesthetics of the corridor, subject to conformance to all applicable safety codes and standards (including, if applicable, the Texas Manual on Uniform Traffic Control Devices, as amended or revised) and shall not conflict with the operation of any TxDOT facilities.
- d) **Operations and Tolling.** The Authority shall be responsible for the operation of the Authority Improvements in compliance with applicable law and relevant provisions of this Agreement, the operations and maintenance agreement described in Section 19, and any trust agreement(s) or similar documentation evidencing or securing Project financing, if any. The Authority shall be responsible for the construction, installation, operation and maintenance of all the tolling equipment and tolling infrastructure required for operation of the tolled lanes, and for operation and maintenance of any non-tolled facilities and equipment incorporated within the Authority Improvements. The Authority may subcontract to third parties all or part of the design, construction, maintenance, and/or operation of the Authority Improvements and the construction of the TxDOT Improvements; however, the Authority shall retain ultimate responsibility for the obligations, responsibilities, and liabilities assumed in this Agreement.
- e) **Hazardous Materials.** For federally funded contracts, the Authority will comply with federal construction requirements cited in 23 CFR Part 635 and with requirements cited in 23 CFR Part 633, and shall include the latest version of Form “FHWA-1273” in the contract bidding documents. If force account work will be performed, a finding of cost effectiveness shall be made in compliance with 23 CFR 635, Subpart B. The Authority shall be responsible, as may be required by any applicable state or federal law, for promptly and diligently addressing, through clean-up or other appropriate and lawful steps, based on a property use appropriate risk-based clean-up standard, any hazardous materials that are encountered in or on the Property by the Authority or any contractors working on the Authority Improvements and, for the TxDOT Improvements, any hazardous materials which were discharged onto or migrated onto the TxDOT Improvements prior to the time that the TxDOT Improvements are open to traffic. If

- soil excavated within the right-of-way in the course of the Authority's construction of the Project is identified as containing hazardous materials, the Authority or its contractors shall accept delivery of the identified soil and handle it properly in accordance with applicable law.
- f) **Lane Closures.** The Contract shall include permitted periods for lane closures on the Authority Improvements and the TxDOT Improvements during construction of the Project. Upon issuance of notice-to-proceed under the Contract, the Authority may approve or disapprove all requests for lane closures that are compliant with the allowable lane closures identified in the Contract, and, except with regard to emergency lane closures, shall provide written notice to TxDOT of the closures at least 48 hours in advance for one-lane closures on any TxDOT facilities and 96 hours in advance for any closures on TxDOT facilities of more than one lane. In the event of an emergency lane closure, the Authority may permit the closure without the prior approval of TxDOT, and in that case, shall notify TxDOT of the closure as soon as possible after the Authority learns of the need for the closure.
- g) **Substantial Completion, Punch List, and Final Acceptance.** Within two (2) business days after the Authority receives notice from the Contractor of the date it expects to achieve substantial completion of the Project (but not less than ten (10) business days prior to such date), the Authority shall provide TxDOT with written notification of such date. After such notice, TxDOT and the Authority shall meet and confer and exchange information on a regular basis regarding the TxDOT Improvements with the goal being TxDOT's and the Authority's orderly and timely inspection and review of such work for substantial compliance of the TxDOT Improvements with the plans, standards and specifications in the Contract and identification of patent defects, and for the joint preparation of a written punch list for the TxDOT Improvements with which both parties concur. The Authority shall cause punch list items for the TxDOT Improvements, including patent defects identified by the Parties, to be diligently completed following substantial completion of the Project. Upon completion of the punch list work, TxDOT shall issue and sign a notification of completion acknowledging that the TxDOT Improvements are complete and the Authority may issue a notification of final acceptance to the Contractor. Upon final acceptance of the Project, the Authority will provide a copy of the notification of final acceptance to TxDOT.

6. **Utility Relocations.**

- a) **Relocation and Adjustment of Utilities.** Any utility relocations required for the Project shall be the responsibility of the Authority. The Authority shall ensure that all utility relocations are performed in accordance with applicable State and federal laws, regulations, rules, policies, and procedures. This includes, without limitation, 43 TAC § 21.21 relating to State Participation in Relocation, Adjustment, and/or Removal of Utilities, and 43 TAC § 21.31 *et seq.* relating to Utility Accommodation. TxDOT acknowledges that utility relocation activities may be undertaken on the Authority's behalf by its contractor, in which case the Authority shall be responsible for ensuring that such contractor carries out all such relocation activities in a manner consistent with applicable laws and administrative regulations. The Authority shall pay, or cause to be

paid, utility owners for relocations required by construction of the Project pursuant to Section 370.170 of the RMA Act. The relocation or adjustment of any utility shall be subject to the approval of TxDOT to the extent such relocation or adjustment impacts the TxDOT Improvements or property owned by TxDOT, which approval shall not be unreasonably withheld and provided without delay. TxDOT agrees to provide such permits and easements as may be necessary for the Authority to accomplish the relocation of utilities as provided herein. TxDOT will cooperate with the Authority in securing the performance of all necessary utility relocations; however, other than as provided herein, and except as may be required by utility owners in connection with the TxDOT Improvements, nothing herein shall require TxDOT (i) to join or undertake any proceeding with regard to utility relocation or (ii) to enter into any agreements with any utility owners.

TxDOT will coordinate with the Authority regarding the placement or relocation of any utility within or on the Property so as to minimize and mitigate any disruption to the construction, operation, or maintenance of the Project.

- b) **Utility Permits.** Prior to issuing a utility permit, the execution of which potentially impacts the construction or operation of the Project, TxDOT shall coordinate with the Authority to minimize impacts and agree on timing. The Authority will ensure the Contractor requires and confirms the utility owner has obtained a TxDOT utility permit before beginning construction for the relocation activities. TxDOT shall review and approve (or provide reasons for non-approval of) permit within ten (10) Business Days. TxDOT shall review and approve (or provide reasons for non-approval of) subsequent permit submittals within five (5) Business Days until permit is approved.

7. Compliance with Texas Accessibility Standards and ADA.

The Authority shall ensure that the plans for and the construction of the Project are in compliance with the Texas Accessibility Standards (TAS) issued by the Texas Department of Licensing and Regulation, under the Architectural Barriers Act, Article 9102, Texas Civil Statutes. The TAS establishes minimum accessibility requirements to be consistent with minimum accessibility requirements of the Americans with Disabilities Act (P.L. 101-336) (ADA).

8. Design Obligations of the Authority and TxDOT.

The Authority, through its design consultant, has completed the design plans for the Project. TxDOT has reviewed and will accept the design through its issuance of a State Letter of Authority prior to construction letting.

9. Environmental Permits and Compliance.

Environmental clearance was achieved for the Project through the issuance of a Finding of No Significant Impact dated August 19, 2019 (the “Environmental Decision”). The Authority shall be solely responsible for compliance with applicable requirements of state and federal law regarding environmental permits, issues, and commitments (“EPIC”) during construction. This shall include, without limitation, full compliance with the approved Environmental Assessment, the Environmental Decision, and all associated technical reports and support documents

(collectively, the “Environmental Documents”) and completion of any required consultations and any required mitigation and additional permitting. In addition, the Authority shall implement the best management practices (“BMPs”) and protocols as described in the final design plans associated with the Project. In order to fully vest the Authority with the ability and obligation to comply with all EPIC, TxDOT, to the extent permitted by law, hereby commits to transfer and assign to the Authority all rights and delegate all obligations granted under the Environmental Documents for the Project, as well as the right to pursue any claims or causes of action for errors or omissions committed in the environmental review process. In the event that changes are made to the scope of the Project by the Authority, which require a re-evaluation of (or supplement to) the Environmental Documents, the cost of such work shall be borne by the Authority.

10. Procurement and Contracting Procedures.

- a) **Procurement Method.** Pursuant to the RMA Act and the Authority’s Policy Code, the Authority is developing the Project through the design/bid/build method. TxDOT and FHWA representatives will have the opportunity to observe the procurement process for purposes of confirming compliance with applicable laws and regulations. TxDOT shall in no way be liable for any claims, protests, or causes of action arising out of the procurement process, except to the extent such claim, protest, or cause of action is caused by the action or inaction of TxDOT. The Authority shall ensure compliance by Contractor with the applicable provisions of this Agreement.
- b) **Warranties and Indemnities.** The Contract shall provide that (i) any and all express or implied warranties and representations in the nature of warranties by the Contractor, (ii) any warranty bonds provided pursuant to the Contract, and (iii) the indemnities shall be jointly made to or for the benefit of both TxDOT (to the extent they relate to the TxDOT Improvements) and the Authority. Any warranty or warranty bond provided pursuant to the Contract with respect to the TxDOT Improvements shall be assignable to TxDOT and TxDOT shall have primary responsibility for prosecuting any warranties under the Contract with respect to the TxDOT Improvements. The Authority shall have primary responsibility for prosecuting any warranties under the Contract related solely to the Authority Improvements. TxDOT shall be named an additional obligee on the warranty bond with respect to the TxDOT Improvements. TxDOT shall be an express third-party beneficiary under the Contract for purposes of enforcement of the indemnities and warranties in favor of TxDOT.
- c) **Insurance and Bonds.** The Contract shall provide that the Authority, TxDOT, the State of Texas, the Commission and their respective successors, assigns, officeholders, officers, directors, commissioners, consultants and employees shall be listed as “additional insureds” with respect to any insurance for which Contractor must obtain an “additional insured” rider or amendment. The Authority shall require the Contractor to supply performance, payment, and warranty bonds securing the Contractor’s obligations under the Contract. Each performance and payment bond shall be in an amount not less than the price for the construction of the Project contained in the Contract. The warranty bond shall be not less than 10% of the price contained in the Contract.

11. HUB Policy; DBE Guidelines.

The Authority shall require its selected contractor to comply with the Authority's Business Opportunity Policy as set forth in the Authority's Policy Code. If requested, the Authority shall provide to TxDOT quarterly reports regarding compliance with this Section.

12. Compliance With Applicable Laws.

It is the Authority's obligation to monitor its Contractor to ensure that the Contractor prosecutes its scope of work in compliance with all applicable state and federal laws.

13. Toll System Interoperability.

Prior to deploying any toll collection equipment or technology on the Project, the Authority (or its contractor) shall certify to TxDOT that the technology complies with the requirements of any interoperability agreements adopted by TxDOT and the Authority, including the applicable inter- and intra-state interoperability standards adopted by TxDOT and the Authority in the Central United States Interoperability Agreement and the Southern States Interoperability Agreement.

14. Maintenance of Records.

All records and documents prepared by the Authority under this Agreement must be made available to authorized representatives of TxDOT during normal work hours. All records and documents prepared under this Agreement must be maintained by the Authority for three (3) years after final payment of construction costs incurred in connection with the Project. Additionally, TxDOT, and its duly authorized representatives shall have access to all records in the actual or constructive possession of the Authority that are directly applicable to this Agreement for the purpose of making audits, examinations, excerpts, and transcriptions. Notwithstanding the foregoing, the Authority shall comply with all laws pertaining to the retention of records and the provision of access thereto.

15. Books and Records.

The Authority shall maintain its books and records in accordance with generally accepted accounting principles in the United States, subject to any exceptions required by existing bond indentures of the Authority, and shall provide TxDOT with a copy of any audit of those books and records. The Authority shall comply with the audit requirements and other requirements relating to project records in 43 TAC § 27.55(b), including having a full audit of its books and records performed annually in accordance with the standards of 2 C.F.R. Part 200. The Parties shall comply with the requirements of the Single Audit Act of 1984, P.L. 98-502, ensuring that the single audit report includes the coverage stipulated in 2 C.F.R. Part 200.

16. Reports and Plans.

The Authority shall deliver to TxDOT quarterly progress reports for the Project. Within six (6) months after completion of the Project, the Authority will deliver to TxDOT the final record drawings, signed, sealed and dated by a professional engineer, licensed in the State of Texas, certifying that the Project and the TxDOT Improvements were constructed in accordance with the approved plans and specifications, and approved contract revisions.

17. Project Operations and Maintenance following Opening to Traffic.

The division of operations and maintenance obligations for TxDOT and the Authority are defined in the Interlocal Agreement with the Texas Department of Transportation for Routine Maintenance Services on Texas Department of Transportation Right of Way Adjacent to Mobility Authority Facilities (“ILA”) executed on August 1, 2020 between the Parties. In the event the ILA is not executed prior to opening to traffic of the Project, maintenance responsibilities will be addressed in an addendum to this Agreement. The delineation of areas for which each Party is responsible for operations and maintenance obligations is depicted in Exhibit “B” (Operations and Maintenance Responsibilities after Opening to Traffic) attached hereto and included as part of this Agreement.

18. Project Costs.

The Authority is responsible for paying the costs of the Project including the costs of all changes to the Project. TxDOT shall be responsible for costs associated with its oversight responsibilities.

19. Termination of this Agreement.

This Agreement may be terminated upon the occurrence of any of the following conditions:

- a) **Mutual Termination.** This Agreement may be terminated by written agreement and consent of the Parties hereto.
- b) **Primacy.** Either Party may terminate this Agreement by written notice to the other Party if the Authority’s exercise of its primacy rights and option with regard to the Authority Improvements is terminated, rescinded, or lapses.
- c) **Dissolution of the Authority.** In the event that the Authority is dissolved, ceases to function, or all or substantially all of its operations are assumed by a third party other than another governmental entity performing essentially the same functions as the Authority.
- d) **Material Breach.** This Agreement may be terminated by either party, upon a material breach of the Agreement by the other, after following the procedures outlined in Section 20 below.
- e) **Completion.** By satisfactory completion of all responsibilities and obligations described herein.

The parties agree that the provisions of Section 2 and Section 32 regarding use of right-of-way and release and indemnity, respectively, shall survive the termination of this Agreement.

20. Defaults and Remedies

- a) **Authority Defaults.** The Authority shall be in breach under this Agreement if the Authority fails to observe or perform any covenant, agreement, term or condition required to be observed or performed by the Authority under this Agreement (an “Authority Default”).

- b) **Authority Cure Periods.** For the purpose of TxDOT's exercise of remedies upon a Authority Default, the Authority shall have a cure period of thirty (30) days after TxDOT delivers to the Authority written notice of the Authority Default; provided that if the Authority Default is of such a nature that the cure cannot with diligence be completed within such time period and the Authority has commenced meaningful steps to cure promptly after receiving the default notice, the Authority shall have such additional period of time, up to a maximum cure period of one hundred twenty (120) days, as is reasonably necessary to diligently effect cure.
- c) **TxDOT Defaults.** TxDOT shall be in breach under this Agreement if TxDOT fails to observe or perform any covenant, agreement, term or condition required to be observed or performed by TxDOT under this Agreement(a "TxDOT Default").
- d) **TxDOT Cure Periods.** For the purpose of the Authority's exercise of remedies upon a TxDOT Default, TxDOT shall have a cure period of thirty (30) days after the Authority delivers to TxDOT written notice of the TxDOT Default; provided that if the TxDOT Default is of such a nature that the cure cannot with diligence be completed within such time period and TxDOT has commenced meaningful steps to cure immediately after receiving the default notice, TxDOT shall have such additional period of time, up to a maximum cure period of one hundred twenty (120) days, as is reasonably necessary to diligently effect such cure.
- e) **Remedies.** This agreement shall not be considered as specifying the exclusive remedy for any agreement default, but all remedies existing at law and in equity may be availed of by either party to this agreement and shall be cumulative; provided that the sole and exclusive remedy of the Authority in the event that TxDOT fails to perform any of its obligations under this Agreement regarding the Project shall be to seek an action in mandamus compelling TxDOT to perform those obligations.

21. **Dispute Resolution.**

The Authority and TxDOT will set up a formalized process to resolve any issues that arise in connection with this Agreement. The process will include an issues resolution ladder to resolve questions at the appropriate organizational levels of each Party. Any issues that cannot be resolved by use of the issues resolution ladder will be referred to the Authority's Executive Director or designee and TxDOT's Executive Director or designee to resolve. If a dispute is processed under the issues resolution ladder and not resolved, the Parties agree to use the procedures in the following sentences. The Party making a claim may advance it in accordance with the statutes and administrative rules applicable on the Effective Date, including all statutory provisions that effect a waiver, in whole or part, of sovereign immunity to suit for the purpose of adjudicating a claim for a breach under this Agreement. The parties agree to use any alternative dispute resolution procedure that is a part of the applicable claim procedure. The Parties shall satisfy the requirement for alternative dispute resolution by participating in non-binding arbitration, unless otherwise agreed to by the Parties. During the resolution of an issue the Authority and TxDOT will not hinder work under the Agreement and intend that such work will proceed.

22. **Successors and Assigns.**

This Agreement shall bind, and shall be for the sole and exclusive benefit of, the Parties and their legal successors, including without limitation any successor agency to TxDOT or the Authority. Other than as provided in the preceding sentence, neither TxDOT nor the Authority shall assign, sublet, or transfer its interest in this Agreement without the prior written consent of the other Party to this Agreement, unless otherwise provided by law.

23. Officials Not to Benefit.

No member or delegate to the Congress of the United States of America shall be admitted to any share or part of this Agreement or to any benefit arising therefrom. No member, officer, or employee of the State of Texas, TxDOT, the Authority, or of a local public body during his/her tenure shall have interest in this Agreement or the benefits/proceeds thereof.

24. Debarment Requirements.

The Authority shall require Contractor to complete the "Debarment Certification", attached hereto as Exhibit "C" and made a part hereof for all purposes. All subcontractors to the Contractor must complete the "Lower Tier Participation Debarment Certification", a sample copy being attached hereto as Exhibit "D" and made a part hereof for all purposes.

25. Circulation of the Agreement.

Copies of this Agreement will be provided to, reviewed and relied upon by underwriters, investment bankers, brokerage firms, bond counsel, and similar parties in connection with the provision of any additional financing.

26. Severability.

If any provision of this Agreement, or the application thereof to any person or circumstance, is rendered or declared illegal for any reason and shall be invalid or unenforceable, the remainder of the Agreement and the application of such provision to other persons or circumstances shall not be affected thereby but shall be enforced to the greatest extent permitted by applicable law.

27. Written Amendments.

Any changes in the character, agreement, terms and/or responsibilities of the Parties hereto must be enacted through a written amendment. No amendment to this Agreement shall be of any effect unless in writing and executed by the Authority and TxDOT.

28. Notices.

All notices to either Party by the other required under this Agreement shall be delivered personally or sent by certified or registered U.S. Mail, postage prepaid, addressed to such Party at the following respective addresses:

Texas Department of Transportation
Austin District Office
7901 N. IH 35
Austin, Texas 78753
Attention: District Engineer

Central Texas Regional Mobility Authority
3300 N. IH 35, Suite 300
Austin, Texas 78705
Attention: Executive Director

with copies to:

Texas Department of Transportation
General Counsel Division
125 E. 11th Street
Austin, Texas 78701
Attention: General Counsel

Central Texas Regional Mobility Authority
3300 N. IH 35, Suite 300
Austin, Texas 78705
Attention: Director of Engineering

All notices shall be deemed given on the date so delivered or so deposited in the mail, unless otherwise provided herein. Either Party hereto may change the above address by sending written notice of such change to the other in the manner provided for above.

29. Gratuities.

Any person who is doing business with or who may do business with TxDOT under this Agreement may not make any offer of benefits, gifts, or favors to employees of TxDOT.

30. Conflict of Interest.

Unless otherwise approved in writing by TxDOT, the Authority shall not assign an employee to the Project if the employee or any immediate family member of the employee:

- a) owns an interest in or is an officer or employee of a business entity that has or may have a contract with TxDOT relating to the Project;
- b) has a direct or indirect financial interest in the outcome of the Project; or
- c) has performed services regarding the subject matter of the Project for an entity that has a direct or indirect financial interest in the outcome of the Project or that has or may have a contract with TxDOT; or
- d) is a current part-time or full-time employee of TxDOT.

31. **Limitations.**

All covenants and obligations of TxDOT and the Authority under this Agreement shall be deemed to be valid covenants and obligations of said entities, and no officer, director, or employee of TxDOT or the Authority shall have any personal obligations or liability hereunder.

32. **RELEASE AND INDEMNITY.**

TO THE EXTENT PERMITTED BY LAW, THE AUTHORITY HEREBY INDEMNIFIES TXDOT, ITS OFFICERS, DIRECTORS, EMPLOYEES, AGENTS, AND ADVISORS OF ANY OF THE FOREGOING PERSONS (EACH SUCH PERSON BEING CALLED AN "INDEMNITEE") AGAINST, AND HOLDS EACH INDEMNITEE HARMLESS FROM AND AGAINST, ANY AND ALL CLAIMS, DAMAGES, LOSSES, LIABILITIES, COSTS OR EXPENSES (INCLUDING REASONABLE FEES, CHARGES AND DISBURSEMENTS OF COUNSEL OF THE INDEMNITEE'S CHOICE) WHICH SUCH INDEMNITEE MAY INCUR OR WHICH MAY BE CLAIMED AGAINST SUCH INDEMNITEE BY ANY PERSON OR ENTITY:

- i. BY REASON OF THE AUTHORITY'S, CONSTRUCTION, OPERATION, OR MAINTENANCE OF THE PROJECT; OR**
- ii. BY REASON OF (a) ANY ACTUAL OR ALLEGED PRESENCE OR RELEASE OF HAZARDOUS SUBSTANCE ON OR FROM THE AUTHORITY IMPROVEMENTS, OR (b) ANY LIABILITY IN RESPECT OF THE AUTHORITY'S CONSTRUCTION OR OPERATIONAL ACTIVITIES FOR THE AUTHORITY IMPROVEMENTS, OTHER THAN THE RELEASE OF A HAZARDOUS SUBSTANCE THAT OCCURS ON THE AUTHORITY IMPROVEMENTS AFTER FINAL ACCEPTANCE OF THE AUTHORITY IMPROVEMENTS AND THAT IS NOT THE DIRECT RESULT OF THE CONSTRUCTION OF THE AUTHORITY IMPROVEMENTS, OR**
- iii. BY REASON OF ANY ACTUAL CLAIM, LITIGATION, INVESTIGATION OR PROCEEDING RELATING TO ANY OF THE FOREGOING, WHETHER BASED ON CONTRACT, TORT OR ANY OTHER THEORY AND REGARDLESS OF WHETHER ANY INDEMNITEE IS A PARTY THERETO;**

PROVIDED THAT THE INDEMNITIES IN THIS SECTION SHALL NOT, AS TO ANY INDEMNITEE, BE AVAILABLE TO THE EXTENT

THAT SUCH LOSSES, CLAIMS, DAMAGES, LIABILITIES OR RELATED EXPENSES ARE DETERMINED BY A COURT OF COMPETENT JURISDICTION BY FINAL AND NONAPPEALABLE JUDGMENT TO HAVE RESULTED FROM THE NEGLIGENCE, BAD FAITH OR WILLFUL MISCONDUCT OF SUCH INDEMNITEE.

PROVIDED FURTHER THAT THE INDEMNITIES IN THIS SECTION SHALL ONLY BE AVAILABLE TO AN INDEMNITEE FOLLOWING THE FULL AND FINAL EXHAUSTION OF ALL REMEDIES AGAINST THE CONTRACTOR AND ONLY TO THE EXTENT THAT SUCH LOSSES, CLAIMS, DAMAGES, LIABILITIES OR RELATED EXPENSES HAVE BEEN DETERMINED BY A COURT OF COMPETENT JURISDICTION TO NOT BE THE RESPONSIBILITY OF THE CONTRACTOR.

NOTHING IN THIS SECTION IS INTENDED TO LIMIT THE AUTHORITY'S OBLIGATIONS UNDER THE TERMS OF THIS AGREEMENT. WITHOUT PREJUDICE TO THE SURVIVAL OF ANY OTHER OBLIGATION OF THE AUTHORITY HEREUNDER, THE INDEMNITIES AND OBLIGATIONS OF THE AUTHORITY CONTAINED IN THIS SECTION SHALL SURVIVE THE EXPIRATION OR EARLIER TERMINATION OF THIS AGREEMENT.

33. Sole Benefit.

This Agreement is entered into for the sole benefit of TxDOT and the Authority and their respective successors and permitted assigns. Nothing in this Agreement or in any approval subsequently provided by either Party hereto shall be construed as giving any benefits, rights, remedies, or claims to any other person, firm, corporation or other entity, including, without limitation, the public in general.

34. Relationship of the Parties.

Nothing in this Agreement shall be deemed or construed by the Parties, or by any third party, as creating the relationship of principal and agent, or joint venture or partnership, between TxDOT and the Authority.

35. Authorization.

Each Party to this Agreement represents to the other that it is fully authorized to enter into this Agreement and to perform its obligations hereunder, and that no waiver, consent, approval, or authorization from any third party is required to be obtained or made in connection with the execution, delivery, or performance of this Agreement. If and to the extent that any approval or action by the Governor of the State of Texas is required to effectuate or authorize any provision of this Agreement, TxDOT agrees that it will use all reasonable efforts to obtain said approval or

action. Each signatory on behalf of TxDOT and the Authority, as applicable, is fully authorized to bind that entity to the terms of this Agreement.

36. Interpretation.

No provision of this Agreement shall be construed against or interpreted to the disadvantage of any Party by any court or other governmental or judicial authority by reason of such Party having or being deemed to have drafted, prepared, structured, or dictated such provision.

IN WITNESS WHEREOF, TxDOT and the Authority have executed this Agreement in two (2) multiple counterparts on the dates shown herein below, effective on the date listed above.

**CENTRAL TEXAS
REGIONAL MOBILITY AUTHORITY**

**TEXAS DEPARTMENT OF
TRANSPORTATION**

By: _____
Mike Heiligenstein
Executive Director

By: _____
James M. Bass
Executive Director

Date: _____

Date: _____

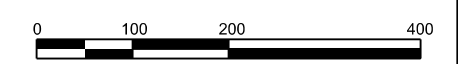
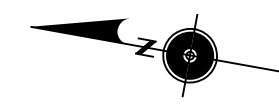
EXHIBIT "A"

183A PHASE III PROJECT AND TXDOT IMPROVEMENT LIMITS



EXHIBIT “B”

**Operations and Maintenance Responsibilities
after Opening to Traffic**

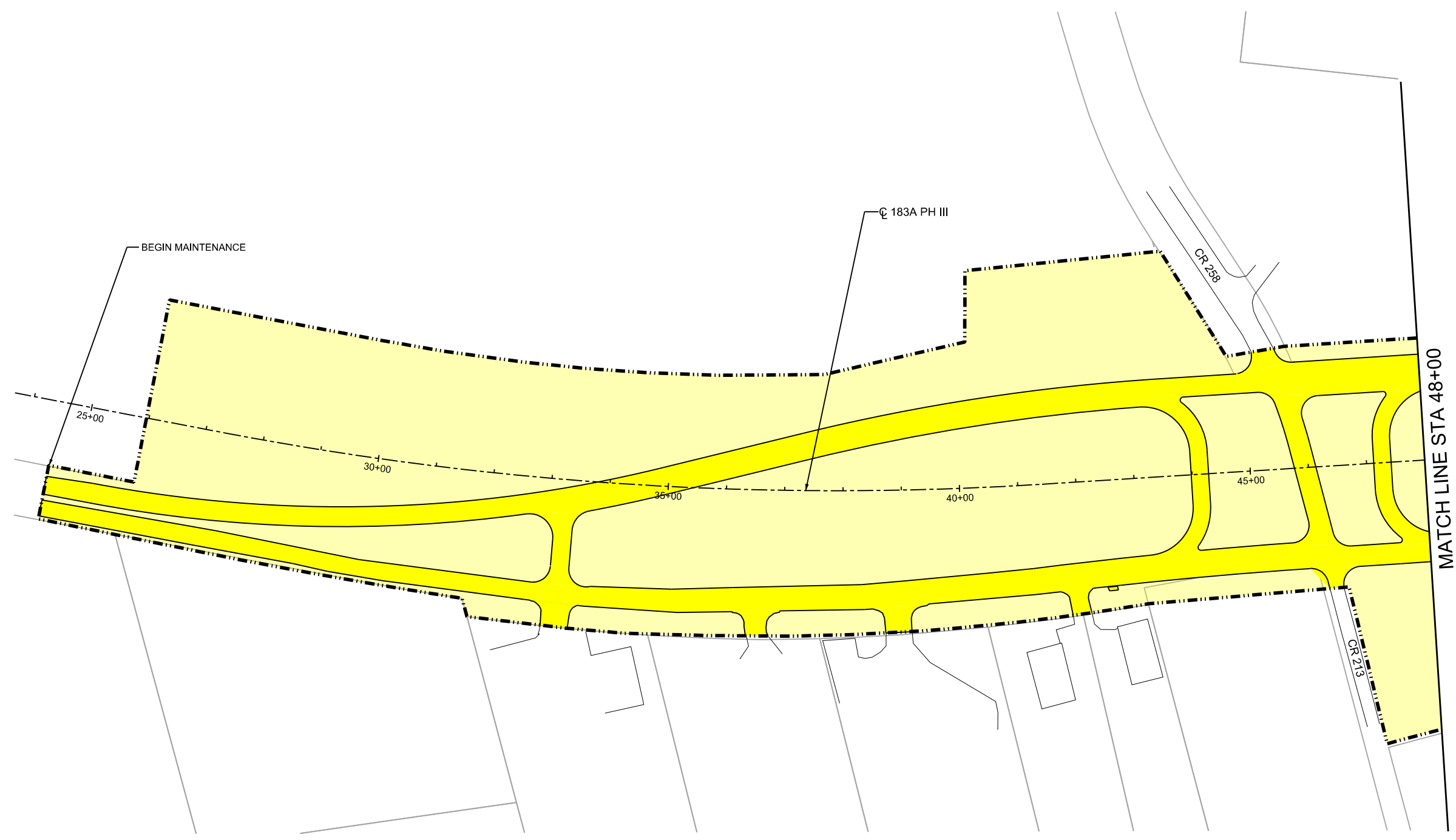


LEGEND

- LIMITS OF MAINTENANCE
- CTRMA RESPONSIBILITY
- TXDOT RESPONSIBILITY
- TXDOT/CTRMA DEMARCATION LINE

NOTES:

1. MAPS ARE BASED ON THE MOST CURRENT AVAILABLE DATA AND ARE SUBJECT TO CHANGE.
2. ALL ADVANCE SIGNS RELATED TO THE TOLL FACILITY ARE INCLUDED IN THE CTRMA MAINTENANCE EXCLUDING SUPPORTS AND TRUSSES.

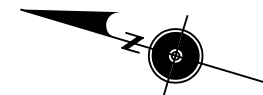


LIMITS OF MAINTENANCE AND OPERATIONS
183A PH III
 BEGIN PROJECT TO STA 48+00

SHEET 1 OF 12 SHEETS

DESIGNED BY:	PROJECT NO.			SHEET NO.
STAFF	20PROGXX02M			1
DRAWN BY:	STATE	DIST.	COUNTY	
GLG	TEXAS	AUS	WILLIAMSON	
CHECKED BY:	CONT.	SECT.	JOB	HIGHWAY NO.
MES	XXXX	XX	XXX	VAR

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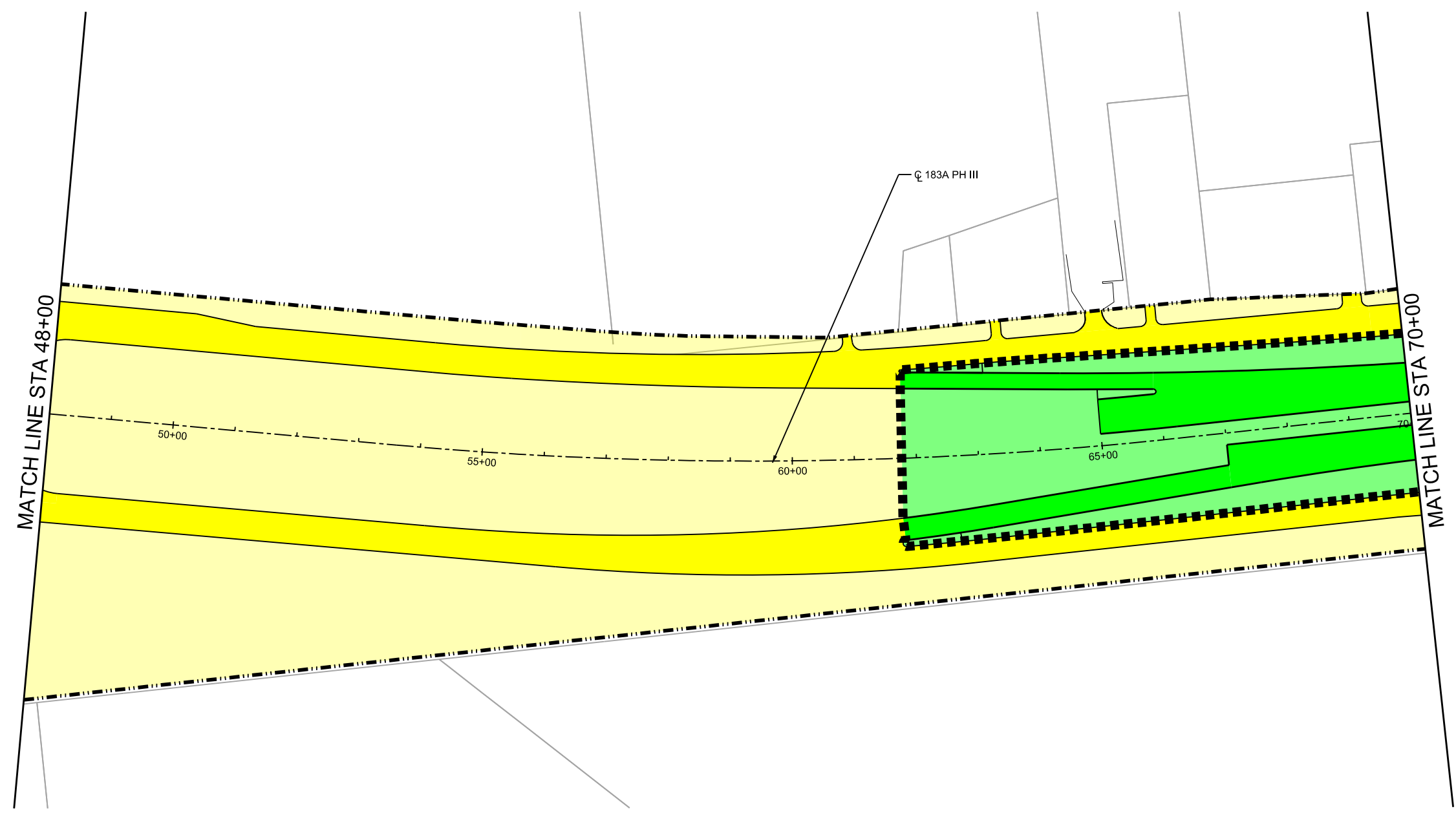


LEGEND


- LIMITS OF MAINTENANCE
- CTRMA RESPONSIBILITY
- TXDOT RESPONSIBILITY
- TXDOT/CTRMA DEMARCATION LINE

NOTES:

1. MAPS ARE BASED ON THE MOST CURRENT AVAILABLE DATA AND ARE SUBJECT TO CHANGE.



DATE: 4/23/2020
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 FILE: ...183A PH3 2020 PLN02 LMT OPS REV.dgn



**CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY**

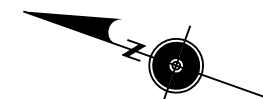
LIMITS OF MAINTENANCE AND OPERATIONS

183A PH III

STA 48+00 TO STA 70+00

SHEET 2 OF 12 SHEETS

DESIGNED BY:	PROJECT NO.			SHEET NO.
STAFF	20PROGXX02M			2
DRAWN BY:	STATE	DIST.	COUNTY	
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MES	XXXX	XX	XXX	VAR

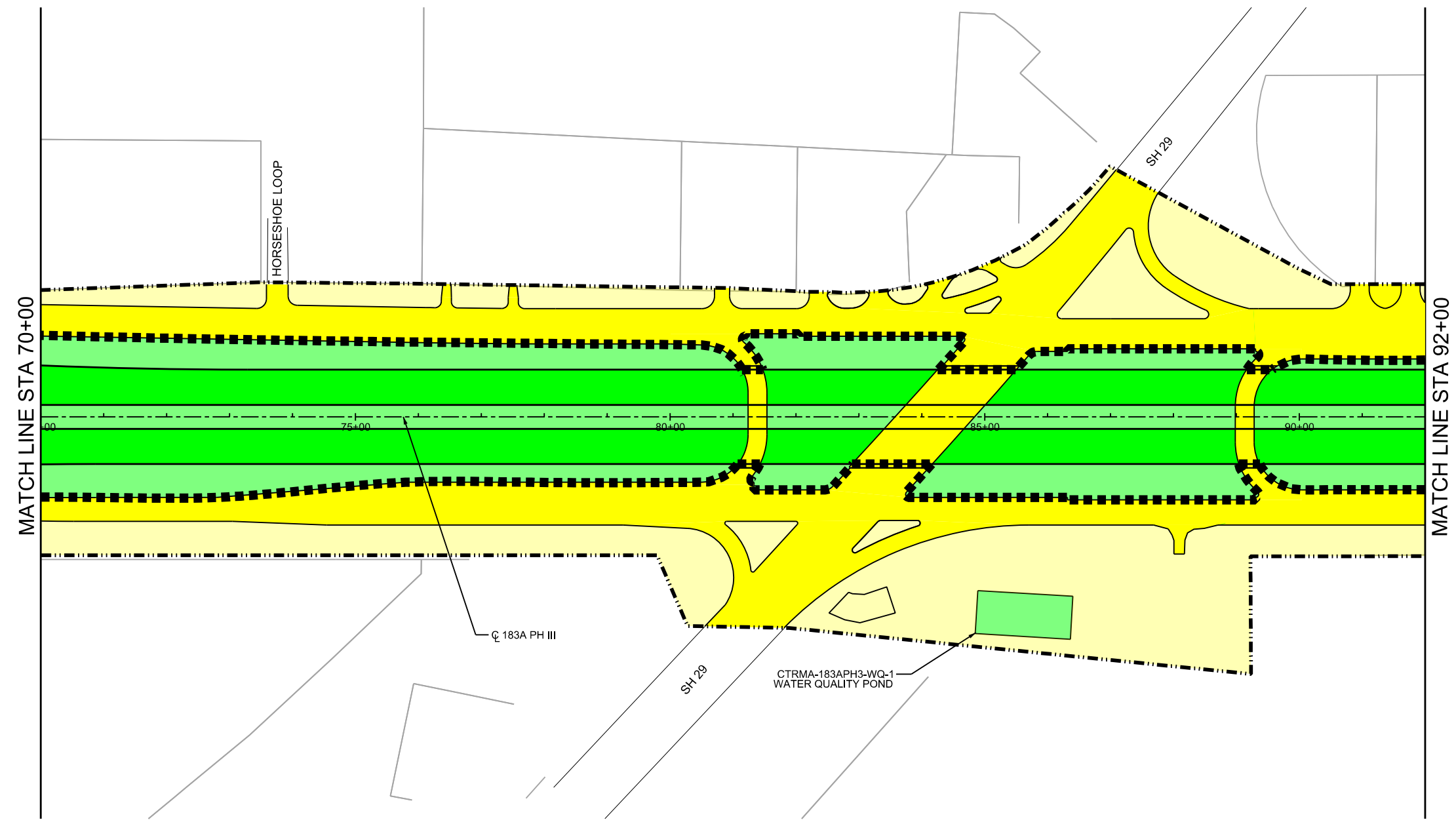


LEGEND

- LIMITS OF MAINTENANCE
- CTRMA RESPONSIBILITY
- TXDOT RESPONSIBILITY
- TXDOT/CTRMA DEMARCATION LINE

NOTES:

1. MAPS ARE BASED ON THE MOST CURRENT AVAILABLE DATA AND ARE SUBJECT TO CHANGE.



DATE: 4/23/2020
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CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

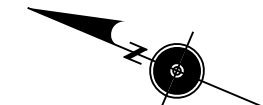
LIMITS OF MAINTENANCE AND OPERATIONS

183A PH III

STA 70+00 TO STA 92+00

SHEET 3 OF 12 SHEETS

DESIGNED BY:	PROJECT NO.			SHEET NO.
STAFF	20PROGXX02M			3
DRAWN BY:	STATE	DIST.	COUNTY	
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CHECKED BY:	CONT.	SECT.	JOB	HIGHWAY NO.
MES	XXXX	XX	XXX	VAR

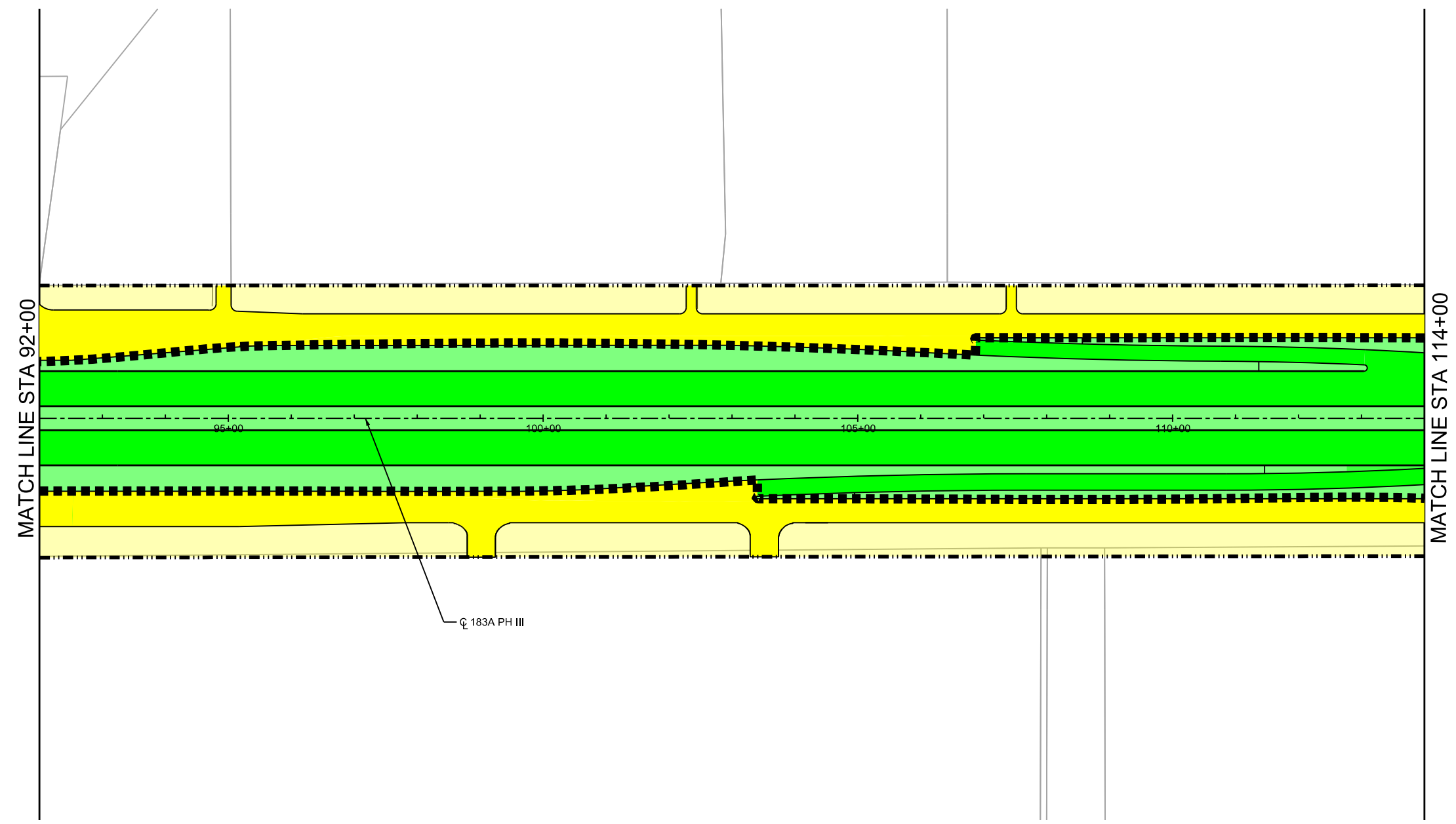


LEGEND


- LIMITS OF MAINTENANCE
- █ CTRMA RESPONSIBILITY
- █ TXDOT RESPONSIBILITY
- █ TXDOT/CTRMA DEMARCATION LINE

NOTES:

1. MAPS ARE BASED ON THE MOST CURRENT AVAILABLE DATA AND ARE SUBJECT TO CHANGE.



DATE: 4/23/2020
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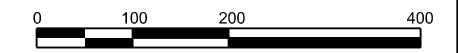
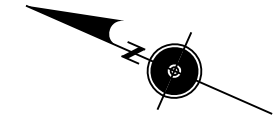
**CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY**

LIMITS OF MAINTENANCE AND OPERATIONS

**183A PH III
STA 92+00 TO STA 114+00**

SHEET 4 OF 12 SHEETS

DESIGNED BY:	PROJECT NO.			SHEET NO.
STAFF	20PROGXX02M			4
DRAWN BY:	STATE	DIST.	COUNTY	
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CHECKED BY:	CONT.	SECT.	JOB	HIGHWAY NO.
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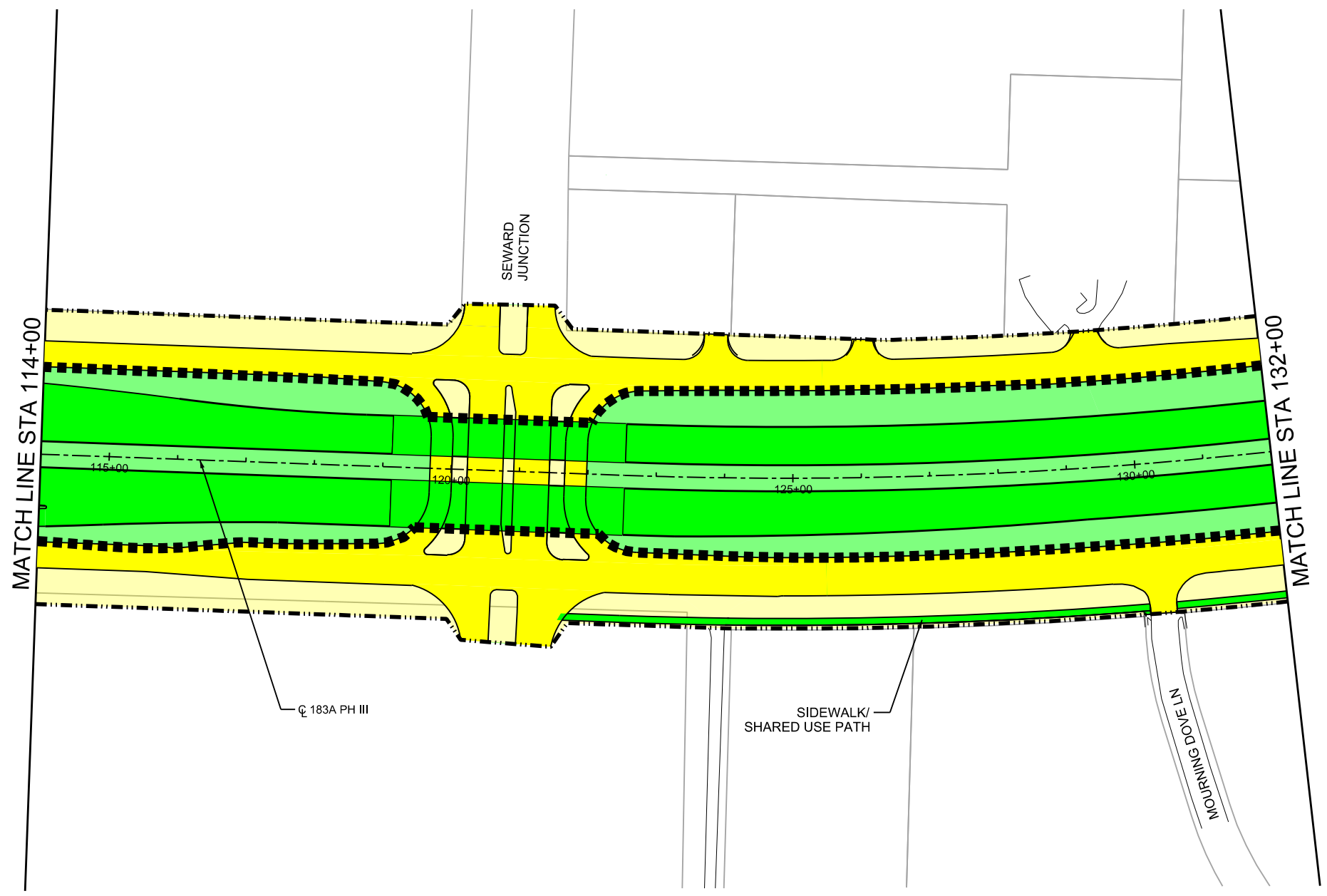


LEGEND

- LIMITS OF MAINTENANCE
- CTRMA RESPONSIBILITY
- TXDOT RESPONSIBILITY
- TXDOT/CTRMA DEMARCATION LINE

NOTES:

1. MAPS ARE BASED ON THE MOST CURRENT AVAILABLE DATA AND ARE SUBJECT TO CHANGE.

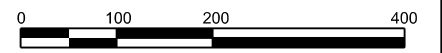
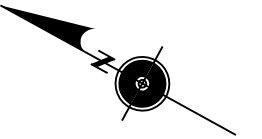


LIMITS OF MAINTENANCE AND OPERATIONS
183A PH III
 STA 114+00 TO STA 132+00

SHEET 5 OF 12 SHEETS

DESIGNED BY:	PROJECT NO.			SHEET NO.
STAFF	20PROGXX02M			5
DRAWN BY:	STATE	DIST.	COUNTY	
GLG	TEXAS	AUS	WILLIAMSON	
CHECKED BY:	CONT.	SECT.	JOB	HIGHWAY NO.
MES	XXXX	XX	XXX	VAR

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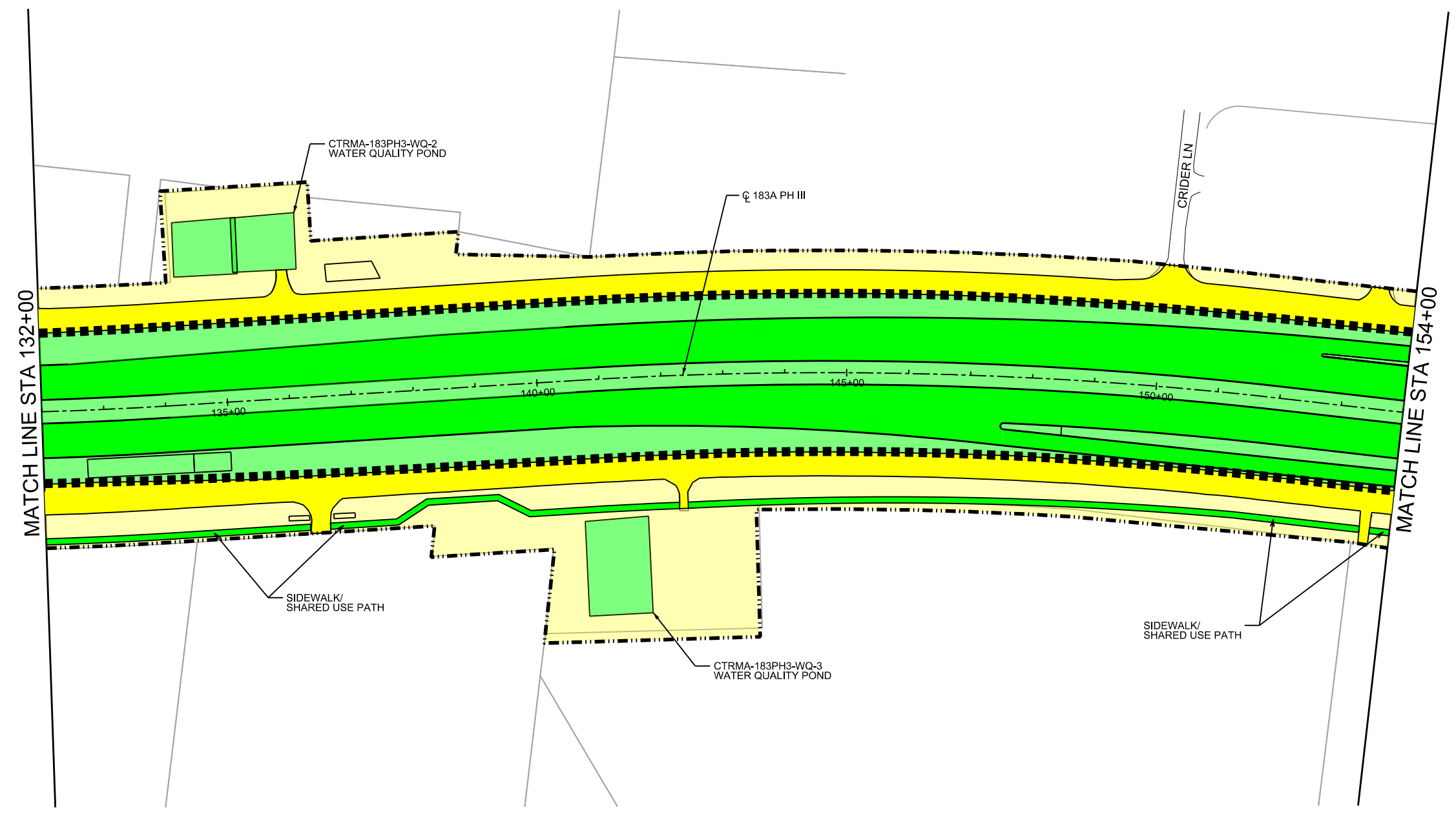


LEGEND

- LIMITS OF MAINTENANCE
- CTRMA RESPONSIBILITY
- TXDOT RESPONSIBILITY
- TXDOT/CTRMA DEMARCATION LINE

NOTES:

1. MAPS ARE BASED ON THE MOST CURRENT AVAILABLE DATA AND ARE SUBJECT TO CHANGE.



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CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

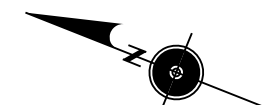
LIMITS OF MAINTENANCE AND OPERATIONS

183A PH III

STA 132+00 TO STA 154+00

SHEET 6 OF 12 SHEETS

DESIGNED BY:	PROJECT NO.			SHEET NO.
STAFF	20PROGXX02M			6
DRAWN BY:	STATE	DIST.	COUNTY	
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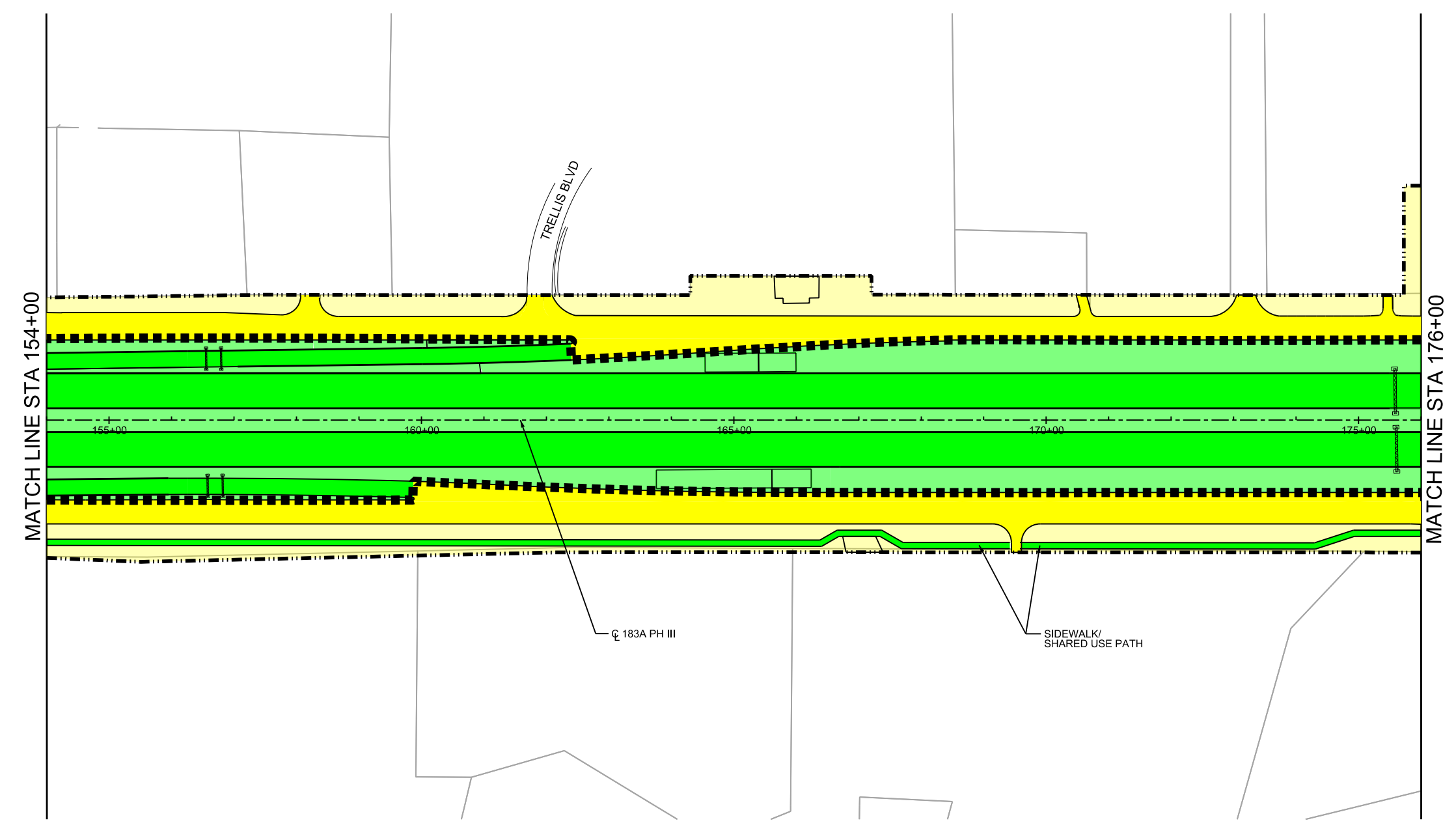


LEGEND

- LIMITS OF MAINTENANCE
- CTRMA RESPONSIBILITY
- TXDOT RESPONSIBILITY
- TXDOT/CTRMA DEMARCATION LINE

NOTES:

1. MAPS ARE BASED ON THE MOST CURRENT AVAILABLE DATA AND ARE SUBJECT TO CHANGE.



DATE: 4/23/2020
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CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

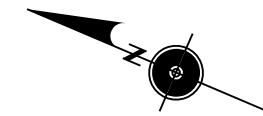
LIMITS OF MAINTENANCE AND OPERATIONS

183A PH III

STA 154+00 TO STA 176+00

SHEET 7 OF 12 SHEETS

DESIGNED BY:	PROJECT NO.			SHEET NO.
STAFF	20PROGXX02M			7
DRAWN BY:	STATE	DIST.	COUNTY	
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CHECKED BY:	CONT.	SECT.	JOB	HIGHWAY NO.
MES	XXXX	XX	XXX	VAR

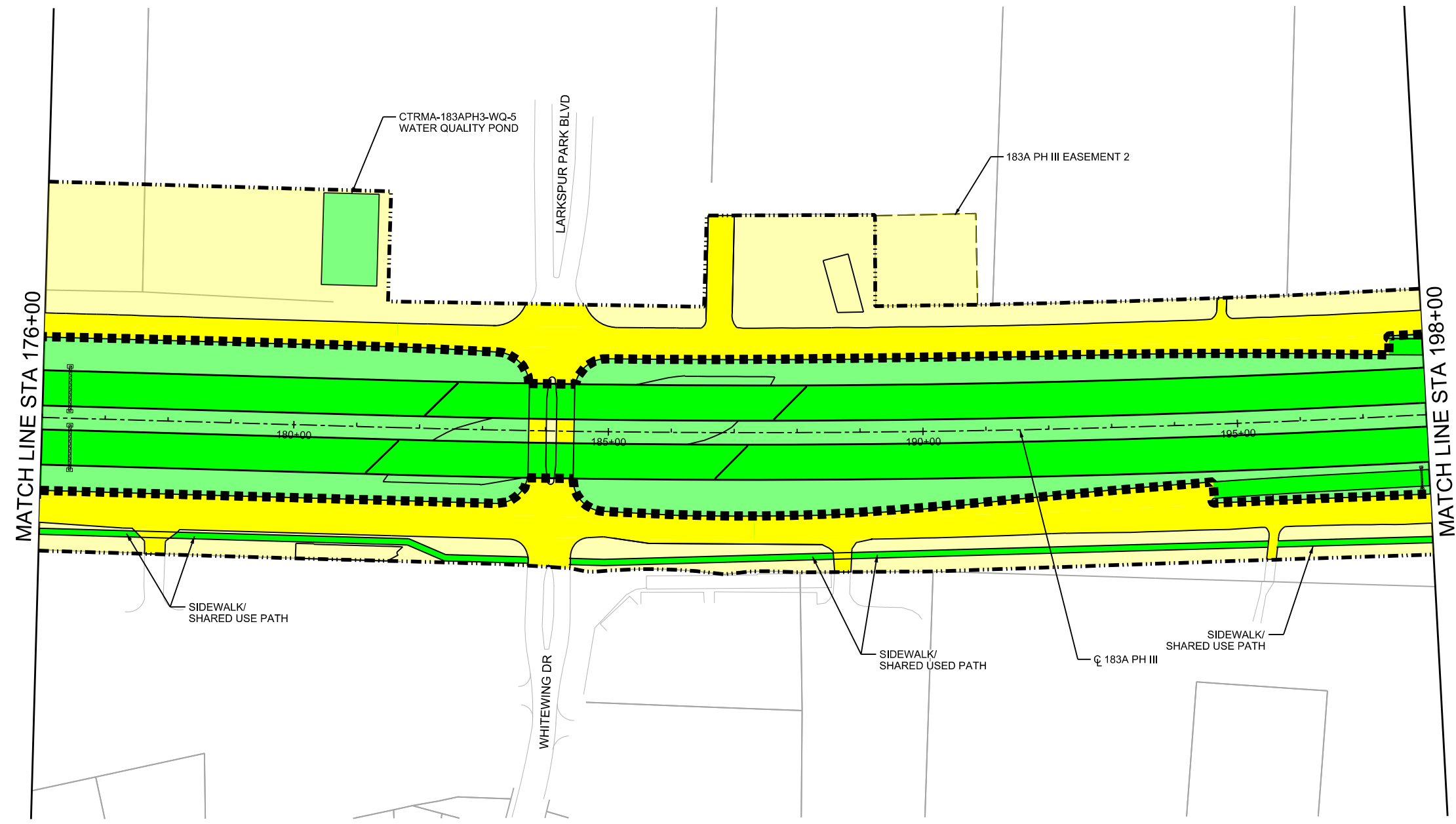


LEGEND


- LIMITS OF MAINTENANCE
- CTRMA RESPONSIBILITY
- TXDOT RESPONSIBILITY
- TXDOT/CTRMA DEMARCATION LINE

NOTES:

1. MAPS ARE BASED ON THE MOST CURRENT AVAILABLE DATA AND ARE SUBJECT TO CHANGE.



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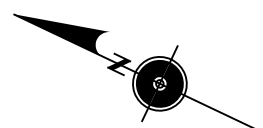
**CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY**

LIMITS OF MAINTENANCE AND OPERATIONS

**183A PH III
STA 176+00 TO STA 198+00**

SHEET 8 OF 12 SHEETS

DESIGNED BY:	PROJECT NO.				SHEET NO.
STAFF	20PROGXX02M				8
DRAWN BY:	STATE	DIST.	COUNTY		
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CHECKED BY:	CONT.	SECT.	JOB	HIGHWAY NO.	
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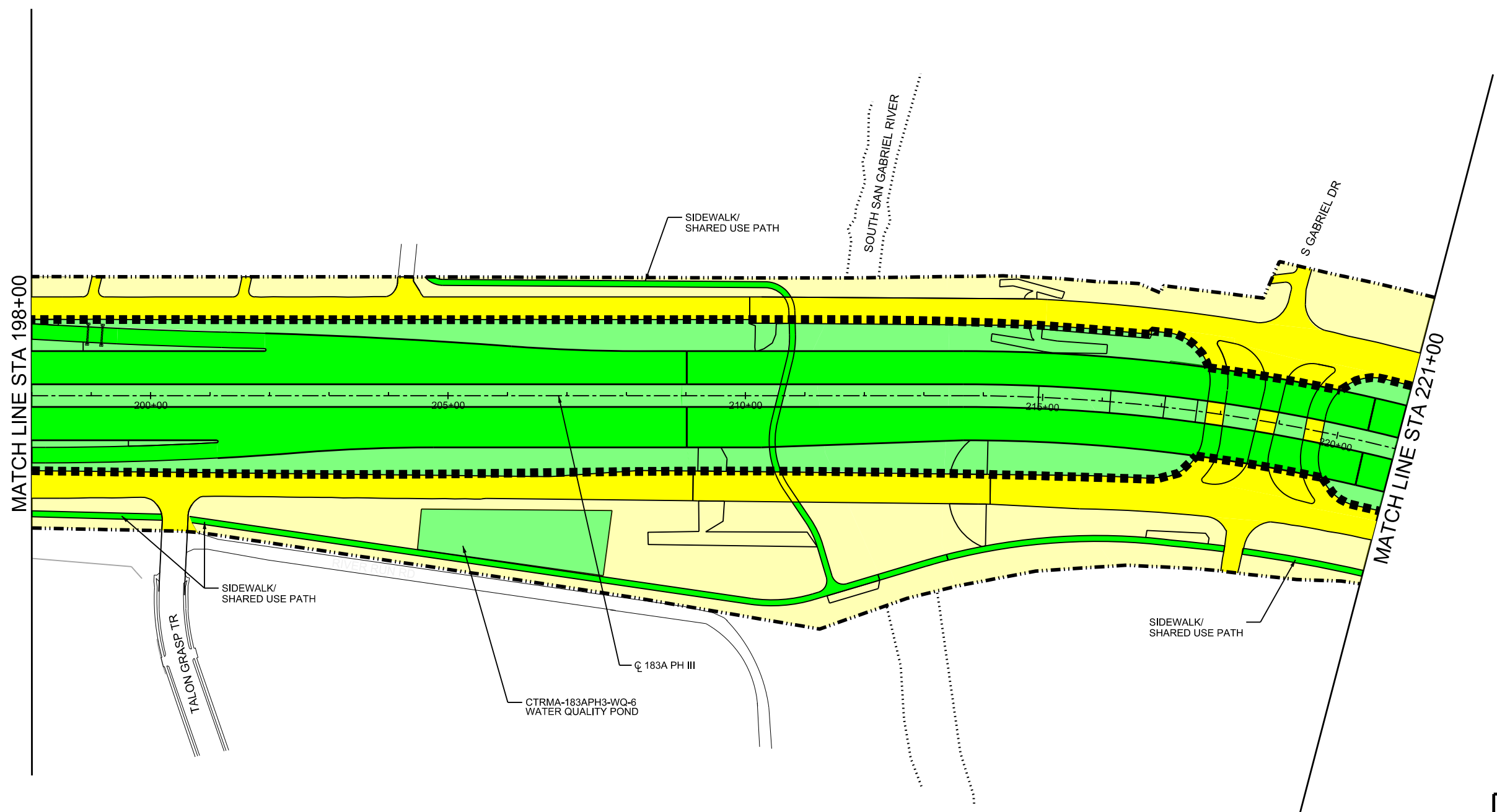


LEGEND

- LIMITS OF MAINTENANCE
- CTRMA RESPONSIBILITY
- TXDOT RESPONSIBILITY
- TXDOT/CTRMA DEMARCATION LINE

NOTES:

1. MAPS ARE BASED ON THE MOST CURRENT AVAILABLE DATA AND ARE SUBJECT TO CHANGE.



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

LIMITS OF MAINTENANCE AND OPERATION

183A PH III
STA 198+00 TO STA 221+00

SHEET 9 OF 12 SHEETS

DESIGNED BY:	PROJECT NO.			SHEET NO.
STAFF	20PROGXX02M			9
DRAWN BY:	STATE	DIST.	COUNTY	
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CHECKED BY:	CONT.	SECT.	JOB	HIGHWAY NO.
MES	XXXX	XX	XXX	VAR

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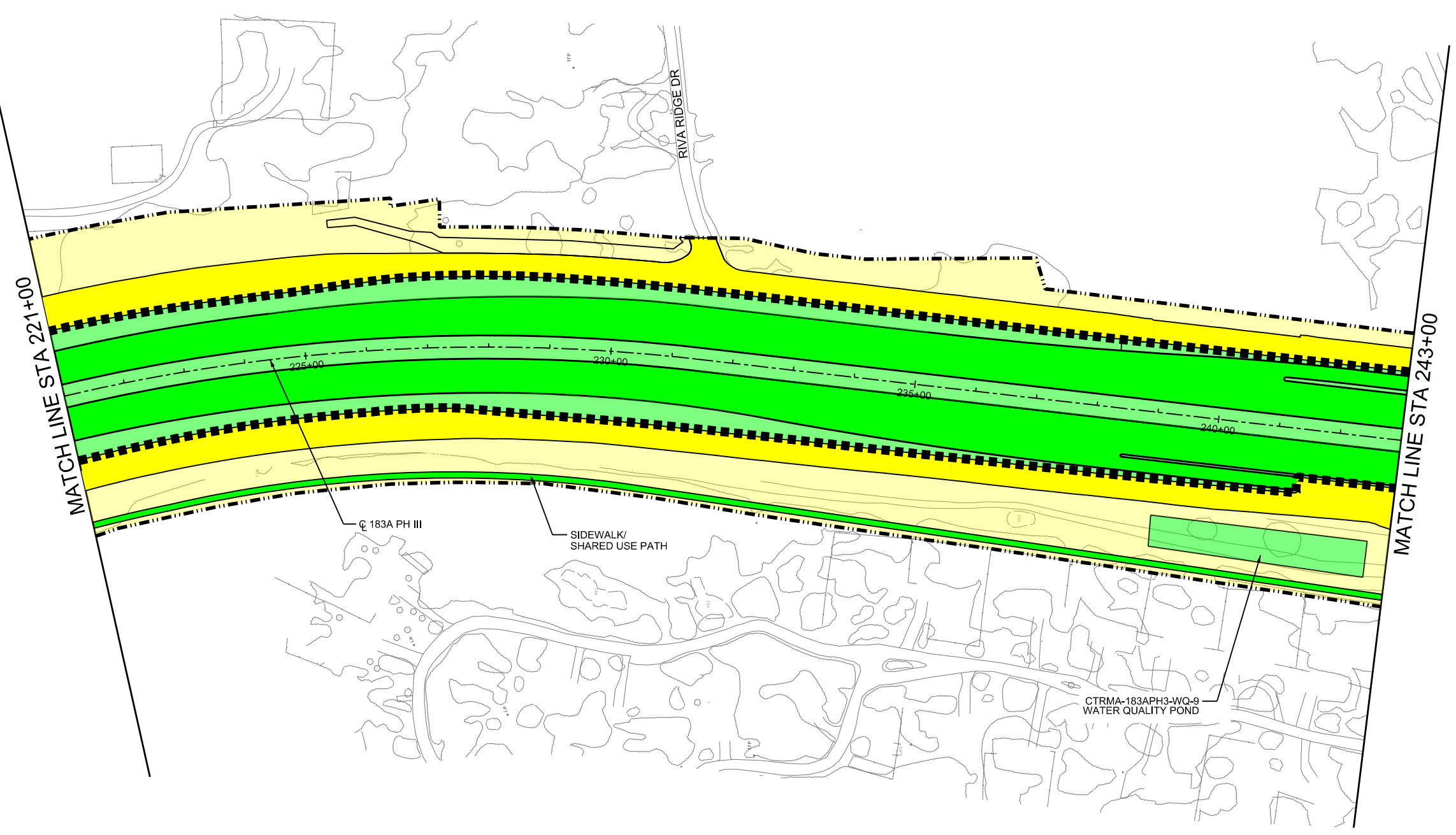


LEGEND

- LIMITS OF MAINTENANCE
- CTRMA RESPONSIBILITY
- TXDOT RESPONSIBILITY
- TXDOT/CTRMA DEMARCATION LINE

NOTES:

1. MAPS ARE BASED ON THE MOST CURRENT AVAILABLE DATA AND ARE SUBJECT TO CHANGE.



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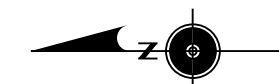


LIMITS OF MAINTENANCE AND OPERATIONS

183A PH III
STA 221+00 TO STA 243+00

SHEET 10 OF 12 SHEETS

DESIGNED BY:	PROJECT NO.				SHEET NO.
STAFF	20PROGXX02M				10
DRAWN BY:	STATE	DIST.	COUNTY		
GLG	TEXAS	AUS	WILLIAMSON		
CHECKED BY:	CONT.	SECT.	JOB	HIGHWAY NO.	
MES	XXXX	XX	XXX	VAR	

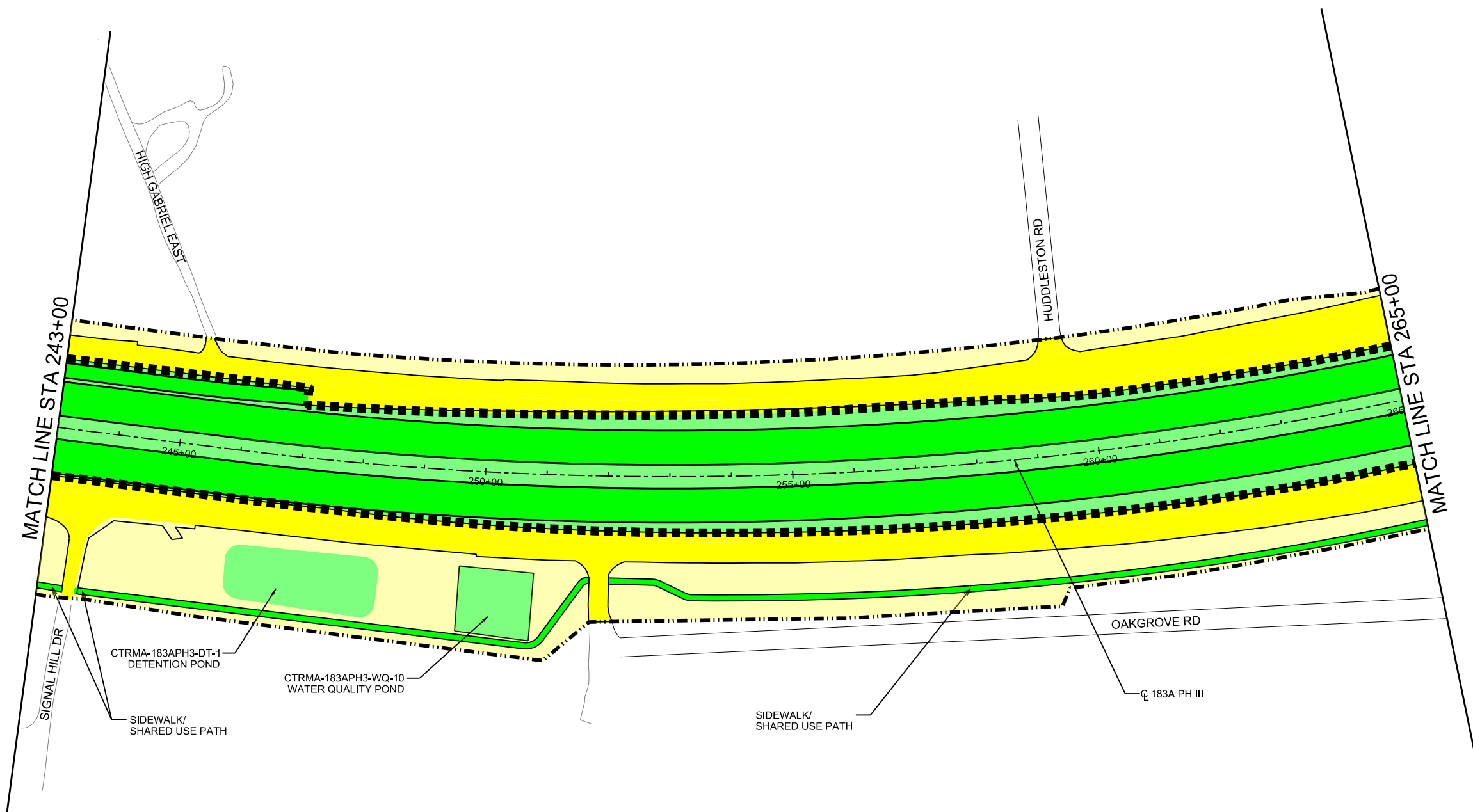


LEGEND

- LIMITS OF MAINTENANCE
- CTRMA RESPONSIBILITY
- TXDOT RESPONSIBILITY
- TXDOT/CTRMA DEMARCATION LINE

NOTES:

1. MAPS ARE BASED ON THE MOST CURRENT AVAILABLE DATA AND ARE SUBJECT TO CHANGE.



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CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY

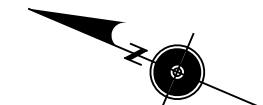
LIMITS OF MAINTENANCE AND OPERATIONS

183A PH III

STA 243+00 TO STA 265+00

SHEET 11 OF 12 SHEETS

DESIGNED BY:	PROJECT NO.			SHEET NO.
STAFF	20PROGXX02M			11
DRAWN BY:	STATE	DIST.	COUNTY	
GLG	TEXAS	AUS	WILLIAMSON	
CHECKED BY:	CONT.	SECT.	JOB	HIGHWAY NO.
MES	XXXX	XX	XXX	VAR

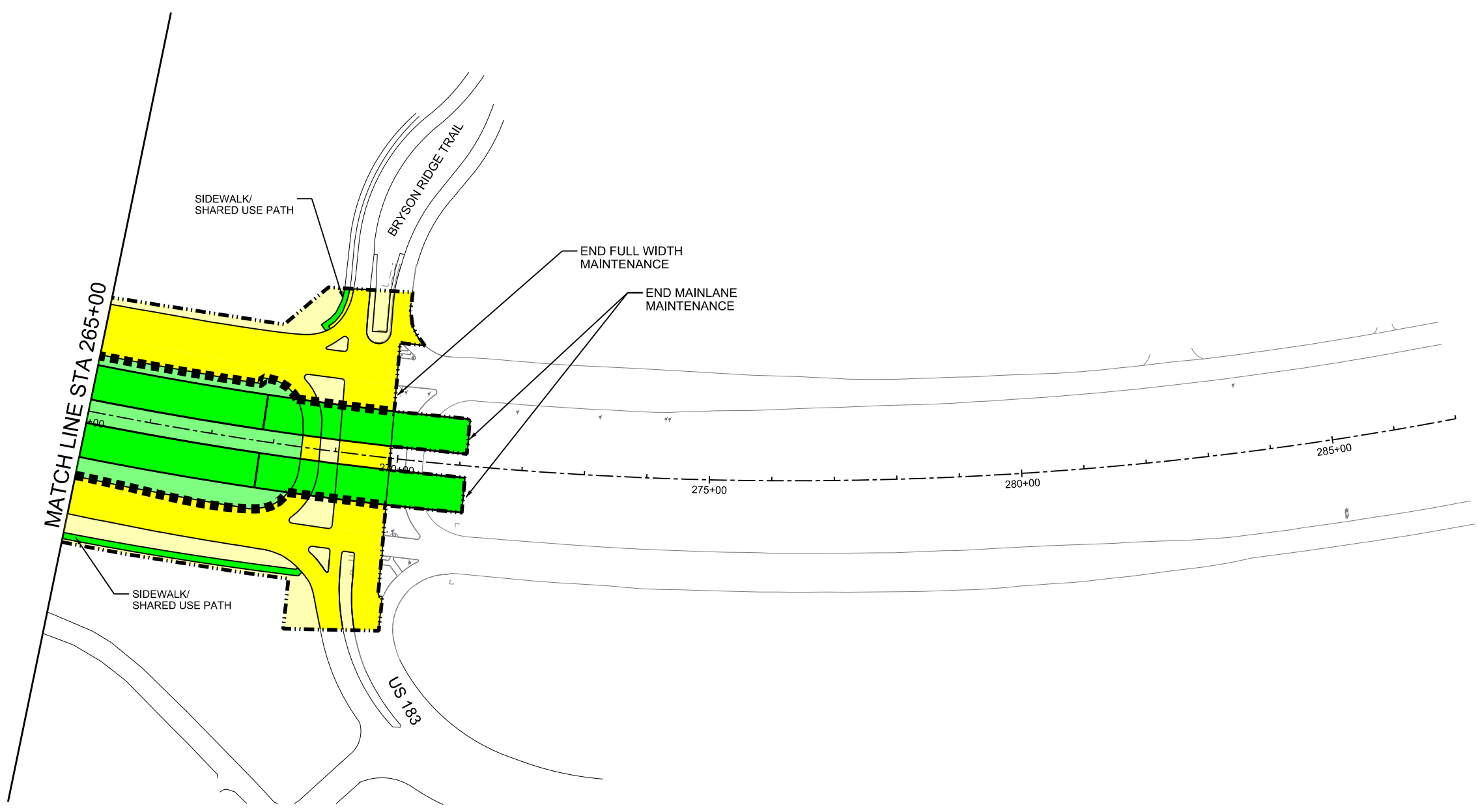


LEGEND

- LIMITS OF MAINTENANCE
- CTRMA RESPONSIBILITY
- TXDOT RESPONSIBILITY
- TXDOT/CTRMA DEMARCATION LINE

NOTES:

1. MAPS ARE BASED ON THE MOST CURRENT AVAILABLE DATA AND ARE SUBJECT TO CHANGE.
2. ALL ADVANCE SIGNS RELATED TO THE TOLL FACILITY ARE INCLUDED IN THE CTRMA MAINTENANCE EXCLUDING SUPPORTS AND TRUSSES.



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LIMITS OF MAINTENANCE AND OPERATIONS
183A PH III
STA 265+00 TO STA 271+00

SHEET 12 OF 12 SHEETS

DESIGNED BY:	PROJECT NO.			SHEET NO.
STAFF	20PROGXX02M			12
DRAWN BY:	STATE	DIST.	COUNTY	
GLG	TEXAS	AUS	WILLIAMSON	
CHECKED BY:	CONT.	SECT.	JOB	HIGHWAY NO.
MES	XXXX	XX	XXX	VAR

EXHIBIT “C”

Debarment Certificate

- (1) The CONTRACTOR certifies to the best of its knowledge and belief, that its principals:
 - (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from covered transactions by any federal department or agency;
 - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public* transaction or contract under a public* transaction; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity* with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - (d) Have not within a three-year period preceding this application/proposal had one or more public* transactions terminated for cause or default.
- (2) Where the CONTRACTOR is unable to certify to any of the statements in this certification, such CONTRACTOR shall attach an explanation to this certification.

*federal, state or local

Signature of Certifying Official

Title

Date

EXHIBIT “D”

Lower Tier Participant Debarment Certification

(Negotiated Contracts)

_____, being duly sworn
(insert name of certifying official)

or under penalty of perjury under the laws of the United States, certifies that

neither _____ nor its
(insert name of lower tier participant)

principals are presently:

- debarred, suspended, proposed for debarment,
- declared ineligible,
- or voluntarily excluded from participation in this transaction by any Federal department or agency.

Where the above identified lower tier participant is unable to certify to any of the above statements in this certification, such prospective participant shall indicate below to whom the exception applies, the initiating agency, and dates of action.

Exceptions will not necessarily result in denial of award, but will be considered in determining contractor responsibility. Providing false information may result in criminal prosecution or administrative sanctions.

EXCEPTIONS:

Signature of certifying Official

Title

Date of Certification



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

September 30, 2020
AGENDA ITEM #11

Discuss and consider awarding a construction contract for the 183A Phase III Project

Strategic Plan Relevance:	Regional Mobility
Department:	Engineering
Contact:	Justin Word, P.E., Director of Engineering
Associated Costs:	\$175,695,656.17
Funding Source:	Project Funds - Plan of finance includes toll revenue bonds and Transportation Infrastructure Finance and Innovation Act (TIFIA) funds.
Action Requested:	Consider and act on the draft resolution

Project Description - The Mobility Authority is proposing to extend 183A north from Hero Way to north of SH 29 to accommodate forecasted traffic volumes along the US 183 corridor. The 6.6-mile Phase III proposed tollway project will initially have two tolled lanes in each direction with an option to widen to three lanes in the future. The proposed tollway will be located mostly in the existing right-of-way within the median of the US 183 corridor. The extension will also feature a shared use path north from Hero Way to the proposed Seward Junction Loop project.

Previous Actions/Brief History of the Project/Program -

- November 30, 2016 - the Authority approved Work Authorization No. 5 with WSP USA Inc. for schematic design and environmental services on the 183A Phase III Tollway Project.
- April 2017 - the Authority negotiated and executed the interim (design phase) Project Development Agreement (PDA) with the Texas Department of Transportation (TxDOT).
- January 2019 - the Authority approved a contract with Rodriguez Transportation Group for professional engineering design services.
- June 13, 2019 - public hearing was held.
- August 19, 2019 - Finding of No Significant Impact (FONSI) was issued for the project by TxDOT.

- October 30, 2019 - the Board exercised the option of the Mobility Authority under state law to develop, finance, construct, and operate the 183A Phase III Project as a toll project. The Board also added the Project to the Mobility Authority Turnpike System.
- August 27, 2020 -the Texas Transportation Commission approved connection to State Highway system and authorized the Executive Director of TxDOT to negotiate and execute a project development agreement for the project.

Construction Contract Procurement Timeline

- August 7, 2020 Advertised project
- August 19, 2020 Pre-bid meeting
- September 17, 2020 – Bid Opening

Bids

A total of 5 bids were received. Four bids were responsive. The responsive bids range from \$175,695,656.17 to \$203,624,090.88 as shown in the table below.

<u>Contractor</u>	<u>Bid Price</u>
Austin Bridge & Road, LP	\$181,944,638.57
Balfour Beatty	\$203,624,090.88
The Lane Construction Corp	\$175,695,656.17
Webber LLC	\$181,681,620.02

The lowest responsive and responsible bidder is the Lane Construction Corporation at \$175,695,656.17. The engineer’s estimate was \$174,650,000.

These bids are currently under review by TxDOT for concurrence with the recommendation. Therefore, staff is requesting approval to award the contract to the contractor with the lowest responsive and responsible bid conditioned on receiving concurrence from TxDOT.

Financing -Funding is planned to be provided through a combination of toll revenue bonds and Transportation Infrastructure Finance and Innovation Act (TIFIA) funds.

Action requested - Staff recommends that, conditioned on receiving concurrence from TxDOT, the Board award the contract for construction of the 183A Phase III Project to Lane Construction Corporation and that upon receiving concurrence from TxDOT the Board authorizes the Executive Director to negotiate and execute an agreement with Lane Construction Corporation in an amount not to exceed \$175,695,656.17 for construction of the 183A Phase III project.

Backup Provided:

Draft Resolution

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

RESOLUTION NO. 20-0XX

AWARDING A CONSTRUCTION CONTRACT FOR THE 183A PHASE III PROJECT

WHEREAS, the Central Texas Regional Mobility Authority (Mobility Authority) received environmental approval for the development of an approximately 6.6-mile extension of 183A north from Hero Way to north of SH 29 consisting of two initial tolled lanes in each direction that will ultimately be widened to three-tolled lanes in each direction in the future (the “183A Phase III Project”) through the issuance of a Finding of No Significant Impact by the Texas Department of Transportation (TxDOT), dated August 19, 2019; and

WHEREAS, by Resolution No. 19-059, dated October 30, 2019, the Board exercised its option as a local toll project entity to develop, finance, construct, and operate the 183A Phase III Project; and

WHEREAS, by Resolution No. 19-060, dated October 30, 2019, the Board added the 183A Phase III Project to the Mobility Authority Turnpike System; and

WHEREAS, the Executive Director advertised for bid proposals on August 7, 2020, and subsequently received four responsive bids for construction of the 183A Phase III Project; and

WHEREAS, Mobility Authority staff reviewed the bids in accordance with the Mobility Authority’s procurement policies and determined that the apparent low bid in the amount of \$175,695,656.17 was submitted by The Lane Construction Corporation and that the bid is responsive, mathematically correct, and materially balanced; and

WHEREAS, contingent upon receiving concurrence from TxDOT, the Executive Director recommends awarding a construction contract for the 183A Phase III Project to The Lane Construction Corporation; and

WHEREAS, the Executive Director requests that the Board authorize him to negotiate and execute a contract with the The Lane Construction Corporation in the amount of \$175,695,656.17 for the construction of the 183A Phase III Project, following receipt of TxDOT’s concurrence with the contract award.

NOW THEREFORE, BE IT RESOLVED that contingent upon receiving concurrence from TxDOT, the Board hereby approves the award of a construction contract for the 183A Phase III Project to The Lane Construction Corporation; and

BE IT FURTHER RESOLVED, upon receipt of TxDOT’s concurrence with the contract award, the Executive Director is hereby authorized and directed to negotiate and execute a contract with

the The Lane Construction Corporation in the amount of \$175,695,656.17 for the construction of the 183A Phase III Project

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 30th day of September 2020.

Submitted and reviewed by:

Approved:

Geoffrey Petrov, General Counsel

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



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

September 30, 2020
AGENDA ITEM #12

Discuss and consider approving
Work Authorization No. 1 with
Cofiroute USA, LLC for the automation
of the Habitual Violator Program

Strategic Plan Relevance:	Regional Mobility
Department:	Operations
Contact:	Tracie Brown, Director of Operations
Associated Costs:	\$498,680
Funding Source:	Toll Revenues
Action Requested:	Consider and act on draft resolution

Summary:

Background - In September 2018 the Mobility Authority's Board of Directors approved the implementation of a habitual violator program. Texas law describes habitual violators as those customers who have accumulated 100 or more unpaid tolls in aggregate in a 12-month period and have been issued two notices of nonpayment. Habitual violator enforcement remedies include publication of the toll scofflaw's name, a vehicle registration block and a ban of the vehicle's use of the entity's toll facilities. Vehicle impoundment is possible for those who violate the vehicle prohibition.

The goals of the Mobility Authority's habitual violator program are to ensure that all users pay their fair share, encourage prompt payment and promote electronic toll tag usage. The Authority's habitual violator program was deployed in July 2019. The first set of vehicles prohibitions were approved in November 2019 by the Authority's Board of Directors. To date, approximately 2,500 unique vehicles have been included in the Mobility Authority's habitual violator program.

A recent independent analysis found that the program has resulted in more payments and reduced toll road usage by violators deemed as "habitual" after remedy letters. To continue the success of the program and address these chronic violators on a wider and more systematic scale, system enhancements are required to automate the process.

Current Action - Since the deployment of the habitual violator program in July 2019, the supporting operating processes and business requirements have been continually refined. These updated specifications have resulted in a need for automating the following processes in order to improve the program's performance:

- applying the approved \$50 Enhanced Enforcement Administrative Fee to each HV account the determination step;
- integrating the implementation and removal of a DMV registration hold;
- tracking requests for administrative hearing and updating customer records with hearing results;
- implementing the courtesy pre-determination letter;
- integrating with the Authority's license plate reader technology to allow for the quick upload of a prohibited vehicle hot list;
- alerting customers of their habitual violator status when they log into the payment portal; and
- developing a series of reports to report on certain elements of the habitual violator program.

The system will also facilitate the creation and tracking of payment plans and to monitor payment plan defaults. The total cost for these process and system enhancements is \$498,680.

Previous Actions - In December 2018 the CTRMA Board of Director approved an amendment of the Agreement with CUSA outlining CUSA's expected recompense for processing and collecting Pay By Mail toll transactions paid from post-paid accounts, overpayments and prior to notice generation. The amendment also added two new pay items that to the original pricing schedule, compensation for insufficient funds and compensation for out of state license plate lookups.

In July 2019 the Board approved a second amendment modifying the compensation schedule to support extended call center hours, the administration of the Qualified Veteran Program and habitual violation enforcement support.

Staff Recommendation - Staff recommends approval of Work Authorization No. 1 with Cofiroute USA, LLC to facilitate the automation of the habitual violator program.

Backup Provided - Draft Resolution
Draft Work Authorization No. 1

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

RESOLUTION NO. 20-0XX

**APPROVING WORK AUTHORIZATION NO. 1 WITH COFIROUTE USA, LLC FOR
THE AUTOMATION OF THE HABITUAL VIOLATOR PROGRAM**

WHEREAS, by Resolution No. 18-005, dated February 28, 2018, the Board approved an agreement with Cofiroute USA, LLC for pay by mail, violations processing, collections and customer services (the “Agreement”); and

WHEREAS, by Resolution No. 18-049, the Board adopted a Habitual Violator Policy for the implementation of toll enforcement remedies; and

WHEREAS, the Mobility Authority now desires to automate certain elements of the Pay By Mail Back Office System to further enhance the performance of the Habitual Violator Program; and

WHEREAS, the Executive Director and Cofiroute USA, LLC have negotiated proposed Work Authorization No. 1 under the Agreement in an amount not to exceed \$498,680.00 for the automation of certain processes of the Habitual Violator Program; and

WHEREAS, the Executive director recommends that the Board approve Work Authorization No. 1 with Cofiroute USA, LLC in the form or substantially the same form as attached hereto as Exhibit A.

NOW THEREFORE, BE IT RESOLVED, that the Board approves Work Authorization No. 1 with Cofiroute USA, LLC in an amount not to exceed \$498,680 for the automation of the Habitual Violator Program; and

BE IT FURTHER RESOLVED that the Board authorizes the Executive Director to finalize and execute Work Authorization No. 1 with Cofiroute USA, LLC on behalf of the Mobility Authority in the form or in substantially the same form as is attached hereto as Exhibit A.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 30th day of September 2020.

Submitted and reviewed by:

Approved:

Geoffrey Petrov, General Counsel

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

Exhibit A

PAY BY MAIL SERVICES



***WA-001 - Habitual Violator Program Automation
August 12, 2020***

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1 INTRODUCTION

The Central Texas Regional Mobility Authority (“CTRMA”) has requested certain changes to its Pay By Mail Back-Office System in order to make enhancements to the Habitual Violators (“HV”) processes and supporting Payment Plan functionality. This Work Authorization outlines the scope of these enhancements and agreed upon compensation. Any terms not defined in this Work Authorization will have the meanings defined in the Master Agreement between CTRMA and Cofiroute. This Work Authorization is subject to the terms of the Master Agreement, including without limitation its provisions regarding obligations, variations, coordination, delay and force majeure.

2 PURPOSE

The Habitual Violator (HV) program identifies customers who have unpaid transactions for a single license plate within a 365-day timeframe per Senate Bill 1792. The HV program should be able to implement for both agencies. Customers will provide one warning letter (Pre-Determination) and notification of Habitual Violator (Determination) with options for resolving the outstanding balance. The customer may submit a request for an administrative hearing. Customers take no action to resolve their delinquent account in response to the Pre-Determination and Determination notifications, they are subject to an additional enforcement fee, a vehicle registration hold placed with the Texas Department of Motor Vehicles (TxDMV), and a vehicle prohibition on all Authority toll facilities. Payment Plans functionality will also be implemented in the BOS due to dependencies in the HV business rules allowing HV accounts relief from some HV remedies (Registration Hold) when a given percentage threshold of the payment plan are paid.

3 SCOPE

The PBM Back-Office System needs to be updated to support the HV requirements defined in the latest business rules document section 2.19, Habitual Violator Business rules (“HV Rules”, available at [The Mobility Authority Business Rules 2.11_Feb_2020.docx](#)). Notable requirements of the Habitual Violator automation are:

1. Identify the all eligible HV customers with a minimum configurable number (100) of unpaid trips with the transactions aged and mailed to Notice of Toll Violation letters in the last 365 days. Flag any license plate that has multiple account numbers for the exception queue.
2. Implement the changes related to HV determination business rules, track the payments received after the predetermination and in every stage thereafter to make sure customer still qualifies to be in HV determination or Registration hold before aging further.

3. Apply a \$50 Enhanced Enforcement Administrative (EEA) Fee to each HV account during HV determination and update NTV template for the \$50 EEA Fee in invoices.
4. Integrate the implementation of DMV registration hold and removal of registration hold.
5. Implement the CUSA user interface in the CSC and TVC application module that will reflect any administrative hearings, such as hearing requests, hearing results updates, adjusting the appeal fee, based on CTRMA's approval handling the finance integration and allowing certain payments in the payment screen. (Note: This administrative hearing fee is applicable to CTRMA only).
6. Implement the following letters with print vendor CSG
 - a. Predetermination letter for both agencies
 - b. Determination letter for both agencies
 - c. DMV Registration hold letter for both agencies
 - d. Prohibition notice letter for CTRMA
 - e. Termination letter for both agencies
 - f. DMV registration removal letter for both agencies
 - g. Prohibition removal letter for CTRMA
7. Implement the following user interface changes for handling the business rules defined in section 2.19, Habitual Violator Business rules in the document ([The Mobility Authority Business Rules 2.11_Feb_2020.docx](#)).
 - a. HV screens / View screens
 - b. HV status screens driven based on user privileges
 - c. Upload approved prohibition list
 - d. HV configurations related screen
 - e. Manual review screen for CSR with plates having multiple account numbers
8. Implement business rule change to stop sending an account to Collections if customers are identified as a Habitual Violator
9. Implement business rule changes to the existing invoice system related to HVs
 - a. Stop aging the transaction which is already in NTV (Notice of Toll Violation)
 - b. Continue invoices as NTV
 - c. Stop sending invoices if there are no transactions/fee for a billing period
10. Exclude the HV customers from pre-court or court selection
11. Integrate with Vigilant vendor and provide ALPR (Automatic License Plate Recognition) hot list for CTRMA agency as per the ICD in Appendix 2 ([ALPR Hot List ICD v1.1.docx](#))
12. Create reports related to HV as defined in Appendix 4, ([HV Report Requirements.xlsx](#))
 - a. Vehicle registration hold report
 - b. Prohibition notice reports
 - c. Report on different HV statuses

13. Show an indicator of text to display the HV Status in the Customer portal when customer logs in. CTRMA and CUSA to provide the approved text.

14. Optional Item #1: System should support customers registered in a configurable list of counties to be excluded from the list sent to the Texas DMV for registration hold.

The PBM Back-Office System needs to be updated to support the payment plans requirements defined in the latest business rules document, Appendix 1 ([The Mobility Authority Business Rules 2.11_Feb_2020.docx](#)) and also further described in the Payment Plan Change Description document, Appendix 3 ([PaymentPlanChangeDescription.docx](#)). Notable requirements are:

15. Payment Plans will be created for all outstanding unbilled tolls and fees on any account in the CTRMA BOS.

16. Payment plans created in the system will enforce configurable allowable minimum and maximum payment plan balances owed, payment plan term types, term lengths, percentage or fixed amount down payments, and default configuration values.

17. When a payment plan is created all the aging will be stopped/held other than the initial invoice, toll bill notice (TBN). However, if a TBN remains unpaid after the due date, the payment plan is considered defaulted.

18. Upon Default, the transactions will resume aging based on their last invoice due date. For HV customers, the aging will start from the point when the account went into HV.

19. Notifications would be sent to customer's mobile and email address upon creation of the payment plan, just prior and on default.

20. A new BOS Payment Plan report will be created providing Program and Agency Summary information along with the ability to drill down and provide the following detail data: Account Number, Customer Name, Payment Plan Balance, Collected Amount, % paid, Outstanding Balance, created date, next payment date, status at a minimum.

21. The Collections interface will be updated to provide notifications to PennCredit when accounts go into HV status and when payment plans have been established.

3.1 ACTIONS TO BE TAKEN AND IMPACTED AREAS:

- Update the ICD with print vendor to include the new templates identified and update the CTRMA BOS to support them. Updates to the existing NTV Template to show the EEA fee element in transaction details section.
- Perform integration testing with print vendor related to HV changes.
- Implement integration with vigilant vendor to provide ALPR hot list details and SFTP timings
- Validate and test the collection interface corresponding to HV business rules and Payment Plans updates.

- Integrate HV process with DMV probe request, registration hold, and registration release automated processes.
- Implement payment plans screens to allow for creation, updates, payments, and past payment plans.
- Internal QA of the changes and regression testing of the application before presenting it to CUSA/CTRMA for the acceptance.
- Update design documents and training manuals as needed

3.2 AFFECTED SUBSYSTEMS

The following BOS subsystems have been identified as areas that will be impacted by the change in the approach for application of the collections fee. Those systems include:

- Collection Transaction Processor and Batch Creation
- CSC Portal
- TVC Module
- Collections Interface modifications to exchange information between the vendor and the PBM system
- External or Self-service portal
- Court and Habitual Violator modules changes related to collections amount calculations
- Write-off job
- Reports

3.3 ASSUMPTIONS

1. Customers requesting Hearing/Appeal are handled through operational process.
2. CUSA will download the eligible transactions list and either
 - a. provide input to CTRMA board
 - b. or upload the approved list through operational process. System will facilitate to download eligible prohibition list / upload the approved prohibition list.
3. Providing evidences to Justice of Peace and/or County courts is an operational process.
4. For the customers who are removed from HV process due to disputes, the transactions that stopped aging at NTV will resume aging and will be moved to Collections as per the regular invoice cycle.
5. System will facilitate removal of registration hold/removal from prohibition list. There will not be any approval process for these actions. The letter will be generated in the nightly batch process and will be sent to the print vendor CSG.
6. CTRMA TBOS will assess the court filing fee (\$100) from both court and HV customer when the payment is received and will update the appropriate general ledger account when it is paid to the court at the time of hearing. Submitting the court filing fee to the court and any refund of the court filing fee back to the customer is outside of CTRMA BOS. If the customer is not guilty,

any refund of the administrative fee is done outside of the CTRMA BOS and there will not be any refund entries in the BOS. Administration Hearing Fees will be tracked separately from Court Filing Fees.

7. HV Turn On/Off condition. If HV is already ON and customers are in HV process and for some reason the configuration is turned OFF for one of the agencies, new HV process will stop immediately on the day of the configuration effective date. However, the change of the BOS configuration will not impact the customers who are already in the middle of HV process and the existing HV customer accounts would continue to age accordingly.

8. All the letter templates would be same for both CTRMA and NETRMA and configurable by agency.

9. View only manual screen for CSR to review license plates with multiple accounts.

10. The interface documentation updates are proposed in the Payment Plan Change Description document, Appendix 3 ([PaymentPlanChangeDescription.docx](#)). PennCredit must be able to process the updated files.

11. External website changes will be limited to the HV status indicator and to allow payment plan payments to be accepted for all accounts.

12. Any new transactions posting after a payment plan is set up in the BOS would be part of the Toll Bill Notice as per the current process. The payment plan amount would not be shown in the previous charges section of the Toll Bill.

13. Once a payment plan is Defaulted, the outstanding payment plan amount would be shown in the previous charges section of the subsequent notice or bill. Per the current process the system will generate the notice (TBN, 30 days past due or 60 days past due) based on the oldest transaction stage associated with the payment plan.

14. Payment Plan balance would be a separate line item in the TBN notice and not be included in the Total Amount Due in the Toll Bill Notice.

15. When a payment is done for an outstanding TBN (in the CSC portal, external portal or lockbox via current functionality), it would be applied to that invoice only.

16. There would be a provision to pay the payment plan amount separately in customer portal and in the CSR portal.

17. Any account level payment follows the current FIFO order business rules.

18. Dispute transactions would also be included in the payment plan balance.

19. Any approved disputes, other adjustments or payment reversals would be adjusted with the last term amount of the active payment plan.

20. Once the payment plan is fully paid, the application would wait for a configurable number of days before updating the payment plan status as completed.

21. Documentation to be updated: Detailed Design Document, TVC, SAC and Reports User Manuals

4 Costs

	Rate*	Estimated Hours	Cost
Project Manager	\$155	178	\$27,590.00
Developer	\$110	1825	\$200,750.00
Lead Developer	\$145	780	\$113,100.00
QA Lead	\$125	320	\$40,000.00
QA	\$105	984	\$103,320.00
Lead Developer/Infra support	\$145	96	\$13,920.00
Total		564	\$498,680.00

* Note – Rates identified above have been agreed to between CTRMA and Cofiroute USA as per Appendix D of the PBM Agreement

* Additional: Optional Item 1, specific to NETRMA only: Configuration to allow for customers to be excluded from the Registration

Hold based upon their county using the ZIPFOURce interface to determine the county where registered.

	Rate*	Estimated Hours	Cost
Developer	\$110	56	\$6,160.00
QA	\$105	14	\$1,470.00
Total		70	\$7,630.00

4.1 PAYMENT MILESTONES

Milestone	Amount	Date
Notice to Proceed	10%	NTP Date
Design Approved	10%	Per Project Schedule
Development Completed	30%	Per Project Schedule
Testing Approved	20%	Per Project Schedule
User Manual Updates and Training	10%	Per Project Schedule
Go Live	20%	Per Project Schedule

Total Cost, including optional Item 1: \$506,310.00

Estimated time to completion: 20 weeks from NTP

5 Acronyms and Definitions

BOS	Back Office System
BR	Business Requirement
CSC	Customer Service Center
CTRMA	Central Texas Regional Mobility Authority
CUSA	Cofiroute USA
DDD	Detailed Design Document
FAT	Factory Acceptance Test
HV	Habitual Violator
NETRMA	North East Texas Regional Mobility Authority
NTP	Notice to Proceed
PBM	Pay By Mail
PP	Payment Plan
QA	Quality Assurance
QC	Quality Control
Vendor	Cofiroute USA

6 Final Approvals

CTRMA Representative

Date

Cofiroute USA Representative

Date



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

September 30, 2020
AGENDA ITEM #13

Authorize negotiation and execution of a contract to purchase a certain parcel, utility easement or other property interest for the 183A Phase III Project

Strategic Plan Relevance: Regional Mobility
Department: Engineering / Law
Contact: Justin Word P.E., Director of Engineering / Geoff Petrov, General Counsel
Associated Costs: N/A
Funding Source: N/A
Action Requested: Consider and act on draft resolution

Summary:

The Mobility Authority must acquire certain parcels, utility easements and/or related property interests ("Property") from real estate that abuts or is near the existing 183A Phase III Project right-of-way. Each owner of a parcel or property interest identified has received an official written offer to purchase the Property for an amount determined by an independent, professional appraiser. The Mobility Authority or its agent is required to pay no less than the offer made for the Property.

The parcels for your consideration and action at this meeting are:

- A. Parcel 3E of the 183A Phase III Project, a temporary construction easement of 996 square feet and a permanent waterline easement taking of 20,500 square feet from a 11.34-acre parcel of real estate, **owned by Tiny Foster**, and located at 1880 Hwy 183, Leander, TX 78641.

Backup: To be provided at the Board Meeting



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

September 30, 2020
AGENDA ITEM #14

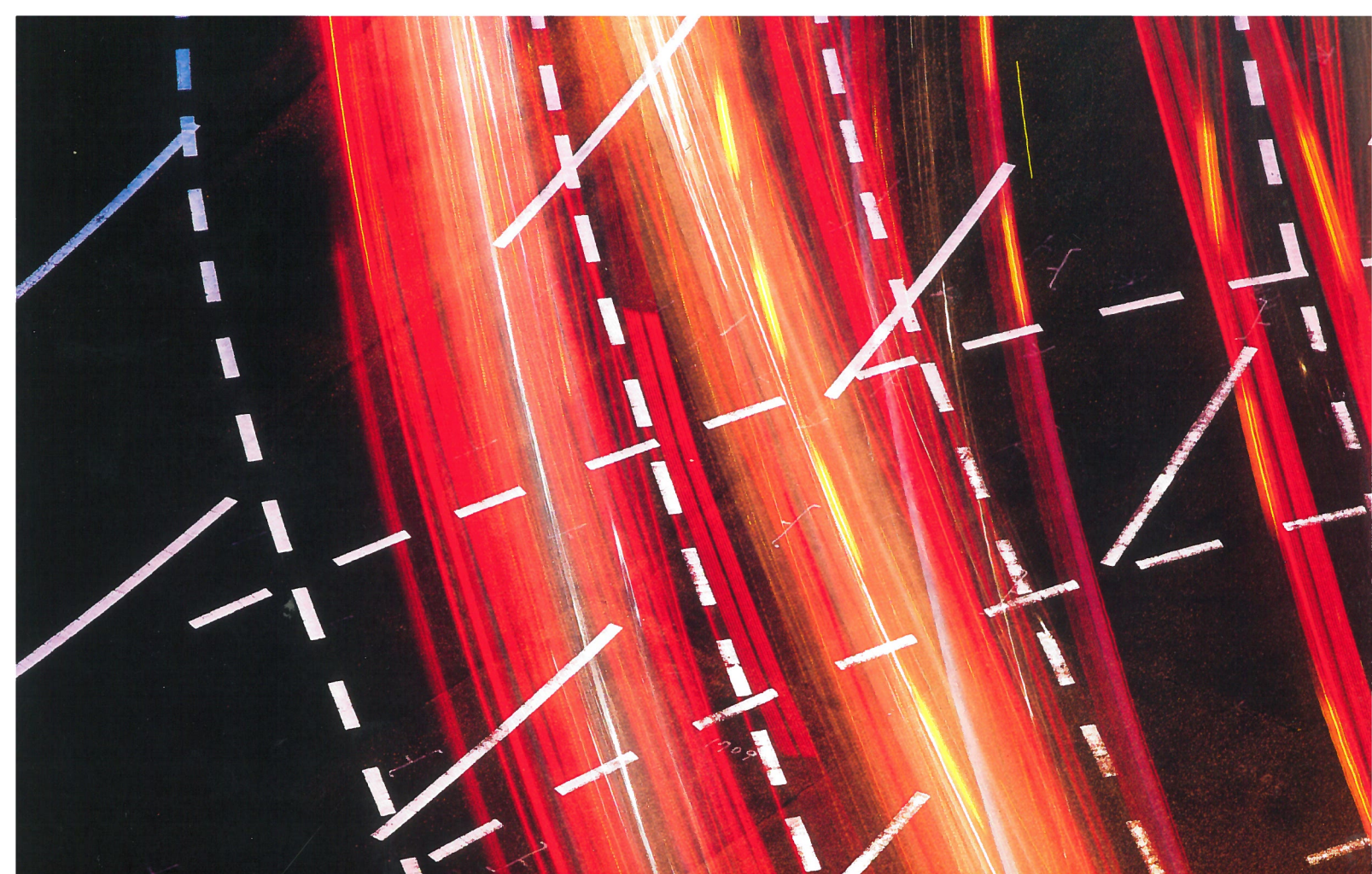
Presentation regarding TxDOT/TxTag
back office transition

Strategic Plan Relevance:	Deliver on commitments to our customers and our Investors
Department:	Operations
Contact:	Tracie Brown, Director of Operations
Associated Costs:	N/A
Funding Source:	N/A
Action Requested:	Briefing and Board Discussion Only

Summary:

This item is to provide an update on the Texas Department of Transportation's (TxDOT) project to replace its back office and customer service toll transaction/account processing system (Texas' Next Generation Tolling System). TxDOT is planning to transition services from its current provider, Conduent, to IBM/SAP in late October / early November. This will affect customers and interoperable partners (i.e., CTRMA, FBCTRA, HCTRA, NTTA, Oklahoma Turnpike and Kansas Turnpike). TxDOT, the Mobility Authority and other affected agencies have plans in place to manage the transition. A representative from TxDOT will provide a brief update on their plans.

Backup Provided - Presentation
TxDOT Mid-Project Update



Building Texas' Next Generation Tolling System

Texas Department of Transportation, IBM, and SAP Mid-Project Update



The Problem

TxDOT's tolling program needed a new system to better handle the growing needs of the communities it serves

High Growth

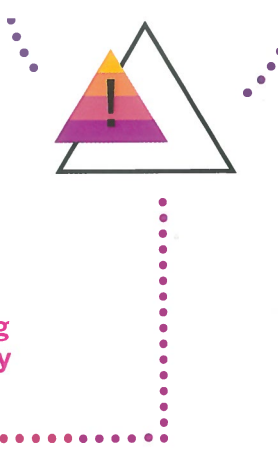
of transactions growing 13% each year

Greater Complexity

More pricing rules, more roads to support

More Agility

More frequent changes, needing greater efficiency

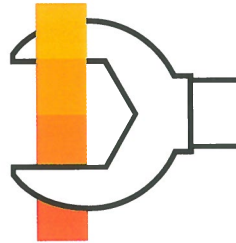


The Solution

Texas' Next Generation Tolling System

IBM is implementing a new, robust system based on key components from SAP:

- **SAP Billing and Revenue Management (BRIM)**, a real-time billing and charging platform, with integrated customer relationship management
- **SAP Customer Experience**, to provide a robust, platform-based approach to web and mobile customer experience
- **SAP Analytics**, for flexible reporting and transparency into key revenue and operational metrics



**Accurate, Flexible,
Scalable, Secure,
Configurable**

Ensures high performance and supports real time transactions through SAP HANA

Protected by SAP's most secure cloud environment SAP NS2

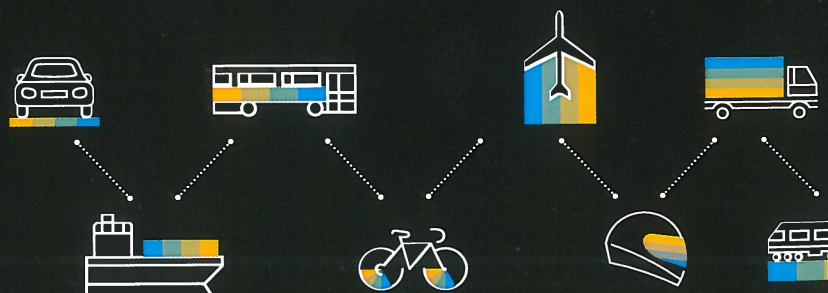


Risk Management Strategy

- 6-month collaborative design process with IBM prior to greenlighting project
- Devoted space for project
- 12 full-time TxDOT employees dedicated to success of project
- Partners, IBM and SAP, devoted to making project successful
- Gartner Group providing oversight on project
- Strong financial controls including granular view of data at general ledger level, backwards traceability from transaction to general ledger, and vice versa.

The Possibilities

- Today – Tolling and Parking | Tomorrow – Any mode of transportation that will be capable of multi-mode billing
- TxDOT can transform the way transportation billing is done both in Texas and worldwide.
 - Potential to be a shared service to eliminate interoperability challenges within the state
 - Ability to automate any channel



Proven Results

Scalability Benchmarks

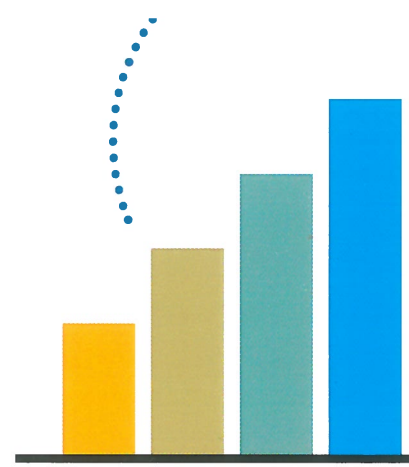
50,000,000 Accounts

100,000 billable items per second

1,175 invoices per second

32% decrease in errors

when A/R and billing are integrated so open items are generated at the same time as the bill
(Source: SAP Performance Benchmarking)



TxDOT Tolling Solution is being built on proven, industry leading technology that is already in use by industries to handle massive scale and transaction frequency (>75K transactions / second)

Major European Motorway Network

625 Million
Billable items per year

Major Tech Company

Over **1.3 Billion** customer accounts managed

500,000 new accounts added every day

Over **1,000** purchase transactions per second - 24x7x365

Major Telco

100 million subscribers in 5 months following launch

16 million Daily Transactions

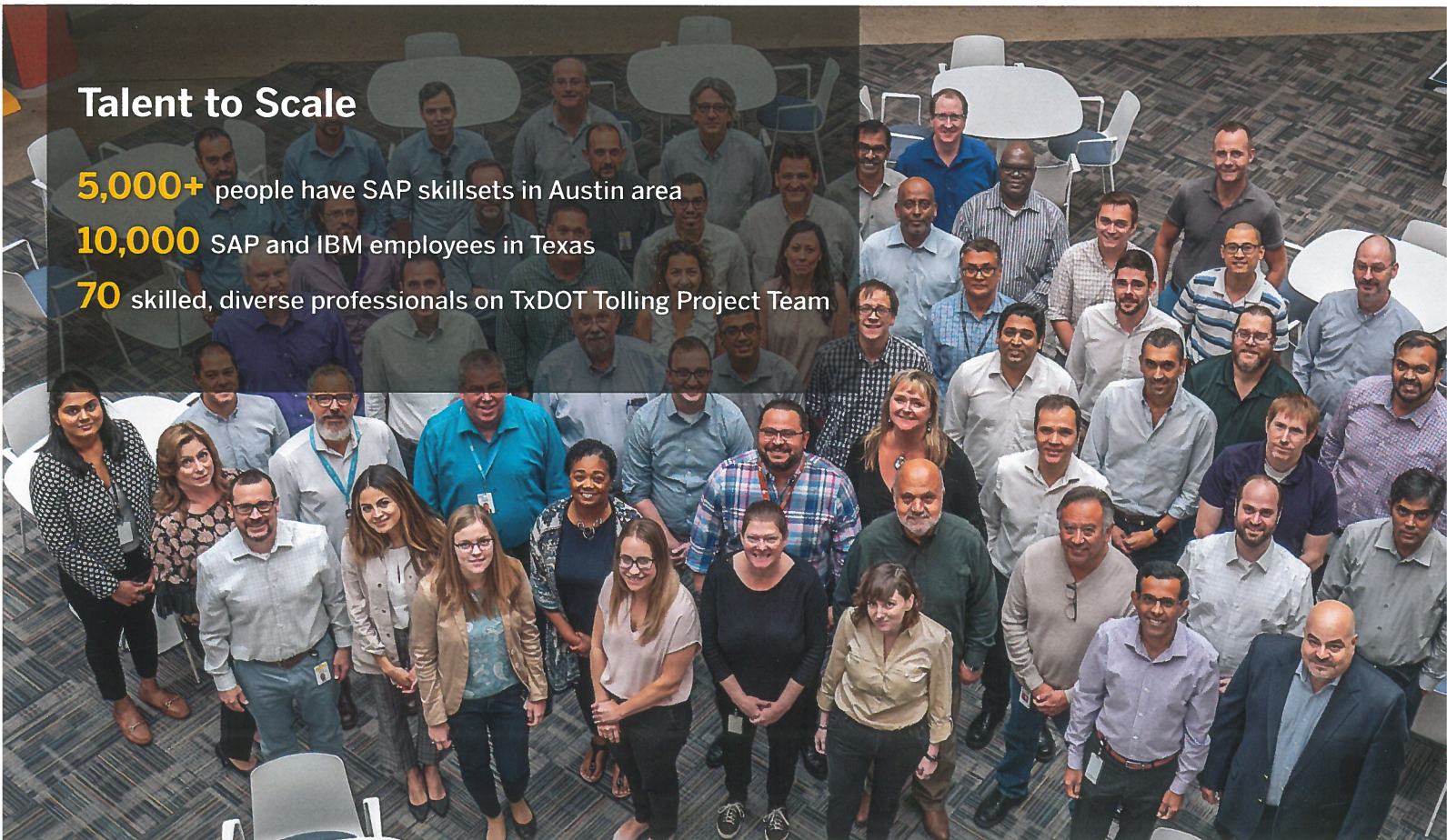
40,000 account activations/hour

Talent to Scale

5,000+ people have SAP skillsets in Austin area

10,000 SAP and IBM employees in Texas

70 skilled, diverse professionals on TxDOT Tolling Project Team



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THE BEST RUN





CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

September 30, 2020
AGENDA ITEM #15

Executive Director Board Report

Strategic Plan Relevance: Regional Mobility
Department: Executive
Contact: Mike Heiligenstein, Executive Director
Associated Costs: N/A
Funding Source: N/A
Action Requested: Briefing and Board Discussion Only

Executive Director Board Report:

- A. Key findings of CTRMA travel behavior survey
- B. Effect of COVID-19 on agency operations
- C. 183 North procurement update
- D. 183 South schedule update
- E. Annual toll rate adjustments

Backup Provided: Presentation

MOBILITY AUTHORITY POLICY CODE

Chapter 3: OPERATIONS

Article 9. TOLL POLICIES

Subchapter A. TOLL RATES

301.001 Priority of Bond Documents

Notwithstanding any conflicting provision in this subchapter or in a prior resolution adopting the Toll Policies, the toll rates and schedules promulgated by the authority shall always be sufficient to meet or exceed all covenants and requirements set forth in all applicable bond documents and obligations of the authority. If any conflict arises between the bond documents and this subchapter or a prior resolution adopting the Toll Policies, the covenants and requirements of the bond documents shall control to the extent of such conflict.

301.002 Toll Rates

- (a) The authority shall establish toll rates for each tolled facility operated by the authority. Each toll established by this section is subject to an adjustment on January 1 of each year under the procedure set forth in Section 301.003 (Annual Toll Rate Escalation). The executive director is authorized and directed to edit a toll established by this section to update and certify any change to a toll made pursuant to Section 301.003.
- (b) The toll charge for each tolled facility operated by the authority shall be published on the authority website.
- (c) The toll charged for use of the MoPac Express Lanes shall be variable in nature. The minimum toll rate will be \$0.25 per Express Lane segment, in 2016 dollars. The minimum toll rate per segment will be adjusted annually by \$0.05 per segment until the minimum toll rate is \$0.50, at which point the minimum toll rate per segment will be adjusted annually in accordance with the methodology for toll rate escalation provided in Section 301.003. There shall be no maximum toll rate. To maximize throughput and maintain free flowing conditions, the toll rate for each MoPac Express Lane segment shall change on a real-time basis based on traffic volumes. When traffic volumes increase, the minimum toll rate shall be increased as much as necessary to prevent the MoPac Express Lane(s) from becoming congested. When traffic volumes decrease, the toll rate shall be reduced to encourage use of the MoPac Express Lane(s). The primary goal of the variable toll rate is to minimize congestion on the MoPac Express Lanes and to encourage more people to ride public transit or join a registered vanpool. Changeable message signs shall be located prior to the entrance of each MoPac Express Lane segment to notify customers of the current toll rate. A customer shall never pay more than the toll rate information shown on the sign located near the vehicle's entry point, but may be charged less. The Mobility Authority may reduce tolls if it determines that operational issues warrant such an adjustment.

MOBILITY AUTHORITY POLICY CODE

301.003 Annual Toll Rate Escalation

(a) The following provisions are fully adopted and made a part of this subchapter and may be incorporated in any Trust Indenture or Supplemental Trust Indenture issued in conjunction with bond financing to be utilized for the financing of the construction and development of projects by the authority (defined terms in these provisions shall be in accordance with the terms and definitions set forth in the Master Trust Indenture and any applicable Supplemental Trust Indenture):

Subject in all instances to the provisions, requirements and restrictions of the Master Indenture, as amended and supplemented from time to time, beginning on October 1, 2012 and on each October 1 thereafter (the “Toll Escalation Determination Date”), a percentage increase in the Toll rates charged on all toll facilities in the Turnpike System will be determined in an amount equal to the Toll Rate Escalation Percentage. The Toll Rate Escalation Percentage, as calculated on each Toll Escalation Determination Date, shall be reported to the board each year at its October board meeting. The percentage increase in the Toll rates shall be effective on the January 1 of the next calendar year, unless at such board meeting the board affirmatively votes to modify the Toll Rate Escalation Percentage. If the board votes to modify the Toll Rate Escalation Percentage, the Toll rate increase to be effective on January 1 of the next calendar year shall be based on the modified Toll Rate Escalation Percentage.

(b) For purposes of determining the Toll Rate Escalation Percentage, the following capitalized terms shall have the meanings given below:

- (1) “Toll Rate Escalation Percentage” = shall mean a percentage amount equal to $[(CPI^t - CPI^{t-12})/CPI^{t-12}]$. In the event the Toll Rate Escalation Percentage is calculated to equal less than 0%, then the Toll Rate Escalation Percentage shall be deemed to equal 0%.
- (2) “CPI^t” = the most recently published non-revised index of Consumer Prices for All Urban Consumers (CPI-U) before seasonal adjustment (“CPI”), as published by the Bureau of Labor Statistics of the U.S. Department of Labor (“BLS”) prior to the Toll Escalation Determination Date for which such calculation is being made. The CPI is published monthly and the CPI for a particular month is generally released and published during the following month. The CPI is a measure of the average change in consumer prices over time for a fixed market basket of goods and services, including food, clothing, shelter, fuels, transportation, charges for doctors’ and dentists’ services, and drugs. In calculating the index, price changes for the various items are averaged together with weights that represent their importance in the spending of urban households in the United States. The contents of the market basket of goods and services and the weights assigned to the various items are updated periodically by the BLS to take into account changes in consumer expenditure patterns. The CPI is expressed in relative terms in

MOBILITY AUTHORITY POLICY CODE

relation to a time base reference period for which the level is set at 100.0. The base reference period for the CPI is the 1982-1984 average.

- (3) “CPI^{t-12}” = the CPI published by the BLS in the month that is 12 months prior to the month used to established CPI^t.
- (4) If the CPI is discontinued or substantially altered, as determined in the sole discretion of the authority, the authority will determine an appropriate substitute index or, if no such substitute index is able to be determined, the authority reserves the right to modify its obligations under this section.

301.004 Exemption from Toll

- (a) The operator or the registered owner of a vehicle operated on an authority toll facility is required to pay the toll established by this subchapter unless the vehicle is exempted by federal law, state law or by this section.
- (b) An authorized emergency vehicle defined by Section 541.201, Transportation Code, is exempt from paying a toll to use an authority toll facility under Section 370.177, Transportation Code.
- (c) A state or federal military vehicle is exempt from paying a toll to use an authority toll facility under Section 362.901, Transportation Code.
- (d) Through December 31, 2021, recipients of the Congressional Medal of Honor, Legion of Valor and Purple Heart awards as well as Disabled Veterans are eligible to participate in the Qualified Veterans Toll Discount Program to be exempt from paying a toll to use the authority’s non variable rate toll facilities. Participation is limited to no more than two vehicles per qualified veteran, the designated primary plate and an additional plate upon demonstration of a hardship as determined by the Executive Director. All participants must be registered with the authority; the vehicle must be registered with the Texas Department of Motor Vehicles; the vehicle must have a qualifying specialty plate and have it properly displayed; the vehicle must be associated to an electronic toll tag account; and the participating veteran must have no outstanding CTRMA toll violations at the time of the transaction. The exemption does not apply to the authority’s express lane facilities.
- (e) Under Section 370.177(a-1), Transportation Code, and to facilitate a multi-modal transportation system that ensures safe and efficient travel for all individuals in central Texas, a vehicle used exclusively to provide transportation to a member of the public under a transit program



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

September 30, 2020
AGENDA ITEM #16

Executive Session

Executive Session:

Discuss the acquisition of one or more parcels or interests in real property needed for the 183A Phase III Project and related issues, pursuant to §551.072 (Deliberation Regarding Real Property) and §551.071 (Consultation with Attorney).



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

September 30, 2020
AGENDA ITEM #17

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

September 30, 2020
AGENDA ITEM #18

Executive Session

Executive Session:

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



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

September 30, 2020
AGENDA ITEM #19

Executive Session

Executive Session:

Discuss personnel matters as authorized by §551.074 (Personnel Matters).



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

September 30, 2020
AGENDA ITEM #20

Adjourn Board Meeting

Strategic Plan Relevance:	Regional Mobility/Economic Vitality/ Sustainability
Department:	Executive
Contact:	Mike Heiligenstein, Executive Director
Associated Costs:	N/A
Funding Source:	N/A
Action Requested:	Discussion only

Summary:

Adjourn Board Meeting.