REQUEST FOR PROPOSALS ("RFP")

Toll Collection Systems Implementation and Maintenance
RFP No. 92700-13-100214

Submit Response To:

Attn: Barbara Harris Chappel
RFP Number 92700-13-100214
State Road and Tollway Authority
47 Trinity Avenue
4th Floor
Atlanta, GA 30334

All spaces below are to be filled in and this sheet must be incorporated within as the first page of the response to this Request for Proposals (RFP).

Firm Name: _____

Contact Name: _____

Address: _____

_____

Telephone: _____ Facsimile: _____

Email: _____

By my signature below, I certify that I am authorized to sign this proposal for the firm named above. I further certify that this proposal is made without prior understanding, agreement, or connection with any other company or person submitting a separate proposal for the same services, and is in all respects fair and without collusion or fraud. I further certify that the provisions of OCGA §§45-10-20 et seq. have not been violated and will not be violated in any respect. This offer shall remain open for acceptance for 150 days from the Amended Proposal Due Date. On behalf of the firm named above, I further certify that such firm has and will abide by all conditions set forth in this RFP.

Signature_____

Name and Title _____

Date_____

Refer ALL Inquiries to: **Barbara Harris Chappel**
SRTA Contracting Officer
procurement@georgiatolls.com
Only email inquiries accepted

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Appendix Q- Responsibility Certification Form
Appendix R- Contractor and Sub-Contractor Affidavits

1 Introduction

1.1. Purpose of Procurement

This Request for Proposals ("RFP") is being issued to establish a Contract with a Prequalified Tolling System Integrator~~s~~ ("TSI~~s~~") who will provide toll collection system implementation and maintenance for the I-75 South Express Lanes Project and I-75/I-575 Northwest Corridor Express Lanes Project (referred to individually as the "Project" and collectively as the "Projects") to the State Road and Tollway Authority ("SRTA") as further described in this RFP. Only Prequalified TSIs may submit a proposal. Each TSI may submit only one proposal. Both Projects will be awarded to a single TSI.

The work will include providing All Electronic Tolling ("AET") Systems Integration, and Express/Managed Lanes services for the Projects. Please see Appendix B for detailed Project descriptions, straight line diagrams, and schedules. Both of these Projects will be implemented separately. GDOT will also procure Civil Contractor(s) for each Project who will perform the civil requirements of the respective Project. The Tolling Systems Integrator ("TSI") is expected to coordinate its work with each Civil Contractor selected by GDOT for the Projects.

Both Projects will be barrier separated reversible Express Lanes, and will include AVI with multiprotocol (at least 3 protocols) readers, processing both SRTA home and interoperable transactions, video transactions, variable/dynamic pricing, entry/exit trip building, image processing, and interfacing with a third party back office.

Each Project will be controlled by one or more TSI-provided Toll Facility Host(s). The Toll Facility Host(s) will be responsible for:

- Establishing variable/dynamic toll rates based on vehicle speed and volume in the General Purpose lanes and the Express Lanes;
- Providing data feeds and monitoring changeable message signs;
- Monitoring all Toll Zones for processing activities, direction of traffic, MOMS, etc.;
- Processing and tracking all transactions on the Project;
- Building complete trips from those transactions;
- Sending the completed trips to the SRTA System Host for posting and processing;
- Providing system image processing and review via OCR and manual; and
- Audit, reconciliation and reporting.

PRE-QUALIFICATION NOTICE:

To be eligible to submit a response to this RFP, the TSI must have been identified as a qualified Contractor as a result of RFQC No 92700-13-100214 entitled "Tolling Systems Integrator I-75 South Express Lanes Project and I-75/I-575 Northwest corridor Express Lanes Project".

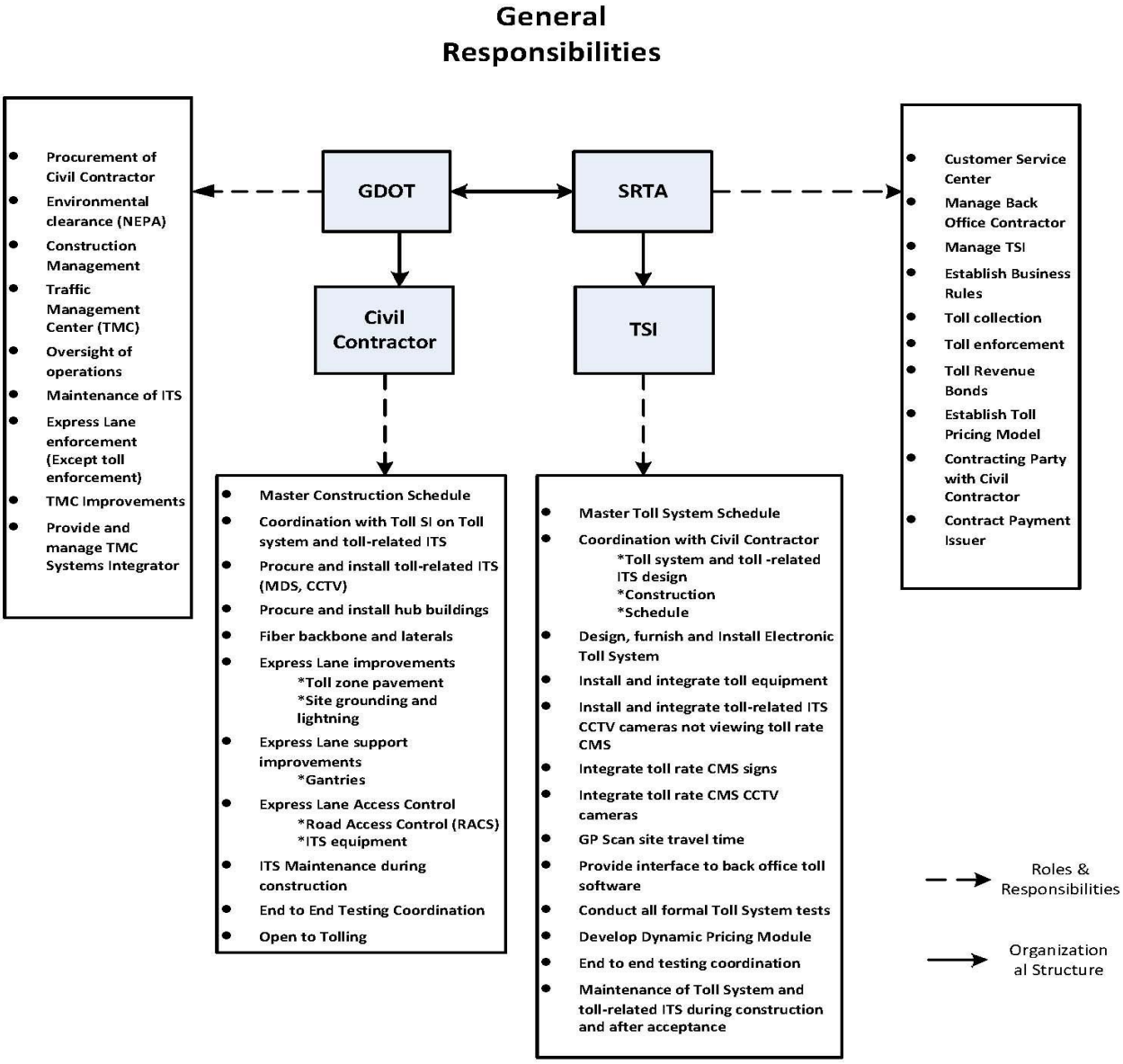
In the case of newly created teamed firms or joint ventures, the individual companies that are teaming or forming a joint venture must agree to joint and several liability for their teamed entity or joint venture regardless of the legal structure of the newly created venture. SRTA's determination of the need for joint and several liability shall be conclusive. The new entity must include a prequalified TSI and the name of the prequalified TSI shall be indicated in the cover letter.

The following companies are Prequalified Tolling Systems Integrators:

- 3M
- Kapsch
- SICE
- Xerox

1.2. General Responsibilities

The General Responsibilities of GDOT, SRTA, the Civil Contractor and TSI Contractor are set out below:



The Civil Contractor(s) RFP's are still undergoing the procurement process. Amendments as they occur shall be furnished to the TSIs for their reference. SRTA will notify the TSIs as these amendments are made available on the ftp site. It is the responsibility of the TSI to review and incorporate information from GDOT's Civil Contractor(s) RFP's amendments as applicable to the integration services required by this RFP.

1.3. RFP Certification

The SRTA certifies that the use of competitive sealed bidding will not be practicable or advantageous to the State of Georgia in completing this acquisition; therefore, an RFP is being used.

1.4. Overview of the RFP Process

The objective of the RFP is to select a TSI Contractor provide the goods and/or services outlined in this RFP to the SRTA. This RFP process will be conducted to gather and evaluate responses from TSIs for potential award. All prequalified TSI are invited to participate by submitting responses, as further defined below. After evaluating all TSIs responses received prior to the closing date of this RFP, the preliminary results of the RFP process will be publicly announced, including the names of all participating TSIs and the evaluation results. Subject to the protest process, final Contract award(s) will be publicly announced thereafter.

1.5. Schedule of Events

The schedule of events set out herein represents the SRTA's best estimate of the schedule that will be followed. However, delays to the procurement process may occur which may necessitate adjustments to the proposed schedule. If a component of this schedule, such as the close date, is delayed, the rest of the schedule may be shifted as appropriate and at SRTA's discretion. Any changes to the dates up to the closing date of the RFP will be communicated to the prequalified Contractors prior to the closing date of this RFP. After the close of the RFP, the SRTA reserves the right to adjust the remainder of the proposed dates, including the dates for evaluation, award and the Contract term on an as needed basis with or without notice.

Event	Date	Time
RFP Issued	May 17, 2013	
Deadline for submitting written questions regarding the RFP.	June 21~~11~~, 2013	5:00 PM
Deadline for submitting written questions regarding the Contract	June 21~~11~~, 2013	5:00 PM
Deadline for Posting Responses to Written Questions	June 26~~13~~, 2013	5:00 PM
First One-on-One Session	June 3-6, 2013	June 3 – 1:00-5:00 PM June 4-6 – 9:00 AM – 1:00 PM
Second One-on-One Session	July 15 – 18, 2013	9:00 AM – 4:00 PM
Deadline for Posting Final Contract	June 12~~25~~, 2013	5:00 PM
Proposals Due/Close Date and Time	July 31, 2013	1:00 PM
Notice of Intent to Award* [NOIA] (on or about)	October 1, 2013	5:00 PM
Notice of Award [NOA] (on or about)	10 calendar days after NOIA	N/A

1.6. Official Issuing Officer

Barbara Harris Chappel, Issuing Officer

bchappel@georgiatolls.com

1.7. Contract Term

The initial term of the Contract is ~~for six (6) calendar year(s) from the execution date of the Contract~~from the effective date through June 30, 2019. The SRTA shall have four (4) renewal ~~one (1) year~~ option~~(~~s~~)~~ of up

to three (3) years each,~~to renew,~~ which options shall be exercisable at the sole discretion of the SRTA. Renewal will be accomplished through the issuance of a Contract Amendment. In the event that the Contract, if any, resulting from the award of this RFP shall terminate or be likely to terminate prior to the making of an award for a new Contract for the identified products and/or services, the SRTA may, with the written consent of the awarded TSI, extend the Contract for such period of time as may be necessary to permit the SRTA's continued supply of the identified products and/or services. Additional renewals for maintenance purposes only can be issued. Unless this RFP explicitly states otherwise, the resulting award of the Contract does not guarantee volume or a commitment of funds.

1.8. Bid Bond

The TSI shall submit with its proposal a Bid Bond guaranteeing its offer to be good for acceptance for a period of 150 days from the proposal due date in the amount of $288,400. The Bid Bond shall be submitted on the form identified as Appendix O and shall be issued by a surety licensed to do business in the State of Georgia.

2 Instructions to TSI's

By submitting a response to the RFP, the TSI is acknowledging that the TSI:

- Has read the information and instructions,
- Agrees to comply with the information and instructions contained herein.

2.1. General Information and Instructions

2.1.1. Restrictions on Communicating with Staff

From the issue date of this RFP until the final award is announced, TSIs are not allowed to communicate for any reason with any State staff except through the Issuing Officer named herein, or during the TSIs' conference (if any), or as defined in this RFP or as provided by existing work agreement(s). Prohibited communication includes all contact or interaction, including but not limited to telephonic communications, emails, faxes, letters, or personal meetings, such as lunch, entertainment, or otherwise. The SRTA reserves the right to reject the Proposal of any TSI violating this provision.

2.1.2. Contract Questions, Clarifications and Recommendations

The final Contract that the SRTA expects to award as a result of this RFP will be posted on the date/time as indicated in Section 1.5 of this RFP. Therefore, all costs associated with complying with the requirements of the final Contract should be included in any pricing quoted by the TSIs.

Please review the SRTA's attached Contract terms and conditions and submit any and all questions, clarifications and recommendations to the Issuing Officer by the deadline date/time specified in Section 1.5~~2.3.2~~. Exceptions should be submitted in Microsoft Word and each exception should be numbered in numeric sequence and in the following format:

•Contract Provision, Section Number, Title and current wording
•Reason for Exception, citing law and/or business reasons
•Proposed Language

Respondents submitting questions, clarifications and recommendations will have an opportunity to discuss their questions during both one-on-one sessions. Meetings will take place during the time specified in Section 1.5 Schedule of Events.

Requests that materially change the terms or the requirements of the as determined by the SRTA, in its sole discretion, will be rejected. Requests that grant the TSI an impermissible competitive advantage, as determined by the SRTA, in its sole discretion, will be rejected. Requests will only be considered if submitted prior to the deadline for submitting written questions as defined by the Schedule of Events. The final Contract, containing any acceptable and agreed upon requests will be posted by the deadline specified in Section 1.5 Schedule of Events. All requests will be taken into consideration by SRTA; however, the final Contract that is posted will contain the final Contract terms and conditions that are

acceptable to SRTA. TSIs should plan on the Contract terms and conditions contained in the final Contract posted, being included in any award as a result of this RFP.

In the event of a conflict between the Civil RFPs and this RFP, the latter shall control. If the TSI discovers any such conflicts, then the TSI should notify the SRTA Issuing Officer.

2.1.3. Overview of the RFP Process

Written Questions and Answers Period. No questions other than written will be accepted. Questions and answers will not be binding upon the State unless incorporated by amendment to this RFP. All TSIs must submit questions by the deadline identified in Section 1.5 Schedule of Events for submitting questions. All questions about this RFP must be submitted using the Question and Answer form available in the Procurement Library on the ftp site sent via e-mail to each TSI.

Answers to questions will only be provided to the TSI who is the source of the question. If SRTA determines the answer to any particular question to be material to the content of this RFP, then SRTA will amend this RFP for the benefit of all TSIs.

One-on-One Session. There will be two one-on-one sessions scheduled with each TSI:

Session One – Four Hour Sessions

June 3, 2013, 1:00 - 5:00PM

June 4-6, 2013, 9:00 AM – 1:00 PM

Session Two -- Seven Hour Sessions

July 15 – 18, 2013, 9:00 AM – 5:00 PM

The Issuing Officer will contact each TSI to schedule the one-on-ones sessions. Agendas for each session will be set by the TSI.

The first One-on-One session will be for the TSI to delve into SRTA's thinking in particular areas of the final RFP. The TSI's agenda, provided in advance to SRTA, will indicate the desired areas of discussion. This session will not be a presentation by the TSI.

The second One-on-One Session will be for the TSI to provide a preview of its proposal in the form of a presentation.

Site Visits. SRTA expects to provide the TSIs with information relevant to the Projects. This may include access to roadways, bridges, medians, potential toll collection points, reader/transponder equipment, and SRTA's current back-office and CSC operations.

TSIs should submit a written request for access to the Issuing Officer. The request should indicate the specific sites for access and the preferred dates/times, including the number of attendees. The names and titles of attendees should be submitted to the Issuing Officer no less than two (2) days prior to the scheduled visit.

Proposal Submission. Proposals shall be packaged and submitted in accordance with Section 2.2 Submittal Instructions. Prequalified TSIs shall submit Proposals no later than the day and time indicated in section 1.5 Schedule of Events.

Proposal Evaluation. Proposals will be evaluated in accordance with Section 2.2 Proposal Evaluation and Award.

Proposal Award. The Contract will be awarded based on Section 2.3.1 and Section 2.3.11

2.1.4. State's Right to Request Additional Information – TSI's Responsibility

Prior to award, the SRTA must be assured that the selected TSI has all of the resources to successfully perform under the Contract. This includes, but is not limited to, adequate number of personnel with required skills, availability of appropriate equipment in sufficient quantity to meet the on-going needs of the SRTA, financial resources sufficient to complete performance under the Contract, and relevant experience in similar endeavors. If such information is required, the TSI will be so notified and will submit the information requested within the time requested by SRTA.

2.1.5. Failing to Comply with Submission Instructions

Proposals received after the identified due date and time or submitted by any other means than those expressly permitted by the RFP will not be considered. TSIs' responses must be complete in all respects, as required in each section of this RFP.

2.1.6. Rejection of Proposals; State's Right to Waive Immaterial Deviation

The SRTA reserves the right to reject any or all responses, to waive any irregularity or informality in a TSI's Proposal, and to accept or reject any item or combination of items, when to do so would be to the advantage of the State of Georgia. It is also within the right of SRTA to reject responses that do not contain all elements and information requested in this RFP. A TSI's response will be rejected if the response contains any defect or irregularity and such defect or irregularity constitutes a material deviation from the RFP requirements, which determination will be made by the SRTA on a case-by-case basis.

2.1.7. State's Right to Amend and/or Cancel the RFP

The SRTA reserves the right to amend this RFP prior to the Proposal due date and time. Amendments to the RFP will be made in writing and communicated to the prequalified TSI. EACH TSI IS INDIVIDUALLY RESPONSIBLE FOR REVIEWING AMENDMENTS AND ANY OTHER POSTED DOCUMENTS AND MAKING ANY NECESSARY OR APPROPRIATE CHANGES AND/OR ADDITIONS TO THE TSI'S RESPONSE. Finally, the SRTA reserves the right to cancel this RFP at any time.

2.1.8. Protest Procedures

TSIs should familiarize themselves with the procedures set forth on SRTA's website, which is accessible online as follows:

http://www.georgiatolls.com/business/.

2.1.9. Costs for Preparing Proposals

Each TSI's Proposal should be prepared simply and economically, avoiding the use of elaborate promotional materials beyond those sufficient to provide a complete Proposal. The cost for developing the Proposal and participating in the procurement process (including the protest process) is the sole responsibility of the TSI. The SRTA will not provide reimbursement for any costs.

2.1.10. ADA Guidelines

The State Road and Tollway Authority adheres to the guidelines set forth in the Americans with Disabilities Act. TSI's should contact the Issuing Officer at least one day in advance if they require special arrangements when attending the Bidders/TSIs' Conference (if any). The Georgia Relay Center at 1-800-255-0056 (TDD Only) or 1-800-255-0135 (Voice) will relay messages, in strict confidence, for the speech and hearing impaired.

2.1.11. Public Access to Procurement Records

Proposals will be made available for public inspection, upon request, after SRTA's posting of the Notice of Intent to Award (or the Notice of Award in the event the SRTA does not issue the Notice of Intent to Award). Audited financial statements not otherwise publicly available but required to be submitted as part of the TSI's Proposal shall not be subject to public disclosure unless otherwise required by law. PLEASE NOTE: Even though information (financial or other information) submitted by a TSI may be marked as "confidential", "proprietary", etc., the State will make its own determination regarding what information may or may not be withheld from disclosure as set forth in Georgia's Open Records Act, O.C.G.A. §50-18-70 et seq ("Open Records Act").

2.1.12. Confidential/Proprietary Information

TSIs shall state with specificity those records ~~elements~~ of its Proposal that it considers confidential and/or proprietary. ~~Failure to properly identify and mark confidential or proprietary information as specified at the end of this paragraph may result in all information received being deemed non-confidential, non-proprietary, and in the public domain.~~ The TSI submitting records containing trade secrets that wishes to keep such records confidential shall submit and attach to the records an affidavit affirmatively declaring that specific information in the records constitute trade secrets pursuant to Article 27 of Chapter 1 of Title 10. Notwithstanding the foregoing, TSIs are hereby given notice that any and all materials submitted in response to this RFP are subject to the provisions of Georgia's Open Records Act upon completion of the RFP process. SRTA's receipt, review, evaluation or any other act or omission concerning any such information shall not be considered to create an acceptance of any obligation or duty for SRTA to prevent the disclosure of any such information except as required by the Open Records Act. TSIs that decide to submit information they believe should be exempt from disclosure under the Open Records Act shall: (i) clearly mark each page containing such information as confidential, proprietary or exempt, (ii) shall include such information in a different color from the rest of the proposal text and (iii) shall state the legal basis for the exemption with supporting citations to the Georgia Code.

Pursuant to Georgia Law, if the information is requested under the Open Records Act, SRTA shall make a final determination if any exemption actually exists for SRTA to deny the request and prevent disclosure. SRTA will withhold such information from public disclosure under the Open Records Act only if SRTA determines, in its sole discretion, that there is a legal basis to do so.

All material submitted regarding the RFP becomes the property of SRTA.

Any activity pursuant to this RFP by any TSI is governed by all applicable laws including, without limitation, State and Federal antitrust laws.

2.1.13. Registered Lobbyists

By submitting a response to this RFP, the TSI hereby certifies that the TSI and its lobbyists are in compliance with the Lobbyist Registration Requirements in accordance with the Georgia Government Transparency and Campaign Finance Commission.

2.2. Submittal Instructions

Listed below are key action items related to this RFP. The Schedule of Events in Section 1.5 identifies the dates and time for these key action items. This portion of the RFP provides instructions regarding the process for reviewing the RFP, preparing a Proposal to the RFP and submitting a Proposal to the RFP.

2.2.1. Preparing a Response

When preparing a response, the TSI must comply with the following:

1. Use the nomenclature and follow the format instructions provided.
2. Complete Appendix D- Performance Requirements and Service Level Agreements and include as a part of the Technical Proposal.
3. Complete Appendix L– Pricing Worksheets as the Cost Proposal.
4. Complete each question in Appendix M – Technical Response Guide as instructed therein and include Appendix M as a part of your Technical Proposal.
5. Proofread your Proposal and make sure it is accurate and readily understandable.
6. Label any and all files using the corresponding Section numbers of the RFP so that the SRTA can easily organize and navigate the TSI's Proposal.
7. The Technical Proposal shall not utilize less than an 11 ~~12~~ point font.
8. The Technical Proposal shall not exceed 477~~400~~ pages, excluding Cover Letter, Executive Summary, Certificate of Non-collusion, Appendices D, O, P, Q, R, and cut sheets required as part of Appendix M. As indicated in Appendix M, many of the items which are to be provided may be submitted as attachments to Appendix M and are excluded from the page limit.

2.2.2. Packaging the Response

The TSI's Proposal, in response to this RFP, must be divided into two (2) appropriately labeled and sealed packages - a Technical Proposal and a Cost Proposal.

The contents of each package will include:

1. Technical Proposal
   - Signed Certificate of Non-Collusion – Cover page of this RFP,
   - Cover Letter
   - Affidavit of Trade Secrets
   - Executive Summary, not to exceed 10 pages,

- Appendix D - Performance Requirements and Service Level Agreements and include as a part of the Technical Proposal
- Appendix M – Technical Response Guide and all required attachments.
- Appendix O – Bid Bond executed by a Surety authorized to do business in the State of Georgia,
- Signed Appendix P – Sales and Use Tax Form,
- Signed Appendix Q – Statement of Responsibility Certification Form,
- Appendix R-1 Contractor Affidavit under O.C.G.A. § 13-10-91(b)(1)
- Appendix R-2 Subcontractor Affidavit under O.C.G.A. § 13-10-91(b)(3)
- Appendix R-3 Sub-subcontractor Affidavit under O.C.G.A. § 13-10-91(b)(4)

DO NOT INCLUDE ANY COST INFORMATION IN YOUR TECHNICAL SUBMISSION.

2. Cost Proposal
   - The TSI must complete Appendix L – Pricing Worksheets as the Cost Proposal

2.2.3. "Hard Copy" and Electronic Copies Required

TSI must provide the following number of copies:

1. Technical Proposal:
   - Eight (8) hard copies, with one (1) marked "Original" with original signatures; and
   - Eighteen (18) CD-ROM copies.

2. Cost Proposal:
   - Three (3) hard copies, with one (1) marked "Original" and
   - Ten (10) CD-ROM copies of the SRTA provided Excel Worksheets.
     Technical Proposal and Cost Proposal CDs **must be labeled and packaged separately.** In the event of a discrepancy/conflict between a hard copy and a CD version, the Original hardcopy version will govern.

2.2.4. Electronic Copies

1. Use caution in creating electronic files to be included on a CD. If the SRTA is unable to open an electronic file due to a virus or because the file has become corrupted, the TSI's response may be considered incomplete and disqualified from further consideration.
2. Use commonly accepted software programs to create electronic files. The SRTA has the capability of viewing documents submitted in the following format: Microsoft Word, Microsoft Excel and portable document format file (PDF). Unless the RFP specifically requests the use of another type of software or file format than those listed above, please contact the Issuing Officer prior to utilizing another type of software and/or file format. In the event the SRTA is unable to open an electronic file because the SRTA does not have ready access to the software utilized by the TSI, the TSI's response may be considered incomplete and disqualified from further consideration.

2.2.5. Submitting the Response

Mark the outside of shipping package as follows:

Name of Company
Point of Contact for Company and Phone Number
RFP# 92700-13-100214

The TSI's complete response must be received on or before the due date and time at the following location:

Barbara Harris Chappel, Issuing Officer
47 Trinity Avenue, 4th Floor
Atlanta, Georgia 30334-9006

All proposals will be time stamped by the SRTA upon receipt. Proposals received after the due date and time will not be evaluated.

2.3. Proposal Evaluation and Award

All timely proposals will be evaluated in accordance with the following steps. The objective of the evaluation process is to identify the proposal which represents the best value to the SRTA based on a combination of technical and cost factors. Based on the results of the initial evaluation, the SRTA may or may not elect to negotiate technical and/or cost factors as further described in the RFP. Once the evaluation process has been completed (and any negotiations the SRTA desires to conduct have occurred), the apparent successful TSI will be required to execute the Contract. The SRTA will announce the results of the RFP as described further in 2.3.13~~2~~. ~~"Notice of Award" of this RFP.~~

2.3.1. Administrative/Preliminary Review

First, the proposals will be reviewed by the Issuing Officer to determine the proposal's compliance with the following requirements:

1. Proposal was received by deadline,
2. Proposal is complete and contains all required documents, and
3. Technical Proposal does not include any pricing from the Cost Proposal

If the TSI's proposal passes the Administrative/Preliminary Review, the TSI's response will be submitted to the Evaluation Team for evaluation.

2.3.2. Scoring Criteria

The evaluation is comprised of the following:

	Category	Points
Cost	Cost of proposed products and/or services	300 Points
Technical	Mandatory Requirements	Pass/Fail
	Scored Requirements Sections 3 -7	700 Points
	Up to 50 of the 700 Technical Points will be available for value added services, attributes and features as determined by SRTA	
Total	N/A	1000 Points

2.3.3. Cost Proposal

Each TSI is required to submit a Cost Proposal as part of its response. The Cost Proposal will be evaluated and scored. By submitting a response, the TSI agrees that it has read, understood, and will abide by the following instructions/rules:

1. The submitted Cost Proposal must include all costs of performing pursuant to the final posted Contract.
2. Cost proposals containing a minimum order/ship quantity or dollar value, unless otherwise called for in the RFP, will be treated as non-responsive and may not be considered for award.
3. In the event there is discrepancy between the TSI's unit price and extended price, the unit price shall govern.
4. The prices quoted and listed in the Cost Proposal shall be firm throughout the Term of the Contract, including Renewal Terms, if any.
5. For the purposes of the Work to be performed, TSI shall be responsible for all travel and per diem incurred in the performance of this Contract. Therefore, these expenses shall be included in the prices set out in **Appendix L, Pricing Worksheets**, Cost Proposal and will not be presented as separately payable items.

2.3.4. Cost Structure and Additional Instructions

The SRTA's intent is to structure the cost format in order to facilitate comparison among all TSIs and foster competition to obtain the best market pricing. Consequently, the SRTA requires that each TSI's cost be in the format outlined in Appendix L. Additional or alternative cost structures will not be considered. Each TSI is cautioned that failure to comply with the instructions listed below, submission of an incomplete offer, or submission of an offer in a different format than the one requested may result in the rejection of the TSI's proposal.

Enter all information directly into the cost sheet(s). Enter numbers on each cost sheet in "number" (two-place decimal), not "currency" or other format unless otherwise stated. That is, omit dollar signs, commas, and any other non-essential symbols. (e.g., $7.90 should be entered as 7.90) Prices must be in US Dollars

The Technical Proposal shall not include any pricing from the Cost Proposal.

The Cost Proposal will be reviewed for reasonableness and proper allocation between projects. Failure to reasonably allocate cost among the deliverables may result in proposal disqualification.

1. The reasonableness review will be a general review of the overall cost proposal and address potential frontend loading of price items such as Mobilization.
2. The proper allocation of costs between the two projects is very important because these projects are funded out of separate accounts. Proper allocation refers to certain costs that are "joint costs" such as Program Management, System Design, Documentation, Mobilization, etc. These pricing components should have a relative allocation between projects of approximately 35% for I-75 South and 65% for NWC.
3. To assist in pricing the Projects, it is anticipated that the Notice to Proceed (NTP) for each project will be given at the same time. The Preliminary Design Review for each Project will be conducted concurrently and therefore invoiced concurrently.

2.3.5. Evaluating Technical Requirements

The Evaluation Team will review each proposal in detail to determine its compliance with the RFP technical requirements. Responses to all Mandatory requirements will be evaluated on a pass/fail basis. ~~If a proposal fails to meet a Mandatory requirement, the SRTA will determine if the deviation is material. A material deviation will be cause for rejection of the proposal. An immaterial deviation will be processed as if no deviation had occurred.~~ All proposals which meet the requirements are considered "Responsive Proposals" at this point in time and will be scored in accordance with the point allocation in Section 2.3.2 "Scoring Criteria" of this RFP.

The TSI will receive a total technical score at the conclusion of the evaluation of the RFP Proposal.

2.3.6. Competitive Range

The SRTA Technical Evaluation Team shall evaluate all proposals submitted by the prequalified TSIs (only 1 proposal each) in accordance with the above technical scoring criteria and, in conjunction with the contracting officer, establish a Competitive Range based on the raw consensus scores of each proposal as follows:

- Based on the raw consensus scores of each proposal against all technical evaluation criteria, the contracting officer may establish a competitive range comprised of all proposals with a raw consensus score of 75% or more of the available raw technical points.
- Proposals excluded or otherwise eliminated from the competitive range will not be evaluated any further and their ~~sealed~~ price proposals will be returned to the TSI. No further revisions to that proposal shall be accepted or considered.
- TSIs excluded or otherwise eliminated from the competitive range may request a debriefing.

Proposals from TSIs remaining in the competitive range will proceed through the rest of the evaluation process as outlined below.

2.3.7. Final Technical Score

The TSI with the highest technical score will have its final technical score adjusted to 700 points. All remaining TSI shall have their scores adjusted as follows:

Unadjusted Technical Score under Consideration

$$\frac{\text{Highest Scoring Unadjusted Technical Score}}{} \times 700 = \text{Adjusted Technical Score under Consideration}$$

2.3.8. Evaluating Cost Proposal and Total Combined Score

The Cost Proposals will be reviewed and scored in accordance with Section 2.3.2. "Scoring Criteria." To expedite the evaluation process, the SRTA reserves the right to analyze the Cost Proposals independently, but at the same time the Technical Evaluation Team is analyzing the Technical Proposals. Neither the Cost Proposals nor the cost analysis will be disclosed to the Technical Evaluation Team until the Technical Evaluation Team completes its final evaluation and scoring of the RFP Proposal Factors.

2.3.9. Cost Scoring

The SRTA will utilize lowest total cost to determine the most competitive Cost Proposal. The TSI deemed to have the most competitive Cost Proposal overall, as determined by the SRTA, will receive the maximum score for the cost criteria. Other proposals will receive a percentage of the maximum score based on the percentage differential between the most competitive Cost Proposal and the specific proposal in question as follows:

$$\text{Cost Score under Evaluation} = \frac{\text{Lowest Cost Proposal}}{\text{Cost Proposal under Evaluation}} \times 300$$

2.3.10. Best and Final Offers (BAFOs)

The SRTA reserves the right to request BAFO prices from the TSIs prior to finalizing combined technical and price proposal scores.

2.3.11. Total Score

The TSI's cost score will be combined with the TSI's technical score to determine the TSI's overall score (or "total combined score").

2.3.12. Selection and Award

The responsive and responsible TSI receiving the highest Total Combined Score and with whom the SRTA executed the Contract will be selected for award.

2.3.13. Public Award Announcement

The preliminary results of the evaluation will be announced through the public posting of a Notice of Intent to Award to the SRTA website and/or to the Georgia Procurement Registry. The Notice of Intent to Award ("NOIA") is not notice of an actual Contract award; instead, the NOIA is notice of the SRTA's expected Contract award(s) pending resolution of the protest process. The NOIA (if any) will identify the apparent successful TSI, unsuccessful TSI(s), and the reasons why any unsuccessful TSIs were not selected for Contract award.

The Notice of Award ("NOA") is the SRTA's public notice of actual Contract award and will be publicly posted to the SRTA website.

2.4. Company Structure

The TSI will provide the legal form of its business organization, the state in which incorporated (if a corporation) or otherwise formed, the types of business ventures in which the organization is involved and the office location that will be the point of contact during the term of any resulting Contract.

2.5. Small and/or Minority Business

It is the policy of the State of Georgia that small and/or minority business enterprises shall have a fair and equal opportunity to participate in the State purchasing process. Therefore, the State of Georgia encourages all small and minority business enterprises to compete for, win, and receive contracts for goods, services, and construction. Also, the State encourages all companies to sub-contract portions of any state contract to small and minority business enterprises. TSIs interested in taking advantage of the Georgia income tax incentives provided for by the O.C.G.A. §48-7-38, relative to the use of minority subcontractors in the performance of contracts awarded by the State of Georgia, should contact the Department of Administrative Services Vendor Relations Administrator.

2.6. Sales and Use Tax

In accordance with Official Code of Georgia Annotated §50-5-82, the State Entity is prohibited from awarding a contract to a nongovernmental vendor if that vendor or an affiliate of the vendor is a "dealer" failing or refusing to collect sales or use taxes on its sales delivered to Georgia. Please complete the Sales and Use Tax Form, which is included as **Appendix P** to this RFP.

2.6.1.

In the event the TSI is identified as an apparent successful vendor, the information provided in the Sales and Use Tax Form will be submitted by SRTA to the Georgia Department of Revenue ("DOR") for a determination as to whether the TSI is a "prohibited source." SRTA reserves the right to submit the TSI's completed form to DOR for review even if the TSI has not been selected for award.

2.6.2.

Any TSI identified as a prohibited source will be ineligible for award. Accordingly, the TSI is strongly encouraged to check its tax status now and resolve any outstanding tax liabilities prior to submitting this response. Department of Revenue has identified the following source to allow TSIs to check current tax status: http://www.etax.dor.ga.gov.

2.7. Proposal Withdrawal and/or Revision Following Submission

A submitted proposal may be withdrawn and changes to a submitted proposal can be made prior to the RFP due date and time. In the event a TSI notes an error or omission in its response which was overlooked during the Prequalified TSI's review prior to submitting the response, the Prequalified TSI may contact the Contracting Officer to request the response be withdrawn. Please take note of the following limitations and risks regarding regaining access to the response:

Please note in order to reinstate the Prequalified TSI's ability to resubmit a response, the Prequalified TSI's original response must first be withdrawn. Once the Prequalified TSI's response is withdrawn, the SRTA has no response from the Prequalified TSI. Unless and until the Prequalified TSI resubmits the revised response, the SRTA will have no offer from the Prequalified TSI to evaluate for possible Contract award. Any resubmission must be received by SRTA no later than the RFP due date and time.

2.8. Conflict of Interest

The TSI must disclose in detail anything that may create a conflict or appearance of a conflict of interest.

2.9. TSI Responsibility

A Responsible TSI is one that SRTA believes to be responsible based on responses provided on the TSI's "Statement of Responsibility Certification Form" and/or based on TSI's responses to the requirements of the solicitation document. SRTA reserves the right to conduct additional due diligence into any TSI's responsibility status. Such due diligence may include investigations into any of the items set forth on the form in Appendix Q. Each TSI must complete and submit Appendix Q.

2.10. Contract Terms and Conditions

The Contract that the SRTA expects to award as a result of this RFP will be the Final Contract posted by the Deadline for Posting Final Contract as set forth in Section 1.5.

2.11. Execution of the Contract

At the end of the evaluation process, the SRTA shall contact the apparent successful TSI. The apparent successful TSI must return two signed Contracts acceptable to SRTA to the Contracting Officer within one (1) week of notification. Failure to do so may lead to rejection of the TSI. SRTA reserves the right to proceed to discussions with the next highest ranked TSI.

SRTA reserves the right to modify the Contract to be consistent with the successful offer.

3. Technical Specifications

3.1. General Project Overview

This Contract is to provide All Electronic Tolling (AET) Systems, implementation, maintenance, training and integration with SRTA's accounting and customer service systems to support Express Toll Lanes services for the Projects. Please see Appendices B and C for detailed project descriptions, straight line diagrams, and preliminary schedules.

While similar, the two projects will not be implemented on the same schedule. Each project will be implemented separately by a Design-Builder/Developer (Civil Contractor) under separate GDOT contracts as a Design-Build and Design-Build-Finance projects respectively; therefore it is likely that the Tolling System Integrator Contractor (TSI Contractor) will work with a different Civil Contractor for each project. Additionally, the Electronic Toll Collection System will be required to interface with GDOT's ITS systems and the TSI Contractor will coordinate with GDOT's contractors to define and implement the interface (see section 3.5.5.3 for more details). The Civil Contractor(s) will perform all work associated with the design and construction of the Projects, to include all roadways and associated infrastructure necessary to construct the Project in accordance with the Civil Contractor's design schematic of the Project. Each Civil Contractor must coordinate with GDOT, SRTA, adjacent Governmental Entities and the TSI Contractor in the design of their respective Project. The TSI Contractor will be required to work closely with each Civil Contractor.

Both projects will be Barrier Separated Reversible Express Lanes systems, and will include, but will not be limited to, AVI with multiprotocol (three protocols - minimum) readers, processing both SRTA home and interoperable transactions, video transactions, variable/dynamic pricing, trip building (entry/exit and other), image processing, and interfacing with a third party back office.

The TSI Contractor shall provide a Toll Facility Host that will be responsible for, but not necessarily limited to:

- Establishing Dynamic toll rates based on vehicle speed and/or volume in the General Purpose lanes and/or the Express lanes;
- Providing the capability to create Variable Toll Rates (e.g. Time of Day) and static rate plans;
- Communicating these toll rates out to the Toll Rate Changeable Message Signs (CMS) located along the roadway for each facility;
- Providing appropriate interface(s) and applications (e.g. CMS Video review, Dynamic Pricing GUI, Electronic Toll Collection System Reversal) for SRTA TOC staff to utilize during daily operations to manage toll rates on the Express Lane(s);
- Interfacing with SRTA's existing BOS (per the SRTA provided ICD) to receive Transponder Validation Lists (TVL) and plate files and to send completed trips for posting and processing;
- Providing data feeds to monitor current toll rates displayed on toll rate CMSs;
- Monitoring the Roadway Access Control System (RACS) CMS which shows the facility open and closed status;
- Monitoring all toll zones for system status from all lane level equipment along with processing activities (transactions being formed), and direction of traffic alerts;
- Monitoring the MOMS to ensure alerts are communicated to SRTA TOC and other staff;
- Processing and tracking all transactions on the project;
- Building trips from those transactions which consists of an Entry and Exit Transaction;
- Processing single or "orphaned" transactions into trips by way of "Transaction Matching" logic and algorithms;
- Providing system image processing and review via OCR/ALPR and manual; and
- Reconciling, properly auditing and reporting all transactions and trips.

3.1.1. I-75 South Express Lanes Project Overview

The 11-mile I-75 South Express Lanes Project will include a reversible barrier-separated Express lane system and ITS infrastructure along southbound I-75 and I-675 in Henry and Clayton Counties. Please refer to Appendix B – Project Descriptions which contains project descriptions, a project map, straight line diagrams indicating equipment types and locations as well as preliminary information on gantry locations, and a preliminary schedule.

The operation of the I-75 South Express Lanes Project in the northbound direction has no intermediate exits. Once a vehicle enters the Express lanes it can only exit at the end of the managed lanes either on I-75 or I-675. The southbound is the reverse; there are only entrance points on the North end coming either from I-75 or I-675 with various exit points heading south.

3.1.2. I-75 Northwest Corridor Project Overview

The 29.7-mile Northwest Corridor Express Lanes Project will involve the addition of reversible barrier separated express lanes and associated ITS infrastructure along I-75, I-285 and I-575 in Cobb and Cherokee Counties. Please refer to Appendix B – Project Descriptions which contains project descriptions, a project map, straight line diagrams indicating equipment types and locations as well as preliminary information on gantry locations, and a preliminary schedule.

3.1.3. Reversible Roadway Operations

The reversible operation for each of the roads will be controlled by GDOT at the Traffic Management Center (TMC).

3.1.4. TSI Contractor Provided General System Components

The lane components will be in an AET configuration and will include a zone controller that will process all lane functions including but not limited to: Automatic Vehicle Classification (AVC); Automatic Vehicle Identification (AVI), Vehicle Enforcement System (VES) Cameras and lighting; Video Audit System; TVL and license plate file downloads; transaction processing; audit support; reconciliation; reports and MOMS monitoring. The TSI Contractor shall provide cut sheets for all equipment that is provided for the lane solution, and where cut sheets are not available links to web sites with product details, specifications and requirements shall be provided.

3.1.4.1. AVI (RFID) Equipment

SRTA has distributed and currently supports two RFID transponder types and protocols, but the TSI Contractor provided System will be required to support at least three protocols concurrently. At present the three anticipated protocols are:

- "PeachPass" branded transponders, which are the open standard (ISO-18000 6C) technology (these are the only transponders currently being distributed by SRTA);
  - Currently Approximately 215,000 in active distribution
  - Currently SRTA reads full TID and OID (EPC) values (96 bits each) on the 6C transponders
  - SRTA does not currently write back to 6C transponders

- Legacy "Cruise Card" branded transponders, and "SunPass" branded transponders which are TransCore eGo® Plus sticker tags currently being read in SeGo mode.
  - Currently Approximately 189,000 in active distribution
  - Currently SRTA reads at least 64 bits of memory on eGo® Plus transponders
  - SRTA does not currently write back to eGo® Plus transponders
- The third protocol that shall be supported is the IAG.
- SRTA does not currently process IAG transponders for toll collection. Particular read requirements will be determined through future interoperability discussions. For the purposes of this Project, the TSI Contractor should assume SRTA will be required to interact with the IAG transponders in a manner consistent with their use by existing IAG member agencies, but no writing back to the transponder is required.

SRTA will provide PeachPass and Cruise Card transponders that can be used for testing while the TSI Contractor shall be responsible for providing the IAG transponder(s).

The TSI Contractor will be responsible for providing, installing, integrating, tuning and maintaining multi-protocol (at least three) RFID readers, antennas and ancillary equipment in order to meet performance standards as defined in the RFP. The provided AVI equipment must meet the performance requirements outlined in Appendix D. In addition, the RFID readers must each be capable of storing all information related to at least 250,000 transponder reads in the event the RFID operates in a stand-alone mode (no Zone Controller connectivity).

3.1.4.2. Variable/Dynamic Toll Pricing Strategy by Facility

The Electronic Toll Collection System must be able to accommodate both Variable and Dynamic pricing. It is expected that Dynamic Pricing may be used during normal peak hours. Variable Pricing may be used based on "time of day", "day of week", off peak hours or whenever SRTA desires to implement. The Dynamic Pricing System will calculate toll rates and display them on the toll rate CMSs whenever the facilities are in operation in a given direction. Measured traffic flow Level of Service (LOS), in the form of lane occupancy (such as density), speed and/or other data from the General Purpose and Express Lanes of a Tolled Segment shall be used as the basis of that Toll Segment's toll rate calculation.

The effective toll rate for a vehicle is determined at the point of entry to the express lanes. The system shall be designed in a way to ensure that the vehicle is charged the appropriate rate taking into account estimated travel times between the Toll Rate CMS sign and the immediate next tolling gantry. Regardless of how the toll rate is calculated, the vehicle is to be charged no more than the toll rate that was displayed on the toll rate CMS prior to entering the facility.

3.1.4.3. Trip Building

Toll zone controllers at each tolling point at the express lane entry and exit locations will create toll transaction records identified by a sequential number that includes, but is not limited to the following fields: the transaction number, agency code, tolling zone location, time, date, transponder ID, image, direction of travel, and transponder status code.

From the AVI and video image transactions, toll transaction records are generated by the zone controllers. The system will combine the entry/exit transactions and using transponder data or license plate data to create a trip and then apply the applicable toll rate based on the time of entry. Whenever single or "orphaned" transactions are discovered, the system shall utilize transaction matching logic, algorithms, or other methods to allow trips to be built. In general, toll rates will be assigned based on the time stamp of a vehicle's entry transaction.

3.1.4.4. Image Processing and Image Review

The system shall capture image(s) of all vehicles traveling through a toll zone where a Transaction Record is generated by the zone controller. All images will be automatically reviewed by the system.

Image processing includes both OCR/ALPR processing to enable images to bypass manual reviews. The manual image reviews will be processed through SRTA's image review center, utilizing TSI Contractor-provided Image Review workstation hardware/software.

3.1.4.5. Interface with Third Party Back Office

The completed Trips, including AVI, image, and combined (AVI & Image) trips, will be sent to SRTA's CSC system (a third party Back Office System) for posting and violation processing. The TSI Contractor provided system shall ensure that all Trip Transactions created in the Facility Host are sent to and received by the third party BOS. The TSI Contractor provided system must provide full reporting and reconciliation functionality such that transmission and receipt of Trips to and from the Facility Host and the third party BOS can be fully reconciled. The Electronic Toll Collection System will support the retransmission of Trips to SRTA's CSC system automatically based on transmission failure and at SRTA's request. This requirement will be detailed during the design phase of the Project(s).

The TSI Contractor shall implement the Interface to the Third Party BOS in the fashion described by the SRTA provided ICD and any updates or revisions to that ICD will be coordinated with and approved by SRTA during the design phase of the Project(s). Note that the ICD provided in Appendix I is an initial draft and various data elements and file structures will change during the implementation of the Projects. The ICD is provided to allow the TSI Contractor to understand the fundamental approach that will be the basis of exchanging information with SRTA's BOS.

3.1.5. Project Partnerships and Responsibilities

~~SRTA is partnered with GDOT and their representatives for the design, development, construction and delivery of the I-75 NWC Project and the I-75 South Project. These are Design Build (DB) projects under GDOT and GDOT will be procuring appropriate Civil Contractor(s) for all Civil and construction aspects of the projects. The Civil Contractor will be responsible for delivering many of the infrastructure items commensurate with the project the TSI Contractor will use once delivered.~~

~~Responsibilities for the Civil Contractor and the TSI Contractor involved in the Project(s) are described in the Responsibilities Matrix, attached to this RFP as Appendix J. The matrix is a part of the GDOT RFP for each of the projects and developed as a high level summary. Detailed requirements for each project with respect to the Civil Contractor's scope of work are included within the GDOT RFP's. The TSI Contractor that is selected by SRTA to deliver the Electronic Toll Collection System will be required to abide by the responsibility assignments described by this matrix. All parties will be expected to have input to and understanding of this matrix as the Project(s) progress and as directions may be changed.~~

~~A high level summary of major civil infrastructure items to be furnished and installed by the Civil Contractor are listed below. For detailed design requirements please reference the GDOT RFP's. For maintenance responsibilities please reference section 6 of this RFP. These infrastructure items include but are not limited to:~~

- ~~Structures~~
  - ~~New full span gantries for the toll zones (two gantries for each toll zone).~~
  - ~~New full span gantries for the mainline toll rate CMS.~~
  - ~~Toll Rate CMS sign structure (full span on mainline, overhead or roadside for arterials)~~
  - ~~Toll Rate CMS AVI structures (full span on mainline, overhead or roadside for arterials)~~
  - ~~Toll Rate CCTV structure.~~
  - ~~Either new or existing full span gantries for the GP scan sites. Existing sites will be retrofitted to meet the minimum height requirements stated in the GDOT RFP.~~
- ~~Toll Related ITS Equipment~~
  - ~~Toll rate CMS (mainline and arterial)~~
  - ~~MDS~~
  - ~~Toll rate CCTV~~
- ~~Roadside cabinets with environmental control~~
- ~~Hub buildings~~
  - ~~New buildings that include generators and AC~~
  - ~~Existing buildings with AC retrofitted with generators~~
  - ~~Uninterruptible power supply~~
- ~~Generators~~
- ~~Toll maintenance area~~
  - ~~Each Toll Zone will have a toll maintenance area to provide parking and access to the tolling equipment.~~
  - ~~Please reference the GDOT RFP's for additional information regarding design requirements. Conceptual Toll Site Layouts are included in the RFP documents as Exhibits. These include conceptual lane and shoulder widths as well as the relationship of the toll maintenance area that will contain the cabinets (as necessary) and the generator.~~
- ~~Corridor communications system~~
  - ~~Duct bank, conduit, and ground boxes~~
- ~~Conceptual layouts~~
  - ~~A conceptual design of the ITS and tolling system was developed as part of the GDOT RFP. These are included as Exhibits and depict the tolling and tolling related ITS components.~~

SRTA is partnered with GDOT and their representatives for the design, development, construction and delivery of the I-75 NWC Project and the I-75 South Project. These are Design Build (DB) projects under GDOT and GDOT will be procuring appropriate Civil Contractor(s) for all Civil and construction aspects of the projects. The Civil Contractor will be responsible for delivering many of the infrastructure items commensurate with the project the TSI Contractor will use once delivered.

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respect to the Civil Contractor's scope of work are included within the GDOT RFP's. The TSI Contractor that is selected by SRTA to deliver the Electronic Toll Collection System will be required to abide by the responsibility assignments and demarcations described by this matrix and as detailed within the GDOT RFP documents. All parties will be expected to have input to and understanding of this matrix as the Project(s) progress and as directions may be changed.

A high level summary of major civil infrastructure items to be furnished and installed by the Civil Contractor are listed below. For detailed design requirements please reference the GDOT RFP's. For maintenance responsibilities please reference section 6 of this RFP. These infrastructure items include but are not limited to:

- Structures
  - New full span gantries for the toll zones (two gantries for each toll zone).
  - New full span gantries for the mainline toll rate CMS.
  - Toll Rate CMS sign structure (full span on mainline, overhead or roadside for arterials)
  - Toll Rate CMS AVI structures (full span on mainline, overhead or roadside for arterials)
  - Toll Rate CCTV structure. (note, this structure may be shared with GDOT CCTV and/or MDS).
  - Toll MDS structure (note, this structure may be shared with GDOT CCTV and/or MDS).
  - Either new or existing full span gantries for the GP scan sites. Existing sites will be retrofitted to meet the minimum height requirements stated in the GDOT RFP.
- Toll-Related ITS Equipment
  - Toll rate CMS (mainline and arterial)
  - MDS
  - Toll rate CCTV
- Roadside (toll ITS) cabinets with environmental control and commercial electrical power service
- Hub buildings
  - New buildings that include with AC and supported by Civil Contractor permanent back up power system and commercial electrical power service.
  - Existing buildings with AC retrofitted supported by Civil Contractor permanent back up power system and updated commercial electrical power service, if necessary.
  - Uninterruptible power supply
- Generators: A Permanent back up power system will be designed and furnished by the Civil Contractor. Toll and toll related devices that are supported by this back up system include:
  - Toll Gantry locations
  - Toll Rate CMS, MDS not shared with GDOT, and AVI
  - Toll Rate CMS Monitoring CCTV
  - Travel Time (GP scan sites)
  - Hub buildings containing toll related equipment
  - One mobile emergency generator per GDOT RFP shall be furnished to SRTA
  - Toll zone roadway lighting
- Toll maintenance area
  - Each Toll Zone will have a toll maintenance area to provide parking and access to the tolling equipment.
  - Please reference the GDOT RFP's for additional information regarding design requirements. Conceptual Toll Site Layouts are included in the RFP documents as

Exhibits. These include conceptual lane and shoulder widths as well as the relationship of the toll maintenance area.

- Corridor communications system
  - Duct bank, conduit, and ground boxes,
  - Trunk fiber optic cable, including fiber splicing, buffer tube assignments, fiber assignments, and terminations in communication hubs,
  - Drop fiber optic cable from trunk fiber cable to roadside cabinets, terminated in patch panel.
- Conceptual layouts
  - A conceptual design of the ITS and tolling system was developed as part of the GDOT RFP. These are included as Exhibits and depict the tolling and tolling related ITS components.

The following summary matrix describes at a high level, the responsibilities for installation, integration and maintenance of these Civil Contractor provided items. For more information please refer to the respective GDOT RFP's.

Equipment [1]	Furnish	Install	Integrate [2]	Maintain	Operate
EL CMS	Civil	Civil	Civil/GDOT network	GDOT	SRTA via Navigator
GP CMS	Civil	Civil	Civil/GDOT network	GDOT	Navigator
Toll Rate CMS	Civil	Civil	TSI/SRTA network	TSI	TSI
GP Travel time sites (AVI)	TSI	TSI	TSI/SRTA network	TSI	TSI
Gates	Civil	Civil	Civil/GDOT network	GDOT	GDOT
Generators	Civil	Civil	TSI/SRTA network	TSI	TSI
Cabinets	Civil	Civil	TSI/SRTA network	TSI	TSI
CCTV Toll Rate	Civil	Civil	TSI/SRTA network	TSI	TSI
CCTV on Gantry pole	TSI	TSI	TSI/SRTA network	TSI	TSI
MDS	Civil	Civil	TSI/SRTA network	TSI	TSI
Hub Building	Civil	Civil	N/A	GDOT/SRTA (TSI) [3]	GDOT/SRTA (TSI) [4]
UPS Hub Buildings	Civil	Civil	TSI/SRTA network	TSI	TSI
UPS Toll Related ITS locations	TSI	TSI	TSI/SRTA network	TSI	TSI

Notes: *5/9/2013*

[1] Equipment references the actual piece of toll or toll related ITS and not the infrastructure supporting it.

[2] Integrate references the network that the device will ultimately reside on and that the device operates as intended within the toll and toll related ITS infrastructures.

[3] For the Hub Building the maintenance will be shared by GDOT and SRTA (TSI). The AC units, lightning protection and pest control shall all be maintained by SRTA via TSI.

[4] For the Hub Buildings, in some instances GDOT and SRTA will have equipment co-located. In other instances only one or the other agency will be operating within the building.

Table 3.1-1 Toll and Toll-Related ITS Responsibility Matrix

~~The TSI Contractor shall be required to work closely with the Civil Contractors throughout all phases of the Project(s). Please refer to the GDOT RFPs and to the respective Responsibility Matrixes for each in Appendix J.~~

~~The TSI Contractor shall be required to coordinate with the Civil Contractors during the design phase to furnish requirements such as but not limited to: equipment loadings for the final gantry design, fiber splicing diagrams, electrical equipment loading for HVAC (hub and cabinet), electrical design coordination, RF surveys, cable length distance limitations, and gantry spacing.~~

~~Additionally, the TSI Contractor will be required to coordinate the design, development, and implementation activities with GDOT to implement all aspects of an interface with the GDOT TMC.~~

The TSI Contractor shall be required to work closely with the Civil Contractors throughout all phases of the Project(s). Please refer to the GDOT RFPs and to the respective Responsibility Matrixes for each in Appendix J.

The TSI Contractor shall be required to coordinate with the Civil Contractors during the design phase to furnish requirements such as but not limited to: equipment loadings for the final gantry design, fiber splicing diagrams, electrical equipment loading for HVAC (hub and cabinet), electrical design coordination, RF surveys, cable length distance limitations, and gantry spacing.

Additionally, the TSI Contractor will be required to coordinate the design, development, and implementation activities with GDOT to implement all aspects of an interface with the GDOT TMC.

3.1.6. General Requirements

The requirements described in this RFP include the system concepts and technical requirements for the design, development, fabrication, programming, integration, testing, installation, implementation and maintenance of the Project(s). The requirements are specified on a functional level to permit the TSI Contractor

the flexibility in the design and development of the Electronic Toll Collection System(s) to reflect proven and reliable technology for an Electronic Toll Collection System fully capable of meeting SRTA's operational and contractual requirements.

The TSI Contractor shall furnish, mobilize and secure all required facilities, equipment, and resources necessary for initiating and concluding the Agreement and may include such portions of the following as are required at the beginning and end of the Project:

- Setting up at the various worksites, storage areas, sanitary and other facilities as required by GDOT and any other state or local law, rules, regulations or ordinances and the subsequent demobilization and removal from the site of said equipment, appurtenances and the like upon completion of the work. See Appendix K – Site Acceptance Checklist - for more details;
- Maintenance of Traffic (see 4.5.3.1) Traffic Control and Lane Closures for details);
- Obtaining necessary permits and licenses, and payment of fees as required by local, state and federal law;
- Coordinating design and installation and testing activities with SRTA and/or SRTA-Designated Representatives during various stages of the Project;
- Lighting work area;
- Sampling and testing of materials; and
- Providing required insurance and bonds.

The TSI Contractor shall be responsible for purchasing and maintaining equipment required for development, testing and implementation of the Electronic Toll Collection System. The TSI Contractor shall demonstrate the system at a test site located within the Continental USA with a representative configuration of equipment to be used for the Express Lanes system. SRTA and/or SRTA-Designated Representatives will approve the test site and SRTA and/or SRTA-Designated Representatives shall have full access to the test site while it is operational. SRTA and/or SRTA-Designated Representatives shall have access to all test data both live and historical to verify test scenarios and results. The test site shall be a closed course type facility suitable for testing all anticipated traffic patterns and speeds up to ~~100mph~~85mph. Equipment installed at the test site will not be used on the Express Lanes System.

The delivered system shall comply with the following standards:

- All measures shall be US Customary;
- All keyboards shall be QWERTY;
- All numbers shall be Microsoft English (United States); and
- The time zone used on all reports or screens that are displayed to users/customers shall be Atlanta (Georgia, United States) local time.

3.2. In-Lane System Functional Requirements

The TSI Contractor shall provide all equipment, hardware, software, cabling and connectors, and all other equipment required to design, develop, test, and implement the lane level Electronic Toll Collection system as identified in the requirements described by this RFP. Travel lanes and shoulder lanes that are 10 feet wide or greater will be fully equipped, shoulder lanes that are greater than or equal to four feet wide but less than 10 feet wide will have limited equipment, and shoulder lanes less than four feet wide will not be

equipped. ~~Travel lanes and shoulder lanes that are 10 feet wide or greater will be fully equipped, shoulder lanes that are greater than four feet wide and less than 10 feet wide will have limited equipment, and shoulder lanes less than four feet wide will not be equipped.~~ Fully equipped lanes will include AVI, AVC, VES, and DVAS subsystems while limited equipment lanes will include VES and TSI Contractor specified equipment required to trigger VES cameras and detect direction of vehicle travel. This section describes requirements for the lane level equipment that SRTA envisions will be required.

3.2.1. Zone Controller

The TSI Contractor shall provide zone controllers at all Gantry Locations per the requirements described herein and below.

3.2.1.1. Zone Controller Redundancy and Failover

Zone controllers shall be provided at all Gantry Locations on the Project(s). Zone controllers shall be designed and deployed in a redundant configuration such that there is a primary zone controller with a "hot standby" secondary zone controller that is able to take over transaction processing in the event the primary unit should fail (i.e. automatic failover). When the secondary unit detects that the primary is off-line, the secondary unit shall assume the functions of the primary unit. Alarm messages shall be generated when such an event occurs. These alarm messages shall be automatically transmitted to the MOMS. The TSI Contractor's failover design shall ensure that there is no loss of transactions or of revenue due to one of the zone controllers failing. Only one zone controller (either the primary or secondary) at any tolling location at a time shall generate Transaction Records. The switchover from the primary zone controller to the secondary zone controller shall not disrupt the operation of the rest of the system(s).

The zone controller hardware in all zone controllers shall be sufficient to process Transaction Record and image volumes of at least ~~2800~~30,000 vehicles per lane per ~~hour~~day. Zone controllers ~~and associated roadside image servers~~ shall have on board storage capacity to accommodate at least 90 days transaction record retention.

The zone controller(s) at each Gantry Location shall interface to roadside equipment (such as AVI, AVC, VES and DVAS equipment) to form Transaction Records, synchronize equipment time(s) and to implement MOMS alerts.

~~1.1.1.1.~~3.2.1.2. Zone Controller Software

Zone controllers located at each Gantry location process data obtained from the AVI, AVC, and VES equipment, sensors and subsystems to generate Transaction Records for each vehicle passing under the Gantry.

The zone controller software shall be configurable and able to support the Express Lanes volumes as indicated in section 3.5.

The TSI Contractor shall utilize appropriate protocols and data structures to accomplish the communications, including equipment status and alarms required between various components, sensors, peripherals, and subsystems. All messages between the zone controller, VES, ALPR, AVI system, vehicle separation/classification sensors, and the Facility Host shall utilize a documented,

non-proprietary protocol that is made available to and approved by SRTA during the Design Phase of the Project(s).

3.2.1.3. Zone Controller Start-Up

The zone controllers shall have start up procedures for initialization, and for self-diagnostic test sequences. Alarm messages shall be reported for all failure conditions and a notification of the diagnostic check completion shall be transmitted to the MOMS. Upon start-up or initialization, both zone controllers (primary and redundant) shall verify with the Facility Host (or appropriate system) that the latest configuration files, application software, transponder validation list, and any other files required to support the lane operations are present. If the latest files are not present on the zone controllers, the zone controllers shall send a notice to the MOMS application to alert appropriate maintenance and SRTA staff that there may be a configuration issue.

3.2.1.4. Transaction Processing

The zone controller will be required to detect and frame vehicles, to capture images of vehicles and associate them with the correct transaction, to classify vehicles by axle count and to detect direction of travel. The detailed transaction processing rules and the transaction message details will be defined and finalized during the Design Phase; however, the following basic requirements will apply (see Appendix D for related SLA requirements):

- For each individual vehicle, up to two (2) transponders (issued by SRTA or interoperable agencies) shall be read in accordance with the SLA requirement(s) and these transponders will be processed and reported in that vehicle's Transaction Record(s);
- The System shall have the ability to process multiple transponders in a vehicle. Payment shall be assigned to some or all of the transponders in the following order:
  - Valid home agency transponder;
  - Valid interoperable transponder; and
  - If no valid home or interoperable transponder, create a video transaction.
- A Transaction Record shall be created for each vehicle that travels through a Tolling Point, and the zone controllers shall ensure that the Transaction Record is complete prior to transmitting it to the Facility Host; and
- The zone controllers shall be able to automatically synchronize with the various sensors and subsystems at the lane level to ensure the events in the lane correspond to the Transaction Records generated and are associated with the correct vehicle.

3.2.1.5. Configuration Files

All parameters and settings required to operate the zone controller application will be maintained in a configuration file or files. A copy of the current zone controller configuration files shall be maintained on the Facility Host and will be available for downloading along with the zone controller

application file. Authorized personnel will also be able to make changes to the configuration file resident in the zone controller while in the field, according to SRTA's Change Management Policies. Changes made in the field shall be backed up to the Facility Host. All zone controllers will have default configuration files that allow the lane to start-up automatically.

3.2.1.6. Reversible Traffic Processing

The Express Lanes will have both planned and unplanned reversals of travel directions as part of normal operations. As such, zone controller(s) will be required to detect and record (in transaction records) a vehicle's direction of travel through the tolling zone. The zone controller(s) will be required to detect and frame vehicles (assign transponders accurately), to capture images of vehicles and assign them to the correct transaction, and to classify vehicles by axle count regardless of the direction of travel in the Express Lane(s).

The zone controller shall be able to automatically synchronize with the various sensors and subsystems at the lane level for both directions of travel.

The zone controller shall ensure that data from the various sensors and subsystems for only the direction of travel are captured and reported in the vehicle's Transaction Record. The Facility Host will have the capability to "set" the direction of travel in the Electronic Toll Collection System (note the Electronic Toll Collection System will not have control over RACS). This functionality will be implemented based on messaging between GDOT's RACS and the Facility Host which will be facilitated by the interface between GDOT and the TSI Contractor. The SRTA TOC personnel will be able to override this "set" direction when needed. See section 3.4.6 for additional requirements relevant to reversible traffic processing.

~~1.1.1.1.~~3.2.1.7. Interface to Direction of Travel Indicators

The zone controller will interface to the Direction of Travel indicator lights as necessary to visibly display the direction of travel that the Electronic Toll Collection System has been placed in (see section 3.2.11 for more information on this requirement). This will be used by personnel as an indicator of the system's direction setting. This is not meant to be an indicator for customer usage. Loss of communication to any of the Direction of Travel lights shall be immediately detected by the zone controller and transmitted to the MOMS.

~~1.1.1.2.~~3.2.1.8. Interface to Facility Host

All Transaction Records generated by the zone controller will be transmitted to the Facility Host in near real-time, and the delivery to the Facility Host will be guaranteed and will meet associated SLA requirements (see Appendix D) for Transaction Record transmission. All Transaction Records shall be uniquely identified, and validation shall be performed by the Facility Host to ensure that there are no missing, corrupted or duplicate Transaction Records. If missing, corrupted or duplicate Transaction Records are detected, an alert will be sent to MOMS and these incidents will be able to be reported upon.

The zone controller shall transmit the data identified below to the Facility Host. All messages shall be confirmed as received by the Facility Host before they are eligible for removal at the zone controller level. In the event of communication failures the following information shall be stored at

the roadside for a minimum of ninety (90) days or until successful transmission (either automatic or manual) is complete and verified:

- All Transaction Records generated in the lanes;
- Images for all Transaction Records;
- All alarm and status messages generated in the lanes; and
- All lane operational messages and device self-health messages.

The zone controllers shall include at least the following information in each transaction record:

- Transaction identification number;
- Transponder number(s);
- Tolling zone
- Lane;
- Speed;
- Direction of travel;
- Transponder account status;
- Transponder type;
- Violation indicator;
- Link to associated images;
- Actual Axles;
- Vehicle Class;
- Transaction date;
- Transaction time;
- Agency ID/Code; and
- Equipment status code.

The TSI Contractor's system will support reporting from the zone controllers, as well as the Facility Host to allow audits to be performed to ensure Transaction Records generated by the zone controllers are properly received by and reported on the Facility Host (see section 3.5.7 for specific audit report requirements). The TSI Contractor will provide an automated means of synchronizing the zone controller and Facility Host messages in the event that any of the following events occur, but not limited to:

- The zone controller is replaced;
- Communications are down;
- Control is switched from one of the redundant zone controllers to the other; or
- When data on the zone controller is not retrievable due to a catastrophic failure.

The zone controllers will be capable of receiving files and tables from the Facility Host or, in the case of a communication failure, via local download. Receipt of all files and data will be acknowledged and/or logged, and any failures in the transmission shall be reported to the MOMS. Retransmission

protocols will be developed during the Design Phase. These files and tables include but are not limited to:

- **TVL:** The zone controller shall be capable of using the TVL as received from the Facility Host. The TVL file shall include License Plate information related to each Transponder. The zone controller shall be capable of accepting comprehensive (complete list once a day) and incremental (changes updated on a configurable interval, but not less than on an hourly basis) TVL files, and shall activate the most recent TVL upon receipt and after validation of the file.

- **Configuration Files:** All zone controller configuration files and tables needed to support lane operations will be maintained at the Facility Host for version control and will be available for download to the zone controllers.

- **Software Download:** All zone controller software (application file(s), executable file(s)) shall be transmitted to the zone controllers from the Facility Host; and versions on each zone controller shall be maintained, tracked and recorded.

~~1.1.1.3.~~3.2.1.9. Stand Alone Operation

The zone controller shall be capable of operating in a stand-alone mode if communications between the zone controller and Facility Host are down. When operating in this mode, the last TVL, configuration, and application files downloaded from the Facility Host shall be used while processing vehicles. Upon re-establishing communications with the Facility Host all back-logged messages shall be transmitted to the Facility Host without affecting the near real time operations or degrading the lane operations. The zone controller subsystem shall be capable of storing all transaction information collected while in stand-alone mode for a minimum of ninety (90) days.

~~1.1.1.4.~~3.2.1.10. Time Synchronization

All zone controllers will be time synchronized to the Facility Host at time of zone controller start up. The software used for time synchronization shall support monotonic changes to time. The zone controller will synchronize or transmit time synchronization messages with every connected/monitored subsystem capable of maintaining time, per the appropriate SLAs.

3.2.2. Uninterruptible Power Supply (UPS)

All toll and toll-related ITS equipment shall be UPS protected with a minimum of two (2) hours full operation. The TSI Contractor will monitor all UPS via Simple Network Monitoring Protocol (SNMP). ~~TSI Contractor will provide all required electrical connections between UPSs and back-up generator systems located along the Express Lane(s) Corridor(s) and will provide for connections to portable generators at all Gantry Locations and hub buildings. The TSI Contractor shall furnish UPSs that are compatible with portable generators that will be mounted in the cabinet(s) to allow connectivity with no tools required.~~ The TSI Contractor shall furnish UPSs to be mounted in cabinets that are compatible with portable generators to allow connectivity with no tools required. If any online UPS fails, an auto-sync transformer shall bridge line power and utility power within one ~~Hertz~~ cycle of AC line power and no power is lost, only backup capability is lost. Whenever any of the following occur, an alert will be generated and sent to maintenance personnel and SRTA staff via the MOMS:

- UPS begins to power equipment;
- UPS battery level reaches a configurable low point; and
- Whenever UPS is no longer under battery power.

The following equipment will be protected by UPS:

- Toll Rate CMS;
- GP Lane AVI equipment;
- Toll rate AVI equipment;
- Shared MDS;
- Toll rate CCTV; and
- All toll zone equipment.

UPSs at Gantry Locations shall be able to gracefully shut down all toll zone equipment within a configurable time frame except for the AVI subsystem equipment at the location. This will allow the AVI subsystem to remain in operation for a longer period of time (48 hours at a minimum) to continue to read transponders. The provisioning of the hub building UPS is the responsibility of the Civil Contractor.

3.2.3. AVI Equipment

The Electronic Toll Collection System will include AET with multiprotocol (minimum of three (3) concurrent protocols) RF readers, processing both SRTA home and interoperable transponders. The TSI Contractor shall provide AVI antenna and readers that meet the requirements herein at all Gantry Locations and general purpose lane AVI scan sites (referred to as travel time sensors in the GDOT RFP documents) as required by the project.

The Civil Contractor is furnishing either a new quad chord structure or a retrofitted existing full span structure to accommodate the tolling locations and the travel time locations. The TSI contractor is responsible for furnishing all required mounting brackets and hardware to attach the tolling and tolling related ITS equipment. Please reference the respective GDOT RFP's for specifications and exhibits (quad chord) related to the structural requirements.

In addition to the selection, provisioning, and testing of the AVI subsystem, the specific protocols that the multiprotocol readers must be capable of processing are Peach Pass (6C), IAG, Cruise Card and SunPass (eGo® Plus transponders currently being read in SeGo mode) transponders in a highway open road tolling environment. Since it is possible that SRTA may become interoperable with other agencies, or that a national interoperability standard will be adopted, readers shall be configurable to allow SRTA to implement different protocols in the future.

The TSI Contractor shall provide certification during the PDR that the proposed reader's 6C capabilities have been certified by an approved independent third party laboratory (Certification under the OmniAir Certification Services' ISO 18000-6C Certification Program will satisfy this requirement).

The TSI Contractor shall conduct initial site RF interference tests (in coordination with the Civil Contractor) at all proposed Project sites that will be equipped with RFID products. The TSI Contractor will also provide

all RF engineering analysis, lane frequency assignments and FCC required AVI transmitter technical information.

The TSI Contractor is responsible for the design, provision and installation of the AVI subsystem including any associated enclosures (and heating/cooling if required), cabling, brackets and ancillary components required for the proper functioning/operation of the AVI subsystem within the performance requirements identified in Appendix D.

3.2.4. Vehicle Detection, Separation, and Classification

The TSI Contractor will select and install inductive loop based systems at each tolling location that are capable of:

- Detecting vehicles at speeds in accordance with the SLA requirements.;
- Separating vehicles spaced as close as ~~eight (8)~~six (6) feet apart, at speeds in accordance with the SLA requirements; and
- Reporting vehicle speeds in accordance with the SLA requirements.

The vehicle detection/separation equipment shall have the ability to classify vehicles and shall detect trailer hitches to ensure that vehicles with a trailer/tow are reported as one unit (axles combined). Vehicles shall be classified based on the number of axles, and vehicles that are capable of traveling with axles "up" will be classified correctly (only axles on the roadway will be classed). The final classification scheme shall be subject to SRTA review and approval. The system shall have the capability to identify multi-axle vehicles (vehicles with more than two axles) as transactions, and these transactions will be dispositioned based on SRTA's Business Rules.

The separation and classification loop system shall provide vehicle event messages and signals to the zone controller and may also trigger the VES cameras. If the loop system stores time internally, it shall have the ability to synchronize time with the zone controller or through the network to the same source as the zone controller at any time. The loop system shall be capable of performing diagnostics and reporting health to the zone controller when polled or at configurable intervals. Loss of communication to the loop system shall be immediately detected and transmitted to the MOMS.

3.2.5. Violation Enforcement System

The TSI Contractor shall provide all necessary hardware, software and related equipment required to support the in-lane VES requirements that include but are not limited to the following:

- Meet the VES performance metrics in Appendix D;
- Capture images of the front and rear license plate (if present) of vehicles that straddle lanes or shoulders under a Gantry in the Express Lane(s) Corridor(s);
- Images must include clearly visible license plate and vehicle image data such that SRTA can utilize versions of images in print format on violation notices;
- Capture and process images of vehicles in accordance with the speed and separation requirements in the SLAs;

- Buffer/store images locally (on-board camera, in zone controller, or in a DPU system) until successful image transition to the Facility Host is acknowledged, such that no image is lost;
- Store all images (including those associated with valid AVI Trips) for a configurable rolling periods ~~of not less than thirty (30) days~~as indicated in section 3.9.1. Images for all Trips considered to have valid payment in the lane at the time of the Trip (i.e. valid transponder Trips) will be stored in the TSI Contractor system and only transmitted to the SRTA BOS on request by SRTA (Note: this image request functionality will be added to the SRTA BOS ICD during the Project design phase). The primary cause of this request is for Trips that fail to post to customer accounts on the BOS, in which case these Trips will be pursued as violations in the SRTA BOS, requiring the associated image(s). Images for all other trips (i.e. violations) will be sent to the SRTA BOS with the initial transmittal of the Trip;
- Images shall be stored in ~~native~~ a format which supports ~~for~~ OCR and VSR processing for a configurable rolling period of not less than thirty (30) days at the roadside or hub location and shall allow for automatic rebroadcast, and re-OCR and re-VSR as necessary;
- Images shall be stored image-by-image as separate digital files, in open-standard file architecture such as JPEG, GIF or TIFF and linked to the transaction message;
- Process images with ALPR software;
- The VES shall also support transmission of uncompressed unaltered images as necessary for ALPR (OCR and VSR processing) to extract the plate number and jurisdiction, and Region of Interest with an accuracy that meets the performance requirements specified in Appendix D. The VES shall select a single best image from the appropriate camera(s) for image review process unless the vehicle is in the straddle or shoulder lane;
- To support rapid detection of poor performing image captures, the VES shall provide event messages through MOMS that indicate if the image quality of a VES camera has degraded such that its average OCR confidence falls below a configurable threshold, or a camera is producing black (no picture) images; and
- Cameras and illumination devices shall support a capture rate of no fewer than four vehicles per second.

The Civil Contractor is providing all gantry structures to which the TSI Contractor may mount tolling hardware. If the TSI Contractor elects to mount VES components on any other structure, then the TSI Contractor will be responsible for all civil engineering design, shop drawings and construction costs related to the location of such equipment. All shop drawings will be submitted to SRTA and shall be approved by SRTA in accordance with section 4.

3.2.5.1. VES Cameras and illumination devices

The TSI Contractor should reference the permanent roadway lighting requirements contained in the GDOT RFP for the information on the lighting levels that will be provided at the toll locations. The TSI Contractor shall provide VES Cameras and illumination devices that, at a minimum:

- Capture images of the rear license plates and vehicle image of each and every vehicle that passes under a Gantry Location in the Express Lane Corridor(s);

- Capture images of the front license plates and vehicle image, masking out the front image of the occupants of each and every vehicle that passes under a Gantry Location in the Express Lane Corridor(s);
- For standardization purposes, it is SRTA's goal to use the same model camera and illumination devices at all lane locations;
- It is SRTA's desire that the camera model be capable of switching between color and monochrome dependent on the direction of travel and illumination utilization;
- For cost efficiency purposes, it is SRTA's desire to use the same set of front and rear cameras and illuminators in the opposite direction when a lane is operating in the reversed direction;
- Properly capture all license plates with sufficient sharpness to read state jurisdictions;
- Provide a contrast to noise ratio of at least 10:1;
- Provide a human readable image of legal temporary paper plates during day ~~ambient~~ light conditions
- Cameras shall meet or exceed the following properties in order to ~~provide~~meet the performance metrics in Appendix D:
    - ~~Capable of switching modes between color and monochrome,~~
    - Color mode shall be used for all rear images, and front images during daylight hours,
    - Monochrome mode shall be used for front view cameras during periods when front lighting limitations are present,
    - High resolution image technology greater than 2000 pixels in the horizontal direction,
    - Minimum of 150 pixels per license plate image width,
    - CMOS sensor,
    - Real-time adaptive light sensing,
    - Field of view that covers at least 14' horizontal and 8' vertical,
    - Properly capture temporary license plate images;
- In all ~~ambient~~ light conditions, images shall clearly show – at a minimum - the entire ~~front and~~ rear of the vehicle in enough detail/clarity to discern the make/model and location of the vehicle in the travel lane;
- At a minimum external asynchronous triggers shall be supported by the camera and illumination;
- Camera illumination and triggering devices shall be mounted/installed such that the operation of these devices is not distracting and does not affect driver safety in any fashion;
- Illumination shall be energy efficient LED lighting;
- Both on axis and off axis illumination may be used to illuminate the license plate and vehicle; and
- Illuminators shall be monitored by the MOMS system to detect failures and degradation.

3.2.6. CCTV Systems (In-Lane Systems)

SRTA envisions several CCTV based systems/applications implemented along the Express Lanes Corridor(s) to ensure that all operational responsibilities are met. These systems will be utilized to monitor toll rate CMS locations, to implement lane level DVAS, provide security/access monitoring for certain facilities, and for ITS related support. The TSI Contractor shall furnish and install those cameras/systems that will be deployed to support DVAS, to monitor traffic at each Gantry location, and to implement security

monitoring at cabinets co-located with Gantry Structures and hub facilities. The Civil Contractor will provide those CCTV cameras that will be deployed to support toll rate CMS monitoring. Refer to Appendix B for locations of these CCTV components. All CCTV cameras shall support integrated Pan/Tilt/Zoom (PTZ) controls and remote applications to review video. These CCTV based systems have specific requirements as described below.

3.2.6.1. CCTV Camera Requirements:

All TSI Contractor provided CCTV systems shall include digital cameras that are IP-based and that utilize the same fiber network as all other roadside equipment. All cameras provided to satisfy these requirements must be self-contained with full color and PTZ functionality and shall be capable of showing human readable images in any light conditions. Any application that is utilized to access the CCTV systems will include password protection. All CCTV cameras shall include appropriate enclosures to ensure continuous operation in all weather conditions, shall provide clear video/images of the intended subject area regardless of ambient lighting (day and night) and/or weather conditions and shall have at least the following attributes/capabilities:

- Camera:
  - Day (color)/night (monochrome) switchover and iris control, with user-selectable manual and automatic control capabilities;
  - Provides Titling & Masking features;
  - programmable preset titles for each preset position, and programmable privacy zones;
  - Programmable preset Titling (minimum 18 characters per line);
  - IP Addressable;
  - Digital high definition resolution (1280 x 720 as a minimum) full color;
  - Automatic focus;
  - Operation in ambient light for Day/night conditions;
  - ~~Power Over Ethernet (PoE);~~
  - capable of remote firmware upgrade via the communication interface; and
  - H.264 / MPEG-4 Part 10 video compression.
- Video Encoding:
  - H.264 Moving Picture Experts Group's MPEG4 part 10 (H.264) video compression technology;
  - Encoded video can be transmitted utilizing programmable bit rates;
  - Is capable of delivering color and monochrome video at up to 30 frames per second (fps) regardless of resolution; and
  - Provides 99.99 percent error-free operation.
- Lens:
  - Shall be of automatic and manual focus and iris controls;
  - High Definition Camera has minimum 24X motorized automatic optical zoom lens with optical iris;
  - Shall have depth of field that provides a clear image of roadside areas under all lighting conditions; and

  - Shall have a maximum aperture of at least f/1.6.
- Dome:
  - Shall be pressurized Dome with low-pressure alarm feature;
  - NEMA 4X/IP-67 rating; and
  - Distortion free plastic with sunshield.
- PTZ functionality;
  - Integrated pan/tilt mechanism capable of providing 360 degree continuous pan with a minimum 90 degree tilt range (i.e. zero (0) degrees to minus 90 degrees);
  - Variable speed control;
  - Preset position return accuracy of plus or minus 0.36 degree, or less than 0.10 percent or better;
  - Support a minimum of 64 presets;
  - Support a minimum of eight programmable blackout zones.
  - Positioner has a minimum automatic pan speed of 240 degrees per second to a preset camera position; and
  - Includes azimuth and compass display with ability to display pan and tilt position with a 1 degree resolution.
- Communication/Network Interface:
  - Supports National Transportation Communications for ITS Protocol (NTCIP) 1205 v1.08;
  - Capable of communication with other devices using transmission control protocol (TCP)/IP, or user datagram protocol (UDP)/IP;
  - Supports Real Time Streaming Protocol (RTSP, per IETF RFC 2326);
  - Camera's local area network (LAN) connection supports requirements detailed in the IEEE 802.3 Standard for 10/100 Ethernet connections; and
  - The camera shall have a minimum of one Ethernet port, which shall be a 10/100 Base-TX connection or greater.

The system shall have the capability to store a minimum of ninety (90) days of video data that can be retrieved by the review application during normal daily operations. Storage time shall be configurable between thirty (30) and ninety (90) days. Video older than the configurable period of time shall be archived off the "live" system, but will remain retrievable/viewable for three (3) years by SRTA TOC staff on request with 24 hour lead time. This ninety (90) day storage requirement applies to but is not limited to the following:

- Toll Rate CMS CCTV video (stored at 10 FPS);
- Video Audit System CCTV video (stored at 30 FPS); and
- Gantry Location and security access CCTV video (stored at 15 FPS).

SRTA currently utilizes Cohu Inc's Phoenix Viewer Express to view live CCTV video from the I-85 Express Lanes Project (note SRTA does not have recording capability in this system). For all CCTV

systems provided by the TSI Contractor under this RFP, the TSI Contractor will be responsible for camera control, real time and recorded video display, and the collection and storage of all CCTV video. Additionally, The TSI Contractor shall either provide integration to SRTA's existing Phoenix Viewer Express (including any required licenses to support the additional cameras/users/locations required under this RFP) or shall provide/install/configure a complete video viewing package with features and functionality equivalent to the Phoenix Viewer Express. The TSI Contractor shall include the 27 existing cameras installed on the I-85 Express Lanes in the video viewing package.

All components (cameras, servers, etc.) in this system shall be integrated with the MOMS such that appropriate alerts, messages, and equipment statuses can be automatically monitored, responded to, and reported on.

3.2.6.2. CCTV Installation Requirements

Power and data connections at each location will be provided by Civil Contractor. The TSI Contractor shall be responsible for running power/data connections from the power/data equipment enclosure(s) to the TSI Contractor-installed equipment.

All externally mounted or installed components of the DVAS CCTV system (brackets, enclosures, cabling, connectors, etc) shall be appropriately sealed and/or enclosed such that they will operate continuously and will provide legible images of the lane(s) under all weather/lighting conditions in the Atlanta metro region.

All Gantry and Security Access CCTV system cameras shall be mounted/located in such a way as to ensure unobstructed viewing of the roadway and the hub/cabinet facility access activities allowing for SRTA monitoring and/or response to an access alarm. Locations for the cameras will be coordinated with SRTA.

As required during the project, the TSI Contractor shall provide installation plans (shop drawings) for all CCTV system equipment and/or components (cameras, enclosures, brackets, cabling, conduit, etc). All shop drawings and as-built drawings will be submitted to SRTA/GDOT and shall be approved by SRTA/GDOT in accordance with section 4. The relevant as-built hardcopies shall be stored in all equipment cabinets/enclosures for use by maintenance technicians.

3.2.6.3. Toll Rate CMS Monitoring

The TSI Contractor shall integrate the Civil Contractor provided toll rate CMS monitoring CCTV equipment into a system/application that can be utilized by SRTA TOC staff to view the toll rate CMS in real-time, and to and review recorded/historical CMS video data. The system shall automatically capture and record video of all toll rate CMS.

Cameras shall automatically revert to SRTA configurable preset PTZ settings in order to redirect them to a view of the toll rate CMS displays when no manual PTZ inputs have been detected within a configurable timeframe.

3.2.6.4. Digital Video Audit System (DVAS)

The TSI Contractor shall provide a comprehensive DVAS that enables SRTA staff to verify/reconcile/audit toll transactions from all lanes, to review video of events and/or incidents in the express lane(s), and to identify possible irregularities. The TSI Contractor shall provide all necessary hardware, software and ancillary equipment required to support DVAS deployment in the Express Lanes. The DVAS shall include, but will not be limited to:

- Interfacing with the zone controller(s) for vehicle transactional data to include elements such as individual loop state changes, AVI tag reads, vehicle classification, location (lane, Gantry/Plaza), data/time, and violation indication;
- Zone controller transactional data (as above) will be overlaid onto the video data displayed on screen;
- CCTV cameras (see section 3.2.6.1. above for camera requirements) in each lane directed toward the exit of the tolling zone(s) to capture video data of vehicles/traffic exiting the lane;
- A Video Display/Workstation(s) with appropriate application/software and user interface to allow viewing of at least 16 camera feeds in real time, in separate and selectable windows with overlaid transactional data;
- The user interface shall provide the capability to select and review video based on timeframe, location (lane/ Gantry/ Plaza), tag number, vehicle class, transaction number, and shall allow the selected video to be replayed in real-time, in slow motion, frame by frame, and will allow the user to "scroll" through the selected video with a pointing device (mouse);
- Whenever video data is being reviewed, the corresponding transactional data will be displayed on screen. As video is "scrolled'", transactional data elements will "scroll" with the video;
- Provide the ability to print selected video images with associated transactional data;
- All digitized video and corresponding transactional data will be synchronized/coupled and will be stored to allow historical viewing and analysis;
- DVAS Cameras shall allow an authorized operator/user to individually set them up and configure them, and configure settings shall be available on a per-camera basis;
- ~~Video/images of vehicles without the customer being seen clearly;~~
- DVAS camera(s) shall provide:
  - Clear video/images of the intended subject area regardless of ambient lighting and/or weather conditions; and
  - An overall view of the traffic flow for the targeted area.

While DVAS cameras shall remain in fixed positions during normal operations, they may be operated remotely (pan, tilt, zoom) by appropriate SRTA personnel. The capability to control any/all DVAS cameras shall be UserID and password protected. DVAS cameras will return to a SRTA configurable default position any time that they have been placed into remote control and no PTZ inputs have been received for a SRTA configurable period of time.

3.2.6.5. Gantry Location and Security Access Monitoring

The TSI Contractor shall provide CCTV cameras at each gantry location to monitor local traffic conditions/incidents and hub/cabinet facility access activities at co-located roadside cabinets and/or hubs. The TSI Contractor may utilize the 10- to 15-foot tubular extensions located at each Gantry Location provided by the Civil Contractor for mounting these cameras. As with other CCTV based systems specified herein, this system shall utilize cameras with Pan/Tilt/Zoom (PTZ) controls and will allow for a default setting that cameras automatically return to when not in remote control operation.

While these cameras will be defaulted to provide a view of local traffic conditions at each Gantry Location, whenever a co-located cabinet or hub building is unlocked, or the respective doors are left open for a selectable time period, the TSI Contractor shall integrate the system such that the camera at that location shall automatically be directed to a preset PTZ setting that will allow both real time images and recording of the access event.

When an access event has been detected by MOMS or by the Security System, the TSI Contractor shall integrate the system such that the camera at that location shall be auto directed to the activity, and an alarm indication and a notification shall be sent to the SRTA TOC and to SRTA's Intelligent Transportation Management System (ITMS) as described in section 3.6. The camera shall continue to monitor and record activity at the access event until operator action determines the cause and resets the alarm and camera position.

3.2.7. Traffic all Lanes (EL & GP) - MDS Sensors

The TSI Contractor shall integrate the Civil Contractor provided Microwave Vehicle Detection units (MDS) into the Electronic Toll Collection System. The TSI Contractor shall ensure that the detection system is tuned properly to provide vehicle presence detection and traffic data collection, across all specified lanes to measure (at a minimum) vehicle speed, vehicle count/volume, lane occupancy, and vehicle direction. These sensors will be placed at locations approved by GDOT/SRTA (see GDOT RFP documents for location details) on gantries/structures provided by Civil Contractor.

While these MDS units shall be provided by Civil Contractor, it is expected that the TSI Contractor shall work closely with appropriate GDOT/SRTA personnel and contractors to ensure that these units meet appropriate industry standard requirements for device implementation (IP addressable), device set-up and configuration, operational requirements (all weather conditions), frequency, and vehicle detection accuracy (speed and volume) in all applicable lanes at a designated location.

The MDS will be shared between GDOT and SRTA, and as such both GDOT and SRTA will maintain simultaneous connections to the MDS units. The Civil Contractor is responsible for installation of the MDS and integration with the GDOT network, reference the GDOT RFPs for additional details. The TSI Contractor shall integrate the MDS into the SRTA network. The shared MDS are critical to SRTA's dynamic pricing system. SRTA will have primary control of configuring these shared devices. Since the MDS unit is only required to have a single Ethernet port, a terminal (port) server may also be required to provide network connectivity via serial interface to provide simultaneous communication. The TSI Contractor will need to coordinate with both GDOT and SRTA to determine the network interface to be used to provide network connectivity (Ethernet or serial).

While ~~I~~it is not envisioned that these traffic sensors will interface directly with zone controllers for transactional data, ~~but~~ the raw data output from these sensors will be aggregated by the TSI Contractor and utilized by the Dynamic Pricing module (see requirements in section 3.4.3 below).

The TSI Contractor will ensure the MDS equipment installed along the Express Lane(s) Corridor(s) will receive time synchronization data from the National Institute of Standards and Technology (NIST).

3.2.8. GP Lane AVI Scan Sites (Travel Time System)

In addition to installing AVI equipment at all Express Lane Gantry Locations to support the Electronic Toll Collection System, the TSI Contractor shall install AVI equipment to monitor and report on transponders detected in any/all of the General Purpose lanes indicated in Appendix B and in the GDOT documents as GP AVI equipment.

The purpose of the GP Lane AVI equipment is to:

- Record AVI transponder reads in the GP lanes in order to assess transponder penetration in those Lanes; and
- Calculate travel times in the GP lane(s) between AVI Scan Site points.

Data from these AVI Scan sites will be transmitted to the Facility Host, to the GDOT TMC (see section 3.5.5.3 for specifics of the interface to GDOT TMC) and the SRTA TOC. This information shall be available in various system reports (see section 3.5.6 for a description of these reports). The SRTA TOC requires the ability to view the data from these AVI Scan sites in real-time (see section 3.4.4).

In the event that any AVI Scan site loses communications with the Facility Host the AVI system at that location will be capable of storing/buffering all information related to at least 250,000 transponder reads ~~AVI reads for up to three (3) days~~ and when communications are restored these reads will be transmitted to the Facility Host ~~for use in Transaction Processing and Trip Building~~.

The TSI Contractor will ensure the AVI equipment installed at these GP Lane AVI Scan Sites will receive time synchronization data from the NIST.

3.2.9. Toll Rate CMS AVI Sites

The TSI Contractor shall be responsible for providing and implementing AVI equipment located at all toll rate CMS locations. Transponder reads from these locations will be used to determine travel times from the toll rate CMS locations to the Gantry Locations. The dynamic pricing system shall have a dynamic value representing the calculated travel times from the toll rate AVI sites to the nearest downstream Gantry Location. This value may be used by the Dynamic Pricing System to ensure that customers do not pay more than what was displayed by the toll rate CMS prior to entering the facility(s). Note – Express Lane entry points may have more than a single associated toll rate CMS.

Toll Rate CMS AVI sites that are on the mainline shall require coverage of each travel lane. Each Toll Rate CMS AVI site on the arterial roadways that serve as access to the express lane facility shall require coverage of at least two (2) lanes. These two lanes will be determined during the design phase coordination with the Civil Contractor and will be dependent upon the intersection configuration and the infrastructure furnished for the AVI to be mounted on.

The TSI Contractor will ensure the AVI equipment installed at these toll rate CMS Sites, as well as the toll rate CMS controllers (supplied by SRTA/GDOT) will receive time synchronization data from the NIST.

3.2.10. Roadway Reversal System

Each facility has a Roadway Access Control System (RACS) that provides control for proper ingress and egress to and from the Express Lane(s) and allows GDOT to set the direction of travel on the facility. Primary control and operation of the RACS is the responsibility of the GDOT TMC, and while communication to/from the RACS for purposes of lane reversal is over the GDOT TMC network and infrastructure, there will be communication to the SRTA TOC whenever the direction of travel is changed (see section 3.4.6 for specific requirements on SRTA TOC Roadway Reversal).

As defined within the GDOT RFP, the Civil Contractor RACS shall consist of the below items:

- Roadside Access Control System (RACS): Warning Gates, Resistance Gates, CMS, and CCTV Cameras (NOTE: the lane Open/Closed CMS is a different CMS from the toll rate CMS);
- Reversible Gate and Warning Gate control software;
- Access Control System "smart controller" at the roadside;
- Communication connections between the roadside cabinet and each embedded CMS controller;
- Integration with NaviGAtor through NTCIP-compliant interfaces and communication protocols;
- Reversible lane operations module within NaviGAtor (responsibility of the TMC SI); and
- Integration between NaviGAtor and SRTA's ~~BOS~~ TSI (responsibility of the TMC SI and SRTA).

GDOT will provide a hard-wired connection between the RACS controller cabinet and the closest toll rate CMS controller cabinet that will communicate the position of an RACS "override" switch to the toll rate CMS controller. The TSI Contractor will be required to configure the toll rate CMS to display certain messages based on the position of this "override" switch. The "override" switch will allow GDOT maintenance personnel to select one of ~~three~~ five ~~–~~positions: Open; Closed; minimum toll rate determined by SRTA, SRTA configurable message, and the default 'Normal' position in which the switch will reside during normal operations. Outside of normal operations, based on the position of the switch, the toll rate CMS will then display the appropriate/associated message, to be defined by SRTA during the design phase of the project.

These messages will override any existing or default messages being displayed on the toll rate CMS, and any message transmitted by the Electronic Toll Collection System. Additionally, as each toll rate CMS controller will be connected to the Electronic Toll Collection System Network and anytime the "override" switch is utilized, the Electronic Toll Collection System will generate a message to the SRTA TOC ITMS Interface and to the GDOT TMC communicating the position of the switch. The content and format of this message shall be coordinated with the SRTA TOC and the GDOT TMC during the Design Phase of the Project(s).

For additional related requirements regarding the RACS furnished by the Civil Contractor, please reference the GDOT RFP's for the Express Lane Access Control specifications and associated language contained within the technical documents.

3.2.11. Direction of Travel Indicators

The TSI Contractor shall provide and install indicator lights at each Gantry Location (one light per gantry per direction) that will visibly communicate the direction of travel along the Express Lanes Facility to maintenance personnel and RACS operators. These lights shall be mounted to the top of each reversible gantry structure and shall be controlled by the zone controller at each Gantry location.

These lights will be in the visible spectrum and will communicate the direction of travel to maintenance personnel. Illumination of the light will be visible from 360 degrees and in all ambient lighting conditions. There will be a single light for each direction of travel. The light on the right hand side of the current direction of travel (per the Electronic Toll Collection System's setting) will be illuminated.

MOMS will be required to monitor the status of the direction of travel indicators and provide alerts/alarms upon exception events and equipment malfunctions.

The design and operational procedures for these direction-of-travel indicators shall be finalized during the Design Phase of the Project(s).

3.2.12. Toll Rate CMS Integration

While all of the CMS that will be deployed for the Project(s) will be provided by the Civil Contractor, the TSI Contractor shall be required to integrate these toll rate CMS into the Electronic Toll Collection System. Toll rate CMS shall be connected to the Electronic Toll Collection System roadside network (fiber optic network), to the appropriate RACS controller (hard-wired), and shall display/communicate the current toll rate as determined by the Dynamic Pricing system to motorists travelling the Express Lane(s) Corridor(s). The specific toll rate messages that will be displayed on these toll rate CMS will be finalized during the design phase(s) of the project(s).

Please see the GDOT RFP for the CMS requirements and specifications. Full matrix CMS signs shall be furnished by the Civil Contractor. The mainline toll rate CMS will consist of a toll rate message OR a configurable message. The arterial toll rate CMS will consist of a toll rate message as well as a configurable message that contains the destination. For the arterial toll rate CMS the destination message with the dynamic toll rate shall be posted simultaneously on the full matrix CMS sign.

If any toll rate CMS loses communication with the Facility Host, an alert will be generated in the MOMS and a default message will be displayed by the CMS. This default message will be agreed to during the design phase of the project(s). Additionally, the toll rate CMS shall display/communicate the appropriate “override” message to motorists travelling the Express Lane(s) Corridor(s) should the “override” switch position dictate such (see section 3.2.10 for specifics on the “override” switch).

3.3. In Lane Hardware and Software Requirements

3.3.1. Hardware Requirements

All equipment, supplies and materials furnished under this Contract shall be new, off-the-shelf, field proven and must meet applicable ISO, IEEE and ANSI defined standards. Materials and products that have been previously used for development or testing purposes or items that have been salvaged or rebuilt/refurbished shall not be used in connection with this Agreement.

Hardware shall be designed with the following specifications:

- All components that perform the same function shall be interchangeable;
- All zone controllers shall be identical in terms of form, fit, and function;
- Replacement parts and units shall be modular such that each can be changed out with no equipment modification required;

- All electronic components shall be installed in non-corrosive sealed enclosures and meet the requirements specified in section 3.3.5 of this RFP;
- Enclosures shall have at least a 30 percent expansion capacity to accommodate added circuit boards and additional components for future expansion;
- ISO standard I/O interface modules shall be used in the design and all serial, discrete and network interface boards shall have at minimum two spare slots to support the addition of components;
- All field wiring shall be terminated on screw lugs or connectors, and wherever possible, connectors shall be keyed or polarized to prevent incorrect connections. If keying or polarization will not prevent an incorrect connection, the cable shall be clearly labeled to indicate the proper connection point.;
- All wiring and connectors shall be labeled per industry standards;
- Surge suppression shall be provided for all field wiring susceptible to lightning or similar surges;
- All lane equipment shall be fused and protected against over current, over voltage, under voltage and lightning;
- Power supply shall be provided for all required internal DC voltages;
- All equipment shall be properly grounded to ensure the safety of maintenance personnel; and
- All field cabinets will have surge suppression on all wires and/or cables entering the cabinet.

3.3.2. Hardware Mean Time Between Failure (MTBF) Requirements

The TSI Contractor shall select equipment that meets the following ***minimum*** MTBF requirements. Cut sheets for all equipment shall be provided with the TSI Contractor's proposal. For subsystems made up of multiple components for which no single MTBF can be obtained from subsystem vendor, the TSI Contractor shall be prepared to provide a subsystem reliability analysis using MTBF values for the individual components included in the subsystem. For the zone controller, the MTBF applies to each individual zone controller in a redundant pair when a redundant pair is specified.

Hardware	Minimum MTBF (Hours)
Zone Controller	> 30,000
Vehicle Detector/Separator	> 10,000
AVI Antenna/Reader	> 17,520
VES Camera	> 20,000
VES Controller	> 20,000
CCTV	> 20,000
Network Switches	> 50,000
Network Routers	> 50,000

Hardware	Minimum MTBF (Hours)
Facility Host Servers	> 50,000
Facility Host Printers	> 10,000
Flat Screen Displays	> 50,000

Table 3.3-1: MTBF Requirements for Hardware Systems and Subsystems

3.3.3. Diagnostics

All maintenance personnel are required to carry a cell phone and laptop computer with cellular based wi-fi connectivity. Equipment design and installation in racks or cabinets shall provide easy access to components for removal/replacement and testing by maintenance personnel. In addition, key equipment such as the zone controller shall have test points or ports necessary to diagnose the equipment while in operation. The test points and ports shall be easily accessible including access by laptop computer.

3.3.4. Customized Hardware

The TSI Contractor shall provide all necessary documentation to allow a third party to maintain, configure and test any customized components.

3.3.5. Enclosures, Cabinets and Hub Buildings

Cabinet locations will be determined based on gantry structure design and location, roadside and/or median space constraints and other limiting factors.

The Civil Contractor shall provide a single equipment enclosure (to be utilized for the zone controller(s)) at all toll Gantry Locations. Details of the enclosures are provided in GDOT Special Provision SP 939 as included in the GDOT RFPs. Hub buildings (both newly installed for the Project(s) by the Civil Contractor and SRTA-identified existing hub buildings) can be utilized by the TSI Contractor for roadside equipment/servers/etc. New hub buildings will be provided by the Civil Contractor in accordance with GDOT Special Provision SP 797 as included in the GDOT RFP. Aside from the hubs/enclosures outlined in the appendices, the TSI Contractor shall be responsible for purchasing and installing any additional required equipment enclosures for these Project(s).

The TSI Contractor shall provide freestanding equipment cabinets to store server, data storage and networking equipment in the Toll Facility Host/hub. Each cabinet enclosure shall have a rectangular frame with removable top panel, side panels and doors. The cabinet frame shall be rectangular with four corner posts, manufactured from aluminum with bolted frame construction. The cabinet frame shall have a static load limit of 2000 lb. Installed cabinets shall include thermal, power, and cable management accessories that control airflow through the cabinet and keep network and power cables separate and organized. The cabinet shall support 19 inch rack mount equipment and support at least 42 rack units when doors, top panel and side panels are installed. The cabinet shall include a single front door with a perforated metal panel and quick-release hinge pins. The door shall be removable and reversible to open from the right or left. The front door shall have a single-point, spring-loaded, push-button latch with a keyed lock. The cabinet shall include a single rear door with a perforated metal panel and quick-release hinge pins. The door shall be removable and reversible to open from the right or left. The rear door shall have a single-

point, spring-loaded, push-button latch with a keyed lock. The cabinet shall include two locking solid side panels with keyed latches for easy installation and removal. The cabinet shall include (4) leveling feet, (4) clamps for securing the leveling feet to the floor, a baying kit, and a means for bonding the cabinet to a grounding busbar. Each installed cabinet shall be equipped with a temperature sensor that connects to an environmental monitoring appliance. All cabinets in the hub buildings will be based on Chatsworth TeraFrame or equivalent.

GDOT/SRTA will ensure that power and fiber connections are provided at all tolling locations. Fiber connections will be dark fiber terminated in patch panels, of a capacity and connector type to be specified at a later date. TSI Contractor shall coordinate with the Civil Contractor during the Civil Contractor's design phase to design and deliver the fiber splicing diagrams/documentation. For details on the roadside fiber network, see Appendix F. The TSI Contractor will be responsible for running any required power and fiber connections from the Civil Contractor provided power/fiber demarcation locations to ~~the~~ any additional TSI Contractor~~'s~~ required equipment enclosures. The TSI Contractor shall coordinate with the Civil Contractor during the design phase(s) of the project(s) to ensure that the cabinets will accommodate all required connections.

All enclosures will be NEMA 4 compliant and will include any necessary heating and cooling units to ensure proper and reliable operations. All enclosures will provide for suitable air circulation such that internal enclosure temperatures meet the manufacturer's specifications of all equipment contained within the enclosures. In addition, all enclosures will be sized such that they are unobtrusive, and present minimal safety risk or hazard to traffic flow. Enclosures and all equipment installed within these enclosures shall be appropriately grounded to protect from power surges and lightning strikes.

Access to all hub buildings and zone controller cabinets shall include video capture of the event, and an alert shall be sent as part of the MOMS. Video capture shall be for the duration of the event (as long as the enclosure/cabinet door remains open) and video data shall be retained for a minimum of ninety (90) days.

Keys for all enclosure/cabinets (including GDOT/SRTA provided) shall be unique to SRTA and shall not be interchangeable with GDOT key sets. The TSI Contractor will be responsible for re-keying all cabinets utilized for the Electronic Toll Collection System and toll-related ITS locations to meet this requirement.

3.3.6. Bill of Materials (BOM)

The TSI Contractor shall provide a BOM for all hardware, COTS software and equipment supplied under this Agreement. Where possible, a second source shall be listed for all components. All COTS hardware shall be described with regard to manufacturer, vendor contact information, model number and feature set. The BOM will be included with the System Detailed Design Document submittal.

3.3.7. Spares

Refer to section 6.12.1 of this RFP for details on spares.

3.3.8. In Lane Software Requirements

The operating systems, databases, COTS software and Electronic Toll Collection System software provided by the TSI Contractor shall support near real time lane transactions. The proposed operating systems and databases shall be currently supported versions/releases (no Beta releases) with a future upgrade path.

The Electronic Toll Collection System software shall be parameter driven and configurable and shall be warranted against software defects and deficiencies until the Contract is terminated.

All COTS software descriptions shall include manufacturer, version number, feature set and number of user licenses provided.

3.4. Facility Host Functional Requirements

SRTA requires a Facility Host System or collection of systems/servers that will be deployed by the TSI Contractor to perform those functions of the Electronic Toll Collection System that meet the requirements as described herein and below. The TSI Contractor is responsible for all aspects of the design, development, testing and implementation of the Facility Host(s), which must meet all of the required level of performance requirements as described in Appendix D. The Express Lane System Architecture depicted in the following diagrams provides an overview of a fully implemented Express Lane System. The construction of the two facilities are not scheduled to be implemented at the same time. Both primary and Disaster Recovery (DR) Facility Host(s) will be implemented to support the first project that goes live. To support the second project, one or both of these previously installed Facility Hosts may be utilized by the TSI Contractor provided the appropriate SLA can be met by this design. While the functional requirements of these Projects are similar, they need to be treated as separate facilities for the purpose of dynamic pricing, reporting, etc. and each shall have its own set of configurable parameters. As indicated previously, the I-75 South Express Lane Facility is scheduled to be implemented first.

SRTA provides the following diagrams as representative of the functional requirements for a fully implemented Electronic Toll Collection Systems:

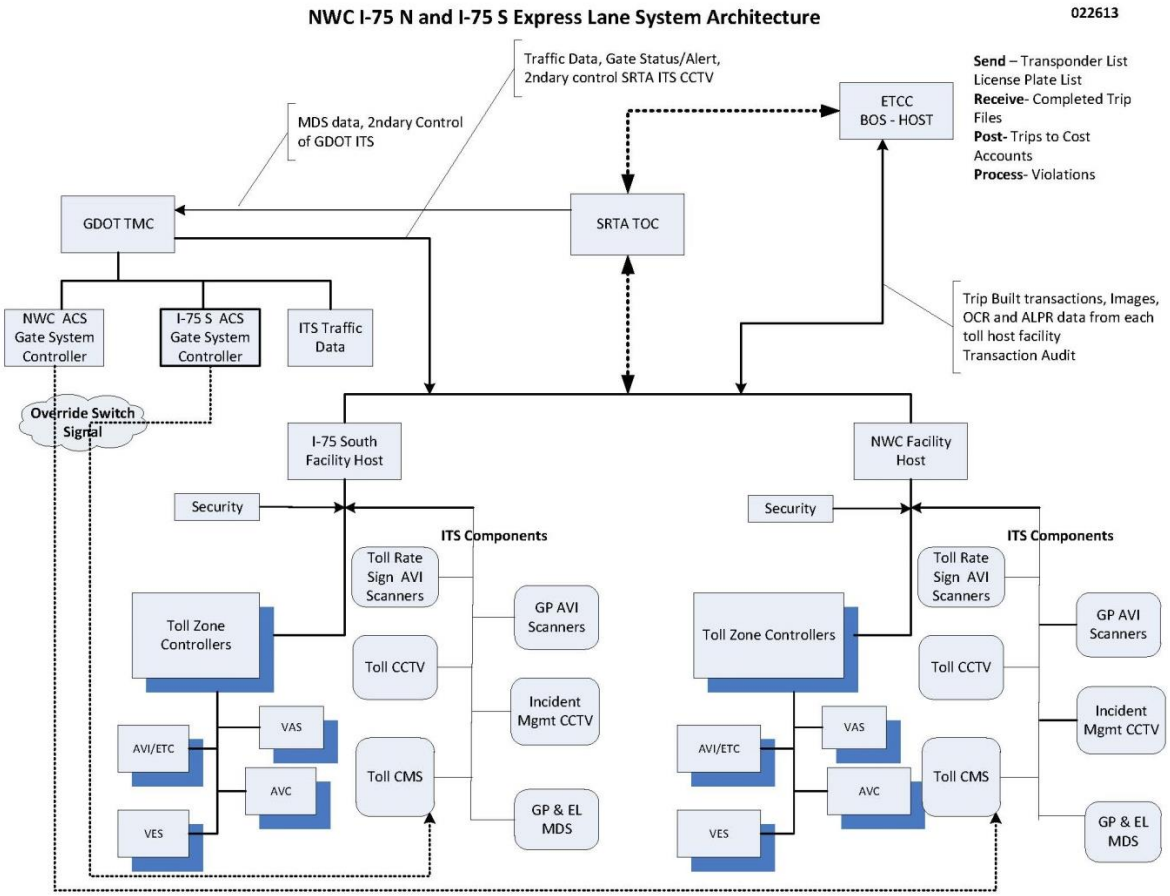


Figure 3.4-1 Express Lane System Architecture (above)

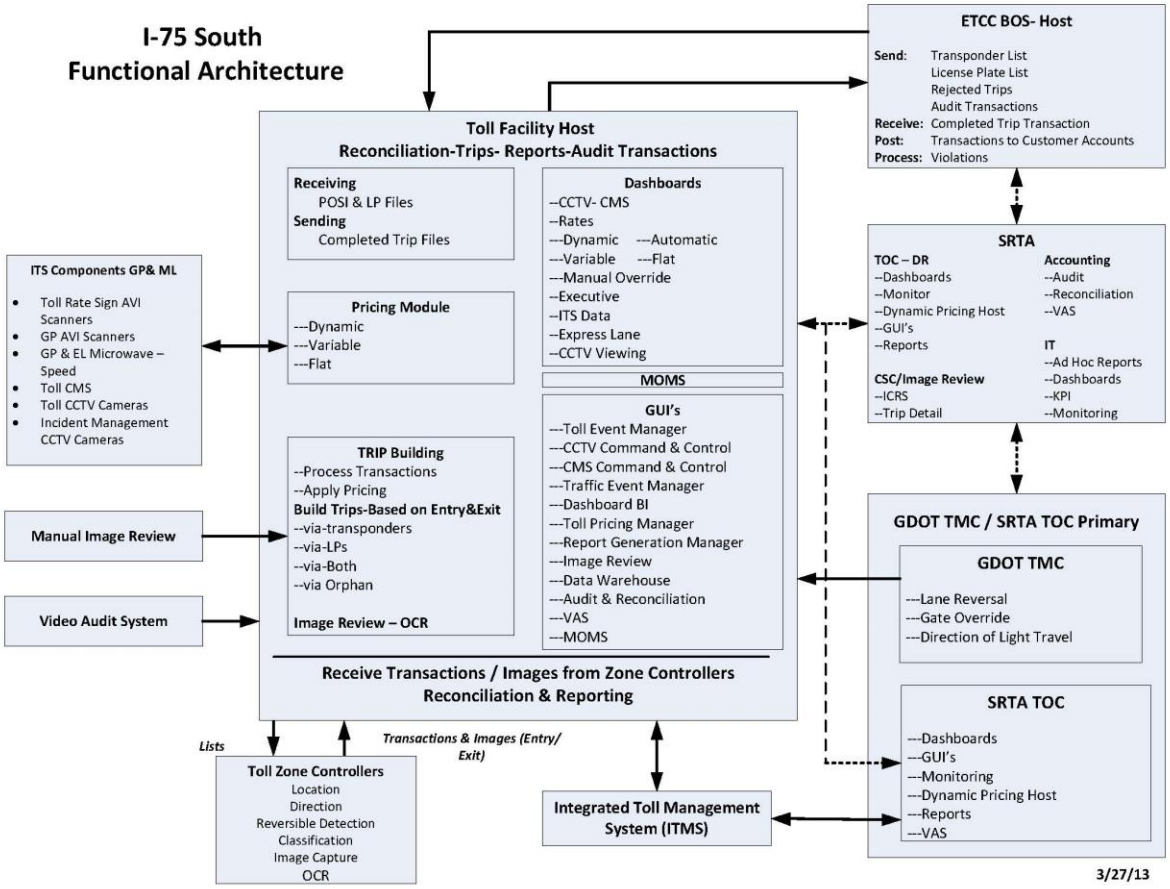


Figure 3.4-2 I-75 South Functional Architecture (above)

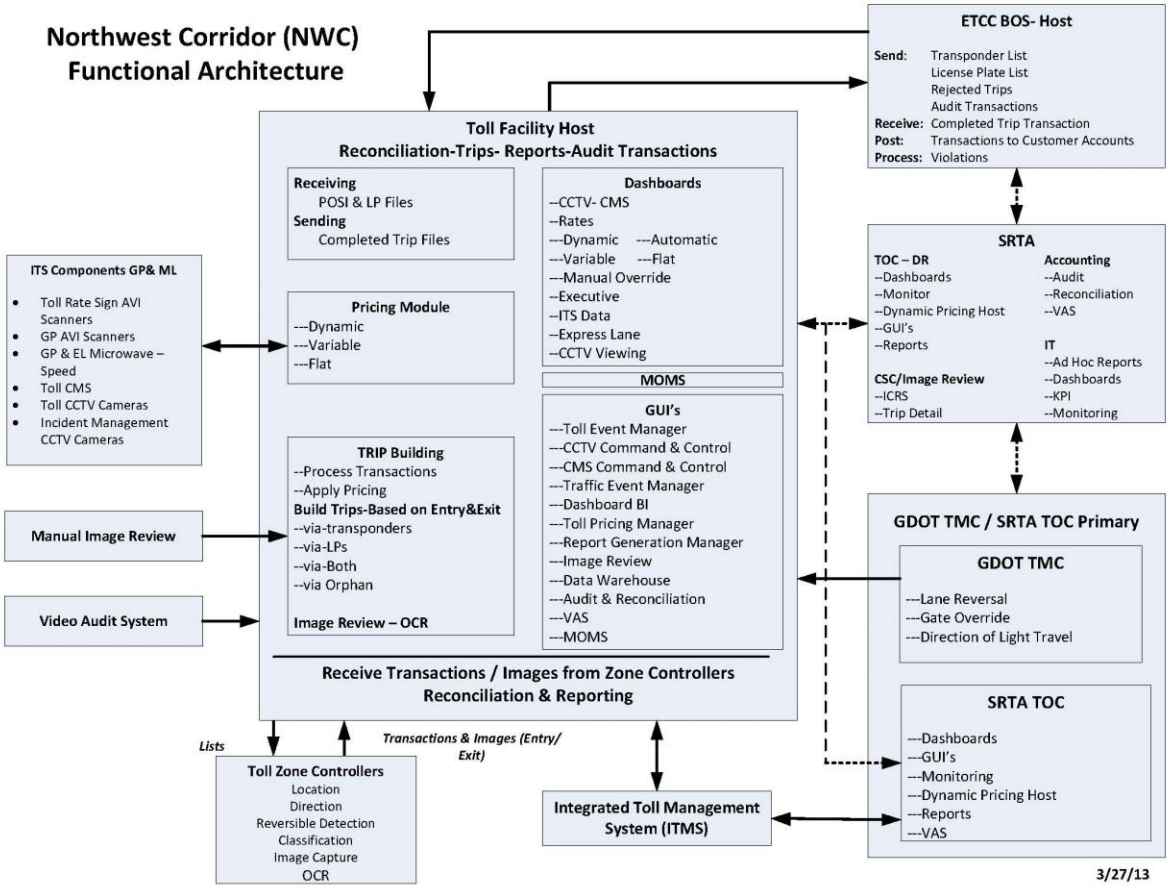


Figure 3.4-3 NWC Functional Architecture (above)

3.4.1. Transaction Processing

The Facility Host will process Transaction Records received from the zone controllers. These Transaction Records will be assembled into Trips by the Trip Building Process (see below – section 3.4.2) and these Trips will be transmitted to SRTA's existing BOS for processing/posting as described by the ICD for Third Party BOS (see section 3.5.5.1). The TSI Contractor is responsible for designing and implementing the logic necessary to process transactions and to form Trips at the Facility Host.

3.4.2. Trip Building

The TSI Contractor shall develop a process that logically groups Transaction Records transmitted from the zone controllers containing the vehicle transaction data (such as time, location, identification by transponder number or license plate number) for a specific Express Lane Corridor into Trips. A Trip shall be created by matching two (2) transactions. In most cases the trip shall consist of an entry and exit transaction matched to a unique vehicle. The TSI Contractor's system shall process all conditions that occur in an entry/exit type of system and properly create trips from entry/exit transactions and by matching orphaned transactions (see Appendix D for Trip Building performance requirements).

The Trip Building Process shall determine the toll amount due for each Express Lane Trip based on the following factors:

- The toll rate in effect at the time the vehicle entered the Express Lane for that specific Trip;
- The length of the Express Lane facility travelled by the vehicle – from entry to exit;
- Time of transactions and logic to determine range of matching transaction to validate trip potential;
- AVI, image and/or combination based trips. For image based transactions, the system shall support either a rate differential based upon a percentage of the posted toll rate and/or a fixed fee per entry/exit transaction and/or per trip;
- Logical sequence of transaction data of location, time, duration of time between entry and exit; and
- Exception logic to process orphaned (AVI, and plate image) transactions.

The Trip building process shall use time ranges to develop blocks of transaction data to attempt to associate into trips. The time ranges shall be automatically generated and be dynamic based on the duration of the possible trips plus an extra configurable parameter of minutes to ensure all possible transactions are included in the block of possible trips.

The transactions are matched to create trips and then the system will assign the appropriate toll rate to the trip based on the time and location where the trip occurred.

The Trip Building Process will identify a vehicle's progress through the Express Lane Corridor using the transponder number (transponder-based Trip) or license plate number (plate based trip), or a combination of transponder and plate (missed AVI read at a gantry – have plate image) in order to produce Trip Transactions. These Trips will fall into one of the following categories:

- **Valid AVI Trip** – Trip transaction formed from only AVI Reads where the transponder status was either "valid" or "low balance";
- **AVI Violation Trip** – Trip transaction formed where the transponder status is "lost", "invalid" or "stolen" status;
- **Plate Based Trip** – Trip transaction formed from only a license plate number or Vehicle Signature Recognition (VSR); where the plate number or VSR can be associated with an account;
- **Violation Trip** – Trip transaction formed from only a license plate number or VSR (no known transponder in vehicle) where plate number, or VSR, is not on a CSC account;
- **AVI and Plate (combination) Trip** – Trip transaction formed by combination of an AVI Read (with tag in good status) and license plate number, or VSR, where the plate number or VSR is on account. For image based Trips, the system shall support either a toll rate differential based upon a percentage of the posted toll rate and/or a fixed fee per Trip, if or when SRTA decides to implement such a differential; and
- **Other Trip Type** – Additional Trip types may be defined during the Design Phase of the Project(s).

Transaction Records that cannot be formed into a trip – such as "orphaned" entry transactions with no associated exit transaction – will follow exception processing rules and functionality. The TSI Contractor shall provide a system/utility that allows SRTA to disposition these orphaned transactions such that a trip can be built and a toll can be charged. This exception processing functionality shall allow SRTA operations personnel to configure how the Trip Building Process dispositions these types of transactions, and may allow them to manually match some of these types of transactions such that a Trip can be built. SRTA envisions that there will be different approaches or solutions to dispositioning these types of transactions and requires flexibility and configurability in the delivered system.

SRTA envisions several possible methods for dispositioning these types of transactions, and desires the flexibility to choose the method (or methods) by which these transactions are processed, based on configurable settings. SRTA envisions at least the following methods for dispositioning orphaned transactions:

- Pattern Matching ("Typical Trip") – where there may be a history of transactions for a vehicle (transponder, plate, OCR, VSR) that can be used to apply tolls;
- Minimum Toll – where SRTA may choose to configure a minimum toll rate that can be applied to orphaned transactions;
- Maximum Toll – where SRTA may configure a maximum toll rate that can be applied to orphaned transactions; and/or
- By matching (possibly manually) one orphaned transaction with another orphaned transaction by way of comparing average vehicle speed and entry/exit timestamp and suggesting a matching transaction.

The above mentioned methods for dispositioning orphaned transactions may not be a comprehensive list of the many different possibilities for dispositioning these types of transactions and as such, SRTA desires a system that presents multiple configurable options for dealing with these types of transactions.

3.4.3. Variable and Dynamic Pricing System

The TSI shall provide and implement a Variable and Dynamic Pricing System (DP System) for the Project(s). The data and criteria used for controlling and executing the DP System shall be configurable and flexible such that SRTA can make real time adjustments once the Express Lanes are in operation. Frequency and timing of the execution of the DP System shall be configurable as well. The DP System must use appropriate data inputs and calculations to ensure that customers will be charged the rate observed on the sign prior to the point of entry (or a lower rate).

The DP System shall provide the capability to permit authorized users to set current pricing based on any one of three pricing policies at any time. The three pricing policies shall be to optimize travel time reliability (i.e., to activate whichever rate plan results in a travel time that meets or exceeds a threshold defined by SRTA for in the EL), to maximize vehicle throughput (i.e., to activate whichever rate plan yields the greatest vehicle throughput at that time in the EL) or to maximize revenue (i.e., to activate whichever rate plan would potentially yield the highest revenue at that time). These pricing policies are to be applied at the EL corridor level, not to the independent segments only.

The DP System shall be able to support different rate plan schedule types, including variable, dynamic, and failover (static variable/historical). In addition to these rate plan schedule types, the system must support manual overrides to toll rates, both real time and retroactively. The different rate plan schedule types shall

be able to support SRTA defined roadway segment based pricing as well as by Trip based per mile pricing. SRTA requires the configuration of these pricing mechanisms to emphasize ease of use and accountability by TOC operators, as well as speed and reliability.

SRTA requires the ability to have any of the above rate plans in effect, while maintaining the ability to view in real time the rates being generated by a minimum of one of the other listed rate plans, such as another dynamic pricing plan. In other words, the ability to change the dynamic rate plan parameters and evaluating the impact to the toll rates without implementing them is desired. SRTA also requires a maximum rate increase and/or decrease parameter that controls abrupt changes of the toll rates posted on the toll rate CMS.

SRTA requires the ability to easily configure the system to price based on one of the minimum two required methods at a time (similar additional methods are desired):

- calculate a per mile based rate for each segment and combine it with the rate of other segments to calculate the toll for a vehicle's entire trip ***OR***;
- apply the same per mile rate from one segment to all other segments within a particular OD pair assigned to the vehicle's trip

Segment/OD configuration and distances shall be finalized with SRTA input and approval at least thirty (30) days before FAT testing. These should remain configurable by users with appropriate user access.

SRTA envisions a flexible and configurable system that will allow users to make adjustments to parameters, configuration settings, and calculation frequencies in real-time through the application/GUI. This section describes the general requirements, and additional details are provided in Appendix H.

3.4.3.1. Data inputs

The Facility Host Dynamic Pricing application will obtain data from the toll and toll-related ITS systems. The system shall utilize real time toll-related ITS data, and AVI (gantry, travel time sensor and toll rate CMS).

The TSI Contractor shall furnish a GUI that allows SRTA to view the real time data collected from the roadside equipment utilized in the DP System. SRTA requires the ability to automatically (based on SRTA configurable thresholds) or manually enable/disable specific ITS devices data factoring in the dynamic pricing calculation. The thresholds for the toll-related ITS device inputs needed to calculate a price shall be configurable by SRTA.

3.4.3.2. Rate Plan Types and Schedules

The system shall include the following rate plan types: variable, dynamic, and failover. These rate plan types can be combined in a single 24 hours/seven (7) day schedule that can be set up to be effective at a specific date and time and can be overridden manually by a user at any time.

3.4.3.2.1. Variable

Variable plans are fixed rates that the user applies for a particular segment or OD pair for a particular time of day in a day of the week. For details please refer to Appendix H.

3.4.3.2.2. Dynamic

Dynamic plans are a combination of parameters configured by the user. These options and parameters shall support the ability to price the facility per SRTA policy. These may include but are not limited to; traffic thresholds, segment weights, and maximum/minimum rate and rate change thresholds. See Appendix H for more information. These parameters shall be set individually for each express lane project.

3.4.3.2.3. Failover

In the event that the DP System stops receiving data from ITS devices beyond what is required to feed into the dynamic pricing algorithm for a proper rate calculation, SRTA requires the ability to implement a failover rate plan. In other words, if a configurable amount of ITS devices fail or are not available to the DP System, then the failover rate plan can be automatically invoked. The failover rate plan shall be set up based on a variable rate plan or automatically generated from historical rate plan data as described in Appendix H. The ability to use both types of rate plans (not simultaneously), is required.

3.4.3.2.4. Manual Overrides

Regardless of what the scheduled rate may be, SRTA TOC Operators require the ability to manually override the rate using either an existing rate plan or by selecting a particular rate for a particular segment/OD pair. This override can apply to real time implementation or retroactively within a configurable time window.

At times it might be required to override all rates, or rates for particular segment/OD pair at the facility host to adjust the toll rates. In cases where the toll rates are zero dollars ($0), associated images shall not be sent for manual review.

3.4.3.3. Dynamic Pricing Calculation

SRTA envisions a system that optimizes the toll rate calculation based on the desired optimizing strategy (targeting a travel time reliability measure, maximizing throughput or revenue,). The DP toll rates shall be calculated based on traffic conditions (including but not limited to ~~speed and~~ a lane occupancy measure such as density) in the Express Lanes and in the GP lanes (the ability to not use either the EL or GP is required). The DP System shall have the ability to calculate toll rates at a minimum of every 3 minutes, with the calculation frequency being a configurable parameter.

The elements included within the pricing calculation shall be user configurable. The level of complexity in the dynamic pricing system shall not hinder the calculation speed required for near real-time implementation.

3.4.3.4. Graphical User Interface

SRTA requires all of the screens/reports/functionality delivered with the DP System to use an interface that allows SRTA staff to operate the system and set/change configuration variables to affect how the system calculates toll rates. The DP System GUI's development will be coordinated with SRTA during the Design Phase of the Project(s). SRTA requires at least the following:

- Rate plan development tool - Allow the manual input of each OD pair rate, or by selecting a per mile rate to apply to all selected OD pairs;
- Import Rate Plans - For static variable rate plans, SRTA requires the ability to import a CSV or similar file;
- Manual Override - Ability to implement, in real time or retroactively, a selected rate plan or specific rate for selected OD pair(s);
- Confirmation - Ability for user to confirm the selection prior to implementing the rates. Configurable confirmation pops up messages are required to aid in the confirmation process. In addition to these messages, SRTA desires configurable safeguards that trigger additional confirmation messages;
- Rate plan management - Ability to create a revised rate plan by copying an existing rate plan. Ability to sort rate plans by date of creation, alphabetically, and to search by date of creation and keyword, at a minimum Ability to archive old rate plans not in use so that they are hidden from a user's view, but maintaining a record of it; and
- Rate plan viewer - During and after setting up variable and/or dynamic pricing schedules, the user shall have the ability to simultaneously view the different types of rate plans for the one or several OD pairs in a scrollable calendar view, as well as any current manual overrides applied.

3.4.3.4.1. DP System Viewer

SRTA requires the ability to always view the calculated rates based upon a different rate plan regardless of the effective rate plan. For example, if the system is operating on a variable rate plan and the SRTA operators desire to implement a dynamic rate plan, the ability to view the current posted toll rate displayed alongside the calculated new toll rate is required. This viewer is required to be part of the facility host's production system and users shall be able to select the viewed rate plan and apply it for posting.

3.4.3.5. Dynamic Pricing Test System

SRTA requires a pre-production/test environment that shall be available at least 30 days prior to the start of Integration Testing (which precedes End-to-End testing with GDOT) and shall remain available until SRTA approval of System Acceptance Testing (SAT). This test environment shall be populated with the toll-related ITS data from the ITS equipment installed as part of this project. Additionally, this test environment will be kept current with all software updates/fixes that are applied to the production system up through SAT such that updates/fixes applied to the production system are applied to this test environment simultaneously. The purpose of this test environment is for SRTA staff to utilize, familiarize, analyze, and develop standard operating procedures for dynamic pricing and SRTA TOC interfaces in preparation for operations of the facilities.

3.4.4. Configurable Dashboard System

The Facility Host shall provide a real time system and process monitoring utility/application that allows authorized users to view the status of different processes and operations currently running on the Facility Host and related systems. All dashboards will be highly end-user configurable, will include drill-down capability to present details supporting high level data presentations, and will be accessible based on UserID and group/role attributes. SRTA desires a feature set and functionality for the dashboard system

similar to what is currently in place at THEA (see reference documentation THEA Image Concentrator User Guide).

The following types of dashboards (at a minimum) would be supported by the system and access would be by UserID and Group or Role and can be run concurrently. The Electronic Toll Collection System will provide business intelligence/configurable dashboard tools and capabilities to be able to access information on the various dashboards listed below and to be able to configure and display other key data from the TSI Contractor's system. The TSI Contractor will be required to conduct joint application development sessions with SRTA personnel in order to finalize the design and implementation approach for SRTA-specific (custom to SRTA) dashboards.

3.4.4.1. Express Lanes Corridor(s) Dashboards:

SRTA requires a dashboard application that presents a real time, operational, color coded map/representations of the entire express lane corridor(s) along with current statuses of equipment and traffic conditions by segment with configurable LOS parameters. SRTA TOC staff shall be able to select a facility to view and both facilities may be selected and viewed simultaneously.

This Dashboard utility will allow users to drill down into more detailed layers of Dashboard data with pointing device (mouse) selection. The map shall display current operational status of all roadside equipment with data inputs to include, but not limited to:

- Zone controller status;
- VES Equipment status;
- AVC System status;
- Toll rate CMS status and data;
- CCTV;
- MDS equipment status; and
- Current traffic conditions – (i.e. vehicle speed).

3.4.4.2. ITS Dashboards

SRTA requires an ITS dashboard application that presents a real time, operational, color coded map/representation of the entire express lane corridor(s) along with current state of the ITS devices along the corridor – both in the ETL and the GP lanes. SRTA TOC staff will be able to select a facility to view and both facilities may be selected and viewed simultaneously.

This dashboard utility will allow users to drill down into more detailed layers of dashboard data with pointing device (mouse) selection. The map shall display current operational status of all ITS equipment with data inputs to include, but not limited to:

- MDS units;
- GP lane AVI scan sites;
- CCTV;
- Backup generator(s); and
- Toll rate CMS AVI sites.

3.4.4.3. Executive Dashboard

An executive dashboard will be implemented to allow SRTA executives and directors to view current system status. Data inputs to the executive dashboard may include, but will not be limited to:

- Current direction of travel;
- Current toll rates;
- Average speed and volume of traffic by segment;
- Previous day/week revenue; and
- General system health.

3.4.4.4. Image Review Dashboard

An image review dashboard shall be provided that will be userID and role/group access controlled and will be configurable by SRTA (the end user). SRTA operations staff will be able to see the status of the relevant processes in the image review system.

This dashboard utility shall allow users to drill down into more detailed layers of dashboard data with pointing device (mouse) selection. This dashboard shall display current operational status of all Image Review processes/metrics to include, but not limited to:

- ALPR/OCR performance;
- Images coded-off;
- Images per reviewer;
- Image backlog by day/direction of travel/by facility; and
- Orphaned transactions waiting disposition by day/direction.

3.4.4.5. MOMS Dashboard

SRTA requires a MOMS dashboard that communicates overall system health and that will present at least the MOMS information. MOMS data shall be displayed in a user friendly format that allows for priorities to be determined based on weighted factors such as transaction and revenue volumes by device location. Allowing for maintenance priorities be set by where the best return on the effort is made (e.g. a camera atop a Gantry Location with high volumes would get a higher priority for repair than a camera over a low volume ramp lane or shoulder).

The MOMS dashboard shall present the following information at a minimum:

- Roadside equipment availability and status;
- VES image quality; and
- Facility Host availability.

3.4.4.6. Trip Building Dashboard

Trip building is a critical part of the functionality required to implement the Electronic Toll Collection System for the Project(s). A trip building dashboard is required that will present at a minimum:

- Overall number of transactions processed (before trip creation);
- Trips created over a selected time-period;
- Orphaned transactions awaiting reconciliation;
- Overall orphaned transactions;
- AVI trips as related to license plate trips;
- Overall and current violation rates; and
- Related trip and transaction information.

3.4.5. GP lane AVI Reads

The AVI equipment installed to detect transponders in the GP lanes (indicated in Appendix B as GP AVI equipment), along with the MDS units installed in the GP lanes shall communicate data to the Facility Host and to the GDOT TMC per the ICD and the approved SLA Requirement in Appendix D.

GP lane transponder reads shall be stored in the Facility Host database and the system shall have the ability to produce various reports aggregating and detailing this data. These reports will include travel time, transponder penetration, vehicle speed, vehicle volume, and others. The DP System may use this data (both AVI Reads and MDS output) as part of the toll rate calculation. The system (both roadside and Facility Host) is not required to distinguish which individual GP lane the transponders were read in within a given GP monitoring location. However, this data would be useful to SRTA if provided.

3.4.6. Roadway Reversal Functionality

The RACS is controlled and operated by GDOT. GDOT's TMC System Integrator (TMC SI) will develop the interface/functionality required for GDOT operation of the roadway reversal system. GDOT personnel are responsible for operating the RACS wherein barrier gates will open/close; traffic direction CMSs will display appropriate messages indicating the direction of travel. The direction of the Facility will be changed sequentially based on SRTA/GDOT operational policy. In order to facilitate roadway direction change/status messaging between GDOT's RACS and the Electronic Toll Collection System, the TSI Contractor will develop a GDOT/SRTA approved ICD to be used for communications between the Electronic Toll Collection System and GDOT's RACS. The TSI Contractor will coordinate with GDOT's TMC SI and appropriate GDOT/SRTA personnel to understand where in the GDOT process the notification to the Electronic Toll Collection System needs to take place. Messaging/notification of a change to the RACS direction of travel shall trigger a change in the direction of travel in the Electronic Toll Collection System.

When the TMC changes the direction of travel on the roadway, the Electronic Toll Collection System will automatically set its direction of travel. This will be accomplished by way of the interface with the GDOT TMC (see section 3.5.5.3 for details on the Interface) wherein the TMC will set (or change) direction on the facility in the TMC central system software. In case of the roadway reversal process not proceeding as expected (e.g. segments not reversing in the prescribed order per the ICD, etc.), the Electronic Toll Collection System will not change the direction of travel.

In case communications between GDOT's TMC system and the Electronic Toll Collection System are interrupted and the above messaging fails, SRTA TOC Operations staff require the ability to manually set the direction of travel in the Electronic Toll Collection System at any given time. This functionality will be UserID and password controlled such that only appropriate Operations staff have access. The TSI Contractor will provide an application that displays the current direction of travel and allows the selection of

the desired (new) direction of travel. Only two (2) directions will be available. This will allow the Electronic Toll Collection System to display appropriate messages on toll rate CMSs and to generate an alarm if a vehicle is detected travelling the wrong way through a toll zone (see section 3.4.6.1).

The Electronic Toll Collection System will not have any direct effect on the RACS controllers and/or related barrier gates or other non TSI Contractor provided equipment.

3.4.6.1. Wrong Direction of Travel Alarm

The functionality described in section 3.4.6 will allow the direction of travel in the Electronic Toll Collection System to be defined on a segment by segment basis, effectively directing the zone controllers at each Gantry Location to expect traffic to pass under the gantry in a particular direction. When any zone controller detects a vehicle travelling in the opposite (wrong) direction of travel from that which is expected, the Electronic Toll Collection System will generate an alarm which will be sent to a configurable contact list either via email or SMS text, and will also display/audible an alarm to TOC operators.

This alarm message will be communicated to the SRTA TOC and will be clearly evident on the TOC workstations regardless of the particular dashboard/screen in use at the time (i.e. a popup window will display the alarm) both in audible and visual form (flashing graphic on screen and an audible alarm). The alarm message will indicate the number of wrong way vehicles detected at the time of the alarm.

In addition to presenting the alarm on the TOC workstations, the alarm will create an event in the ITMS that will be managed by TOC Operators, and will be distributed via email and/or SMS text to a SRTA-configurable group.

3.5. Facility Host System

The TSI Contractor shall furnish a complete “Active Redundant” Facility Host system. The Facility Host system shall include all cabinets, enclosures, servers, storage systems, keyboards, monitors, cabling, and any ancillary equipment, as may be necessary to provide a complete and acceptable data management system that meets the requirements of this RFP. SRTA requires high availability systems in order to reduce down time and maximize performance between redundant sites. To achieve this goal, the TSI Contractor shall deploy an Active Redundant Facility Host architecture.

Active Redundant is a network of independent processing facility hosts where each Facility Host has access to a replicated database giving each Facility Host access and usage of a single application. In an active redundant system, all requests are load-balanced across all available processing and storage capacity. When a failure occurs on a Facility Host, the remaining Facility Host system(s) assumes all processing with limited/no interruption in service. The Active Redundant configuration shall use clustering and/or replication technologies to achieve a meshed environment where if one Facility Host location has an outage the remaining Facility Host(s) will automatically assume processing for the roadside equipment. Each Facility Host shall support both roadways in the event of a failure at the other Facility Host. For example, if the "I-75 NWC" host goes offline, then the "I-75 South" host will take over transaction processing for the NWC roadway equipment.

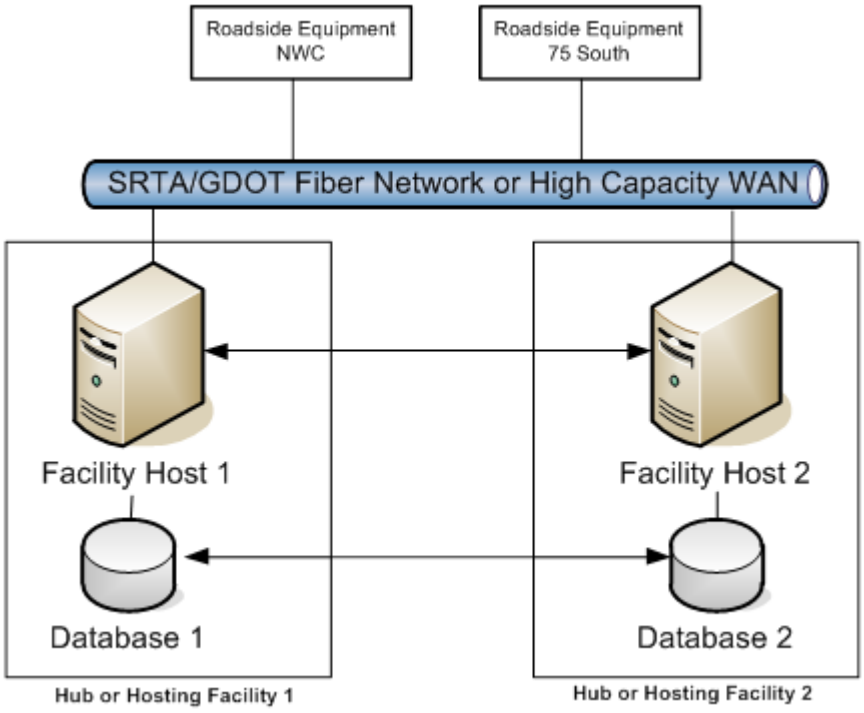


Figure 3.5-1 – Example Active-Redundant Facility Host configuration

The Civil Contractor is responsible for installing hub buildings along the roadway and each of the hub buildings will contain fiber optic cabling, A/C units, and generators. The specifications of the new hub buildings are included within the GDOT RFP (section 797 – Hub Buildings, along with associated verbiage in the GDOT RFP are applicable). The TSI Contractor shall coordinate with the Civil Contractor during the design phase to furnish equipment loadings and design details as necessary. The size of the new hub buildings is as defined within the GDOT RFPs.

The TSI Contractor may use these hub buildings to install their Facility Host(s). If the TSI Contractor chooses not to use the hub buildings, then the TSI Contractor must provide other facility host locations as described in Section 3.5.4 and all required network communication links to meet the SLAs. The current schedule has the hub buildings on I-75 South being turned over first. The TSI Contractor must install at least two facility hosts at I-75 South hub buildings until the NWC hub buildings are turned over and then the TSI Contractor shall relocate at least one Facility host to a NWC hub building.

The Facility Host server(s)/system(s), including all hardware elements, shall be of the latest commercially available design and shall incorporate standard commercially available products and components in production at time of design/development and supported by manufacturers. The TSI Contractor shall utilize proven configurations that support future upgrades to system processors, memory components, storage systems, operating systems, and databases. TSI Contractor shall provide a scalable solution that will support the transaction levels for each project described in the following table (for the purposes of system sizing, the TSI Contractor should assume all trips are image-based):

Trips/Transactions	Average Daily Traffic	Scalability Metric - 2x
I-75 South	18,000/36,000	36,000/72,000
I-75 Northwest Corridor	45,000/90,000	90,000/180,000
TOTAL Daily Image Based Trips/Transactions (for the purposes of sizing)	**63,000/126,000**	**126,000/252,000**

Table 3.5-1 Facility Host Transaction Processing Capacity Requirements

The system shall scale to the above volumes with no major hardware/software infrastructure changes. The Facility Host servers/systems shall include hot swappable components and sub-systems wherever available. It is desirable for the Facility Host server(s)/system(s) and relevant peripheral hardware and components to be supplied by the same manufacturer.

3.5.1. Facility Host Application Access

SRTA's staff will access the Facility Host to support the management and operation of the facilities. This access will be provided by a GUI based applications/interfaces running on the Facility Host (or appropriate application server(s)). SRTA TOC personnel will utilize workstations at the TOC or other locations to access and login to these applications/interfaces. The TSI Contractor shall provide the interface to support at a minimum the following applications:

- Updates to Dynamic Pricing;
- Set toll rates;
- CCTV viewing;
- ITS data feeds;
- GP lane AVI readers;
- Run reports;
- Toll rate AVI Sites; and
- MDS and dashboard functionality.

Other SRTA staff and/or SRTA representatives may access these applications/interfaces to perform reporting and auditing requirements. Detailed requirements for the functionality of this application/interface are described above in section 3.4. These applications/interfaces shall be available 24 hours a day seven (7) days a week, or as described by the appropriate SLA in Appendix D.

3.5.2. Facility Host Operating System and Software

The operating system for the Facility Host server(s)/system(s) shall consist of a COTS multi-user, multi-tasking operating system. The TSI Contractor is responsible for obtaining all licenses as required. All necessary licenses will be obtained for all COTS operating system software used by TSI Contractor's Facility Host solution. The TSI Contractor will retain authorized copies (backups) for all software media to use for periodic system maintenance, upgrades, or restorations, as required. The proposed operating system shall have warranty and COTS maintenance support services for the term of the Contract.

The operating system shall be a proven system and version release with a large installed base, used widely throughout the United States for enterprise-class database operations and shall be compatible with relevant

database and web-based development and operational tools, and shall not be a "Beta" or first release version. The TSI Contractor shall maintain the Operating System with necessary updates and security patches throughout the term of the maintenance agreement.

3.5.2.1. Database Management System

SRTA requires a high level of reliability, security, and performance from the database system that will be implemented for the storage and processing of transactional and other data in support of the Project(s). The TSI Contractor shall implement the system with the latest version/release (non Beta) of database software that is field-proven, stable, and in production to operate in an enterprise class environment. The database system will be compatible with the operating system and application software, and shall support redundant central processing system architectures. The proposed database software shall have warranty and maintenance support services for the term of the Contract.

The TSI Contractor shall deliver the Entity-relationship diagram (ERD) to SRTA no later than sixty (60) days after NTP. The ERD will be delivered in electronic format that is compatible with ER/Studio (http://www.embarcadero.com/products/er-studio). The ERD must define cross schema relationships.

3.5.3. Backup and Archive Capability

The TSI Contractor shall provide automated capability to backup the Facility Host on a daily basis using appropriately sized and configured tape and/or disk subsystems. Data shall be retained in accordance with SRTA data retention policy, and may be archived to permanent long-term storage only after the data retention time-period has expired. Archived data will be available to SRTA within 24 hours of SRTA's request. Summarized transaction, revenue and violation data will be retained on the Facility Host or in a data warehouse system for at least ten (10) years so that performance reports can be generated for trend analysis. System logs shall be retained on the system for one month after which they can be archived. All other data shall be retained on the server for six (6) months after which it can be archived or moved to a data warehouse system as appropriate. When disk space utilization reaches a configurable high capacity (available disk space becomes low), a message shall be transmitted to the MOMS. Any deletion of data that has reached its expiration timeframe or which has been successfully archived shall be automatic, shall occur without user intervention, and shall generate a message transmitted to the MOMS.

The TSI Contractor shall develop and submit a comprehensive backup plan during the Design Phase of the Project(s) for SRTA review and approval. This plan shall address all aspects of the backup, restore and archive strategies and processes including but not limited to:

- Backup and recovery for all application, database, and/or storage systems;
- Backup and recovery for all roadside systems (zone controllers and/or DPUs);
- Integration into MOMs and/or any other reporting software to include descriptions and notifications of the success and/or failure of backup systems or jobs; and
- Details on data archiving: disk to disk, disk to media and rotational schedule of media and offsite storage as well as the frequency of data backup for all servers/systems.

3.5.4. Multiple Facility Host Locations

Should the TSI Contractor choose not to deploy the Facility Host systems in the GDOT-provided hub buildings then SRTA requires that the facility hosting location(s) t adhere to data center Tier 2 (or greater) power, cooling and security requirements. The Tier 2 (or greater) data center standard must comply with the requirements defined by the Telecommunications Infrastructure Standard for Data Centers (TIA-942). The location where the Facility Hosts are implemented shall be equipped with appropriate power and network connectivity to ensure that a seamless transition from one Facility Host to the other active redundant facility host site can be accomplished within the required timeframe (see Appendix D).

Each hosting facility shall contain two wide area network connections from separate local loops and shall be configured with active-active failover to ensure communication resiliency and uninterrupted service. The TSI Contractor's design shall ensure that no data created in the Project(s) is lost when a Facility Host is brought back to full operation.

The Facility Host locations shall have the appropriate networking infrastructure to support SRTA bandwidth and operational requirements for transaction processing along with any interfaces that may be required (such as the SRTA CSC/VPC data interface and all others described elsewhere in this RFP).

3.5.4.1. Version Tracking

The TSI Contractor shall maintain a system of records that will adhere to SRTA's change management plan for all versions of the following types of data (at a minimum):

- Dynamic pricing data (toll rates/schedules) including toll rates for each facility categorized by location and date/time period;
- CMS data including the toll rates or exception messages transmitted to each CMS unit, the date/time sent/acknowledged and the date/time period the data was displayed;
- Roadway direction of travel information by segment;
- Lane and Facility Host configuration and executable files including version numbers, date/time resident in the systems; and
- Versions of TVL files for each transmission classified by toll facility and date/time sent.

Authorized users shall have the ability to access the above data through a GUI and generate reports. The Facility Host system shall generate a daily report that is distributed to designated SRTA staff. At least 12 months of the above data shall be available online and for reporting on the Facility Host.

3.5.5. Interfaces

The Facility Host shall be required to interface with the following systems but not limited to:

- Existing SRTA CSC System (Back Office);
- Zone controller(s);
- GDOT TMC;
- GP Lane AVI Scan Sites and toll rate AVI Sites;
- GDOT/SRTA/TSI Contractor Provided CCTV;

- GDOT Provided toll rate CMS;
- GDOT provided (shared) MDS units and;
- Cohu multi viewer and playback application;
- SRTA ITMS; and
- SRTA data warehouse (ETL).

The TSI Contractor shall utilize non-proprietary industry standard protocols and data structures to accomplish the communications required between various components, peripherals, and subsystems. These protocols and data structures shall be fully detailed by the TSI Contractor in the Interface Control Documents developed or complied with during the Design Phase of the project. At a minimum all messages between the zone controller, VES, AVI system, vehicle separation sensors, toll rate CMS, GDOT RACS, GP Lane AVI sites, and the Facility Host shall utilize a documented, open (available to SRTA during the Design Phase) transmission protocol.

3.5.5.1. Existing SRTA CSC System (Back Office)

The TSI Contractor shall interface with the existing SRTA CSC System to submit trips for further processing. The TSI Contractor shall develop this interface according to the existing CSC back office ICD (Appendix I) and shall coordinate with the SRTA back office vendor during the requirements phase for any technical details and issues regarding the development of the interface. Performance of this interface will meet the appropriate SLAs as identified in Appendix D.

3.5.5.1.1. Data exchange Format

All data, with the exception of images, will be specified in XML format as defined in the Second Edition of XML Schema documented at: http://www.w3.org/TR/xmlschema-0/.

Images will be transmitted in Jpeg format. ETCS vendors must use a version of Jpeg that displays properly in the following browsers:

- Microsoft Internet Explorer 7 or higher;
- Mozilla Firefox Version 3.6 or higher; and
- Google Chrome 5.0 or higher.

3.5.5.1.2. Transfer Protocol

The required message protocol is web services.

Bulk data and images will be transmitted using SFTP architecture.

3.5.5.1.3. Data Exchanges

The following data exchanges are specified:

Data Exchange	Format	Push / Pull	Method / Protocol	Frequency
Toll Transaction	XML	ETCS Push to CSC	Web Service / HTTPS	Continuously – 24/7
Transponder Validation List	XML	CSC Push to ETCS	File Transfer / SFTP	Full – Once per day Incremental – Hourly
Daily Reconciliation Report	XML	ETCS Push to CSC	Web Service / HTTPS	Once per day
Images	Jpeg	ETCS Push to CSC	File Transfer / SFTP	Continuously – 24/7
Transaction Disposition*	XML	CSC to push	File Transfer / SFTP	To be determined, but no less than once per day

Table 3.5-2 Data Exchanges

3.5.5.1.4. Data Types

XML includes data types called built-in data types. The following built-in data types are used in the interface:

- Int;
- Long;
- Decimal;
- Boolean;
- Date;
- Time; and
- DateTime.

3.5.5.1.5. Web Services

Web Services will be provided by SRTA's existing BOS. The Facility Host calls the CSC Web Service(s) to push data to the BOS or to send out acknowledgement to the BOS. Web Services are accessed through an HTTPS connection over an IPSec VPN.

While it is not required (with Category 2 data) to encrypt during transmission, SRTA's existing BOS utilizes HTTPS whenever possible.

Using HTTPS will not introduce additional complexity to the interface. It will, however, introduce extra processing. The processing load will be determined during the Design Phase of the Project(s), at which point the architecture might be modified to address issues. If during design and testing additional processing becomes an issue, alternatives will be identified.

Each Web Service transaction consists of a request and a reply in a synchronous session. If the request is successful, the reply message will include a status code that denotes success. If the request is not successful, the reply message will include an error message.

3.5.5.2. Zone Controllers

The Facility Host will be required to interface with the zone controllers per section 3.2.1.8.

In the event of an extended communication failure, the TSI Contractor shall be responsible for manual data file transfer between the zone controller and the Facility Host to ensure uninterrupted operations.

3.5.5.3. GDOT Traffic Management Center (TMC)

The Facility Host shall be required to interface with the GDOT's Traffic Management Center (TMC) ITS application. The TSI Contractor shall be required to coordinate with the GDOT TMC SI to develop, test, and interface roadside traffic data such as but not limited to:

- Traffic volume;
- Occupancy;
- Speed;
- Direction;
- Other data from the roadside MDS units;
- AVI reads from the GP lanes and the Express Lanes; and
- RACS.

The TSI Contractor shall be responsible for developing this interface using the SRTA-approved ICD.

3.5.5.4. GP Lane AVI Scan Sites and Toll Rate CMS AVI sites

The Facility Host will be required to interface with the GP lane AVI scan sites and the toll rate CMS AVI sites. The TSI Contractor shall develop an ICD during the design phase of the Project(s) for final approval by SRTA.

3.5.5.5. Toll Rate CMS CCTV – Civil Contractor provided

The Facility Host shall interface with CCTV cameras located in the vicinity of each toll rate CMS associated with the Project(s). TSI Contractor shall coordinate with the Civil Contractor providing the toll rate CCTV cameras to develop an ICD during the design phase of the Project(s). The final ICD shall be subject to the approval of SRTA.

3.5.5.6. Toll Rate (CMS) – Civil Contractor provided

The toll rate CMS, which will be provided by Civil Contractor, will be installed at all locations where customers enter the Express Lanes. The Facility Host must interface with the toll rate CMS by sending the necessary information to populate the signs with current pricing information and other data to be specified by SRTA during the design phase of the project. Toll rate CMS specifications will be provided by the Civil Contractor in accordance with GDOT SP631. This interface shall provide the ability to automatically query the toll rate CMS (at a configurable interval) to validate the toll rate that is being displayed at the current time is correct and matches the Facility Host. The comparison of the sign message to the Facility Host rate shall occur with the same frequency as the toll rate CMS query without the input of staff. Automated alerts shall be forwarded to SRTA staff and to SRTA's ITMS if the messages do not match or if the toll rate CMS does not respond to a query. In addition to presenting

the alarm on the TOC workstations, the alarm will create an event in the ITMS that will be managed by TOC Operators.

The system shall also include a graphical representation that visibly depicts the sign face/message on the roadway along with a graphical representation of the current pricing information from the Facility Host for SRTA staff to view and compare the messages. SRTA staff will utilize this Facility Host interface to manage the information (toll rates, overrides, etc) displayed on the toll rate CMS and to ensure that the pricing information displayed on the signs is the current pricing information.

The MOMS shall monitor the toll rate CMS equipment and report associated alerts and alarms.

3.5.5.7. MDS Units – Civil Contractor Provided

The Facility Host will be required to interface with the MDS units provided by the Civil Contractor. The TSI Contractor shall develop an ICD during the design phase of the Project(s) for final approval by SRTA.

3.5.5.8. SRTA Data Warehouse (Extract Transform Load)

SRTA is the owner of all of the data captured and stored for this project. SRTA retains exclusive rights of the data contained within the database. As such, SRTA requires that the TSI Contractor grant access to view and interface with SRTA data.

The Facility Host database will be required to interface with the SRTA data warehouse. Roadside traffic data such as, but not limited to: location, vehicle volume, speed, direction, travel times and other data from the roadside MDS units will be transmitted to the SRTA data warehouse. The other data will include, but not be limited to: AVI reads from the GP lanes and ETL, Trips, and violations. This interface will be either a web service feed or a flat file based interface (not dependent upon database design) whereby the SRTA system(s) (and potentially others) will retrieve designated files created by the Facility Host. The TSI Contractor shall be responsible for developing this interface, utilizing a SRTA-approved ICD.

3.5.6. Standard Reporting Requirements

The TSI Contractor shall provide a sample of each standard report that is available from the proposed type of system with their proposal. Each sample will include the name of the report, a description of the report, the report itself, and an explanation of any selection criteria that was used to generate the report. These sample reports shall be generated utilizing real data from a production system.

The reporting system provided by the TSI Contractor shall support the following general requirements:

- Suite of standard reports that can be scheduled to be generated automatically on a user defined frequency/time or on user demand;
- Secure user access to reports based on pre-defined, configurable user categories;
- User friendly menu-driven reporting interface including drop down lists for selection criteria that includes at a minimum:
  - Date/Time;
  - Location;

  - Plaza;
  - Facility;
  - Lane Number;
  - Transaction type;
  - Transaction ID;
  - Trip ID;
  - Transponder ID;
  - License Plate Number/Jurisdiction;
  - Trip Types (see section 3.4.2); and
  - Express Lanes and/or General Purpose Lanes.
- Summary and detail level reports including hyperlinks within the reports that allow the user to drill down from summarized data fields to obtain the underlying detailed data;
- Standardized report format with headers and footers that contain such information as:
  - SRTA logo;
  - Report title;
  - Selection criteria used to generate the report;
  - Date and time when the report was generated;
  - Indicator of whether the report contains adjustment data;
  - Page number and total number of pages contained in the report;
  - Subtotals; and
  - Drill down capability via hyperlinks.
- Column and row titles labeled using terms that are clearly defined in user documentation and applied consistently throughout all reports;
- Segregation of relevant data by Toll Facility/Corridor/Project;
- Range of output options including PDF, html, csv, Excel 2007 or later or screen display;
- Optimized performance including:
  - Execution of reports to meet SLAs as described in Appendix D;
  - No degradation in overall system performance caused by reports execution;
- Full auditability and reconciliation whereas detail level reports support summary level reports and data points (numbers) reconcile between them.

3.5.6.1. Standard Reports

Standard reports to be delivered with the system shall include, but will not be limited to the following:

- Traffic and revenue reports – by Facility/Gantry Location/direction;
  - Hourly, daily, weekly, monthly and yearly traffic, transaction and revenue by location and payment type; and
  - Presented in row/column format as well as in graphical and/or chart format;
- Transaction adjustment reports;

- Traffic and revenue reconciliation reports;
- Detailed transaction report(s) by Facility/Gantry Location/ direction/lane that include that include at least the following fields:
  - Transaction ID, transponder number(s), transponder status, image URL, axle count(s), revenue due, revenue collected, violation indicator, and date/time/location.
- MOMS reports;
- Historic and trend reports – including recurring (habitual) transactional data;
- File Transmission Reports;
- Toll Rate System Logs and Toll Rate CMS Sign Logs by time period and location;
- Exception reports;
- Availability and performance statistical reports;
- Transponder penetration reports shall be measurable in ETL and GP lanes;
- Travel time report based on transponder reads/timestamps. Shall be measurable in ETL and GP lanes;
- Speed report – provides average speed sorted by segment based upon MDS data;
- Vehicles per hour/per lane report;
- Trip Transaction report(s) – must include: trip detail, trip ID, trip length, trip category, entry and exit time(s), final license plate number after image review, initial posting status returned from SRTA BOS, timestamp when Trip was sent to SRTA BOS, travel time and segment travel times and average speed;
- Dynamic Pricing reports(s) – must include: dynamic pricing rates grouped by rate change, by segment, by day, by time period, etc. Dynamic reports shall also have the ability to report on historic rate changes;
- Toll transaction processing report – shall report on the Processing status of toll transactions that have not yet been assigned a trip. Shall be historical and shall display the transactions backlog. For example:

	Day 1	Day 2	Day 3	Day 4
Toll Transactions - not yet matched to a trip	1000	800	400	50

- TSI Contractor shall provide 20 custom reports that shall be defined by SRTA.

3.5.6.2. Report User Manual

The TSI Contractor shall provide a report manual that will list and details all available reports. The report manual shall include, but will not be limited to:

- Name of the report;
- Report description;

- Version number;
- Identification of field level reconciliation (i.e. which fields can be reconciled to another report(s));
- Last Date revision; and
- SQL query.

3.5.7. Audit Support

The Facility Host shall provide audit trails for all transaction processing to allow SRTA the ability to audit the trip building and toll rate assignment process and any subsequent modifications made to trip transactions and toll rates. The TSI Contractor shall provide a detailed audit report that is suitable for the auditing and reconciliation of all Transaction Records and other messages generated by the zone controllers. This report shall contain a sequence of records based on location and entry-exit date/timestamp that includes equipment warning and failure messages and all data pertinent to each individual Transaction Record. In the event that an automated process fails to complete successfully, an alarm shall be generated in the MOMS such that an audit trail is captured.

The TSI Contractor shall also provide an audit report which shall compare Transaction Records generated by the zone controllers with Transaction Records received by, and processed by the Facility Host. The report shall have selection criteria including, but not limited to: location and entry-exit date/time stamp and will include data elements such as unique transaction identifier numbers generated in the lane(s), transaction records received by the Facility Host, transaction records processed by the Facility Host and direction/reversal. Final format and content of the report will be determined during the Design Phase.

Additionally, since the Facility Host will build Trips and transmit to SRTA's existing CSC Back Office for posting, an audit report is required that compares all trips generated by the Facility Host and transmitted/received to the BOS. This report shall have selection criteria including, but not limited: to entry-exit date/time stamp, Facility, vehicle data and will include data elements such as transactions generated in the lane(s), transaction records received by the Facility Host, transaction records processed by the Facility Host into Trips, Trips sent to the CSC System, Trips received by the CSC system, Trips waiting to be received by the CSC System and other relevant data. Final format and content of the report will be determined during the Design Phase.

SRTA may request a third party audit (at SRTA's expense) at any time after the Electronic Toll Collection System is placed in revenue service – regardless of final System Acceptance. The TSI Contractor will cooperate with the audit process and shall provide all required data such as but not limited transactional and/or financial, VES Image sets, DVAS records/recordings, archived data, and OCR results. The TSI Contractor shall make any necessary corrections based on anomalies or discrepancies found during the audit process such that SLA agreements and system availability requirements are met and/or system flaws that impact the auditability of the system or system security are detected and corrected.

3.6. SRTA Intelligent Transportation Management System (ITMS)

SRTA will have a fully functional ITMS in place and will require that the TSI Contractor provide appropriate interfaces to the ITMS such it may operate in a functional layer 'above' the Electronic Toll Collection System, and can serve to integrate and fuse ITS/ATMS, Tolling System, and Tolling Operations data to

automate and facilitate effective and efficient SRTA operations at all levels. The ITMS will have the following functionality:

- Interface with the Tolling System to obtain current and historical pricing, equipment status and traffic data;
- Interface with other systems to obtain traffic data;
- Directly monitor field equipment, where possible (non disruptive), for Tolling System auditing purposes;
- Facilitate the creation, automated reporting, management and resolution of 'Tolling Events' – caused by traffic incidents, equipment failures, etc; and
- Fusion of ITS / ATMS and Tolling System data for auditing purposes (pricing), and to generate reports for Tolling System and Tolling Operations optimization.

Distillation of fused data for various targeted STRA information dashboards – for Tolling Operations, Customer Service, Executive and Operations Management, and potentially, the Public.

3.7. SRTA TOC

The SRTA TOC for both Projects will be collocated in the GDOT TMC building located on East Confederate Avenue in Atlanta, Georgia. The TSI Contractor shall furnish all necessary equipment for the TOC operations, install, integrate, test and otherwise complete the build out of the SRTA TOC site as approved by SRTA. GDOT will provide the space and furniture for three pods with sufficient space for the installation of equipment and equipment racks required to support the requirements of this RFP. All facility power, utilities and network connectivity via fiber plant to the TOC will be provided by GDOT/SRTA. The TSI Contractor shall furnish and install a secondary communication pathway (leased line) from the roadway to the facility housing SRTA's TOC.

SRTA envisions an operations area that provides operational control and monitoring for the three SRTA managed lane facilities. The TSI Contractor shall furnish the equipment required for the three pods and install and integrate the equipment for the two pods associated with I-75 South Express Lanes and NWC Express Lanes.

Each pod will contain three (3) workstations of which two (2) workstations will be staffed by SRTA (and equipped by the TSI Contractor) for each Project (the third workstation is to be left open for GDOT's use). From these workstations, SRTA personnel will provide at a minimum: operational guidance, respond to and resolve alarms, manage events, make updates to the Dynamic Pricing system, set toll rates, and run reports. To do so, the SRTA TOC personnel will run applications via the interfaces specified in section 3.5.5 which include but is not limited to; ITMS, CCTV viewing, ITS data feeds, GP lane AVI readers, Toll Rate AVI Sites, MVDS and dashboard functionality.

The TSI Contractor is responsible for coordinating with GDOT/SRTA in the design of the TOC layout in the area(s) designated for installation of the PCs, monitors, equipment racks, servers, and other ancillary equipment for each workstation, etc. Design coordination shall take into consideration all design elements including but not limited to space, power, floor loading and interface requirements.

Each pod is configured to provide work space for three operators, two of which will be SRTA staff, together with the required PCs, monitors, and ancillary equipment envisioned for effective toll operations. An example pod configuration is provided below.

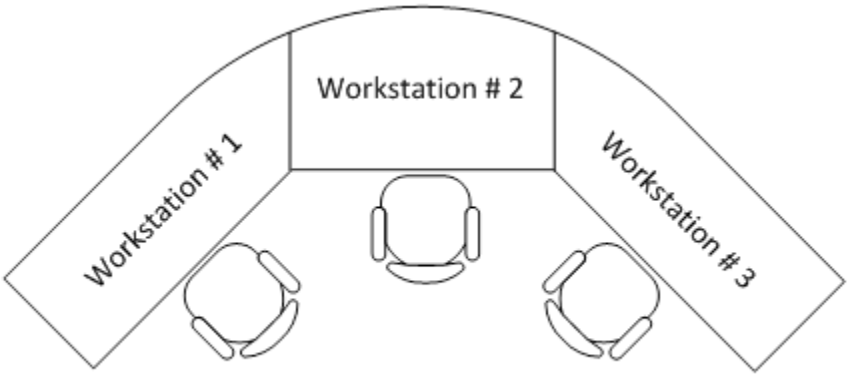


Figure 3.7-1 Example Pod Configuration

Each of the three pods shall provide at a minimum 20 monitors, 10 PCs, and all ancillary equipment (keyboards, mice, KVM switches, cabling, monitor arms, etc.) required to equip two workstations per pod.

The TSI Contractor shall furnish and install the equipment required for the three pods. Illustrated below is a conceptual rendition of how each workstation might be configured

Figure 3.7-2 Conceptual Workstation Configuration

Each of the five (5) monitors on the top row of monitors shall be able display from one (1) to 16 video streams per monitor simultaneously as indicated in the illustration below.

Figure 3.7-3 Example of Simultaneous Monitoring

Each SRTA position operator shall be able to individually select, display, and control 16 separate video images simultaneously on each of the five (5) monitors. All GUI's, Dashboards and Toll applications shall be accessible and selectable at each of the five (5) monitors in the bottom row.

Each SRTA pod will have two workstation configurations as indicated. Shown below is an illustration of how a position might be configured. This photo (taken from Broward County FDOT District 4 TMC) is provided only for illustrative purposes to depict how a workstation might be configured. It is not meant to reflect the intended configuration within the GDOT TMC. The TSI Contractor is responsible for providing a final design that clearly illustrates all SRTA positions, equipment, monitor mounting brackets, etc.

Figure 3.7-4 Broward County FDOT District 4 TMC Workstation Configuration

The TSI Contractor shall coordinate and work closely with SRTA/GDOT and the GDOT TMC SI Contractor in design and integration the SRTA TOC work area(s). All servers, storage devices, communications equipment, UPS, and other TOC system hardware shall be installed in the designated locations within the GDOT/TMC or as prescribed in the drawings supplied by and approved by SRTA and GDOT.

The TSI Contractor shall coordinate with GDOT/SRTA for the specifications and dimensions of the GDOT TMC pods to be provided by the GDOT. Additionally, the TSI Contractor shall coordinate with GDOT and the GDOT TMC SI Contractor for the designated areas for the three SRTA pod locations and the equipment racks.

The TSI Contractor is responsible for but not limited to;

- Furnish and install UPS (rack units if applicable);
- Furnish and install equipment cabinets, servers, communication equipment, workstations, and other peripheral equipment needed to support the TOC operations;
- Furnish and install all cabling required to interface all equipment provided by TSI Contractor;
- Furnish and install required equipment racks;
- Furnish and install all electronics and other devices in their respective equipment racks;
- Furnish and install workstation monitors, PCs, and all ancillary equipment (keyboards, mice, KVM switches, cabling, monitor arms, etc.);
- Furnish and provide alternative CCTV control application;
- Furnish and Installation of toll network equipment;
- Establishing and validating communications to appropriate equipment and applications (such as roadside devices, and the Facility host, CCTV viewing apps, etc.)
- Validate all cable and wire terminations via test process to ensure that the cable is properly terminated and connected correctly;
- Calibration and testing of each interface required by this specification; and
- Calibration, testing, and control of the CCTV cameras via Navigator and the alternative CCTV control application.

The TSI Contractor shall develop an installation checklist for the build out of the SRTA TOC that tracks the progress and completion of all installation activities. This checklist shall also include the successful completion and test of all interfaces required.

3.7.1. Disaster Recovery Facility for TOC Operations

The SRTA DR facility will be located at SRTA's current headquarters located at 47 Trinity Avenue, Atlanta, Georgia.

The TSI Contractor shall furnish, build-out, integrate and test this DR site as approved by SRTA. The TSI Contractor shall provide the equipment and redundant systems necessary to execute the procedures/processes necessary to maintain continuity of operations in the event of a failure of ~~either primary facility host~~the facility host system(s), or whenever SRTA chooses to operate the DR.

The DR facility work area will consist of one pod with three (3) operator workstations. The pod will be configured to provide work space for three (3) operators to work side by side by side. The pods shall

provide at a minimum 30 monitors, 15 PCs, and all ancillary equipment (keyboards, mice, KVM switches, cabling, monitor arms, etc.) required to equip three workstations.

The TSI Contractor shall furnish and install one pod with three (3) workstations which includes both the furniture and equipment required for the three (3) workstations. The configuration of each workstation shall be the same as the illustrated conceptual rendition of the workstations used in the SRTA TOC in the previous section.

As with the primary site implementation, at each workstation the operator shall be able to individually select, display, and control up to 16 separate video feeds simultaneously on each of the five (5) monitors. All GUI's, dashboards and tolling related applications shall be accessible and selectable at each of the five (5) monitors in the bottom row.

The TSI Contractor is responsible for the design of the designated area that houses the servers, racks, etc and shall take into consideration all design elements including but not limited to space, power, and floor loading requirements. The TSI Contractor shall coordinate and work closely with SRTA in designing the Disaster Recovery facility. As with the installation and build-out of the primary TOC location at the GDOT TMC, the TSI Contractor is responsible for, but not limited to,

- Furnish and install one (1) pod;
- Furnish and install UPS (rack units if applicable);
- Furnish and install of equipment cabinets, servers, communication equipment, workstations, and other peripheral equipment needed to support the TOC operations;
- Furnish and install all cabling required to interface all equipment provided by TSI Contractor;
- Furnish and install required equipment racks;
- Furnish and install all electronics and other devices in their respective equipment racks;
- Furnish and install workstation monitors, PCs and all ancillary equipment (keyboards, mice, KVM switches, cabling, monitor arms, etc.);
- Furnish and provide alternative CCTV control application;
- Furnish and Installation of toll network equipment;
- Establishing and validating communications to in-lane equipment (Facility host);
- Validate all cable and wire terminations via test process to ensure that the cable is properly terminated and connected correctly;
- Calibration and testing of each interface required by this specification; and
- Calibration, testing, and control of the CCTV cameras via Navigator and the alternative CCTV control application.

The TSI Contractor shall develop an Installation checklist for the build out of the DR facility that tracks the progress and completion of all installation activities. This checklist shall also include the successful completion and test of all interfaces required for full recovery of operations from the facility.

3.8. Maintenance Online Management Systems (MOMS)

The TSI Contractor shall provide a MOMS which shall be the primary repository for the logging of all system maintenance activities, generating tickets for all process failures, file transmission failures, communication issues, hardware issues, maintaining equipment inventory, and for generating reports. MOMS shall be the central repository for all system monitoring alerts. The TSI Contractor shall provide a fully integrated MOMS application that automates the creation, tracking and reporting of work orders, automatically monitors equipment health and status, generates alarm messages, maintains and updates equipment inventory, equipment location and is capable of automatically creating reports as may be determined by SRTA during the Design Phase of the Project(s). The MOMS shall include a COTS network monitoring system.

The TSI Contractor shall provide a MOMS that shall include, but will not be limited to the following:

- Configurable alarm priorities;
- Manage work assignment of maintenance personnel;
- Real time access to MOMS, facilitated using laptop and/or desktop computers and/or personal data assistant (PDA) equipment;
- Automated and manual work order management;
- 24 hours a day by seven (7) days a week automatic dispatching of technicians by at least text messaging, email or cell phone with the ability to escalate dispatching;
- Automated work orders generated for scheduled preventive and predictive tasks, as well as for alarms generated by equipment in the lanes, ITS equipment, or at the Facility Host;
- Critical alarms to notify appropriate personnel, as identified by SRTA during the Design Phase of the Project(s), tracking the acknowledgement, response, repair, and total down times associated with work orders generated through the alarm subsystem in accordance to the SLA requirements in Appendix D;
- Updates to the maintenance work order, alarm response, and maintenance activity be appended to the ticket with a searchable date and time stamp to record the entire history of the activity;
- System generated alarms and manual posting of incidents;
- The logging of maintenance Trouble Failure Reports (TFR) used to track failures from initial identification to completion. Access to TFRs using a query by location, status, component or unique tracking number; and
- The inventory portion of the MOMS shall track equipment and spare parts and shall generate automated messages when warranties are nearing expiration or when levels of spares reach a configurable minimum threshold. The inventory management portion of MOMS shall accept bar-coded inputs. Additionally the inventory portion of MOMs shall provide a monthly report of the status of all equipment in inventory to include but not limited to, in repair, spares inventory, operational (or deployed), and retired (or no longer useable or serviceable).

3.8.1. MOMS Reports

MOMS reporting system shall support the generation of maintenance tracking and management reports which cover all areas of maintenance management including but not limited to system service levels, MTBF, Mean Time to Respond, Mean Time to Repair, current and consumed inventory as well as the ability to customize reports tailored to SRTA needs.

MOMs shall provide, but not be limited to, the following types of report data selectable as weekly, monthly, annually, or as identified by SRTA during the Design Phase of the Project(s):

- Equipment, Subsystem and Total System Availability by selectable time period and location;
- Lane System Availability;
- Summary and Detail Work Order Status by time period and location;
- Work Order History;
- Open Work Order;
- Number of Work Orders Exceeding Repair Times;
- Number of Work Orders Exceeding Response Times;
- Mean-Time-To-Repair (MTR);
- Meant-Time-To-Respond (MTTR);
- Mean-Time-To-Respond and Repair (MTRR);
- Mean-Time-Between-Failures (MTBF);
- Equipment inventory including hardware/equipment description, hardware/equipment location (deployed or in inventory as retired, in repair, inventory, operational), software and firmware versions, serial numbers and warranty information installed components by lane and location;
- Summary and detail history of alarms by selectable time period and location (preferably using drill down functionality);
- Incident logs by equipment type, time period and location;
- Acknowledgement, Response and Repair Time by technician, Electronic Toll Collection System location & priority and location;
- Routine and Preventive Maintenance activities by equipment types, location and time period;
- Corrective (unscheduled) maintenance history by classification (minor and major), including component failure rates by equipment type, time period, location and technician;
- Equipment use and repair history by equipment type, time period, location and technician; and
- Equipment use and repair history by device, time period, and location.

3.9. Image Processing Subsystem

The TSI Contractor provided Image Processing Subsystem (IPS) shall provide a high level of automation with a low error rate as defined by the Image Processing SLAs in Appendix D. The IPS shall be designed in conjunction with SRTA. The TSI Contractor is expected to develop, design and implement a system that optimizes the combination of technology and human review to achieve these results (high automation and low error rate). This system shall meet the performance requirements identified by the Image Review SLAs in Appendix D with human readable plates taken from actual image sets from the roadside system. The outcome of the system ultimately shall be to populate the Facility Host data base with all data elements related to the identification of the license plate. The IPS is a critical element of the Trip Building system (see

section 3.4.2) as it is responsible for associating license plate images with transactional data such that Trips can be created in the Facility Host system.

The TSI Contractor shall be required to tune the Optical Character Recognition (OCR) aspect of the system and to provide camera tuning and illumination enhancements multiple times during the development of the Express Lanes Toll Collection System Project(s) to optimize the performance of IPS automation and accuracy and to achieve the performance requirements of the contract as described in the Image Processing SLAs in Appendix D. The system shall use both OCR and Video Signature Recognition (VSR) technologies to support accuracy, automation and efficiency. Additionally, the TSI Contractor shall provide SRTA with pre and post tuning image quality report(s), during the development of the Project(s).

The TSI Contractor shall provide data for the development, tuning and testing of the IPS. The TSI Contractor shall collect image truth sets from the express toll lanes in the first thirty (30) days of open to tolling on the Facility(s) prior to the completion of the accuracy and automation tuning of the OCR/VSR. Representative data sets of all images (such various times of day and night, weather conditions, and locations) shall be included and are subject to SRTA approval. The TSI shall meet the following guidelines when developing and testing the IPS:

- Image truth data and test sets collected by the TSI (subject to SRTA review) shall be a minimum of 100,000 images each unless otherwise approved by SRTA and shall contain all types of images (human readable and non-readable) captured from cameras deployed for the Project(s), on the project corridor(s);
- The TSI is responsible for performing the manual image review of all truth data and test sets (subject to SRTA review);
    - Correct IPS reads are determined during the testing only on those image sets where a license plate and the state jurisdiction is unambiguously determinable by human reviewers and the IPS outputs the same read and jurisdiction answer that double blind human reviewing provides (and validated a third time if the IPS and human reviewers disagree). If the IPS rejects any vehicle with an unreadable or missing plate, that is not considered a correct “read” by the IPS but instead is considered a correct reject.
- The IPS system and associated image review workstations shall process all the images expected by the design criteria for the Electronic Toll Collection System’s expected level of transaction/image volumes;
- Image review workstation performance shall be measured during a concurrent seven (7) hour work day at each of the TSI Contractor provided workstations; and
- The TSI Contractor will provide at least ten (10) image review workstations, total (which will be utilized to process image transactions on both Projects), to be delivered prior to revenue collection on the first Project. The TSI Contractor shall provide four (4) workstations for the I-75 South implementation and the remaining six (6) workstations during the I-75 NWC implementation.

In order for the Facility Host system to accept any VSR data generated by the IPS, the VSR data must first have been confirmed by a human reviewer, such that all unique license plates have been human reviewed at least once prior to progressing through the IPS. This VSR authentication (human review) of a license plate shall be re-verified, based on a configurable parameter of license plate identification frequency (i.e. how long since last human review of plate XYZ – 123, and how many times it has been seen passed through the automated IPS since last human verification). Re-verification of the VSR data shall be

performed through a configurable parameter of either high confidence OCR or human review process, or a combination thereof.

All automated image review shall require a double blind review process that results in a match of one or more of the following but not limited to:

- OCR/VSR result match to authenticated VSR;
- OCR match to human reviewer;
- VSR match to human reviewer; or
- Human reviewer # 1 match to human reviewer #2.

Human review of license plate images shall be a double blind process (two or more independent/different human reviewers). In the case that the outcome of this double blind review process does not agree, the image shall be presented to a third blind review conducted by a supervisor.

Images shall automatically be populated on appropriate screens without the need for user interaction within the timeframe identified by the image review SLAs in Appendix D.

The workstation application shall be able to run on standalone SRTA workstations (non IPS specific workstations), or shall be accessible by these standalone workstations. The plate review application is preferred to be browser based (consistent with SRTA IT standards), such that it can easily be loaded on multiple workstations, and without special licenses. The IPS system shall be sized to support two (2) times the stated quantities of image review workstations at the required performance levels as identified in the Image Processing SLAs as identified in Appendix D.

The unique transaction identifier shall serve as the common link to all associated images of a transaction and all transaction processing results shall be associated with the original transaction record.

The IPS shall filter, report on, and act on duplicate images and data such that the same images/transactions are not processed multiple times and a SRTA configurable list of specific license plates are filtered out such that they are not sent further into the review or payment process.

All images from the roadside cameras shall be passed through OCR and VSR in their native, or unaltered, image format to provide the most data and accuracy possible. Only images that meet the requirements determined during the Design Phase of the Project(s) (e.g. all transactions, no payment method, class mismatch, invalid tag, etc.) will be sent to human review.

The IPS software will be trained to recognize a variety of states/plate-types that appear on the facilities in order to meet the level of accuracy rate and automation required. The choice as to which states/plate-types shall include the standard Georgia issued plate, with the remaining choice to be at the contractors discretion based solely on the variety of plates commonly seen on the facilities. The accuracy and automation rates are to be calculated on all plates seen on the facilities

3.9.1. Image Database and Storage

- ~~Images shall be stored in native format for OCR and VSR processing for a configurable rolling period of not less than thirty (30) days at the roadside or hub location and shall allow for automatic rebroadcast, and re-OCR and re-VSR as necessary.~~
- Images may be compressed after successful OCR and VSR processing,

- The IPS system shall have access to all images at the Facility Host level to store, view, and edit copies of all images associated with each transaction.
- After the thirty (30) day period the images used for AVI to AVI trip building may be deleted on a rolling FIFO basis, all other images used for revenue collection shall be stored for access by the system for processing and operational processes for a period of not less than one (1) year prior to archival;
- Image quality enhancements made through the IPS process for human review or for printing purposes shall be stored and made available to the existing SRTA BOS system for processing (for printing on violation notices) and shall include automatic enhancements such as:
    - Contrast;
    - Gamma;
    - Brightness;
    - Color; and
    - Magnification.

3.9.2. Image Processing Subsystem Interfaces

- The TSI Contractor shall define the interface between the IPS and the Facility Host System in the form of an Interface Control Document (ICD), and the IPS shall be integrated to and from the Facility Host in accordance with this ICD;
- The IPS shall receive images and data from the Facility Host system containing the lane level data;
- Transmission of images and data from Facility Host and roadside to the IPS and SRTA BOS shall allow for guaranteed transmission, re-transmission, and/or recovery of data;
- The original and amended transaction data shall be maintained throughout the IPS;
- The IPS shall transmit and receive information, including the transaction data, image and amended license plate processing data to and from the Facility Host which is then sent to the existing SRTA BOS for processing;
- Transaction data shall contain all amended information (such as license plate information, ROI, OCR) from the IPS and the existing SRTA BOS, and shall be stored in a single repository on the Facility Host;
- Transactions with images shall be interfaced in a format that allows for the existing SRTA BOS to create enforcement actions such as violation notices;
- The TSI Contractor shall integrate and define all interfaces with the existing SRTA BOS for image processing with the new IPS;
- The IPS shall include interfaces to provide vehicle notifications to law enforcement for near real-time notification to officers in the field of detection of specific license plate ID's matching predetermined lists; and
- Every user or system action associated with an image shall be logged to be used for reporting and auditing.
- In addition to the network connection, the IPS shall accept images for processing from direct connection to storage devices in the case of network outages.

3.9.3. Special Functions

- The Special Function application shall provide for authorized users to search the entire image repository, to view, save locally, and print a specific image. The search shall be based on

plaza/lane/date/time criteria and or range; and transponder, plate ID, whether the image has been reviewed or not and shall present all transaction and links to images that match the criteria.

- The IPS shall support the creation and filtering of multiple lists configured and edited by SRTA that allow for screening of special interest license plate IDs such as but not limited to:
    - Blue list (Law enforcement request);
    - Clear list (plate IDs which are allowed to travel the toll roads without charge, non-revenue-based plate list);
    - Amber list
    - Silver list
    - An additional 20 filters

3.9.4. Image Review and Processing

- The IPS shall be configurable and will support manual and double blind review of license plate images.
- Image sets shall be created and reviewed based on the time period of lane operations correlating to a single direction of travel on a facility, and all images in a given set shall be reviewed before the set is closed/released for trip building processes.
- The IPS shall be capable of supporting a minimum of fifty (50) concurrent users.
- The IPS GUI must be ergonomic and provide an efficient process for reviewing images. This shall include but shall not be limited to:
    - Image review monitor screens of at least but not limited to 27” high definition LED for image review;
    - Calibration tools displayed on monitors to customize human alignment with color, contrast, brightness to the monitor display;
    - Metrics to indicate to image review users the volume of images processed and expected image review performance level indicator on a near real-time basis;
    - The Region of Interest (ROI) of the vehicle must be from the best and most likely image displayed and must be displayed in a large view, with other possible images associated with the transactions displayed on the same screen in smaller views;
    - The input of license plate characters by human users must be a font size that is similar to the displayed size of the ROI, and beneath the plate in the ROI image in the field of view of the operator;
    - Mouse button use is strictly limited to tasks such as choosing the image and ROI (if necessary), most operator functions shall be done through a single or limited keystroke(s) and will not require a mouse (e.g. - use of “hot” keys);
    - A reviewer shall have the ability to go back and edit at least the last 10 transactions processed by that reviewer;
    - Information about the date, time, and location (zone, lane number, Camera ID) of the image shall be presented;
    - When known, DMV information about the vehicle type, year, and color;
    - When known, the transponder ID; and
    - The image being selected for ROI shall be highlighted on the review screen.
- Image reviewers shall be able to work on individual blocks of images based on configurable settings which shall include but not limited to:

- Individual reviewers shall be able to configure the quantity of transactions in a single block to be reviewed;
- Supervisors shall be able to set the default value of the quantity of transactions in a block;
- First in First Out (FIFO) - oldest-first basis default setting;
- Plaza/lane location (with supervisor override);
- Date/time interval, (with supervisor override);
- Specific transaction or Plate ID, (with supervisor override); and
- Performance determination for time of processing will be aggregated based on the time to complete the number of transactions in a given block.

- The IPS shall provide the capability for images to be loaded into various processing queues based upon selection criteria to be defined during the Design Phase.
- Separate screens and queues shall be provided based on the role of the users, so as to provided screens for reviewers (for the determination of license plate characters, state jurisdictions, plate type, out state plates), supervisor (review, approval operations functions), administrator, and auditor type functions).
- Selection of image review criteria shall allow supervisor override capability including, but not limited to supporting random sampling and double blind review based on a configurable sampling criteria, of location, and operator.
- No image shall be put in a terminal state until it has been sent to a queue for supervisor review, and all efforts to match a trip have been exhausted.
- For routine measurement of operator performance and accuracy, the TSI Contractor shall develop tools and processes to introduce a truthed set of images, known as the "performance set" into the reviewer work flow on a configurable routine basis.
- The performance set shall include a mix of images of various plate id, state, type, and code off.
- Multiple varying performance set samples of known truthed images shall be presented to the reviewer for determination without their knowledge of the sampling.
- The frequency and size of the performance set of data shall be configurable by the supervisor based on reviewer roles, and individual reviewers.
- The supervisor shall have system tools to allow for the creation of performance set sample files.
- The system will provide a score of the reviewer's performance based on the known performance set plate samples and the time to complete the performance sample set.
- Unique performance set samples from the operational set may be used as a tool in training.
- The IPS shall support audit functionality to measure that automation, accuracy, and leakage levels at defined intervals or as desired by SRTA and provide results via dashboard and reports~~(ad hoc audit support)~~.
- The system shall allow an auditor to create defined quantities of images to review against the results of all conditions of image dispositions such that automation, accuracy and leakage performance values can be determined.
- Images shall be available to reviewers in a manner that allows for a constant feed of configurable number of image blocks or queues to be reviewed.
- Images shall be presented as automatically enhanced for viewing, adjusting for color, gamma, and contrast as well as providing the option of seeing the raw image.
- Reviewers shall have tools to easily manually enhance images, for color, contrast, light/dark zoom, negative and ROI selection.

- Images presented for review may be compressed outside of the ROI area, so as not to significantly reduce the high resolution details of the image.
- The IPS user interface shall enable authorized users to:
    - View images (both vehicle images and ROIs) and the transaction data related to the image;
    - Enter either the license plate data for the plate image, reject the license plate data previously associated with the image;
    - View OCR and lane system health results for each transaction; and
    - Select transaction dispositions to be associated with the image (e.g., reject, accept, or hold for additional review).
- For any image-based transaction to be rejected because of lack of a useable image, the rejection shall not be permitted until the reviewer enters a reason code for the rejection. Reason codes may include, but not be limited to, the following list which shall be refined during the system design process:
    - Image too dark or too light;
    - Image not clear;
    - license plate not in field of view;
    - License plate obscured, dirty, partially or completely blocked by debris or covers, hitches, trailers, or vehicle;
    - License plate view partially or completely marred by human tampering; and
    - Additional codes as defined by SRTA through the use of a user interface.
- The system shall have the ability to manage and synchronize images from multiple cameras associated with the same image transaction.
- The system shall group images for one transaction together on one image review screen.
- The best image shall be pre-selected by the system as the initial image to be displayed for review.
- If a plate image is eligible for second manual review or supervisor review, then all associated images shall be available for that review.
- Images rejected during initial or subsequent review shall be kept for a configurable time period before deletion, or such that they can be automatically reintroduced into the processing if necessary by supervisor action.
- Output of the image review process shall contain all associated fields of the transaction, to include license plate characters, state, type, ROI coordinates, system accuracy score, method by which the image was identified, and ID of human image reviewer.
- In the cases of multiple images of a single transaction identification of the single image that should be used for document issuance should be the image that was determined to be the preferred image either through human review or OCR/VSR results.
- Automation acceptance criteria for an individual license plate VSR will have expiration dates or parameters, measured in days (XXX) such that a result will be accepted before human review is required again, and/or number of times a result is accepted before human review is required again.
- The IPS shall be able to automatically reject system provided results, with a pre-defined disposition category for various image categories (such as black image with no plate) and send the image to a queue that can be configured either for or without manual review to either discard or process the image.
- The IPS shall also feed an easily configurable percentage (from zero to 100 percent) of the following images for human review:

  - Images which were automatically accepted based on OCR and VSR results and
  - Images associated with valid AVI transactions.
- IPS shall be capable of removing, rejecting from processing, or limiting the input of images from the roadside for processing within the IPS based on configurable SRTA business rules. This includes but is not limited to the removal of images from processing queues based on time parameters, toll rates, and location(s),
- The IPS shall be capable of identifying through image review process certain vehicles; such as, but not be limited to emergency (police, fire and other) vehicles. Such vehicles can be identified by license plate, type or appearance of vehicle for the purposes of not charging, not sending to violation enforcement or for conditions of other business rules. Once these vehicles/plates are identified they may be added by authorized SRTA users to the special interest license plate lists (ie clear list) such that future encounters of the license plate can be identified through the ALPR process.

3.9.5. IPS Search Functionality

- The IPS shall have configurable search tools to locate images and data in the database.
- The search functions shall use radio buttons, range fields, wild cards and other GUI parameters to allow users to easily query images and associated transaction data.
- Search results shall allow for display of images, data or both.
- Search results shall be sortable by named display fields.
- Search results shall be displayed in html, PDF, CSV, and excel formats to the user's desktop or other location.
- Search criteria may be printed and saved to the user's desktop or other location via a naming criterion for future use by any user.
- Search criteria shall include but not be limited to date/time/range, location(s), lane(s), transponder ID, license plate, camera ID, transaction ID, OCR/VSR performance value ranges, operator performance, operator log actions, transaction revenue types (i.e. non revenue), transaction conditions (i.e. class mismatch, insufficient funds, etc) and other criteria developed during the design phase.
- The search results shall be capable of being flagged by individual transaction(s) or all "select all" displayed data, and saved by a name provided by the user for future review, analysis, editing, printing, or exporting.
- Name flagged data shall be capable of being kept private by the user or be editable by other users.
- Name flagged data shall be searchable for further analysis by the user.

3.9.6. IPS Reports

- The IPS shall have easy to use reporting tools consistent with other reporting tools and formats of the project that provide stored reports and configurable search criteria that and can be named and stored that generate exportable (PDF, excel, CSV, as a minimum) reports.~~ad hoc reports that can be named and stored.~~
- Reports shall provide summary and detail level information.
- All Dashboard and search functions shall have corresponding reports preformatted.
- All reports shall have appropriate titles, headers, and indicate searched or report criteria.

- Reports may be saved to html, pdf, csv, and/or Excel formats to the user's desktop or other location.
- Reports shall be further defined during the design phase.

3.10. Security and Access Control System

Access to Electronic Toll Collection System information and security at the toll facilities is of utmost importance to assure that SRTA has a reliable, uninterrupted revenue stream and a secure, auditable Electronic Toll Collection System. The TSI Contractor shall be responsible for the physical security of the Facility Host facilities and all property within them. Access to computer equipment shall be restricted and only authorized personnel shall be allowed to enter the facilities.

3.10.1. Security Requirements

All TSI Contractor personnel shall be subject to security and background checks to the satisfaction of SRTA. The TSI Contractor shall obtain written approval from SRTA for all service personnel.

TSI Contractor's personnel shall be issued SRTA identification badges, and shall wear such identification badges at all times when performing duties on the project(s). Use of such identification badges for purposes other than work associated with the Contract may result in termination of the employee from the Contract, and possible other legal or disciplinary action.

The services and work performed under the Contract are considered highly confidential. All employees of the TSI Contractor shall not discuss their work with other unauthorized personnel, or any individuals not directly associated with the Electronic Toll Collection System. SRTA shall identify and designate a primary point of contact for the TSI Contractor to communicate with. Under most circumstances, the TSI Contractor shall limit communication with SRTA staff and only communicate with the designated point of contact.

The TSI Contractor shall submit a Security Plan to SRTA in accordance with section 4.6.11 of this RFP. Security and access control for the Project shall be compliant with the requirements of this RFP and the applicable GTA Standards provided on the GTA web page (http://gta.georgia.gov/information-agencies).

3.10.1.1. System Security

Only authorized personnel shall have access to computers and system information on the Electronic Toll Collection System computers and network. The TSI Contractor shall provide a single sign-on system whereas multiple systems shall access a common user account and password system (such as KERBEROS or LDAP). Using a single system of unique user ID and password control, the system shall provide controlled user access that includes, but is not limited to, sign-on facilities, permission control, and different levels of access for system control, files, directories, and application software. The system shall support authorized changes to the access levels and personnel designated to those levels.

The TSI Contractor shall develop an access level matrix during system design and submit it to SRTA for approval thirty (30) days prior to system FAT. A final access matrix shall be developed by the TSI Contractor and submitted to SRTA sixty (60) days prior to the commissioning of the system.

3.10.2. Access Control Requirements

The security control and access system shall operate 24 hours a day, seven (7) days a week, and shall consist of CCTV cameras to record and store video of access to the primary and disaster recovery Facility Host buildings, roadside hub buildings, all cabinets that carry transactional data from lanes to the Facility Host or lanes to zone controller, access doors and other TSI Contractor provided cabinet locations as approved by SRTA. Access to enclosures and cabinets (door open alarms) shall be recorded automatically and transmitted to the MOMS. See section 3.3.5 for key/lock requirements related to enclosures/cabinets.

In addition the security control and access system shall include, but not be limited to

- The camera shall have a viewable image streaming video 24 hours a day unless hampered by adverse weather conditions;
- The CCTV Security cameras shall have configurable pre-sets for but not limited to; the toll zone and equipment cabinet access, and the roadway in both the approach and departure directions;
- CCTV pre-sets shall be triggered by sensors monitoring cabinets or building doors or other defined areas identified by SRTA;
- Access to enclosures, hubs, and cabinets shall be recorded automatically and transmitted to the MOMS and the associated video for the timeframe that the doors remain open will be available to all TOC locations. On communication hubs, CCTV cameras will be mounted to record the external and internal sides of the doorways;
- Recording of CCTV video shall be provided on a digital video recorder (DVR) at the hub or Facility Host level;
- The DVR system shall have sufficient hard disk storage for at least ninety (90) days of recording; and
- The CCTV subsystem shall automatically purge CCTV data not marked for archive for a configurable period of time, with the default set at ninety (90) calendar days.

3.11. SRTA Network and Communications

The Civil Contractor is responsible for providing/installing the main trunk fiber optic outside plant (physical fiber cable and conduit) on both Projects and terminating in patch panels in hub buildings and in the main equipment cabinets (provided by the Civil Contractor) at tolling gantries.

Reliable, secure high-speed communications between the Facility Host server(s) and the CSC/VPC, Gantry locations and other roadside equipment (i.e., toll rate CMS, MDS, etc.) are necessary to support the real time nature of the System. Therefore the communications infrastructure between ~~both the primary and DR~~all ~~f~~Facility Host locations and the tolling facilities must be designed to provide the necessary bandwidth, redundancy and availability to meet SRTA's requirements. ~~In addition, communications between the Facility Hosts and remote CSC/VPC sites and other external interfaces must be accommodated. The TSI Contractor will be responsible for specifying the bandwidth requirements to support communications between the Facility Host locations and the internal and external interfaces. In addition,~~

Fiber Optic Network:

~~t~~The TSI Contractor will be responsible for furnishing, installing, integrating and testing and maintaining the communications equipment required to ensure that SLAs are met. The TSI Contractor shall be responsible for the detailed network design that meets all requirements outlined in the Toll Network Infrastructure Design Guide, Appendix F.

The TSI Contractor shall be responsible for determining the bandwidth required for the fiber optic network (minimum of Gigabit Ethernet), including both the toll and toll-related ITS systems. The TSI Contractor shall be responsible for performing a link budget analysis to determine the optical distance requirements of each link, and provide the appropriate type and quantity of transceivers in each switch.

The TSI Contractor shall propose a redundancy/failover scheme that meets or exceeds the requirements outlined in the Toll Network infrastructure Logical Design Guide. If the TSI Contractor's design requires the use of any standard or proprietary network protocols outside of the network design guide, the TSI Contractor shall submit a request in writing to SRTA for approval.

The TSI Contractor shall develop an IP scheme for all IP enabled devices on the project. The TSI Contractor shall coordinate with SRTA to determine the IP range and subnet mask for each VLAN. The IP scheme shall be submitted to SRTA for review and approval prior to integration of any network devices.

~~It is also the TSI Contractor's responsibility to provide/configure all electronics and WAN links required to ensure fault tolerant WAN connectivity from the SRTA hub locations to the TSI Contractor's Facility Host locations, and from the Facility Host locations to SRTA's existing back office hosting locations (both Richardson, TX and Lisle, IL). The TSI Contractor's WAN topology and bandwidth/equipment shall be subject to SRTA review/approval~~Metro Area Network:

Both the I-75 South and NWC TSI networks shall connect to the GDOT Metro Area Network fiber in order to interconnect at least one (1) toll related hub on each project and for primary connectivity to SRTA CSC at the SRTA headquarters and to the SRTA TOC at the GDOT TMC location. The physical fiber will be allocated by SRTA through GDOT. All equipment, configuration, and management of the inter project network will be the responsibility of the TSI.

Wide Area Network:

In order to establish a communication path to the SRTA back office and ensure maximum reliability, a WAN connection shall be provided by the TSI Contractor at a minimum of one (1) toll related hub location on each project. It is the TSI Contractor's responsibility to provide/configure all electronics and WAN links required to provide a back office communication path and ensure fault tolerant WAN connectivity from:

- I-75 South toll related hub / TSI Contractor's Facility Host locations to SRTA existing back office hosting locations (connects to both Richardson, TX and Lisle, IL) and SRTA TOC and CSC locations.
- NWC toll related hub / TSI Contractor's Facility Host locations to SRTA existing back office hosting locations (connects to both Richardson, TX and Lisle, IL) and SRTA TOC and CSC locations.

The TSI Contractor's WAN topology and bandwidth/equipment shall be subject to SRTA review/approval. The costs associated with any monthly fees will be the responsibility of the TSI Contractor.~~. Wide Area Network:~~

~~In order to ensure maximum reliability, a WAN connection shall be provided by the TSI Contractor at a minimum of one (1) toll related hub location on each project. The WAN link will serve as a redundant connection in the event that the primary fiber optic network connection is interrupted. It is the TSI Contractor's responsibility to provide/configure all electronics and WAN links required to ensure fault tolerant WAN connectivity from:~~

~~I-75 South toll related hub / TSI Contractor's Facility Host locations to SRTA existing back office hosting locations (connects to both Richardson, TX and Lisle, IL).~~

~~NWC toll related hub / TSI Contractor's Facility Host locations to SRTA existing back office hosting locations (connects to both Richardson, TX and Lisle, IL).~~

~~The TSI Contractor's WAN topology and bandwidth/equipment shall be subject to SRTA review/approval. The costs associated with any monthly fees will be the responsibility of the TSI Contractor.~~

4 Project Management, QA/QC, System Design Process, Documentation, Installation and Testing

4.1. Project Management and Meetings

The TSI Contractor's project management approach shall reflect industry best practices, be tailored to the applicable Project(s) and be sufficiently detailed and structured to allow SRTA to regularly review progress and schedules, track progress, assess risk, and determine whether the TSI Contractor has the necessary management, staff, and controls in place to meet the specifications of this RFP. The project management approach should be consistent with the latest version of the Project Management Body of Knowledge (PMBOK).

4.1.1. Project Management Plan

The TSI Contractor shall submit a Project Management Plan (PMP) to SRTA for review and approval that describes how the TSI Contractor plans to manage and implement the Project(s). The TSI Contractor shall discuss their approach to project management and how their management philosophy and principles are consistent with the Project Management Institute's PMBOK and how they will be incorporated in the management of the Project(s) along with the design, test, installation, implementation, and maintenance aspects of this Project(s). The PMP shall describe the system of management, staff, and measurable controls that will be utilized to meet the specifications of this RFP and will enable SRTA to monitor the progress and quality of the work performed on the Project(s). The PMP will include all aspects of change management, communications management, configuration management, human resources management, requirements management and will incorporate the quality management plan, risk management plan, and cost, Master Project Schedule and scope baselines.

A preliminary PMP shall be submitted to SRTA for review and approval. The PMP shall be a "living" document, and as such, shall be updated periodically to reflect any necessary changes as approved in writing by SRTA. All revisions shall be dated and version controlled.

The PMP shall address the requirements detailed in this section and other areas of the RFP and shall describe how the TSI Contractor will address the coordination requirements detailed in GDOT's RFPs for each Project with the respective GDOT Civil Contractor.

4.1.1.1. Organization Chart and Project Staffing

The PMP shall include an organization chart(s) listing key personnel together with their roles and responsibilities, their primary location (Atlanta or otherwise) and the percentage of time that will be dedicated to each Project. Additionally, the organization chart(s) shall list key subcontractor team members, team member locations, and their responsibilities. The organization chart(s) shall indicate the Project Manager, who ~~will be assigned to the Project full time~~ shall be available full time on an as-needed basis and will be the single point of contact for the Project, as well as other key personnel who will be responsible for the QA/QC, design and development, networking, maintenance, installation, testing, training, safety and documentation aspects of the Project. Additionally the organization chart shall identify a point of contact above the PM for issues requiring escalation as required in the Contract.

The TSI Contractor shall be responsible for assigning and maintaining a sufficient number of qualified and experienced professionals and other technical personnel needed to deliver the Electronic Toll Collection System for the Project(s). The TSI Contractor will be responsible for ensuring that all staff on the Project(s) are properly trained and certified to perform the work.

Resumes for all key personnel shall be included in the project staffing portion of the PMP. Any changes to the staffing identified in the organization chart(s) shall be submitted in writing to SRTA for approval.

The TSI Contractor shall clearly describe categories of work that will be performed by the TSI Contractor's own personnel and those categories that will be performed by subcontractors, who shall be named in the Proposal. The TSI Contractor shall also include a section describing the procedures that will be used for managing all subcontractors. Any changes to the subcontractors identified in the Proposal shall be submitted in writing to SRTA for approval.

4.1.1.2. Planning, Communications and Reporting

The PMP shall include a description of the plans and procedures that will be used for communications with SRTA related to planning, issue resolution and reporting. This description shall address correspondence, document control, submittals and submittal letters, change order process, reporting of Project status, invoice submission, verification/approval process, and SRTA's access to TSI Contractor's key personnel. The TSI Contractor shall also address the coordination with the Civil Contractor for gantry and roadway design and scheduling.

SRTA requires that all documentation and other submittals be delivered to SRTA no later than the close of business (COB) on the day in which the Master Project Schedule indicates that they are to be delivered. SRTA defines COB as 5:00 PM Atlanta time. Any/all documents or submittals that are delivered to SRTA after 5:00 PM Atlanta time on the day they are due according to the Master Project Schedule shall be considered late.

4.1.1.3. Issues Management

The PMP shall include a description of how the TSI Contractor will work with the SRTA to discuss and resolve system or Project issues. The issues management process shall be used to establish a structured means to track issues and to ensure timely resolution of questions and issues and the process used to document and identify possible changes to create change orders, when required. SRTA requires a ten (10) business day turnaround on change order requests.

The TSI Contractor shall include a description of the issues escalation process, to include the TSI Contractor's corporation escalation point of contact.

4.1.1.4. Risk Management

The PMP shall describe the system of risk management that the TSI Contractor will implement in order to identify, track and mitigate areas of Project risk. Factors that should be tracked over the course of the Project include, but are not limited to, the events subject to risk and their probability, impact, mitigation, contingency and reduction.

4.1.1.5. Quality Management

The QA/QC Program shall include a system of problem logging and tracking, follow-up tracking, and final disposition tracking during the design, testing and implementation phases. The QC process shall ensure accurate problem description and recording, assignment of personnel, tracking of progress for corrections/revisions, and regression testing. Preferably, the TSI Contractor shall utilize a fully integrated problem or defect tracking tool that includes a reporting capability.

4.1.2. Master Project Schedule

The TSI Contractor shall develop a detailed Master Project Schedule for each Project listing all tasks related to the design, development, testing, installation, deployment and commissioning of the Electronic Toll Collection System. The Master Project Schedule shall be maintained in Microsoft Project format (Office 2007 or newer) and shall be submitted in both Microsoft Project and pdf format. The Master Project Schedule shall identify all milestones and events starting with the NTP, through the date of System Acceptance (SA). The preliminary Master Project Schedule that is delivered as part of the TSI Contractor's Proposal shall be updated and submitted to SRTA for review and approval. The approved updated Master Project Schedule will serve as the baseline for all subsequent schedules and updates throughout the duration of the Project. The TSI Contractor shall update the Master Project Schedule on a monthly basis and submit it to SRTA for SRTA approval as a part of the monthly progress report.

The Master Project Schedule shall include durations and milestones (see Deliverables/milestones in Appendix C - all of these items at a minimum shall be included in the Master Project Schedule), resources and any known dependencies for all Project(s) tasks and elements. The Master Project Schedule will include all milestones defined in this RFP. The Master Project Schedule shall include review durations as defined in section 4.3 of this document.

The Master Project Schedule shall also include Civil Contractor coordination meetings, submittals and review times required to provide technical input and support to the GDOT Civil Contractors and any other coordination that may be required. Please refer to the GDOT RFPs.

4.1.3. Project Progress Meetings

Project progress meetings shall be held at least monthly, on site at SRTA offices at SRTA's discretion, and will follow a defined agenda. The TSI Contractor shall coordinate the meeting agenda with the SRTA Project Manager and submit a meeting agenda and the progress report to SRTA at least three (3) business days prior to the scheduled meeting. The report shall include, at a minimum, the following elements:

- An updated Master Project Schedule showing progress since the previous meeting and including any proposed changes from the latest approved Master Project Schedule;
- A description of the percentage of work completed for each task in progress;
- An analysis of all critical path tasks;
- A risk matrix that describes all known risks associated with the Master Project Schedule as well as recommended mitigation strategies or contingency plans that will avoid potential delays;
- Report on testing activities including status and overview of defect tracking results (when applicable);

- A description of any proposed change orders or if any change order work is in progress, the status of the associated work;
- A six (6) week work plan for activities to be accomplished on the Project;
- An updated action items list from the previous meeting that shows the status of the open action items and that lists any action items that can be closed; and
- A copy of the approved minutes of the previous meeting.

The TSI Contractor shall ensure that key Project(s) staff shall attend the monthly progress meeting with SRTA. The TSI Contractor shall assist the SRTA Project Manager to prepare and set up meeting facilities, and facilitate meeting discussions.

The TSI Contractor shall prepare draft minutes of the Project(s) progress meeting and forward them to the SRTA Project Manager for approval within three (3) business days after the meeting. Once approved, all Project(s) progress meeting materials should be posted on the Project(s) website.

4.1.4. Other Project Meetings

In addition to the progress meetings, other Project meetings will be required to address specific issues and tasks. These meetings will be conducted periodically at SRTA's determined frequency and locations. In order to optimize the value of these meetings, the TSI Contractor shall ensure that the following procedures are followed:

- Coordinate date and time with the SRTA Project Manager and distribute notices of Project(s) meeting by email and post them on the Project(s) website;
- Prepare the agenda in coordination with the SRTA Project Manager;
- Prepare and set up meeting facilities and assist the SRTA Project Manager to facilitate meeting discussions;
- Attend the meeting with all required staff; and
- Prepare draft minutes of the meeting and forward them to the SRTA Project Manager for approval within three (3) business days after the day of the meeting.

4.1.5. Project Communication Website(s) and Tools

There will be Project(s) document collaboration system(s) (SharePoint or similar) established by SRTA or GDOT and the TSI Contractor will be required to use these tools for submittal deliveries.

4.2. Quality Assurance and Quality Control Program

The TSI Contractor shall establish, maintain and follow an effective Quality Assurance/Quality Control Program (QA/QC Program) to ensure conformance to requirements and quality delivery of all Project deliverables and tasks, including design, development, fabrication, processing, assembly, inspection, test, maintenance, packaging, shipping, storage, site preparation and installation.

The QA/QC Program shall be overseen by an experienced QA/QC Manager who should report at an organizational level above the TSI Contractor's Project Manager. The QA/QC Manager shall be identified

on the organization chart by name and relationship to the TSI Contractor's Project Manager within the corporation management structure.

4.2.1. Quality Management Plan

The Quality Management Plan (QMP) shall describe the processes, metric goals and procedures instituted by the TSI Contractor to measure the effectiveness of their QA/QC program and ensure it is used as an integral and systemic part of the Project. The TSI Contractor shall provide a copy of a QMP currently being used on a similar existing project as part of the Proposal submittal.

The TSI Contractor shall update the QMP for review, comment and approval by SRTA. The QMP shall describe the TSI Contractor's QA/QC Program and shall encompass all aspects of the Project(s).

The QMP developed for the Project(s) shall specifically address the scope of work defined for the Project and shall describe, at a minimum:

- TSI Contractor's QA/QC staffing;
- Configuration management system;
- Change control process;
- Software coding/commenting standards;
- Records management;
- Records of subcontractor QA/QC programs and audits;
- Cost records;
- Design review and walk through processes;
- Purchase control;
- Inspection and verification processes;
- Handling , storage and delivery of products; and
- Testing processes and programs.

All supplies, equipment, software and other services delivered as part of this Project(s), whether manufactured or performed within the TSI Contractor's company or at any other source, shall be controlled at all points necessary to ensure conformance to the specifications of this Project(s). The QA/QC Program shall focus on the prevention and early detection and correction of discrepancies. The TSI Contractor shall describe the tools and methodologies that will be used to correct discrepancies and that will be in place for early detection.

The TSI Contractor's QMP shall describe the tools that the TSI Contractor uses to provide control and tracking of purchased materials and subcontracted work. Manufacturing, fabrication and assembly work conducted by the TSI Contractor shall be controlled completely by the TSI Contractor.

4.2.1.1. Software/Hardware Change Management

The QMP shall also include a change management plan describing the method in which software/hardware releases are implemented. SRTA will work with the TSI Contractor to create the change management plan.

The change management plan shall include:

- Release version number;
- Subsystems affected during release;
- Subsystem availability during outage;
- Impacts to SRTA back office and ICD;
- Length of release;
- List of tickets resolved;
- Detailed resolution of each ticket;
- Benefits to ticket implementation;
- Screen shots of any UI changes;
- Hardware upgrade\configuration changes;
- Communications upgrade\configuration changes; and
- Coordination meeting planning.

4.2.2. Records

The TSI Contractor shall maintain all quality records and data such as, but not limited to: records of design reviews and code walk-through sessions; inspection and test results; records pertaining to nonconforming material; change order documentation; audit results and all other records related to the RFP and resulting Contract for no fewer than five (5) years after the expiration of the Contract. This information shall be made available in electronic format to SRTA upon request, within three (3) business days.

4.2.3. Control of Purchase

The TSI Contractor shall ensure strict conformance of all supplies, components, developmental tools, assemblies, subassemblies and services procured from TSI subcontractors and vendors to the specifications of this RFP. The TSI Contractor shall also establish and provide to SRTA documented procedures for the selection of qualified suppliers and subcontractors and assume responsibility for controlling the quality of the supplies and services provided.

4.2.4. Inspection and Verification

The TSI Contractor shall be responsible for the inspection and verification of in-process, final assembly, unit tests and system tests of their supplied systems. SRTA reserves the right to perform a final verification of provided units. TSI Contractor shall assist as needed.

4.2.5. Handling, Storage and Delivery

The TSI Contractor shall protect all hardware, software, equipment, spares and other items required by this RFP by providing and delivering documented handling, storage, preservation, packaging, and shipping instructions to the appropriate parties, including the specification of any unique or special requirements.

4.2.6. Inspection at Subcontractor or Vendor Facilities

SRTA reserves the right to inspect services or supplies not manufactured or performed within the TSI Contractor's facility at the subcontractor or vendor site. This inspection will not replace the TSI Contractor's inspection activity or relieve the TSI Contractor of the responsibility to meet the requirements of this RFP.

4.3. Project Documentation

The TSI Contractor shall provide comprehensive system design, user, installation, maintenance and training documentation as part of the Project(s).

For submittals requiring engineering design review/approval (e.g. mounting bracket drawings), the TSI Contractor shall allow for thirty (30) calendar days for the review of SRTA and other stakeholders. The TSI Contractor shall prepare plans, shop drawings, and as-builts in accordance with the GDOT's instructions as to design criteria, procedures, and format as contained within the GDOT RFP procurement documents, and within the TSI Contractor procurement documents as applicable. Current GDOT design manual and guidelines may be found at:
http://www.dot.ga.gov/doingbusiness/PoliciesManuals/roads/Pages/default.aspx. The TSI Contractor shall advise SRTA immediately if TSI Contractor believes that there may be or is a conflict among these documents.

The TSI Contractor shall allow for up to twenty (20) calendar days for SRTA review for all other submittals. Based on SRTA approval, this timeframe may be less for minor submittals. These include all system design documents, test procedures and manuals. The TSI Contractor shall update documents based upon SRTA comments and shall furnish a revised document for concurrence review and SRTA approval. A submittal shall not be considered final until it has received SRTA approval. Final versions of documentation shall be delivered in electronic format to SRTA. Upon SRTA request, documentation/ submittals shall be provided in three ring binders in addition to the electronic copy. Whenever practical, all documents shall be produced using standard Microsoft Office applications.

The TSI Contractor shall submit shop drawings to SRTA for review and approval detailing the installation design to be used for all installation activities. Detailed drawings shall be provided for each installation configuration and if these measurements differ at various locations, the differences shall be noted. All documentation regarding the equipment installation shall be maintained by the TSI Contractor and made accessible to SRTA or GDOT upon request. All documentation shall have current and visible version and revision numbers, titles and other information. Any documents requiring engineer approval (with Georgia PE stamp) will be submitted for preliminary SRTA review prior to engineer approval. After all SRTA comments have been addressed, the TSI Contractor will obtain engineer sign and seal and then submit final documents to SRTA. The TSI Contractor is responsible for engineer's approval on all items necessary to deliver the scope of work contained within this RFP.

See Appendix C for a complete listing of all Project(s) deliverable documentation.

See section 4.1 for details regarding project management documentation.

See section 4.2 for details regarding QA/QC documentation.

See section 4.4 for details regarding system design documentation.

See section 4.5 for details regarding installation documentation.

See section 4.6 for details regarding testing documentation.

See section 5 for details regarding training documentation.

4.3.1. Software Development Plan

The TSI Contractor will prepare and submit a Software Development Plan (SDP) to SRTA that describes the resources, tools, development platforms and methodology used for the software development of the Electronic Toll Collection System. The SDP shall describe the software life-cycle methodology that will be utilized as well as the technical approach, problem reporting and tracking process, risk mitigation procedures, software configuration and change management, and other items pertinent to a complete plan for software development for the Project(s).

The SDP shall provide a description of the structure of the software development team that will be assigned to the Project(s) and how personnel will be assigned to the various system development disciplines including software developers, system engineers, test engineers, software test personnel, configuration management staff, documentation specialists, Project(s) management staff and software maintenance personnel.

4.3.2. FCC Licenses

The TSI Contractor is responsible for compiling all Federal Communication Commission (FCC) licensing materials. The TSI Contractor shall provide AVI location and support structure information in compliance with FCC standards, and provide the completed form(s) to SRTA for submission to the FCC. After initial installation, the TSI Contractor is also responsible for providing any FCC required maintenance forms, completed and submitted to SRTA for submission to the FCC.

SRTA is responsible for submitting the completed forms to the FCC and the payment of all related FCC licensing costs.

4.3.3. Safety Plan

The TSI Contractor will develop a comprehensive Safety Plan for the Project, which will be submitted to SRTA for review, comment and approval. The Safety Plan shall describe the procedures that will be instituted both during infrastructure installation, system implementation/deployment, testing and during system maintenance activities to ensure personal safety and compliance with all applicable state and federal laws, rules and regulations, and legislation including but not limited to OSHA, NECA, FHWA, MUTCD, and GDOT.

The TSI Contractor will ensure that all personnel working within the Project(s) work areas are trained on the safety program, prior to entrance to any work area and will be responsible at all times for the safety of all TSI Contractor personnel.

4.3.4. Security Plan

The TSI Contractor will provide a Security Plan for the Project, which will be submitted to SRTA for review, comment and approval. The Security Plan shall describe personnel, facilities, data and communications security provisions that shall be utilized for the Project(s), including, but not limited to the following:

- ~~Electronic Toll Collection System security and access control;~~
- Cabinet, hub, facility and housing access;
- Electronic Toll Collection System software control including UserID and password protections and system access control;
- ~~Database security;~~
- ~~Password and access control;~~
- Data privacy and encryption;
- Data communications security; and
- Virus and spyware protection.

4.3.5. Disaster Recovery Plan

The TSI Contractor shall provide a Disaster Recovery (DR) plan including DR procedures for the Project for SRTA review, comment and approval at the System Detail Design Document (SDDD) review. The DR plan shall include, but not be limited to, the following:

- Recovery management procedures for implementing and managing recovery process;
- Identification of key personnel, by name, email address, location and cell phone contact number directing/coordinating the recovery process;
- Electronic Toll Collection System business impact analysis;
- Loss of service continuity;
- Initial systems damage assessment checklist;
- Description of redundant systems and failover processes;
- Emergency contact lists;
- Detailed procedures/processes to be used in the event of complete destruction of the primary Facility Host site;
- Include a recovery plan in the event of a lost gantry at a tolling site (i.e. a temporary lane recovery plan); and
- Training in recovery of processes needed for long-term business and systems continuity.

The Disaster Recovery plan will be tested as part of the Integration Test and as described in Section 4.6 of this RFP. The TSI Contractor will make any required updates to the DR plan and resubmit to SRTA on a quarterly basis at a minimum.

4.3.6. Configuration Management and Document Control Plan

The TSI Contractor shall develop a Configuration Management and Document Control Plan for the Project that describes procedures that will be implemented to ensure that COTS and System application software, hardware, configuration files and Project documentation are tracked, documented and managed in accordance with industry best practices. The QA/QC Manager will be responsible for ensuring that processes described in the Configuration Management and Document Control Plan are institutionalized.

The TSI Contractor shall describe in detail the configuration management tools and techniques that will be used throughout the Project to track and control versions of hardware and COTS and customized software.

The TSI Contractor shall provide a copy of a Configuration Management and Document Control Plan that is currently being used on a similar existing project as part of the Proposal submittal. The TSI Contractor's documentation shall be controlled through a configuration management system that tracks changes to documents and controls version numbering and any serialization.

The TSI Contractor shall submit the Configuration Management and Document Control Plan for these Projects to SRTA for review and approval.

The TSI Contractor's document control system shall identify, categorize, track and manage all Project plans, manuals and other documents under the TSI Contractor's control. Revisions shall be documented and tracked using a system of version control and change control logs. Updated softcopy and hardcopy versions of Project documents shall be submitted to SRTA for approval whenever significant revisions are made. All electronic and hard copy documentation developed by the TSI Contractor for the Project, including materials developed to support training and marketing, will be the property of SRTA.

Once SRTA approves that any portion of the Express Lane Toll Collection System shall be placed into operational service, the TSI Contractor shall not change or replace any production hardware or software without written approval from SRTA. Any such approved changes shall be documented as part of the configuration management and inventory control process. A SRTA Change Management Board is established to review and approve changes to the system hardware and/or software configuration.

4.3.7. As-built Drawings/Documents

All changes incorporated during installation shall be indicated using signed and sealed red lines by the TSI Contractor and any sub-contractors. At the completion of the installation of the Project, the TSI Contractor shall verify and incorporate all red line drawings into the final as-built drawing package. The final as-built drawing package shall include installation drawings, shop drawings, and any redline drawing types used during installation of the Electronic Toll Collection System.

Applicable as-built drawings shall be available, electronically as well as print outs, for the technicians to perform their maintenance work at all tolling roadside cabinets and hub buildings. All as-built documents will be provided for each Project within sixty (60) days of the TSI Contractor's completion of installation on the respective Project.

4.3.8. Business Rules and Standard Operating Procedures

Business Rules shall be developed by SRTA during the design phase with support from the TSI Contractor through a series of one day workshops. No more than five (5) workshops will be held. The TSI Contractor is responsible for producing two drafts and a final submittal for SRTA's review, comment, and approval. Refer to Appendix C for deliverables related to Business Rules.

The TSI Contractor will work with SRTA to develop and document Standard Operating Procedures for the use of the Electronic Toll Collection System as it relates to managing the Project roadway traffic and data. The TSI Contractor is responsible for producing two drafts and a final submittal for SRTA's review, comment, and approval.

4.4. System Design Process and Related Documentation

All documentation described in this section is subject to the requirements detailed in section 4.3.

4.4.1. Civil Contractor Design Coordination Meetings

Multiple contactors will work on the Project during the design, construction and implementation phases. During the Project Design Phase, there will be a series of coordination meetings, review meetings, and submittal requirements between the TSI Contractor, Civil Contractor, SRTA and GDOT to clearly define and develop the design requirements, timetables, test plans, roles and contingency plans. The TSI Contractor's Master Project Schedule shall be provided to the Civil Contractor for the purposes of coordinating applicable design, construction and installation activities. The Civil Contractor will provide their schedule for comment by SRTA and the TSI Contractor. Design coordination meetings shall be included in the TSI Contractor Master Project Schedule.

The TSI Contractor shall be responsible for the coordination of its work with all such parties including attendance at required design, construction, review, implementation and other meetings as deemed necessary by SRTA.

4.4.2. System Requirements Document

The TSI Contractor shall develop a System Requirements Document (SRD) during the requirements phase. The SRD shall address, at a minimum, the Electronic Toll Collection System (ETC) environment, hardware and software configurations, high level process descriptions, use cases, data flow diagrams, performance and reliability specifications, data dictionary and interface requirements for the Project. The SRD shall also include a requirements traceability matrix (RTM), in Microsoft Excel format. The RTM shall include all Project requirements that affect the design or functionality of Project hardware or software.

The preliminary SRD submission shall include all system requirements and will be followed by an initial review and comment period, after which the formal requirements review(s) will take place. Upon completion of the requirements reviews, the SRD may be revised and re-submitted to SRTA for final review and approval. The approved SRD and RTM along with SRTA's Business Rules shall provide the basis for defining the testing requirements to be demonstrated during the Factory Acceptance Test (FAT) and Integration Test.

4.4.3. Preliminary Design Review and Documentation

The Preliminary Design Review (PDR) is the first in-depth review of the system design and will be performed after the TSI Contractor has made the initial changes to their system design to accommodate SRTA's requirements. The TSI Contractor shall provide system and subsystem block diagrams and data flow diagrams, and demonstrate compliance with system requirements. Hardware concept drawings and preliminary level engineering specifications shall be submitted during this review.

The Preliminary Design Documentation (PDD) shall contain detailed information on system design and technical approach and shall include, but not be limited to, those listed below:

- General system design;
- SRD;

- RTM;
- Business Rules;
- System software specifications and design;
- System hardware specifications and design with cut sheets (Internet links to cutsheets are acceptable);
- System network evaluation.

A single PDD shall be developed to address the design requirements for both projects. The TSI Contractor shall submit the PDD three (3) weeks in advance of the scheduled PDR meeting. The PDD will be reviewed by SRTA and comments provided to the TSI Contractor. The PDR meeting will be held to discuss the review the design documentation, discuss SRTA comments and provide an in-depth review of the system design and the design documentation. The PDR meeting shall take place at SRTA.

The TSI Contractor shall provide minutes/action items from the PDR and submit revised versions of the documentation for SRTA review and approval. This process will be repeated until SRTA determines that the PDD is acceptable.

4.4.4. Detail Design Review and Documentation

A Detail Design Review (DDR) meeting shall be conducted for each project by the TSI Contractor to discuss the System Detailed Design Document (SDDD). The SDDD shall be an extension of the approved PDD documents and shall include detail such as block diagrams, hardware and software design, user interface and screen layouts, report formats testing procedures, operational procedures, other pertinent design documentation including a list of equipment for each function along with a description of its role. Separate SDDD submittals shall be developed for each project.

The DDR provides the final review of the SDDD, as implemented in accordance with the approved PDR approach. The SDDD must be received from the TSI Contractor not later than three (3) weeks in advance of the scheduled DDR meeting to allow SRTA to review the documents in detail prior to the meeting.

As described above, the TSI Contractor will submit a SDDD for design approval that describes the design specifications of all hardware, software and communications to be provided by the TSI Contractor to meet the requirements of the Project(s). Hardware design shall describe all hardware specifications including appropriate diagrams and facility layouts. Software design shall describe the module and/or process level. The SDDD will form the basis for the DDR and will be submitted for review, comment and discussion, after which the design reviews will take place. Upon completion of the design reviews, the SDDD may be revised and submitted to SRTA for final review and approval. The TSI Contractor shall provide minutes/action items from the DDR and submit revised versions of the documentation for SRTA review and approval. This process will be repeated until SRTA determines that the SDDD is acceptable.

The SDDD shall include, but not be limited to, the following:

- Scope of Project(s);
- RTM;
- Performance standards;
- Specification sheets for all equipment (Internet links to specification sheets are acceptable);

- Full software manual set for all COTS software as requested by SRTA;
- System sizing and design details;
- Description of all third party software;
- System, subsystem and module level descriptions and interaction between modules;
- Business Rules;
- Requirements for all peripheral device interfaces;
- Examples (mockups) of all reports;
- Description of system diagnostics, status monitoring and error handling;
- Description of degraded mode handling at the lane level;
- Description of redundancy and failover processes;
- Algorithm descriptions including trip building and dynamic pricing;
- Lane layouts and logic, and timing diagram details;
- End to end transaction diagram;
- ICDs;
- File and transaction message formats;
- Design for user interfaces including graphical representation (screen shots or mockups) of all menus and screens;
- Database design and ERD;
- Data communications diagram; and
- Communications network logical design.

4.4.5. System Detailed Design Document As-Built

Within thirty (30) days after the successful completion of the System Acceptance Test, the TSI Contractor shall submit the As-Built SDDD including all changes made during the software development, installation and testing phases. All submittals shall be provided in three ring binders accompanied with electronic copies.

4.4.6. Interface Control Documents

As part of the requirements phase for the Project, the TSI Contractor will define a list of interfaces and related requirements for the Project(s). During the Design Phase, the TSI Contractor will develop Interface Control Documents (ICDs) for SRTA review, comment and approval that fully describe the interfaces including file formats, message guarantee structure and receipt acknowledgement, error checking and handling, retransmission procedures, archiving and other related specifications. The ICDs shall describe hardware and software interfaces, including, but not limited to, the following:

- Interface with existing SRTA BOS (TSI Contractor shall coordinate with SRTA's BOS to develop/finalize this ICD);
- Transmission of MOMS data between devices and the MOMS system;
- Transmission of data between the Electronic Toll Collection System and:
    - the CMS equipment;

  - the GDOT's TMC NaviGAtor system (TSI Contractor shall coordinate with TMC SI to develop/finalize this ICD);
  - the SRTA ITMS;
  - the RACS (TSI Contractor shall coordinate with the Civil Contractor and TMC SI to finalize this ICD);
  - the congestion measurement AVI equipment;
  - GDOT provided CCTV;
  - GDOT/SRTA provided MDS units; and
  - SRTA Data Warehouse;
- Transmission of data between the Facility Host Server and the Zone Controllers;
- Transmission of data between the Facility Host Server and the image processing subsystem;
- Transmission of data between the Zone Controllers and all lane peripherals, including, but not limited to, VES cameras, loop system, and AVI system;
- Transmission of data/communications between the Zone Controller (or Facility Host, whichever is applicable) and the direction of travel indicator(s); and
- Other interfaces as described in Image Processing Subsystem described in section 3.

The ICDs shall address the physical, functional and performance aspects of all interfaces. Data and process flow shall be used to illustrate the ICD processes.

4.4.7. System Design Approval

Once SRTA has made the decision that all of the updates and revisions of the SDDD are at an acceptable level and considered complete, an approval letter of the SDDD will be provided to the TSI Contractor. The approval of the SDDD authorizes the TSI Contractor to proceed with equipment procurement, and system implementation.

4.4.8. Engineering Design

The TSI Contractor shall use the services of a fully qualified engineering firm(s) for the purpose of performing all engineering civil, structural, electrical, mechanical, and architectural design and the preparation of related plans and documentation under this Project. All engineering civil, structural, mechanical, and architectural design work shall be performed under the direct supervision of an engineer of the appropriate discipline licensed in the State of Georgia.

4.5. Installation and Related Documentation

The TSI Contractor shall be responsible for the installation of the complete Electronic Toll Collection System(s) equipment provided under this RFP. To perform installation of the Electronic Toll Collection System(s), the TSI Contractor shall supply all qualified personnel, tools, materials and equipment required.

The TSI Contractor shall ensure that all components manufactured by a third party are installed in accordance with the manufacturer's installation instructions. In addition, the TSI Contractor shall procure on-site and remote support as needed from the third party vendor(s) to ensure the proper operation of

equipment at no additional cost to SRTA. TSI Contractor is responsible for all aspects of system provisioning, installation and implementation.

Electrical work to be performed by electricians licensed in the State of Georgia. All electrical work shall be performed in accordance with the applicable regulations. Appropriate NEC compliance shall be adhered to with all electrical articles for installation pertaining to wiring, enclosures, and other electrical equipment, including lightning protection. The TSI Contractor shall tie into the Civil Contractors site grounding and lightning protection system. The TSI Contractor shall ensure that site grounding and lightning protection meet the stated requirements.

All documentation described in this section is subject to the requirements detailed in section 4.3.

4.5.1. Installation Plan

The TSI Contractor shall submit, as part of the Proposal submittal, a preliminary installation plan for the Project(s) with sufficient detail to enable SRTA to assess the overall approach and management processes for implementing the installation requirements, including concerns and risks.

The TSI Contractor shall submit an installation plan to SRTA for review and approval. The TSI Contractor shall coordinate all aspects of the installation activities at both the lane level and the Facility Host level with SRTA/GDOT. The Installation Plan shall provide a comprehensive description of all aspects of the installation activities associated with the Project(s) including, but not limited to, the following:

- A baseline installation schedule for SRTA review, comment and approval. Following approval, monthly updates to the schedule shall be conducted and reported in the monthly status meeting. The installation schedule shall identify resources and dependencies as well as the anticipated durations for each installation activity (this installation schedule, once approved by SRTA, shall be incorporated into the Master Project Schedule);
- A description of installation resources including personnel and equipment;
- A description of the process of toll and toll related ITS site acceptance from the Civil Contractor;
- Description of the requirements for lane closures and other traffic management requirements necessary to install the toll and toll related ITS equipment;
- A description of the methods to be used to manage delivery and staging of the Electronic Toll Collection System equipment to be installed;
- A detailed component list and description of how each item version number and serial number shall be recorded for each installation activity; and
- Describe methods and controls that will be used to coordinate and work with the Civil Contractor and maintain the requirements of the Project(s) site turnover schedules.

4.5.2. Installation Meetings

The TSI Contractor shall schedule and attend weekly installation meetings during the installation phase of the Project. The TSI Contractor and any sub-contractors shall ensure that appropriate personnel are present at these meetings that are authorized to make decisions on behalf of the TSI Contractor and who can report on the Master Project Schedule, issues, status and planned activities. The TSI Contractor shall prepare and distribute a meeting agenda at least 24 hours prior to the scheduled meeting. This meeting

agenda shall consist of those items pertaining to the installation and schedule for the previous and current week's installation efforts. All issues recorded during the installation activity for the week shall be discussed and resolved if possible. An open action items list shall also be maintained for any outstanding work items related to the weekly meeting.

In addition to these above detailed weekly installation meetings with SRTA staff, the TSI Contractor shall be required to attend the Civil Contractor's construction coordination meetings, either onsite or remotely, as necessary upon SRTA's request.

4.5.3. Construction Coordination with SRTA/GDOT

The Civil Contractor is responsible for the provision of the gantries, the fiber backbone plant (the fiber conduit/cable and patch panels but not electronics, which shall be provided by the TSI Contractor), all signage, all CMS, all MDS, Toll Rate CMS CCTV cameras, hubs, roadside cabinets with HVAC, toll zone pavement, roadway striping, standby generators, site power service, site grounding and lightning protection. The TSI Contractor shall be responsible for closely coordinating with SRTA, SRTA representatives, GDOT, and GDOT representatives with respect to these items.

The TSI Contractor shall participate in the tolling design workshops as defined in the GDOT RFP. These workshops are intended to facilitate the design of the toll and toll-related infrastructure locations. The TSI Contractor shall review applicable Civil Contractor design submittals with respect to the design requirements of the toll and toll-related infrastructure. The TSI Contractor shall comply with the review durations as defined within the GDOT RFP documents. The TSI Contractor shall furnish comments to SRTA at a minimum five (5) days prior to the expiration of the allotted duration (e.g. if the GDOT RFP review duration is thirty (30) days , the TSI Contractor shall furnish comments to SRTA five (5) days before the allotted thirty (30) day duration ends).

During the Project design through implementation periods, there will be a series of meetings between the TSI Contractor, SRTA and GDOT to finalize the design and installation requirements, schedules, test plans, roles and contingency plans. The TSI Contractor shall attend Civil Contractor coordination/design meetings and provide the necessary support requested. TSI Contractor coordination items with the Civil Contractor require written approval from SRTA. TSI Contractor shall not provide direction to the Civil Contractor. Rather, the TSI Contractor will make SRTA aware of any issues requiring direction be communicated to the Civil Contractor, and SRTA will ensure the direction is communicated if appropriate. TSI Contractor shall not act upon any direction from the Civil Contractor or GDOT without written approval from SRTA.

The TSI Contractor shall only take direction from SRTA or SRTA-designated Representatives regarding any and all aspects of the work. No other party has the authority to amend or change any aspect of the Project or otherwise direct the TSI Contractor with regard to any and all aspects of the work. If an issue should arise between the TSI Contractor and the Civil Contractor that cannot be resolved within the regular progress/construction meetings, the issue must be presented by TSI Contractor to SRTA for resolution no later than two (2) business days after the issue arises.

4.5.3.1. Traffic Control and Lane Closures

The Civil Contractor is required to develop a traffic management plan and a traffic control plan to define its Maintenance of Traffic (MOT) plan, mobilization assumptions and construction staging assumptions for each of the Projects. A MOT plan, in accordance with current MUTCD/GDOT standards, shall be

submitted by the TSI Contractor for SRTA approval. The TSI Contractor shall coordinate with the Civil Contractor regarding access to the Project(s). The Project(s) will require TSI Contractor toll and toll-related equipment installation in locations within the newly constructed portions of the Project(s) and along the existing roadways (interstate and arterial).

The Civil Contractor shall have MOT in place prior to the facilities opening to protect the construction zone. For all toll related work contained within the construction zone, the TSI Contractor shall coordinate with the Civil Contractor as necessary. If additional MOT needs are required for the toll and toll-related equipment installation and testing, it is the responsibility of the TSI Contractor to furnish.

The TSI Contractor shall be responsible for the MOT required to install and test any of the toll and toll-related ITS devices that are located in the general purpose lanes of the existing interstate and any applicable arterials.

The TSI Contractor shall be responsible for coordinating and administering the lane closures and traffic controls that are not specifically the responsibility of the Civil Contractor and that have been agreed to and coordinated with SRTA/GDOT and the Civil Contractor. TSI Contractor should note that some equipment is located such that closures of the general purpose lanes are required, and some equipment is located within the footprint of the new Project(s) where coordination with Civil Contractor and GDOT shall be conducted as applicable. Allowable lane closures shall follow the requirements furnished in the GDOT RFP for each Project. Allowable work hours for all activities within the Project(s) limits shall be coordinated with GDOT and SRTA during the course of the construction coordination meetings.

For installation/integration work required after the Project(s) is open to traffic, the TSI Contractor shall provide SRTA with a schedule of requested lane closures and will cooperate with SRTA and GDOT to minimize the required number of lane closures in both the Express Lanes and the general purpose lanes.

The TSI Contractor shall communicate all lane closure requests to SRTA and GDOT for approval at least two (2) weeks in advance of the anticipated closure. The process for requesting lane closures will be jointly developed between the TSI Contractor and SRTA sixty (60) days prior to the first site turnover on the Project(s).

4.5.3.2. Installation Checklist

The TSI Contractor shall develop and submit to SRTA for review, an installation checklist for all TSI Contractor installation activities associated with the Electronic Toll Collection System. The checklist shall detail all items required for the installation team to complete the installation process for all toll and toll-related ITS sites and Facility Host systems. A copy of the completed checklist shall be provided to SRTA after the completion of the installation activity for each toll and toll-related ITS site as well as the Facility Host Systems.

4.5.3.3. Toll Site Transition/Site Acceptance Requirements

The design and construction of each Project shall be coordinated between the TSI Contractor and the respective Civil Contractor as set forth herein. As the Civil Contractor builds out the Project(s), individual toll and toll-related ITS locations will be turned over to the TSI Contractor in phases. There is a toll site and toll-related ITS site turnover schedule for each Project. The requirements for site turnovers are provided in the Site Acceptance Checklists developed for each Project and contained in Appendix K.

The TSI Contractor shall meet submittal/review requirements as stated in the Master Submittal List for each Project. The Master Submittal List is provided in the GDOT RFPs and provides review times and coordination requirements. The TSI Contractor shall allow a minimum of five (5) business days for both SRTA and GDOT review of the TSI Contractor's proposed comments regarding the Civil Contractor's submittals within the stated requirements of the Master Submittals Schedule.

The projected site turnover schedule developed for each Project as included in the GDOT RFP is included below. However, the TSI Contractor is cautioned that the schedules presented herein for site turnover are subject to change and final coordination with the Civil Contractor(s) Project schedule. The TSI Contractor shall be required to conduct a preliminary and final walk through of each site to be turned over and provide concurrence that the site meets the design specifications required by the GDOT design documentation and is suitable for the TSI Contractor's use prior to SRTA's acceptance of each site before TSI Contractor commences installation work. Partial acceptance of the toll and toll-related ITS sites is prohibited.

4.5.3.4. I-75 South Toll Site and Toll-Related ITS Turnover Schedule

The following information is excerpted from the GDOT RFP procurement documents and is subject to change via the GDOT RFP process. It is the responsibility of the TSI Contractor to coordinate schedules with the Civil Contractor throughout the term of the Project.

No later than two-hundred and fourteen (214) calendar Days prior to the Civil Contractor's Substantial Completion Date, the Civil Contractor shall turnover the Communication Hub(s), the fully tested and accepted fiber back bone and draft as-built plans to GDOT and SRTA for the Communication Hub(s) and fiber back bone and all related infrastructure.

Every two weeks from this initial turnover, the Civil Contractor shall turnover, at a minimum, two (2) Toll Locations and fifteen (15) toll-related ITS sites plus five-hundred (500) feet on each side of the toll gantry for installation, integration and testing to the Toll SI. The first turnover of toll-related ITS sites at two-hundred (200) calendar Days prior to the Civil Contractor's Substantial Completion Date shall include at least one site for each of the following: a) Toll Rate CMS, b) Toll Rate CMS CCTV, c) Toll Rate CMS AVI, d) GP scan (travel time), e) Shared MDS, and f) ACS equipment cabinet to Toll Rate CMS equipment cabinet copper cable installation and connectivity of controllers.

The priority for the required toll-related ITS site turnovers are:

1. Toll Rate CMS
2. Toll Rate CMS CCTV
3. Toll Rate CMS AVI
4. ACS equipment cabinet to Toll Rate CMS equipment cabinet copper cable installation
5. GP Scan Sites (travel time)
6. Shared MDS

Per the following table, the turnover of all Toll Locations and toll-related ITS sites shall be completed no later than one-hundred and thirty (130) calendar Days prior to the Civil Contractor's Substantial Completion Date.

Items in BLACK are set forth in the GDOT RFP, Items in RED are assumed dates for this RFP.

Days prior to Substantial Completion	I-75 South Civil Contractor Site Turnover Milestone Schedule		TSI Contractor Site Installation and Integration Correlate to Civil Contractor Site Turnover
	Toll	Toll-Related ITS	TSI Contractor Milestones
NLT 360			FAT Approval
NLT 290	Provide MDS		Integrate into final design
214	Communication Hub(s) Fiber Network		Inspect and Accept Hubs
200	Toll Locs (2)	ITS Locs (15)	Inspect and Accept Sites
NLT 193			Facility Host Installation/Unit Test/Network Integration completed
186	Toll Locs (2)	ITS Locs (15)	Inspect and Accept Sites
NLT 173			First Site Installation Test (ITS Sites) Approved
172	Toll Locs (Remainder)	ITS Locs (15)	Inspect and Accept Sites
NLT 163			First Site Installation Test (Toll Site) Approved
158		ITS Locs (15)	Inspect and Accept Sites
144		ITS Locs (15)	Inspect and Accept Sites
NLT 133			75% of Toll Zones and 30% ITS Sites Integrated
130		ITS Locs (Remainder)	Inspect and Accept Sites
NLT 100			100 % Toll Sites & 75% ITS Sites Integrated
NLT 70			100% of Toll & ITS Sites Integrated with network
45 to 0			System Integration Tests
0	Substantial Completion		System Integration Tests Completed

Days prior to Substantial Completion	I-75 South Civil Contractor Site Turnover Milestone Schedule		TSI Contractor Site Installation and Integration Correlate to Civil Contractor Site Turnover
	Toll	Toll-Related ITS	TSI Contractor Milestones
+1 to +20	End to End		End to End
+30	Open to Tolling		Open to Tolling
+60	Project Acceptance		Project Acceptance

End of excerpt from GDOT RFP.

The TSI Contractor shall ensure that all items, including site grounding and site lightning protection, on the Site Acceptance Checklist have been provided by the Civil Contractor and meet Project(s) specifications before accepting the site. Appendix K includes copies of each Project Site Acceptance Checklist. Each turnover shall include draft as-built plans to GDOT and SRTA regarding each specific location and all related infrastructure so that the TSI Contractor shall complete its work based upon the draft as-built plans provided. Final as-built plans shall be delivered to GDOT and SRTA no later than thirty-nine (39) calendar days prior to the Civil Contractor's Substantial Completion Date.

4.5.3.5. NWC Toll Site and Toll-Related ITS Site Turnover Schedule

The following information is excerpted from the GDOT RFP procurement documents and is subject to change via the GDOT RFP process. It is the responsibility of the TSI Contractor to coordinate schedules with the Civil Contractor throughout the term of the Project.

No later than two-hundred and seventy (270) calendar days prior to the Civil Contractor's Substantial Completion date, the Civil Contractor shall turnover the communication hub building(s), the fully tested and accepted fiber back bone and draft as-built plans to GDOT and SRTA for the Communication Hub(s) and fiber back bone and all related infrastructure.

Every two weeks from this initial turnover, the Civil Contractor shall turnover, at a minimum, two (2) Toll Locations and fifteen (15) toll-related ITS sites plus five-hundred (500) feet on each side of the toll gantry for installation, integration and testing to the TSI Contractor. The first turnover of toll related ITS sites at two-hundred and fifty-six (256) calendar Days prior to the Civil Contractor's Substantial Completion Date shall include at least one site for each of the following: a) Toll Rate CMS, b) Toll Rate CMS CCTV, c) Toll Rate CMS AVI, d) GP scan (travel time), e) Shared MDS, and f) ACS equipment cabinet to Toll Rate CMS equipment cabinet copper cable installation and connectivity of controllers.

The priority for the required toll-related ITS site turnovers are:

1. Toll Rate CMS
2. Toll Rate CMS CCTV
3. Toll Rate CMS AVI

4. ACS equipment cabinet to Toll Rate CMS equipment cabinet copper cable installation
5. GP Scan Sites (travel time)
6. Shared MDS

Per the following table, the turnover of all Toll Locations and toll-related ITS sites shall be completed no later than one-hundred and forty-four (144) calendar Days prior to the Civil Contractor's Substantial Completion Date.

Items in BLACK are set forth in the GDOT RFP, Items in RED are assumed dates for this RFP

Days prior to Substantial Completion	NWC Civil Contractor Site Turnover Milestone Schedule		TSI Contractor Site Installation and Integration Correlate to Civil Contractor Site Turnover
	Toll	Toll-Related ITS	TSI Contractor Milestones
NLT 420			FAT Approval
NLT 325	Provide MDS		Integrate into final design
270	Communication Hub(s) Fiber Network		Inspect and Accept Hubs
NLT 249			Facility Host Installation/Unit Test/Network Integration completed
256	Toll Locs (2)	ITS Locs (15)	Inspect and Accept Sites
242	Toll Locs (2)	ITS Locs (15)	Inspect and Accept Sites
NLT 229			First Site Installation Test (ITS Sites) Approved
228	Toll Locs (2)	ITS Locs (15)	Inspect and Accept Sites
NLT 219			First Site Installation Test (Toll Site Approved)
214	Toll Locs (2)	ITS Locs (15)	Inspect and Accept Sites
200	Toll Locs (2)	ITS Locs (15)	Inspect and Accept Sites
NLT 190			35% of Toll Zones & 20% ITS Sites Integrated
186	Toll Locs (2)	ITS Locs (15)	Inspect and Accept Sites
172	Toll Locs (Remainder)	ITS Locs (15)	Inspect and Accept Sites
158		ITS Locs (15)	Inspect and Accept Sites
NLT 150			80% of toll Zones & 60% ITS
144		ITS Locs (Remainder)	Inspect and Accept Sites
NLT 100			100% of Toll & 75% ITS Sites Integrated with network
NLT 70			100% of Toll & ITS Sites Integrated with network
45 to 0			System Integration Tests
0	Substantial Completion		System Integration Tests Completed

Days prior to Substantial Completion	NWC Civil Contractor Site Turnover Milestone Schedule		TSI Contractor Site Installation and Integration Correlate to Civil Contractor Site Turnover
	Toll	Toll-Related ITS	TSI Contractor Milestones
+1 to +20	End to End		End to End
+30	Open to Tolling		Open to Tolling & Start of System Acceptance Test
+60	Project Acceptance		Project Acceptance

End of excerpt from GDOT RFP.

The TSI Contractor shall ensure that all items on the Site Acceptance Checklist have been provided by the Civil Contractor before accepting each site. Appendix K includes copies of each Project Site Acceptance Checklist. With each turnover, the Civil Contractor shall provide draft as-built plans to GDOT and SRTA regarding each specific location and all related infrastructure so that the TSI Contractor may complete its work based upon the draft as-built plans provided. The Civil Contractor shall deliver final as-built plans to GDOT and SRTA no later than thirty-nine (39) calendar Days prior to the Civil Contractor's Substantial Completion Date.

4.5.4. Compliance with Installation Standards

The TSI Contractor shall adhere to all installation standards, applicable laws, ordinances, and codes as specified in ~~GDOT Special Provisions and~~ IEEE and NEC standards, GDOT Standards and Details, GDOT Standard Specifications, and GDOT Special Provisions. The TSI Contractor shall adhere to installation requirements detailed in the Special Provisions incorporated as part of the GDOT RFPs. The TSI Contractor shall be responsible for all costs associated with any permits, plan reviews and inspections and shall procure any required documentation related to proper installation standards, law, ordinance or codes. The TSI Contractor shall label all wiring and cabling at both ends in accordance with TIA/EIA-606-A. All enclosures/cabinets shall have nameplates installed to ensure unique identification.

4.6. Testing and Related Documentation

The requirements described in this Section detail the test phases, facility, and support services necessary to test the Electronic Toll Collection System. The TSI Contractor shall conduct testing of the system to validate the Toll Collection System integrity, reliability, functionality, accuracy and compliance to the requirements of this RFP.

For the following testing, the TSI Contractor will follow the applicable SRTA-approved test plans to conduct internal pre-tests of the System. The TSI Contractor will provide the test results to SRTA, prior to commencement of the actual test phases. SRTA may require the TSI Contractor to re-run the internal test prior to conducting the actual test if the preliminary test results do not indicate the test would be passed per the test plan.

- Factory Acceptance Test
- First In-Lane Site Installation Test

- Integration Testing
- System Acceptance Test

The TSI Contractor will be responsible for tracking all issues found during all testing phases until the issue's final resolution. TSI Contractor shall describe in detail all issues and what functionality is affected. This issues list will be provided to SRTA upon request within two (2) days.

Additionally, as part of the Electronic Toll Collection System tests the TSI Contractor shall support the Civil Contractor End-to-End Testing requirement for each Project. This test will provide testing for all ITS, Toll ITS, and Toll System Equipment installed for each Project by the Civil Contractor and the TSI Contractor.

All documentation described in this section is subject to the requirements detailed in section 4.3.

4.6.1. Master Test Plan

The TSI Contractor shall submit a Master Test Plan (MTP) to SRTA for review, comment and approval. The objective of the MTP is to ensure the Electronic Toll Collection System meets all contractual requirements, and are tested and certified to be operational and compliant with the RFP requirements, SRTA's Business Rules and functional requirements. The MTP shall provide a description of the standards for developing individual test plans and the procedures for the formal testing. These standards shall address test procedure format, severity levels and acceptance criteria for each test phase. In addition, the MTP shall describe the entry criteria that must be met before a formal test can be started and the exit criteria that must be met before each formal test can be considered complete.

4.6.2. Test Procedures

All formal test procedures shall conform to the standards defined in the MTP. At a minimum, the test procedures shall include the following elements:

- Introduction;
- Test purpose;
- Test platform (including required equipment and location);
- Time estimate;
- Pre-requisites;
- Set-up;
- Entry and exit criteria including pass/fail criteria;
- Individual test conditions/steps;
- Test condition identifier (i.e., reference to requirement);
- Description;
- Expected results;
- Actual results; and
- Notes.

As test procedures for specific formal tests are developed, they shall be submitted to SRTA for review, comment and approval. Once approved, the test procedures shall be added to the MTP as addenda.

4.6.3. Test Reports

After the completion of each formal test, the TSI Contractor will submit a test report to SRTA for review and approval. The test report shall describe the results of the test; a listing of all defects identified together with the severity level of each; a plan for resolving those defects; and a recommendation for retests (if appropriate). The TSI Contractor shall be responsible for completing all corrective actions identified within a time frame approved by SRTA. SRTA may withhold approval of any test until the required corrective actions have been satisfactorily completed.

SRTA will review and approve formal test plans and schedules proposed by the TSI Contractor and will witness and determine the acceptability of the test results. The TSI Contractor shall provide all test and support personnel, test vehicles, test equipment and test sites in accordance with the approved Master Test Plan and Procedures. The TSI Contractor shall provide both development and test equipment configurations necessary to conduct their internal test activities. In addition, the TSI Contractor shall conduct all tests in accordance with the Master Project Schedule and the approved test plans and procedures.

During the development of the System software, the TSI Contractor's test personnel shall conduct a comprehensive program of internal testing and walk-through sessions to ensure that the Electronic Toll Collection System meets the functional specifications set forth in this RFP and that defects are detected and resolved or identified prior to formal demonstration testing witnessed by SRTA and SRTA-designated representatives. Progress on these tests shall be reported during Project Meetings.

4.6.4. Formal Test Phases

In addition to the internal testing conducted by the TSI Contractor to verify that the system meets Project requirements, the TSI Contractor shall demonstrate to SRTA and SRTA-designated representatives that the lane level and Facility Host Level Systems meet functional, technical, operational and performance requirements by executing the following formal tests, which are further described in the subsections that follow:

- Factory Acceptance Test;
- Hardware Production Test;
- Infrastructure Acceptance;
- First In-Lane Site Installation Test for each type of site;
- Site Commissioning Test;
- Integration Test;
- End to End Test; and
- System Acceptance Test.

For the test phases below, SRTA requires an additional calendar day of testing, above and beyond the test period scheduled for performing/validating the scripted testing, to perform "ad-hoc" SRTA-defined tests.

The TSI Contractor will support this testing utilizing the same test facilities/personnel/data available for the scripted test procedures.

- Factory Acceptance Test
- First In-Lane Site Installation Test
- Integration Testing

4.6.5. Factory Acceptance Test

The TSI Contractor shall conduct a Factory Acceptance Test (FAT) at a test facility that is representative of the Project roadway including at least two (2) double gantry locations to simulate entry/exit Trip Building. FAT shall include representative lane equipment, a Facility Host system/server(s), and all external interfaces including functional interface to the SRTA BOS and the GDOT TMC. The FAT shall be designed to demonstrate the full functionality of Electronic Toll Collection System, including dynamic pricing and trip building functionality, in a factory environment with hardware and software representative of the final system, including all graphic user interfaces (GUI) and rate postings utilizing the same type of toll rate CMS equipment installed on the Project(s), simulated transaction volumes to represent the expected real-world load on the system.

FAT shall be conducted in accordance with the Master Project Schedule.

In the event that the SRTA BOS provider or the GDOT TMC SI are not prepared for FAT, the TSI Contractor will not be responsible for the affected interface tests during FAT but will be required to demonstrate their functionality. When the external interfaces are available for testing, the TSI Contractor will perform integration testing of the interfaces in coordination with the third party.

4.6.5.1. FAT Site

Tests for each Project shall be demonstrated at a closed course test site with real vehicles (approved by SRTA) and applicable equipment installed on two gantries to simulate trips being built on the Projects, simulating real-world traffic patterns driving through the test site. The test site shall accommodate at least two lanes and shoulders of travel in a single direction, and shall include the ability for reverse direction of travel through the tolling zones. The test site shall accommodate speeds ranging from stop-and-go up to 100 mph in each direction. The FAT site shall simulate the Electronic Toll Collection System including but not limited to: typical gantries as located on the applicable Project, Facility Host server(s)/system(s) as used on the applicable Project, and all external interfaces.

4.6.5.2. FAT Plan

The TSI Contractor shall develop a FAT Plan including test procedures (scripts) designed to demonstrate Electronic Toll Collection System and subsystem functionality in an integrated configuration, and to stress the Electronic Toll Collection System. The TSI Contractor shall submit the FAT plan and procedures (test scripts) to SRTA for review and comment not less than thirty (30) days before the FAT. The FAT plan shall include the conditions to be tested together with the expected results and a description of the grading that will be used for classifying and recording any defects noted during the FAT (e.g. Critical, Major, Minor, depending on the severity of the defect).

4.6.5.3. FAT Scope

All Electronic Toll Collection System functionality, capacity, modules, interfaces, and ease of use will be tested. The FAT shall include Lane and Facility Host functionality along with all external interfaces. Reports shall be generated to verify correctness and completeness. Internal and external interfaces shall be verified for accuracy.

As part of the FAT the accurate transfer of test data (transactions) from Gantry locations to the Facility Host System shall be verified to be in compliance with the design documents. Test data (Trip Transactions) shall also be demonstrated to be properly formed and in accordance with the ICD integration to SRTA's existing CSC. The TSI Contractor will work with SRTA's existing BOS to establish appropriate test conditions such that Trip Transactions can be delivered to a test location at SRTA's CSC hosting facility.

The FAT shall also include test procedures for stress testing in order to verify that the system will be able to handle the estimated transactional volumes for both transponder-based transactions and image-based transactions. Normal and exception scenarios shall be demonstrated.

The TSI Contractor shall provide simulated transaction data that will mimic SRTA's expected actual data. The simulated data shall be used to run the Electronic Toll Collection System continuously over a two (2) day period (continuous 48 hours) to ensure:

- The data files are correctly created;
- The data is processed accurately through each zone controller;
- The data is transferred to the Facility Host correctly;
- Trip Transactions are correctly formed and sent to SRTA's existing CSC; and
- Image-based Trips are properly identified.

All screens and reports shall also be tested. In addition, interfaces to external entities shall be demonstrated.

The full range of required reports shall be tested using simulated data or data collected over a sufficient test period that spans multiple consecutive months.

Various lane level failure conditions shall be generated to test the MOMS alarm and maintenance requirements associated with the Project(s) network links.

While the first Project's FAT will be subject to the above scope requirements, the second Project's FAT will require only the demonstration of functionality that has been impacted by any design/implementation/ equipment changes (regardless of whether these changes were initiated by the TSI Contractor or others) related to the first Project. SRTA will approve any functionality that does not require demonstration during the second Project's FAT.

4.6.5.4. FAT Report and Approval

Following the FAT, the TSI Contractor shall submit a detailed FAT report to SRTA that describes testing results including the severity levels of any defects found.

FAT approval is dependent on successful demonstration of the complete Electronic Toll Collection System as functionally compliant and meeting the exit criteria identified in the FAT Plan.

4.6.6. Hardware Production Test

All hardware provided by the TSI Contractor shall be unit tested to ensure it complies with the requirements of the system. Records or relevant documentation of this hardware/unit testing shall be made available to SRTA upon request. The TSI Contractor shall also provide certification that the hardware provided under this RFP meets environmental requirements of the system components.

4.6.7. Infrastructure Acceptance

This acceptance testing will be conducted in accordance with the approved Master Project Schedule and in accordance with the Site Acceptance Checklist found in Appendix K, will be coordinated with appropriate SRTA and GDOT personnel, and will be performed at the demarcation point for the SRTA/GDOT infrastructure and system(s) being accepted by the TSI Contractor at the indicated locations and facilities. These tests will validate, at a minimum, the civil, power and network infrastructure and communication backbone for the Project(s) (reference Appendix F for details regarding network testing requirements). SRTA and or SRTA-designated representatives may observe any/all of the site acceptance tests that are performed.

If an issue should arise between the TSI Contractor and the Civil Contractor on a toll or ITS site meeting the site acceptance criteria that that cannot be resolved within five (5) business days, the issue will be presented to SRTA for mitigation and resolution.

4.6.8. In-Lane Sites Installation Tests

4.6.8.1. First In-Lane Sites Installation Tests

For each type of site installation, the TSI Contractor shall submit a first in-lane site installation test plan to SRTA for review and comment not less than thirty (30) days before the first in-lane site installation. A first in-lane site installation test shall be conducted at locations where the complete set of hardware, software and communications equipment is installed for a reversible gantry, a non-reversible gantry (including both directions of travel), and each type of ITS equipment sites to deem the first sites of each type complete. Once the equipment/components have been individually tested, the subsystems shall be integrated and tested to include communications with the Facility Host System. The first in-lane site installation tests shall be conducted by the TSI Contractor and witnessed by SRTA and/or GDOT in accordance with approved test procedures and the test schedule. The TSI Contractor must submit first in-lane site installation test reports showing activities and results for approval by SRTA.

The TSI Contractor shall not install equipment at any other gantry or ITS locations until the first site installation test for the respective type of location has been approved. This test or an approved subset of this test shall be used as a site commissioning test for the remaining gantry/ITS locations.

4.6.8.2. Site Commissioning Test

Once SRTA gives authorization, the installation of the remaining gantry and ITS locations may progress in accordance with the approved Master Project Schedule. Upon completion of installation activities at each site, the TSI Contractor shall test the equipment, software and communications following the in-lane site installation test plan, or approved subset. At SRTA discretion, the test will be witnessed by SRTA and possibly GDOT in accordance with approved test procedures and the test schedule. At SRTA's discretion, site installation may not be considered complete until the site installation or commissioning test has been witnessed and approved by the SRTA.

4.6.9. Integration Test

Upon the successful installation and testing of all equipment/components/systems at all of a Project's locations, SRTA will give the TSI Contractor authorization to conduct integration testing on the Facility to validate the functionality and operational status of the lanes and the integration of the Facility Host, the existing CSC and any other external interfaces required. The TSI Contractor shall submit the integration test plan to SRTA for review and comment not less than thirty (30) days before the integration test.

Each component of the in-lane equipment and its interface to the zone controller shall be verified to be fully operational. During this test the zone controllers, ITS components and their interfaces to the Facility Host system shall be validated to ensure that the communication system is in place and the Electronic Toll Collection System is ready for revenue collection. The installation of all equipment and software and their operations shall be verified end to end.

As part of integration testing the TSI Contractor shall use the approved ICDs developed during the Project Design Phase, and shall verify that all necessary external interfaces, including the operational interface to the SRTA CSC and the GDOT TMC, work properly. The TSI Contractor shall be responsible for working with all appropriate entities to schedule and perform this testing.

As part of the integration testing, the TSI Contractor, with SRTA's approval, shall demonstrate the Disaster Recovery plan process. The TSI Contractor shall develop a test scenario and process that demonstrates the effectiveness of the recovery plan to the extent that is feasibly possible to simulate disaster conditions. The TSI Contractor shall perform the Disaster Recovery procedures contained in the approved DR plan. Disaster Recovery testing will be an essential part of the integration testing.

Full Facility Host functionality shall be demonstrated including but not limited to: Trip Building; Dynamic Pricing; and the transmission of Trip Transactions to SRTA's existing CSC. The interface with the Roadway Access Control System (RACS) will also be tested.

All Image Processing Subystem functionality shall be tested including the processes for manually reviewing images.

The full range of Facility Host reports shall be tested using simulated data or data collected over a test period that spans multiple months.

The TSI Contractor shall ensure that all integration tests are completed and passed with SRTA's approval prior to the Civil Contractor's substantial completion date. The TSI Contractor shall notify SRTA in writing when the integration tests are complete and ready for end to end testing with the Civil Contractor. Integration testing approval is dependent on successful demonstration/operation of the end to end Electronic Toll Collection System as functionally compliant to all of the requirements of the Contract.

4.6.10. End to End Test

The TSI Contractor shall participate in and support the GDOT end to end testing that will occur during the twenty-one (21) calendar day period after the Civil Contractor's substantial completion date and prior to open to tolling. This will provide GDOT and SRTA with an opportunity to conduct full system tests, conduct

daily operations to confirm operation plans and standard operating procedures, and to otherwise prepare for toll collection on the Project(s).

Portions of end to end testing will occur after hours and on weekends. The Civil Contractor, SRTA, TSI Contractor, GDOT and the TMC SI shall have completed all their testing, training of GDOT and SRTA staff, and acceptance requirements for Civil Contractor installed ITS devices, Communication Hubs, communication and electrical networks, generators, and integration with NaviGAtor and SRTA's back office toll collection system prior to the start of end to end testing.

The Civil Contractor shall be responsible, at a minimum, for coordinating the end to end testing with GDOT and SRTA to ensure that there will be no conflicts between GDOT, SRTA and their affiliated contractors; providing temporary advance signing (if needed to avoid confusion) stating that the Project(s) are closed and testing is occurring; providing maintenance of traffic/traffic control at all access locations for a maximum of five (5) full days which could include evenings and weekends and may not be consecutive; providing a safe environment free of obstacles and unauthorized personnel on the Project(s); providing access to the facilities for authorized GDOT and SRTA staff and contractors; and repairing any issues found with the Civil Contractor's work efforts within one (1) calendar day unless otherwise approved by GDOT.

The Civil Contractor or the TSI Contractor shall not expect to have access nor conduct work within the Project facility during the end to end testing, with the exception of providing services as described above. GDOT may, at its own discretion, provide the Civil Contractor access to the Project facility to conduct work.

At the successful completion of end to end testing, SRTA and GDOT will authorize the Project to be acceptable to be open to tolling and authorize the TSI Contractor to begin the System Acceptance Test.

4.6.11. System Acceptance Test

The objective of the System Acceptance Test (SAT) is to ensure that the Electronic Toll Collection System (software and hardware) functions over a period of sixty (60) consecutive days with the required functionality, availability, accuracy and performance. A precondition for the commencement of SAT is that the Electronic Toll Collection System is meeting or exceeding the RFP requirements and all applicable Project SLAs. The TSI Contractor shall submit SLA reporting (see Appendix D for SLA reporting details) for this test.

Upon the certification of satisfactory completion of end to end testing, the System will be commissioned for live operations and revenue collection. The TSI Contractor shall notify SRTA in writing when the system acceptance period shall begin. The TSI Contractor is solely responsible for executing SAT. The overall system shall then be observed in live operations by the TSI Contractor and SRTA for a minimum of sixty (60) consecutive days. During this period, system accuracy, performance, reliability and auditability shall be measured and verified for, but not limited to, each tolling point, the Facility Host, image review, trip building and collectively for the entire system. The dynamic pricing functionality shall be closely monitored to ensure that it is performing accurately and that the CMS are posting the correct toll rates. The alarms displayed by the MOMS shall be analyzed. If the system acceptance results in a failure or requires a restart, the TSI Contractor may be held accountable for any costs incurred by SRTA to support the additional system acceptance period(s).

Anomalies identified shall be categorized by criticality, and the timing of resolution of all anomalies shall be agreed upon by SRTA and the TSI Contractor. The TSI Contractor shall develop a plan for correcting the anomalies and testing the fixes prior to requesting authorization from SRTA to install the fixes in the production system and verification through the use of regression testing that they are working properly and have not caused any new problems. These tests shall be repeated until the System has met SAT requirements for sixty (60) consecutive days and SRTA is satisfied that the Electronic Toll Collection System meets the requirements as defined in the design documents and this RFP.

The TSI Contractor will be given Project Acceptance for the Electronic Toll Collection System upon the successful completion of all tests described in Section 4, closure of all punch-list items, completion and submission of all required documents and meeting of other conditions as specified in the Contract Documents.

4.6.12. System Audit

The TSI Contractor shall describe in detail the audit system/tool that is being proposed to audit the Electronic Toll Collection System. The discussion shall include the internal modules, the capability, and the test procedures and analysis methodology to be used to evaluate the data collected.

The TSI Contractor shall develop and provide the system audit test procedures for SRTA review and approval prior to executing an audit of the entire Electronic Toll Collection System as part of the system acceptance test. An entire twenty-four (24) hour period of data taken from each direction of traffic shall be monitored and the data collected at all gantry locations. At SRTA's discretion, the monitoring shall be conducted either using an independent test tool approved by SRTA or using DVAS video records of the lane. Video recordings taken in the lane(s) shall be matched with the data taken from the various lane-level sensors and equipment (such as AVI equipment, cameras, camera triggers, etc.) such that a detailed analysis can be performed. Raw/un-manipulated data and all associated video will be provided to SRTA for independent verification. The Facility Host System shall be thoroughly analyzed to ensure that the transaction data collected in the lanes is correctly processed and transmitted to SRTA's existing CSC. Accurate determination of Trips and correct calculation of toll rates and assignments shall also be verified.

All anomalies and performance deficiencies identified during the system audit portion of the system acceptance test will be analyzed and explained by the TSI Contractor. SRTA and the TSI Contractor shall determine the corrective action to be taken. These audits shall be repeated until SRTA is satisfied that the Electronic Toll Collection System meets functional, operational and audit requirements. The TSI Contractor shall perform audits per the approved system audit test procedures on an annual basis during maintenance of the Electronic Toll Collection System.

5 Training Plan and Program

5.1. General

All training material and user manuals specified in this RFP shall be submitted to SRTA for review, comment, and approval. SRTA requires that all documentation, training materials, and other submittals be delivered to SRTA no later than the close of business (COB) on the day in which the Project Schedule indicates that they are to be delivered. Documents or submittals that are delivered to SRTA after 5:00 p.m. EST/EDT on the day they are due according to the Project Schedule shall be considered late.

~~The SRTA review cycles for most deliverables will be no less than ten (10) business days for typical submittals and not less than fifteen (15) business days for major document submittals, including but not limited to requirements, shop drawings, product cut sheets, design documents, test procedures and manuals.~~ For submittals requiring engineering design review/approval (e.g. mounting bracket drawings), the TSI Contractor shall allow for thirty (30) calendar days for the review of SRTA and other stakeholders. The TSI Contractor shall allow for up to twenty (20) calendar days for SRTA review for all other submittals. Based on SRTA approval, this timeframe may be less for minor submittals. These include all system design documents, test procedures and manuals. Updated versions of the draft documentation may be required by SRTA before approval is granted. Whenever practical, all documents shall be produced using standard Microsoft Office 2007 or later applications. Final versions of manuals and training materials shall be delivered in both hard and soft copy to SRTA.

5.2. Training Plan

The TSI Contractor shall develop and submit a Training Plan for the Electronic Toll Collection System to SRTA for review, comment and approval as part of the acceptance of the SDDD. Each training course provided by the TSI Contractor shall include an overview of the design, operations, and maintenance of the system. In addition to the overview, each of the respective courses shall present system/subsystem details and demonstrate that the system meets the requirements delineated in section 3 and in applicable appendices of this RFP. The focus of the training program shall be to instruct SRTA staff and representatives on the capabilities and usage of the system, The Training Plan shall describe the purpose and provide a detailed syllabus for each course, the proposed duration for each course, the course training materials that will be provided including access to workstations, or other equipment, and all logistical requirements needed to conduct each course. The Training Plan shall also describe the qualification requirements for the TSI trainer and the intended audience for each training course.

5.3. Training Program

Due to the length of the installation and integration period as the various sites are being turned over to the TSI Contractor by the Civil Contractor, the Training Program shall include three classes of 20 personnel for each course per Project. The initial class for each course shall be presented prior to operation (i.e., first integration) of the various system elements (i.e., facility host integration, First On Site Installation, etc.). The TSI Contractor shall provide formal and informal instruction, advanced and basic system training, visual aids (to include SRTA specific screenshots), manuals, diagrams, and catalogs as required. To the extent

possible, training shall be hands-on using the actual system software, user interfaces, Dashboards, and screens on workstations.

The TSI Contractor shall provide a training schedule and a full set of draft training materials for each course, (including instructor guides and student workbooks) for SRTA review, comment and approval NLT 120 days after SRTA acceptance of the SDDD. Once approved, the TSI Contractor shall produce sufficient copies of the training materials to accommodate the estimated number of personnel who will attend each training course plus one (1) editable (no PDF files) and reproducible set of documentation on compact disc that may be used for future training sessions.

5.4. Training Courses

It is expected that each training course will have been presented, at least once, prior to the start of integration testing. However, these courses shall be completed no later than 30 days prior to beginning the integration test. The initial class for the High Level System Overview course may be required any time after acceptance of the SDDD and shall be determined by SRTA (TBD). The initial class for the System Operations course shall be completed NLT 15 days after the Facility Hosts are installed and integrated into the toll network. Each course shall include instruction in proper usage of the equipment and software either supplied or incorporated into the toll collection system, the facility host, and the interface with the CSC. Hands-on access for all user interfaces (UI) applicable to each of the courses shall be included as part of each training package. Training materials, including, but not limited to, training syllabus and schedule, scope, PowerPoint presentations, workbooks, and other materials needed for each training course will be submitted to SRTA for review/approval prior to the course presentation according to the deliverable schedule in Appendix C. TSI Contractor is responsible for any necessary updates to the material discovered during live training sessions.

All training course content, training materials and documentation shall be reviewed and updated, on an annual basis, as part of any change orders that affect hardware or software requirements or performance. Updated course and training materials shall be provided in both hardcopy and electronic format.

The TSI Contractor shall provide, at a minimum, the following training courses for SRTA personnel:

5.4.1. High Level System Overview

This overview course is designed primarily for SRTA managers, public information and marketing staff, Information Technology (IT) personnel, and others who require a basic understanding of the entire Electronic Toll Collection System. The course shall discuss system functionality, to include, but not limited to, the lane, Facility Host, Trip Building and Dynamic Pricing, user interfaces and relevant interfaces. This course shall be offered three times during the Training Program and shall provide, but is not limited to:

a. Host System,
    i. Operations,
    ii. Dashboards,
    iii. User Interfaces,
    iv. Trip Building
    v. Dynamic Pricing
b. Toll Zone Lane

   i. Vehicle Detection and Classification System,
   ii. VES- Image Processing/ALPR/OCR
   iii. ETC
c. CCTV Camera subsystem
   i. Surveillance
   ii. Toll CMS
   iii. Video Audit System
d. Toll ITS
   i. Toll CMS Sign Subsystem
   ii. GP AVI Scan System
   iii. MDS
e. Image Processing (Review) System
   i. Overview of User Interface (Dashboards)
   ii. Overview of transaction processing
   iii. Overview of Reports
f. Reconciliation, audit and reports
g. System Maintenance

5.4.2. System Operations

This course is targeted for SRTA IT staff and operations personnel and provides an in depth knowledge of the operations aspects of the system including, but not limited to: report generation, transaction flow, file downloads, trip building, dynamic pricing calculation, operations, performance, alarms, audits, etc. A glossary of all relevant terms shall be provided. The course shall be conducted three times; NLT 15 days after the Facility Hosts sites are installed; NLT than 30 days prior to integration test; or as necessary (TBD) to meet the needs of attendees. The course shall provide, but is not limited to:

a. Facility Host System, operations, Dashboards, Interfaces
b. Trip Building
c. Dynamic Pricing
d. Toll Zone Lane
   i. Vehicle Detection and Classification System,
   ii. VES- Image Processing/ALPR/OCR
   iii. ETC
e. CCTV Camera subsystem
   i. Surveillance
   ii. Toll CMS
   iii. Video Audit System
f. Toll ITS
   i. Toll CMS Sign Subsystem
   ii. GP AVI Scan System
   iii. MDS
g. Image Processing (Review) System
   i. User interface training
   ii. Detailed transaction processing
   iii. Dashboard
   iv. Reports

h. Audit and Reconciliation
   i. Include step-by-step process on how to audit transactions, from initial receipt of transaction to reconciliation of the transaction
   ii. Include a list of all reports as well as a reports matrix that will be used to reconcile transactions cradle to grave. These would be system generated reports, description, and purpose.

5.4.3. Image Processing (Review) System

This course is targeted for SRTA image review staff and management and is intended to provide detailed knowledge in the processes required to understand the trip building process, the processes required by image review to complete the trip building (transaction) process, including the review of images that have not produced an OCR readable license plates and for orphaned images not associated with a transaction and in general to do so with a low overall error rate. The course shall be provided three times; 30 days prior to systems integration; 15 days prior to integration testing; and as requested by SRTA (TBD). The course shall be developed as a two-part course to be presented to both supervisor and image reviewer, but tailored as needed for each yet sufficiently detailed that either supervisor or image reviewer shall understand all processes all user interfaces, the Dashboards, and the special processing required for handling the special functions explained in the reference documentation THEA Image Concentrator User Guide. In addition the course shall include, but not be limited to:

a. User Interface screens and operations capability demonstrating the user-friendly, efficient processes for reviewing images and confirming license plate reads
b. Roadside audit process from capture of image with vehicle transaction message to ensure correct identification of images providing a check of roadside toll system performance
c. Image Transaction Review flow process
d. Tracking the performance and production of the system.
e. Discussion of the Quality Assurance functions including performance measurement, and detail reporting.
f. Compilation of operational statistics for Key Performance Indicators (KPIs) (to be defined in detail during design process)
g. Production of image quality reports showing acceptance levels and rejects by reason

5.4.4. System Administration

This course is targeted for personnel who work directly with the administration, network monitoring, and troubleshooting of the application software, operating systems, database applications, OCR and manual image processing functions, configuration management, backup/restore, disaster recovery functions website, and network communications who should attend this course. The course shall be provided three times; 30 days prior to integration tests; 30 days prior to End to End Test, and as requested by SRTA (TBD). The course shall be scheduled to meet the needs of attendees.

5.4.5. Training Facility

SRTA will provide the facility for conducting training sessions. Should it be determined by SRTA through coordination with the TSI Contractor that certain aspects would be better addressed on location, the TSI

Contractor shall provide all software, servers, network access and other equipment needed for conducting the training sessions at whatever facility is deemed most effective for the training to be delivered.

5.5. Training Program Delivery Schedule

To ensure that the SRTA and their authorized representatives are adequately prepared to evaluate system performance prior to and during the system integration and System Acceptance Test, all training material, manuals, and training classes must be delivered to SRTA as indicated in Appendix C. All training must be completed prior to System Acceptance Testing. The delivery dates indicated in Appendix C are applicable for both the I-75 South and the I-75 NWC Express Lane Projects and may be subject to change to accommodate system changes that may be required, or to provide additional training to SRTA staff and representatives.

5.6. User Manual

The TSI Contractor shall provide a set of manuals designed to provide the intended users with the information necessary to perform their jobs. Due to the length of the installation and integration period as the various sites are being turned over to the TSI Contractor by the Civil Contractor, the TSI Contractor shall provide a set of user manuals as described below for each Project. All TSI Contractor-developed manuals shall be written, organized in such a way that the user can easily find the required information, with technical details on all equipment that cover the full range of materials, illustrations, graphics, tables and instructions required to perform the intended functions. Manuals shall be provided in both hardcopy and editable (not pdf) electronic format.

User manuals to be provided as part of this RFP include, but are not limited to the following:

- Systems Administrator Manual;
- System Audit Manual;
- System User Manuals;
- Reports Manual;
- Third Party Hardware and Software Manuals for all Tolling and Tolling ITS Equipment; and
- Maintenance Service Manuals.

5.6.1. Systems Administrator Manual

The TSI Contractor shall develop and submit a Systems Administrator Manual for SRTA review, comment and approval in accordance with the Training and Manual Delivery Schedule in Appendix C. This manual shall include complete instruction and reference for the overall support, management and administration of the Electronic Toll Collection System. The contents of the manual shall include, but shall not be limited to a detailed description of the full set of software programs, processes, subsystems and systems that must be administered, maintained and monitored to keep the Express Lane Toll Collection System operating properly.

The Systems Administrator's Guide shall provide step-by-step instruction for each task required to maintain the required service levels defined in Appendix D. These instructions shall include monitoring of scheduled tasks, data transmissions, and interfaces between other internal and external interfaces.

A complete guide to the database monitoring and diagnostics functions shall be described in detail to support the full range of database administration tasks.

A complete troubleshooting guide shall be included that includes error codes and their associated meaning and corrective actions; and procedures for restarting processes, programs and systems.

5.6.2. Systems Audit Manual

The TSI Contractor shall develop and submit an Audit Manual for SRTA review, comment and approval in accordance with the Training and Manual Delivery Schedule in Appendix C. The Manual shall be designed to train audit personnel who shall be performing day-to-day and periodic auditing of Electronic Toll Collection System. It shall include details on how to perform transaction audits from Zone Controller to the Back Office interface. Additionally the manual shall also provide detailed procedures for reconciliation of revenue and transactions. The TSI Contractor shall include detailed process flows for both audit and reconciliation.

Screens and reports that shall be used by audit personnel shall be described in sufficient detail to understand and work with all financial aspects of the System software. All reports that are generated by the system shall be described and a sample of each provided. A reports matrix, of the reports, that will be used to reconcile transactions shall also be included. The TSI Contractor shall update the list of reports and the reports matrix as approved changes are made.

5.6.3. Systems User Manuals

The TSI Contractor shall deliver a set of System User Manuals to SRTA for review, comment and approval in accordance with the Training and Manual Delivery Schedule in Appendix C. The purpose of these manuals is to document the proper use of application software. Each volume shall provide an overview of the subsystem; procedures for their use, reports generation, troubleshooting and any other descriptions, screen images, or other figures needed to cover the full functionality and use of the application(s). System User Manuals shall include, but not be limited to:

a. Facility Host Server;
b. Zone Controller Server(s);
c. Dynamic Pricing System;
d. Reports Manual;
e. Image Processing System Supervisors' Manual;
f. Image Processing System Reviewer Users' Manual; and
g. All User Interfaces and Dashboards.

5.6.4. Reports Manual

The TSI Contractor shall provide a report manual for review, comment and approval in accordance with the Training and Manual Delivery Schedule in Appendix C. The manual will list and provide details for executing all available reports. The report manual shall include, but not be limited to;

a. Table of contents;
b. Name of the report;
c. Report description;
d. Identification of field level reconciliation (i.e., which fields can you reconcile to another report(s));
e. Version number;
f. Last date revision; and
g. SQL query.

5.6.5. Third Party Hardware Manuals

A complete set of third party hardware manuals shall be provided to SRTA; and a second set shall be maintained for use by the TSI Contractor's maintenance personnel. Each set of hardware manuals shall include technical manuals, hardware reference materials, parts lists, operator's guides, installation and maintenance manuals and all other related materials necessary to install and maintain the third party hardware installed on the Express Lanes Toll Collection System. The TSI Contractor shall provide updates when available and produced by Third Party providers. Manuals shall be provided in both hardcopy and electronic format.

5.6.6. Third Party Software Manuals

A complete set of third party software manuals shall be provided to SRTA; and a second set shall be maintained for use by the TSI Contractor's software support personnel. The set of software manuals shall include user's manuals, programmer's reference guides, installation and maintenance manuals and all other related materials necessary to install and maintain the software systems. In addition, the TSI Contractor shall maintain a full set of electronic media containing the third party software installation materials as well as any patches or updates provided by the manufacturer. The TSI Contractor shall provide updates when available and produced by Third Party providers. Manuals shall be provided in both hardcopy and electronic format.

5.7. Maintenance and Service Manuals

The TSI Contractor shall provide a Maintenance Service Manual or Manuals, as appropriate, describing the hardware and software maintenance procedures for the maintenance of the Express Lanes Toll Collection System. An initial or Draft Maintenance and Service Manual shall be provided NLT 120 days after SRTA approval of the SDDD. The Final Maintenance and Service Manual(s) shall be provided with the Final Maintenance Plan 120 days prior to go-live. Project acceptance shall not be approved until the Final Maintenance Manual(s) have been accepted by SRTA.

The Manual(s) shall include, but are not limited to the following:

- Project Description and Systems Overview;
- Installation Instructions;
- Troubleshooting Procedures;
- Predictive and Preventive Maintenance Procedures;
- Special MOTs requirement per tolling point or ITS site;

- MOMS Instruction;
- Network Monitoring and Operations Instructions;
- Maintenance Schedule;
- Diagrams, Schematics, and Layouts;
- As-Built Drawings;
- Parts Lists
- References to third party service manuals for equipment or software provided by the TSI Contractor for use on the Project;
- Listing of Error Codes for each Subsystem; and
- Test Procedures and Guidelines.

The Maintenance Service Manual(s) shall be reviewed and updated, on an annual basis, as part of any change orders that affect hardware or software maintenance requirements. Manuals shall be provided in both hardcopy and electronic format.

In addition to the Maintenance Service Manual(s) provided specifically for the Express Lanes Electronic Toll Collection System, the TSI Contractor shall ensure that copies of standard service manuals for all commercial equipment are provided, maintained and easily available (preferably electronically) to Project technicians and to SRTA on request.

6 Maintenance

The TSI Contractor shall be responsible for the operation and maintenance of the Electronic Toll Collection System and all of its subsystems. The TSI Contractor shall operate the system(s) at a high performance level and maintain the systems with predictive and preventative measures to ensure continuous operation. This section describes the requirements of the TSI Contractor's maintenance program.

6.1 Transition

The Site Acceptance checklist (Appendix K) shall be used to turnover tolling zone(s), hub buildings and toll related ITS equipment between Civil Contractor and TSI Contractor. Once a tolling zone has been turned over to the TSI Contractor, the TSI Contractor is responsible for all maintenance items within the tolling zone.

The TSI Contractor shall be prepared to commence the transition services from the Warranty to Maintenance functions 60 days prior to the scheduled System Acceptance of the Electronic Toll Collection System. Transition services shall include any coordination with SRTA or other entities required to ensure full functionality for the required Maintenance services.

6.2 General Requirements

The TSI Contractor shall provide hardware, software and network warranty and maintenance services for the Electronic Toll Collection System. In addition, the TSI Contractor shall maintain all network, UPS and generator equipment/infrastructure that is utilized by the Electronic Toll Collection System, including equipment/infrastructure provided by the Civil Contractor.

The warranty phase for each Project shall commence upon open to tolling of each Project and shall include all maintenance and production support for the Electronic Toll Collection System. The warranty phase will conclude either after twelve (12) months or upon successful completion of the System Acceptance Test as described in section 4.6.11 of this RFP, whichever occurs later. The maintenance period for each Project shall begin at the completion of the warranty period. The TSI Contractor shall ensure that the costs for the warranty and subsequent years of maintenance and production support are separated into individual pricing components in the Pricing Forms in Appendix L.

The TSI Contractor shall be responsible for maintaining the equipment in accordance with the Service Level Agreement (Appendix D) during the warranty and maintenance periods.

The TSI Contractor will be responsible for coordinating Maintenance of Traffic (MOT) with GDOT after receiving approval from SRTA. The TSI Contractor shall be responsible for initiating any requests for a lane closure and shall follow GDOT procedures.

6.3 Maintenance Plan

The TSI Contractor will submit a separate master Maintenance Plan for each Project. The TSI Contractor shall submit an initial Maintenance Plan with the Proposal, an updated Plan in accordance with the SDDD, and a Final Maintenance Plan 120 days prior to go-live. Each plan shall be submitted to SRTA for review and approval and shall identify all aspects of the maintenance program and services to be provided as part of the specified Projects.

Upon completion of the requirements review and approval of the SDDD, the TSI Contractor shall update and revise the Maintenance Plan as may be needed and re-submit to SRTA for final review and approval. The review process for the final Maintenance Plan will be the same as indicated above.

The Maintenance Plan shall address but not limited to the following; toll system hardware and software maintenance, network monitoring, ITS hardware and software maintenance and fiber maintenance.

6.3.1. Organization Chart and Project Staffing

An organizational chart that contains titles, names and reporting structure for key personnel who will be assigned to project management, hardware, software and networking aspects of the maintenance program. If any of the personnel will not be assigned to the Project on a full time basis, the percentage of time shall be indicated on the organizational chart. Indicate the anticipated location(s) (Atlanta or otherwise) for maintenance personnel.

The organization chart(s) shall include subcontractor team members and their responsibilities in supporting the maintenance requirements of this RFP. The TSI Contractor shall identify the number of maintenance personnel who will be assigned to each job category including, but not limited to: supervisors, managers, repair shop technical staff, network and systems engineers, database and systems administrators, desktop support, and toll & ITS maintenance technicians. The TSI Contractor shall identify the local maintenance staff by name, location and contact information as well as any full and part time personnel providing system and network maintenance and the location where these activities will be executed. The TSI Contractor shall identify full and part time personnel (including sub-contractors) that will be dedicated to the project and provide a work schedule two weeks in advance for all periods of the day and work week that includes the name and title of maintenance personnel for hardware, software and networking aspects of the system who will be on duty and/or on call; and provide a list of contact numbers and email addresses for all supervisory staff and maintenance personnel and their areas of responsibility. The list shall be maintained current and shall be updated any time there is a change.

6.3.2. Planning, Communications and Control

The Maintenance Plan shall describe how the TSI Contractor will manage all aspects of the project including project controls, project schedules, warranty maintenance, and management of subcontractor activities and the Maintenance On-line Management System (MOMS). The TSI Contractor shall describe the dedicated maintenance facilities and their proposed locations that will support the maintenance requirements for each Facility. The Maintenance Plan shall include a description of the maintenance procedures that will be followed in providing maintenance support 24/7 including preventive, predictive and

response to alarms generated by the system via the MOMS, NMS, or reported to maintenance personnel by SRTA or GDOT and a schedule and description of preventive and predictive maintenance activities for all system components.

The TSI Contractor shall provide a schedule to SRTA that identifies the priority of the notification protocol indicated in the event of major problems and/or emergencies and explain the methods that shall be used to monitor the Electronic Toll Collection System, including priority levels for response to alarms, paging protocol and sample reports and screens. The TSI Contractor shall describe how the MOMS system will be used as the primary tool for the logging of all scheduled and unscheduled maintenance activities, equipment inventory, and reporting requirements.

The TSI Contractor shall explain the methods that shall be used to monitor the communications system including priority levels for response to alarms, paging protocol and sample reports and screens including how staff will interface with the Network Monitoring System (NMS) to report communications alarms and report them within the MOMS system. The Maintenance Plan shall include a description of the provisioning processes addressing consumables, spare equipment and spare parts including a list of spare parts and quantities (also see Section 6.12 of this document) and discuss how these processes will ensure that the inventory of spares is available as needed to maintain performance and availability requirements.

The TSI Contractor shall describe the maintenance activities that may need to be performed during priority 1 failures during both on and off peak traffic density hours, including how traffic management will be implemented within the guidelines for traffic control described in the GDOT RFPs. The Maintenance Plan shall include a description of the test and support equipment that will be used for the Project(s) and the accessibility and location of that equipment and a description of maintenance vehicle types and quantities, and maintenance training program.

6.3.3. Reporting

The TSI Contractor shall describe the maintenance reporting system used to track maintenance activities and provide reports which cover all areas of maintenance including, but not limited to, system service levels, trouble tickets generated/responded to/closed/open, device service levels, MTBF, MTTR, current and consumed inventory. The Maintenance Plan shall describe the methods that will be utilized to measure and report on system performance and SLAs as described in Appendix D. The Maintenance Plan shall include a list of all reports along with a reports matrix that indicates which of the available reports meet stated requirements and provide samples of all applicable forms. The TSI Contractor shall provide a description of configuration management and asset inventory management to be used to track equipment and software.

6.4 Maintenance Requirements

The TSI Contractor shall be responsible for the following systems and maintenance activities.

6.4.1. Electronic Toll Collection System Equipment Maintenance

The TSI Contractor shall maintain all tolling equipment furnished and installed by the TSI Contractor and for selected items furnished and installed by the Civil Contractor. The Civil Contractor provided equipment to be maintained by the TSI Contractor will include all hardware and software associated with the following items at a minimum:

- MDS Units
- Toll rate CMS and CCTV camera
- Roadside equipment cabinets and associated electronics in the cabinet
- Fiber optic network (patch panel, pull-boxes and cabling)
- Tolling Hubs
- Gantry and Hub building lightning protection
- HVAC
- Generators
- UPS
- Pest Control at cabinets and Hub buildings.

Generators will be fueled by natural gas and will have permanent gas pipelines installed by the Civil Contractor. In addition to preventive maintenance and repair maintenance activities, the TSI Contractor will be responsible for testing and starting the units on a weekly basis.

6.4.2. Toll ITS Equipment Maintenance

The TSI Contractor shall be responsible for maintenance of toll ITS equipment, including equipment installed by the Civil Contractor and the TSI Contractor, as well as all toll zone equipment installed by the TSI Contractor. Toll ITS equipment includes the following items at the TOC primary and DR locations:

- Toll Rate CMS and Toll Gantry CCTV systems ~~to monitor toll rate CMS messages~~
- ~~CCTV cameras located on toll gantries, unless shown co-located with other equipment on the ITS Layout (Refer to GDOT RFPs)~~
- Shared Microwave Detection Systems (MDS~~) to measure traffic performance and provide the Facility Host with data for use in the Dynamic Pricing System~~
- Changeable Message Signs (CMS) ~~to communicate toll rate information to travelers (toll rate CMS)~~
- GP lane AVI scan sites ~~consisting of AVI antennas and readers on the general purpose lanes to provide travel time data~~
- Toll Rate AVI scan sites

6.4.3. Network Systems Maintenance

The TSI Contractor shall be responsible for the maintenance of the entire SRTA communications network installed on the Project(s). Refer to Appendix F for additional information. Network maintenance activities

shall include the monitoring of the primary and backup networks transmitting data between the roadside equipment, the Facility Host location(s) and SRTA BOS. The TSI Contractor shall monitor the connections with all external interfaces (reference Section 3.5.6) at the TOC(s) and Facility Host, such as to the BOS, the GDOT TMC, and commercial leased lines. The TSI Contractor shall ensure that all network connections required for switchover to the redundant Facility Host are maintained in to the same performance and SLA requirements as the primary Facility.

The TSI Contractor is responsible for the fiber optic network maintenance from the nearest pull-box to the patch panel for the tolling and tolling related ITS equipment. The TSI Contractor shall trouble shoot any network connection issues under the TSI Contractor's control. In the event that the problem involves other entities, the TSI Contractor shall notify SRTA and/or GDOT, and work with the responsible parties until the problem is resolved. The TSI Contractor shall be responsible for any and all network cabling install in support of the Project(s). Any periodic firmware upgrades must be performed during SRTA approved maintenance windows and firmware upgrades shall be performed a minimum of every six (6) months unless no firmware updates are available. Additional firmware updates may be required to address security vulnerabilities, bug fixes, or other fixes that are deemed urgent by the manufacturer. These urgent firmware updates shall be performed by the TSI Contractor within one week of notification from the manufacturer.

6.4.4. Change Management Process

The TSI Contractor shall be responsible for all Electronic Toll Collection System maintenance at the lane level, Facility Hosts, and Image Review workstations including, but not limited to the following:

- Operating systems
- Hardware
- Network
- Databases
- Application software
- Third party software
- Configuration management and software version control

The TSI Contractor shall use MOMS or similar Help Desk Software Support software to open, track, and resolve tickets related to software and hardware related issues identified by SRTA and the TSI Contractor. TSI Contractor shall provide designated SRTA personnel access to the trouble ticket system. Each week the TSI Contractor shall provide SRTA a comprehensive list of all tickets created over the term of the project in an excel format. Tickets should have easily identifiable statuses such as open, closed, pending release, and pending to close. Tickets shall identify the subsystem affected, creation date, scheduled release date (if applicable), resolution date, and a detailed explanation of the issue and resolution. Tickets may not be closed by the TSI Contractor without written approval from SRTA.

The TSI Contractor shall maintain strict version control of all software changes, maintain a list of the installed software, by version, and shall use MOMs or similar Help Desk Support Software to register and update software versions installed in the toll system. Software releases scheduled or emergency must be submitted in writing to SRTA's Change Management Board (CMB). SRTA's CMB is comprised of members

from functional area: Executive, Operations, IT, Finance, Marketing, Strategic Business Development, and Process Improvement. In addition Georgia Department of Transportation may choose to provide a representative to the board.

6.5 Maintenance Coverage

The TSI Contractor shall establish a maintenance facility in Atlanta, subject to SRTA approval.

The TSI Contractor shall have the ability to provide maintenance services 24 hours a day, seven days a week including holidays. Maintenance services can be provided on-site or off-site as appropriate, so long as the performance and SLA requirements described in Appendix D are met. At a minimum, one (1) full-time maintenance technician, subject to SRTA approval, shall be assigned to each of the I-75 South and NWC projects. The TSI Contractor is free to assign more than one technician for each project and shall identify staffing requirements in the Maintenance Plan. The TSI Contractor shall post a two (2) week look-ahead schedule identifying personnel and the times they will be available during these hours for each of the Projects. The schedule shall also identify the maintenance technicians that will be assigned on-call status and their assignment times. The TSI Contractor shall provide SRTA an updated schedule and list of personnel, including subcontractors, with contact information on a monthly basis, or whenever there are personnel changes.

The TSI Contractor shall provide a help desk that shall consist of a consolidation point for trouble ticket and issue tracking. The help desk shall be a single phone number and single e-mail address for a simple method for reporting issues. The TSI Contractor shall supply personnel with expertise in the support of the system hardware, software and database management system(s) during SRTA working hours (to be determined during the system design phase) to provide a help desk function for all TSI Contractor-supplied back office and communications systems and subsystems. The help desk is intended to act as a central point of contact for all technical support, including hardware and software questions, installation of updated versions of software, networking, network connection requests, and troubleshooting.

6.6 Reliability and Availability Requirements

Project availability and reliability shall be measured using the methods described below. These requirements shall be initially applied during the 60-day Systems Acceptance Testing Phase. Once SRTA has certified Final Systems Acceptance, the Project shall transition to the maintenance phase, which shall be subject to monthly assessment of availability and reliability measurement and Liquidated Damages for failure to meet applicable requirements.

6.7 Preventive Maintenance

The TSI Contractor shall develop a schedule of hardware and software items in the Electronic Toll Collection System and Toll ITS system requiring preventive maintenance. The TSI Contractor shall develop and follow a regularly scheduled preventive maintenance process including maintenance activities in accordance with the schedule documented in the Maintenance Plan for the inspections, repairs, adjustments, tuning and replacement of parts and components as required to keep the Electronic Toll Collection System in operating condition commensurate with agreed upon SLAs. Each preventive maintenance activity in the Maintenance Plan shall address the scope of work, its frequency and anticipated duration, including any required coordination with SRTA, GDOT or other contractors/service providers.

The Maintenance Plan will detail preventive maintenance activities including, but not limited to:

- Updating configuration/installation settings as needed;
- Cabinets/ Field Switches: cabinets and field switch will be inspected a minimum of every month including:
    - Clean/vacuum inside of cabinet;
    - Clean/replace cabinet filters;
    - Check integrity of cables and connectors (replace as necessary);
    - Check proper function of thermostat and fan/heater operation;
    - Check incoming power for proper voltage;
    - Visually inspect electrical path to ground;
    - Check cabinet mounting for corrosion;
    - Provide and renew pest deterrent system; and
    - Check all cabinets for graffiti and remove/mask.
- Hub building and WAN demarcation locations will be inspected a minimum of every month and perform maintenance checks to ensure system operation and prevention of masked issues due to the redundant hardware;
- Generators will be inspected a minimum of every month and perform maintenance checks to ensure system operation
- Hub building A/C units will be inspected a minimum of every month and perform maintenance checks to ensure system operation
- Gantry and Hub building lightning protection will be inspected a minimum of every month and perform maintenance checks to ensure system operation
- Hub building Uninterruptible Power Supplies (UPS): Hub UPS will be checked a minimum of every four (4) months with a laptop diagnostic program;

- All UPSs (including those in Hub buildings and in equipment cabinets and all other UPSs utilized by the Electronic Toll Collection and Toll ITS Systems will be inspected a minimum of every four (4) months, including:
    - Check operations of UPS;
    - Perform function test;
    - Check incoming line voltage;
    - Check surface voltage; and
    - Check filters.
- Generators: preventive maintenance will be performed per the manufacturer recommended preventive maintenance tasks/schedule;
- LED modules (Toll Rate CMS): all Toll Rate CMSs will be inspected a minimum of every four (4) months, including:
    - Check cabinet for water stains and other signs of water intrusion;
    - Seal any cabinet leaks and replace damaged door gaskets;
    - Check cabinet drain holes for obstructions;
    - Check fan operation;
    - Check and clean filter;
    - Check cable connections;
    - Check DMS controller operation;
    - Check auxiliary control panel operation;
    - Clean LED sign panel (as necessary);
    - Check LED and electronic circuitry:
        - Check temperature levels for appropriate values;
        - Perform diagnostics test;
        - Check power supplies and other configured peripherals; and
        - Check light sensor readings.
- Electrical service: electrical services will be inspected a minimum of every four (4) months, including:
    - Check integrity of cables and connectors (maintain as necessary);
    - Check incoming power for proper voltage;
    - Visually inspect electrical path to ground;
    - Check transformer connections; and
    - Check disconnect connections.
- Fiber optic communications: fiber cable will be inspected every 3 months. And should any repairs be required to be made, payment of repairs to be made under the fiber optic repair items; and
- Facilities pest control: the TSI Contractor will inspect and actively treat facilities, cabinets, hub buildings, conduit, etc. for pest control including but not limited to rodent, ants and other pests that

may disrupt the function of the Electronic Toll Collection System by their presence or activities. The TSI Contractor will provide SRTA a schedule and treatment plan as part of the Maintenance Plan.

Preventive maintenance shall only be performed by a maintenance technician during normal working hours as agreed to with SRTA. The scheduled reversal periods for Express Lane closures will be included as normal working hours. Preventive maintenance test procedures for every key component of the Electronic Toll Collection System shall be established as part of the Maintenance Plan. These test procedures shall be utilized each time a preventive maintenance procedure is performed that requires testing.

Preventive maintenance activities shall be registered in the MOMS and shall automatically generate an alert message with requisite tracking in the MOMS (presumably as a technician work order), allowing SRTA to monitor preventive maintenance activities. Failure to perform these activities in accordance with the approved maintenance schedule may result in penalties, as specified in Appendix D of this RFP.

During the time periods when the roadway reverses, the ETL(s) may be closed to both directions of travel. Currently it is anticipated closures will be for approximately two (2) hours. Preventive maintenance activities can be conducted during roadway reversal as long as they do not impact the lane reversal process. Any preventive maintenance activity requiring a toll lane closure shall be coordinated with SRTA and GDOT if it cannot be scheduled during the ETL reversible time periods. Any maintenance work, other than priority 1 issues, must be authorized by SRTA so that the work will not interfere with normal ETL traffic flow. SRTA requires prior notification of all maintenance activities.

For required GP lane maintenance activities, the TSI Contractor shall comply with GDOT traffic control and MOT requirements. The TSI Contractor shall be responsible for coordinating preventative, predictive or scheduled lane closure requests with GDOT at least two (2) weeks in advance of the desired lane closure upon approval by SRTA.

6.8 Unscheduled Maintenance

The TSI Contractor shall respond to all alerts and notifications that a subsystem or a component of the Electronic Toll Collection System has experienced a failure. Unscheduled maintenance shall be classified, tracked and reported using the MOMS.

The response times to the failure and the repair times are measured against the performance and SLA requirements detailed in Appendix D.

6.9 Corrective Maintenance

If the TSI Contractor proposes to improve or modify the Electronic Toll Collection system, a plan shall be submitted to SRTA for review and approval. The plan shall detail the action to be taken, duration to completion, number and type of personnel required, and any special conditions required as part of the corrective action. The TSI Contractor shall provide the on-site labor at no additional cost to SRTA for any corrective actions.

Any work performed by the TSI Contractor regarding corrective maintenance that benefits system form, fit, or function shall be considered in the course of normal business and SRTA shall not incur any additional labor charges for this type of maintenance. If specialized labor personnel must be brought on site, SRTA must agree to do so before the specialized labor is implemented. With prior approval from SRTA, the specialized labor can be charged at the agreed upon rates.

Any material required for corrective maintenance shall be approved in advance by SRTA and agreement for payment established prior to purchase and/or installation. Corrective maintenance shall be scheduled and only be superseded by maintenance actions affecting collection of revenue.

6.10 Hardware and Software Installation Log

The TSI Contractor shall develop a log report form for all hardware and software installed for each facility of the Electronic Toll Collection System. This log shall record the date, time and location of each item of equipment installed on the system, and any configuration settings or options selected during the installation process or changed subsequent to the initial installation. The log shall be implemented and maintained from commencement of installation activities throughout the life of the system.

The log format shall be reviewed and approved by SRTA prior to start of installation activities. The TSI Contractor shall maintain the logs for all software and hardware installed on the Electronic Toll Collection System and shall include and maintain the log in MOMS. The TSI Contractor shall provide SRTA an updated log prior to commencing the System Acceptance Test.

The TSI Contractor shall include an explanation of the process and controls to be used to update the hardware and software logs and how SRTA staff shall have access to the updated logs from MOMS.

6.11 Maintenance Administration, Tools, Material, and Training

The TSI Contractor shall use a combination of systems, procedures, meetings, personnel and tools to perform the maintenance activities for the Project(s).

6.11.1. Maintenance On-Line Management System

The TSI Contractor shall use MOMS as the primary integrated system tool for all maintenance actions, inventory management, system and unit performance tracking and evaluations and associated reports. MOMS shall be used as the primary repository for the logging of all maintenance activities, equipment inventory management, work order tracking, preventive maintenance schedules, technician schedules, equipment health and status, and report generation.

The TSI Contractor shall use MOMS to support configurable alarm priorities to meet SRTA requirements and to support response times, as well as to track maintenance personnel and work assignments.

SRTA staff and Maintenance personnel shall have real time access to the MOMS using laptop, desktop computers, personal data assistant (PDA), and smart phones.

The TSI Contractor shall:

- Use MOMS automated work order capability to generate preventive maintenance schedules for equipment in the lanes or at the Facility Host.
- Use MOMS to proactively manage image quality alerts from the roadside equipment.
- Log all maintenance TFRs in MOMS to track failures from initial identification of the problem to resolution.
- Append MOMS ticket with updates to the maintenance work order, alarm response, and maintenance activity with a searchable date and time stamp to record the entire history of the activity.
- Retain the TFR data in MOMS for five years
- Provide SRTA a weekly status report, or when requested by SRTA on TFRs by location, status, component or unique tracking number.
- Use MOMS inventory capability to track equipment and spare parts and to provide a monthly report of the status of all equipment in inventory to include but not limited to, in repair status, spares inventory, operational (or deployed), and retired (no longer useable or serviceable).
- Use MOMS to provide a warning or indicator when warranties are nearing expiration or when levels of spares reach a configurable minimum threshold.
- Provide SRTA with monthly maintenance reports which cover all areas of maintenance including system service levels, MTBF, MTTR, current and consumed inventory.

The TSI Contractor shall provide samples of all available MOMS reports, along with a reports matrix, for the following types of report data that shall be selectable as weekly, monthly, annually, or as desired by SRTA:

- Equipment, subsystem and total system availability by selectable time period and location;
- Lane system availability
- Summary and detail work order status by time period and location;
- Work order history
- Open work order
- Number of work orders exceeding repair times
- Number of work orders exceeding response times
- Mean-Time-To-Repair
- Meant-Time-To-Respond
- Mean-Time-To-Respond and Repair
- Mean-Time-Between-Failures
- Equipment inventory including hardware/equipment description, hardware/equipment location (deployed or in inventory as retired, in repair, inventory, operational), software and firmware versions, serial numbers and warranty information installed components by lane and location.

- Summary and detail history of alarms by selectable time period and location (preferably using drill down functionality);
- Incident Logs by equipment type, time period and location;
- Acknowledgement, Response and Repair Time by technician, Electronic Toll Collection System component, location, and priority;
- Routine and preventive maintenance activities by equipment types, location and time period.
- Unscheduled Maintenance history by classification, including component failure rates by equipment type, time period, location and technician;
- Equipment use and repair history by equipment type, time period, location and technician.
- Equipment use and repair history by device, time period, and location.

6.11.2. Network Monitoring System (NMS)

The TSI Contractor shall implement a Network Monitoring System (NMS) to monitor all LAN and WAN links within the project limits. The software tool shall utilize the Simple Network Management Protocol (SNMP) to provide real time monitoring of network status. The NMS shall be owned and operated by the TSI Contractor, but SRTA shall be provided access to the tool and shall be provided with a user account and password for monitoring purposes. The NMS shall send out automated alerts when infrastructure components fail, which shall be sent via email and/or SMS text message. The NMS shall be capable of logging all network alarms, and the alarm output shall be provided to SRTA upon request.

6.11.3. Maintenance Status Meetings

Upon commencement of the warranty phase, the TSI Contractor shall, at a minimum, have a monthly maintenance status meeting with SRTA. A regular meeting day shall be established and repeated each month. Initially, separate status meetings shall be held for each toll facility. However, with SRTA approval, a combined maintenance status meeting may be held once both projects are completely in the warranty / maintenance phases. The meeting regularity may be decreased or otherwise changed by SRTA as the situation dictates.

The TSI Contractor shall prepare and submit a meeting agenda to SRTA for review and approval no less than three (3) business days prior to the scheduled meeting(s). Additionally, the TSI Contractor shall provide a copy of the approved agenda, toll facility reports on system and maintenance performance, and any other documentation that is to be discussed during the meeting(s), to all designated meeting attendees no less than two (2) business days prior to the scheduled meeting(s).

For each monthly meeting, the TSI Contractor shall provide separate toll facility maintenance reports for each Project. The report shall address system performance, availability, and compliance with the specified SLA as described in Appendix D. The TSI Contractor shall prepare and distribute copies to all attendees.

The TSI Contractor shall prepare meeting minutes and an Action Items List, and distribute them to meeting attendees not later than five (5) business days after the meeting.

6.11.4. Tools and Materials

The TSI Contractor shall provide equipment and tools sufficient for each technician to meet the maintenance requirements of each Project including traffic control and lane closure equipment.

6.11.4.1. Technician Tools

The TSI Contractor shall provide each maintenance technician with required equipment, laptop or desktop computers, traffic control equipment or any other materials required to perform maintenance activities that enable each technician to meet the applicable SLA requirements in Appendix D.

All technicians are required to carry a cell phone (smart phone) and laptop computer with Wi-Fi connectivity. All supervisory personnel and managers shall also carry a cell phone to ensure immediate and direct lines of communications in times of emergency or need.

All test equipment shall be properly calibrated and maintained in good working condition in accordance with the manufacturer's specification and records of all equipment calibration events shall be retained.

6.11.4.2. Maintenance Vehicles

The TSI Contractor shall provide sufficient quantities and types of maintenance vehicles to satisfy maintenance requirements. All contract vehicles provided as part of the Project(s) must be equipped to perform maintenance activities, have current registration, and properly insured. All contract vehicles shall have the TSI Contractor's logo, or other logos as agreed to by SRTA, on both front doors, and shall be equipped with (at a minimum) an emergency light bar on top of the vehicle for safety purposes. All contract vehicles shall only be operated by properly trained and licensed personnel. TSI Contractor is responsible for providing evidence of current equipment and vehicle safety inspection, registration and license information to SRTA annually or when requested by SRTA.

6.11.5. TSI Contractor's Internal Maintenance Training

The TSI Contractor shall provide a comprehensive maintenance training program including classroom and hands on experience necessary to ensure that qualified personnel are available to perform all maintenance related activities. In addition, all maintenance personnel shall be trained in the proper use of the MOMS, safety procedures and quality control prior to assignment to the Project.

The TSI Contractor shall provide all materials needed for the training program including syllabus, training and equipment manuals, visuals and training equipment. In addition, training courses offered by the manufacturers or vendors shall be provided to maintenance personnel to ensure adequate knowledge on the operation, maintenance and repair of specialized equipment.

Training records shall be kept for all maintenance staff and made available to SRTA upon request.

When significant changes in equipment or software are installed on the Project, maintenance personnel shall be trained in advance of in-service installation.

6.12 Equipment and Spare Parts Inventory Management

The TSI Contractor shall provide spare parts and an inventory management system that shall be up-to-date at all times.

6.12.1. Spare Parts

The TSI Contractor shall purchase and maintain the spare parts and consumables inventory as agreed to and approved by SRTA. The TSI Contractor shall utilize the spare parts pricing form (as provided in Appendix L) and recommend quantities for all spare parts supplied for the Project. The spare parts list shall also be included in the Maintenance Plan. The initial spare parts inventory for the Project(s) will be purchased by SRTA or provided by the Civil Contractor to be used during the maintenance phase. This initial stock of spares is not to be used until after the warranty phase has completed, or, if the TSI Contractor elects to utilize the initial spares inventory during warranty, the TSI Contractor will be responsible for funding the replenishment of the inventory levels to their original quantities until the completion of the warranty phase at no additional cost to SRTA. All spare parts purchased for the Project(s) during the maintenance phase (but not including warranty phase) shall be procured by the TSI Contractor, and expensed on the monthly maintenance invoice. The TSI Contractor shall obtain SRTA approval prior to purchasing needed spares. Prices charged to SRTA shall be in accordance with the approved spare parts price form. All spares procured shall become the property of SRTA and shall be labeled as SRTA property and identified with a bar code or other inventory management process approved by SRTA.

The TSI Contractor is completely responsible for ordering, receiving and properly storing the spares, and for maintaining an adequate inventory of spares to ensure Project SLAs are not affected by spare parts availability. When the TSI Contractor receives shipments of spare parts, a SRTA representative shall verify and approve that the spares have been received and properly entered into the TSI Contractor's spares inventory database. Spares to be used on the SRTA project shall be dedicated to the SRTA project and stored in a designated portion of the TSI Contractor's storage facility dedicated to the Project (i.e. NWC spares shall not be intermingled with I-75 South spares or other SRTA spares). SRTA shall have access to the spare's storage facility, and to the spares inventory system. A SRTA representative shall perform quarterly spares inventory inspections. SRTA also reserves the right to audit the TSI Contractor's spare parts storage facility at any time, with no prior TSI Contractor notice required.

The TSI Contractor will maintain equipment provided by the Civil Contractor as summarized in section 3.1.5 of this RFP. The Civil Contractor will provide spare parts for the Civil Contractor provided equipment. The Civil Contractor spare parts are listed in: GDOT RFP I-75 South – Appendix 15 and GDOT RFP NWC Attachment 17-4. If the Civil Contractor spare parts do not meet the TSI Contractor maintenance requirements, then the TSI shall discuss with SRTA for resolution. TSI Contractor shall be required to furnish spare parts for all equipment that is required as part of the scope of this RFP.

The MOMS must provide a spare parts and inventory management system to include a spare parts inventory report (listing spares inventory for all spare parts items) that will be included with monthly warranty/maintenance invoices.

6.12.2. Equipment Inventory Management

The TSI Contractor shall record and track all inventory of equipment and spares using MOMS. The TSI Contractor shall maintain an adequate inventory of equipment, spares and consumables to meet availability, performance and operational requirements outlined in the SLAs. The TSI Contractor shall be responsible for providing environmentally controlled (air conditioned/heated) storage space for all equipment, spares, and/or consumables that require such. Access to the spares inventory storage location shall be controlled, and all door locks will have unique keysets made available only to appropriate SRTA and TSI Contractor personnel.

The TSI Contractor shall maintain accurate records of all equipment and parts as they enter the inventory and as they leave the inventory. The TSI Contractor shall apply a unique bar code on all equipment. The bar code shall be placed in a readily accessible and uniform area for all similar equipment. The TSI Contractor shall provide a sufficient quantity of barcode scanners (5 at a minimum) for use by SRTA and maintenance personnel for direct entry into MOMS of all assets (operational units, spare inventory, test equipment, etc.). Records shall include, but not be limited to, part numbers, part descriptions, serial numbers, times and dates of changes to location, warranty information and a brief description of the part itself, to include the repair cost per unit, times the number of times each unit was sent for repair. The following procedures shall be followed during maintenance activities:

- When a part is replaced and determined to be in warranty, the part shall be returned to the manufacturer.
- When a part is replaced and determined to be out of warranty, the part shall be repaired or replaced (whichever is most cost effective), and returned to inventory.
- When a part that is not within the warranty period is replaced, but a repair is not possible, the part shall be reordered.
- When a part is not repairable or not serviceable it shall be recorded in the MOMs inventory as retired. Disposition of retired parts shall be coordinated with SRTA.

For all repair activities, the details of the repair and the parts disposition, including parts retired, shall be recorded and tracked in the MOMS. The TSI Contractor shall provide a safe and secure storage location for all spares and shall bear all risk for loss or damage. The TSI Contractor shall provide, at their own expense, adequate inventory of miscellaneous maintenance and repair items and consumables.

6.13 Out of Scope Work

In the event the TSI Contractor believes a task is out of scope, the TSI Contractor shall notify SRTA no more than one (1) hour after detection. SRTA shall review the event in question and determine further action by the TSI Contractor (if any). If applicable, the TSI Contractor shall provide a detailed explanation in writing to SRTA as to the nature of the condition, required corrective action, a preliminary cost estimate and why the TSI Contractor believes the work is out of scope. If SRTA agrees with the TSI Contractor, then the parties shall pursue a Change Order pursuant to the Contract.

6.14 Notification of Incident and Potential Revenue Loss

The TSI Contractor shall immediately report to SRTA any incident or identified discrepancy that has or will potentially result in a loss of revenue, customer service or audit ability or which could impact system performance or availability. The TSI Contractor shall correct the problem in a timeframe agreed upon by SRTA and the TSI Contractor and shall propose remediation to minimize negative impact.

6.15 Cooperation with Others

The TSI Contractor shall provide full cooperation and participation with law enforcement, GDOT, TMC and SRTA in the event of major traffic incidents, traffic diversions in and out of the Express Lane Facilities. The TSI Contractor shall cooperate with all other parties, including vendors, governmental agencies and other maintenance providers, as required, to ensure that maintenance functions are handled effectively, efficiently, and according to all laws, rules, regulations, and specifications of any applicable vendors, governmental agencies and other maintenance providers.

7 Optional Services and Systems

SRTA may have the need for the following services and systems in the future:

- Toll operation center staffing
  - Upon mutual agreement with SRTA, the TSI may be required to perform toll operation management in the Toll Operations Center (hereinafter referred to as TOC), operations and monitoring for the State Road and Toll Authority (hereinafter referred to as the SRTA), toll facilities as they become operational and directed to do so by SRTA. Provide the appropriate staff necessary to manage, operate and maintain the TOC(s) and the necessary training and supervision of the TOC operations staff.

- Customer service center operations staffing
  - Upon mutual agreement with SRTA, the TSI may be required to perform customer service center operation management in the Customer Service Center (hereinafter referred to as CSC), operations for SRTA, toll facilities as they become operational and directed to do so by SRTA. Provide the appropriate staff necessary to manage, operate and maintain the CSC(s) and the necessary training and supervision of the CSC operations staff.

- Image review processing operations staffing
  - Upon mutual agreement with SRTA, the TSI may be required to perform image review service center operation management, image review and processing for SRTA. Provide the appropriate staff necessary to manage, operate and maintain the image review and processing operations and the necessary training and supervision of the image review staff

- Fiber emergency maintenance (backbone and lateral)
  - Upon mutual agreement with SRTA, the TSI may be required to perform emergency fiber repair in the event the main fiber backbone or a lateral is cut. The fiber conduit and duct bank is owned and managed by GDOT, so coordination will be needed to work with GDOT to identify, repair, and splice the SRTA managed fiber cable inside the conduit. Repairs will include civil, materials and labor.

- Back office account management system
  - Upon mutual agreement with SRTA, the TSI may be required to provide all software, hardware and services associated with conversion of the existing back office account management system to a new system. This includes all equipment and functionality for: CSC account management, call center systems, transponder inventory, audit and reporting, customer web site, payment processing, credit card gateway, interactive voice recognition systems, collections interfaces, interoperable toll agency interfaces, telephony interfaces, print interfaces, and management dashboards.

- Violation processing system
    - Upon mutual agreement with SRTA, the TSI may be required to provide all software, hardware and services associated with conversion of the existing violation system to a new system. This includes all equipment and functionality for: violation and video bill account management, interfaces to DMV's and other entities for address lookups, payment cycles and account aging, evidence packages, collections interfaces, court interfaces, call center systems, audit and reporting, customer web site, payment processing, credit card gateway, interactive voice recognition systems, telephony interfaces, print interfaces, and management dashboards.
- Special Projects
    - Upon mutual agreement with SRTA, the TSI may be required to perform work related to the support, engineering, maintenance (including emergency maintenance), modifications, growth and enhancement of all toll technologies owned and operated by the SRTA or other authorized State entity. This work shall be considered Special Projects and may include, but not be limited to, design, software development, infrastructure engineering, engineering analysis, recommendations and testing, fabrication, prototype programs, data collection activities, training, installation, reporting and documentation.

Please indicate your ability and willingness to provide any of these services in your response to this RFP. These service and systems will not be priced at this time.

APPENDIX A

STANDARD TERMS AND DEFINITIONS

Appendix A – Standard Terms and Definitions

Acceptance: The approval by SRTA or SRTA-Designated Representative of a document or phase of the Project or the full Project as defined in the Contract.

Acceptance Testing: Includes all testing to verify the requirements of the Contract as defined in the Project RFP.

Account Holder: A person or persons or governmental agency having established a SRTA Customer Account in order to use the SRTA-operated toll lanes.

Account Type: Designation of a SRTA Customer Account into one of the following categories: Non-Revenue, Emergency Non-Revenue, Toll, Anonymous, or Register-by-Plate.

American National Standards Institute (ANSI): Organization that oversees the development of products, services, processes, systems and personnel in the USA.

All-Electronic Tolling (AET): is synonymous with Open Road Tolling (in methodology), or no-cash tolling that provides a seamless method of collecting tolls from customers without slowing down or stopping at tollbooths.

Alternative Fuel Vehicle (AFV): A vehicle with an Alternative Fuel Vehicle license plate from the state of Georgia

As-Built Drawings: The documents and drawings associated with the RFP.

Authority: Georgia State Road and Tollway Authority (SRTA).

Automatic License Plate Recognition (ALPR): The process of using cameras and related video equipment coupled with OCR technology installed over or to the side of a roadway to determine the license plate identifier and state where the vehicle is registered.

Automatic Vehicle Classification (AVC): The system automatically classifies vehicles as they pass through the toll zone.

Automatic Vehicle Identification (AVI): A system consisting of an antenna and reader installed in a toll lane or instrumented shoulder, together with a compatible transponder mounted on a vehicle for automatic identification of the transponder as it passes through the lane.

Back-Office or Back Office System (BOS): The hardware and software system(s) that supports, manages and processes functions related to toll collection data (or other vehicle fee) data management (e.g., database processes, clearing and settlement, network maintenance and system administration), and related non-customer facing customer service and video processing activities.

Back Office Transaction(s): A debit or credit posted to a customer account to record a toll charge, adjustment, payment, violation transaction or similar action.

Bill of Materials (BOM): An itemized list of equipment, software, parts or other items together with the associated prices for materials to be delivered by the TSI Contractor to the Authority as part of the Contract.

Business Rules: A preliminary set of rules approved by SRTA that define how SRTA operated/managed Electronic Toll Collection Facilities and Systems should respond to various situations that occur during the toll collection process based on business case and policy decisions made by SRTA .

Change Control Board (CCB): A committee established to review and approve proposed changes and requests to a project's Baseline Requirements affecting design and construction in an effort to control costs, control scope changes, and provide historical data for quality assurance purposes.

Changeable Message Sign (CMS): The signs installed before all entrances to a MANAGED LANES Lane Tolling Segment that display the rate information. Commonly known as a Variable Message Sign (VMS).

Civil Contractor: There are different GDOT contractors for the two Express Lane Projects. In the GDOT RFP's they are referenced as the Design – Build Contractor for the I-75 South Project and as the Developer for the NWC Contract. For this RFP the two contractors are referred to as the Civil Contractor responsible for civil work for their respective contract.

Clarification: A request for further information and verification of statements in the submitted written responses to the RFQC as requested by SRTA. This may include the need for the PSI to submit additional information or further verify in writing components of previously submitted written responses.

Closed Circuit Television (CCTV): A system of video cameras and related equipment required to allow remote users to view the Express Lane CMS displays, activity in the Tolling Zone(s), and entrance/exit from secured locations (Hub Buildings).

Contract: The binding Agreement between SRTA and the TSI Contractor for the Express Lanes Implementation, Maintenance, and Back Office Operations.

Contract Documents: The RFP and any addenda thereto (and any other documents and Exhibits referenced therein), the TSI Contractor's Proposal (and any documents and Exhibits referenced therein) and any Change Orders and the Contract.

COTS: Commercially Available Off-the-Shelf hardware and software supplied by the TSI Contractor under this Contract.

Cruise Card*:* SRTA's legacy branded eGo® Plus transponder. Although Cruise Cards have not been distributed since mid-2011, there are roughly 189,000 Cruise Card transponders in use on existing SRTA toll facilities. SRTA currently only distributes PeachPass branded ISO 18000-6C transponders.

Customer Service Center/Violation Processing Center (CSC/VPC): An integrated system that contains infrastructure equipment, software, and services required to manage customer accounts, process toll payments, obtain correct account name, and address information, and prepare billing, invoicing and violation noticing for payment processing per the established Business Rules.

Customer Service Representative (CSR): Personnel assigned to the CSC/VPC who handle customer account management and customer interfaces.

Customized Hardware: The Toll Collection System hardware provided especially for this Project by the TSI Contractor.

Department of Revenue (DOR): The principal tax collecting agency for the State of Georgia that includes, among other functions, the Motor Vehicles Division.

Design Documentation: System design documentation required under this RFP, including but not limited to the Software Development Plan, System Requirements Document, Systems Detailed Design Document, Interface Control Documents, Engineering Design Plans, Installation Shop Drawings, Test Plans and Procedures and As-Builds

Design Phase: The period in the Project which follows the Requirements Phase, and in which the SDD is developed and submitted to SRTA for review and approval.

Detailed Design Review (DDR): The DDR is the final review of the system's design to obtain design approval prior to beginning implementation. The TSI Contractor conducts the DDR.

Digital Video Audit System (DVAS): The system provides the capability for both real time video and toll lane transaction activity monitoring, or for "after-the-fact" transaction analysis and investigations using pre-recorded digital video of toll lane activity with simultaneous playback of the associated transaction and event data. It is an essential tool for auditing and validating toll transactions processes.

Dynamic Pricing System: The system using data inputs from roadside equipment to calculate toll rates based upon SRTA's operational policy for all tolling segments.

Electronic Toll Collection (ETC): A system of integrated devices and components that perform the automated recording and reporting of vehicle transactions through electronic media in a toll revenue collection system.

Electronic Toll Collection System: The system that is to be provided under this RFP that includes a system of integrated devices and components that perform the automated recording and reporting of vehicle transactions through electronic media in a toll revenue collection system together with associated toll-related ITS equipment utilized by the TSI Contractor's system which includes the MDSs, CMSs, CCTV and GP AVI Scan.

End to End Test: This test provides GDOT and SRTA with an opportunity to conduct full system tests, conduct daily operations to confirm operation plans and standard operating procedures, and to otherwise

prepare for Open to Tolling.

Express Lanes Toll Collection System: The complete System provided by the TSI Contractor to meet the requirements of this RFP, and the Contract.

Express Toll Lanes (ETL): Express Toll Lanes are a form of Managed Lanes (See definition below). The Express Toll Lanes make use of the Variable Pricing concept and restricted access to provide motorists who choose to pay a toll access to a relatively free flowing travel lane separate from the General Purpose Lanes.

Extensible Markup Language (XML): is a markup language that defines a set of rules for encoding documents in a format that is both human-readable and machine-readable

Facility Host: Toll facility system that contains software required to accept tolling transactions (ETC, ALPR and video) from the tolling zone controllers; builds trips from combination of transaction inputs; determines toll for a trip; interfaces with the SRTA BOS to provide the completed Trip Transaction.

Factory Acceptance Test (FAT): The testing performed by the TSI Contractor designed to test the functionality of the Express Lanes Toll Collection System in a factory environment with hardware and software representative of the final system

Financial Management System: Financial management application module that SRTA plans to migrate to in the near future. The TSI Contractor shall be responsible for interfacing with this application.

Force Majeure: The circumstances as defined in the Contract whereby either party is excused from meeting the performance requirements specified in the Contract.

Free-Flow: The targeted traffic conditions in a segment(s) in the Express Lane that support an average speed of the posted speed limit miles per hour or greater for a Trip.

Gantry: A structure positioned over the roadway where ETC and other tolling equipment is mounted for the purpose of reading transponders, obtaining images of vehicle license plates and gathering other data required by the Zone/Lane Controller for the accurate processing of Lane Transaction Records

Gantry Controlled Access (GCA): SRTA's Electronic Barrier and Enforcement System and Method, patent pending, US Patent Application #12/170322

Gantry Location: The roadway position where ETC and other tolling equipment is mounted for the purpose of reading transponders, obtaining images of vehicle license plates and gathering other data required by the Zone Controller for the accurate processing of Lane Transaction Records.

General Ledger (GL): A collection of the group of accounts that supports the items shown in SRTA's financial statements

Georgia Department of Transportation (GDOT): SRTA's partner agency for the Express Lanes Project.

GDOT Specifications, Special Provisions, and Standards: A collection of construction-related information that outlines any GDOT-specific construction methods, manuals, references, materials sampling & testing, and other procedures and requirements that contractors doing business in the State of Georgia must adhere to.

Georgia Technology Authority (GTA): Entity that manages Georgia's IT infrastructure including the data center, network and telecommunications services and security; establishes policies, standards and guidelines for the state IT; promotes an enterprise approach to state IT; and develops and manages the state portal, georgia.gov.

Graphical User Interface (GUI): A computer interface using graphical elements such as windows, icons, menus and pointers supporting the human-machine interactions.

High Occupancy Toll (HOT) Lane: A managed lane that combines HOV and pricing strategies by allowing vehicles that do not meet HOV occupancy (or other toll-exempt requirements) to gain access to HOV lanes by paying a toll.

I-85 Express Lanes Project: A demonstration project converting 15.6 miles of existing HOV lanes into HOT Lanes in the high volume I-85 Corridor for the purpose of providing reliable travel time for qualifying HOV vehicles as well as toll paying customers who would not otherwise be eligible to use the HOV Lanes.

Institute of Electrical and Electronics Engineers (IEEE): Organization which develops standards for the computer and electronics industry.

Interactive Voice Response (IVR): An automated telephone information system integrated with SRTA's telephone system used to communicate with SRTA's customers using a combination of fixed voice menus and data extracted from database(s) in real time.

Interface Control Document (ICD): A written description detailing the data interface(s) between two or more systems.

International Organization for Standardization (ISO): Organization which sets national industrial and commercial standards.

Internet Protocol (IP): IP, as the primary protocol in the Internet layer of the Internet protocol suite, has the task of delivering packets from the source host to the destination host solely based on the IP addresses

Local Area Network (LAN): The portion of a data network typically contained within a single building. The communications equipment that links the Zone Controllers with the WAN.

Maintenance On-line Management System (MOMS): A software package provided by the TSI Contractor that supports reporting and tracking of alarm messages, and maintains status, location, health, and attributes for the Managed Lane and Back Office equipment.

Maintenance Phase: The period that begins after completion of the warranty period and is contingent upon

the successful completion of the Final System Acceptance Test for each Project.

Managed Lanes (ML): Managed lanes are defined as a highway toll facility, or a set of lanes where operational tolling strategies are proactively implemented and managed in response to changing traffic conditions. Potential lane management applications that fall into this broad definition of "managed lanes"

- ***Pricing*** — Includes both traditional toll lanes and toll lanes that use congestion pricing, where price is varied during certain time periods in order to manage demand (e.g. peak-period surcharge or off-peak discount).
- ***Vehicle eligibility*** — The lanes are managed by allowing certain vehicles or restricting others; minimum occupancy is an example of an eligibility restriction.
- ***Access control*** — An example would be express lanes where vehicles are allowed but access is limited during long stretches of the facility, minimizing turbulence in the flow of vehicles.

Master Project Schedule: The TSI Contractor's detailed schedule that lists all tasks related to the design, development, testing, installation and deployment of the Express Lanes Project as defined in the RFP.

Mean Time Between Failures (MTBF): The arithmetic mean time between failures of the System or components of the System.

National Electrical Code (NEC): US Standard defining the safe installation of electrical wiring and equipment.

National Electrical Manufacturers Association (NEMA): The standards making body for enclosures that define the level of protection required against the external environment.

National Institute of Standards and Technology (NIST): Previously known as the **National Bureau of Standards** (**NBS**) —a measurement standards laboratory, otherwise known as a National Metrological Institute (NMI), and serves as the source of the nation's official time.

Non-Revenue Account*:* A category of SRTA customer accounts to be utilized for non-emergency transit vehicles and other vehicles that will always qualify for toll-exempt status.

Non-Revenue Emergency Account: An SRTA Customer Account designated for emergency vehicles only. One of the primary differences between an Emergency Account and a Non-Revenue Account is that an emergency vehicle is not subject to facility violations enforcement.

Notice to Proceed (NTP): Written notification from SRTA to the TSI Contractor stating the date the Contractor can begin work subject to the conditions of the Contract Documents. The performance time for the Project begins at the NTP date.

Origin-Destination (OD) Pair: The defined portion of roadway between a legal entry and any legal exit location along an express lane corridor. An OD pair can therefore be a single tolling segment or a combination of multiple consecutive tolling segments.

Open Records Act: means O.C.G.A. § 50-18-70 et seq.

Open Road Tolling (ORT): The automated collection of tolls on a toll facility where no toll booths are present and vehicles are allowed to travel at normal speeds while passing under the tolling Gantries.

Open to Tolling: The first day of operation where toll revenue is collected.

Optical Character Recognition (OCR): Specialized software that is used to automatically extract numerals, characters and the state designation from an image of a license plate.

Payment Card Industry (PCI) Industry Data Security Standard: A standard created by the Payment Card Industry Standards Council to help organizations that process card payments prevent credit card fraud through increased controls around data and its potential exposure to compromise. The TSI Contractor is required to comply with the PCI Industry Data Security Standard as part of the RFP.

PeachPass: SRTA's proposed branding for transponders and customer accounts used on the I-85 Express Lanes. SRTA may elect to phase out the Cruise Card branding in order to utilize the PeachPass identifier for all SRTA-issued transponders and associated accounts. SRTA may phase out or change branding again at any time in the future.

Portable Document Format (PDF): A file format created by Adobe Systems used to represent documents in a manner independent of the original application software.

Preliminary Design Review (PDR): The PDR is the first in-depth review of the system design that shows the TSI's understanding of system requirements, processes, design compliance and the technical approach being implemented to meet requirements. The TSI Contractor conducts the PDR.

Prime Contractor: The single legal entity that enters into a contract with a client for the purpose of delivering Services under a defined scope of work. For purposes of the Systems Integrator RFP, the Prime Contractor will be the pre-qualified Prospective Systems Integrator that executes the contract with SRTA and is the primary point of contact with SRTA with respect to the Services being delivered.

Project: the total Work defined in this RFP and the Contract Documents.

Project Acceptance: SRTA will provide the TSI Contractor Project Acceptance for the Electronic Toll Collection System upon the successful completion of all test described in Section 4, closure of all punch list items, completion and submission of all required documents and meeting of other conditions as specified in the Contract Documents.

Project Management Plan: The plan developed by the TSI Contractor in response to the RFP in accordance with the RFP and approved by SRTA, as the same may be amended from time to time by written Contract between SRTA and the TSI Contractor.

Prospective Systems Integrator (PSI): A vendor / contractor / firm seeking prequalification under this RFQC.

Qualified Contractor: The Prospective Systems Integrator(s) that are pre-qualified by SRTA. They are the only entities eligible to respond to the Toll System Integrator RFP as a Prime Contractor***.***

Quality Assurance/Quality Control (***QA/QC):*** The systematic process of checking to see whether a product or service being developed is meeting specified requirements

Radio Frequency Identification (RFID): The technology used at the lane level to communicate between a transponder and a roadside reader to identify the transponder's unique identification number and other information that may be written to the transponder.

Region of Interest: The image focal point of roadside cameras on the area of a vehicle that includes the license plate and other vehicle characteristics used to determine the license plate as the image is passed through OCR and VSR.

Register by Plate Account: A pre-authorized account established for one or more vehicles registered by license plate number for use on SRTA operated facilities.

Request for Proposals (RFP): The public procurement document to be issued for the Toll System Integrator for the Toll Collection Systems Implementation and Maintenance.

Request for Qualified Contractors (RFQC): The public procurement document and process used to pre-qualify Prospective Systems Integrators as Qualified Contractors eligible to respond to the planned Systems Integrator RFP in the role of a Prime Contractor.

Requirements Phase: The period in the Project where the TSI Contractor, in collaboration with SRTA, defines the hardware, software, reporting and communications requirements for the Project, which are then documented in the SRD and submitted to SRTA for review and approval.

Requirements Traceability Matrix: A document, usually in the form of a table, that traces requirements to the tests that are needed to verify that the requirement is fulfilled. A good traceability matrix will provide backward and forward traceability, i.e. a requirement can be traced to a test and a test to a requirement. A requirements traceability matrix may be used to check to see if the current project requirements are being met.

Routine Maintenance Activities: Regularly scheduled inspections, repairs, adjustments tuning and replacement of parts and components as required to keep the System in top operating condition.

Segment: The defined portion of roadway between a legal entry and the next consecutive legal exit locations along an express lane corridor.

Simple Network Management Protocol: An Internet standard protocol for managing devices on IP networks

Short Message Service: A text messaging service component of phone, web, or mobile communication systems, using standardized communications protocols that allow the exchange of short text messages between fixed line or mobile phone devices

Structured Query Language (SQL): is a special-purpose programming language designed for managing data held in a relational database management system.

Skip Tracing: Any investigation that entails locating a subject whose contact information is not immediately known

Software Development Plan (SDP): The document developed by the TSI Contractor and submitted to SRTA for review and approval that describes the resources, tools, development platforms and methodology used for the software development of the Project.

State: the State of Georgia

State Road and Tollway Authority or SRTA: The public authority and instrumentality of the State of Georgia established under O.C.G.A. § 32-10-60 et seq.

SRTA-Designated Representatives: Person or persons authorized by SRTA to represent SRTA in all dealings with the TSI Contractor.

Suspended Status: The status of a CSC account where transponder(s) associated with the account are no longer valid as defined in the Business Rules.

System Acceptance Test (SAT): A consecutive sixty (60) day operational test period to evaluate and ensure that the Electronic Toll Collection System software and hardware performance meets the functionality, availability, accuracy and performance requirements

System or Toll Collection System: The fully integrated hardware and software components required to meet the technical and operational requirements of the RFP.

System Detailed Design Document (SDDD): Milestone deliverable describing the Express Lanes Project hardware, software, functionality and communications design that shall be developed by the TSI Contractor and delivered to SRTA during the Design Phase of the Project for SRTA review and approval.

System Requirements Document (*SRD*): The document developed by the TSI Contractor in cooperation with SRTA and submitted to SRTA for review and approval as part of the system requirements review process that describes the full set of requirements for the Project.

Systems Integrator: The TSI Contractor (and their selected subcontractors) responsible for implementation of the RFP for the Express Lanes Project.

Task Order: An order for additional services placed against the Contract

Toll Account: A prepaid SRTA Customer Account that can be used for SRTA operated Toll Facilities. Each vehicle associated with the account must have a transponder registered in Primary Mode: either Non-Toll or Toll. Note the Primary mode only applies to the I-85 HOT Lane, where customers can set their mode to Non-Toll to indicate they have enough occupants in their vehicle to qualify for toll exemption. For

the project(s) described in this RFP, every Toll Account passage is eligible for a toll regardless of the mode in which a transponder resides.

Toll Facility: A roadway, or MANAGED LANES Lane within a roadway, for which travelers who are not toll-exempt pay a specified fee for usage***.***

Toll Facility Infraction: A traffic violation resulting from illegal toll facility use such as failure to have a valid transponder in the vehicle while driving in a SRTA Operated tolled facility; or failure to comply with other legal requirements associated with Georgia Tolled Facilities.

Toll Mode*:* The status of a transponder associated with a SRTA Toll Account where the vehicle will be charged a toll when using any SRTA Tolled Facility. For the project(s) described in this RFP, every Toll Account passage is eligible for a toll, regardless of the mode in which a transponder resides.

Toll Schedule: The table of toll rates to be applied for toll transactions based on SRTA policies.

Traffic Management Center (TMC): The headquarters and information clearinghouse for NaviGAtor, GDOT's Intelligent Transportation System (ITS).

Transaction Record*:* The record created in an Express Lane containing the data captured by the Zone Controller for a vehicle passage. These Transaction Records are transmitted to the Facility Host where they are processed to create Trips that are posted to customer accounts.

Transponder: A radio transmitter-receiver mounted in or on a customer's vehicle that is used to communicate with a roadside reader for the purpose of communicating a unique serial number and other information.

Transponder Validation List (TVL): The list that contains the transponders issued to Cruise Card and/or PeachPass customers and transmitted from SRTA's existing Back Office System to the Express Lane Facility Host.

Trip: The term used to describe the passage of a vehicle through an Express Lane Corridor from the point where the vehicle enters the Express Lane at an authorized entry location until it exits the Express Lane at an authorized exit location. A Trip may include a single Tolling Segment or multiple Tolling Segments. Vehicles associated with a Toll Account will be charged a toll for each Tolling Segment travelled over the course of the Trip.

Trip Building Process: An automated process that groups Transaction Records from Express Lanes using an identifier (transponder or license plate number or other means of identifying the vehicle) in order to create Trip Transactions that are either posted to an existing account or processed as potential violations.

Trip Transaction: A term used to designate a transaction ready to be posted to a customer account at SRTA's existing CSC or a violation transaction processed by SRTA's existing VPC. All Transaction Records received from Express Lane Tolling Gantries for a given transponder or license plate number are assembled into a single Trip Transaction for that Tolled Segment by the Facility Host System.

TSI Contractor: The person, firm or entity undertaking the Work identified in this RFP under the terms of the Contract and with whom SRTA has entered into the Contract. The toll system integrator in this RFP

Trouble Failure Report (TFR)*:* The description of a component or system issue or failure as recorded in the MOMS.

Uninterruptible Power Supply (UPS): The battery backup device, which maintains a continuous supply of electric power when utility power is not available.

Variable Dynamic Toll Pricing: Tolls that vary in "near-time" in response to changing congestion levels in traffic on the facility. Variable dynamic pricing is a key characteristic of toll pricing, allowing for prices that change or fluctuate due to different variables, conditions, and situations***.***

Vehicle Signature Recognition (VSR): The process of capturing significant and identifiable features of a vehicle by the violation image capture system to accurately capture color images with a field of view wide enough to capture the entire back of the vehicle and is configurable to capture a license plate located at any portion on the back of the vehicle. Additionally the system provides a histogram of vehicles and license plates intended to give a unique digital signature of a vehicle and allow it to be paired with a license plate or AVI Tag. If a portion of the license plate or car is obscured, the vehicle shall be recognized by its digital signature.

Violation Enforcement System (VES): Video based system located at Toll Gantries used to record license plate images of selected vehicles in video form.

Violation Notice: The notification sent to a toll system violator as determined by the SRTA Business Rules.

Violation Processing Center (VPC): See definition for *Customer Service Center/Violation Processing Center (CSC/VPC).*

Violation Processing System (VPS): SRTA's current Back Office hardware, software and other equipment used to determine the registered owners of violation vehicles create and send violation invoices and notices, track payments and support the court system.

V-Toll: A SRTA Back Office process that matches a vehicle license plate number obtained from images captured in the lane to a transponder associated with a SRTA Customer Account.

Virtual Local Area Network (VLAN): A logical local area network (or LAN) that extends beyond a single traditional LAN to a group of LAN segments, given specific configurations. Since a VLAN is a logical entity, its creation and configuration is done completely in software

Warranty Phase: The period that includes all maintenance and production support that commences upon open to tolling of each Project and ends with System Acceptance of each Project.

Wide Area Network (WAN): The portion of a data network between buildings/regions, not typically containing that portion of the network within buildings and the fiber communication network that services the Project.

Work: Includes all work which in the judgment of SRTA is necessary for completion of the construction of the Project under the Contract Documents and includes, without limitation, all plant, labor, materials, equipment, systems, services and software and other facilities, installation, testing, operational and maintenance and other things necessary or proper for or incidental to the carrying out and completion of the terms of the Contract Documents.

Table of Acronyms

Acronyms used in this document are listed below together with their meanings.

Acronym	Meaning
AFV	Alternate Fuel Vehicle
ALPR	Automatic License Plate Recognition
ANSI	American National Standards Institute
AVI	Automatic Vehicle Identification
BI	Business Intelligence
BOM	Bill of Materials
BOS	Back Office System
CCB	Change Control Board
CCTV	Closed Circuit Television
CMS	Changeable Message Sign
COTS	Commercially Available Off the Shelf
CSC/VPC	Customer Service Center/Violation Processing Center
CSR	Customer Service Representative
DB	Design – Build
DDR	Detailed Design Review
DP	Dynamic Pricing
DOAS	Department of Administrative Services
DOR	Department of Revenue
DPU	Data Processing Unit
DR	Disaster Recovery
DVAS	Digital Video Audit System
ETC	Electronic Toll Collection
ETL	Express Toll Lane
FAT	Factory Acceptance Test
FCC	Federal Communications Commission
FHWA	Federal Highway Administration
GCA	Gantry Controlled Access
GDOT	Georgia Department of Transportation
GL	General Ledger
GP	General Purpose
GPR	Georgia Procurement Registry
GUI	Graphical User Interface

GTA	Georgia Technology Authority
GUI	Graphical User Interface
HOV	High-Occupancy Vehicle
HOT	High Occupancy Toll
HVAC	Heating, Ventilation and Air Conditioning
IAG	Inter Agency Group
ICD	Interface Control Document
IEEE	Institute of Electrical and Electronics Engineers
IP	Internet Protocol
IRPS	Image Review and Processing System
IPS	Image Processing Subsystem
IS	Information Systems
ISO	International Organization for Standardization
ITMS	Integrated Toll Management System
IVR	Interactive Voice Response
KPI	Key Performance Indicators
LAN	Local Area Network
LOS	Level of Service
MDS	Microwave Detection System
ML	Managed Lane
MOMS	Maintenance On-line Management System
MOT	Maintenance of Traffic
MTBF	Mean Time Between Failures
MTP	Master Test Plan
MTR	Mean-Time-To-Repair
MTRR	Mean Time to Repair and Respond
MTTR	Meant-Time-To-Respond
MUTCD	Manual of Uniform Traffic Control Devices
MVDS	Microwave Vehicle Detection System
NEC	National Electrical Code
NECA	National Electrical Contractors Association
NEMA	National Electrical Manufacturers Association
NIST	National Institute of Standards and Technology
NLT	Not Later Than
NMN	Network Management System
NOIA	Notice of Intent to Award
NTCIP	National Transportation Communications for ITS Protocol

NTP	Notice to Proceed
NWC	Northwest Corridor
OCR	Optical Character Recognition
OD	Origen-Destination
ONVIF	Open Network Video Interface Forum
ORT	Open Road Tolling
OSHA	Occupational Safety & Health Administration
PCI	Payment Card Industry
PDD	Preliminary Design Document
PDF	Portable Document Format
PDR	Preliminary Design Review
PM	Project Management
PMBOK	Project Management Body of Knowledge
PMP	Project Management Plan
PSI	Prospective System Integrator
PTZ	Pan Tilt Zoom
QA/QC	Quality Assurance/Quality Control
QC	Qualified Contractor
QWERTY	Standard Keyboard with keys in traditional typewriter arrangement
RACS	Roadway Access Control System
RF	Radio Frequency
RFID	Radio Frequency Identification
RFP	Request for Proposals
RFQC	Request for Qualified Contractor
RTM	Requirements Traceability Matrix
ROI	Region of Interest
SDDD	System Detailed Design Document
SDP	Software Development Plan
SLA	Service Level Agreement
SMS	Short Message Service
SNMP	Simple Network Management Protocol
SRD	System Requirements Document
SRTA	State Road and Tollway Authority
SQL	Structured Query Language
TBD	To Be Determined
TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance
TFR	Trouble Failure Report

THEA	Tampa Hillsborough Expressway Authority
TIMS	Transponder Inventory Management System
TMC	Traffic Management Center
TMG	Team Georgia Marketplace
TOC	Tolls Operation Center
TSI	Toll System Integrator
TVL	Transponder Validation List
UPS	Uninterruptable Power Supply
VES	Violation Enforcement System
VLAN	Virtual Local Area Network
VPC	Violation Processing Center
VPS	Violation Processing System
VSR	Vehicle Signature Recognition
WAN	Wide Area Network
XML	Extensible Markup Language

APPENDIX B

PROJECT DESCRIPTIONS

Project Description - I-75 South Express Lanes

Toll System Design & Implementation Project

1. Project Description

Project Overview:

The 11 mile I-75 South Express Lanes Project will include a reversible barrier-separated Electronic Toll Collection system and ITS infrastructure along southbound I-75 and I-675 in Henry and Clayton Counties. Tolling points in the I-75 South project will be both reversible and non-reversible with a variety of total toll lanes at a tolling point. All tolling points will have a double gantry furnished by the Civil Contractor.

All vehicles passing through a Toll Zone will be classified based on the number of actual axles (per SRTA's classification scheme). Vehicles with up to 6 wheels and up to 3 axles are allowed to travel in the Express Lanes, but tractor trailers are not permitted to use the Express Lanes.

The peak travel periods for the I-75 South Project are typically northbound 0630 to 0930 hours and southbound 1530 to 1900 hours daily. The Express Lanes will be operational in the northbound direction between 0500 to 1000 hours and closed from 1000 to 1400 hours. The Express Lanes will be operational in the southbound direction from 1400 to 1900 hours daily or as determined by GDOT and SRTA. The weekends will be northbound.

TSI Contractor Requirements Overview:

The Toll System Integrator shall coordinate with the selected Civil Contractor to deliver the 75 South Express Lanes. The TSI shall be responsible for: confirming final design requirements, providing input on site specific details, review of tolling infrastructure design plans, schedule coordination for installation of all tolling infrastructure, toll related ITS and communications system components, as well as testing of the tolling components and system, and site inspections for the tolling infrastructure turnovers.

Testing for this project will encompass all required toll system component testing as defined in the TSI RFP through "end to end" testing which will include the full team of partners and is the last step before tolling may commence.

A high level schedule for the civil construction activities is included in the GDOT RFP, which will be provided to TSI shortlisted firms once it has been finalized and released to the public. The GDOT RFP contains schedule requirements for the TSI roadside activities. Currently, the TSI will have a period of 220 days to install, test (component through end to end), and integrate all the required roadside equipment prior to open to tolling.

The scope of the TSI Contractor for providing the roadside tolling related components consists of the below major categories:

1. Electronic Toll Collection System. Includes but is not limited to the following: Multi-protocol readers, antennas, in-pavement loops, zone controllers, violation enforcement cameras, toll lane vehicle detection

equipment, communications from cabinet to controller, power from cabinet to devices, power back-up systems, mounts, brackets, and other incidental items to complete the installation, testing, and integration services.

2. Toll Related intelligent transportation system (ITS). Includes but is not limited to the following: Toll related ITS cameras, general purpose lane scan sites, and integration of the design build team furnished and installed ITS equipment; toll rate Changeable Message Signs (CMS) and microwave detection systems (MDS).

3. Communications. Includes but is not limited to the following: Network design, installation, testing, and integration to support the tolling infrastructure. The logical layer(s) is the responsibility of the TSI. The physical layer (duct bank, conduit, fiber, patch panel) will be furnished and installed by the Design Build team.

4. Maintenance. Includes but is not limited to providing System Maintenance for both the ETCS and the fiber communication network

The TSI Contractor shall also be responsible for providing the appropriate SRTA TOC user interfaces to monitor the equipment, toll rate signs, effective toll rates, traffic conditions (toll related ITS devices), and operate the Electronic Toll Collection system. The toll rate sign cameras will be fully integrated, monitored and controlled in the TOC. SRTA has primary control of all tolling components and toll related ITS components (toll rate CMS, general purpose lanes scan sites, and MDS devices) to support operations.

The TSI roadside toll collection system will capture and process individual tolling point transactions by a vehicle, build those transactions into a Trip, and assign a calculated fare for revenue due. This Trip along with the associated fare will be transmitted to the SRTA BOS for posting to a customer's account and / or for violation processing. The TSI RFP will contain an Interface Control Document (ICD) for the information flow between the TSI roadside system and the SRTA BOS.

The roadside access control system to operate the reversibility of the facility will be designed, furnished, and installed by the Civil Contractor. GDOT's TMC SI will be responsible for integrating it into the existing NaviGAtor system. GDOT's TMC shall have full control of this system. The TSI Contractor will be required to coordinate with the GDOT TMC SI so that an automated message is sent and received between the GDOT TMC NaviGAtor system and SRTA's TOC system to confirm when each of the respective systems has reversed directions.

2. Physical Description of the 75 South Express lanes

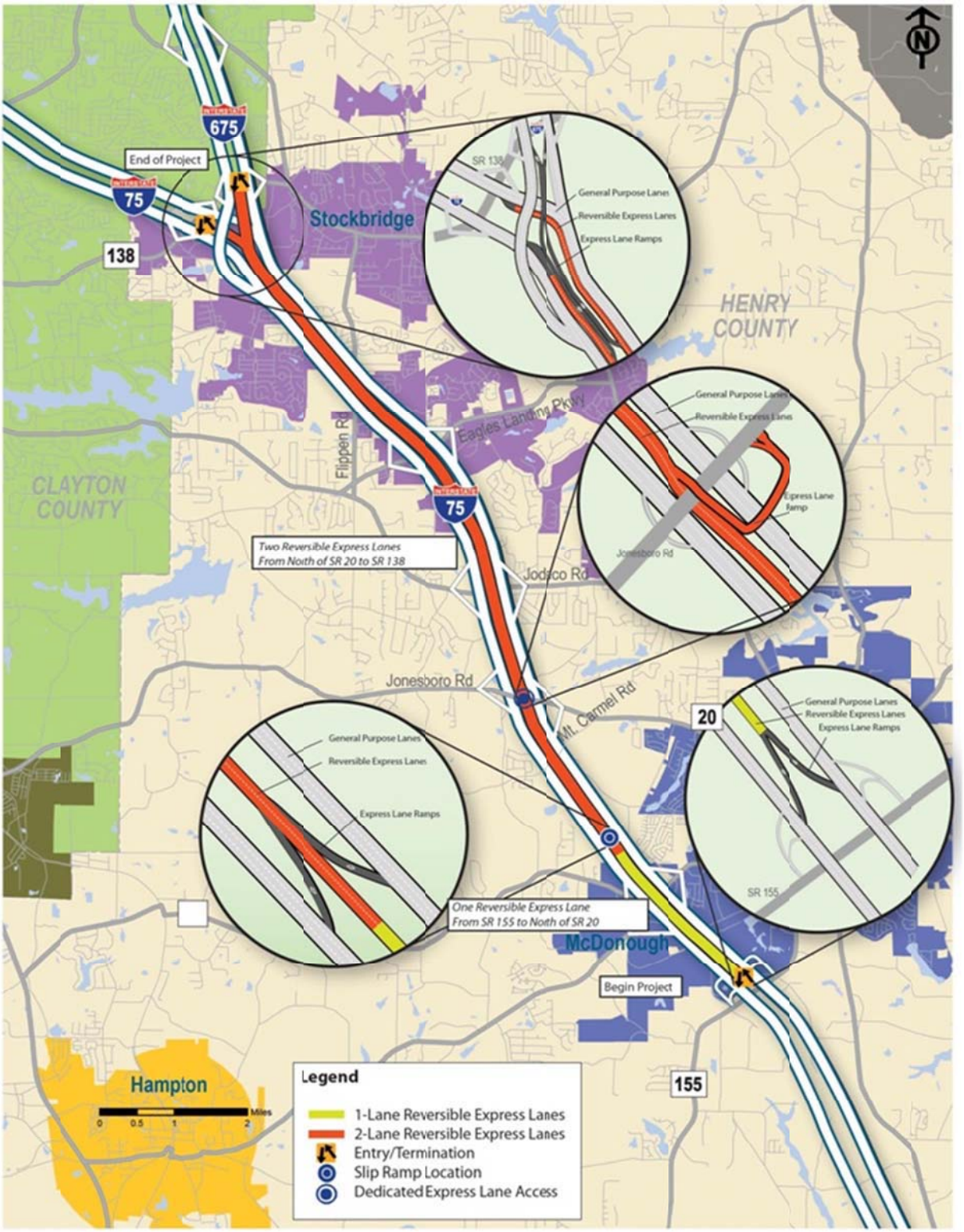
The I-75 South Project will include reversible barrier-separated Express lanes along southbound I-75 and I-675 in Henry and Clayton Counties. The Project's Electronic Toll Collection system will begin at the I-75 Bridge over SR 155/McDonough Road and will consist of one reversible Express lane. Approximately 1-mile south of Mt. Carmel Road, the reversible Express Lane will transition from one to two reversible Express Lanes. Two reversible Express Lanes continue along I-75, ending just south of the I-75 southbound ramp from SR 138/Stockbridge Highway. From the I-75/I-675 Interchange, the Express Lanes continue along I-675 and end at SR 138/Stockbridge Highway. The Express lanes will be variably/dynamically tolled. Primary direction flow will be northbound in the am, and southbound in the pm. The weekends will be northbound.

The current tolling concept proposes the following tolling scheme:

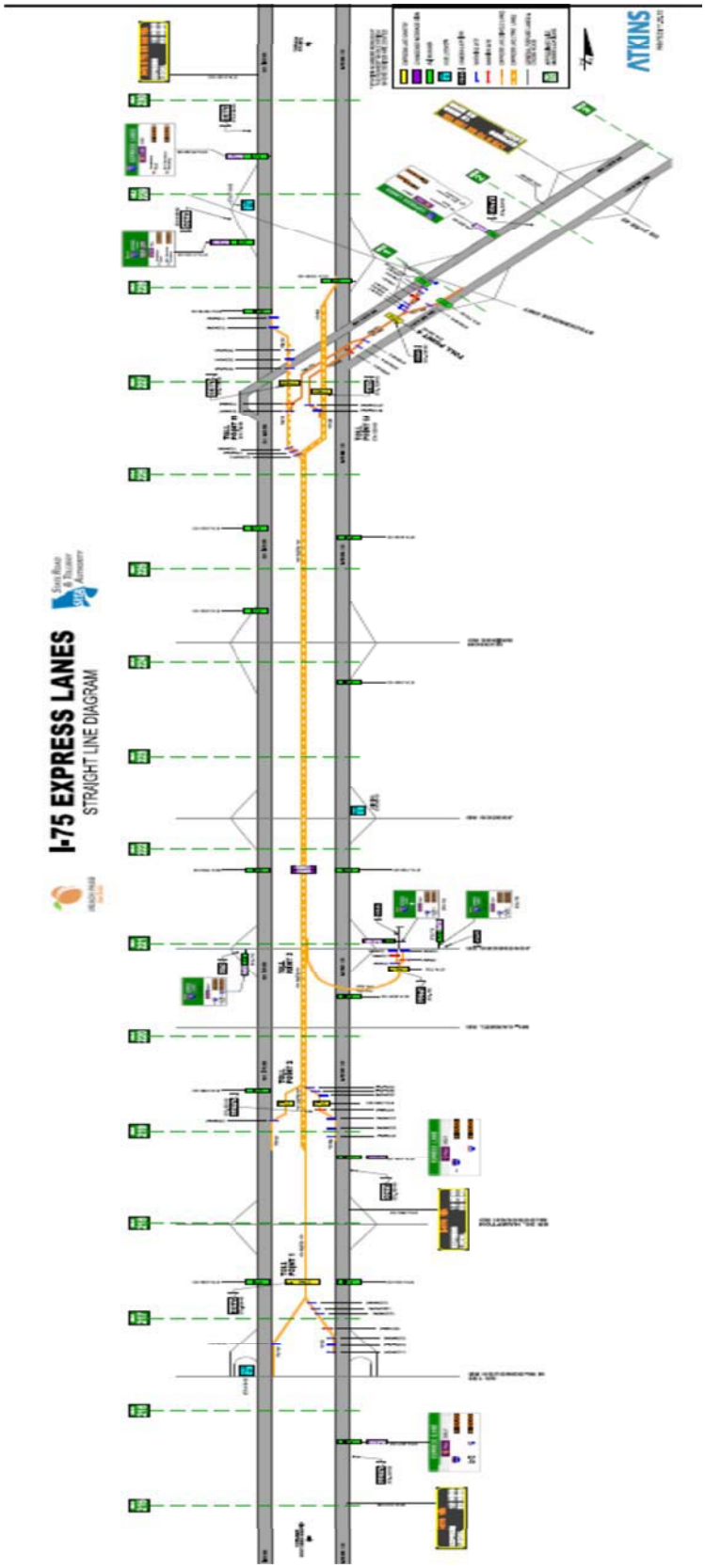
TOLLING POINTS I-75 South Express Lanes

Toll Zone	Description	Reversible	Tolling Lanes
Tolling Zone 1	Double Gantry; Single Lane w/Shoulder	**Y**	**4**
Tolling Zone 2a Tolling Zone 2b	Entry Ramp NB; Single Lane w/Shoulder Exit Ramp SB; Single Lane w/Shoulder	**N** **N**	**2** **2**
Tolling Zone 3	Double Gantry; Entry and Exit Ramp; Single Lane with two ½ Shoulders	**Y**	**2**
Tolling Zone 4	Future – Not included in this procurement		
Tolling Zone 5a Tolling Zone 5b	I-75N; Exit Gantry NB; Double Lane with Shoulder; Entry Ramp SB; Double Lane with Shoulder	**N** **N**	**3** **3**
Tolling Zone 6	I-675; Double Gantry; Single Lane with Shoulder	**Y**	**4**
Total Tolling Lanes			**20**

The two diagrams on the following pages provide a high level overview of the project location, as well as a straight line diagram depicting the currently proposed tolling and ITS concept. The final RFP documents for the civil contract will be furnished to the shortlisted TSI firms upon their release.


End of Project
675
75
138
Stockbridge
HENRY COUNTY
CLAYTON COUNTY
Flippen Rd
Eagles Landing Pkwy
Jodeco Rd
Jonesboro Rd
Mt. Carmel Rd
20
155
McDonough
Begin Project
Hampton
Two Reversible Express Lanes
From North of SR 20 to SR 138
One Reversible Express Lane
From SR 155 to North of SR 20
General Purpose Lanes
Reversible Express Lanes
Express Lane Ramps
Legend
1-Lane Reversible Express Lanes
2-Lane Reversible Express Lanes
Entry/Termination
Slip Ramp Location
Dedicated Express Lane Access
Miles
0 0.5 1 2

Note: The following straight line diagram for the I-75 South project will be available electronically on the SRTA website.



Project Description – I-75/I-575 Northwest Corridor Express Lanes

Toll System Design & Implementation Project

1. Project Description

Project Overview:

The 29.7 mile NWC Managed Lanes Project will include a reversible barrier-separated Electronic Toll Collection system and ITS infrastructure along I-75 and I-575 in Cobb and Cherokee Counties. Tolling points in the NWC Project will be both reversible and non-reversible with a variety of total toll lanes at a tolling point. All tolling points will have a double gantry furnished by the Civil Contractor.

All vehicles passing through a Toll Zone will be classified based on the number of actual axles (per SRTA's classification scheme). Vehicles with up to 6 wheels and up to 3 axles are allowed to travel in the Express Lanes, but tractor trailers are not permitted to use the Express Lanes.

The peak travel periods for the NWC Project are typically southbound between 0530 to 0930 hours and northbound 1530 to 1930 hours daily. The Express Lanes will be operational in the southbound direction between 0500 to 1030 hours and closed from 1030 to 1430 hours. The Express Lanes will be operational in the northbound direction from 1500 to 1900 hours daily, or as determined by GDOT and SRTA. The weekends will be southbound.

TSI Contractor Requirements Overview:

The Toll System Integrator shall coordinate with the selected GDOT Civil Contractor to deliver the I-75/I-575 Northwest Corridor Managed Lanes. The TSI Contractor responsibilities shall be: confirming final design requirements, providing input on site specific details, review of tolling infrastructure design plans, schedule coordination for installation of all tolling infrastructure, toll related ITS and communications system components, as well as testing of the tolling components and system, and site inspections for the tolling infrastructure turnovers.

Testing for this project will encompass all required toll system component testing as defined in the TSI RFP through "end to end" testing which will include the full team of project partners and is the last step before tolling may commence.

A high level preliminary schedule for the Design Build activities is included in the GDOT RFP, which will be provided to the TSI shortlisted firms. The TSI will have to comply with the schedule contained in GDOT's Design Build Contract as the schedule relates to the TSI roadside activities. Currently, the schedule allows the TSI Contractor a period of 270 days to install, test (component through end to end), and integrate all the required roadside equipment prior to open to tolling.

The scope of work for the TSI Contractor is to design, provide, integrate and test the roadside tolling-related components consisting of the major categories below:

1. Electronic Toll Collection System (Toll System). Includes but is not limited to the following: Multi-protocol readers, AVI antennas, in-pavement loops, zone controllers, violation enforcement cameras, toll lane vehicle detection equipment, communications from cabinet to controller, power from cabinet to devices, power back-up systems, mounts, brackets, and other incidental items to complete the installation, testing, and integration services.

2. Toll Related Intelligent Transportation System (ITS). Includes but is not limited to the following: Toll related ITS cameras, general purpose lane scan sites, and integration of the design build team furnished and installed ITS equipment; toll rate CMS signs and microwave detection systems (MVD).

3. Communications. Includes but is not limited to the following: Network design, installation, testing, and integration to support the tolling infrastructure. The logical layer(s) is the responsibility of the TSI. The physical layer (duct bank, conduit, fiber, patch panel) will be furnished and installed by the Design Build team.

4. Maintenance. Includes but is not limited to providing System Maintenance for both the ETCS and the fiber communication network

The TSI Contractor shall also be responsible for providing the appropriate Toll Operations Center (TOC) user interfaces to monitor the equipment, toll rate signs, effective toll rates, traffic conditions (toll related ITS devices), and operate the Electronic Toll Collection system. The toll rate sign cameras will be fully integrated, monitored and controlled in the TOC. SRTA has sole control of all tolling components and toll related ITS components (toll rate CMS, General Purpose lanes (GP) scan sites, and MVD devices) to support operations.

The TSI roadside toll collection system will capture and process individual tolling point transactions by vehicle, build those transactions into a Trip, and assign a calculated fare for revenue due. This Trip along with the associated fare will be transmitted to the SRTA back office system for posting to a customer's account and / or for violation processing. The TSI RFP will contain an ICD for the information flow between the TSI roadside system and the SRTA BOS.

The roadside access control system that will operate the reversibility of the facility will be designed, furnished, and installed by the Civil Contractor. GDOT's TMC SI will responsible for integrating it into the existing NaviGAtor system. GDOT's Traffic Management Center (TMC) shall have full control of this system. The TSI Contractor will be required to coordinate with the GDOT TMC system integrator so that an automated message is sent and received between the GDOT TMC system and SRTA's TOC system to confirm when each of the respective systems has reversed directions.

2. Physical Description of the I-75 Northwest Corridor Managed Lanes

The 29.7-mile NWC Managed Lanes Project will involve the addition of reversible Express Lanes along I-75 and I-575 in Cobb and Cherokee Counties. The Project will include two lanes on the outside of the existing General Purpose Lanes along I-75, between I-285 and I-575. The two reversible tolled Express Lanes will consist of a mix of roadway at-grade, on walls, and elevated highway. In addition, one reversible tolled Express Lane will be added along I-75 between I-575 and Hickory Grove Road, as well as along I-575 to Sixes Road. These lanes will be at-grade and located in the median along the inside of the existing General Purpose lanes. Access to the Express Lanes will be provided by Express Lanes interchanges on I-75 and slip ramps on I-575. Express Lanes interchange access points are proposed along I-75 at I-285, Terrell Mill Road, SR 3 Connector/Roswell Road, I-575 at Barrett Parkway, and Hickory Grove Road. Three pairs of slip ramps are proposed on I-575 at Barrett Parkway, Shallowford Road, and Sixes Road. The exact location of the slip ramp locations differ for southbound and northbound access. The southbound slip ramps

only allow vehicles to enter the reversible-lane system and northbound slip ramps only allow vehicles to exit the reversible-lane system. Reversible ramps providing connection to and from I-285 general purpose lanes are also part of the proposed improvements. Refer to the NWC Map below for interchange and slip ramp locations.

The NWC Managed Lanes Project is being undertaken to provide reliable transportation alternatives, to supply much needed congestion-priced capacity, provide substantial travel time savings, and generate significant economic benefits for the region.

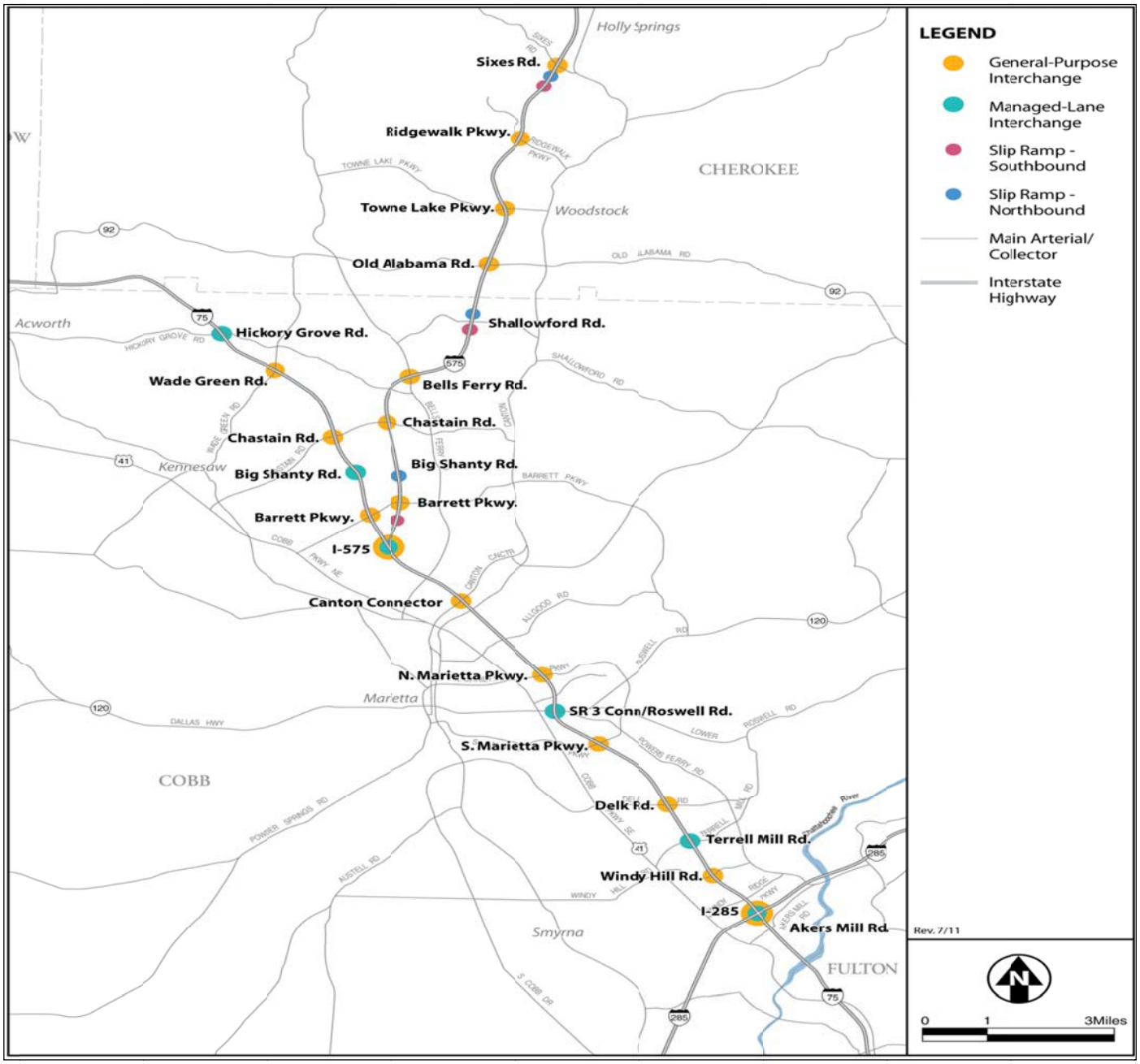
The current tolling concept consists of the following tolling scheme:

TOLLING POINTS I-75 Northwest Corridor Express Lanes

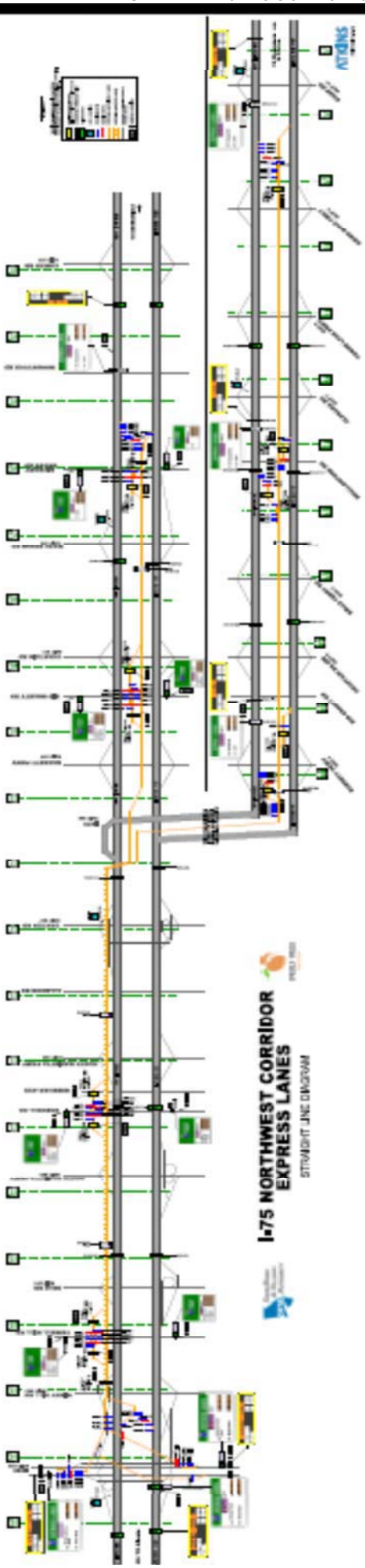
TOLL POINT	Location	Number of Travel Lanes	Number of Shoulders	Total Toll Lanes	Reversible
1	Just N of Windy Hill Road	2	1	6	Yes
2A	Ramp to Terrell Mill, S of overpass	1	1	4	Yes
2B	Ramp from Terrell Mill, N of overpass	1	1	4	Yes
3A	Ramp to Roswell, S of underpass	1	1	4	Yes
3B	Ramp from Roswell, N of underpass	1	1	4	Yes
4A	Ramp to Big Shanty, S of underpass	1	1	4	Yes
4B	Ramp to Big Shanty, N of underpass	1	1	4	Yes
5A	Ramp to Hickory Grove, S of overpass	1	1	4	Yes
6	Just N of Hickory Grove Rd Overpass	1	1	4	Yes
7B	Slip Ramp S of Barrett Pkwy on 575	1	0	1	No
7A	Slip Ramp N of Barrett Pkwy on 575	1	0	1	No

8B	Slip Ramp S of Shallowford Rd on 575	1	0	1	No
8A	Slip Ramp N of Shallowford Rd to 575	1	0	1	No
9	Just N of Ridgewalk Pkwy on 575	1	1	4	Yes
	Total Tolling Lanes			**46**	

The two diagrams on the following pages provide a high level overview of the project location, as well as a straight line diagram depicting the currently proposed tolling and ITS concept. The Design Build RFP will be furnished to shortlisted TSI firms when released by GDOT.


LEGEND
General-Purpose Interchange
Managed-Lane Interchange
Slip Ramp - Southbound
Slip Ramp - Northbound
Main Arterial/ Collector
Interstate Highway
Rev. 7/11
0
1
3Miles
Holly Springs
Sixes Rd.
Ridgewalk Pkwy.
CHEROKEE
Towne Lake Pkwy.
Woodstock
Old Alabama Rd.
Shallowford Rd.
Acworth
Hickory Grove Rd.
Wade Green Rd.
Bells Ferry Rd.
Chastain Rd.
Chastain Rd.
Kennesaw
Big Shanty Rd.
Big Shanty Rd.
Barrett Pkwy.
Barrett Pkwy.
I-575
Canton Connector
N. Marietta Pkwy.
Marietta
SR 3 Conn/Roswell Rd.
S. Marietta Pkwy.
COBB
Delk Rd.
Terrell Mill Rd.
Windy Hill Rd.
I-285
Akers Mill Rd.
Smyrna
FULTON

Note: The following straight line diagram for the I-75 NWC project will be available electronically on the SRTA website.



APPENDIX C

DELIVERABLES SCHEDULE

Appendix C – Deliverables Schedule

RFP Section	Submittal	When	Review Period * (Calendar Days)
Project Management			
4.1.2	Master Project Schedule	NTP+15 days	~~15~~ 20 days
4.1.1	Project Management Plan (PMP)	NTP+30 days	~~15~~ 20 days
4.3.3	Safety Plan	NTP+30 days	~~10~~ 15 days
4.3.4	Security Plan	NTP+30 days	~~10~~ 15 days
4.2.1	Quality Management Plan (QMP)	NTP+30 days	~~10~~ 15 days
4.3.6	Configuration Management and Document Control Plan	NTP+30 days	~~10~~ 15 days
4.3.2	FCC Licensing Forms	Schedule	~~10~~ 15 days
4.5.1	I-75 South Installation Plan (detailed project specific plans)	NTP+60 Days	~~21~~ 30 days
4.5.1	NWC Installation Plan (project specific concerns - Not Detailed)	NTP+60 Days	~~21~~ 30 days
4.5.1	NWC Installation Plan (detailed project specific plans)	Schedule	~~21~~ 30 days
4.6.1	Preliminary Master Test Plan	NTP+60 Days	~~21~~ 30 days
6.3	Final Maintenance Plan	NLT 120 days prior to go live	~~21~~ 30 days
3.10.1.1	System Access Level Matrix	30 days prior to FAT	~~10~~ 15 days
3.10.1.1	System Access Level Matrix (Final)	60 days prior to system commissioning (satisfactory completion of Integration Tests)	~~10~~ 15 days
4.5.3.1	Traffic Control (MOT) Plan	NLT 60 days prior to the first site turnover	~~10~~ 15 days
Design Submittals			
4.3.8	Initial Business Rules Draft	NTP+120 Days	~~10~~ 15 days

RFP Section	Submittal	When	Review Period * (Calendar Days)
4.3.8	Second Business Rules Draft	NTP+180 Days	~~10~~ 15 days
4.3.8	Final Business Rules Document	NTP+240 Days	~~10~~ 15 days
4.4.2	System Requirements Document (SRD)	Schedule	~~21~~ 30 days
3.2.3	ISO 18000-6C Certification	Schedule (with PDD documents prior to PDR)	~~10~~ 15 days
4.4.3	PDD (Developed under I-75 South for Both Projects)	Schedule (all PDD documents must be submitted 3 weeks prior to PDR)	~~30~~ 45 days
3.5.2.1	Entity Relationship Diagram	Schedule (with SDDD documents prior to DDR)	~~10~~ 15 days
4.3.5	Disaster Recovery Plan	Schedule (with SDDD documents prior to DDR)	~~15~~ 20 days
4.4.6	ICDs	Design Phase Schedule (with SDDD documents prior to DDR)	~~30~~ 45 days
6.3	Updated Maintenance Plan	Design Phase Schedule (with SDDD documents prior to DDR)	~~15~~ 20 days
3.5.3	Comprehensive Data Archive & Backup Plan	Design Phase Schedule (with SDDD documents prior to DDR)	~~15~~ 20 days
4.4.4	SDDD (Required for Each Project)	Schedule (all SDDD documents must be submitted 3 weeks prior to DDR)	~~30~~ 45 days
Appendix F	Final Fiber Assignments	Schedule	~~15~~ 20 days
4.4.5	SDDD As Built	30 Days after System Acceptance	~~21~~ 30 days
4.5.3.2	Installation Check List	Schedule	~~15~~ 20 days
4.3.7	Installation Shop Drawings & As Built	Schedule	~~30~~ 45 days
4.6.5.2	FAT Test Plan & Procedures	NLT 30 days prior to FAT	~~21~~ 30 days

RFP Section	Submittal	When	Review Period * (Calendar Days)
4.6.1	Final Master Test Plan	Schedule (with SDDD documents prior to DDR)	~~21~~ 30 days
4.6.8.1	First In-Lane Site Installation Test Procedures	Schedule but NLT 30 days prior to start of each Test Phase	~~21~~ 30 days
4.6.9	Integration Tests Procedures for each type site	Schedule but NLT 30 days prior to start of each Test Phase	~~21~~ 30 days
Training Submittals			
5.2	Training Program Plan	Included with the SDDD	
5.3	DRAFT Training Materials for all classes	SDDD + 120 days after SRTA approval of SDDD	~~30~~ 45 days
5.4, 5.4.1	High Level Overview Course #1	TBD by SRTA	NA
5.4, 5.4.2	System Operation Course #1	NLT than 15 days after each Facility Host is Installed and Integrated to Network	NA
5.4, 5.4.2	System Operations Course #2	NLT 30 days prior to System Integration Test	NA
5.4, 5.4.1	High Level Overview Course #2	NLT 30 days prior to System Integration Test	NA
5.4, 5.4.4	System Administration Course #1	NLT 30 days prior to System Integration Test	NA
5.4, 5.4.3	Image Review Course #1	NLT 30 days prior to System Integration Test	NA
5.4, 5.4.2	System Operations Course #3	NLT 30 days prior to End to End Test	NA
5.4, 5.4.4	System Administration Course #3	NLT 30 days prior to End to End Test	NA
5.4, 5.4.3	Image Review Course #2	NLT 30 days prior to End to End Test	NA
5.4, 5.4.1	High Level Overview Course #3	TBD by SRTA	NA
5.4, 5.4.4	System Administration Course #3	TBD by SRTA	NA
5.4, 5.4.3	Image Review Course #3	TBD by SRTA	NA
Manual Submittals			
5.6.1	System Administration Manual	NLT 60 days prior to System Integration Test	~~15~~ 20 Days
5.6.2	System Audit Manual	NLT 60 days prior to System Integration Testing and Prior to Training	~~15~~ 20 Days
3.5.6.2, 5.6.4	Report User Manual	NLT 60 days prior to System Integration Testing and Prior to Training	~~15~~ 20 Days

RFP Section	Submittal	When	Review Period * (Calendar Days)
5.6.3	System User Manuals	NLT 60 days prior to System Integration Testing	~~21~~ 30 days
5.6.3	Image Processing System Supervisor's Manual	NLT 60 days prior to System Integration Testing	~~21~~ 30days
5.6.3	Image Processing System Reviewer's User Manual	NLT 60 days prior to System Integration Testing	~~21~~ 30 days
5.7	Preliminary Maintenance & Service Manual(s)	SDDD + 120 days after SRTA approval of SDDD	~~30~~ 45days
5.7	Final Maintenance & Service Manual(s)	NLT 120 days prior to Go Live	~~30~~ 45 days
5.6.5	Third Party Hardware Manuals	Prior to Completion of System Acceptance Test	~~15~~ 20 days
5.6.6	Third Party Software Manuals	Prior to Completion of System Acceptance Test	~~15~~ 20 days

* Review period is time required to review document and for generation of comments

APPENDIX D

PERFORMANCE REQUIREMENTS AND SLA'S

Appendix D – Performance Requirements and SLA's

Addendum #~~2~~6 ~~June~~July 19, 2013

Terms and Conditions

1 Overview

The Agreement obliges the TSI Contractor to meet certain defined levels of performance in the execution of the Scope of Work. This Appendix D which includes the SLA Table, attached hereto and incorporated herein, describes the minimum performance requirements the TSI Contractor must meet. The TSI Contractor is responsible for demonstrating that the performance requirements of the RFP and as otherwise described herein can be met or exceeded prior to Final System Acceptance. The measurement of these key performance parameters and levels of service shall be automated where possible and shall be straightforward and data-driven, as reasonably determined by SRTA. The performance requirements are intended to be consistent with the written requirements of the Contract Documents.

The TSI Contractor shall develop reports that compare actual results to the requirements as defined in this Appendix and shall submit these reports to SRTA within seven (7) business days of each month end. The methods and results of the measurement process shall be fully subject to independent audit and shall be utilized by the TSI Contractor to trigger timely action to correct any deficiencies and failures in order to meet required accuracy and availability requirements.

Actual performance shall be defined and measured against the requirements and time periods in the SLA table in order to assess the overall quality, reliability, integrity and value of the delivered system. This Appendix addresses requirements for the following major areas of performance and levels of service:

1. Availability;
2. Accuracy;
3. Time Constraints; and
4. Maintenance (Response/Repair timing).

2 Reports and Record Keeping

The TSI Contractor shall provide monitoring reports that shall be generated on a monthly basis and submitted to SRTA by the 7th business day following month end. The TSI Contractor shall maintain all corresponding supporting data in compliance with the data retention policies outlined in the RFP and shall be made available to SRTA upon request. The TSI Contractor shall be subject to Liquidated Damages as described in the SLA Table for failure to provide the required reports within the specified timeframe or if reports are not accurate or complete.

3 Key Performance Requirements

3.1 Availability Requirements

Availability requirements are specified in the SLA Table. Availability shall be measured using the methods described below. These requirements shall be initially applied at the start of the Warranty Phase. After 12 months and once SRTA has certified Systems Acceptance, the Project shall transition to the Maintenance Phase. The monthly warranty fee or maintenance fee, as applicable,

shall be subject to monthly assessment of availability and reliability measurement, as well as other criteria as set forth in the SLA Table, and applicable damages for failure to meet such criteria.

Performance Reviews

SRTA will review the TSI Contractor's performance on a monthly basis, using required system reports provided by the TSI Contractor including reports generated and created by MOMS. Performance reviews shall begin one (1) month after commencement of the Warranty Phase and shall include evaluation of the previous month of operation. SRTA may elect to waive or impose damages during the first four (4) months of the Warranty Phase.

Availability Requirements

The Availability requirements as specified in the SLA Table shall be measured during the Systems Acceptance Test and monthly thereafter. The availability requirements will not measure approved scheduled preventive maintenance activities.

The availability calculation will not include downtime during any period when SRTA/GDOT does not allow the TSI Contractor to close a lane or otherwise work along the roadway unless such failure to approve is the result of the TSI Contractor not following GDOT's procedures in making the request.

Chargeable and Non-Chargeable Failures

For purposes of calculating Availability performance requirements for testing and for maintenance performance chargeable and non-chargeable failures are defined as follows:

Chargeable Failures

Chargeable failures include any failures that are not specifically identified as non-chargeable below, including but not limited to:

1. A malfunction which prevents the Electronic Toll Collection System (hardware or software) from performing its designated function, when used and operated under its intended operational and environmental conditions as detailed in this Scope of Work.
2. A malfunction that poses a threat to the safety of the Electronic Toll Collection System components, Toll Collection System customers, employees or others.
3. An occurrence where data is not successfully transmitted between the Toll Zone Locations and the Facility Host System unless the failure is already accounted for as a separate performance failure (e.g., if the Zone Controller is not functioning and does not transmit data to the Facility Host System, the zone would be charged for the failure but the System would not).
4. Any failure of equipment or software that allows revenue loss to occur on the Electronic Toll Collection System that is not already accounted for as a separate performance failure.
5. Major software anomalies and bugs that affect the performance and operation of the Electronic Toll Collection System.
6. Shutdown or unavailability of a Toll Zone or Facility Host System unless specifically directed.
7. Failure to properly register or transmit a transaction record from a Toll Zone Location to the Facility Host System.
8. Failure to properly reconcile the Electronic Toll Collection System.
9. Failure to transmit a transaction's correct toll amount to SRTA's BOS.

10. Failure to transmit the correct toll amounts to the CMS within the required time period.
11. Loss of data either at the lane or Facility Host level including failure to meet data retention requirements.
12. Failure to electronically send or receive transaction information.
13. Failure to generate the reports required to reconcile and audit the system.

Non-Chargeable Failures

Non chargeable failures shall include:

1. Force majeure, as defined in the Agreement.
2. Vandalism.
3. System component failures caused by environmental or operating conditions outside of the design standards of the equipment.
4. Failures of expendable and consumable items in operation beyond their intended useful life in testing. (However, under the maintenance requirements of this Scope of Work, as TSI Contractor shall be responsible for preventive maintenance and shall be responsible for the regular replacement of consumables, such failures shall be considered chargeable if they affect system operation or performance).
5. Failures that are customer or user induced.

3.2 Accuracy Requirements

Accuracy requirements for the Project are specified in the SLA Table.

3.3 Time Constraint Requirements

Time Constraint requirements for the Project are specified in the SLA Table.

3.4 Maintenance Service Level Requirements

The TSI Contractor shall provide sufficient personnel, tools and other necessary resources to meet the service level requirements defined in the SLA Table.

3.4.1. Maintenance Support Requirements

Maintenance response time shall be measured from the time when the TSI Contractor receives notification of the maintenance event or failure and ending when the maintenance technician arrives at the site of the problem or acknowledges the associated alarm or alert in the MOMS application.

Repair time shall be measured from the time when the technician arrives at the site or when the technician acknowledges the failure to the time when the failure condition is corrected and the system is returned to normal operation. If access to the equipment in question is denied to the TSI Contractor based on SRTA policy, the repair time shall be measured beginning when SRTA has allowed the TSI Contractor access to the equipment.

Both the response time and the repair time shall be registered in the MOMS. Failure to meet the required response and repair times shall be monitored through MOMS reports.

3.4.2. Routine Maintenance Activities Requirements

The TSI Contractor shall perform routine maintenance activities in accordance with the approved Maintenance schedule.

3.4.3. Stop Clock Conditions

The TSI Contractor may be excused from its obligation to meet the performance and service level requirements set forth above under certain conditions that shall be referred to as "Stop Clock Conditions." Only the time during which such conditions are present shall be excluded from the timeframes used to measure the TSI Contractor's performance as set forth below:

A. The TSI Contractor will exclude from its availability calculations the time arising from any of the following "Stop Clock Conditions":

   1. Loss of connectivity to all GDOT provisioned roadside Hub buildings if the loss of connectivity to all Hubs is caused by a third party not under the direct or indirect control of TSI Contractor and not reasonably preventable by TSI Contractor, including, but not limited to, fiber cuts not caused by the TSI Contractor. For purposes of this provision, TSI Contractor's employees, affiliates, subsidiaries, tel/data services providers, agents, suppliers or subcontractors shall be deemed to be under the control of TSI Contractor with respect to the equipment, services, or facilities to be provided under this Agreement.

   2. The following SRTA or GDOT contact/access problems, provided that TSI Contractor makes reasonable efforts to contact SRTA's Project Manager immediately upon the commencement of the Stop Clock period:

      (i) Access necessary to correct the problem at a SRTA or GDOT owned site is not available because access is improperly denied or not arranged by the site contact or SRTA representative, provided that TSI Contractor properly scheduled the visit or access beforehand, if advance notice was required.

      (ii) GDOT construction activities that prevent TSI Contractor from performing previously scheduled maintenance or repair of In-Lane equipment or systems.

      (iii) Incorrect site contact information which prevents access, provided that TSI Contractor takes reasonable steps to notify immediately SRTA's Project Manager of the improper contact information and takes reasonable steps to obtain the correct information.

      If it is determined later that the cause of the problem was not SRTA's fault or responsibility; or in the event of denied access, if the reason was determined to be proper, then the Stop Clock Condition shall not apply.

   3. Routine Scheduled Maintenance provided such schedule was provided to and approved by SRTA's Project Manager in advance and in writing; provided however, that in no event shall the Stop Clock Condition time period be extended beyond the standard routine scheduled maintenance time period.

   4. Force Majeure events.

B. Notwithstanding any other provision of the Contract Documents to the contrary, Stop Clock Conditions do not apply to:

   1. TSI Contractor's response time performance requirements as set forth in the RFP generally and Appendix D specifically.

   2. Testing or maintenance initiated by TSI Contractor outside of routine scheduled maintenance windows.

3. Power fluctuations caused by electrical utility providers, common carriers, TSI Contractor, TSI Contractor's affiliates, subsidiaries, data services providers, or subcontractors.

4. Time period during which SRTA has made reasonable efforts to notify TSI Contractor's Project Manager of a problem, but TSI Contractor's Project Manager was not available or reachable.

5. Failure of the TSI Contractor to provide adequate facilities (including cabinets, sunshields, etc.) to ensure delivery of the contracted services will not be considered a valid Stop Clock Condition to the extent such failure of TSI Contractor contributed to the Stop Clock Condition.

6. Any other reason or cause not expressly listed in above for which the TSI Contractor is responsible.

C. If TSI Contractor asserts Force Majeure or failure of SRTA/GDOT provided equipment as an excuse to performance, TSI Contractor shall have the burden of: (i) proving sole proximate cause to SRTA's satisfaction, (ii) that TSI Contractor took reasonable steps to minimize the delay and damages caused by events when known or should have been known, and (iii) that TSI Contractor timely notified SRTA of the actual occurrence which is claimed as grounds for a defense under this clause (if any).

3.4.4. Help Desk Support Requirements

The TSI Contractor shall supply personnel with expertise in the support of the system hardware, software and database management system(s) during SRTA working hours (to be determined during the system design phase) to provide a help desk function for all TSI Contractor-supplied systems and subsystems. The help desk is intended to act as a central point of contact for all technical support, including hardware and software questions, installation of updated versions of software, networking, network connection requests, and troubleshooting.

3.5 Miscellaneous

3.5.1 Single Event Causing Cumulative Liquidated Damages.

If the TSI Contractor can prove to SRTA's reasonable satisfaction that a single event causes the TSI Contractor to fail to meet more than one SLA, cumulative Liquidated Damages shall not be imposed, but instead the highest applicable Liquidated Damages relative to such occurrence shall apply. By way of example and not limitation, if the power subsystem goes down affecting multiple devices such as the GP lane AVI scan site and the MDS, the TSI Contractor will be subject to liquidated damages for the GP lane AVI scan site but not for the MDS. If the TSI Contractor fails to repair the the GP lane AVI scan site and the MDS according to the service levels set forth in Appendix D, then the TSI Contractor shall, in addition to the liquidated damages assessed for the the GP lane AVI scan site, will be responsible for liquidated damages resulting from not meeting the repair time service levels for the GP lane AVI scan site and the MDS.

3.5.2 Calculation of Damages

For the purpose of calculating liquidated damages, all timeframes stated in the ***Damages*** column of the following chart shall be the time stated or any portion thereof. By way of example and not by limitation, if in SLA ~~#2~~AV5, the Zone Controller fails to meet the SLA by 31 minutes for one lane of peak travel hours, then the Liquidated Damages assessed for failure to meet this SLA will be $1,200. Likewise, if the Zone Controller fails to meet the SLA by 2 minutes for one lane of peak travel hours, then the Liquidated Damages assessed for failure to meet this SLA will be $600.

SLA Response Instructions

The TSI shall respond to requirements contained in Appendix D according to the following procedure. In all instances, ***the TSI shall complete all highlighted cells*** in the SLA table (the following spreadsheet).

For all SLA items in the table, the TSI should:

1. In column M of the table(with the heading "Will the TSI comply with the performance requirements (Y/N)?"), fill in "Y" or "N" ***for EACH SLA item,*** to indicate if the TSI will or will not comply with the SLA requirement.

2. A ninety (90) day stabilization period is provided for. This allows a separate SLA level to be identified for the periods of days 1 through 90 (commencing with the start of the Warranty phase - this is identified in column D "Minimum Performance Level Open to Tolling Days 1 Thru 90") and then days 91 through the end of the contract term (in column F "Minimum Performance Level Day 91 and Beyond"). SRTA has provided the minimum acceptable SLA performance levels for each SLA in the table. In columns E and G, for each SLA item, the TSI Contractor will fill in the performance level to which they commit. The TSI Contractor can indicate any performance level that is ***equal to o r better*** than SRTA's prescribed minimum levels. Indicating a performance level higher than the minimum may result in a higher proposal evaluation score as it results to Appendix D.

3. In column I of the table ("Measurement Method"), if a cell is marked "TSI Contractor to propose their solutions", the TSI Contractor will describe how the SLA will be measured and reported upon. SRTA understands the measurement of some SLAs will vary based on a TSI Contractor's particular system design, so this approach allows the TSI Contractor to propose the most effective, efficient measurement process as it relates to their implementation.

4. The TSI Contractor will not edit/alter any other cells in the spreadsheet.

Appendix D - Performance Requirements and SLAs

Addendum #7 - July 24, 2013 - changes from Addendum #2 shown in RED

Note: TSI's shall provide responses within all cells which are highlighted yellow on this worksheet. See SLA response instructions

SLA #	Service Level KPIs	Definition	Minimum Performance Level Days 1 Thru 90	TSI Proposed SLA Level Days 1 thru 90	Minimum Performance Level Day 91 and Beyond	TSI Proposed SLA Level Day 91 and Beyond	Measured Unit by each Roadway (unless otherwise noted)	Measurement Method	System Acceptance Test Measurement Requirement	Operations Measurement Period/Sample	Damages*	Will the TSI comply with the performance requirements (Y/N)?
Availability												
AV1	Deleted											
AV2	Deleted											
AV3	Deleted											
AV4	Gantry Tolling Equipment - DVAS	Gantry DVAS infrastructure is considered available if it is able to accurately record traffic video and correlate video to transactions to transaction records.	98.00%	TSI Contractor to propose their performance level.	98.00%	TSI Contractor to propose their performance level.	minutes available / total minutes in measured time period for the DVAS system	TSI Contractor to propose their solutions.	During entire SAT time period, availability to be measured/reported by TSI Contractor.	Measured Monthly for entire time period	For every 2 hours below the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 1% of the monthly maintenance/warranty fee.	
AV5	Zone Controller	Zone Controller infrastructure is considered available if it is receiving, processing and sending transactions to the Facility Host. This applies to the Zone Controller redundant pair as a whole and is not measured individually. ~~This also includes the AVI, AVC and VES systems being available.~~	99.95%	TSI Contractor to propose their performance level.	99.95%	TSI Contractor to propose their performance level.	minutes available / total minutes in measured time period for each Toll Zone	TSI Contractor to propose their solutions.	During entire SAT time period, availability to be measured/reported by TSI Contractor.	Measured Monthly for entire time period	For every 30 minutes below the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of $600 per travel lane affected during peak hours, and $200 per travel lane affected during off peak hours.	
AV6	Deleted											
AV7	Facility Host Applications, including Trip Building, Image Processing, Dashboards, External Interfaces, MOMS, CCTV (including DVAS)	A Facility Host Application (including but not limited to those listed) will be considered available if it is functioning per the system design requirements.	99.00%	TSI Contractor to propose their performance level.	99.50%	TSI Contractor to propose their performance level.	minutes available / total minutes in measured time period for the aggregation of all applications for the combination of all facilty hosts that provide redundancy.	TSI Contractor to propose their solutions.	During entire SAT time period, availability to be measured/reported by TSI Contractor.	Measured Monthly for entire time period	For each Facility Host application (to be defined during the Design phase) individually: for every hour below the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 2% of the monthly maintenance/warranty fee.	
AV8	Facility Host Pricing Application	The Facility Host Pricing Application is considered available if it is calculating and posting toll rates to appropriate CMSs per SRTA business rules.	99.30%	TSI Contractor to propose their performance level.	99.90%	TSI Contractor to propose their performance level.	minutes available / total minutes in measured time period	TSI Contractor to propose their solutions.	During entire SAT time period, availability to be measured/reported by TSI Contractor.	Measured Monthly for entire time period	Direct damages.	
AV9	Network Connectivity (All LAN links provided or maintained by TSI Contractor - this includes all SRTA/GDOT fiber network links)	The ability of each LAN link delivered by TSI Contractor to transmit data.	99.90%	TSI Contractor to propose their performance level.	99.99%	TSI Contractor to propose their performance level.	minutes available / total minutes in measured time period for each LAN link	TSI Contractor to propose their solutions.	During entire SAT time period, availability to be measured/reported by TSI Contractor.	Measured Monthly for entire time period	For each individual LAN link ~~VLAN~~: For every 0.1% below the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 2% of the monthly maintenance/warranty fee.	
AV10	Network Connectivity (All WAN links provided or maintained by TSI Contractor)	The ability of each WAN link delivered by TSI Contractor to transmit data.	99.00%	TSI Contractor to propose their performance level.	99.90%	TSI Contractor to propose their performance level.	minutes available / total minutes in measured time period for each WAN link	TSI Contractor to propose their solutions.	During entire SAT time period, availability to be measured/reported by TSI Contractor.	Measured Monthly for entire time period	For each individual WAN link: For every 1% below the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of .5% of the monthly maintenance/warranty fee.	
AV11	MDS Units	An MDS unit is considered available if it is collecting and reporting traffic data.	97.00%	TSI Contractor to propose their performance level.	98.00%	TSI Contractor to propose their performance level.	minutes available / total minutes in measured time period for each MDS unit	TSI Contractor to propose their solutions.	During entire SAT time period, availability to be measured/reported by TSI Contractor.	Measured Monthly for entire time period	For every hour below the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 0.2% of the monthly maintenance/warranty fee. This will be measured as an average of the availability of all TSI Contractor maintained MDS units.	

* All time periods shall be calculated based on the time frame indicated or a portion thereof-See Performance Requirements and SLAs/Terms and Conditions Section 3.5.2 for more details.

Appendix D - Performance Requirements and SLAs

Addendum #7 - July 24, 2013 - changes from Addendum #2 shown in RED

SLA #	Service Level KPIs	Definition	Minimum Performance Level Days 1 Thru 90	TSI Proposed SLA Level Days 1 thru 90	Minimum Performance Level Day 91 and Beyond	TSI Proposed SLA Level Day 91 and Beyond	Measured Unit by each Roadway (unless otherwise noted)	Measurement Method	System Acceptance Test Measurement Requirement	Operations Measurement Period/Sample	Damages*	Will the TSI comply with the performance requirements (Y/N)?
AV12	Toll Rate CMS	A toll Rate CMS is considered available if the sign is correctly displaying messages.	99.80%	TSI Contractor to propose their performance level.	99.90%	TSI Contractor to propose their performance level.	minutes available / total minutes in measured time period for each CMS	TSI Contractor to propose their solutions.	During entire SAT time period, availability to be measured/reported by TSI Contractor.	Measured Monthly for entire time period	Direct damages	
AV13	Toll Rate CMS AVI systems	A Toll Rate CMS AVI system is considered available if it is able to record/report transponder reads.	99.80%	TSI Contractor to propose their performance level.	99.80%	TSI Contractor to propose their performance level.	minutes available / total minutes in measured time period for each CMS AVI	TSI Contractor to propose their solutions.	During entire SAT time period, availability to be measured/reported by TSI Contractor.	Measured Monthly for entire time period	For every hour below the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 0.5% of the monthly maintenance/warranty fee.	
AV14	GP Lane AVI Systems	A General Purpose Lane AVI system is considered available if it is able to accurately record/report transponder reads per the SLAs pertaining to GP Lane AVI performance.	99.00%	TSI Contractor to propose their performance level.	99.00%	TSI Contractor to propose their performance level.	minutes available / total minutes in measured time period for each GP AVI	TSI Contractor to propose their solutions.	During entire SAT time period, availability to be measured/reported by TSI Contractor.	Measured Monthly for entire time period	For each AVI Scan Site individually: every 4 hours below the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 0.5% of the monthly maintenance/warranty fee.	
AV15	Toll Rate CCTV Site	A Toll Rate CCTV site (individual cameras including related systems required for viewing the video at TOC locations) is considered available if it is able to display real time CCTV camera images with no more than a 5 second delay.	99.90%	TSI Contractor to propose their performance level.	99.90%	TSI Contractor to propose their performance level.	minutes available / total minutes in measured time period for each CCTV	TSI Contractor to propose their solutions.	During entire SAT time period, availability to be measured/reported by TSI Contractor.	Measured Monthly for entire time period	For each camera installation individually: For every hour below the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 0.5% of the monthly maintenance/warranty fee.	
AV16	Deleted											
AV17	Deleted											
Accuracy												
AC1	**Toll Zone Vehicle Detection *Note, AC1 - AC6 apply to all vehicles except motorcycles, traveling through a Toll Zone (whether completely in or straddling lanes and shoulders) that are separated from other vehicles in the same travel lane by a minimum of 6 feet, at speeds from stop and go to 85mph.**	Each vehicle passing through a Toll Zone will be detected/reported once, and only once (no exception made for degradation or loss in the availability of the AVC).	99.50%	TSI Contractor to propose their performance level.	99.90%	TSI Contractor to propose their performance level.	Vehicle detected? (Yes/No)	TSI Contractor to propose their solutions.	All lanes tested with a sample size sufficient to show an 80% confidence that the SLA is being met.	On a monthly basis, the TSI Contractor will audit a sample size sufficient to show an 80% confidence that the SLA is being met on all directions of travel on one sixth of the operational Project Toll Zones.	Direct damages	
AC2	Toll Zone Vehicle Classification	Each vehicle passing through a Toll Zone will have their classification (per SRTA's axle-based classification scheme) associated with the vehicle. At least 97% of the vehicles will be two axle and the remaining 3% will be vehicles with more than two axles (no exception made for degradation or loss in the availability of the AVC).	98.00%	TSI Contractor to propose their performance level.	99.80%	TSI Contractor to propose their performance level.	Axles	TSI Contractor to propose their solutions.	All lanes tested with a sample size sufficient to show an 80% confidence that the SLA is being met.	On a monthly basis, the TSI Contractor will audit a sample size sufficient to show an 80% confidence that the SLA is being met on all directions of travel on one sixth of the operational Project Toll Zones.	Direct damages	
AC3	Toll Zone AVI Read/Correlation	Each vehicle passing through a Toll Zone will have all required transponder information, for up to two transponders (issued by SRTA or by interoperable agencies) properly mounted in/on the vehicle, accurately detected, reported and correlated with the correct vehicle. If a vehicle has more than one IAG or eGo Plus transponder mounted, this SLA does not apply (no exception made for degradation or loss in the availability of the AVI).	First transponder read: 99.5% Second transponder read: Best Efforts	TSI Contractor to propose their performance level.	First transponder read: 99.95% Second transponder read: Best Efforts	TSI Contractor to propose their performance level.	Transponder read? (Yes/No)	TSI Contractor to propose their solutions.	All lanes tested with a sample size sufficient to show an 80% confidence that the SLA is being met.	On a monthly basis, the TSI Contractor will audit a sample size sufficient to show an 80% confidence that the SLA is being met on all directions of travel on one sixth of the operational Project Toll Zones.	Direct damages	
AC4	Image Capture/Correlation	Each vehicle passing through a Toll Zone will have all required images captured and correlated with the correct vehicle (no exception made for degradation or loss in the availability of the AVC/VES).	99.80%	TSI Contractor to propose their performance level.	99.90%	TSI Contractor to propose their performance level.	Images captured? (Yes/No)	TSI Contractor to propose their solutions.	All lanes tested with a sample size sufficient to show an 80% confidence that the SLA is being met.	On a monthly basis, the TSI Contractor will audit a sample size sufficient to show an 80% confidence that the SLA is being met on all directions of travel on one sixth of the operational Project Toll Zones.	Direct damages	

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SLA #	Service Level KPIs	Definition	Minimum Performance Level Days 1 Thru 90	TSI Proposed SLA Level Days 1 thru 90	Minimum Performance Level Day 91 and Beyond	TSI Proposed SLA Level Day 91 and Beyond	Measured Unit by each Roadway (unless otherwise noted)	Measurement Method	System Acceptance Test Measurement Requirement	Operations Measurement Period/Sample	Damages*	Will the TSI comply with the performance requirements (Y/N)?
AC5	Express Lane Vehicle Speed	Each vehicle passing through a Toll Zone will have its speed captured and correlated with the correct vehicle.	Reported speed is plus or minus 5mph of actual speeds	TSI Contractor to propose their performance level.	Reported speed is plus or minus 3 mph of actual speeds	TSI Contractor to propose their performance level.	Miles Per Hour	TSI Contractor to propose their solutions.	All lanes tested - 30 samples per lane per site.	On a monthly basis, the TSI Contractor will audit 30 samples per lane on all directions of travel on one sixth of the operational Project Toll Zones.	For each toll zone (direction of travel including all lanes at a gantry location) individually: For every 5 mph outside of the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 0.5% of the monthly maintenance/warranty fee.	
AC6	Express Lane Vehicle Direction	Each vehicle passing through a Toll Zone will have its direction of travel (North or South) captured and correlated with the correct vehicle (no exception made for degradation or loss in the availability of the AVC).	99.95%	TSI Contractor to propose their performance level.	99.99%	TSI Contractor to propose their performance level.	Direction (North or South)	TSI Contractor to propose their solutions.	All lanes tested with a sample size sufficient to show an 80% confidence that the SLA is being met.	On a monthly basis, the TSI Contractor will audit a sample size sufficient to show an 80% confidence that the SLA is being met on all directions of travel on one sixth of the operational Project Toll Zones.	For each toll zone (direction of travel including all lanes at a gantry location) individually: For every .02% below the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 1% of the monthly maintenance/warranty fee.	
AC7	GP Scan Site AVI Read	Each vehicle passing through a GP Lane AVI Scan Site will have all required transponder information, for up to two transponders (issued by SRTA or by interoperable agencies) properly mounted in/on the vehicle, accurately detected and reported (but not necessarily correlated with a vehicle).	95%	TSI Contractor to propose their performance level.	97%	TSI Contractor to propose their performance level.	Transponder read? (Yes/No)	TSI Contractor to propose their solutions.	All lanes tested with a sample size sufficient to show an 80% confidence that the SLA is being met.	On a monthly basis, the TSI Contractor will audit a sample size sufficient to show an 80% confidence that the SLA is being met on one sixth of the operational Project GP Scan Sites.	For each GP Scan site (including all lanes at a particular installation) individually: For every 3% below the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 0.5% of the monthly maintenance/warranty fee.	
AC8	GP Lane Vehicle Speed	Each vehicle passing through a GP lane measurement point will have its speed captured and reported.	Per-direction, per-lane and per-vehicle average speed accuracy: 92% (no more than +/- 8% error in speed calculation)	TSI Contractor to propose their performance level.	Per-direction, per-lane and per-vehicle average speed accuracy: 95% (no more than +/- 5% error in speed calculation)	TSI Contractor to propose their performance level.	Miles Per Hour	TSI Contractor to propose their solutions.	All MDS sites tested (including each lane at each site) - 30 samples per lane per site.	Not Applicable	Associated Response/Repair damages only.	
AC9	GP Lane Vehicle Volume	The number of vehicles passing a GP lane measurement point.	Per-direction volume accuracy: 90% Per-lane volume accuracy 85%	TSI Contractor to propose their performance level.	Per-direction volume accuracy: 95% Per-lane volume accuracy 90%	TSI Contractor to propose their performance level.	Number of vehicles per sample per lane.	TSI Contractor to propose their solutions.	All MDS sites tested (including each lane at each site) - 30 samples per lane per site.	Not Applicable	Associated Response/Repair damages only.	
AC10	Toll Rate CMS AVI Read	Each vehicle passing through a Toll Rate CMS AVI Read Zone (lanes defined in Section 3 of RFP) will have all required transponder information, for all transponders (issued by SRTA or by interoperable agencies) properly mounted in/on the vehicle, accurately detected and reported (but not necessarily correlated with a vehicle or a lane).	95%	TSI Contractor to propose their performance level.	97%	TSI Contractor to propose their performance level.	Transponder read? (Yes/No)	TSI Contractor to propose their solutions.	All lanes tested with a sample size sufficient to show an 80% confidence that the SLA is being met.	On a monthly basis, the TSI Contractor will audit a sample size sufficient to show an 80% confidence that the SLA is being met on one sixth of the operational Project Toll Rate CMS AVI Sites.	Direct damages	
AC11	ALPR Automation	Percentage of images passing the ~~Double blind~~ OCR ~~matching~~ and VSR process as compared to all images ~~of all plates~~ at the stated accuracy level (AC12). (Excluding missing, temporary, and obstructed plates where characters are covered, and damaged plates where characters are not visible. Includes plates with frames that do not touch the plate characters.)	20%	TSI Contractor to propose their performance level.	70%	TSI Contractor to propose their performance level.	Image requires manual review? (Yes/No)	TSI Contractor to propose their solutions.	System report showing total number of images and number of images sent to manual review.	System report showing total number of images and number of images sent to manual review.	For each sample set, for every 2% (or less) below the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 1% of the monthly maintenance/warranty fee.	

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Addendum #7 - July 24, 2013 - changes from Addendum #2 shown in RED

SLA #	Service Level KPIs	Definition	Minimum Performance Level Days 1 Thru 90	TSI Proposed SLA Level Days 1 thru 90	Minimum Performance Level Day 91 and Beyond	TSI Proposed SLA Level Day 91 and Beyond	Measured Unit by each Roadway (unless otherwise noted)	Measurement Method	System Acceptance Test Measurement Requirement	Operations Measurement Period/Sample	Damages*	Will the TSI comply with the performance requirements (Y/N)?
AC12	ALPR Accuracy	This SLA applies only to the percentage of automated images identified in AC11 (e.g. 70%). Outcome of combined OCR and VSR automation processes measured as the number of all license plates (characters, and state jurisdictions) correctly identified by the system. ~~(Excluding missing, temporary, and obstructed plates where characters are covered, and damaged plates where characters are not visible. Includes plates with frames that do not touch the plate characters.)~~	99.90%	TSI Contractor to propose their performance level.	99.95%	TSI Contractor to propose their performance level.	License plate numbers and state jurisdiction correct?	TSI Contractor to propose their solutions.	Minimum sample of 1000 images per lane.	Minimum sample of 1000 images per lane every 6 months or as requested.	For each sample set, for every .1% (or less) below the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 2% of the monthly maintenance/warranty fee.	
AC13	Image Readability	Rear: For this purpose, a "readable image" means an image produced by the VES in which both plate numbers and issuing jurisdiction, and vehicle image can be reliably read electronically or by the human eye. Front: For this purpose, a "readable image" means an image produced by the VES in which both plate numbers and issuing jurisdiction can be reliably read electronically or by the human eye. (Both front and rear exclude missing, temporary, and obstructed plates where characters are covered, and damaged plates where characters are not visible. Includes plates with frames that do not touch the plate characters.)	Rear: 99.8% Front: 85.00%	TSI Contractor to propose their performance level.	Rear: 99.95% Front: 90.00%	TSI Contractor to propose their performance level.	Image readable? (Yes/No)	TSI Contractor to propose their solutions.	Minimum sample of 1000 images per lane.	Minimum sample of 1000 images per lane every 6 months.	For each sample set, for every 0.1% (or less) below the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 1% of the monthly maintenance/warranty fee.	
AC14	Trip Building	The percentage of individual Toll Zone Transactions correctly assembled into Express Lane Trips per SRTA's Business Rules.	99.99%	TSI Contractor to propose their performance level.	99.99%	TSI Contractor to propose their performance level.	Transaction correctly assembled into trip? (Yes/No)	TSI Contractor to propose their solutions.	Minimum sample of 5,000 AVI and 5,000 image (non AVI) transactions monitored through trip building process. To include all lanes/directions.	On a monthly basis, the TSI Contractor will monitor 1,000 AVI and 1,000 image (non AVI) transactions through trip building process. To include all lanes/directions.	For each sample set, for every 0.1% below the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 2% of the monthly maintenance/warranty fee.	
AC15	Trip Toll Rate Assignment	The percentage of Trips assigned the correct toll rate based on SRTA business rules.	99.95%	TSI Contractor to propose their performance level.	99.95%	TSI Contractor to propose their performance level.	Correct toll rate assigned to trip? (Yes/No)	TSI Contractor to propose their solutions.	Include this verification during AC14 process.	Include this verification during AC14 process.	For each sample set, for every 0.1% below the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 2% of the monthly maintenance/warranty fee.	
AC16	CMS Messaging	The accuracy of CMS messages sent by the Electronic Toll Collection System to the Toll Rate CMS subsystems, and displayed on the CMS panels, as they relate to correctly representing the pricing of the trips described on the respective Toll Rate CMSs.	99.99%	TSI Contractor to propose their performance level.	99.99%	TSI Contractor to propose their performance level.	Toll Rate CMS message = Toll Rate calculated for appropriate Trip and timeframe? (Yes/No)	TSI Contractor to propose their solutions.	Minimum sample of 1000 messages reported upon, to include messages to all CMS locations.	On a monthly basis, the TSI Contractor will audit a minimum sample of 250 messages, to include messages to all CMS locations.	Direct damages	
AC17	Deleted											
Time Constraints												
TC1	AVI-based Trip Building	For trips which can be created from 100% transponder-based transactions: the timeframe between the latest-occurring transaction in the trip and the trip being completely built and available for transmission to SRTA's BOS. Note this timeframe is exclusive of any SRTA-configurable dwell/holding period.	6 hours	TSI Contractor to propose their performance level.	4 hours	TSI Contractor to propose their performance level.	Hours	TSI Contractor to propose their solutions.	Include this verification during AC14 process.	Include this verification during AC14 process.	For each sample set's times taken as an average, for every 4 hours outside the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 1% of the monthly maintenance/warranty fee.	
TC2	Image-based Trip Building	For trips which must be created involving at least one image-based transaction: the timeframe between the latest-occurring Image Processing System result (AFTER any applicable ALPR or manual review is completed) for each image-based transaction in the trip and the trip being completely built and available for transmission to SRTA's BOS. Note this timeframe is exclusive of any SRTA-configurable dwell/holding period.	6 hours	TSI Contractor to propose their performance level.	4 hours	TSI Contractor to propose their performance level.	Hours	TSI Contractor to propose their solutions.	Include this verification during AC14 process.	Include this verification during AC14 process.	For each sample set's times taken as an average, for every 4 hours outside the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 1% of the monthly maintenance/warranty fee.	

Appendix D - Performance Requirements and SLAs

Addendum #7 - July 24, 2013 - changes from Addendum #2 shown in RED

SLA #	Service Level KPIs	Definition	Minimum Performance Level Days 1 Thru 90	TSI Proposed SLA Level Days 1 thru 90	Minimum Performance Level Day 91 and Beyond	TSI Proposed SLA Level Day 91 and Beyond	Measured Unit by each Roadway (unless otherwise noted)	Measurement Method	System Acceptance Test Measurement Requirement	Operations Measurement Period/Sample	Damages*	Will the TSI comply with the performance requirements (Y/N)?
TC3	CMS Messaging	The timeframe between the prescribed transmission time of a Toll Rate CMS message and the actual time the CMS message was displayed on the CMS.	5 seconds	TSI Contractor to propose their performance level.	5 seconds	TSI Contractor to propose their performance level.	Seconds	TSI Contractor to propose their solutions.	Include this verification during AC16 process.	Include this verification during AC16 process.	For every 5 seconds outside the SLA for each occurrence, the TSI Contractor shall be subject to Liquidated Damages in the amount of 1% of the monthly maintenance/warranty fee. This SLA is measured/assessed on each individual CMS.	
TC4	Images Available for Review	For Toll Zone transactions with images that require review: the timeframe between the transaction occurring in the lane and the time when the image is available to the Image Processing System.	2 hours	TSI Contractor to propose their performance level.	2 hours	TSI Contractor to propose their performance level.	Hours	TSI Contractor to propose their solutions.	Minimum sample of 10,000 image sets reported upon.	On a monthly basis, the TSI Contractor will report upon a minimum of 3000 image sets.	For every 2 hours outside the SLA for the average of all images in each calendar day of the measurement period, the TSI Contractor shall be subject to Liquidated Damages in the amount of 1% of the monthly maintenance/warranty fee.	
TC5	Non-Image Review System Response	Pertains to navigation between screens in the Facility Host and all other systems developed under the scope of the Project, excluding the image review workstations. Also pertains to error notifications being displayed on the screen in the Facility Host and all other systems developed under the scope of the Project. Wildcard searches, such as "S%", or open field (no search criteria entered), inadvertent or deliberate that require a full database table scan are omitted from this measurement.	Within 4 seconds 100% of the time and within 2 seconds 95% of the time.	TSI Contractor to propose their performance level.	Within 4 seconds 100% of the time and within 2 seconds 95% of the time.	TSI Contractor to propose their performance level.	Seconds	TSI Contractor to propose their solutions.	Response time samples of at least 20 5 minute time periods during peak system load times.	On a monthly basis, response time samples of at least 10 5 minute time periods during peak system load times.	For each sample set's times taken as an average, for every 5 seconds outside the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 0.5% of the monthly maintenance/warranty fee.	
TC6	Image Review System Response	Pertains to the display of an image or image set for manual review, on an image review workstation, and the system being able to accept user input.	Within 1 second 100% of the time and within 0.5 seconds 95% of the time.	TSI Contractor to propose their performance level.	Within 1 second 100% of the time and within 0.5 seconds 95% of the time.	TSI Contractor to propose their performance level.	Tenths of seconds	TSI Contractor to propose their solutions.	Response time samples of at least twenty 5 minute time periods during peak system load times.	On a monthly basis, response time samples of at least ten 5 minute time periods during peak system load times.	For each sample set's times taken as an average, for every 2 seconds outside the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 0.5% of the monthly maintenance/warranty fee.	
TC7	Report Generation (< 1,000,000 records in the report)	Report Generation pertains to the display of non ad-hoc reports generated on the Facility Host and all other systems developed under the scope of the Project, measured from the time the user completes the report request in the UI to the time the report is displayed on the screen or generated as a .csv file.	Within 45 seconds 100% of the time and within 15 seconds 95% of the time.	TSI Contractor to propose their performance level.	Within 45 seconds 100% of the time and within 15 seconds 95% of the time.	TSI Contractor to propose their performance level.	Seconds	TSI Contractor to propose their solutions.	Response time sample of at least 100 reports during peak system load times.	On a monthly basis, response time sample of at least 30 reports during peak system load times.	For each sample set's times taken as an average, for every 1 minute outside the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 0.5% of the monthly maintenance/warranty fee.	
TC8	Report Generation (>= 1,000,000 records in the report)	Report Generation pertains to the display of non ad-hoc reports generated on the Facility Host and all other systems developed under the scope of the Project, measured from the time the user completes the report request in the UI to the time the report is displayed on the screen or generated as a .csv file. For measurement of this SLA, no more than three queries that will result in 1,000,000+ records returned will be conducted simultaneously.	Within 5 minutes for every 1,000,000 records included in the report.	TSI Contractor to propose their performance level.	Within 5 minutes for every 1,000,000 records included in the report.	TSI Contractor to propose their performance level.	Minutes	TSI Contractor to propose their solutions.	Response time sample of at least 10 reports during peak system load times.	On a monthly basis, response time sample of at least 3 reports during peak system load times.	For each sample set's times taken as an average, for every 5 minutes outside the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 0.5% of the monthly maintenance/warranty fee.	
TC9	Submission of Monthly SLA Report	The monthly SLA report, accurately detailing system performance relative to all Project SLAs, shall be submitted to SRTA each month.	Report submitted each month by the 15th calendar day of the month.	TSI Contractor to propose their performance level.	Report submitted each month by the 7th calendar day of the month.	TSI Contractor to propose their performance level.	Days	TSI Contractor to propose their solutions.	N/A	Monthly	For each monthly report, for every 1 day outside the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 1% of the monthly maintenance/warranty fee.	
TC10	CMS Out of Synch Alert	The amount of time between an error/outage occurring which affects a Toll Rate CMS to the time the issue is reported to SRTA's designated contact via an automated email.	15 minutes	TSI Contractor to propose their performance level.	15 minutes	TSI Contractor to propose their performance level.	Minutes	TSI Contractor to propose their solutions.	At least 10 samples.	On a monthly basis, at least 10 samples.	For each individual instance, for every 20 minutes outside the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 0.5% of the monthly maintenance/warranty fee.	

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SLA #	Service Level KPIs	Definition	Minimum Performance Level Days 1 Thru 90	TSI Proposed SLA Level Days 1 thru 90	Minimum Performance Level Day 91 and Beyond	TSI Proposed SLA Level Day 91 and Beyond	Measured Unit by each Roadway (unless otherwise noted)	Measurement Method	System Acceptance Test Measurement Requirement	Operations Measurement Period/Sample	Damages*	Will the TSI comply with the performance requirements (Y/N)?
TC11	Transaction Data Available to SRTA BOS	The amount of time between a Trip being built and the time the Trip is transmitted to SRTA's Back Office System. This is not inclusive of any SRTA specified dwell time.	40 minutes	TSI Contractor to propose their performance level.	20 minutes	TSI Contractor to propose their performance level.	Minutes	TSI Contractor to propose their solutions.	System report detailing/summarizing trip timing, for all trips.	System report detailing/summarizing trip timing, for all trips submitted with monthly SLA report.	For each sample set's times taken as an average, for every hour outside the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 0.5% of the monthly maintenance/warranty fee.	
TC12	Transaction Images Available to SRTA BOS	The amount of time between a Trip being built and the time the images related to the trip are transmitted to SRTA's Back Office System. This is not inclusive of any SRTA specified dwell time.	8 hours	TSI Contractor to propose their performance level.	4 hours	TSI Contractor to propose their performance level.	Hours	TSI Contractor to propose their solutions.	System report detailing/summarizing trip timing, for all trips.	System report detailing/summarizing trip timing, for all trips submitted with monthly SLA report.	For each sample set's times taken as an average, for every 4 hours outside the SLA, the TSI Contractor shall be subject to Liquidated Damages in the amount of 0.5% of the monthly maintenance/warranty fee.	
Response & Repair Timing												
	Priority 1 Definition	Any failure that will result in: loss of ability to accurately collect revenue; inability to accurately create Trips from traffic traveling in the Express Lanes; lane closure; safety hazard; or loss of auditability.										
RR1	Priority 1 Response (Weekday Peak Hours 6AM - 7PM)	Maintenance response time shall be measured from the time when the TSI Contractor receives notification of the maintenance event or failure and ending when the maintenance technician arrives at the site of the problem or acknowledges the associated alarm or alert in the MOMS application.	15 minutes	TSI Contractor to propose their performance level.	15 minutes	TSI Contractor to propose their performance level.	Minutes	Measured via MOMS	MOMs will be utilized to report all events for this category during the test time period.	All events submitted Monthly. LD applies to individual events.	For every 20 minutes outside the SLA per event, the TSI Contractor shall be subject to Liquidated Damages in the amount of $200.	
RR2	Priority 1 Repair (Weekday Peak Hours 6AM - 7PM)	Repair time shall be measured from the time when the TSI Contractor receives notification of the maintenance event or failure and ending when the failure condition is corrected and the system is returned to normal operation.	3 hours	TSI Contractor to propose their performance level.	3 hours	TSI Contractor to propose their performance level.	Minutes	Measured via MOMS	MOMs will be utilized to report all events for this category during the test time period.	All events submitted Monthly. LD applies to individual events.	For every 20 minutes outside the SLA per event, the TSI Contractor shall be subject to Liquidated Damages in the amount of $300.	
RR3	Priority 1 Response (All other times)	Maintenance response time shall be measured from the time when the TSI Contractor receives notification of the maintenance event or failure and ending when the maintenance technician arrives at the site of the problem or acknowledges the associated alarm or alert in the MOMS application.	15 minutes	TSI Contractor to propose their performance level.	15 minutes	TSI Contractor to propose their performance level.	Minutes	Measured via MOMS	MOMs will be utilized to report all events for this category during the test time period.	All events submitted Monthly. LD applies to individual events.	For every 20 minutes outside the SLA per event, the TSI Contractor shall be subject to Liquidated Damages in the amount of $100.	
RR4	Priority 1 Repair (All other times)	Repair time shall be measured from the time when the TSI Contractor receives notification of the maintenance event or failure and ending when the failure condition is corrected and the system is returned to normal operation.	4 hours	TSI Contractor to propose their performance level.	4 hours	TSI Contractor to propose their performance level.	Minutes	Measured via MOMS	MOMs will be utilized to report all events for this category during the test time period.	All events submitted Monthly. LD applies to individual events.	For every 20 minutes outside the SLA per event, the TSI Contractor shall be subject to Liquidated Damages in the amount of $200.	
	Priority 2 Definition	Failure of a system component that will result in a degradation of system performance or results in the loss of redundancy in a key system component, but does not qualify as a Priority 1 event.										
RR5	Priority 2 Response (Weekday Peak Hours 6AM - 7PM)	Maintenance response time shall be measured from the time when the TSI Contractor receives notification of the maintenance event or failure and ending when the maintenance technician arrives at the site of the problem or acknowledges the associated alarm or alert in the MOMS application.	30 minutes	TSI Contractor to propose their performance level.	30 minutes	TSI Contractor to propose their performance level.	Minutes	Measured via MOMS	MOMs will be utilized to report all events for this category during the test time period.	All events submitted Monthly. LD applies to individual events.	For every 20 minutes outside the SLA per event, the TSI Contractor shall be subject to Liquidated Damages in the amount of $200.	
RR6	Priority 2 Repair (Weekday Peak Hours 6AM - 7PM)	Repair time shall be measured from the time when the TSI Contractor receives notification of the maintenance event or failure and ending when the failure condition is corrected and the system is returned to normal operation.	6 hours	TSI Contractor to propose their performance level.	6 hours	TSI Contractor to propose their performance level.	Minutes	Measured via MOMS	MOMs will be utilized to report all events for this category during the test time period.	All events submitted Monthly. LD applies to individual events.	For every 20 minutes outside the SLA per event, the TSI Contractor shall be subject to Liquidated Damages in the amount of $300.	
RR7	Priority 2 Response (All other times)	Maintenance response time shall be measured from the time when the TSI Contractor receives notification of the maintenance event or failure and ending when the maintenance technician arrives at the site of the problem or acknowledges the associated alarm or alert in the MOMS application.	30 minutes	TSI Contractor to propose their performance level.	30 minutes	TSI Contractor to propose their performance level.	Minutes	Measured via MOMS	MOMs will be utilized to report all events for this category during the test time period.	All events submitted Monthly. LD applies to individual events.	For every 20 minutes outside the SLA per event, the TSI Contractor shall be subject to Liquidated Damages in the amount of $100.	

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RR8	Priority 2 Repair (All other times)	Repair time shall be measured from the time when the TSI Contractor receives notification of the maintenance event or failure and ending when the failure condition is corrected and the system is returned to normal operation.	10 hours	TSI Contractor to propose their performance level.	10 hours	TSI Contractor to propose their performance level.	Minutes	Measured via MOMS	MOMs will be utilized to report all events for this category during the test time period.	All events submitted Monthly. LD applies to individual events.	For every 20 minutes outside the SLA per event, the TSI Contractor shall be subject to Liquidated Damages in the amount of $200.	
	Priority 3 Definition	Minor failure of the equipment, network or software or an indication that an event may occur that would result in a malfunction or degradation of the system.										
RR9	Priority 3 Response (Weekday Peak Hours 6AM - 7PM)	Maintenance response time shall be measured from the time when the TSI Contractor receives notification of the maintenance event or failure and ending when the maintenance technician arrives at the site of the problem or acknowledges the associated alarm or alert in the MOMS application.	30 minutes	TSI Contractor to propose their performance level.	30 minutes	TSI Contractor to propose their performance level.	Minutes	Measured via MOMS	MOMs will be utilized to report all events for this category during the test time period.	All events submitted Monthly. LD applies to individual events.	For every 20 minutes outside the SLA per event, the TSI Contractor shall be subject to Liquidated Damages in the amount of $200.	
RR10	Priority 3 Repair (Weekday Peak Hours 6AM - 7PM)	Repair time shall be measured from the time when the TSI Contractor receives notification of the maintenance event or failure and ending when the failure condition is corrected and the system is returned to normal operation.	24 hours	TSI Contractor to propose their performance level.	24 hours	TSI Contractor to propose their performance level.	Minutes	Measured via MOMS	MOMs will be utilized to report all events for this category during the test time period.	All events submitted Monthly. LD applies to individual events.	For every 20 minutes outside the SLA per event, the TSI Contractor shall be subject to Liquidated Damages in the amount of $300.	
RR11	Priority 3 Response (All other times)	Maintenance response time shall be measured from the time when the TSI Contractor receives notification of the maintenance event or failure and ending when the maintenance technician arrives at the site of the problem or acknowledges the associated alarm or alert in the MOMS application.	30 minutes	TSI Contractor to propose their performance level.	30 minutes	TSI Contractor to propose their performance level.	Minutes	Measured via MOMS	MOMs will be utilized to report all events for this category during the test time period.	All events submitted Monthly. LD applies to individual events.	For every 20 minutes outside the SLA per event, the TSI Contractor shall be subject to Liquidated Damages in the amount of $100.	
RR12	Priority 3 Repair (All other times)	Repair time shall be measured from the time when the TSI Contractor receives notification of the maintenance event or failure and ending when the failure condition is corrected and the system is returned to normal operation.	24 hours	TSI Contractor to propose their performance level.	24 hours	TSI Contractor to propose their performance level.	Minutes	Measured via MOMS	MOMs will be utilized to report all events for this category during the test time period.	All events submitted Monthly. LD applies to individual events.	For every 20 minutes outside the SLA per event, the TSI Contractor shall be subject to Liquidated Damages in the amount of $200.	
RR13	Automated Issue Notification	The time it takes to notify SRTA's designated contact via an automated email of Priority 1 and 2 issues/outages that occur. This time period begins when the maintenance technician responds to a Priority 1 or 2 issue notification.	15 minutes	TSI Contractor to propose their performance level.	15 minutes	TSI Contractor to propose their performance level.	Minutes	Measured via MOMS	MOMs will be utilized to report all events for this category during the test time period.	Monthly	For every 5 minutes outside the SLA per event, the TSI Contractor shall be subject to Liquidated Damages in the amount of $300.	
	Help Desk Response	For SRTA-initiated Help Desk requests, the TSI Contractor will respond to requests based on the following priority levels and timeframes.										
HD1	Help Desk Priority 1 Response	The issue affects more than one individual or is mission critical and there is no workaround available.	30 minutes	TSI Contractor to propose their performance level.	30 minutes	TSI Contractor to propose their performance level.	Minutes	Measured via TSI-provided issue reporting/tracking system	Help Desk ticket system will be utilized to report all events for this category during the test time period.	Monthly	For every 30 minutes outside the SLA per event, the TSI Contractor shall be subject to Liquidated Damages in the amount of $300.	
HD2	Help Desk Priority 2 Response	Affects at least one individual and impacts his ability to perform primary work tasks with no workaround available.	1 hour	TSI Contractor to propose their performance level.	1 hour	TSI Contractor to propose their performance level.	Minutes	Measured via TSI-provided issue reporting/tracking system	Help Desk ticket system will be utilized to report all events for this category during the test time period.	Monthly	For every 30 minutes outside the SLA on average for all events in the reporting period, the TSI Contractor shall be subject to Liquidated Damages in the amount of $300.	
HD3	Help Desk Priority 3 Response	Affects at least one individual but workaround is available.	8 hours	TSI Contractor to propose their performance level.	8 hours	TSI Contractor to propose their performance level.	Minutes	Measured via TSI-provided issue reporting/tracking system	Help Desk ticket system will be utilized to report all events for this category during the test time period.	Monthly	For every 30 minutes outside the SLA on average for all events in the reporting period, the TSI Contractor shall be subject to Liquidated Damages in the amount of $300.	

APPENDIX E

RESERVED

APPENDIX F

TOLL NETWORK INFRASTRUCTURE DESIGN GUIDE

SRTA

Toll Network Infrastructure Design Guide

Layer 2 & Layer 3

for

State of Georgia

State Road and Tollway Authority

47 Trinity Avenue, SW
Atlanta, GA 30334

~~*May*~~ *June 2013*

Updated by:	*Updated on:*	*Description of Update:*	*Revision #*
ML / PM	01/24/13	Initial draft document	Version 1.0
PM	02/13/13	Modified section 4.1.2.1	Version 1.1
ML	02/26/13	Added Network Testing Section	Version 1.2
ML	03/25/13	Modified Section 3.1.2 for MLAG; Added WAN Connections.	Version 1.3
ML	4/2/13	Updated WAN Connectivity & Figures	Version 1.4
ML	5/13/13	Updated WAN Connectivity & NWC Hub	Version 1.5
BJ	6/12/13	Addendum #1 issued 06/12/13 -- Updated footnotes #11 and 13 in Figure 3	Version 1.6
JMT	6/13/13	Addendum #2 – update NWC Hub information	Version 1.7

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1 INTRODUCTION

1.1 Purpose

This Toll Network Infrastructure Design document is intended to be the primary reference source to define specific requirements, guidelines, and details which are unique to the design of the network infrastructure components to support State Road and Toll Authority (SRTA) Toll and Toll-Related Intelligent Transportation System (ITS) networks in the State of Georgia. When tolling systems are required on a Georgia Department of Transportation (GDOT) roadway, a SRTA Toll ITS network must be provided in addition to a standard GDOT ITS network. Although, similar in design and location, the SRTA Toll ITS network has some unique requirements and must be physically and logically isolated from the GDOT ITS network. In this document, emphasis is given to identify these special requirements and to clarify any variances which may exist between SRTA and GDOT network infrastructure specifications. SRTA requirements take precedence over GDOT specifications.

1.2 Intended Audience

This document has been prepared for the SRTA Toll System Integrator (TSI Contractor) to provide specific information related to Layer 2 and Layer 3 SRTA Toll and Toll-Related ITS Network infrastructure when designing SRTA toll network infrastructure solutions. This document was not prepared for the GDOT Civil Contractor, and it does not provide the specific design requirements and guideline information related to Layer 1 SRTA Toll and Toll-Related Network infrastructure.

1.3 Toll Network Infrastructure Layers

1.3.1 Layer 1 (Civil Contractor)

Design and provision of the following Layer 1 SRTA Toll and Toll-Related ITS Network infrastructure components are considered to be primarily the responsibility of the Civil Contractor. The design of each of these network infrastructure areas is not addressed in this document:

- Backbone trunk and lateral conduit systems
- Backbone trunk and lateral fiber optic cable communication systems
- Fiber optic cable termination and patch panel distribution
- Toll equipment cabinet enclosures with environmental control
- Hub network build-outs
- Generator system network requirements

The TSI Contractor shall be required to furnish a fiber allocation diagram during the Civil Contractor's design process based upon the toll and toll related ITS device locations so that the Civil Contractor can furnish the required Layer 1 network. A conceptual design is shown in Section 5.0, but the final design will be the responsibility of the TSI Contractor.

1.3.2 Layer 2 (TSI Contractor)

Design and provision of the following Layer 2 SRTA Toll and Toll-Related network infrastructure component areas is considered to be primarily the responsibility of the Toll Systems Integrator (Toll SI). The design of these network infrastructure areas is addressed in this document:

- Data network system equipment (i.e., data switches, GBICs/SFPs, routers, etc.)
- Local and WAN data network system configuration and routing
- UPS for toll and toll-related ITS equipment
- Toll network systems (i.e., AVI, VES, zone controllers, loops, etc.)
- Toll-related ITS network systems (i.e., MDS (SHARED), AVI Scan, CCTV (SRTA), etc.)

1.3.3 Layer 3 (TSI Contractor)

Design and provision of the following Layer 3 SRTA Toll and Toll-Related network infrastructure component areas is considered to be primarily the responsibility of the Toll System Integrator (TSI Contractor). The design of these network infrastructure areas is addressed in this document.

- Toll network backbone communications infrastructure
- SRTA ITS network backbone communications infrastructure
- WAN Connectivity

1.4 Abbreviations

The following are common abbreviations which may be used in this document, if required.

ACL	Access Control List
BO	Back Office
CCTV	Closed Circuit Television
CMS	Changeable Message Sign
DR	Disaster Recovery
FOC	Fiber Optic Cable
GBIC	Gigabit Interface Converter
IEEE	Institute of Electrical and Electronics Engineers
IGMP	Internet Group Management Protocol
IP	Internet Protocol
ISP	Inside Plant
ITS	Intelligent Transportation System
MLAG	Multi-Chassis Link Aggregation
MSTP	Multiple Spanning Tree Protocol
NTCIP	National Transportation Communications for ITS Protocol
OSPF	Open Shortest Path First
OSP	Outside Plant
PIM	Protocol Independent Multicast
RADIUS	Remote Authentication Dial In User Service
RSTP	Rapid Spanning Tree Protocol

SFP	Small Form-Factor Pluggable Transceiver
SNMPv3	Simple Network Management Protocol version 3
SNTP	Simple Network Time Protocol
TACACS	Terminal Access Controller Access-Control System
TCC	Traffic Control Center
TFH	Toll Facility Host
TMC	Transportation Management Center
VLAN	Virtual Local Area Network
VRRP	Virtual Router Redundancy Protocol
WAN	Wide Area Network

2 DESIGN REQUIREMENTS

2.1 General Requirements

The Civil Contractor is responsible for design and provision of many elements of the Toll System. As stated in the GDOT technical specifications, the Civil Contractor shall design and construct the Managed Lane Infrastructure to support Toll System requirements and the Civil Contractor shall coordinate with SRTA and the TSI Contractor to finalize the design requirements.

Except as modified in this document, the SRTA Toll and Toll-Related ITS network infrastructure shall be designed in accordance with the requirements and responsibilities defined in the following:

- GDOT RFP's, Special Provisions and Exhibits.
- GDOT NaviGator ITS Design Manual, Revision 3.

2.2 Special Requirements

Design of the SRTA Network infrastructure shall encompass two general focus areas:

- Communications for SRTA Tolling Zones
- Communications for SRTA Toll-related ITS devices

The network for the SRTA tolling zones will be a point-to-point (aka "homerun") architecture to two adjacent layer 3 switches. The Toll-related ITS network will be a daisy chain ring architecture connecting to the same two layer 3 switches as the toll system. While the networks will be logically separated, they will share some common equipment, particularly the layer 3 switches at Hub P and Hub 2 on the northwest corridor, and Hub 1 and Hub 2 on the I-75 South project.

3 DESIGN CONCEPTS

3.1 Communications for SRTA Tolling Zones

3.1.1 Layer 1 Network Overview

The physical topology of the SRTA Toll Network is a point-to-point (aka "Homerun") configuration. Each toll point will have a pair of dedicated fibers for communication with a minimum of two (2) SRTA hub locations within the project limits. Communications from the toll point to the SRTA hub shall be a minimum of 1 Gigabit per second (Gbps). A physically diverse path shall be used between the hub locations whenever possible to achieve redundancy.

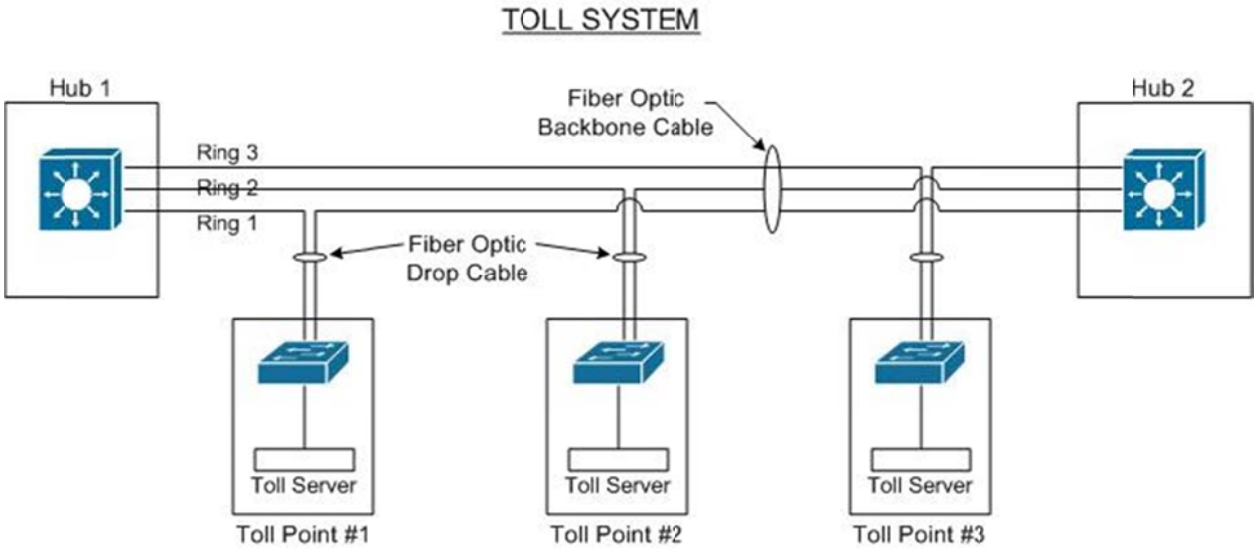


Figure 1

Figure 1 demonstrates the point-to-point physical network architecture.

See Section 5.0 for preliminary proposed fiber assignments. Final assignments are the responsibility of the TSI Contractor, shall be coordinated during the Civil Contractor's design phase and shall be submitted to SRTA for review and approval.

3.1.2 Layer 2 Network

Virtual Logical Area Networks (VLANs) shall be created for each tolling homerun link. The following VLANs shall be created at a minimum:

- Gigabit Ethernet switches (Switch Management)
- Toll Collection Servers

Additional VLANs may also be required based on the TSI Contractor's proposed design and design meetings with SRTA.

The layer 2 architecture will be proposed by the TSI Contractor and must be approved by SRTA.

The SRTA preferred architecture will implement Multi-chassis Link Aggregation (MLAG) from each tolling zone to the two hub switches on each project. The TSI Contractor may propose alternative topologies and protocols, but must be able to demonstrate a substantial advantage over the preliminary design. Proprietary protocols will also be considered, but the final determination on the use of proprietary protocols will be at SRTA's discretion.

In the event of a network affecting issue (fiber cut, power outage, etc.), the system shall automatically failover to a secondary path without user intervention.

3.1.3 Layer 3 Network

VRRP (Virtual Router Redundancy Protocol) or a similar router redundancy protocol shall be implemented and tested on all core / hub switches that are part of the SRTA toll communication network.

Open Shortest Path First (OSPF) shall be implemented and tested on all Layer 3 core / hub routing switches. All Layer 3 core / hub switches shall exchange routing tables with existing SRTA routers and switches located at the Toll Operations Center (TOC) and SRTA TOC DR. All routing switches currently utilize a single OSPF area, but additional OSPF areas may be proposed by the TSI Contractor.

The TSI Contractor shall test each element of the system to ensure that there is no single point of failure on the project. Redundancy and system availability are the primary goals of the Toll network. The TSI Contractor's proposed design should reflect these goals. See Section 4.0 for additional details.

3.1.4 Network Security

The following network security protocols shall be implemented at a minimum:

- RADIUS / TACACS
- Enable SSHv2
- Disable Telnet

Based on the final network design, SRTA may also require ACL policies on the Layer 3 switches to provide an additional layer of security between the Toll network and the Toll-related ITS network.

All WAN Interfaces that utilize the Internet for communication shall implement a firewall for added security. The firewall configuration shall be submitted to SRTA for review and approval prior to implementation.

The TSI Contractor shall disable all unused switch ports.

3.1.5 Additional Protocols

In addition to the standard Layer 2 and Layer 3 network protocols, SRTA requires the following IEEE standards to be configured on all ITS switches (edge and routing switches):

- SNMPv3
- SNTP

3.2 Communications for SRTA Toll Related ITS Devices

3.2.1 Layer 1 Network Overview

The communications at the SRTA Hubs shall be designed to route data to the SRTA TOC. The hubs also serve as an aggregation point for all toll related ITS network systems.

The communications at each field device location shall be designed to communicate with the two adjacent hub locations using physically separated routes.

The physical topology of the SRTA ITS network is a ring or “daisy-chain” configuration. Each ITS edge switch shall be connected to either a layer 3 routing switch or another edge switch. In order to distribute the distances between switches and minimize the effects of local power outages, neighboring edge switches shall not be connected to the same ring. In order to minimize latency, a maximum of 12 edge switches shall be allowed per ring, plus the two hub routing switches.

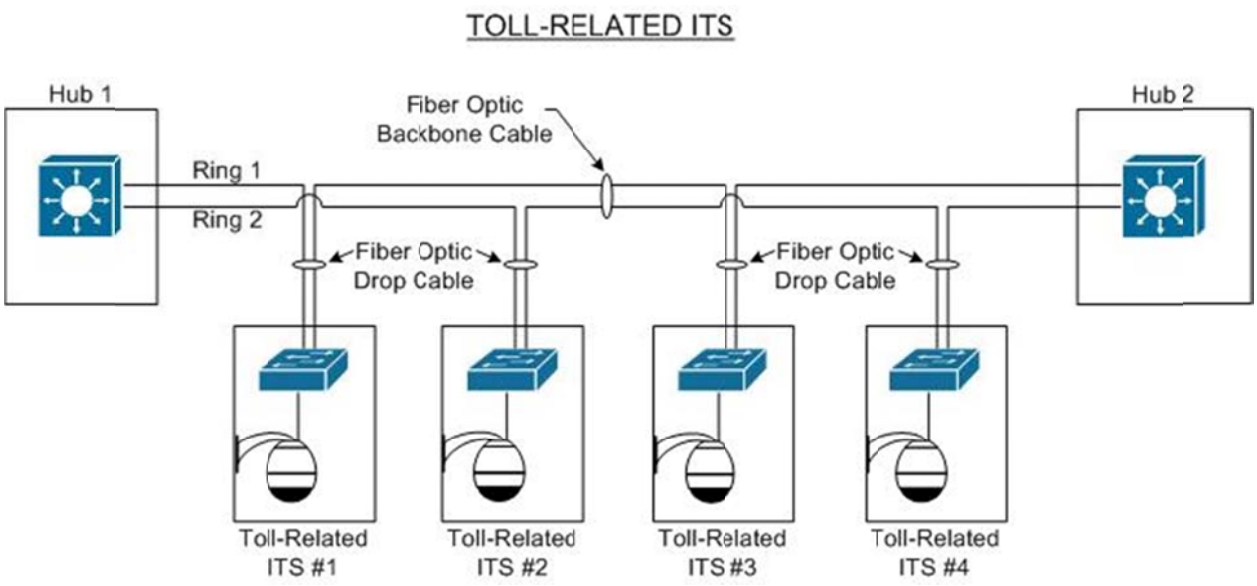


Figure 2

Figure 2 demonstrates the daisy chain physical network architecture in which Switch #1 is connected to Ring #1; Switch #2 is connected to Ring #2; Switch #3 is connected to Ring #1; Switch #4 is connected to Ring #2; etc. See Section 5.0 for preliminary proposed fiber assignments. Final assignments are the responsibility of the TSI Contractor during the Civil Contractor's design phase and shall be submitted to SRTA for review and approval.

3.2.2 Layer 2 Network

A minimum of 5 VLANs will be required for each individual ring on the ITS layer 2 network. These VLANs shall include, but not be limited to:

- Field Ethernet Edge switches
- Uninterruptible Power Supply (UPS)
- CCTV Cameras
- DMS/CMS
- Vehicle Detection systems

Additional VLANs may also be required based on the TSI Contractor's proposed design and design meetings with SRTA.

The preliminary Layer 2 network architecture requires all edge switches installed as part of the SRTA ITS network to be configured with Multiple Spanning Tree Protocol (MSTP). MSTP is part of IEEE 802.1Q-2005. Similar to Rapid Spanning Tree (RSTP), MSTP ensures loop free operation of the network, and is backwards compatible with RSTP. However, MSTP allows multiple instances of Rapid Spanning Tree to be configured on the network. Each toll related ITS ring will be configured as a separate MST instance (MSTI). The TSI Contractor may propose alternative topologies and failover / loop prevention protocols, but must be able to demonstrate a substantial advantage to the

preliminary design. Proprietary protocols will also be considered, but the final determination on the use of proprietary protocols will be at SRTA's discretion.

IGMP Snooping shall be configured, at a minimum, for the CCTV VLAN. IGMP snooping allows the layer 2 edge switch to make intelligent forwarding decisions for multicast traffic.

3.2.3 Layer 3 Network

Open Shortest Path First (OSPF) shall be configured and tested on all Layer 3 routing switches. The hub switches shall exchange routing tables with existing SRTA routers and switches located at the Toll Operations Center (TOC) and SRTA TOC DR, as well as the TFH, and TFH DR. All switches currently utilize a single OSPF area, but additional OSPF areas may be proposed by the TSI Contractor.

VRRP (Virtual Router Redundancy Protocol) shall be implemented on all layer 3 switches that are part of the SRTA ITS communication network.

Protocol Independent Multicast (PIM) shall be implemented on all layer 3 switches that are part of the SRTA ITS communication network.

The TSI Contractor shall test each element of the system to ensure that there is no single point of failure on the project. See Section 5.0 for additional details.

3.2.4 Network Security

The following network security protocols shall be implemented at a minimum:

- RADIUS / TACACS
- Enable SSHv2
- Disable Telnet
- Disable unused switch ports

3.2.5 Additional Protocols

In addition to the standard Layer 2 and Layer 3 network protocols, SRTA requires the following IEEE standards to be configured on all ITS switches (edge and routing switches):

- SNMPv3
- SNTP

3.3 WAN Connectivity

The TSI Contractor shall provide WAN connectivity from a minimum of one (1) Layer 3 Hub routing switch on each project to SRTA and to the Back Office (BO) provider. The WAN connection to SRTA/BO shall be redundant between roadways so that the loss of communication to a single hub facility will not result in a loss of communication with the SRTA/BO. The SRTA fiber optic backbone

may be utilized as one of the redundant WAN connections to SRTA/BO and will also interconnect the various projects.

The TSI Contractor shall determine the bandwidth required for the WAN link. The WAN Link will be expected to communicate all interface data between the TSI and the BO provider. The WAN connection must be secure and stable. Metro Ethernet is preferred, if available. Bonded T-1 circuits shall NOT be used. The TSI Contractor must meet all Performance Requirements and Service Level Agreements (SLAs) as defined in the RFP. The TSI Contractor is responsible for providing any additional hardware required to complete the WAN connections.

The TSI Contractor shall submit the WAN provider, bandwidth and technology proposed for the WAN link to SRTA for review and approval. The TSI Contractor shall also submit a bandwidth analysis showing the estimated bandwidth calculations.

See Figure 3 below for additional details on the existing and conceptual WAN connectivity details.

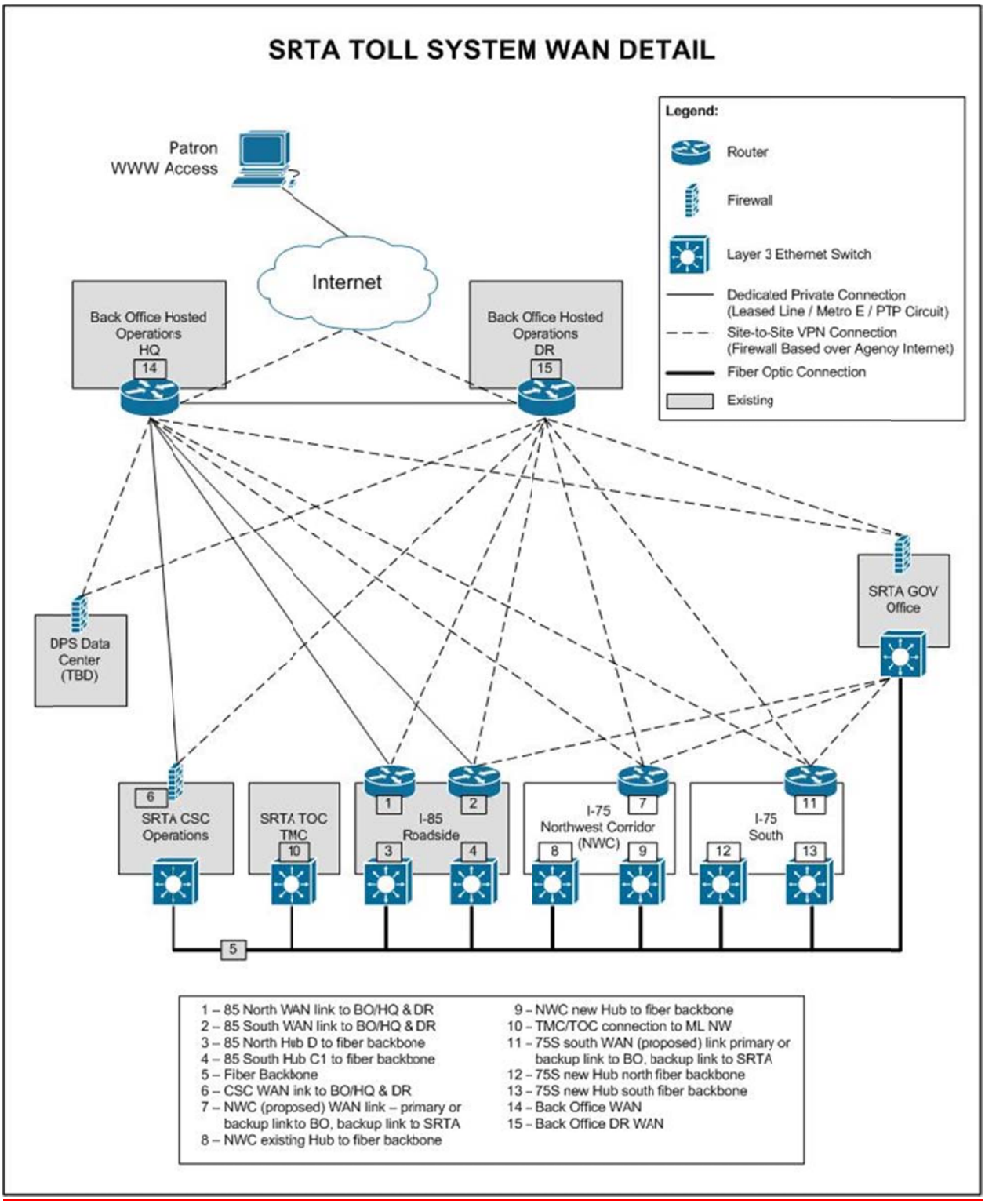

SRTA TOLL SYSTEM WAN DETAIL
Legend:
Router
Firewall
Layer 3 Ethernet Switch
Dedicated Private Connection (Leased Line / Metro E / PTP Circuit)
Site-to-Site VPN Connection (Firewall Based over Agency Internet)
Fiber Optic Connection
Existing
Patron WWW Access
Internet
Back Office Hosted Operations HQ
14
Back Office Hosted Operations DR
15
DPS Data Center (TBD)
SRTA GOV Office
6
SRTA CSC Operations
SRTA TOC TMC
10
1
2
I-85 Roadside
3
4
I-75 Northwest Corridor (NWC)
7
8
9
I-75 South
11
12
13
5
1 – 85 North WAN link to BO/HQ & DR
2 – 85 South WAN link to BO/HQ & DR
3 – 85 North Hub D to fiber backbone
4 – 85 South Hub C1 to fiber backbone
5 – Fiber Backbone
6 – CSC WAN link to BO/HQ & DR
7 – NWC (proposed) WAN link – primary or backup link to BO, backup link to SRTA
8 – NWC existing Hub to fiber backbone
9 – NWC new Hub to fiber backbone
10 – TMC/TOC connection to ML NW
11 – 75S south WAN (proposed) link primary or backup link to BO, backup link to SRTA
12 – 75S new Hub north fiber backbone
13 – 75S new Hub south fiber backbone
14 – Back Office WAN
15 – Back Office DR WAN

Figure 3

4 NETWORK TESTING

4.1 Standalone / Site Testing

This section describes the standalone testing to be performed by the TSI Contractor for the SRTA Communications network. The objectives of these tests are to verify proper installation of each local communications component prior to the system coming online. The TSI Contractor is responsible for submitting a written test plan to SRTA for review and approval that meets the requirements outlined below. All standalone tests shall be carried out in the presence of SRTA and/or its designated representative.

Testing of the fiber optic network is the responsibility of the Civil Contractor, and is included in the site acceptance checklist that is required as part of the GDOT RFP's. The TSI Contractor is responsible for testing everything up to the fiber optic patch panel.

The primary objectives of this test are:

1. Verify that all interconnecting cable installation and network equipment is in accordance with the specifications.
2. Verify IP address, subnet, and gateway are properly configured.
3. Verify SNMPv3 is properly configured.
4. Verify SNTP is properly configured.
5. Verify Layer 2 / Layer 3 redundancy protocols are properly configured.
6. Verify network security protocols are properly implemented.

4.2 Subsystem Testing

This section describes the subsystem testing to be performed by the TSI Contractor for the SRTA Communications network. The objectives of these tests are to verify proper operation of the communications devices from the field to the SRTA Traffic Operations Center and all other remote facilities that are part of the SRTA communications network. The TSI Contractor is responsible for submitting a written test plan to SRTA for review and approval that meets the requirements outlined below. All subsystem tests shall be carried out in the presence of SRTA and/or its designated representative.

The primary objectives of this test are:

1. Verify communications via SSH with each remote L2/L3 switch from a central location.
2. Verify communication with the RADIUS server by attempting to login to the switch as both an authorized and unauthorized user.
3. Verify alarms are being reported properly to the network management software.
4. Verify switch is communicating with the SNTP server by verifying the correct time of day.

5. Verify Communications redundancy / failover protocols are implemented correctly and functioning properly by simulating a fiber cut and power outage.
6. For Layer 3 switches, verify that OSPF is functioning properly.
7. For Layer 3 switches, verify that PIM is functioning properly.
8. Verify WAN connectivity with the Toll Facility Host.
9. Verify WAN connectivity to the DR during a failover scenario (i.e., the TFH is not available).

5 PROJECT SPECIFIC DETAILS

5.1 Northwest Corridor Project

5.1.1 Toll Network Details

5.1.1.1 Layer 1 Network Overview

A preliminary design consisting of nine (9) individual Toll rings has been developed.

5.1.1.2 Layer 2 Network

The TSI Contractor will configure an MLAG (or approved equivalent) for each tolling zone to Hub P and Hub 2.

5.1.1.3 Layer 3 Network

VRRP (Virtual Router Redundancy Protocol) shall be implemented and tested on all layer 3 core/hub switches that are part of the SRTA toll communication network.

- The primary hub location will be located in an existing GDOT Hub. ~~shall be configured as~~ Hub A is located off of I-75 south of I-285. Hub P~~,~~ is located off of I-75 near Barrett Parkway.
- The backup router shall be configured as Hub 2, located off of I-575 and Sixes Rd.

Open Shortest Path First (OSPF) shall be implemented and tested on all layer 3 core/hub routing switches. All layer 3 routing switches shall exchange routing tables with existing SRTA routers and switches located at the Toll Operations Center (TOC). All routing switches shall utilize a single OSPF area.

- GDOT fiber optic cable shall be used to complete the connection between ~~Hub P~~an existing Hub and the SRTA Toll Operations Center. Hub 2 will be connected to the SRTA Toll Operations Center through a leased WAN line.

5.1.2 ITS Network Details

5.1.2.1 Layer 1 Network Overview

A preliminary design consisting of nine (9) individual ITS rings has been developed.

Except for the section of I-575 north of Hwy-92, the TSI Contractor shall utilize the fiber optic cables on both sides of the road to provide a physically diverse route. The TSI Contractor shall design the system to minimize single points of failure.

For the section of I-575 north of Hwy-92 where dual fiber optic backbone cable routing is not feasible, a collapsed ring shall be created. The collapsed ring will not provide protection from a fiber cut, but will still provide a redundant communications path to improve the overall survivability of the network.

5.1.2.2 Layer 2 Network

The TSI Contractor will configure MSTP such that ~~Hub P~~existing Hub A or Hub P is the root bridge and Hub 2 is the backup.

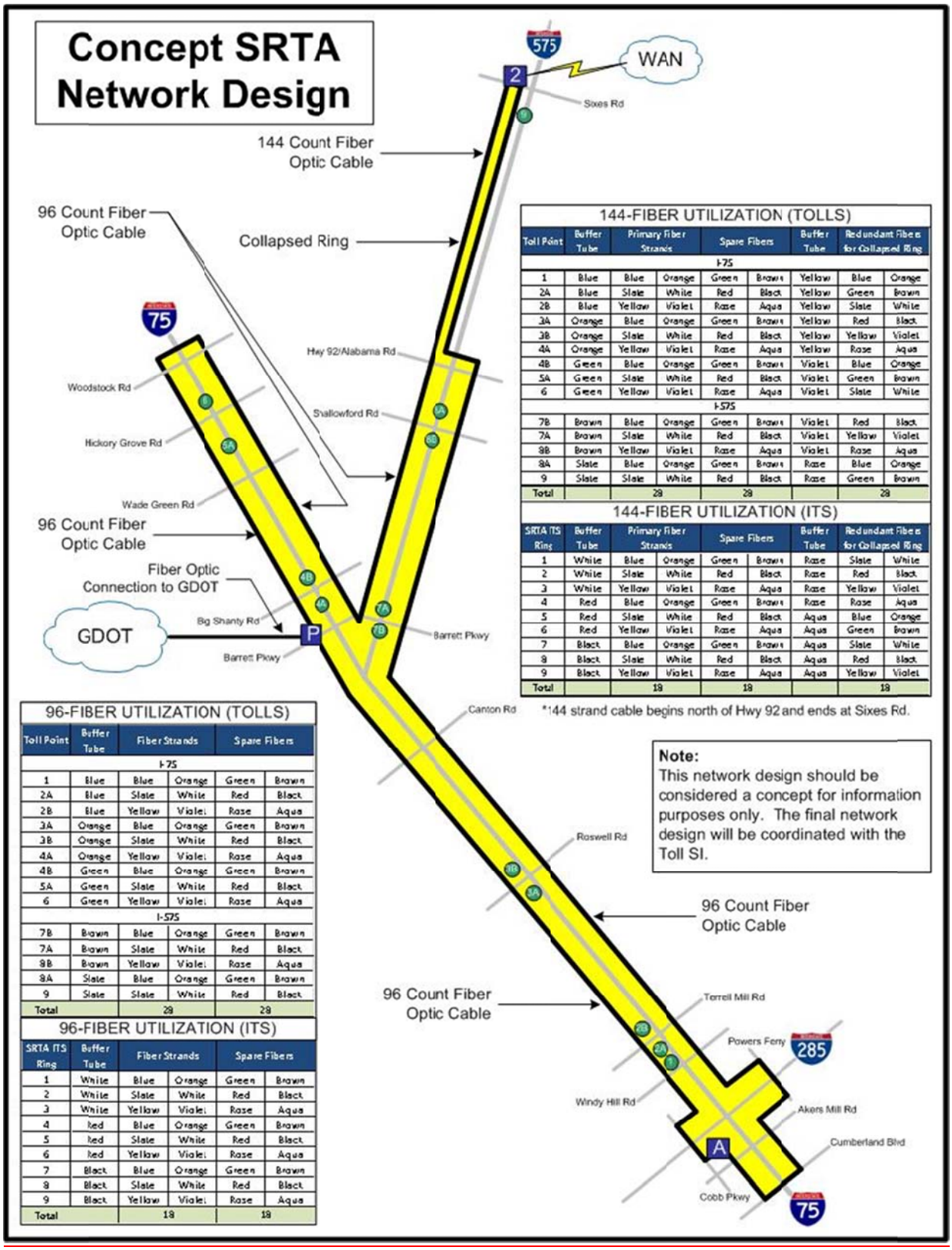
5.1.2.3 Layer 3 Network

Open Shortest Path First (OSPF) shall be configured and tested on all Layer 3 routing switches. The hub switches shall exchange routing tables with existing SRTA routers and switches located at the Toll Operations Center. All switches shall utilize a single OSPF area.

- GDOT fiber optic cable shall be used to complete the connection between ~~Hub P~~an existing Hub~~,~~ and the SRTA Toll Operations Center. Hub 2 will be connected to the SRTA Toll Operations Center through a leased WAN line.

VRRP (Virtual Router Redundancy Protocol) shall be implemented on all Layer 3 switches that are part of the SRTA ITS communication network.

- The primary hub location shall be configured as ~~Hub P~~existing Hub A or Hub P, located off of I-75 near Barrett Pkwy.
- The backup router shall be configured as Hub 2, located off of I-575 and Sixes Rd.



144-FIBER UTILIZATION (TOLLS)

Toll Point	Buffer Tube	Primary Fiber Strands			Spare Fibers		Buffer Tube	Redundant Fibers for Collapsed Ring	
I-75									
1	Blue	Blue	Orange	Green	Brown		Yellow	Blue	Orange
2A	Blue	Slate	White	Red	Black		Yellow	Green	Brown
2B	Blue	Yellow	Violet	Rose	Aqua		Yellow	Slate	White
3A	Orange	Blue	Orange	Green	Brown		Yellow	Red	Black
3B	Orange	Slate	White	Red	Black		Yellow	Yellow	Violet
4A	Orange	Yellow	Violet	Rose	Aqua		Yellow	Rose	Aqua
4B	Green	Blue	Orange	Green	Brown		Violet	Blue	Orange
5A	Green	Slate	White	Red	Black		Violet	Green	Brown
6	Green	Yellow	Violet	Rose	Aqua		Violet	Slate	White
I-575									
7B	Brown	Blue	Orange	Green	Brown		Violet	Red	Black
7A	Brown	Slate	White	Red	Black		Violet	Yellow	Violet
8B	Brown	Yellow	Violet	Rose	Aqua		Violet	Rose	Aqua
8A	Slate	Blue	Orange	Green	Brown		Rose	Blue	Orange
9	Slate	Slate	White	Red	Black		Rose	Green	Brown
Total		28			28			28	

144-FIBER UTILIZATION (ITS)

SRTA ITS Ring	Buffer Tube	Primary Fiber Strands			Spare Fibers		Buffer Tube	Redundant Fibers for Collapsed Ring	
1	White	Blue	Orange	Green	Brown		Rose	Slate	White
2	White	Slate	White	Red	Black		Rose	Red	Black
3	White	Yellow	Violet	Rose	Aqua		Rose	Yellow	Violet
4	Red	Blue	Orange	Green	Brown		Rose	Rose	Aqua
5	Red	Slate	White	Red	Black		Aqua	Blue	Orange
6	Red	Yellow	Violet	Rose	Aqua		Aqua	Green	Brown
7	Black	Blue	Orange	Green	Brown		Aqua	Slate	White
8	Black	Slate	White	Red	Black		Aqua	Red	Black
9	Black	Yellow	Violet	Rose	Aqua		Aqua	Yellow	Violet
Total		18			18			18	

*144 strand cable begins north of Hwy 92 and ends at Sixes Rd.

Note:
This network design should be considered a concept for information purposes only. The final network design will be coordinated with the Toll SI.

96-FIBER UTILIZATION (TOLLS)

Toll Point	Buffer Tube	Fiber Strands		Spare Fibers	
I-75					
1	Blue	Blue	Orange	Green	Brown
2A	Blue	Slate	White	Red	Black
2B	Blue	Yellow	Violet	Rose	Aqua
3A	Orange	Blue	Orange	Green	Brown
3B	Orange	Slate	White	Red	Black
4A	Orange	Yellow	Violet	Rose	Aqua
4B	Green	Blue	Orange	Green	Brown
5A	Green	Slate	White	Red	Black
6	Green	Yellow	Violet	Rose	Aqua
I-575					
7B	Brown	Blue	Orange	Green	Brown
7A	Brown	Slate	White	Red	Black
8B	Brown	Yellow	Violet	Rose	Aqua
8A	Slate	Blue	Orange	Green	Brown
9	Slate	Slate	White	Red	Black
Total		28		28	

96-FIBER UTILIZATION (ITS)

SRTA ITS Ring	Buffer Tube	Fiber Strands		Spare Fibers	
1	White	Blue	Orange	Green	Brown
2	White	Slate	White	Red	Black
3	White	Yellow	Violet	Rose	Aqua
4	Red	Blue	Orange	Green	Brown
5	Red	Slate	White	Red	Black
6	Red	Yellow	Violet	Rose	Aqua
7	Black	Blue	Orange	Green	Brown
8	Black	Slate	White	Red	Black
9	Black	Yellow	Violet	Rose	Aqua
Total		18		18	

5.2 I-75 South

5.2.1 Toll Network Details

5.2.1.1 Layer 1 Network Overview

A preliminary design consisting of six (6) individual Toll rings has been developed.

5.2.1.2 Layer 2 Network

The TSI Contractor will configure an MLAG (or approved equivalent) for each tolling zone to Hub 1 and Hub 2.

5.2.1.3 Layer 3 Network

VRRP (Virtual Router Redundancy Protocol) shall be implemented and tested on all Layer 3 core/hub switches that are part of the SRTA toll communication network.

- The primary hub location shall be configured as Hub 2, located off of I-75 near Hwy 138.
- The backup hub shall be configured as Hub 1, located off of I-75 near GA 155 S.

Open Shortest Path First (OSPF) shall be implemented and tested on all layer 3 core/hub routing switches. All layer 3 routing switches shall exchange routing tables with existing SRTA routers and switches located at the Toll Operations Center (TOC). All routing switches shall utilize a single OSPF area.

- GDOT fiber optic cable shall be used to complete the connection between Hub 1, Hub 2, and the SRTA Toll Operations Center.

5.2.2 ITS Network Details

5.2.2.1 Layer 1 Network Overview

A preliminary design consisting of eight (8) individual ITS rings has been developed.

For the section of I-75 from Hudson Bridge/Eagle's Landing to the northern project limits, the Toll SI shall utilize the fiber optic cables on both sides of the road to provide a physically diverse route. The TSI Contractor shall design the system to minimize single points of failure.

For the remaining areas of I-75 and I-675 where dual fiber optic backbone cable routing is not feasible, a collapsed ring shall be created. The collapsed ring will not provide protection from a fiber cut, but will still provide a redundant communications path to improve the overall survivability of the network.

5.2.2.2 Layer 2 Network

The TSI Contractor will configure MSTP such that Hub 2 is the root bridge and Hub 1 is the backup.

5.2.2.3 Layer 3 Network

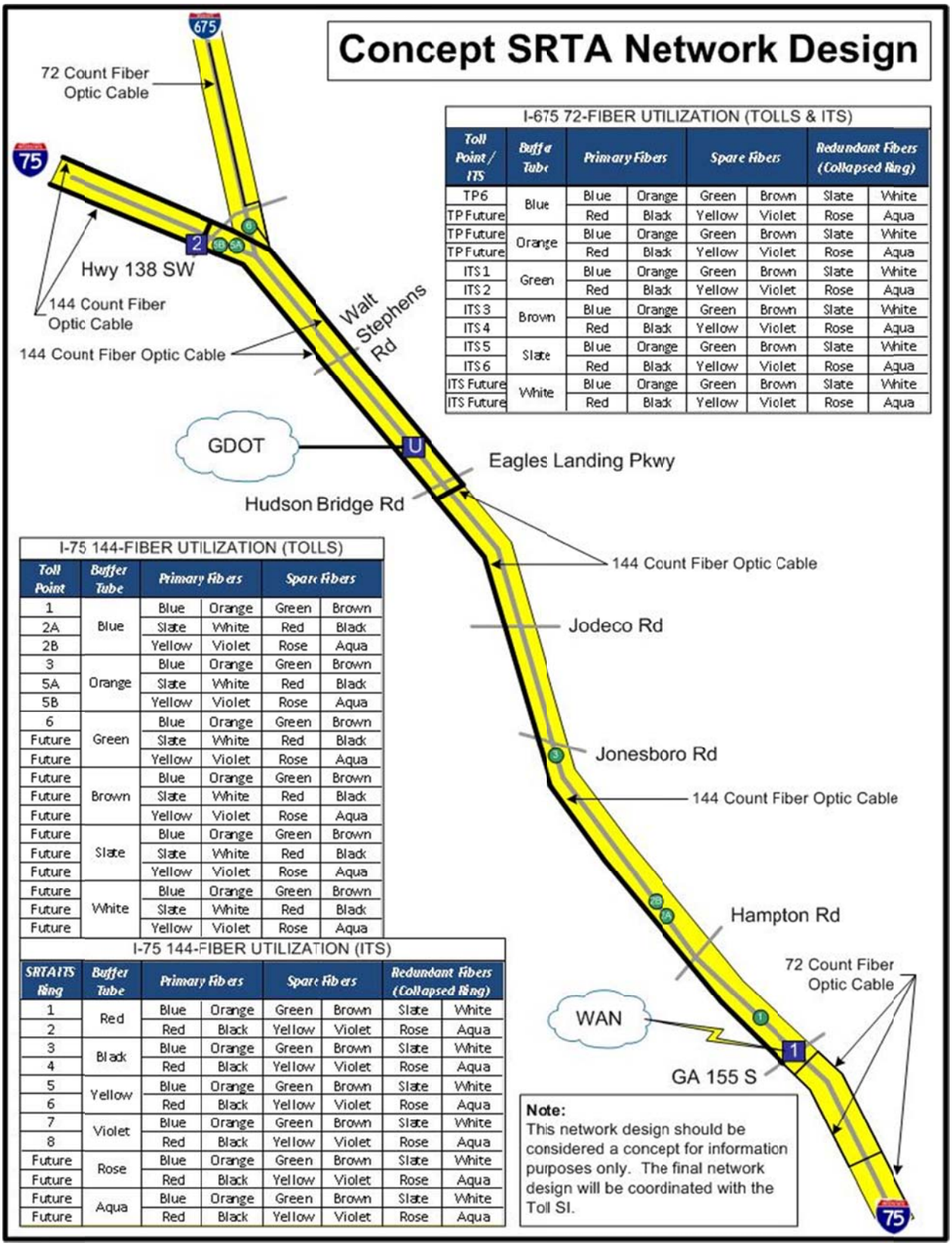
Open Shortest Path First (OSPF) shall be configured and tested on all Layer 3 routing switches. The hub switches shall exchange routing tables with existing SRTA routers and switches located at the Toll Operations Center. All switches shall utilize a single OSPF area.

- GDOT fiber optic cable shall be used to complete the connection between Hub 1, Hub 2, and the SRTA Toll Operations Center.

VRRP (Virtual Router Redundancy Protocol) shall be implemented on all layer 3 switches that are part of the SRTA ITS communication network.

- The primary hub location shall be configured as Hub 2, located off of I-75 near Hwy 138.
- The backup hub shall be configured as Hub 1, located off of I-75 near GA 155 S.

Concept SRTA Network Design



I-675 72-FIBER UTILIZATION (TOLLS & ITS)

Toll Point / ITS	Buffer Tube	Primary Fibers		Spare Fibers		Redundant Fibers (Collapsed Ring)	
TP6	Blue	Blue	Orange	Green	Brown	Slate	White
TP Future		Red	Black	Yellow	Violet	Rose	Aqua
TP Future	Orange	Blue	Orange	Green	Brown	Slate	White
TP Future		Red	Black	Yellow	Violet	Rose	Aqua
ITS 1	Green	Blue	Orange	Green	Brown	Slate	White
ITS 2		Red	Black	Yellow	Violet	Rose	Aqua
ITS 3	Brown	Blue	Orange	Green	Brown	Slate	White
ITS 4		Red	Black	Yellow	Violet	Rose	Aqua
ITS 5	Slate	Blue	Orange	Green	Brown	Slate	White
ITS 6		Red	Black	Yellow	Violet	Rose	Aqua
ITS Future	White	Blue	Orange	Green	Brown	Slate	White
ITS Future		Red	Black	Yellow	Violet	Rose	Aqua

I-75 144-FIBER UTILIZATION (TOLLS)

Toll Point	Buffer Tube	Primary Fibers		Spare Fibers	
1	Blue	Blue	Orange	Green	Brown
2A		Slate	White	Red	Black
2B		Yellow	Violet	Rose	Aqua
3	Orange	Blue	Orange	Green	Brown
5A		Slate	White	Red	Black
5B		Yellow	Violet	Rose	Aqua
6	Green	Blue	Orange	Green	Brown
Future		Slate	White	Red	Black
Future		Yellow	Violet	Rose	Aqua
Future	Brown	Blue	Orange	Green	Brown
Future		Slate	White	Red	Black
Future		Yellow	Violet	Rose	Aqua
Future	Slate	Blue	Orange	Green	Brown
Future		Slate	White	Red	Black
Future		Yellow	Violet	Rose	Aqua
Future	White	Blue	Orange	Green	Brown
Future		Slate	White	Red	Black
Future		Yellow	Violet	Rose	Aqua

I-75 144-FIBER UTILIZATION (ITS)

SRTA ITS Ring	Buffer Tube	Primary Fibers		Spare Fibers		Redundant Fibers (Collapsed Ring)	
1	Red	Blue	Orange	Green	Brown	Slate	White
2		Red	Black	Yellow	Violet	Rose	Aqua
3	Black	Blue	Orange	Green	Brown	Slate	White
4		Red	Black	Yellow	Violet	Rose	Aqua
5	Yellow	Blue	Orange	Green	Brown	Slate	White
6		Red	Black	Yellow	Violet	Rose	Aqua
7	Violet	Blue	Orange	Green	Brown	Slate	White
8		Red	Black	Yellow	Violet	Rose	Aqua
Future	Rose	Blue	Orange	Green	Brown	Slate	White
Future		Red	Black	Yellow	Violet	Rose	Aqua
Future	Aqua	Blue	Orange	Green	Brown	Slate	White
Future		Red	Black	Yellow	Violet	Rose	Aqua

Note:
This network design should be considered a concept for information purposes only. The final network design will be coordinated with the Toll SI.

APPENDIX G

RESERVED

APPENDIX H

DYNAMIC PRICING TABLE

Dynamic Pricing Table

Appendix H

Addendum 1 06/12/13 - Changes shown in red

Addendum 6 07/19/13 - Chnages since Addendum 1 shown in blue

Plan Type	Requirement name	Description	Minimum Requirement	Configurable Function/Parameter(s)	Inputs/Data Sources
All	Separation of facilities	Independence of configuration settings and parameters between facilities.	Configuration settings and parameters between projects shall be independent.	N/A	N/A
	Rate table implementation cycles	Minimum time between the effective start time of two consecutive rate tables.	3 minutes	Above 3 minutes, limited by a user profile.	N/A
	Configurable/dynamic safeguard	Time differential between a rate that posts on a sign and the time that is assigned to its corresponding trip(s).	Calculated in real time based on Toll Rate CMS AVIs and inputted values.	User shall be able to manually input static "safeguard" values/rules in absence or in addition to calculated times.	Toll Rate CMS AVI data, User.
	Maximum rate change	For any particular OD pair/segment, rate change should not be greater than a particular value.	Separate increasing/decreasing parameters, absolute value and percentage based.	User can assign the values.	User
	Segment or OD pair-based pricing	Ability to assign rates to an OD pair by combining the rates of discrete tolling segments within that OD pair OR assigning the rate directly to the OD pair (e.g. a per mile rate x the OD distance).	One method at a time. OD calculated prices using segment-based pricing shall be able to be displayed and reported in OD format.	User can select rates/parameters by direction, segment or OD pair.	User
	Rate plans and schedules storage	All rate plans and schedules shall have a unique name.	Maximum length minimum requirement, 128 characters. Rate plans cannot be deleted but can be hidden by authorized users.	N/A	N/A
	Rate plans and schedule search	System shall have the ability to search and sort a rate plan or schedule certain criteria.	Search by one or multiple criteria, included but not limited to: keyword, created date, creator. Sort by: alphabetical name, created date, creator.	User can select the searching/sorting criteria.	User
	Accountability	All rate changes shall be associated to a user, be viewable in GUI and reports, and records be kept permanently in a database.	A record of all parameter configuration, rate scheduling and rate posting changes shall be assigned to a user and kept in the system. Reporting capability is required.	N/A	N/A
	Multitasking/multivie w	Ability to open and view several input screens at the same time.	All independent screens/menus of the Dynamic pricing system GUI shall be able to remain open simultaneously by the same user.	N/A	N/A
Variable	Rate table scheduling	Ability to assign an effective rate during a 24hr period with a set granularity	Ability to set a different rate every (3) minutes. Start and end times in hh:mm:ss format.	N/A	N/A
	Rate creation	Ability to preload rates to be available for variable rate table creation and manual override implementation.	SRTA approved rates to be preloaded prior to Open to Tolling. Futher rate creation to have ability of automatic generation based on user defined parameters (range, increment).	Limited based on user profile.	N/A
	Rate table input interface	Graphical user interface with appropriate input forms/wizards to create a rate table/schedule	Automatically calculate the rate table based on start and end times and rate/per mile rate. Allow input of rates by manual inputting or importing from a compatible external spreadsheet source.	Limited based on user profile. If importing spreadsheet, values cannot be any different from the user selectable values in the GUI. These values shall be preloaded before open to tolling with SRTA approval.	User (spreadsheets)
	Rate table exporting	Exporting format of the rate table based on desired and observed granularity.	Standard spreadsheet format. Granularity = default 3 minute (equivalent to minimum requirement of table scheduling parameter).	Exported granularity: maximum granularity (e.g. 3 mins.) up to 24hrs.	User
Dynamic	Segment or OD pair-based	Ability to calculate toll rate for each segment (consecutive OD) or for a combination (all possible ODs) either by addition of segments or distance-per mile based.	User chooses option	Limited based on user profile	User, distance table, MDS, GP AVI, Toll System AVI, Toll Rate CMS AVI
	Optimization strategy/objective	System will define a set of pricing configuration parameters based on a user desired optimization strategy (emphazising either LOS Threshold, Maximize Throughput, Maximize Revenue).	User selects objective and is able to modify suggested parameters (see below).	Limited based on user profile	User, distance table, MDS, GP AVI, Toll System AVI, Toll Rate CMS AVI
	Traffic parameters	System uses a combination of user configurable traffic parameters.	User is able to configure traffic thresholds that calculate toll rates based on macroscopic traffic flow. These shall be based on ~~speed (or corresponding travel times) AND~~ lane occupancy (or derived density), optionally speed, volume and/or other traffic LOS variables.	Limited based on user profile	User
	Lane groups	System has the ability to use EL and GP data.	Allow user to choose if GP and/or EL data is to be included. Influence of GP vs EL data would vary depending on SRTA policy.	Limited based on user profile	User
	Toll rate minimum and maximums	System has the ability to calculate a rate based on a minimum or maximum rate and rate per mile.	Minimum and maximum per mile rate for segments/OD pairs. Minimum and maximum toll rate for segments/OD pairs.	Configurable ranges by $0.01 increments.	User

Dynamic Pricing Table

Appendix H

Addendum 1 06/12/13 - Changes shown in red

Addendum 6 07/19/13 - Chnages since Addendum 1 shown in blue

Plan Type	Requirement name	Description	Minimum Requirement	Configurable Function/Parameter(s)	Inputs/Data Sources
	Pricing-spatial relationship (Downstream traffic logic)	System has the ability to weigh the traffic data downstream of any entry point into the toll rate calculation based on SRTA policy.	The system shall be able to weigh traffic data differently into the calculation of its upstream OD pairs. The influence of downstream data on OD pairs shall be able to be determined automatically based on an optimization strategy and manually by authorized SRTA staff.	Limited based on user profile	User, distance table, MDS, GP AVI, Toll System AVI, Toll Rate CMS AVI
Real-time Override	Implementation time frame	Time between the implementation of a rate table and its effective sign posting time.	Real time	Authorized user able to (e.g., lag in posting time).	User
	Rate posting failsafe	GUI designed to minimize user error	Rates shall be chosen from a menu of approved rates. Minimum of one confirmation window/message before sending rate for posting.	Ability to choose failsafes and modify rules (e.g., rates beyond an allowable maximum rate increase, etc.)	User
Retroactive Override	Trip assignment time frame	The amount of time that the user has to effectively implement an override rate / rate table before the trip has proceeded to posting	Up to 12 hours.	Configurable based on limited user profile: 2-12 hours.	User
Failover	Pre-set rate schedules	System to use a variable priced failover plan in effect when real time rate calculations are not functioning properly (e.g., dynamic failing to calculate, gaps in variable pricing, etc.)	Input of rates to follow the same requirements as for normal variable pricing. 24x7, no gaps are allowed.	Interface could be modified/limited based on user profile. If importing spreadsheet, values cannot be any different from the pre set user selectable values in the GUI.	User
	Historical data based	System to calculate a failover plan based on past toll rate historical data	Average by TOD and DOW. Ability to not include zero-rate equivalent messages (e.g. due to incidents or atypical closures). Ability to exclude atypical days of the week (such as a holiday falling on a weekday).	User can determine if this schedule or the historical data-based schedule will be used as the main failover schedule if the minimum historical requirements are met (see below).	Posted and calculated toll rates.
	Historical data lookup time frame	System to look up past rates based on a defined range	Ability to choose the time period in weeks and remove specific date&time ranges from the preselected data lookup period..	User configurable, limited to a profile. System would not allow a time period greater than the operational history of the project.	User
	Historical rate change interval	The time between calculated toll rate changes.	Minimum, 3-15 minutes (configurable); Maximum, based on historical data.	Limited by a user profile.	Posted and calculated toll rates.
	Calculation frequency.	How often the historical based schedule is recalculated.	Weekly for all ODs (at a specific recurrent day and time, e.g. every Monday at midnight)	Limited by a user profile.	User
ITS/Pricing live views (Dashboards)	ITS Dashboard Dynamic Pricing elements- Traffic Data View	The ITS - Pricing Dashboard is to include necessary information for users to make decisions regarding pricing.	Real time graph of all traffic sensor data considered in the dynamic pricing calculation. Ability to select several data points for observation.	User would select the type of data to be observed (e.g., density, speed, volume).	User, MDS, GP AVI, Toll System AVI, Toll Rate CMS AVI
	ITS Dashboard Dynamic Pricing elements- Traffic Data Use	The ITS - Pricing Dashboard is to allow users to remove data points from the calculation.	Ability to remove one or several data points from the dynamic pricing calculation in real time (consistent with calculation frequency parameters). These data points shall also be able to be removed automatically based on user configurable thresholds. Both raw and removed data to be available for reporting purposes.	Limited by a user profile.	User, MDS, GP AVI, Toll System AVI, Toll Rate CMS AVI
	Dynamic Pricing System Viewer Dashboard - Toll rate Data Viewer	Ability for the pricing dashboard to show all rates currently posted on the signs as well as other simultaneously scheduled/calculated rates.	Rates calculated in the background but not posted (static variable/dynamic) shall also be viewable simultaneously with posted rates. Minimum, one (1) alternative rate plan.	N/A	Toll rate data
DP Test System (Pre-Production)	Parallel system to Production to allow testing and training.	The Pre-Production environment would receive the same traffic data inputs and have the same GUI as the Production system, but be independent from it.	Traffic inputs can be modified and/or removed, all system and dynamic rate plan parameters affecting a rate calculation can be modified. Interface shall be identical and receiving same inputs as the Production environment.	N/A	User, distance table, MDS, GP AVI, Toll System AVI, Toll Rate CMS AVI
	Communication between Production and Pre-Production	The Pre-Production environment shall not directly interfere with live operations.	User with appropriate credentials shall have the ability to copy schedules and rate plans from Pre-Prodcution to Production, but implementation occurs in Production only. Traffic data to be synchronized with Production.	N/A	User, distance table, MDS, GP AVI, Toll System AVI, Toll Rate CMS AVI

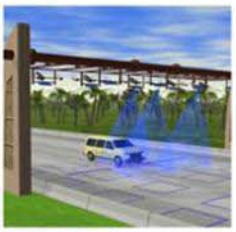
APPENDIX I

ROADSIDE INTERFACE CONTROL DOCUMENT

Roadside Interface Control Document

Version 2.2

April 12, 2011



Created for:

SRTA

Contract Number 927-10-00002

I-85 Express Lanes and Back Office

ETC Electronic Transaction Consultants

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Document History

Date	Revision Version	Author	Summary of Changes
11/24/2010	1	Brett Coffee	Initial Document
11/30/2010	1.1	K. Palmer	Final edits
3/1/2011	1.1	K. Palmer	Edits in response to SRTA/GDOT comments
3/2/2011	2.0	K. Palmer	Final Clean Up
3/9/2011	2.1	K. Palmer	Edits in response to SRTA/GDOT comments
4/12/2011	2.2	K. Palmer	Addition of license plate information in TVL data elements list; reference to transaction disposition file and acknowledgement that the format and frequency will be worked on with the Developer

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Roadside ICD
Document History

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1 INTRODUCTION

1.1 OVERVIEW

This document is a communication tool designed to manage expectations, improve communications, and clarify information required to use the interfaces between a roadside system managed by an external party and the RITE® Customer Service Center (CSC) Back Office. It includes technical details and operational information necessary to ensure proper usage and support for service operation. This document is intended to serve as a basis for discussions with the successful Proposer (Developer). The final ICD will be developed from this preliminary draft according to provisions in the TSA. In the unlikely event that a step in occurs, a two way reconciliation process (i.e. interoperability) will be established leveraging many of the same data exchanges and business rules described herein.

1.2 DEFINITIONS

Word / Acronym	Definition
CSC	Customer Service Center
ICD	Interface Control Document
ETCS	Toll Collection System
XSD	XML Schema Definition
WSDL	Web Service Description Language
Tag	A Tag is a markup construct that is used in XML documents. It begins with "<" and ends with ">".
Markup and Content	XML documents consist of markup and content. Markup begins with the character "<" and ends with a ">". Strings of characters which are not markup are content.
Element	A logical component of an XML document which begins with a start-tag and ends with a matching end-tag. The characters between the start- and end-tags, if any, are the element's content, and may contain markup, including other elements, which are called child elements.
An example of an element is: <AccountID>12345</AccountID>	
XML Document	This ICD defines data structures in XML format for the purpose of passing data from one system to another. The data structures are called "XML Documents"
Facility	A toll facility is usually a separately funded construction project.

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Word / Acronym	Definition
Plaza	A plaza traditionally includes a physical structure with gates, lanes, toll collectors, coin baskets, unattended lanes, and so on.
Open Road Tolling (ORT)	ORT roadways have no need for physical plaza structures. Instead, they have tolling zones with minimal structures to mount electronic toll collecting equipment. The term plaza is sometimes used interchangeably with tolling zone, even though there is no physical plaza with ORT.
Lane	A lane is a single lane of traffic at a toll collecting point.
ETCS	A Toll Collection System refers to the electronic toll collecting equipment at a facility.
ETCS File Server	The file server provided by the ETCS vendor to support file transfers between the ETCS and the CSC Back Office
CSC Back Office	The Customer Service Center back office consists of all interfaces in the Customer Service Center that are not part of the user interface

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2 General Information

2.1 Data Exchange Format

All data, with the exception of images, will be specified in XML format as defined in the Second Edition of XML Schema documented at: http://www.w3.org/TR/xmlschema-0/

Images will be transmitted in Jpeg format, since it is used exclusively by the tolling industry. ETCS vendors must use a version of Jpeg that displays properly in the following browsers:

- Microsoft Internet Explorer 7 or higher
- Mozilla Firefox Version 3.6 or higher
- Google Chrome 5.0 or higher

2.2 Transfer Protocol

The preferred message protocol is web services.

Bulk data and images will be transmitted using SFTP file transfer architecture.

2.3 Data Exchanges

The following data exchanges are specified in this document:

Data Exchange	Format	Push / Pull	Method / Protocol	Frequency
Toll Transaction	XML	ETCS Push to CSC	Web Service / HTTPS	Continuously – 24/7
Transponder Validation List	XML	CSC Push to ETCS	File Transfer / SFTP	Full – Once per day, prior to 4am PST Incremental – Hourly, excluding the period from 3am to 4am PST, 23 total per day
Daily Reconciliation Report	XML	ETCS Push to CSC	Web Service / HTTPS	Once per day
Images	Jpeg	ETCS Push to CSC	File Transfer / SFTP	Continuously – 24/7
Rate Schedule	XML	Not Applicable in Dynamic Pricing	File Transfer / SFTP	Hourly

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Transaction Disposition*	XML	CSC to push	File Transfer / SFTP	To be determined, but no less than once per day

**The Transaction Disposition file is intended to provide information regarding the disposition of the transaction before and during the collection process through posting to an account, payment receipt from a post-paid video customer or writing off a transaction. The format and frequency of file exchange will be determined with the Developer.*

3 XML FORMATTING

XML documents in this interface follow XML formatting rules as defined in the Second Edition of XML Schema documented at: http://www.w3.org/TR/xmlschema-0/

3.1 BUILT-IN DATA TYPES

XML includes data types called built-in data types. The following built-in data types are used in this ICD:

- int
- long
- decimal
- boolean
- date
- time
- dateTime.

The built-in data type for date, dateTime, and time allows timezone to be specified. For this interface all date elements will be specified without a timezone and will be in the local timezone for Atlanta, Georgia.

The dateTime built-in type is:

- Specific instant of time. ISO 8601 extended format
- CCYY-MM-DDThh:mm:ss.

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Example, to indicate 1:20 pm

on May the 31st, 1999 for Eastern Standard Time which is 5 hours behind Coordinated Universal Time (UTC):

1999-05-31T13:20:00-05:00

3.2 COMPLEX TYPES

XML allows the definition of complex data types. A basic complex data type extends a simple type by specifying valid values or ranges.

Here is an example of a complex type that limits the values to "1" and "2". The base type is xsd:string. The values are limited with the enumeration keywords.

```
<xsd:simpleType name="TransactionTypeType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="1"/>
    <xsd:enumeration value="2"/>
  </xsd:restriction>
</xsd:simpleType>
```

Complex types may also be used to specify groups of data elements (traditionally called records).

Here is an example of complex type that defines a record:

```
<xsd:complexType name="USAddress" >
    <xsd:element name="name"   type="xsd:string"/>
    <xsd:element name="street" type="xsd:string"/>
    <xsd:element name="city"   type="xsd:string"/>
    <xsd:element name="state"  type="xsd:string"/>
    <xsd:element name="zip"    type="xsd:decimal"/>
</xsd:complexType>
```

Complex types are discussed in detail at http://www.w3.org/TR/xmlschema-0/.

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4 WEB SERVICES

4.1 PROCESSING GUIDELINES

Web Services will be provided by the CSC Back Office. The ETCS calls the CSC Web Services to push data to the CSC Back Office or send out acknowledgement to CSC. Web Services are accessed through an HTTPS connection over an IPSec VPN.

> An IPSec VPN is used to link two networks over an insecure channel (the Internet). It provides a secure "tunnel" from one network to the other.
>
> HTTPS is used to secure communications over any network, whether the network is internal (intranet) or external (Internet).
>
> While it is not required (with Category 2 data) to encrypt during transmission, we prefer using HTTPS whenever possible. It is more secure, and it is easier to manage from a security standpoint.
>
> Using HTTPS should not introduce additional complexity. It will, however, introduce extra processing. The processing load will be determined during the testing phase, at which point the architecture might be modified to address issues. If testing proves the extra processing is an issue, we will look at alternatives.

Each Web Service transaction consists of a request and a reply in a synchronous session. If the request is successful, the reply message will include a status code that denotes success. If the request is not successful, the reply message will include an error message.

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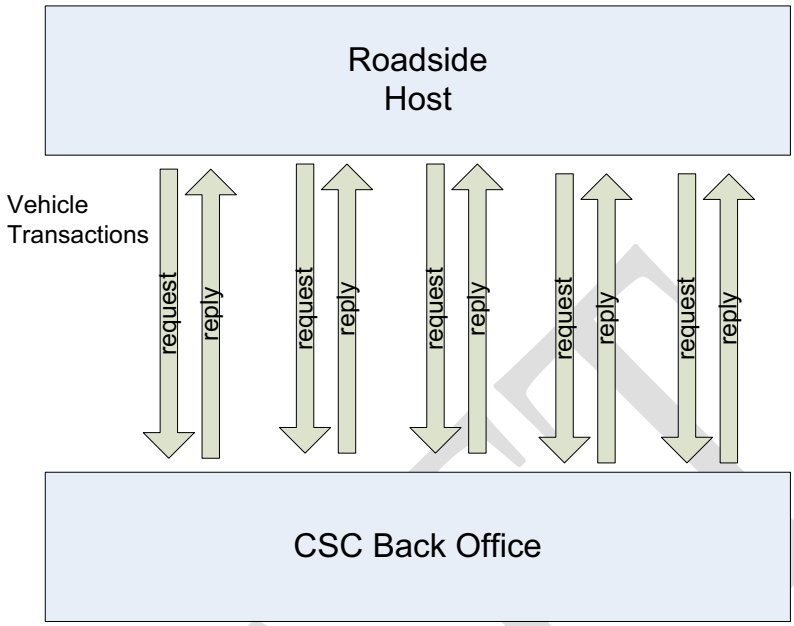
The following drawing shows typical web service transitions:



Only one transaction is sent per request. There is no batching of requests. So, for example, if the ETCS needs to upload 1,000 toll transactions, there will be 1,000 toll transactions for a total of 1,000 requests and 1,000 replies.

4.2 SECURITY

4.2.1 AUTHENTICATION

Authentication will be implemented via Digital Certificate. ETC will generate self-signed x.509 certificates and will distribute the public key to the ETCS vendors.

4.3 TOLL TRANSACTION

4.3.1 DESCRIPTION

The purpose of the Toll Transaction web service is to submit toll transactions (transponder, prepaid video, post paid video) to the CSC Back Office for posting. The transaction request will contain all required transaction data occurring at the lane so that the CSC Back Office can apply the transactions to the appropriate customer account.

Toll transactions will be sent from all lane types (HOT, ORT, mixed use) that require posting to a customer account. Cash transactions, which are not posted to an account, will not be sent.

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4.3.1.1 TRANSPONDER ENFORCED

Transponder enforced transactions must include transponder information and image(s). A lack of corresponding image does not necessarily mean the transaction will not be processed. If a six wheel, two axle vehicle classification scheme is employed photographic evidence of such classification is required (in addition to the entry and exit images).

4.3.1.1 PHOTO ENFORCED

Photo Enforced transactions (prepaid video, post paid video) must include at least one image. They may also include transponder information, for example when a transponder was read, but the transponder status was invalid. If a six wheel, two axle vehicle classification scheme is employed photographic evidence of such classification is required (in addition to the entry and exit images).

When image(s) are included, the Selected Image should also be included along with all OCR data (license plate, jurisdiction, type, OCR confidence interval; if available) and license plate region of interest (ROI) information along with an indication of whether the image was human reviewed.

4.3.1.2 MISSING TRANSPONDER AND PHOTO

If there are no valid transponder reads or images, the Toll Transaction cannot be posted to a CSC account. One or the other is required. If this happens, the Toll Transaction should not be submitted to the CSC, nor should it be included in the Daily Reconciliation web service.

4.3.2 DATA FLOW

Upon receipt of the web service transaction, the CSC Back Office will perform the following data validation checks:

- Required data elements have been specified
- Data elements are of the proper data type and range as specified in the XSD
- TransactionDateTime > current date - 60 days (or another duration as negotiated within the TSA)
- No duplicate transaction. The combination of FacilityCode, PlazaCode, LaneNumber, TransactionDateTime, and SequenceNumber guarantees uniqueness for transactions at the lane.

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If the transaction passes data validation checks, it will be accepted, and a success code will be returned. It will be stored in the CSC database and queued for later posting to the customer's account.

If the transaction does not pass data validation checks, it will be rejected, and a response code will be returned. It will be stored in the CSC database, but it will not be posted to the customer's account. It will be retained in a failed transactions table for later research and/or reporting.

Whether the transaction passes or fails data validation checks, it will be committed to the CSC database before the web service sends an acknowledgement. The transactions that pass data validation will be posted to the appropriate account. Those that fail will be retained in a "failed transactions" table, but they will not be posted to a customer's account.

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4.3.3 DATA ELEMENTS

The following data elements are accepted in the TollTransaction:

Tag Name	Required	Data Type	Notes
FacilityCode	Required	String	Identifies the tolling facility. For HOT transactions sourced from a HOT solution that includes trip building, this is the Exit Facility Domain: FacilityCodes
PlazaCode	Required	String	Code assigned to the plaza or tolling zone. For HOT transactions, this is the Exit Plaza Domain: PlazaCodes
LaneNumber	Required	Int	Identifies the lane within the plaza (or tolling zone). The lane number must be a valid lane number for the specified plaza (or tolling zone). It will be validated before the transaction is posted to the appropriate CSC account. For HOT transactions, this is the Exit Lane Number. Range: 1 to 99
TransactionDateTime	Required	dateTime	Toll Transaction dateTime in the local time zone. Fractions of seconds are required. ETCSs that do not support fractional seconds should pass zeros for the fractional part.. Cannot be in the future or more than 60 days in the past. For HOT transactions sourced from a HOT solution that includes trip building, this is the date/time the vehicle traversed the last toll gantry.
EntryFacilityCode	Optional	String	Identifies the entry facility code for HOT transactions. Required for HOT transactions or facilities that build transaction based upon entry/exit data. It is not used for non-HOT transactions Domain: FacilityCodes

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Tag Name	Required	Data Type	Notes
EntryPlazaCode	Optional	String	Identifies the entry plaza for HOT transactions. Required for HOT transactions. It is not used for non-HOT transactions Domain: PlazaCodes
EntryLaneNumber	Optional	Int	Identifies the entry lane number for HOT transactions. Required for HOT transactions. It is not used for non-HOT transactions Range: 1 to 99
EntryTransactionDateTime	Optional	dateTime	Identifies the date/time the vehicle entered the facility for HOT transactions. Required for HOT transactions. It is not used for non-HOT transactions. Fractions of seconds are required.
SequenceNumber	Required	Long	This number along with PlazaCode, FacilityCode, LaneNumber, and TransactionDateTime guarantees uniqueness for transactions at the lane. The SequenceNumber can be generated by any algorithm as long as it guarantees uniqueness according to the previously mentioned rules. It is acceptable for the sequence number to skip numbers.
TransactionType	Required	String	Identifies the transaction type, photo-enforced (prepaid video or post paid video) or transponder-enforced. Domain: TransactionTypes
AVCClassification	Required	String	Vehicle classification as identified by Automatic Vehicle Classification system in the lane. Domain: VehicleClassTypes

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Tag Name	Required	Data Type	Notes
CSCClassification	Required	String	Vehicle classification as identified in the Transponder Validation List Or License Plate Validation List. Domain: VehicleClassTypes
Transponder	Optional	TransponderType	This is a complex type that includes all fields that describe a transponder. The complex type is defined in Appendix G.1. This data element is required for transponder-enforced transactions, otherwise it is optional If the ETCS reads a transponder, even if the transponder is invalid, it should be submitted in the transaction.
ImageToll	Required	Boolean	This field indicates whether the transaction is an image toll (toll assigned to a transponder via image review and comparison against the TVL)
ImageList	Required	ImageListType (see details in Appendix G.2)	The facility is required to provide images for all transactions
Charged FareAmount	Required	decimal	Required for HOT Lanes. Range: 0.00 to 999.99
Transponder Fare Amount	Required	Decimal	Range: 0.00 to 999.99
Prepaid Video Fare Amount	Required	Decimal	Range: 0.00 to 999.99
Post Paid Video Fare Amount	Required	Decimal	Range: 0.00 to 999.99
VehicleSpeed	Optional	int	Vehicle speed identified by the lane equipment in MPH. Range: 0 to 999
UnusualOccurrenceCode	Optional	string	Unusual occurrences attributed to the system. Domain: UnusualOccurrenceCodes
ETCSStatusCode	Required	string	Describes the status of the toll collecting equipment. Domain: ETCSStatusCodes
ReverseDirectionFlag	Required	boolean	Reverse direction indicator. A true value indicates the traffic was traveling in the reverse direction.
LaneMode	Required	string	Domain: LaneModes
AxleCount	Optional	int	Range: 0 to 15

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4.3.4 REQUEST EXAMPLE

```
<?xml version="1.0"?>
<soap:envelop>
<soap:body>
<sendTransactionData>
   <TollTransaction>
      <FacilityCode>      SR16   </FacilityCode>
      <PlazaCode>         TNB     </PlazaCode>
      <LaneNumber>        1     </LaneNumber>
      <TransactionDateTime>2010-07-27 11:32:29.123456
</TransactionDateTime>
      <SequenceNumber>    12345 </SequenceNumber>
      <TransactionType>   1     </TransactionType>
      <AVCClassification> 2     </AVCClassification>
      <CSCClassification> 2     </CSCClassification>

      <Transponder>
         <TransponderID>       1234567890 </TransponderID>
         <IssuingAgencyCode>   1          </IssuingAgencyCode>
         <TransponderProtocol> SeGO       </TransponderProtocol>
         <Status>              1          </Status>
         <DeclarationState>    1          </DeclarationState>
         <LowBattery>          false      </LowBattery>
      </Transponder>

      <FareAmount>           2.50  </FareAmount>
      <VehicleSpeed>         67    </VehicleSpeed>
      <ETCSStatus>            1     </ETCSStatus>
      <ReverseDirectionFlag> false </ReverseDirectionFlag>
      <LaneMode>             1     </LaneMode>
      <AxleCount>            2     </AxleCount>

      <ImageList>
         <ImageLocation> 20100727/01/01 </ImageLocation>
         <SelectedImageName>    BR549_A01.JPG </SelectedImageName>
         <SelectedROIImageName> BR549_X01.JPG </SelectedROIImageName>
         <Image>
               <ImageName>                BR549_A01.JPG </ImageName>
               <ImageType>                BSI           </ImageType>
               <OCRPlateNumber>           ACN310        </OCRPlateNumber>
               <OCRPlateState>            WA            </OCRPlateState>
               <OCRPlateType>             1             </OCRPlateType>
               <OCRConfidence>            99            </OCRConfidence>
               <OCRPlateNumberConfidence> 99
               </OCRPlateNumberConfidence>
               <OCRPlateStateConfidence>  99
               </OCRPlateStateConfidence>
               <OCRPlateTypeConfidence>   99
               </OCRPlateTypeConfidence>
         </Image>
         <Image>
               <ImageName>                BR549_B01.JPG </ImageName>
               <ImageType>                BSI           </ImageType>
               <OCRPlateNumber>           ACN310        </OCRPlateNumber>
```

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```
            <OCRPlateState>            WA            </OCRPlateState>
            <OCRPlateType>             1             </OCRPlateType>
            <OCRConfidence>            99            </OCRConfidence>
            <OCRPlateNumberConfidence> 99
            </OCRPlateNumberConfidence>
            <OCRPlateStateConfidence>  99
            </OCRPlateStateConfidence>
            <OCRPlateTypeConfidence>   99
            </OCRPlateTypeConfidence>
      </Image>
      <Image>
            <ImageName>                BR549_X01.JPG </ImageName>
            <ImageType>                ROI           </ImageType>
            <OCRPlateNumber>           ACN310        </OCRPlateNumber>
            <OCRPlateState>            WA            </OCRPlateState>
            <OCRPlateType>             1             </OCRPlateType>
            <OCRConfidence>            99            </OCRConfidence>
            <OCRPlateNumberConfidence> 99
            </OCRPlateNumberConfidence>
            <OCPlateStateConfidence>  99
            </OCRPlateStateConfidence>
            <OCRPlateTypeConfidence>   99
            </OCRPlateTypeConfidence>
      </Image>
      <Image>
            <ImageName>                BR549_X02.JPG </ImageName>
            <ImageType>                ROI           </ImageType>
            <OCRPlateNumber>           ACN310        </OCRPlateNumber>
            <OCRPlateState>            WA            </OCRPlateState>
            <OCRPlateType>             1             </OCRPlateType>
            <OCRConfidence>            99            </OCRConfidence>
            <OCRPlateNumberConfidence> 99
            </OCRPlateNumberConfidence>
            <OCRPlateStateConfidence>  99
            </OCRPlateStateConfidence>
            <OCRPlateTypeConfidence>   99
            </OCRPlateTypeConfidence>
      </Image>
    </ImageList>
  </TollTransaction>
</sendTransactionData>
</soap:body>
</soap:envelope>
```

4.4 TRANSACTION RECONCILIATION

A methodology will be developed such that the ETCS receives an indication, at the transaction level, as to the disposition of the transaction. Disposition status will include, but not be limited to, paid and rejected. In the event that a transaction is rejected a reason code will be provided indicated the reason for the rejection.

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It is envisioned that the transaction reconciliation interface will leverage web services described herein.

4.5 DAILY RECONCILIATION

4.5.1 DESCRIPTION

The Daily Reconciliation web service will be executed by each ETCS once a day to provide reconciliation information to the CSC back office.

The summary level information will be compared to the data received by the CSC back office in a CSC report. The discrepancies will be highlighted to help identify missing data. For example, if the daily reconciliation web service states that the ETCS vendor transmitted 5,000 transactions, but the CSC can only find 1,000 transactions, there are apparently 4,000 transactions missing. In this case, the CSC vendor will work with the ETCS vendor to not only find the missing transactions, but also find the cause for the exclusion.

The Daily Reconciliation web service includes the From and To Date/Time range to clearly identify the reporting period of the data included in the summary data.

The ETCS vendors should send summary information for all facilities, plazas, lanes, transaction types, and AVC classifications, even if the transaction counts are zero. This is needed to ensure that all data has been reported.

4.5.2 DATA ELEMENTS

TagName	Required?	Data Type	Notes
FromDateTime	Required	dateTime	starting date/time of the reporting period
ToDateTime	Required	dateTime	ending date/time of the reporting period
ArrayList	Required	ComplexType	
ArrayElement minOccurs="1" maxOccurs="unbounded"			
FacilityCode	Required	string	Identifies the tolling facility. Domain: FacilityCodes
PlazaCode	Required	string	Code assigned to the plaza or tolling region. Domain: PlazaCodes
LaneNumber	Required	int	Identifies the lane within the plaza (or tolling zone). This number typically starts with 1, and increments by 1 for each lane in the plaza. Range: 1 to 99
TransactionType	Required	string	Domain: TransactionTypes

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AVCClassification	Required	string	Vehicle classification as identified by Automatic Vehicle Classification system in the lane. Domain: VehicleClassTypes
TransactionCount	Required	long	Count of transactions

4.5.3 REQUEST EXAMPLE

```
<soap:envelop>
<soap:body>
<sendDailyReconciliation>
  <DailyReconciliation>
    <FromDateTime> 2010-07-27 00:00:00 </FromDateTime>
    <ToDateTime>   2010-07-28 00:00:00 </ToDateTime>

    <ArrayList>
      <ArrayElement>
        <FacilityCode>     TNB </FacilityCode>
        <PlazaCode>        1   </PlazaCode>
        <LaneNumber>       1   </LaneNumber>
        <TransactionType>  1   </TransactionType>
        <VehicleClass>     1   </VehicleClass>
        <TransactionCount> 500 </TransactionCount>
      </ArrayElement>
      <ArrayElement>
        <FacilityCode>     TNB </FacilityCode>
        <PlazaCode>        1   </PlazaCode>
        <LaneNumber>       1   </LaneNumber>
        <TransactionType>  1   </TransactionType>
        <VehicleClass>     2   </VehicleClass
        <TransactionCount> 700 </TransactionCount>
      </ArrayElement>
      <ArrayElement>
        <FacilityCode>     TNB </FacilityCode>
        <PlazaCode>        1   </PlazaCode>
        <LaneNumber>       1   </LaneNumber>
        <TransactionType>  1   </TransactionType>
        <VehicleClass>     3   </VehicleClass>
        <TransactionCount> 900 </TransactionCount>
      </ArrayElement>
      <ArrayElement>
        <FacilityCode>     TNB </FacilityCode>
        <PlazaCode>        1   </PlazaCode>
        <LaneNumber>       2   </LaneNumber>
        <TransactionType>  1   </TransactionType>
        <VehicleClass>     1   </VehicleClass>
        <TransactionCount> 300 </TransactionCount>
      </ArrayElement>
    </ArrayListElement>
  </DailyReconciliation>
</sendDailyReconciliation>
</soap:body>
</soap:envelope>
```

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4.6 ACKNOWLEDGEMENT WEB SERVICE

The CSC will provide a web service to accept acknowledgement from the ETCS. The intent of this web service is to provide a generic Ack / Nak service for all roadside interfaces, including TVL, License Plate Validation List, ,Rate Schedule, etc.

4.6.1 ACKNOWLEDGEMENT FORMAT

Field/Element	Data Type	Required	Notes
AckData/			
AckCode	xs:int	Y	Code of Ack retuned. (example: 0, 1, 2, etc…) Valid Range: 0 .. 999
AckMessage	xs:string	Y	The actual Ack message. (example: "File Name is missing", "No file is received in the past hour", etc…) Valid Range: String
FacilityCodes	xs:string	Y	Indicates the ETCS facility that sends the request. Valid Range: See Appendix F.4
Date	Xs:string	N	It indicates the Date when no TVL full file is received Valid Range: YYYYMMDD (Example: 20101025)
FileName	xs:string	N	This is the same file name in the file sent out to ETCS. This field is used to match an acknowledgement to the file sent out. Valid Range: -For TVL Full File: YYYYMMDDHHMMSS_Full_TVL_XML.ZIP -For TVL Incremental File: YYYYMMDDHHMMSS_Full_TVL_XML.ZIP -For Rate Schedule File: YYYYMMDDHHMMSS_Rate_Schedule.txt
InterfaceName	xs:string	Y	It indicates which interface, either TVL or Rate Schedule. Valid Range: "TVL", or "RATE"
TimePeriod	Xs:string	N	It indicates the TimePeriod when no TVL incremental file is received. Valid Range: HH:MM – HH:MM (Example: 06:00 – 07:00; or 06:00 – 09:00)

4.6.2 ACKNOWLEDGEMENT ACK CODE AND ACK MESSAGE

Ack Code	Ack Message
0	File Received Successfully

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Ack Code	Ack Message
1	No Rate Schedule file is received. (if applicable)
2	No TVL Full File is received
3	No TVL Incremental File is received
11	File cannot be unzipped
12	File cannot be processed
13	File format is not correct
101	The record is blank
102	The TransponderValidationList is missing
103	The FileGenerateTime is missing
104	The TotalRecordCount is missing
105	The CSCClassification is missing
106	The TransponderID is missing
107	The TransponderAgencyCode is missing
108	The TransponderStatusCode is missing
109	The total record count does not match the Header
201	The record is blank
211	The [FareStructure] section is wrong
212	The [FareStructure] – FareID is wrong
213	The [FareStructure] – Fare is wrong
214	The [FareStructure] – class is wrong
215	The [FareStructure] – payment-type is wrong
216	The [FareStructure] – fare-amount is wrong
217	The [FareStructure] – per-axle-fare is wrong
221	The [Schedule-Fare] section is wrong (if applicable)
222	The [Schedule-Fare] – ScheduleID is wrong (if applicable)
223	The [Schedule-Fare] – Period is wrong (if applicable)
224	The [Schedule-Fare] – start-day is wrong (if applicable)
225	The [Schedule-Fare] – start-time is wrong (if applicable)
226	The [Schedule-Fare] – end-day is wrong (if applicable)
227	The [Schedule-Fare] – end-time is wrong (if applicable)
228	The [Schedule-Fare] – fare-id is wrong (if applicable)
231	The [Plaza-Schedule] section is wrong
232	The [Plaza-Schedule] – Plaza is wrong

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Ack Code	Ack Message
233	The [Plaza-Schedule] – facility code is wrong
234	The [Plaza-Schedule] – plaza code is wrong
235	The [Plaza-Schedule] – direction is wrong
236	The [Plaza-Schedule] - effective date/time is wrong
237	The [Plaza-Schedule] – expiry date/time is wrong
238	The [Plaza-Schedule] – schedule-id is wrong

Ack Code Range	Ack Message
0	Success
1 - 100	File transfer error
101 – 200	TVL specific errors
201 - 300	Rate Schedule specific errors
999	Unknown Error – Contact Maintenance Group

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4.6.3 ACKNOWLEDGEMENT XSD

```
<?xml version="1.0" encoding="utf-8" ?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">
	<xs:complexType name="AckResultType">
		<xs:sequence>
			<xs:element name="AckCode" type="xs:int" />
			<xs:element name="AckMessage" type="xs:string" />
			<xs:element name=" FacilityCode " type="xs:string" />
			<xs:element name="Date" type="xs:string" />
			<xs:element name="FileName" type="xs:string" />
			<xs:element name=" InterfaceName " type="xs:string" />
			<xs:element name="TimePeriod" type="xs:string" />
		</xs:sequence>
	</xs:complexType>

	<xs:element name="Ack">
		<xs:complexType>
			<xs:sequence>
				<xs:element name="AckResult" type="AckResultType" minOccurs="1"
maxOccurs="1" />
			</xs:sequence>
		</xs:complexType>
	</xs:element>
</xs:schema>
```

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5 FILE TRANSFERS

5.1 OVERVIEW

File transfers are used instead of web services when bulk data or images must be transmitted.

- Bulk data can be transmitted more efficiently with a file drop architecture than with web services. Web services tend to work better when small amounts of data are needed quickly – such as when transactions are streamed to the CSC.
- Images are a special type of bulk data. Jpeg images can be embedded in XML, but the process is difficult and it has a significant amount of risk. Images can be transferred very easily, however, with file drop architecture.

5.2 ETCS FILE SERVER

The ETCS Vendor is responsible for providing a file server with SFTP access provided to the CSC vendor. This file server will be used for files being transferred between the ETCS and the CSC Back Office. The ETCS vendor is required to size and secure the server with respect to it's traffic volume specifications.

TVL and License Plate Validation Files will be pushed to the ETCS File Server. Images will be pushed from the ETCS File Server. Other files such as daily reconciliation files and any transaction disposition files will also be transferred as required.

5.2.1 ETCS FILE SERVER SECURITY

Data residing on the ETCS file server is classified as category 2. Category 2 data does not require encryption, but it does require authentication for access.

SFTP is not required for this security classification, but for simplicity sake, all file transfers to and from the CSC back office is accomplished with SFTP. FTP is not allowed.

Authentication and encryption will be accomplished with SSH v2 public key / private key pairs.

- The key will be generated by the CSC back office system provider using the Linux "ssh-keygen –t dsa" command. SSH-keygen an SSLv2 public key / private key pair.

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- The default key is a Rivest, Shamir, and Adleman (RSA) key. The "-t dsa" specifies a Digital Signature Algorithm (DSA) key. The DSA key will be used exclusively, as it is more secure.
- The private key is kept securely on the CSC back office server.
- The CSC public key will be given to the ETCS vendors to be placed in the authorized keys file. Placing the CSC public key on the ETCS file server establishes a trust relationship between the servers. This trust does not prompt for username/password and encrypts all transfers using the DSA key.
- DSA keys are exactly 1024 bits as specified in Federal Information Processing Standard (FIPS) 186-2.

The public key / private keys should be replaced annually in accordance with password management policies.

5.3 TRANSPONDER VALIDATION LIST (TVL)

5.3.1 OVERVIEW

The Transponder Validation List (TVL) is created by the CSC and transmitted to the ETCS File Server for processing. It contains the transponder status data for all transponders associated with an account maintained at the CSC.

The TVL will be pushed nightly from the CSC to the ETCS File Server.

5.3.2 TRANSFER PROTOCOL

Secure File Transfer Protocol (SFTP) will be used for all TVL transfers between the CSC Back Office and the ETCS File Server.

5.3.3 FILE ARCHIVAL

TVL files should be retained on the ETCS File Server for a period of 30 days. This retention period is not required by the CSC interface. It is suggested in order to support data analysis in the event there are issues with the data.

The ETCS Vendor is responsible for purging TVL files that are older than 30 days.

5.3.4 COMPRESSION

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TVL files transmitted to the ETCS File Server will be compressed using a standard Linux zip utility.

The specific version used is:

- Linux zip 2.31 (Mar 8, 2005).

It has been successfully tested with

- Linux zip 2.31 (Mar 8 2005).
- Windows zip 2.1 (Apr 27, 1996)

Zip files will be pre-tested before implementation to ensure files zipped by the CSC Back Office can be successfully unzipped by ETCS Vendors.

The file extension will be converted from file-name.file-type to file-name_file-type.ZIP.

Example:

> For a Full TVL file named, 20060619020005_Full_TVL.XML, the zipped file name will be 20060619020005_Full_TVL_XML.ZIP.

5.3.5 FILE TYPES

5.3.5.1 FULL TVL FILE

The full TVL file contains all transponder status data for all transponders maintained at the CSC. Since the CSC contains transponders that are expired or invalid, the TVL will necessarily include transponders with expired or invalid status codes.

The full TVL file will be transmitted to the ETCS File Server daily.

5.3.5.2 INCREMENTAL TVL FILE

The incremental TVL file contains only those transponders that have changed since the last full or incremental TVL file was generated.

The incremental TVL file will be transmitted to the ETCS File Server hourly.

5.3.6 NAMING CONVENTION

```
[FILE_DATE_TIME]_Full_TVL.XML          Full TVL File

[FILE_DATE_TIME]_Incr_TVL.XML          Incremental TVL File
```

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Example: For a Full TVL File created on June 19, 2006 at 02:00:05 the name of the file will be:

```
20060619020005_Full_TVL.XML
```

The zipped version of this file will be:

```
20060619020005_Full_TVL_XML.ZIP
```

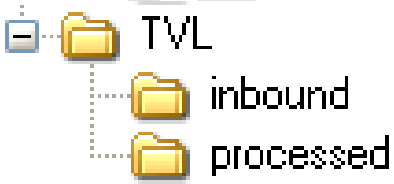
5.3.7 ACKNOWLEDGEMENT

After receiving the file, ETCS will send an Ack/Nak to the CSC by calling CSC's web service. See the Acknowledgement Section.

5.3.8 DIRECTORY STRUCTURE

The first level of the directory structure will be "TVL". TVL files will be pushed to the TVL/inbound directory. As TVL files are processed, they will be moved to the TVL/processed directory. The ETCS Vendor is free to create additional directories as needed, but these 2 directories must exist.

Here is an example of the directory structure:



5.3.9 DATA ELEMENTS

TagName	Required?	Data Type	Notes
TransponderValidationList	Required	ComplexType	
Header			
FileGenerateTime	Required	dateTime	
TotalRecordCount	Required	long	Total count of records in the file AccountVehicle minOccurs="1" maxOccurs="unbounded"
Body			
AccountVehicle minOccurs="1" maxOccurs="unbounded"			
CSCClassification	Required	string	Vehicle classification as identified by TVL.

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TagName	Required?	Data Type	Notes
			Domain: VehicleClassTypes
TransponderID	Required	string	Transponder Serial Number
TransponderAgencyCode	Required	string	Domain: AgencyCodes
TransponderProtocol	Optional	string	Domain: TransponderProtocols
TransponderStatusCode	Required	string	Domain: TransponderStatusCodes
LicensePlateState	Required	string	Identifies the state issuing the license plate associated with the Transponder.
LicensePlateNumber	Required	string	Identifies the license plate associated with the Transponder.

5.3.10 File Example

```
<?xml version="1.0"?>
  <TransponderValidationList>
    <Header>
    < FileGenerateTime>2010-07-27 00:00:00</ FileGenerateTime>
    < TotalRecordCount>2</ TotalRecordCount>
    </Header>
      <Body>
        <AccountVehicle>
          <CSCClassification>     2          </CSCClassification>
          <TransponderID>         1234567890 </TransponderID>
          <TransponderAgencyCode> 1          </TransponderAgencyCode>
          <TransponderProtocol>   SeGO       </TransponderProtocol>
          <TransponderStatusCode> 1          </TransponderStatusCode>
        </AccountVehicle>
        <AccountVehicle>
          <CSCClassification>     2          </CSCClassification>
          <TransponderID>         2345678901 </TransponderID>
          <TransponderAgencyCode> 1          </TransponderAgencyCode>
          <TransponderProtocol>   SeGO       </TransponderProtocol>
          <TransponderStatusCode> 1          </TransponderStatusCode>
        </AccountVehicle>
      </Body>
  </TransponderValidationList>
```

5.4 License Plate Validation List (LPVL)

5.4.1 Overview

The License Plate Validation List (LPVL) is created by the CSC and transmitted to the ETCS File Server for processing. It contains the license plate data for all license plates associated with a prepaid video account maintained at the CSC.

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The LPVL will be pushed nightly from the CSC to the ETCS File Server.

5.4.2 TRANSFER PROTOCOL

Secure File Transfer Protocol (SFTP) will be used for all LPVL transfers between the CSC Back Office and the ETCS File Server.

5.4.3 FILE ARCHIVAL

LPVL files should be retained on the ETCS File Server for a period of 30 days. This retention period is not required by the CSC interface. It is suggested in order to support data analysis in the event there are issues with the data.

The ETCS Vendor is responsible for purging LPVL files that are older than 30 days at their discretion.

5.4.4 COMPRESSION

LPVL files transmitted to the ETCS File Server will be compressed using a standard Linux zip utility.

The specific version used is:

- Linux zip 2.31 (Mar 8, 2005).

It has been successfully tested with

- Linux zip 2.31 (Mar 8 2005).
- Windows zip 2.1 (Apr 27, 1996)

Zip files will be pre-tested before implementation to ensure files zipped by the CSC Back Office can be successfully unzipped by ETCS Vendors.

The file extension will be converted from file-name.file-type to file-name_file-type.ZIP.

Example:

> For a Full LPVL file named, 20060619020005_Full_LPVL.XML, the zipped file name will be 20060619020005_Full_LPVL_XML.ZIP.

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5.4.5 FILE TYPES

5.4.5.1 FULL TVL FILE

The full LPVL file contains all license plate data for all license plate based prepaid video accounts maintained at the CSC. Since the CSC contains prepaid video accounts that are expired or invalid, the LPVL will necessarily include license plates with expired or invalid status codes.

The full LPVL file will be transmitted to the ETCS File Server daily.

5.4.5.2 INCREMENTAL TVL FILE

The incremental LPVL file contains only those transponders that have changed since the last full or incremental LPVL file was generated.

The incremental LPVL file will be transmitted to the ETCS File Server hourly.

5.4.6 NAMING CONVENTION

```
[FILE_DATE_TIME]_Full_LPVL.XML          Full LPVL File

[FILE_DATE_TIME]_Incr_LPVL.XML          Incremental LPVL File
```

Example: For a Full LPVL File created on June 19, 2006 at 02:00:05 the name of the file will be:

```
20060619020005_Full_LPVL.XML
```

The zipped version of this file will be:

```
20060619020005_Full_LPVL_XML.ZIP
```

5.4.7 ACKNOWLEDGEMENT

After receiving the file, ETCS will send an Ack/Nak to the CSC by calling CSC's web service. See the Acknowledgement Section.

5.4.8 DIRECTORY STRUCTURE

The first level of the directory structure will be "LPVL". LPVL files will be pushed to the LPVL/inbound directory. As TVL files are processed, they will be moved to the LPVL/processed directory. The ETCS Vendor is free to create additional directories as needed, but these 2 directories must exist.

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5.4.9 DATA ELEMENTS

The data elements of the LPVL will be determined once a Developer is identified. The file will contain at a minimum all registered license plates and their account status,

5.5 RATE SCHEDULE (IF APPLICABLE)

5.5.1 OVERVIEW

The Rate Schedule is maintained by the ETCS and transmitted to the CSC for processing and historical reference. It contains the toll rates in effect for each vehicle class. It may not be necessary for a rate schedule exchange to occur when a facility is tolled via dynamic pricing.

5.5.2 FREQUENCY

The Rate Schedule file will be pushed from the ETCS to the CSC as needed. A notification email will be sent out to a pre-defined email group for each roadside system when a rate schedule file is pushed.

The CSC should look for new rate schedule files at least hourly. Transfer Protocol

Secure File Transfer Protocol (SFTP) will be used for all Rate Schedule transfers between the CSC Back Office and the ETCS.

5.5.3 FILE ARCHIVAL

Rate Schedule files will be retained at the CSC.

5.5.4 FILE TYPE

Rate Schedule file is an ASCII text file.

5.5.5 NAMING CONVENTION

```
[FILE_DATE_TIME]_Rate_Schedule.txt
```

Example: For a Rate Schedule File created on June 19, 2006 at 02:00:05 the name of the file will be:

```
20060619020005_Rate_Schedule.txt
```

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5.5.6 ACKNOWLEDGEMENT

After receiving rate schedule file, CSCwill send an Ack/Nak to the ETCS.

5.5.7 DIRECTORY STRUCTURE

The first level of the directory structure will be "rate_schedule". Rate Schedule files will be pushed to the rate_schedule/inbound directory. As rate schedule files are processed, they will be moved to the rate_schedule/processed directory.

Here is an example of the directory structure:

5.5.8 FILE FORMAT

Rate Schedule file is modelled after a Microsoft Windows' INI file.

- **Section Heading** – Section Heading is contained in square brackets ("[ ]").
- **Parameter** – Parameters are identified by the first keyword on a line, followed by an equal sign ("="), then the parameter value.
- **Comment** – Comment begin with a semi-colon (";"). Any text following a semi-colon on a line is ignored.

Section Heading and parameter are not case-sensitive.

A Rate Schedule file contains three sections:

- Fare structure definition: "[FareStructure]" section;
- 7-day, 24-hours schedule definitions: "[Schedule-Fare]" section;
- Plaza to Schedule mappings: "Plaza-Schedule]" section;

A Rate Schedule file may contain multiple fare structures, schedule definitions, and plaza-to-schedules mappings. Each schedule definition section heading begins a new rate schedule and spans an entire 7-day, 24-hour period. A simple rate schedule for the entire period may be represented as the example below:

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Day Of Week	Hour of the Day																							
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
S	$1.00																							
M	$1.00						$2.50			$1.00							$2.50			$1.00				
T	$1.00																							
W	$1.00																							
T	$1.00																							
F	$1.00						$2.50			$1.00							$2.50			$1.00				
S	$1.00																							

In text format, the above schedule is represented as:

Start		End		Fare
Day	Time	Day	Time	
SUN	00:00	MON	06:00	$1.00
MON	06:00	MON	09:00	$2.50
MON	09:00	MON	16:00	$1.00
MON	16:00	MON	19:00	$2.50
MON	19:00	FRI	06:00	$1.00
FRI	06:00	FRI	09:00	$2.50
FRI	09:00	FRI	16:00	$1.00
FRI	16:00	FRI	19:00	$2.50
FRI	19:00	SUN	00:00	$1.00

Notice, Sunday midnight is Day SUN, 00:00. As an end point, the Saturday/Sunday midnight boundary is specified as Day SUN, 00:00. The schedule must begin on Day SUN, 00:00 and end on Day SUN, 00:00.

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5.5.9 RECORD FORMAT

5.5.9.1 [FARESTRUCTURE] SECTION

The FareStructure section specifies the fare due by vehicle class and payment type.

This section contains the following parameters:

```
[FareStructure]                ; Section heading
FareID=<fare-id>               ; numeric identifier for this fare
                               ;     structure ranging from 1 to 65535.

Fare=<class>, <payment-type>, <fare-amount> [, <per-axle-fare>]
                               ; where:
                               ;   class = vehicle class
                               ;   payment type = 1 = cash
                               ;                   2 = AVI (revenue)
                               ;                   8 = credit AVI
                               ;   fare amount = minimum fare due for
                               ;      class (implied decimal)
                               ;      e.g., 100 = $1.00
                               ;   per-axle-fare = per axle charge if
                               ;      fare based upon axle count
                               ;      (default 0, optional)
                               ; Multiple Fare keywords are allowed
                               ;     per section
```

Business Rules:

- Only one FareID is allowed per section;
- The FareID should be the first entry in the section;
- Any vehicle class-payment type combination omitted from this section is assumed to have a value of zero;
- A new fare schedule definition begins with another [FareStruture] section heading.

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5.5.9.2 [SCHEDULE-FARE] SECTION

The Schedule-Fare Section maps a set of fare definitions to a 7-day, 24-hour/day period. The association to a given plaza is specified in the Plaza-Schedule Section described later in this document.

This section contains the following parameters:

```
[Schedule-Fare]                             ; Section heading
ScheduleID=<schedule-id>        ; numeric identifier for the schedule
                                ;   ranging from 1 to 655351. Schedule ID 0
                                ;   is reserved for legacy rate schedules
                                ;   that do not support variable pricing
Period=<start-day>,             ; starting day:
                                ;     SUN = Sunday
                                ;     MON = Monday
                                ;     TUE = Tuesday
                                ;     WED = Wednesday
                                ;     THU = Thursday
                                ;     FRI = Friday
                                ;     SAT = Saturday
      <start-time>,             ; start time of price segment
                                ;     format HH:MM (24-hr)
      <end-day>,                ; ending day (same abbreviations as
                                ;     start-day)
      <end-time>,               ; end time of price segment
                                ;     format HH:MM (24-hr)
      <fare-id>                 ; applicable fare ID, the fare ID must
                                ;     defined in a previous FareStructure
                                ;     Section.
                                ;     Multiple Period keywords are allowed
                                ;     per section.
```

Business Rules:

- Only one ScheduleID is allowed per section;
- The ScheduleID should be the first entry in the section;
- Each "Period=" line contains an effective time range and an associated fare structure.
- The time is specified as HOUR:MINUTE. The implication is :00 seconds.

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- The entire 7-day period is specified as starting "SUN, 00:00" and ending "SUN, 00:00". If a fare schedule is omitted from a specified period, the fare amount is set to zero.

- A new schedule begins with another [Schedule-Fare] section heading.

5.5.9.3 [PLAZA-SCHEDULE] SECTION

The Plaza-Schedule Section specifies active schedule for a given plaza. This section contains the following parameters:

```
[Plaza-Schedule]                    ; Section heading
Plaza=<facility code>,              ; 4-char facility ID
      <plaza code>,                 ; 5-char plaza ID
      <direction>,                  ; travel direction (N, S, E, W)
      <effective date/time>,        ; start date of rate
                                    ;   format MM/DD/YYYY HH:MM (24-hr)
      <expiry date/time>,           ; date rate expires
                                    ;   format MM/DD/YYYY HH:MM (24-hr)
                                    ;   99/99/9999 23:59 = no expiration
      <schedule-id>                 ; Schedule ID
```

Business Rules:

- Multiple schedules may be specified for a given plaza. This file will be processed from start to finish by the lane. The last schedule in the file specified for a given plaza with an applicable time frame will be used by the lane. This allows an override schedule to be appended to the section which would preempt a prior schedule. For example, to override a schedule for July 4th, 2006 a portion of the Lane Variable Rate File might be:

```
[Plaza-Schedule]        ; Section heading
      ; The following line is the "default schedule"
Plaza=ABC, MLP1,  N, 01/01/2004 00:00, 99/99/9999 23:59, 1
      ; The following line would override the schedule for 1 day
Plaza=ABC, MLP1,  N, 07/04/2006 00:00, 07/05/2006 00:00, 2
```

In the above example, Schedule 1 is active from January 1st, 2004 with no end time specified. However, at midnight July 4th, 2006, Schedule 2 becomes active until midnight July 5th, 2006. At midnight July 5th, 2006, Schedule 2 terminates and Schedule 1 becomes active once again.

The "Plaza=" entry is repeated multiple times in this section to specify the schedule applicable to multiple plazas.

A sample Rate Schedule file is attached in the Appendix.

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5.6 IMAGES

5.6.1 OVERVIEW

The ETCS collects video images of vehicles on the toll road. These images are used for photo-enforced tolls. Detailed information about the images is recorded in the toll transaction data exchange.

Images will be pushed to the CSC from the ETCS File Server.

5.6.2 IMAGE QUALITY AND CHARACTERISTICS

Images received at the CSC will be subject to optical character recognition (for quality assurance) and will be used on customer notices. While a tuning effort focused on optimizing the images for their ultimate use is expected, the following minimum characteristics are defined.

Each invoice will have an image of acceptable quality displayed on it. The following items define what is meant by acceptable for use on the invoice.

Each video toll / violation transaction following a successful review will have a selected primary and ROI image. The primary includes most of the vehicle and the plate and the ROI includes the plate only.

Each invoice will have a primary image box approximately 2.5 inches wide and 2 inches tall.

The regions for the primary and ROI will allow the following requirements to be met as noted below. The primary or a cropped region of the primary will fit into the invoice primary box such that the following requirements are met.

- Each image will show the plate approximately centered from right to left and top to bottom in the box
- The pixels per inch on the invoice shall not be less than the pixels per inch on the reviewed primary and ROI image
- The aspect ratio shall remain the same as the reviewed selected images
- The plate is readable in 999 cases out of 1000 or better where the plate is readable in the application

For OCR purposes, the ETCS provided image is expected to have a uniform pixel density of not less than 150 dots per inch across the license plate region. The image shall be crisply focused and display sufficient contrast to facilitate OCR.

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5.6.3 TRANSFER PROTOCOL

Secure File Transfer Protocol (SFTP) will be used to push images from the ETCS File Server to the CSC Back Office.

5.6.4 FILE ARCHIVAL

Images must be retained on the ETCS File Server for at least 90 days. The ETCS Vendor is responsible for purging images that are older than 90 days.

5.6.5 COMPRESSION

Images will not be compressed. Jpeg images do not benefit from compression.

5.6.6 NAMING CONVENTION

Images will be named in a unique manner by the ETCS Vendor. The image names will be specified in the toll transaction.

In order to ensure image names are unique, the following data elements will be specified:

`YYYYMMDDHH24MISS_Facility_Plaza_Lane#_Sequence#_Image#_ImageType.JPG`

- YYYYMMDD – Transaction Year/Month/Day
- HH24MISS – Transaction Hour/Minute/Second
- Facility – Facility Code
- Plaza – Plaza Code
- LaneNumber – Lane Number
- Sequence# – Sequential number used to unique identify a transaction
- Image# – Used to uniquely identify an image.
- ImageType – FSI=Front Shot Image, BSI=Back Shot Image, ROI=Region of Interest, VCV = vehicle classification validation.

Examples:

`20100727113029_520_520EB_01_123456_01_FSI.JPG`

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```
20100727113029_520_520EB_01_123456_02_FSI.JPG

20100727113029_520_520EB_01_123456_03_FSI.JPG

20100727113029_520_520EB_01_123456_01_ROI.JPG

20100727113029_520_520EB_01_123456_02_ROI.JPG

20100727113029_520_520EB_01_123456_03_ROI.JPG
```

5.6.7 DIRECTORY STRUCTURE

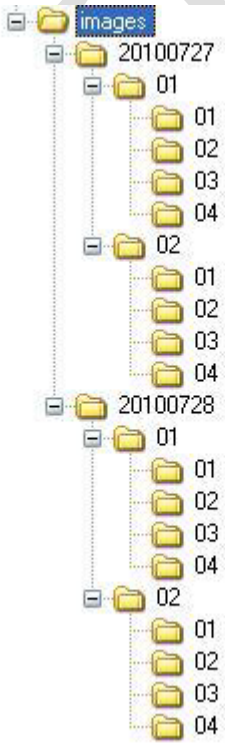
In order avoid performance issues, the directory structure will be formed by using the transaction date along with the plaza number and lane number.

For open road tolling, the toll zone number will be used instead of the plaza number.

The first level of the directory structure will be "images" with the YYYYMMDD/Plaza#/Lane# structure following.

This directory structure will be used for the ImageLocation data element. i.e. images/20100727/01/01.

Here is an example of the directory structure for 4 lanes (01, 02, 03, 04) in 2 plazas (01, 02) over 2 days (07/27/2010 and 07/28/2010):



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5.6.8 REGIONS OF INTEREST (ROI)

The ETCS Vendor is responsible for identifying regions of interest and performing OCR.

5.6.8.1 SEPARATE IMAGES FOR ROI

Some ETCSs identify the ROI by X and Y coordinates. Other ETCSs identify the ROI by cropping the regions of interest and providing separate images.

In order to maintain consistency across all ETCSs, this interface requires ETCSs to provide separate images for regions of interest. This requires vendors that usually provide X and Y coordinates to crop the images instead of passing X and Y coordinates.

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Appendix A TOLL TRANSACTION WEB SERVICE

A.1 XSD

```
<xsd:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xsd:element name="TollTransaction">
    <xsd:complexType>
      <xsd:element name="FacilityCode"        type="FacilityCodeType"
                    minOccurs="1"     />
      <xsd:element name="PlazaCode"           type="PlazaCodeType"
                    minOccurs="1"     />
      <xsd:element name="LaneNumber"          type="LaneNumberType"
                    minOccurs="1"     />
      <xsd:element name="TransactionDateTime" type="xsd:dateTime"
                    minOccurs="1"      />
       <xsd:element name="EntryFacilityCode"   type="FacilityCodeType"
                    minOccurs="0"     />
      <xsd:element name="EntryPlazaCode"      type="PlazaCodeType"
                    minOccurs="0"      />
      <xsd:element name="EntryLaneNumber"     type="LaneNumberType"
                    minOccurs="0"     />
       <xsd:element name="EntryTransactionDateTime"  type="xsd:dateTime"
                    minOccurs="0"   />
      <xsd:element name="SequenceNumber"      type="SequenceNumberType"
                    minOccurs="1"   />
      <xsd:element name="TransactionType"     type="TransactionTypeType"
                    minOccurs="1"  />
      <xsd:element name="AVCClassification"   type="VehicleClassType"
                    minOccurs="1"    />
      <xsd:element name="CSCClassification"   type="VehicleClassType"
                    minOccurs="1"  />
      <xsd:element name="Transponder"         type="TransponderType"
                    minOccurs="0"/>
      <xsd:element name="ImageList"           type="ImageListType"
                    minOccurs="0"/>
      <xsd:element name="FareAmount"          type="FareAmountType"
                    minOccurs="0"/>
      <xsd:element name="VehicleSpeed"        type="VehicleSpeedType"
                    minOccurs="0"/>
      <xsd:element name="UnusualOccurrences"  type="UnusualOccurrences"
                    minOccurs="0"/>
      <xsd:element name="ETCSStatus"           type="ETCSStatusType"
                    minOccurs="0"/>
      <xsd:element name="ReverseDirectionFlag"
                    type="xsd:boolean"
                    minOccurs="0"/>
      <xsd:element name="LaneMode"            type="LaneModeType"
                    minOccurs="1"/>
      <xsd:element name="AxleCount"           type="AxleCountType"
                   minOccurs="1"/>
    </xsd:complexType>
  </xsd:element>

  <xsd:simpleType name="FacilityCodeType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="TNB"/>
      <xsd:enumeration value="SR167"/>
      <xsd:enumeration value="SR520"/>
    </xsd:restriction>
```

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```
</xsd:simpleType>

<xsd:simpleType name="PlazaCodeType">
  <xsd:restriction base="xsd:string">
    <xsd:length  value="5">
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="LaneNumberType">
  <xsd:restriction base="xsd:int">
    <minInclusive value="1"/>
    <maxInclusive value="99"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="SequenceNumberType">
  <xsd:restriction base="xsd:long">
    <minInclusive value="0"/>
    <maxInclusive value="9999999999"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="TransactionTypeType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="1"/>
    <xsd:enumeration value="2"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="VehicleClassType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="1"/>
    <xsd:enumeration value="2"/>
    <xsd:enumeration value="3"/>
    <xsd:enumeration value="4"/>
    <xsd:enumeration value="5"/>
    <xsd:enumeration value="6"/>
    <xsd:enumeration value="7"/>
    <xsd:enumeration value="8"/>
    <xsd:enumeration value="9"/>
    <xsd:enumeration value="10"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="TransponderIDType">
  <xsd:restriction base="xsd:string">
    <xsd:length  value="10">
    <xsd:pattern value="\d{10}"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="AgencyCodeType">
  <xsd:restriction base="xsd:int">
    <minInclusive value="0"/>
    <maxInclusive value="99"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="TransponderStatusType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="0"/>
```

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```
      <xsd:enumeration value="1"/>
      <xsd:enumeration value="2"/>
      <xsd:enumeration value="3"/>
      <xsd:enumeration value="4"/>
      <xsd:enumeration value="5"/>
      <xsd:enumeration value="6"/>
      <xsd:enumeration value="7"/>
      <xsd:enumeration value="8"/>
    </xsd:restriction>
  </xsd:simpleType>

  <xsd:simpleType name="DeclarationStateType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="0"/>
      <xsd:enumeration value="1"/>
      <xsd:enumeration value="2"/>
      <xsd:enumeration value="3"/>
      <xsd:enumeration value="4"/>
      <xsd:enumeration value="5"/>
    </xsd:restriction>
  </xsd:simpleType>

  <xsd:simpleType name="FareAmountType">
    <xsd:restriction base="xsd:decimal">
      <totalDigits value="5"/>
      <fractionDigits value="2"/>
      <minInclusive value="0"/>
      <maxInclusive value="100"/>
    </xsd:restriction>
  </xsd:simpleType>

  <xsd:simpleType name="VehicleSpeedType">
    <xsd:restriction base="int">
      <totalDigits value="2"/>
      <minInclusive value="0"/>
    </xsd:restriction>
  </xsd:simpleType>

  <xsd:simpleType name="ETCSStatusType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="1"/>
      <xsd:enumeration value="2"/>
    </xsd:restriction>
  </xsd:simpleType>

  <xsd:simpleType name="LaneModeType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="0"/>
      <xsd:enumeration value="1"/>
      <xsd:enumeration value="2"/>
      <xsd:enumeration value="3"/>
      <xsd:enumeration value="4"/>
      <xsd:enumeration value="5"/>
      <xsd:enumeration value="6"/>
    </xsd:restriction>
  </xsd:simpleType>

  <xsd:simpleType name="AxleCountType">
    <xsd:restriction base="int">
      <totalDigits value="2"/>
      <minInclusive value="0"/>
```

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```
    <maxInclusive value="15"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="ImageLocationType">
  <xsd:restriction base="xsd:string">
    <maxLength value="150"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="ImageNameType">
  <xsd:restriction base="xsd:string">
    <maxLength value="60"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="ImageTypeType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="ROI"/>
    <xsd:enumeration value="FSI"/>
    <xsd:enumeration value="BSI"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="PlateNumberType">
  <xsd:restriction base="xsd:string">
    <maxLength value="15"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="PlateStateType">
  <xsd:restriction base="xsd:string">
    <maxLength value="3"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="PlateTypeType">
  <xsd:restriction base="xsd:string">
    <maxLength value="3"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:simpleType name="PercentType">
  <xsd:restriction base="xsd:int">
    <minInclusive value="0"/>
    <maxInclusive value="100"/>
  </xsd:restriction>
</xsd:simpleType>

<xsd:complexType name="TransponderType">
  <xsd:element name="TransponderID"
               type="TransponderIDType"    />
  <xsd:element name="AgencyCode"
               type="AgencyCodeType"         />
  <xsd:element name="Status"
               type="TransponderStatusType"/>
  <xsd:element name="DeclarationState"
               type="DeclarationStateType"
               minOccurs="0"/>
  <xsd:element name="LowBattery"
               type="xsd:boolean"
```

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```
                minOccurs="0"/>
  </xsd:complexType>

  <xsd:complexType name="ImageListType">
    <xsd:element name="ImageLocation"        type="ImageLocationType"/>
    <xsd:element name="SelectedImageName"    type="ImageNameType"/>
    <xsd:element name="SelectedROIImageName" type="ImageNameType"/>
    <xsd:element name="Image" minOccurs="0" maxOccurs="unbounded">
      <xsd:sequence>
        <xsd:element name="ImageName"                type="ImageNameType"/>
        <xsd:element name="ImageType"                type="ImageTypeType"/>
        <xsd:element name="OCRPlateNumber"           type="PlateNumberType"
                       minOccurs="0" />
        <xsd:element name="OCRPlateState"            type="PlateStateType"
                       minOccurs="0" />
        <xsd:element name="OCRPlateType"             type="PlateTypeType"
                       minOccurs="0" />
        <xsd:element name="OCRConfidence"            type="PercentType"
                       minOccurs="0" />
        <xsd:element name="OCRPlateNumberConfidence" type="PercentType"
                       minOccurs="0" />
        <xsd:element name="OCRPlateStateConfidence"  type="PercentType"
                       minOccurs="0" />
        <xsd:element name="OCRPlateTypeConfidence"   type="PercentType"
                       minOccurs="0" />
      </xsd:sequence>
    </xsd:element>
  <xsd:complexType>

  <xsd:complexType name="TollTransactionResponse">
    <xsd:element name="ResponseCode"    type="xsd:string" />
    <xsd:element name="ResponseMessage" type="xsd:string" />
    <xsd:element name="TransactionSequenceNumber"
                 type="xsd:long"/>
    <xsd:element name="TransactionId" type="xsd:long"/>
  </xsd:complexType>

</xsd:schema>
```

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A.2 WSDL

```
<wsdl:definitions
  xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
  xmlns:tns="http://www.example.org/TollTransaction/"
  xmlns:types="urn:TollTransactionDataTypes"
  xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  name="TollTransaction"
  targetNamespace="http://www.example.org/TollTransaction/">

  <wsdl:import location="TollTransaction.xsd"
               namespace="urn:TollTransactionDataTypes" />

  <wsdl:message name="TollTransaction_IN">
    <wsdl:part name="TollTransaction" type="types:TollTransaction" />
  </wsdl:message>

  <wsdl:message name="TollTransaction_OUT">
    <wsdl:part name="response" type="types:TollTransactionResponse" />
  </wsdl:message>

  <wsdl:portType name="TollTransactionInterface">
    <wsdl:operation name="sendTransactionData">
      <wsdl:input message="tns:TollTransaction_IN" />
      <wsdl:output message="tns:TollTransaction_OUT" />
    </wsdl:operation>
  </wsdl:portType>

  <wsdl:binding name="TollTransactionSOAP"
                type="tns:TollTransactionInterface">
    <soap:binding style="rpc"
                  transport="http://schemas.xmlsoap.org/soap/http" />
    <wsdl:operation name="sendTransactionData">
    <soap:operation soapAction =
                "http://www.example.org/TollTransaction/sendTransactionData"
      <wsdl:input>
        <soap:body use="literal"
                   namespace="http://www.example.org/TollTransaction/"
                   encodingStyle="http://schemas.xmlsoap.org/soap/encoding/" />
      </wsdl:input>
      <wsdl:output>
        <soap:body use="literal"
                   namespace="http://www.example.org/TollTransaction/"
                   encodingStyle="http://schemas.xmlsoap.org/soap/encoding/" />
      </wsdl:output>
    </wsdl:operation>
    </wsdl:binding>
  <wsdl:service name="TollTransaction">
    <wsdl:port binding = "tns:TollTransactionSOAP"
               name="TollTransactionSOAP">
      <soap:address location="http://www.example.org/" />
    </wsdl:port>
  </wsdl:service>
</wsdl:definitions>
```

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Appendix B DAILY RECONCILIATION WEB SERVICE

B.1 XSD

```
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <xsd:element name="DailyReconciliation">
    <xsd:complexType>
      <xsd:element name="FromDateTime" type="xsd:DateTime"  minOccurs="1"  />
      <xsd:element name="ToDateTime"   type="xsd:DateTime"  minOccurs="1"  />
      <xsd:element name="ArrayList"    type="ArrayListType" minOccurs="1"  />
    </xsd:complexType>
  </xsd:element>

  <xsd:simpleType name="FacilityCodeType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="TNB"/>
      <xsd:enumeration value="SR167"/>
      <xsd:enumeration value="SR520"/>
    </xsd:restriction>
  </xsd:simpleType>

  <xsd:simpleType name="PlazaCodeType">
    <xsd:restriction base="xsd:string">
      <xsd:length  value="5">
    </xsd:restriction>
  </xsd:simpleType>

  <xsd:simpleType name="LaneNumberType">
    <xsd:restriction base="xsd:int">
      <minInclusive value="1"/>
      <maxInclusive value="99"/>
    </xsd:restriction>
  </xsd:simpleType>

  <xsd:simpleType name="TransactionTypeType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="1"/>
      <xsd:enumeration value="2"/>
    </xsd:restriction>
  </xsd:simpleType>

  <xsd:simpleType name="VehicleClassType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="1"/>
      <xsd:enumeration value="2"/>
      <xsd:enumeration value="3"/>
      <xsd:enumeration value="4"/>
      <xsd:enumeration value="5"/>
      <xsd:enumeration value="6"/>
      <xsd:enumeration value="7"/>
      <xsd:enumeration value="8"/>
      <xsd:enumeration value="9"/>
      <xsd:enumeration value="10"/>
    </xsd:restriction>
  </xsd:simpleType>

  <xsd:complexType name="ArrayType">
    <xsd:element name="ArrayElement" minOccurs="1" maxOccurs="unbounded">
```

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```
      <xsd:element name="FacilityCode"     type="FacilityCodeType"    />
      <xsd:element name="PlazaCode"        type="PlazaCodeType"       />
      <xsd:element name="LaneNumber"       type="LaneNumberType"      />
      <xsd:element name="TransactionType"  type="TransactionTypeType" />
      <xsd:element name="VehicleClass"     type="VehicleClassType"    />
      <xsd:element name="TransactionCount" type="xsd:long"            />
    </xsd:element>
  </xsd:complexType>

  <xsd:complexType name="CommonResponse">
    <xsd:element name="ResponseCode"    type="xsd:string" />
    <xsd:element name="ResponseMessage" type="xsd:string" />
  </xsd:complexType>

</xsd:schema>
```

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B.2 WSDL

```
<wsdl:definitions
       xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
       xmlns:tns="http://www.example.org/DailyReconciliation/"
       xmlns:types="urn:DailyReconciliationDataTypes"
       xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
       xmlns:xsd=http://www.w3.org/2001/XMLSchema"
       name=" DailyReconciliation"
       targetNamespace="http://www.example.org/DailyReconciliation">
       <wsdl:import location=" DailyReconciliation.xsd"
                    namespace="urn:DailyReconciliationDataTypes " />
       <wsdl:message name=" dailyReconciliation_IN">
              <wsdl:part name=" DailyReconciliation"
                         type="types: DailyReconciliation" />
       </wsdl:message>
       <wsdl:message name=" dailyReconciliation_OUT">
              <wsdl:part name="DailyReconciliationResponse"
                         type="types:CommonResponse" />
       </wsdl:message>
       <wsdl:portType name="DailyReconciliationInterface">
              <wsdl:operation name="sendDailyReconciliationReport">
                     <wsdl:input message="tns:dailyReconciliation_IN" />
                     <wsdl:output message="tns:dailyReconciliation_OUT" />
              </wsdl:operation>
       </wsdl:portType>
       <wsdl:binding name="DailyReconciliationSOAP"
                       type="tns:DailyReconciliationInterface">
              <soap:binding style="rpc"
                     transport="http://schemas.xmlsoap.org/soap/http" />
              <wsdl:operation name="sendDailyReconciliationReport">
                     <soap:operation
                     soapAction="http://www.example.org/DailyReconciliation/sendDail
              yReconciliationReport"/>
                     <wsdl:input>
                            <soap:body use="literal"
                                   namespace="http://www.example.org/DailyReconciliat
                                   ion/"
                                   encodingStyle="http://schemas.xmlsoap.org/soap/enc
                                   oding/" />
                     </wsdl:input>
                     <wsdl:output>
                            <soap:body use="literal"
                                   namespace="http://www.example.org/DailyReconciliat
                            ion/"
                                   encodingStyle="http://schemas.xmlsoap.org/soap/enc
                            oding/" />
                     </wsdl:output>
              </wsdl:operation>
       </wsdl:binding>
       <wsdl:service name="DailyReconciliation">
              <wsdl:port binding="tns:DailyReconciliationSOAP"
                         name="DailyReconciliationSOAP">
                     <soap:address location="http://www.example.org/" />
              </wsdl:port>
       </wsdl:service>
</wsdl:definitions>
```

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Appendix C ACKNOWLEDGEFILE

C.1 XSD

```
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    attributeFormDefault="qualified" elementFormDefault="qualified"
    targetNamespace="http://types.rim.biz.core.host.etcc.com">
   <xsd:complexType name="AcknowledgeFile">
  <xsd:sequence>
  <xsd:element name="AckCode" type="xsd:int" />
  <xsd:element minOccurs="0" name="AckMessage" nillable="true"
    type="xsd:string" />
   <xsd:element name="FacilityCodes" type="xsd:string" />
  <xsd:element minOccurs="0" name="Date" nillable="true" type="xsd:string"
    />
  <xsd:element name="FileName" type="xsd:string" />
  <xsd:element name="InterfaceName" type="xsd:string" />
  <xsd:element minOccurs="0" name="TimePeriod" nillable="true"
    type="xsd:string" />
    </xsd:sequence>
    </xsd:complexType>
  <xsd:complexType name="CommonResponse">
  <xsd:sequence>
  <xsd:element name="responseCode" type="xsd:string" />
  <xsd:element name="responseMessage" type="xsd:string" />
    </xsd:sequence>
    </xsd:complexType>
  </xsd:schema>
```

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C.2 WSDL

```
  <?xml version="1.0" encoding="UTF-8" ?>
<definitions targetNamespace="http://rim.biz.core.host.etcc.com"
    xmlns="http://schemas.xmlsoap.org/wsdl/"
    xmlns:ns1="http://types.rim.biz.core.host.etcc.com"
    xmlns:soapenc12="http://www.w3.org/2003/05/soap-encoding"
    xmlns:tns="http://rim.biz.core.host.etcc.com"
    xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:soap11="http://schemas.xmlsoap.org/soap/envelope/"
    xmlns:wsdlsoap="http://schemas.xmlsoap.org/wsdl/soap/"
    xmlns:soapenc11="http://schemas.xmlsoap.org/soap/encoding/"
    xmlns:soap12="http://www.w3.org/2003/05/soap-envelope">
 <message name="sendAcknowledgmentRequest">
  <part name="in0" type="ns1:AcknowledgeFile" />
    </message>
<message name="sendAcknowledgmentResponse">
  <part name="out" type="ns1:CommonResponse" />
    </message>
<portType name="AcknowledgeFileInterfacePortType">
<operation name="sendAcknowledgment">
  <input name="sendAcknowledgmentRequest"
    message="tns:sendAcknowledgmentRequest" />
  <output name="sendAcknowledgmentResponse"
    message="tns:sendAcknowledgmentResponse" />
    </operation>
    </portType>
<binding name="AcknowledgeFileInterfaceHttpBinding"
    type="tns:AcknowledgeFileInterfacePortType">
  <wsdlsoap:binding style="rpc"
    transport="http://schemas.xmlsoap.org/soap/http" />
<operation name="sendAcknowledgment">
  <wsdlsoap:operation soapAction="" />
<input name="sendAcknowledgmentRequest">
  <wsdlsoap:body use="literal"
    namespace="http://rim.biz.core.host.etcc.com" />
    </input>
<output name="sendAcknowledgmentResponse">
  <wsdlsoap:body use="literal"
    namespace="http://rim.biz.core.host.etcc.com" />
    </output>
    </operation>
    </binding>
<service name="AcknowledgeFileInterface">
<port name="AcknowledgeFileInterfaceHttpPort"
    binding="tns:AcknowledgeFileInterfaceHttpBinding">
  <wsdlsoap:address
    location="http://localhost:8888/host_ui/services/AcknowledgeFileInterfa
    ce" />
    </port>
    </service>
    </definitions>
```

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Appendix D TRANSPONDERVALIDATIONLIST

D.1 XSD

```
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema">
   <xsd:element name="TransponderValidationList">
      <xsd:element name="Header" type="HeaderType" />
      <xsd:element name="Body"   type="BodyType"   />
   </xsd:element>

  <xsd:complexType name="HeaderType">
       <xsd:element name="FileGenerateTime"   type="xsd:dateTime" />
       <xsd:element name="TotalRecordCount"   type="xsd:long"     />
  </xsd:complexType>

  <xsd:complexType name="BodyType">
      <xsd:element name="AccountVehicle"
                     minOccurs="0" maxOccurs="unbounded">
         <xsd:complexType>
            <xsd:element name="CSCClassification"
                         type="CSCClassificationType"/>
            <xsd:element name="TransponderID"
                         type="TransponderIDType" />
            <xsd:element name="TransponderAgencyCode"
                         type="AgencyCodeType"  />
            <xsd:element name="TransponderProtocol"
                         type="TransponderProtocolType"/>
            <xsd:element name="TransponderStatusCode"
                         type="TransponderStatusType"/>
         </xsd:complexType>
      </xsd:element>
  </xsd:complexType>

  <xsd:simpleType name="CSCClassificationType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="0"/>
      <xsd:enumeration value="1"/>
      <xsd:enumeration value="2"/>
      <xsd:enumeration value="3"/>
      <xsd:enumeration value="4"/>
      <xsd:enumeration value="5"/>
      <xsd:enumeration value="6"/>
      <xsd:enumeration value="7"/>
      <xsd:enumeration value="8"/>
      <xsd:enumeration value="9"/>
      <xsd:enumeration value="10"/>
    </xsd:restriction>
  </xsd:simpleType>

  <xsd:simpleType name="TransponderIDType">
    <xsd:restriction base="xsd:string">
      <xsd:length  value="10">
      <xsd:pattern value="\d{10}"/>
    </xsd:restriction>
  </xsd:simpleType>

  <xsd:simpleType name="AgencyCodeType">
    <xsd:restriction base="xsd:int">
      <minInclusive value="0"/>
```

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```
      <maxInclusive value="99"/>
    </xsd:restriction>
  </xsd:simpleType>

  <xsd:simpleType name="ProtocolType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="SeGo"/>
      <xsd:enumeration value="ASTM"/>
    </xsd:restriction>
  </xsd:simpleType>

  <xsd:simpleType name="TransponderStatusType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="0"/>
      <xsd:enumeration value="1"/>
      <xsd:enumeration value="2"/>
      <xsd:enumeration value="3"/>
      <xsd:enumeration value="4"/>
      <xsd:enumeration value="5"/>
      <xsd:enumeration value="6"/>
      <xsd:enumeration value="7"/>
      <xsd:enumeration value="8"/>
    </xsd:restriction>
  </xsd:simpleType>
</xsd:schema>
```

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Appendix E RATE SCHEDULE SAMPLE FILE

A sample Lane Variable Rate Schedule File follows.

```
; Created 10/01/2004 08:00

[FareStructure]
FareID=1
Fare=2, 1, 50                       ; Class 2, cash (type 1)
Fare=3, 1, 75                       ; Class 3
Fare=4, 1, 100                      ; Class 4
Fare=5, 1, 125                      ; Class 5
Fare=6, 1, 150                      ; Class 6
Fare=2, 2, 35                       ; Class 2, AVI (type 2)
Fare=3, 2, 45                       ; Class 3
Fare=4, 2, 55                       ; Class 4
Fare=5, 2, 65                       ; Class 5
Fare=6, 2, 75                       ; Class 6
Fare=2, 8, 25                       ; Class 2, Credit AVI (type 8)
Fare=3, 8, 25                       ; Class 3
Fare=4, 8, 25                       ; Class 4
Fare=5, 8, 25                       ; Class 5
Fare=6, 8, 25                       ; Class 6

[FareStructure]
FareID=2                            ; $0.50 starting fare
Fare=2, 1, 50                       ; Class 2, cash (type 1)
Fare=3, 1, 75                       ; Class 3
Fare=4, 1, 100                      ; Class 4
Fare=5, 1, 125                      ; Class 5
Fare=6, 1, 150                      ; Class 6
Fare=2, 2, 35                       ; Class 2, AVI (type 2)
Fare=3, 2, 45                       ; Class 3
Fare=4, 2, 55                       ; Class 4
Fare=5, 2, 65                       ; Class 5
Fare=6, 2, 75                       ; Class 6
                                    ; Credit AVI (type 8) set to zero

[FareStructure]
FareID=3                            ; $0.65 strarting fare
Fare=2, 1, 65                       ; Class 2, cash (type 1)
Fare=3, 1, 95                       ; Class 3
Fare=4, 1, 125                      ; Class 4
Fare=5, 1, 150                      ; Class 5
Fare=6, 1, 200                      ; Class 6
Fare=2, 2, 45                       ; Class 2, AVI (type 2)
Fare=3, 2, 55                       ; Class 3
Fare=4, 2, 65                       ; Class 4
Fare=5, 2, 75                       ; Class 5
Fare=6, 2, 85                       ; Class 6
                                    ; Credit AVI (type 8) set to zero

[Schedule-Fare]
```

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```
ScheduleID=1                                ; Fixed rate for all 7 days
Period=SUN, 00:00, SUN, 00:00, 1

[Schedule-Fare]
ScheduleID=2                                ; Variable rate AM rush
Period=SUN, 00:00, MON, 05:00, 2
Period=MON, 05:00, MON, 09:00, 3            ; 5am-9am
Period=MON, 09:00, TUE, 05:00, 2
Period=TUE, 05:00, TUE, 09:00, 3            ; 5am-9am
Period=TUE, 09:00, WED, 05:00, 2
Period=WED, 05:00, WED, 09:00, 3            ; 5am-9am
Period=WED, 09:00, THU, 05:00, 2
Period=THU, 05:00, THU, 09:00, 3            ; 5am-9am
Period=THU, 09:00, FRI, 05:00, 2
Period=FRI, 05:00, FRI, 09:00, 3            ; 5am-9am
Period=FRI, 09:00, SUN, 00:00, 2

[Schedule-Fare]
ScheduleID=3                                ; Variable rate PM rush
Period=SUN, 00:00, MON, 16:00, 2
Period=MON, 16:00, MON, 19:00, 3            ; 4pm-7pm
Period=MON, 19:00, TUE, 16:00, 2
Period=TUE, 16:00, TUE, 19:00, 3            ; 4pm-7pm
Period=TUE, 19:00, WED, 16:00, 2
Period=WED, 16:00, WED, 19:00, 3            ; 4pm-7pm
Period=WED, 19:00, THU, 16:00, 2
Period=THU, 16:00, THU, 19:00, 3            ; 4pm-7pm
Period=THU, 19:00, FRI, 16:00, 2
Period=FRI, 16:00, FRI, 19:00, 3            ; 4pm-7pm
Period=FRI, 19:00, SUN, 00:00, 2

[Plaza-Schedule]
Plaza=ABC, MLP1,  N, 01/01/2004 00:00, 99/99/9999 23:59, 1
Plaza=ABC, MLP1,  N, 07/04/2006 00:00, 07/05/2006 00:00, 2
Plaza=ABC, MLP1,  S, 01/01/2004 00:00, 99/99/9999 23:59, 3
```

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Likewise, an equivalent sample Lane Variable Rate Schedule File may be produced as follows.

```
; Created 10/01/2004 08:00

[Plaza-Schedule]
Plaza=ABC, MLP1,  N, 01/01/2004 00:00, 99/99/9999 23:59, 1
Plaza=ABC, MLP1,  N, 07/04/2006 00:00, 07/05/2006 00:00, 2
Plaza=ABC, MLP1,  S, 01/01/2004 00:00, 99/99/9999 23:59, 3

[Schedule-Fare]
ScheduleID=1                              ; Fixed rate for all 7 days
Period=SUN, 00:00, SUN, 00:00, 1

[Schedule-Fare]
ScheduleID=2                              ; Variable rate AM rush
Period=SUN, 00:00, MON, 05:00, 2
Period=MON, 05:00, MON, 09:00, 3          ; 5am-9am
Period=MON, 09:00, TUE, 05:00, 2
Period=TUE, 05:00, TUE, 09:00, 3          ; 5am-9am
Period=TUE, 09:00, WED, 05:00, 2
Period=WED, 05:00, WED, 09:00, 3          ; 5am-9am
Period=WED, 09:00, THU, 05:00, 2
Period=THU, 05:00, THU, 09:00, 3          ; 5am-9am
Period=THU, 09:00, FRI, 05:00, 2
Period=FRI, 05:00, FRI, 09:00, 3          ; 5am-9am
Period=FRI, 09:00, SUN, 00:00, 2

[Schedule-Fare]
ScheduleID=3                              ; Variable rate PM rush
Period=SUN, 00:00, MON, 16:00, 2
Period=MON, 16:00, MON, 19:00, 3          ; 4pm-7pm
Period=MON, 19:00, TUE, 16:00, 2
Period=TUE, 16:00, TUE, 19:00, 3          ; 4pm-7pm
Period=TUE, 19:00, WED, 16:00, 2
Period=WED, 16:00, WED, 19:00, 3          ; 4pm-7pm
Period=WED, 19:00, THU, 16:00, 2
Period=THU, 16:00, THU, 19:00, 3          ; 4pm-7pm
Period=THU, 19:00, FRI, 16:00, 2
Period=FRI, 16:00, FRI, 19:00, 3          ; 4pm-7pm
Period=FRI, 19:00, SUN, 00:00, 2

[FareStructure]
FareID=1
Fare=2, 1, 50                        ; Class 2, cash (type 1)
Fare=3, 1, 75                        ; Class 3
Fare=4, 1, 100                       ; Class 4
Fare=5, 1, 125                       ; Class 5
Fare=6, 1, 150                       ; Class 6
Fare=2, 2, 35                        ; Class 2, AVI (type 2)
Fare=3, 2, 45                        ; Class 3
Fare=4, 2, 55                        ; Class 4
Fare=5, 2, 65                        ; Class 5
Fare=6, 2, 75                        ; Class 6
```

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```
Fare=2, 8, 25                       ; Class 2, Credit AVI (type 8)
Fare=3, 8, 25                       ; Class 3
Fare=4, 8, 25                       ; Class 4
Fare=5, 8, 25                       ; Class 5
Fare=6, 8, 25                       ; Class 6

[FareStructure]
FareID=2                            ; $0.50 starting fare
Fare=2, 1, 50                       ; Class 2, cash (type 1)
Fare=3, 1, 75                       ; Class 3
Fare=4, 1, 100                      ; Class 4
Fare=5, 1, 125                      ; Class 5
Fare=6, 1, 150                      ; Class 6
Fare=2, 2, 35                       ; Class 2, AVI (type 2)
Fare=3, 2, 45                       ; Class 3
Fare=4, 2, 55                       ; Class 4
Fare=5, 2, 65                       ; Class 5
Fare=6, 2, 75                       ; Class 6
                                    ; Credit AVI (type 8) set to zero

[FareStructure]
FareID=3                            ; $0.65 strarting fare
Fare=2, 1, 65                       ; Class 2, cash (type 1)
Fare=3, 1, 95                       ; Class 3
Fare=4, 1, 125                      ; Class 4
Fare=5, 1, 150                      ; Class 5
Fare=6, 1, 200                      ; Class 6
Fare=2, 2, 45                       ; Class 2, AVI (type 2)
Fare=3, 2, 55                       ; Class 3
Fare=4, 2, 65                       ; Class 4
Fare=5, 2, 75                       ; Class 5
Fare=6, 2, 85                       ; Class 6
                                    ; Credit AVI (type 8) set to zero
```

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Appendix F DOMAINS

F.1 ACKCODES

Ack Code	Ack Message
0	File received successfully
1	File cannot be unzipped
2	File cannot be processed
3	File format is not correct
999	Unknown Error

F.2 TRANSPONDERAGENCYCODE

Example data only

AgencyCode	Description
78	WSDOT
218	TNB
219	CVISN

F.3 DECLARATIONSTATES

DeclarationState	Description
0	Undefined
1	SOV
2	HOV 2+
3	HOV 3+
4	HOV 4+
5	Exempt

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F.4 FACILITYCODES

Example data only

FacilityCode	Description
167N	SR167
167S	SR167
SR16	TNB
520	SR520

F.5 INTERFACENAMES

InterfaceName	Description
RATE	Rate Schedule
TVL	Transponder Validation List

F.6 LANEMODES

LaneMode	Description
0	Lane closed
4	AVI
5	Emergency
6	Special Events

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F.7 PLAZACODES

Example data only

FacilityCode	PlazaCode	Description
167N	15SW	SR167 - 15th St SW HOT Lane
167N	SR18	SR167 - SR18 HOT Lane
167N	15NW	SR167 - 15th St NW HOT Lane
SR16	TNB	SR16 Tacoma Narrows Bridge - Lane 01
SR16	TNB	SR16 Tacoma Narrows Bridge - Lane 02
SR16	TNB	SR16 Tacoma Narrows Bridge - Lane 03
SR16	TNB	SR16 Tacoma Narrows Bridge - Lane 04
520	520EB	SR520 Bridge Eastbound - Lane 01
520	520EB	SR520 Bridge Eastbound - Lane 02
520	520WB	SR520 Bridge Westbound - Lane 03
520	520WB	SR520 Bridge Westbound - Lane 04

F.8 ETCSSTATUSCODES

ETCSStatusCode	Description
1	All equipment functioning normal
2	Some equipment in degraded state

F.9 TRANSACTIONTYPES

TransactionType	Description
2	Transponder (AVI)
1	Photo Enforced (prepaid video or post paid video)

F.10 TRANSPONDERPROTOCOLS

TransponderProtocol	Description
SeGo	Super eGo
ISO 6000c	6c

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F.11 TRANSPONDERSTATUSCODES

TransponderStatusCode	Description
0	No Status
1	Valid
2	Low Balance
3	Invalid
4	Stolen
5	Lost
6	No Balance

F.12 UNUSUALOCCURRENCECODES

UnusualOccurrenceCode	Description
Undefined	Undefined

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F.13 VEHICLECLASSTYPES

VehicleClassType	Description
0	No Vehicle Class
1	Class 1
2	Class 2
3	Class 3
4	Class 4
5	Class 5
6	Class 6
7	Class 7
8	Class 8
9	Class 9
10	Class 10

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Appendix G COMPLEX TYPES

G.1 TRANSPONDERTYPE

The TransponderType is an XML complex type describing the detailed features of a transponder.

The XML tags are described in the following table:

TagName	Required?	Data Type	Notes
TransponderID	Required	string	Transponder Serial Number *Format*: 10 digits with leading zeros *Range*: 0000000000 to 4294967295
IssuingAgencyCode	Required	string	Agency code of the issuing agency *Domain*: AgencyCodes
TransponderProtocol	Required	string	Transponder protocol *Domain*: TransponderProtocols
TransponderStatusCode	Required	string	Transponder status at the time the transaction was read in the lane. This status is pushed to the lanes in the transponder validation list file(s). *Domain*: TransponderStatusCodes
DeclarationState	Optional	string	Patrons may declare their state in HOT lanes. *Domain*: DeclarationStates
LowBattery	Optional	boolean	Identifies the condition of the battery in the transponder.

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G.2 IMAGELISTTYPE

The ImageListType is an XML complex type describing the detailed features of a list of images. The XML tags are described in the following table:

TagName	Required?	Data Type	Notes
ImageLocation	Required	string	Directory containing the image.
SelectedImageName	Required	string	ImageName that was chosen by the ETCS vendor as the preferred image. In most cases, this will be the image with the best OCR results, but in some cases, the ETCS will follow different rules. For instance, the SR520 SOW states that they must choose the front shot image if the OCR results do not match between the front and the rear, and if the AxleCount is 3 or greater.
SelectedROIImageName	Optional	string	ImageName of the ROI that corresponds with the chosen Image.
Image minOccurs="1" maxOccurs="unbounded"			
ImageName	Required	string	File name of the image.
ImageType	Required	string	*Domain*: ROI – Region of Interest FSI – Front Shot Image BSI – Back Shot Image VCV – vehicle
OCRPlateNumber	Optional	string	License plate number as identified by the OCR software or manual review
OCRPlateState	Optional	string	License plate state as identified by the OCR software or manual review
OCRPlateType	Optional	string	License plate type as identified by the OCR software or manual review
OCRPlateNumberConfidence	Optional	int	Confidence percentage assigned by the OCR software for license plate number. *Range*: 0 to 99
OCRPlateStateConfidence	Optional	int	Confidence percentage assigned by the OCR software for license plate state. *Range*: 0 to 99
OCRPlateTypeConfidence	Optional	int	Confidence percentage assigned

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			by the OCR software for license plate type. *Range*: 0 to 99
Manual Image Review Conducted	Required	Boolean	0=no 1=yes

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Appendix H RESPONSE CODES

Response Code	Response Message	Troubleshooting Tips
000	Transaction received successfully	No troubleshooting. Rejoice instead.
101	System is down for maintenance	Check for scheduled maintenance. If necessary, call the CSC help desk to verify. Try to determine when the system will become available. In the meantime, queue transactions so they can be submitted when the system comes back up.
102	General error (undefined)	The web service failed for an unexpected reason. Additional information will be provided in the ResponseMessage data element. Use the ResponseMessage information to troubleshoot. Report the error to the CSC help desk.
103	Invalid data in field "TagName"	Verify that the data was submitted correctly. Confirm by comparing to this ICD. If the data was specified correctly, report to the CSC help desk.
104	Unknown plaza "PlazaCode"	The unknown PlazaCode will be specified in the ResponseMessage data element. Verify that the correct PlazaCode was submitted.
105	Unknown Lane "LaneNumber"	The unknown LaneNumber will be specified in the ResponseMessage data element. Verify that the correct LaneNumber was submitted.
106	Missing required field, "TagName"	Correct the code to include the missing data element.
107	Transaction older than 60 days	Verify that the TransactionDateTime is correct. If it is correct, try to determine why old data is being submitted.
108	Duplicate transaction previously received with ResponseCode "xxx".	This response is expected if the ETCS vendor resubmits old transactions, where some were successfully transmitted, but some were not. If this happens on an ongoing basis, the ETCS vendor needs to track down the information that is being submitted more than once.
109	XML format error.	If possible, the response message details will be specified in the ResponseMessage field.

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APPENDIX J

RESPONSIBILITY MATRIX

EXHIBIT 21-1: TOLL AND TOLL-RELATED INTELLIGENT TRANSPORTATION SYSTEMS IMPLEMENTATION
Responsibility Matrix: GDOT—NWC Managed Lanes Project

	Design	Procure	Install/ Construct	Design	Procure	Install / Construct	
Element/Task/Component/ Sub-system	**Design/Builder (Developer)**			**System Integrator (Toll SI)**			**Comments Other Responsibility/Information**
Tolling and Toll-Related ITS Locations and Electronic Enclosures							
Schedule	P	P	P	S	C	S	Developer must accommodate the Toll SI's schedule. All schedule changes or updates which impact the Toll SI's tasks must be approved by the Toll SI prior to submittal to GDOT.
Toll Layouts	P	P	P	S	C	C	Toll SI to provide requirements for specific lane, cabinet and site layouts. Developer to incorporate into Design Packages. Toll SI to confirm Developer design meets requirements.
Grading	P	P	P	C	N	C	
Drainage	P	P	P	C	N	C	
Aesthetics	P	P	P	S	N	N	Concept Drawings to be provided by Developer. Toll SI to review for tolling equipment placement requirements. Developer to incorporate Toll SI modifications where conflicts with Toll System occur.
Utilities	P	P	P	S	C	C	Toll SI to provide specific requirements for power for Toll System. Toll SI to provide requirements for any utility clearances in the vicinity of locations with any Toll System equipment. Developer to incorporate into toll facilities design and install after Toll SI confirms Developer design alleviates tolling conflicts.
Striping	P	P	P	S	N	N	
Pavement	P	P	P	S	N	C	Toll SI to provide requirements for special pavement in toll gantry areas. Toll SI shall coordinate joint spacing to reduce conflicts with loop placement and sign off on riser locations before concrete pour. Toll SI to confirm that Developer's pavement design plans will support Toll SI's Toll System.
Landscaping	P	P	P	C	N	N	
Fencing/Guardrail/Bollards/Concrete Barrier	P	P	P	S	C	C	Toll SI to provide requirements for specific equipment clearances for Toll System and roadside cabinets. Developer to incorporate into Roadway Design. Toll SI to confirm that design plans meet requirements.

LEGEND			
Primary Responsibility: P	**Support Responsibility: S**	**Coordination Responsibility Only: C**	**No Responsibility: N**

EXHIBIT 21-1: TOLL AND TOLL-RELATED INTELLIGENT TRANSPORTATION SYSTEMS IMPLEMENTATION
Responsibility Matrix: GDOT—NWC Managed Lanes Project

	Design	Procure	Install/ Construct	Design	Procure	Install / Construct	
Element/Task/Component/ Sub-system	**Design/Builder (Developer)**			**System Integrator (Toll SI)**			**Comments Other Responsibility/Information**
Gantries/Trusses/ Junction boxes/ Conduit	P	P	P	S	C	S	Toll SI to provide requirements for specific equipment mounts, conduits, J boxes, power and data wiring for Toll System. Developer to incorporate into structural and site design. Developer to provide and install conduits, cable trays/water tight wireways, truss, junction boxes, pull strings and bell ends for all conduits. Toll SI shall install all Toll System and toll-related ITS related cable & wiring, including communications systems. Developer to install conduit from cabinet to base of toll gantry / structure column in a junction box. Toll SI shall furnish and install mounting brackets for Toll System.
Roadside Cabinets with Environmental Control	P	P	P	S	S	S	Toll SI to confirm size and number of roadside toll, Toll Rate CMS (TRS), TRS CCTV, Travel Time and shared MDS cabinets needed. Developer shall incorporate location into site grading and drainage, and structure design. HVAC: Developer to comply with the America Society of Heating, Refrigeration, and Air Conditioning Engineers: Thermal Guidelines for Data Processing Environments. Developer to procure cabinets and environmental control elements. Developer to install pads and support structures with conduit plumbing, cabinets and HVAC. Developer to verify all mechanical elements are properly installed and in good working condition. Developer to provide power to the DIN and electrify cabinet.
Communications System (from equipment cabinet to device)	P	N	P	S	P	S	Toll SI to provide communications design requirements for Toll System and toll-related ITS locations. Developer to incorporate into the toll gantry and toll-related ITS support structure designs. Toll SI responsible for pulling fiber from cabinet to toll and toll-related ITS equipment through Developer installed conduits.

LEGEND			
Primary Responsibility: P	**Support Responsibility: S**	**Coordination Responsibility Only: C**	**No Responsibility: N**

EXHIBIT 21-1: TOLL AND TOLL-RELATED INTELLIGENT TRANSPORTATION SYSTEMS IMPLEMENTATION
Responsibility Matrix: GDOT—NWC Managed Lanes Project

	Design	Procure	Install/ Construct	Design	Procure	Install / Construct	
Element/Task/Component/ Sub-system	**Design/Builder (Developer)**			**System Integrator (Toll SI)**			**Comments Other Responsibility/Information**
• **Automatic Vehicle Identification , Automatic Detection and Vehicle Classification, Violation Enforcement Systems**							
Automatic Vehicle Identification (AVI) and Automatic Vehicle Detection and Classification (AVDC)	S	S	S	P	P	P	Toll SI to provide AVI System and AVDC System Mounts, Wiring and Cables. Developer to construct special pavement and assure ferrous objects (ie: rebar, grates, etc.) are not in toll revenue collection detection system(s) zone of influence and provide all necessary conduits and ground boxes to pull loops. Developer to install junction / splice boxes. Developer to procure and install equipment cabinet for reader (if needed by Toll SI). Toll SI primary on all tolling terminations. Toll SI to provide and install loops.
VES System, Camera, Illumination, Enclosures, Mounts, Supports, Wiring and Cables	S	S	S	P	P	P	Toll SI to provide and install VES System, camera, illumination enclosures, mounting supports, VES camera wiring and cables. Developer to provide and install conduits, j-boxes, and power wiring (pigtails at end of conduit runs).
Zone Controllers	N	N	C	P	P	P	Toll SI will install all zone controller electronics and complete all terminations.
Federal Communication Commission License Preparation and Submission	S	N	S	P	P	P	Developer to provide FCC format compliant AVI location and engineering required information, and prepare FCC Form 601 Schedule D and all necessary engineering Exhibits to support FCC Form 601 Schedule D. Toll SI responsible for remainder of FCC license application and providing to SRTA to submit to the FCC.,
POWER DISTRIBUTION SUB-SYSTEM							
Conduits/Ducts & Junction/Pull Boxes/ Outlets	P	P	P	S	C	C	Developer to provide necessary conductors, ducts & junction/pull boxes along the corridor and install up to cabinets. Developer to install conduit from the Developer installed cabinet to the junction boxes at the column of the gantry / support structure.

LEGEND			
Primary Responsibility: P	**Support Responsibility: S**	**Coordination Responsibility Only: C**	**No Responsibility: N**

EXHIBIT 21-1: TOLL AND TOLL-RELATED INTELLIGENT TRANSPORTATION SYSTEMS IMPLEMENTATION
Responsibility Matrix: GDOT—NWC Managed Lanes Project

	Design	Procure	Install/ Construct	Design	Procure	Install / Construct	
Element/Task/Component/ Sub-system	**Design/Builder (Developer)**			**System Integrator (Toll SI)**			**Comments Other Responsibility/Information**
Uninterruptible Power Supplies (UPS) – ~~Toll and~~GDOT Toll-Related ITS	P~~S~~	P~~N~~	P~~C~~	S~~P~~	S~~P~~	C~~P~~	~~Toll SI to provide Uninterruptible Power Supply Systems, Enclosures, Mounts, UPS Wiring and Cables Control and Monitoring for toll and toll-related ITS equipment installed by the Toll SI.~~ Toll SI to provide requirements to Developer so that Developer can include requirements in design of equipment cabinets and Communication Hubs and associated infrastructure. Developer to provide and install UPS for Night Vision CCTV, Access Control System (except for Toll Rate CMS), and Communication Hubs.~~toll-related ITS devices installed by the Developer.~~ Developer to provide and install conduits, j-boxes, and any civil requirements for connection to permanent generators.
Uninterruptible Power Supplies (UPS) – Toll and SRTA Toll-Related ITS	P	N	C	S	P	P	Toll SI to provide Uninterruptible Power Supply Systems, Enclosures, Mounts, UPS Wiring and Cables Control and Monitoring for toll and toll-related ITS equipment installed by the Toll SI. The Toll SI will also provide and install the UPS for the Toll Rate Sign CMS, CCTV focused on the Toll Rate Signs, and SRTA's cabinet at Shared MDS locations. Toll SI to provide requirements to Developer so that Developer can include requirements in design of equipment cabinets and Communication Hubs and associated infrastructure. Developer to provide and install conduits, j-boxes, and any civil requirements for connection to permanent generators.
Lightning Protection & Grounding	P	P	P	C	C	C	Developer responsible for installing lightning protection and grounding infrastructure for structures, cabinets and Communication Hubs. Developer to ground all Developer installed ITS and toll-related ITS equipment. Toll SI to confirm requirements for Toll System and Toll SI installed toll-related ITS equipment. Toll SI to tie Toll System and Toll SI installed toll-related ITS equipment into gantry, cabinet and hub grounding.

LEGEND			
Primary Responsibility: P	**Support Responsibility: S**	**Coordination Responsibility Only: C**	**No Responsibility: N**

EXHIBIT 21-1: TOLL AND TOLL-RELATED INTELLIGENT TRANSPORTATION SYSTEMS IMPLEMENTATION
Responsibility Matrix: GDOT—NWC Managed Lanes Project

	Design	Procure	Install/ Construct	Design	Procure	Install / Construct	
Element/Task/Component/ Sub-system	**Design/Builder (Developer)**			**System Integrator (Toll SI)**			**Comments Other Responsibility/Information**
Power Conductors & Wiring	P	P	P	S	C	C	Developer to procure and install the electrical panel and switch box. Toll SI to provide the power specifications for tolling and toll-related ITS locations. Developer shall connect electrical power to service entrance on the DIN Rail and electrify the equipment cabinet.
Generator	P	P	P	S	C	C	Developer to design, procure and install natural gas generators. Toll SI to confirm power requirements at each Toll Zone.
COMMUNICATIONS SUB-SYSTEMS							
Conduits/Ducts & Junction/Pull Boxes/Outlets	P	P	P	S	C	C	Toll SI to provide specific Communications design requirements for Toll System and toll-related ITS. Developer to incorporate into the design and install along the corridor to the cabinet and from the cabinet through the tolling and toll-related ITS locations.
Fiber (including future)	P	P	P	S	S	S	Toll SI to confirm fiber requirements for tolling and toll-related ITS. Developer to incorporate into design of backbone and laterals. Developer to install along the corridor from communication hub to cabinets (patch panels).
Computer Rack System	C	P	P	P	S	S	Toll SI to provide requirements for key accessed computer rack system. Developer to procure and install at communication hub(s).
Routers	C	N	C	P	P	P	Toll SI responsible for toll and toll-related ITS network equipment.
Hub(s)	P	P	P	S	C	S	Toll SI to confirm specific requirements (e.g. area needed, power, heat loads, etc) for toll and toll-related ITS. Developer to design and construct, including secured permanent generator and all related infrastructure. HVAC equipment location shall be approved by GDOT, but initial recommendation is to place out of sight on roof of the building and secure accordingly. Hub(s) will provide space for tolling and toll-related ITS computer rack system(s). Developer shall confirm

LEGEND			
Primary Responsibility: P	**Support Responsibility: S**	**Coordination Responsibility Only: C**	**No Responsibility: N**

EXHIBIT 21-1: TOLL AND TOLL-RELATED INTELLIGENT TRANSPORTATION SYSTEMS IMPLEMENTATION
Responsibility Matrix: GDOT—NWC Managed Lanes Project

	Design	Procure	Install/ Construct	Design	Procure	Install / Construct	
Element/Task/Component/ Sub-system	**Design/Builder (Developer)**			**System Integrator (Toll SI)**			**Comments Other Responsibility/Information**
							with GDOT whether space for GDOT ITS related computer rack system(s) is needed. Toll SI responsible for WAN connection(s) with telecommunication companies.
Switches	C	N	C	P	P	P	Toll SI responsible for toll and toll-related ITS network equipment.
Firewalls	C	N	C	P	P	P	
Patch/Distribution Panels	P	P	P	S	C	C	Developer shall procure and install patch panels, and terminate lateral (drop fiber) at the patch panel.
Corridor Communications System	P	P	P	S	S	S	Developer to provide Fault Tolerant Single Mode Fiber Optic IP Based NWC Corridor Communication System. Developer to provide corridor conduit and duct bank system, including all that is necessary to furnish and install conduit, ground boxes, and duct bank.
Corridor to Back Office Communication System	N	N	N	P	P	P	Toll SI to provide Fault Tolerant IP Based NWC Toll Road Corridor to SRTA Back Office Communication System for Toll System and toll-related ITS.
Utility Vaults & Junction/Pull Boxes	P	P	P	C	C	C	
TOLL-RELATED ITS							
Access Control System (ACS) – Copper Cable-Based Connection between ACS Cabinet and Toll Rate CMS Cabinet	P	P	P	S	N	C	Developer to install a direct copper (non-network) cable-based connection within conduit connecting the ACS controller at the ACS roadside cabinet and the Toll Zone's associated toll rate CMS(s) controllers within the sign's equipment cabinet. Developer shall test and confirm that signal is transmitted from ACS controller and received by toll rate CMS controller.
Toll Rate CMS	P	P	P	S	S	S	Toll SI to confirm requirements for toll rate CMS panels. Developer to design and install foundations, support structure, static signs, conduits, j-boxes, mounting supports, lighting, power wiring. (pigtails at end of conduit runs). Developer to procure and install static sign portion, procure and install CMS panels, and rack mount associated hardware in equipment cabinet. Toll SI

LEGEND			
Primary Responsibility: P	**Support Responsibility: S**	**Coordination Responsibility Only: C**	**No Responsibility: N**

EXHIBIT 21-1: TOLL AND TOLL-RELATED INTELLIGENT TRANSPORTATION SYSTEMS IMPLEMENTATION
Responsibility Matrix: GDOT—NWC Managed Lanes Project

	Design	Procure	Install/ Construct	Design	Procure	Install / Construct	
Element/Task/Component/ Sub-system	**Design/Builder (Developer)**			**System Integrator (Toll SI)**			**Comments Other Responsibility/Information**
							to integrate with SRTA network.
Travel Time System – AVI Antennas, Readers	S	N	S	P	P	P	Toll SI to provide and install Antennas, Readers, Mounts, Wiring and Cables. Developer to provide and install equipment cabinet(s), support structure, conduits, j-boxes, mounting supports, & power wiring. (Pigtails at end of conduit runs.)
CCTV Cameras, Enclosures, Mounts, Supports, Wiring, and Cables (Toll Rate CMS)	P	P	P	S	N	S	Toll SI to confirm locations for CCTV cameras focused on toll-rate CMS. Developer to provide and install toll-rate CMS CCTV cameras, mounting supports, wiring, cables, support structure, conduits, j-boxes, and equipment cabinet (pigtails at end of conduit runs).
CCTV Camera, Enclosures, Mounts, Supports, Wiring, and Cables (Non-Toll Rate CMS)	P	N	S	S	P	P	Toll SI to confirm locations for non-toll rate CMS focused CCTV cameras connected to SRTA's network. Toll SI to provide and install the non-toll rate CMS CCTV cameras, mounts, wiring and cables. Developer to provide and install support structure, conduits, j-boxes, equipment cabinet, and power wiring (pigtails at end of conduit runs).
Microwave Detection Sensors (MDS)	P	P	P	S	N	S	GDOT, SRTA and Toll SI to confirm locations for shared MDS devices. Developer to fully install MDS for GDOT per special provisions and GDOT ITS requirements. For SRTA portion of shared MDS device, Developer shall provide and install MDS, Enclosures, Mounts, Wiring and Cables. Developer to provide and install support structure, conduits, j-boxes, mounting supports, power wiring, communication cable between the MDS device and the Developer provided media converter in SRTA's equipment cabinet. Toll SI to connect media converter to SRTA's drop fiber terminated by the Developer at the patch panel.

LEGEND			
Primary Responsibility: P	**Support Responsibility: S**	**Coordination Responsibility Only: C**	**No Responsibility: N**

APPENDIX 5: TOLL AND TOLL-RELATED INTELLIGENT TRANSPORTATION SYSTEMS IMPLEMENTATION
Responsibility Matrix: GDOT—I-75 Express Lanes Project

	Design	Procure	Install/ Construct	Design	Procure	Install / Construct	
Element/Task/Component/ Sub-system	**Design/Builder (Contractor)**			**System Integrator (Toll SI)**			**Comments Other Responsibility/Information**
Tolling and Toll-Related ITS Locations and Electronic Enclosures							
Schedule	P	P	P	S	C	S	Contractor must accommodate the Toll SI's schedule. All schedule changes or updates which impact the Toll SI's tasks must be approved by the Toll SI prior to submittal to GDOT.
Toll Layouts	P	P	P	S	C	C	Toll SI to provide requirements for specific lane, cabinet and site layouts. Contractor to incorporate into Design Packages. Toll SI to confirm Contractor design meets requirements.
Grading	P	P	P	C	N	C	
Drainage	P	P	P	C	N	C	
Aesthetics	P	P	P	S	N	N	Concept Drawings to be provided by Contractor. Toll SI to review for tolling equipment placement requirements. Contractor to incorporate Toll SI modifications where conflicts with Toll System occur.
Utilities	P	P	P	S	C	C	Toll SI to provide specific requirements for power for Toll System. Toll SI to provide requirements for any utility clearances in the vicinity of locations with any Toll System equipment. Contractor to incorporate into toll facilities design and install after Toll SI confirms Contractor design alleviates tolling conflicts.
Striping	P	P	P	S	N	N	
Pavement	P	P	P	S	N	C	Toll SI to provide requirements for special pavement in toll gantry areas. Toll SI shall coordinate joint spacing to reduce conflicts with loop placement and sign off on riser locations before concrete pour. Toll SI to confirm that Contractor's pavement design plans will support Toll SI's Toll System.
Landscaping	P	P	P	C	N	N	
Fencing/Guardrail/Bollards/Concrete Barrier	P	P	P	S	C	C	Toll SI to provide requirements for specific equipment clearances for Toll System and roadside cabinets. Contractor to incorporate into Roadway Design. Toll SI to confirm that design plans meet requirements.

LEGEND			
Primary Responsibility: P	**Support Responsibility: S**	**Coordination Responsibility Only: C**	**No Responsibility: N**

APPENDIX 5: TOLL AND TOLL-RELATED INTELLIGENT TRANSPORTATION SYSTEMS IMPLEMENTATION
Responsibility Matrix: GDOT—I-75 Express Lanes Project

	Design	Procure	Install/ Construct	Design	Procure	Install / Construct	
Element/Task/Component/ Sub-system	**Design/Builder (Contractor)**			**System Integrator (Toll SI)**			**Comments Other Responsibility/Information**
Gantries/Trusses/ Junction boxes/ Conduit	P	P	P	S	C	S	Toll SI to provide requirements for specific equipment mounts, conduits, J boxes, power and data wiring for Toll System. Contractor to incorporate into structural and site design. Contractor to provide and install conduits, cable trays/water tight wireways, truss, junction boxes, pull strings and bell ends for all conduits. Toll SI shall install all Toll System and toll-related ITS related cable & wiring, including communications systems. Contractor to install conduit from cabinet to base of toll gantry / structure column in a junction box. Toll SI shall furnish and install mounting brackets for Toll System.
Roadside Cabinets with Environmental Control	P	P	P	S	S	S	Toll SI to confirm size and number of roadside toll, Toll Rate CMS (TRS), TRS CCTV, Travel Time and shared MDS cabinets needed. Contractor shall incorporate location into site grading and drainage, and structure design. HVAC: Contractor to comply with the America Society of Heating, Refrigeration, and Air Conditioning Engineers: Thermal Guidelines for Data Processing Environments. Contractor to procure cabinets and environmental control elements. Contractor to install pads and support structures with conduit plumbing, cabinets and HVAC. Contractor to verify all mechanical elements are properly installed and in good working condition. Contractor to provide power to the DIN and electrify cabinet.
Communications System (from equipment cabinet to device)	P	N	P	S	P	S	Toll SI to provide communications design requirements for Toll System and toll-related ITS locations. Contractor to incorporate into the toll gantry and toll-related ITS support structure designs. Toll SI responsible for pulling fiber from cabinet to toll and toll-related ITS equipment through Contractor installed conduits.
Automatic Vehicle Identification , Automatic Detection and Vehicle Classification, Violation Enforcement Systems							

LEGEND			
Primary Responsibility: P	**Support Responsibility: S**	**Coordination Responsibility Only: C**	**No Responsibility: N**

APPENDIX 5: TOLL AND TOLL-RELATED INTELLIGENT TRANSPORTATION SYSTEMS IMPLEMENTATION
Responsibility Matrix: GDOT—I-75 Express Lanes Project

	Design	Procure	Install/ Construct	Design	Procure	Install / Construct	
Element/Task/Component/ Sub-system	**Design/Builder (Contractor)**			**System Integrator (Toll SI)**			**Comments Other Responsibility/Information**
Automatic Vehicle Identification (AVI) and Automatic Vehicle Detection and Classification (AVDC)	S	S	S	P	P	P	Toll SI to provide AVI System and AVDC System Mounts, Wiring and Cables. Contractor to construct special pavement and assure ferrous objects (ie: rebar, grates, etc.) are not in toll revenue collection detection system(s) zone of influence and provide all necessary conduits and ground boxes to pull loops. Contractor to install junction / splice boxes. Contractor to procure and install equipment cabinet for reader (if needed by Toll SI). Toll SI primary on all tolling terminations. Toll SI to provide and install loops.
VES System, Camera, Illumination, Enclosures, Mounts, Supports, Wiring and Cables	S	S	S	P	P	P	Toll SI to provide and install VES System, camera, illumination enclosures, mounting supports, VES camera wiring and cables. Contractor to provide and install conduits, j-boxes, and power wiring (pigtails at end of conduit runs).
Zone Controllers	N	N	C	P	P	P	Toll SI will install all zone controller electronics and complete all terminations.
Federal Communication Commission License Preparation and Submission	S	N	S	P	P	P	Contractor to provide FCC format compliant AVI location and engineering required information, and prepare FCC Form 601 Schedule D and all necessary engineering Exhibits to support FCC Form 601 Schedule D. Toll SI responsible for remainder of FCC license application and providing to SRTA to submit to the FCC.,
POWER DISTRIBUTION SUB-SYSTEM							
Conduits/Ducts & Junction/Pull Boxes/ Outlets	P	P	P	S	C	C	Contractor to provide necessary conductors, ducts & junction/pull boxes along the corridor and install up to cabinets. Contractor to install conduit from the Contractor installed cabinet to the junction boxes at the column of the gantry / support structure.
Uninterruptible Power Supplies (UPS) – GDOT Toll-Related ITS	P	P	P	S	C	C	Toll SI to provide requirements to Contractor so that Contractor can include requirements in design of equipment cabinets and Communication Hubs and associated infrastructure. Contractor to provide

LEGEND			
Primary Responsibility: P	**Support Responsibility: S**	**Coordination Responsibility Only: C**	**No Responsibility: N**

APPENDIX 5: TOLL AND TOLL-RELATED INTELLIGENT TRANSPORTATION SYSTEMS IMPLEMENTATION
Responsibility Matrix: GDOT—I-75 Express Lanes Project

	Design	Procure	Install/ Construct	Design	Procure	Install / Construct	
Element/Task/Component/ Sub-system	**Design/Builder (Contractor)**			**System Integrator (Toll SI)**			**Comments Other Responsibility/Information**
							and install UPS for Night Vision CCTV, Access Control System (except for Toll Rate CMS), and Communication Hubs. Contractor to provide and install conduits, j-boxes, and any civil requirements for connection to permanent generators.
Uninterruptible Power Supplies (UPS) – Toll and SRTA Toll-Related ITS	P	N	C	S	P	P	Toll SI to provide Uninterruptible Power Supply Systems, Enclosures, Mounts, UPS Wiring and Cables Control and Monitoring for toll and toll-related ITS equipment installed by the Toll SI. The Toll SI will also provide and install the UPS for the Toll Rate Sign CMS, CCTV focused on the Toll Rate Signs, and SRTA's cabinet at Shared MDS locations. Toll SI to provide requirements to Contractor so that Contractor can include requirements in design of equipment cabinets and Communication Hubs and associated infrastructure. Contractor to provide and install conduits, j-boxes, and any civil requirements for connection to permanent generators.
Lightning Protection & Grounding	P	P	P	C	C	C	Contractor responsible for installing lightning protection and grounding infrastructure for structures, cabinets and Communication Hubs. Contractor to ground all Contractor installed ITS and toll-related ITS equipment. Toll SI to confirm requirements for Toll System and Toll SI installed toll-related ITS equipment. Toll SI to tie Toll System and Toll SI installed toll-related ITS equipment into gantry, cabinet and hub grounding.
Power Conductors & Wiring	P	P	P	S	C	C	Contractor to procure and install the electrical panel and switch box. Toll SI to provide the power specifications for tolling and toll-related ITS locations. Contractor shall connect electrical power to service entrance on the DIN Rail and electrify the equipment cabinet.
Generator	P	P	P	S	C	C	Contractor to design, procure and install natural gas generators. Toll SI to confirm power requirements at each Toll Zone.

LEGEND			
Primary Responsibility: P	**Support Responsibility: S**	**Coordination Responsibility Only: C**	**No Responsibility: N**

APPENDIX 5: TOLL AND TOLL-RELATED INTELLIGENT TRANSPORTATION SYSTEMS IMPLEMENTATION
Responsibility Matrix: GDOT—I-75 Express Lanes Project

	Design	Procure	Install/ Construct	Design	Procure	Install / Construct	
Element/Task/Component/ Sub-system	**Design/Builder (Contractor)**			**System Integrator (Toll SI)**			**Comments Other Responsibility/Information**
COMMUNICATIONS SUB-SYSTEMS							
Conduits/Ducts & Junction/Pull Boxes/Outlets	P	P	P	S	C	C	Toll SI to provide specific Communications design requirements for Toll System and toll-related ITS. Contractor to incorporate into the design and install along the corridor to the cabinet and from the cabinet through the tolling and toll-related ITS locations.
Fiber (including future)	P	P	P	S	S	S	Toll SI to confirm fiber requirements for tolling and toll-related ITS. Contractor to incorporate into design of backbone and laterals. Contractor to install along the corridor from communication hub to cabinets (patch panels).
Computer Rack System	C	P	P	P	S	S	Toll SI to provide requirements for key accessed computer rack system. Contractor to procure and install at communication hub(s).
Routers	C	N	C	P	P	P	Toll SI responsible for toll and toll-related ITS network equipment.
Hub(s)	P	P	P	S	C	S	Toll SI to confirm specific requirements (e.g. area needed, power, heat loads, etc) for toll and toll-related ITS. Contractor to design and construct, including secured permanent generator and all related infrastructure. HVAC equipment location shall be approved by GDOT, but initial recommendation is to place out of sight on roof of the building and secure accordingly. Hub(s) will provide space for tolling and toll-related ITS computer rack system(s). Contractor shall confirm with GDOT whether space for GDOT ITS related computer rack system(s) is needed. Toll SI responsible for WAN connection(s) with telecommunication companies.
Switches	C	N	C	P	P	P	Toll SI responsible for toll and toll-related ITS network equipment.
Firewalls	C	N	C	P	P	P	
Patch/Distribution Panels	P	P	P	S	C	C	Contractor shall procure and install patch panels, and terminate lateral (drop fiber) at the patch panel.
Corridor Communications System	P	P	P	S	S	S	Contractor to provide Fault Tolerant Single Mode

LEGEND			
Primary Responsibility: P	**Support Responsibility: S**	**Coordination Responsibility Only: C**	**No Responsibility: N**

APPENDIX 5: TOLL AND TOLL-RELATED INTELLIGENT TRANSPORTATION SYSTEMS IMPLEMENTATION
Responsibility Matrix: GDOT—I-75 Express Lanes Project

	Design	Procure	Install/ Construct	Design	Procure	Install / Construct	
Element/Task/Component/ Sub-system	**Design/Builder (Contractor)**			**System Integrator (Toll SI)**			**Comments Other Responsibility/Information**
							Fiber Optic IP Based NWC Corridor Communication System. Contractor to provide corridor conduit and duct bank system, including all that is necessary to furnish and install conduit, ground boxes, and duct bank.
Corridor to Back Office Communication System	N	N	N	P	P	P	Toll SI to provide Fault Tolerant IP Based NWC Toll Road Corridor to SRTA Back Office Communication System for Toll System and toll-related ITS.
Utility Vaults & Junction/Pull Boxes	P	P	P	C	C	C	
TOLL-RELATED ITS							
Access Control System (ACS) – Copper Cable-Based Connection between ACS Cabinet and Toll Rate CMS Cabinet	P	P	P	S	N	C	Contractor to install a direct copper (non-network) cable-based connection within conduit connecting the ACS controller at the ACS roadside cabinet and the Toll Zone's associated toll rate CMS(s) controllers within the sign's equipment cabinet. Contractor shall test and confirm that signal is transmitted from ACS controller and received by toll rate CMS controller.
Toll Rate CMS	P	P	P	S	S	S	Toll SI to confirm requirements for toll rate CMS panels. Contractor to design and install foundations, support structure, static signs, conduits, j-boxes, mounting supports, lighting, power wiring. (pigtails at end of conduit runs). Contractor to procure and install static sign portion, procure and install CMS panels, and rack mount associated hardware in equipment cabinet. Toll SI to integrate with SRTA network.
Travel Time System – AVI Antennas, Readers	S	N	S	P	P	P	Toll SI to provide and install Antennas, Readers, Mounts, Wiring and Cables. Contractor to provide and install equipment cabinet(s), support structure, conduits, j-boxes, mounting supports, & power wiring. (Pigtails at end of conduit runs.)
CCTV Cameras, Enclosures, Mounts, Supports, Wiring, and Cables (Toll Rate CMS)	P	P	P	S	N	S	Toll SI to confirm locations for CCTV cameras focused on toll-rate CMS. Contractor to provide and install toll-rate CMS CCTV cameras, mounting supports, wiring, cables, support

LEGEND			
Primary Responsibility: P	**Support Responsibility: S**	**Coordination Responsibility Only: C**	**No Responsibility: N**

APPENDIX 5: TOLL AND TOLL-RELATED INTELLIGENT TRANSPORTATION SYSTEMS IMPLEMENTATION
Responsibility Matrix: GDOT—I-75 Express Lanes Project

	Design	Procure	Install/ Construct	Design	Procure	Install / Construct	
Element/Task/Component/ Sub-system	**Design/Builder (Contractor)**			**System Integrator (Toll SI)**			**Comments Other Responsibility/Information**
							structure, conduits, j-boxes, and equipment cabinet (pigtails at end of conduit runs).
CCTV Camera, Enclosures, Mounts, Supports, Wiring, and Cables (Non-Toll Rate CMS)	P	N	S	S	P	P	Toll SI to confirm locations for non-toll rate CMS focused CCTV cameras connected to SRTA's network. Toll SI to provide and install the non-toll rate CMS CCTV cameras, mounts, wiring and cables. Contractor to provide and install support structure, conduits, j-boxes, equipment cabinet, and power wiring (pigtails at end of conduit runs).
Microwave Detection Sensors (MDS)	P	P	P	S	N	S	GDOT, SRTA and Toll SI to confirm locations for shared MDS devices. Contractor to fully install MDS for GDOT per special provisions and GDOT ITS requirements. For SRTA portion of shared MDS device, Contractor shall provide and install MDS, Enclosures, Mounts, Wiring and Cables. Contractor to provide and install support structure, conduits, j-boxes, mounting supports, power wiring, communication cable between the MDS device and the Contractor provided media converter in SRTA's equipment cabinet. Toll SI to connect media converter to SRTA's drop fiber terminated by the Contractor at the patch panel.

LEGEND			
Primary Responsibility: P	**Support Responsibility: S**	**Coordination Responsibility Only: C**	**No Responsibility: N**

APPENDIX K

SITE ACCEPTANCE CHECKLIST

TOLLING SITE ACCEPTANCE CHECK-LIST
TOLLING GANTRY SITES

TOLL PLAZA NAME: **Date: ___ / ___ / ___**
DIRECTION (NB/SB):
Inspector Name(s):

TOLLING SITE ACCEPTANCE CHECK-LIST

(ALL Items must be completed prior to Toll Equipment Installation Begins)

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
	1 - GANTRY & ASSOCIATED ELEMENTS			
1	Tolling Gantry Columns & Truss (wireway unistrut per plans).			
2	Measure minimum height above roadway to ensure toll equipment clearances achieved (per plans and specifications).			
3	Measure maximum height above roadway to ensure toll equipment clearances achieved (per plans and specifications).			
4	Confirm toll equipment mounting horizontal pipe OD measurement (per plans and specifications).			
5	Note condition of all hardware assembly, including any signs of galling or any other hardware damage (provide complete photographic record).			
6	Confirm connections and connectors are properly installed (per plans, specifications, details, & manufacturer specifications), including: - Bolt size, type, materials, torque - Banding size, materials, tightness - Mounting bracket & arm size, materials, alignment			
	2 - GANTRY ELECTRICAL & ENCLOSURE			
7	CGB Fittings, couplings, reducers at Conduit Ends (per plans and specifications).			
8	Rigid Conduits Installed (separate power and data) & Properly Secured (per plans and specifications).			
9	Rigid Conduit Terminations in Wireway Properly Sealed (per plans and specifications).			
10	Rigid Conduit Size (per plans and specifications).			
11	Wireway Quantity, Size, supported every X ft vertically/horizontally, & Properly Connected Segments (per plans and specifications).			
12	Wireway Transitions properly installed and secured to: - Gantry Truss & Supports - Gantry Column & Supports - Drip fittings installed at vertical to horizontal transition prior to wire troughs. (per plans and specifications)			

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
13	Wireway Terminations into wire troughs properly installed/secured/sealed for: - Data wire trough - Power wire trough (per plans and specifications)			
14	Wire Trough Quantity (Data/Power/Loops if required), Size (per plans and specifications).			
15	Wire Trough Conduit Terminations Properly Sealed & Bushings Installed. - X X" Data Conduits - X X" Power Conduits -Pullstrips (per plans and specifications)			
16	Lightning protection and grounding (IAW NEC specifications) installed and tested per (per plans and specifications)			

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
	3 - LOOP ELECTRICAL INFRASTRUCTURE			
17	Loop Pavement Constructed and of Correct Length (per plans and specifications).			
18	Pavement Loop Stub-Ups Installed & with Correct Quantity (per plans and specifications)			
19	9" Min. Separation Between Each Stub-up. 6" separation at each stub-up pullbox termination (per plans and specifications).			
20	Proper stub-up locations for concrete pavement locations (per plans and specifications).			
21	Permanent pavement markings installed			
22	Loop Pullboxes Installed & in the Correct Position (per plans and specifications): - Pullbox location provide stub-up placement to enable saw cutting of lead-in wires around loops. - Loop Drain Boxes			
23	Interconnect Conduits Connecting Specific Loop Pullboxes Installed and Connects Correct Pullboxes (per plans and specifications): - Between First-Second & Second-Third Pullboxes. - Between the Last Two Pullboxes.			
24	Conduit Home Runs to the Cabinet (or tolling equipment enclosure(s)) from Correct Pullboxes (per plans and specifications).			
	4 - GANTRY TO TOLLING ENCLOSURE ELECTRICAL CONNECTIONS			
25	AVI Reader Conduits and Termination in Concrete Pad Properly Done & Sealed (per plans and specifications).			
26	Data Conduits and Termination in Concrete Pad Properly Done & Sealed (per plans and specifications).			
27	Power Conduits and Termination in Concrete Pad Properly Done & Sealed (per plans and specifications).			
28	Duct Banks (Data/Reader/Loops & Power) Installed with Correct Number of Conduits (per plans and specifications).			
29	Duct Banks (Data/Reader/Loops & Power) Installed with Separate Pullboxes for Data and Power Conduits (per plans and specifications).			
30	Duct Banks Encased in Concrete if applicable (per plans and specifications).			
31	Duct Bank Pullboxes Properly Installed, Labeled, & of Correct Size ((per plans and specifications)).			
32	Duct Bank Pullboxes - bolts correctly installed to seal lids (per plans and specifications).			
	5 - TOLL EQUIPMENT ENCLOSURE (IF NO GANTRY BUILDING)			

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
33	Toll Equipment Enclosure(s) of the proper qty/size (per plans and specifications) Including: - Foundation In Place and of proper size - Layout of the maintenance area is per spec/plan - Proper access to cabinets and generator tank per plan - Required bollards or barriers in place - Enclosure(s) Installed/Anchored to Pad - Enclosure/Slab Connection Properly Sealed - Enclosure door clearance requirements met - Enclosure locks installed and keys delivered			
34	Back-Up Power Generator Installed, Tested (per plans and specifications).			
35	Generator Fuel Tank Fully Operational Installed, Tested, and Fire Marshall inspected (per plans and specifications).			
36	Primary Power is Installed, Tested (per plans and specifications).			
37	Enclosure/Site Grounding and Lightning Protection (IAW NEC specifications) Installed, Tested (per plans and specifications).			
38	Duct Bank Conduit Stub-Ups in enclosure pad Installed, Properly Terminated, with Bushing, etc (per plans and specifications).			
39	Duct Bank Conduit Stub-Ups Correctly Positioned Per Rack and Conduit Layout (per plans and specifications).			
40	Pad Opening Around Conduits Properly Enclosed & Sealed.			
41	CCTV Conduits Installed and Terminated.			
42	Main Distribution Panel Installed, Tested (per plans and specifications).			
43	Clean Power Panel (Service Panel) Installed, Tested, Wired for tolls and comm racks (per plans and specifications). Type C cabinet spec calls for two 10-outlet strips protected by SPD.			
44	Clean Power Panel is correct Type (per plans and specifications).			
45	Clean Power Panel Contains Breakers (per plans and specifications).			
46	All Surge Suppressors Installed, Tested (per plans and specifications).			
46	Grounding systems and arrays have been installed and tested. Ohmic readings for the site ground array meet specifications.			
47	CCTV Conduits Installed and Terminated (per plans and specifications).			
48	Toll Equipment Enclosure Lighting Installed, Tested (per plans and specifications).			
49	Toll Equipment Enclosure HVAC Units Fully Operational, Installed, Tested (per plans and specifications).			
50	Condensate Drain Wells Installed, Tested (per plans and specifications).			
51	Exterior Disconnects Installed, Tested (per plans and specifications).			

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
	6 - FIBER OPTIC COMMUNICATIONS INFRASTRUCTURE & DEVICES			
52	Communications Rack Properly Installed/Secured (per plans and specifications).			
53	Patch Panel Properly Installed in Communications Rack (per plans and specifications).			
54	Connection from Backbone-to-Toll Equipment Enclosure Installed (per plans and specifications), including: - Splice Vaults. - Pullboxes. - Conduit. - Tone Wire. - Warning Tape.			
55	Fiber Cable Connection from Backbone-to-Toll Equipment Enclosure Installed, Tested (per plans and specifications), including: - 12SM for Tolling Gantries. - 3 fiber north to next SRTA hub - 3 fiber south to next SRTA hub - Termination in Patch Panel Complete. - OTDR readings for all fiber runs available and within spec.			
	7 - Equipment manuals and warranty information			
56	For items that are accepted by the Toll SI for equipment installation and integration, all applicable manuals and warranty information shall be provided prior to final accetpance (per plans and specifications).			
	8 - Draft As-Builts			
57	Provide draft as-builts suitable for Toll SI to utilize to complete its work.			

TOLLING SITE ACCEPTANCE CHECK-LIST
TOLL RATE CMS SITES

SIGN NAME: **Date: ___ / ___ / ___**
DIRECTION (NB/SB):
Inspector Name(s):

TOLLING SITE ACCEPTANCE CHECK-LIST

(ALL Items must be completed prior to Toll Equipment Installation Begins)

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
	1 - CMS PANELS			
1	CMS Panels installed in sign structure and of correct size/quantity/type (per plans and specifications).			
2	CMS controller installed and tested, communicating with sign (per plans and specifications).			
3	CMS Panels power on and illuminate test pattern properly (per plans and specifications).			
4	Confirm connections and connectors are properly installed (per plans, specifications, details, & manufacturer specifications), including: - Bolt size, type, materials, torque - Banding size, materials, tightness - Mounting bracket & arm size, materials, alignment			
	2 - GANTRY ELECTRICAL & ENCLOSURE			
5	CGB Fittings, couplings, reducers at Conduit Ends (per plans and specifications).			
6	Rigid Conduits Installed (separate power and data) & Properly Secured (per plans and specifications).			
7	Rigid Conduit Size verified (per plans and specifications).			
	4 - GANTRY TO TOLLING ENCLOSURE (NETWORK) ELECTRICAL CONNECTIONS			
8	Duct Banks (Data & Power) Installed with Separate Pullboxes for Data and Power Conduits (per plans and specifications).			
9	Duct Banks Encased in Concrete if applicable (per plans and specifications).			
10	Duct Bank Pullboxes Properly Installed, Labeled, & of Correct Size (per plans and specifications).			
11	Bolts installed to seal ground box lids (per plans and specifications).			
	5 - NETWORK ENCLOSURE (Cabinet)			
12	Enclosure(s) of the proper qty/size (per plans and specifications), and: - Properly pole mounted - Enclosure door clearance requirements met - Enclosure locks installed and keys delivered			

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
13	Portable Generator Input (Manual Transfer Switch) - Installed and Tested (per plans and specifications).			
14	Utility Power is Installed, Tested (per plans and specifications).			
15	Enclosure/Site Lightning Protection Installed, Tested, (per plans and specifications).			
16	Grounding systems and arrayes have been installed and tested. Ohmic readings for the site ground array meet specifications.			
17	Duct Bank Conduit Stub-Ups in enclosure pad Installed, Properly Terminated, with Bushing, etc (per plans and specifications).			
18	Duct Bank Conduit Stub-Ups Correctly Positioned Per Rack and Conduit Layout (per plans and specifications).			
19	Pad Opening Around Conduits Properly Enclosed & Sealed (per plans and specifications).			
20	Main Distribution Panel Installed, Tested (per plans and specifications).			
21	Power Transfer Panel (Service Panel) Installed, Tested (per plans and specifications).			
22	Power Transfer Panel (Service Panel) is correct Type (per plans and specifications).			
23	Power Transfer Panel Contains correct quantity/type Breakers (per plans and specifications).			
24	All Surge Suppressors Installed, Tested (per plans and specifications).			
25	UPSs Installed, Tested (per plans and specifications).			
26	UPS Quantity and Model Correct (per plans and specifications).			
27	UPS Phase Matches Incoming Power Phase: - Single Phase or Three Phase (per plans and specifications).			
28	Equipment Enclosure lighting Installed, Tested (per plans and specifications).			
29	Exterior Disconnects Installed, Tested (per plans and specifications).			
	6 - FIBER OPTIC COMMUNICATIONS INFRASTRUCTURE & DEVICES			
30	Communications Rack Properly Installed/Secured (per plans and specifications).			
31	Patch Panel Properly Installed in Communications Rack (per plans and specifications).			
32	Connection from Backbone-to-C abinet Installed (per plans and specifications): - Splice Vaults. - Pullboxes. - Conduit. - Tone Wire. - Warning Tape.			

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
33	Fiber Cable Connection from Backbone-to-Cabinet Installed, Tested (per plans and specifications), including: - 12SM for CMS Sign Locations. - Termination in Patch Panel Complete. - 3 fiber north to next SRTA hub - 3 fiber south to next SRTA hub - OTDR readings for all fiber runs available and within spec.			
	7 - FIRMWARE			
34	-Confirmation that the latest firmware is installed for the sign (per plans and specifications).			
	8 - Equipment manuals and warranty information			
35	For items that are accepted by the Toll SI for equipment installation and integration, all applicable manuals and warranty information shall be provided prior to final acceptance (per plans and specifications).			
	9 - Draft As-Builts			
36	Provide draft as-builts suitable for Toll SI to utilize to complete its work.			

TOLLING SITE ACCEPTANCE CHECK-LIST
MDS SITES

TOLL PLAZA NAME: **Date: ___ / ___ / ___**
DIRECTION (NB/SB):
Inspector Name(s):

TOLLING SITE ACCEPTANCE CHECK-LIST

(ALL Items must be completed prior to Toll Equipment Installation Begins)

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
	1 - MDS Mounting Pole			
1	Pole of appropriate size/height/material/location per specifications, plans and manufacturer specifications			
2	Confirm connections and connectors are properly installed (per plans, specifications, details, & manufacturer specifications), including: - Bolt size, type, materials, torque - Banding size, materials, tightness - Mounting bracket & arm size, materials, alignment			
	2 - Conduit			
3	Network enclosure to MDS pole conduit number/size per plans and terminated both at network enclosure and at pull box at base (if applicable) of pole (per plans and specifications).			
4	Pull Box size per plans and anchored to pole correctly (per plans and specifications).			
	3 - Electrical			
5	Pole grounding installed and tested (per plans and specifications).			
	4 - NETWORK ENCLOSURE (Cabinet)			
6	Enclosure(s) of the proper qty/size (per plans and specifications), and: - Properly pole mounted - Enclosure door clearance requirements met - Enclosure locks installed and keys delivered			
7	Utility Power is Installed, Tested (per plans and specifications).			
8	Enclosure/Site Lightning Protection Installed, Tested (per plans and specifications).			
9	Duct Bank Conduit Stub-Ups Correctly Positioned Per Rack and Conduit Layout (per plans and specifications).			
10	Main Distribution Panel Installed, Tested (per plans and specifications).			
11	Power Transfer Panel (Service Panel) Installed, Tested (per plans and specifications).			

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
12	Power Transfer Panel (Service Panel) is correct Type (per plans and specifications).			
13	Power Transfer Panel Contains correct quantity/type Breakers (per plans and specifications).			
14	Grounding systems and arrays have been installed and tested. Ohmic readings for the site ground array meet specifications.			
15	All Surge Suppressors Installed, Tested (per plans and specifications).			
16	UPSs Installed, Tested (per plans and specifications).			
17	UPS Quantity and Model Correct (per plans and specifications).			
18	UPS Phase Matches Incoming Power Phase: - Single Phase or Three Phase (per plans and specifications).			
19	Equipment Enclosure lighting Installed, Tested (per plans and specifications).			
20	Exterior Disconnects Installed, Tested (per plans and specifications).			
	5 - MDS Unit (if provided/installed by DB Contractor)			
21	MDS unit of correct type per specifications			
22	MDS power/data cables correct per specifications, manufacturer specifications, terminated to MDS correctly and run to network enclosure with coiled up 10' loop in cabinet			
23	MDS powers up correctly and produces sample data file (per plans and specifications)			
24	MDS sample data file received/reviewed locally and within specifications			
25	MDS Warranty/Support information per specification prior to final acceptance			
	6 - Communications			
26	Serial conversion to ethernet provided and properly mounted in cabinet. Provide an ethernet cable with ends and plugged in and tested for commands and data output (per plans and specifications).			
27	Connection from Backbone-to-Cabinet Installed (per plans and specifications), including: - Splice Vaults. - Pullboxes. - Conduit. - Tone Wire. - Warning Tape.			

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
28	Fiber Cable Connection from Backbone-to-Cabinet Installed, Tested (per plans and specifications), including: - 12SM for CMS Sign Locations. - Termination in Patch Panel Complete. - 3 fiber north to the next SRTA hub - 3 fiber south to the next SRTA hub - OTDR readings for all fiber runs available and within spec.			
	7 - Equipment manuals and warranty information			
29	For items that are accepted by the Toll SI for equipment installation and integration, all applicable manuals and warranty information shall be provided prior to final accetpance (per plans and specifications).			
	8 - Draft As-Builts			
30	Provide draft as-builts suitable for Toll SI to utilize to complete its work.			

TOLLING SITE ACCEPTANCE CHECK-LIST
TOLL RATE CAMERA SITES

TOLL PLAZA NAME: **Date: ___ / ___ / ___**
DIRECTION (NB/SB):
Inspector Name(s):

TOLLING SITE ACCEPTANCE CHECK-LIST

(ALL Items must be completed prior to Toll Equipment Installation Begins)

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
	1 - Camera Mounting Pole			
1	Pole of appropriate size/height/material/location (per plans and specifications).			
2	Confirm camera can be mounted on pole to have clear unobstructed view of intended toll rate CMS (per plans and specifications).			
3	Confirm connections and connectors are properly installed (per plans, specifications, details, & manufacturer specifications), including: - Bolt size, type, materials, torque - Banding size, materials, tightness - Mounting bracket & arm size, materials, alignment			
	2 - Conduit			
4	Network enclosure to Camera pole conduit number/size installed and terminated both at network enclosure and at pull box at base (if applicable) of pole (per plans and specifications).			
5	Pull Box size to installed and anchored to pole correctly (per plans and specifications).			
	3 - Electrical			
6	Pole grounding installed and tested (per plans and specifications)			
	4 - NETWORK ENCLOSURE (Cabinet)			
7	Enclosure(s) of the proper qty/size installed (per plans and specifications), and: - Properly pole mounted - Enclosure door clearance requirements met - Enclosure locks installed and keys delivered			
8	Utility Power is Installed, Tested (per plans and specifications).			
9	Enclosure/Site Lightning Protection Installed, Tested (per plans and specifications).			
10	Duct Bank Conduit Stub-Ups Correctly Positioned Per Rack and Conduit Layout (per plans and specifications).			
11	Main Distribution Panel Installed, Tested (per plans and specifications).			

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
12	Power Transfer Panel (Service Panel) Installed, Tested (per plans and specifications).			
13	Power Transfer Panel (Service Panel) is correct Type per plans.			
14	Power Transfer Panel Contains correct quantity/type Breakers per plans.			
15	Grounding systems and arrays have been installed and tested. Ohmic readings for the site ground array meet specifications.			
16	All Surge Suppressors Installed, Tested (per plans and specifications).			
17	UPSs Installed, Tested (per plans and specifications).			
18	UPS Quantity and Model Correct (per plans and specifications).			
19	UPS Phase Matches Incoming Power Phase (per plans and specifications): - Single Phase or Three Phase.			
20	Equipment Enclosure lighting Installed, Tested (per plans and specifications).			
21	Exterior Disconnects Installed, Tested (per plans and specifications).			
	4 - Communications			
22	Connection from Backbone-to-Cabinet Installed (per plans and specifications), including: - Splice Vaults. - Pullboxes. - Conduit. - Tone Wire. - Warning Tape.			
23	Fiber Cable Connection from Backbone-to-Cabinet Installed, Tested (per plans and specifications), including: - 12SM for CMS Sign Locations. - Termination in Patch Panel Complete. - 3 fiber north to the next SRTA hub - 3 fiber south to the next SRTA hub - OTDR readings for all fiber runs available and within spec.			
	5 - Equipment manuals and warranty information			
24	For items that are accepted by the Toll SI for equipment installation and integration, all applicable manuals and warranty information shall be provided prior to final accetpance (per plans and specifications).			
	6 - Draft As-Builts			
25	Provide draft as-builts suitable for Toll SI to utilize to complete its work.			

TOLLING SITE ACCEPTANCE CHECK-LIST
GP SCAN SITES

TOLL PLAZA NAME: **Date: ___ / ___ / ___**
DIRECTION (NB/SB):
Inspector Name(s):

TOLLING SITE ACCEPTANCE CHECK-LIST

(ALL Items must be completed prior to Toll Equipment Installation Begins)

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
	1 - GANTRY & ASSOCIATED ELEMENTS			
1	GP Scan Site Gantry Columns & Truss (per plans and specifications), including wireway unistrut welded on correct side.			
2	Measure minimum height above roadway to ensure toll equipment clearances achieved (per plans and specifications).			
3	Measure maximum height above roadway to ensure toll equipment clearances achieved (per plans and specifications).			
4	Note condition of all hardware assembly, including any signs of galling or any other hardware damage (provide complete photographic record).			
5	Confirm connections and connectors are properly installed (per plans, specifications, details, & manufacturer specifications), including: - Bolt size, type, materials, torque - Banding size, materials, tightness - Mounting bracket & arm size, materials, alignment			
	2 - GANTRY ELECTRICAL & ENCLOSURE			
6	CGB Fittings, couplings, reducers at Conduit Ends (per plans and specifications).			
7	Rigid Conduits Installed (separate power and data) & Properly Secured (per plans and specifications).			
8	Rigid Conduit Terminations in Wireway Properly Sealed (per plans and specifications).			
9	Rigid Conduit Type and Size correct (per plans and specifications).			
10	Wireway Quantity, Size, supported vertically/horizontally, & Properly Connected Segments (per plans and specifications).			
11	Wireway Transitions properly installed and secured (per plans and specifications) to: - Gantry Truss & Supports - Gantry Column & Supports - Drip fittings installed at vertical to horizontal transition prior to wire troughs.			
12	Wireway Terminations into wire troughs properly installed/secured/sealed (per plans and specifications) for: - Data wire trough - Power wire trough			

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
13	Wire Trough Quantity (if required), Size and concrete pad around wiretroughs installed (per plans and specifications).			
14	Wire Trough Conduit Terminations Properly Sealed & Bushings Installed (per plans and specifications), including: - Data Conduits per plans - Power Conduits per plans - Pullstrips			
	4 - GANTRY TO EQUIPMENT ENCLOSURE ELECTRICAL CONNECTIONS			
15	AVI Reader Conduits (qty/size per plans) Termination in Concrete Pad Properly Done & Sealed (per plans and specifications).			
16	Power Conduits (qty/size per plans) Termination in Concrete Pad Properly Done & Sealed (per plans and specifications).			
17	Duct Banks (Reader & Power) Installed with Correct Number of Conduits (per plans and specifications).			
18	Duct Banks (Data & Power) Installed with Separate Pullboxes for Data and Power Conduits (per plans and specifications).			
19	Duct Banks Encased in Concrete if applicable (per plans and specifications).			
20	Duct Bank Pullboxes Properly Installed, Labeled, & of Correct Size (per plans and specifications).			
21	If Duct Bank Pullboxes Have Locks (Screwed-In Locks, or other type), Were Locks Provided & of Correct Quantity to Lock All Pullboxes (per plans and specifications).			
	5 - TOLL EQUIPMENT (NETWORK) ENCLOSURE			
22	Equipment Enclosure(s) of the proper qty/size (per plans and specifications) and: - Foundation In Place and of proper size (if ground mounted) - Required bollards or barriers in place (if req'd) - Enclosure(s) Installed/Anchored to Pad (if req'd) - Enclosure/Slab Connection Properly Sealed (if req'd) - Enclosure door clearance requirements met - Enclosure locks installed and keys delivered			
23	Primary Power is Installed, Tested (per plans and specifications).			
24	Enclosure/Site Lightning Protection Installed, Tested (per plans and specifications).			
25	Duct Bank Conduit Stub-Ups in enclosure pad Installed, Properly Terminated, with Bushing, etc. (per plans and specifications).			
26	Duct Bank Conduit Stub-Ups Correctly Positioned Per Rack and Conduit Layout (per plans and specifications).			
27	Pad Opening Around Conduits Properly Enclosed & Sealed (if pad mounted) (per plans and specifications).			
28	Main Distribution Panel Installed, Tested (per plans and specifications).			

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
29	Clean Power Panel (Service Panel) Installed, Tested, Wired for tolls and comm racks (per plans and specifications).			
30	Clean Power Panel (Service Panel) is correct Type (per plans and specifications).			
31	Clean Power Panel (Service Panel) Contains Breakers (per plans and specifications).			
32	All Surge Suppressors Installed, Tested (per plans and specifications).			
33	Grounding systems and arrays have been installed and tested. Ohmic readings for the site ground array meet specifications.			
34	UPSs Installed, Tested (per plans and specifications).			
35	UPS Quantity and Model Correct (per plans and specifications).			
36	UPS Phase Matches Incoming Power Phase (per plans and specifications): - Single Phase or Three Phase.			
37	Toll Equipment Enclosure HVAC Units Fully Operational, Installed and Tested (per plans and specifications).			
38	Condensate Drain Wells Installed, Tested (per plans and specifications).			
39	Exterior Disconnects Installed, Tested (per plans and specifications).			
	6 - FIBER OPTIC COMMUNICATIONS INFRASTRUCTURE & DEVICES			
40	Communications Rack Properly Installed/Secured (per plans and specifications).			
41	Patch Panel Properly Installed in Communications Rack (per plans and specifications).			
42	Connection from Backbone-to-Enclosure Installed (per plans and specifications), including: - Splice Vaults. - Pullboxes. - Conduit. - Tone Wire. - Warning Tape.			
43	Fiber Cable Connection from Backbone-to-Cabinet Installed, Tested (per plans and specifications), including: - 12SM for GP Scan Site Locations. - Termination in Patch Panel Complete. - 3 fiber north to next SRTA hub - 3 fiber south to next SRTA hub - OTDR readings for all fiber runs available and within spec.			
44	Provide an ethernet cable with ends and plugged in and tested for commands and data output (per plans and specifications).			
	7 - Equipment manuals and warranty information			
45	For items that are accepted by the Toll SI for equipment installation and integration, all applicable manuals and warranty information shall be provided prior to final accetpance (per plans and specifications).			
	8 - Draft As-Builts			

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
46	Provide draft as-builts suitable for Toll SI to utilize to complete its work.			

TOLLING SITE ACCEPTANCE CHECK-LIST
HUB BUILDING SITES

TOLL PLAZA NAME: **Date: ___ / ___ / ___**
DIRECTION (NB/SB):
Inspector Name(s):

TOLLING SITE ACCEPTANCE CHECK-LIST

(ALL Items must be completed prior to Toll Equipment Installation Begins)

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
	1 - HUB BUILDING FON CONNECTIONS			
1	Fiber Optic Network Duct Banks Installed with Correct Number of Conduits (per plans & specifications)			
2	Duct Banks Encased in Concrete if applicable (per plans and specifications).			
3	Duct Bank Pullboxes Properly Installed, Labeled, & of Correct Size (per plans and specifications).			
4	Duct Bank Pullboxes Have bolt down lids properly installed (per plans and specifications)			
5	**Existing Buildings Only (wall penetration):**			
6	Conduit Duct Bank "Chase" Mounted on Exterior Building Wall Properly Installed, Secured to Wall, & with Correct Number of Conduits (per plans and specifications).			
7	Conduit Chase Wire Trough Termination Properly Done, Sealed, with Bushing, etc. (per plans and specifications).			
8	Conduit Penetrations to Building Wall Properly Done (per plans and specifications), including: - One Penetration Per Duct Bank Conduit. - Penetration Size Same as Duct Bank Conduits. - Penetration is slopped away. - Penetration is Properly Enclosed & Sealed.			
9	Conduit Penetration at Correct Height for Transition into Interior Ceiling Mounted Cable Trays (existing bldgs only) (per plans and specifications).			
10	**New Buildings Only (floor penetration):**			
11	Duct Bank Conduit Stub-Ups in Building Floor Installed, Properly Terminated, with Bushing, etc. (per plans and specifications).			
	2 - HUB BUILDING ARCHITECTURAL, ELECTRICAL, MECHANICAL, & PLUMBING			
12	**ARCHITECTURAL**			
13	**New Buildings Only:**			

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
14	Pre-Fabricated Building Fully Constructed (per plans and specifications), including: - Foundation In Place - Floor Slab Poured (if applicable) - Building Delivered and Installed - Building Connected/Secured to Foundation - Building/Foundation Connection Properly Sealed - Painting of Walls/Flooring			
15	Building Door Installed & with Hardware (per plans and specifications), including: - Interior Push Bar/Electrified Lever Trim - Door Contact - Dead Lock - Bar Lock with Pad Lock - Painting of Door			
16	Confirm connections and connectors are properly installed (per plans, specifications, details, & manufacturer specifications), including: - Bolt size, type, materials, torque - Banding size, materials, tightness - Mounting bracket & arm size, materials, alignment			
17	**EXTERIOR ELECTRICAL**			
18	**New Buildings Only:**			
19	Back-Up Power Generator Installed, Tested, and Certified.			
20	Generator Fuel Tank Fully Operational (Installed, Tested, and Fire Marshall Certified).			
21	Primary Power is Installed, Tested, & Certified.			
22	Building/Site Lightning Protection Installed, Tested, & Certified (may apply to existing buildings as well).			
23	Grounding systems and arrays have been installed and tested. Ohmic readings for the site ground array meet specifications.			
24	**INTERIOR ELECTRICAL**			
25	**New Buildings Only:**			
26	Duct Bank Conduit Stub-Ups in Building Floor Installed, Properly Terminated, with Bushing, etc. (per plans and specifications)			
27	Duct Bank Conduit Stub-Ups Correctly Positioned Per Rack and Conduit Layout (per plans and specifications).			
28	Floor Opening Around Conduits Properly Enclosed & Sealed (per plans and specifications).			
29	CCTV Conduits Installed and Terminated (per plans and specifications).			
30	Access Control/Security System Conduits Installed and Terminated (per plans and specifications).			
31	**Both Building Types (New or Existing)**			
32	Main Distribution Panel Installed, Tested (per plans and specifications)			
33	Clean Power Panel Installed, Tested, Wired for tolls and comm racks (per plans and specifications).			

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
34	Clean Power Panel Breakers installed and tested (per plans and specifications).			
35	All Surge Suppressors Installed, Tested (per plans and specifications).			
36	Cable Trays Installed, Properly Secured to Ceiling, Placed Correctly (per plans and specifications).			
37	Cable Tray Type is 24" Wide & Divided for Data and Power Cables (per plans and specifications).			
38	Flexible Conduit Drops from Cable Tray to Toll Equipment Racks Installed, Properly Terminated in Cable Tray, & Properly Secured to Cable Tray and Racks (per plans and specifications).			
39	CCTV Conduits Installed and Terminated (per plans and specifications).			
40	Access Control/Security System Conduits Installed and Terminated (per plans and specifications).			
41	Building Lighting Installed, Tested (per plans and specifications).			
42	**HVAC (Interior/Exterior)**			
43	**Both Building Types (New or Existing)**			
44	New interior and exterior HVAC Units Fully Operational (Installed, Tested). Demonstrate Failover capabilities. (per plans and specifications)			
45	Condensate Drain Wells Installed, Tested (per plans and specifications).			
46	Exterior Disconnects Installed, Tested (per plans and specifications).			
	3 - FIBER OPTIC COMMUNICATIONS INFRASTRUCTURE & DEVICES			
47	Communications Rack Properly Installed/Secured (per plans and specifications).			
48	Patch Panels Properly Installed in Communications Rack.			
49	Connection from Backbone-to-Building Installed (per plans and specifications), including: - Splice Vaults. - Pullboxes. - Conduit. - Tone Wire. - Warning Tape.			
50	Fiber Cable Connection from Backbone-to-Building Installed, Tested (per plans and specifications): - OTDR readings for all fiber runs available and within spec.			
	4 - EQUIPMENT MANUALS AND WARRANTY INFORMATION			
51	For items that are accepted by the Toll SI for equipment installation and integration, all applicable manuals and warranty information shall be provided prior to final accetpance (per plans and specifications).			
	5 - ADDRESS			
52	Address for each Communication Hub where WAN access is required.			
	6 - Draft As-Builts			

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
53	Provide draft as-builts suitable for Toll SI to utilize to complete its work.			

TOLLING SITE ACCEPTANCE CHECK-LIST
ACCESS CONTROL UNIT SITES

TOLL PLAZA NAME: **Date: ___ / ___ / ___**
DIRECTION (NB/SB):
Inspector Name(s):

TOLLING SITE ACCEPTANCE CHECK-LIST

(ALL Items must be completed prior to Toll Equipment Installation Begins)

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
	1 - GATE CONTROL UNIT ENCLOSURE TO TOLL RATE SIGN ENCLOSURE CONDUIT			
1	Conduit and copper cable between the roadside access control cabinet and proper toll rate CMS enclosure are of correct quantity/size (per plans and specifications).			
	2 - FIBER OPTIC COMMUNICATIONS INFRASTUCTURE & DEVICES			
2	Communication cable is installed, coiled, terminated, and tested (per plans and specifications)			
	3 - Draft As-Builts			
3	Provide draft as-builts suitable for Toll SI to utilize to complete its work.			

TOLLING SITE ACCEPTANCE CHECK-LIST
CONDUIT AND FIBER NETWORK

CONDUIT & FIBER SEGMENT (FROM HUB TO HUB): **Date: ___ / ___ / ___**
DIRECTION (NB/SB):
Inspector Name(s):

CONDUIT/FIBER ACCEPTANCE CHECK-LIST

(ALL Items must be completed prior to Toll Equipment Installation Begins)

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
	1 - CONDUIT DUCT BANKS			
1	Correct number of 2" conduits (per plans and specifications)			
2	Correct number of 1 1/4" conduits (per plans and specifications)			
3	Correct conduit spacing (per plans and specifications)			
4	Correct conduit depth (per plans and specifications)			
5	Locate wire installed and tested (per plans and specifications)			
	2 - PULL BOXES			
6	Correct communication and electrical pull box spacing (per plans and specifications)			
7	Correct communication and electrical pull box sizing (per plans and specifications)			
8	Pull box lids meet load bearing specifications & standards (per plans and specifications)			
9	Pull box lids are properly bolted to box (per plans and specifications)			
10	Pull boxes are properly grouned (per plans and specifications)			
11	Concrete aprons installed around all pull boxes located in unpaved locations (per plans and specifications)			
12	Conduit properly stubbed into pull boxes (per plans and specifications)			
13	Empty conduit openings properly plugged and sealed (per plans and specifications)			
14	Conduit openings around cables properly sealed (per plans and specifications)			
	3 - SPLICE BOXES/VAULTS			
15	All fiber and electrical cabling located in a properly installed splice box (per plans and specifications)			
16	Fiber and electrical splice boxes installed adjacent to toll equipment cabinets and communiction hubs (per plans and specifications)			
17	Concrete aprons installed around all splice boxes located in unpaved locations (per plans and specifications)			
18	Splice box lids meet load bearing specifications & standards (per plans and specifications)			
19	Splice box lids are properly bolted to box (per plans and specifications)			

Item ID	Inspection Item	Item Completed YES / NO	Tolls Accepted YES / NO	Observations & Issues Noted (start with: Not Started, Work In Progress, or Completed)
20	Splice boxes are properly grounded (per plans and specifications)			
	4 - FIBER OPTIC CABLE - BACKBONE			
21	SRTA fiber optic cable size(s) meets specifications (# of fibers) (per plans and specifications)			
22	Fibers home run from field cabinets and ganty cabinets to SRTA Hub Buildings per plans and specifications (per plans and specifications)			
23	All backbone cable splicing occurs only in splice boxes (per plans and specifications)			
24	Prior to splicing with drop fiber cables, all fibers were tested with OTDR and results meet specifications (per plans and specifications)			
25	All splicing is done by splicing technician who has received training and certification from accredited source (per plans and specifications)			
26	All splices are done in a splice tray (per plans and specifications)			
27	All splice trays are installed in splice enclosures (per plans and specifications)			
28	The proper amount of fiber has been stored and securly coiled in each splice and pull box (per plans and specifications)			
	5 - ELECTRICAL CABLES			
29	Correct lectrical cable size and types (per plans and specifications)			
30	Electrical cables properly terminated and securely connected (per plans and specifications)			
31	Electrical cables connected to grounding buss bars or grounding systems (per plans and specifications)			
32	Surge supression installed and tested (per plans and specifications)			
33	Electrical cables installed in separate conduit from fiber and other communication cables (per plans and specifications).			
	6 - Draft As-Builts			
34	Provide draft as-builts suitable for Toll SI to utilize to complete its work.			

APPENDIX L

PRICE PROPOSAL WORKSHEET

APPENDIX L - PRICE PROPOSAL

Addendum #7 - July 24, 2013

The following items were changed in conjunction with Amendment 7 of the TSI RFP.

1	Tab 4 I75 South Price, unlocked column G, allowing users to enter Unit Prices.
2	Tab 12 and 13 Progress Payments, changed cell D15 to distribute monthly payments over 48 months to reflect the statement number 11 in the tab "Addendum-6 Changes"

APPENDIX L - PRICE PROPOSAL

Addendum #6 - July 19, 2013

The following items were changed in conjunction with Amendment- 6 of the TSI RFP.

1	Tabs 4 & 5 **Pricing changed** Item 251 to Item 251a **Installation of Lane System and Integration**. These are the fully equipped travel lanes and shoulders.
2	Tabs 4 & 5 **Pricing added** Item 251b **Installation of Small Shoulders**. These are the 4ft and 6ft shoulders that only include Shoulder Loops and Cameras.
3	Tabs 7 & 8 **Quantities added** Item 251b Installation of Small Shoulders. These include Shoulder Loops and Cameras.
4	Tabs 4 & 5 **Pricing Changed** Item 252 to read ***Installation & Integration GP Scanner Sites, CMS Sites & ITS***
5	Tabs 4 & 5 **Pricing** Items 31 & 32: The **language was changed** to tie better with the Network Design document and they now read: P-1 & P-2 31 **Toll Facility LAN & Network Security - Layer 2 (This includes implementation through Warranty)** P-1 & P-2 32 **Toll Facility WAN & Network Security - Layer 3 (This includes implementation through Warranty)**
6	Tabs 4 & 5 **Pricing** Item 33: The **Verbiage was changed**: From - Network Associated Devices & Work Effort(Enclosures, Splicing, Switches, Cabinets, etc.) To - **Network Equipment and Cabling (Enclosures/Cabinets, Switches, Routers, Firewall, Patch Cords, GBICs, etc.)**
7	Tabs 4 & 5 **Delete** Item 36 Ethernet Hubs.
8	Tab 6 - **Maintenance** - Changed Network Maintenance verbiage: From: Toll Facility WAN & Network Control (This includes the duration of the Maintenance Period) To: **Toll Facility LAN, WAN & Network Security Maintenance (This includes the duration of the Maintenance Period)**
9	Tab 6 - **Maintenance** - Changed Network Maintenance Total verbiage: From: Total Annual System Maintenance & WAN To: **Total Annual System & Network Maintenance**
10	Tabs 9 & 10 **Initial Equipment Inventory** - **Added a Required Network Spare Parts** section**.**
11	**PRICING - PAYMENT CHANGES** 1) **Program Management and Plan Deliverables -** These costs must be split between I-75S and NWC (35%-65%) respectively. However, for payment pursuant to Section 16 of the Contract, SRTA will add the two Project categories together and spread the total out over 48 months. This quotient will provide a standard payment from NTP for 48 months. Notwithstanding the above, payments are still dependent upon the TSI Contractor providing the required submittals and documentation and otherwise complying with the Contract Documents. 2) **Hardware Payments -** Only after successful FAT may the TSI Contractor invoice SRTA pursuant to Section 16 of the Contract for 50% of the cost of SRTA pre-approved hardware purchases. These purchases must have prior written approval by SRTA, must show documentation and verification of delivery and quantity and accepted in proper working order before they are eligible for payment. The Progress Payments will still be calculated in the manner shown in Tabs 12 & 13 minus the cost paid of associated hardware per Gantry (Toll Zone) Installation.
12	Tab-6 Maintenance - The Number of lanes shown in the Maintenance I-75 South schedule was 22; it has been changed to 20.
13	Tab 7 & 8 Quantities - Item 23 CCTV DVAS Cameras - Change requirement from (1/Zone & Direction) to (1/lane & Direction)

APPENDIX L - PRICE PROPOSAL

Addendum #4 -

The following items were changed in conjunction with Amendment- 4 of the TSI RFP.

1	Tab 4, P-1 I-75 South Price, **corrected** summation formula for **Total Lane Hardware.**
2	Tab 4, P-1 I-75 South Price, **added** new Line Item (**P-1) 57 UPS Units for Toll Rate CMS sites**
3	Tab 5, P-2 NWC Price, **corrected** summation formula for **Total Lane Hardware.**
4	Tab 5, P-2 NWC Price, **added new** Line Item (**P-2) 57 UPS Units for Toll Rate CMS sites.**
5	Tab 7, I 75 Quantities; Revised quantity for Line Item **(P-1) 55 AVI Scan Site -** changed from 20 to 22.
6	Tab 7, I 75 Quantities; **added new** Line Item **(P-1) 57 UPS Units for Toll Rate CMS sites;** **added** a row with STA indicator reference.
7	Tab 8, NWC Quantities; Revised quantity for Line Item **(P-2) 55 AVI Scan Site -** changed from 33 to 37; **added** a row with STA indicator reference.
8	Tab 8, NWC Quantities; **added new** Line Item **(P-2) 57 UPS Units for Toll Rate CMS sites;** **added** a row with STA indicator reference.
9	Tab 2, Instructions; Added instructions regarding the **35%-65% split** on certain pricing items. These are also referenced under Section 2.3.4 in the RFP. These instructions are included in the newly inserted Item 13.
10	Some quantities have been added to both Pricing Sheets, which are **Tab 4** I-75 South and **Tab 5** NWC. These quantity cells are locked the Pricing Tabs and shown as a light Blue box.
11	Tab 2, Instructions, have been changed in several areas to address the addition of some quantities to the Pricing Tabs.
12	Tab 4, P-1 33 add language to include cabinets. Item P-1 39 Cabinets - deleted.
13	Tab 5, P-2 33 add language to include cabinets. Item P-2 39 Cabinets - deleted.
14	Tab 4 and Tab 5 Revised quantities on Item 251 Lane Installation

APPENDIX L - PRICE PROPOSAL

Addendum #1 - June 12, 2013

The following items were changed in conjunction with Amendment-1 of the TSI RFP.

1 Eliminated Toll Facility Host Rack-Mount Maintenance Workstation, Pricing Line Items (P-1) 65 and (P-2) 65; Tabs 4 & 5

2 Changed Titles of Line Items (P-1) 69 and (P-2) 69 from *Dashboards - Headquarters* to **Dashboard Monitors - Headquarters**

3 Toll Facility CCTV Controller - Estimated Quantities under Line Item (P-1) 24 and (P-2) 24 changed from 2 to 1 on Tabs 7 & 8.

4 Revised Lien Items (P-1) 10 and (P-2) 10 VES Cameras to include Rear and Front Cameras on Tabs 4 & 5, and reduced the estimated quantities on Tabs 7 & 8 based on using the same cameras in the lane for both directions

5 Changed Line Item (P-1) 32 and (P-2) 32 to read **Toll Facility WAN & Network Control (*This includes implementation through Warranty*) on Tabs 4 & 5**

6 Added to the Maintenance Pricing, Tab 6 - **Toll Facility WAN & Network Control (*This includes the duration of the Maintenance Period*). This line item was added for both Projects.**

7 **SALES TAX** - Sales Tax must be included in all equipment pricing. The Sales Tax percentage to be used is **8%**.

This will be adjusted to actual at the time of invoicing.

There is NOT and should NOT be a line item for Sales Tax. This must be included in the Equipment Pricing.

8 **Toll Facility Host Servers** - The quantities Tabs show a Toll Facility Server and an Active Redundant Server for each Project. The actual quantities are dependent upon the integrator's solution. However as a minimum there must be a Toll Facility Host server on Each Project using the Active-Active protocol.

9 **Revised Pod Monitors,** Line Items (P-1) 26 and (P-2) 26 on the Pricing Tabs and Quantities Tabs, from 27" Monitors to 21" Monitors.

SRTA
I-75 South and NWC Express Lanes
Price Proposal Package

Price Proposal By:

Appendix L

Price Proposal Worksheet Tabs

Number	Name
	Addendum-6 CHANGES
	Addendum-4 CHANGES
	Addendum-1 CHANGES
1	Title
2	Instructions
3	Summary Pricing Sheet
4	P-1 I-75 South Pricing
5	P-2 NWC Pricing
6	System Maintenance Price
7	P-1 I-75 South Quantities
8	P-2 NWC Quantities
9	P-1 I-75 South Initial Equipment Inventory
10	P-2 NWC Initial Equipment Inventory
11	Labor Rates Sheet
12	I-75 South Progress Payments
13	NWC Progress Payments

SRTA EXPRESS LANES SYSTEM PRICE PROPOSAL INSTRUCTIONS

This page provides notes and instructions for completing the Price Proposal forms

Notes	
1	**SRTA's intent is to structure the cost format in order to facilitate comparison among all TSIs and foster competition to obtain the best market pricing. Consequently, the SRTA requires that each TSI's cost be in the format outlined in this Appendix L. Additional or alternative cost structures will not be considered. Each TSI is cautioned that failure to comply with the instructions listed below, submission of an incomplete offer, or submission of an offer in a different format than the one requested may result in the rejection of the TSI's proposal. All equipment Pricing must include an 8% Sales Tax.**
2	**Enter all information directly into the Price sheet(s). Enter numbers on each Price Tab. Prices must be in US Dollars. Enter "0" to indicate not available or "0" if there is no charge. Cells Must NOT be left blank. Even if the proposer intends to not ask for compensation according to any item, a "0" must be added to ensure the block was not simply missed.**
3	**The Vendor is fully responsible for submitting an accurate Pricing Sheet. This includes quantities, Pricing, formulas, and calculations.**
4	**SRTA Payments - In general, SRTA will not pay more than 90% of the total capital price prior to a successful System Acceptance Test, as defined in the RFP.**
5	**The VENDOR MUST ENTER BOTH QUANTITIES AND PRICES ON THE PRICING TABS.**
6	**ALL ENTRIES WILL BE MADE ON THE FOLLOWING TABS:** 1. **Title Tab - Tab 1 Enter the Firm's name** 2. **SYSTEM PRICING: TAB-4** I-75 SOUTH **and TAB-5** NWC**.** 3. **SYSTEM MAINTENANCE PRICING: TAB 6** 4. **Spare Parts: TAB 9** I-75 SOUTH-Initial Inventory and **TAB 10** NWC-Initial Inventory 5. **LABOR RATES: TAB 11**
7	**Light Blue Shaded blocks** are remarks, estimated quantities for certain components or equations and normally should not be changed by the proposer. The Vendor must enter quantities as noted below and the proposer may add other categories or individual items in the section of the Pricing Tabs labeled as "Other Items". Vendor may provide any comments needed in the **Remarks** Columns regarding individual Pricing categories. In Brown Shaded areas the Vendor may change or add items as needed.
8	**Project Sections:** 1. Note that proposers shall use this WORKBOOK form for the PRICE PROPOSAL 2. **All items must be addressed.** 3. **The Projects have an additional ID number: I-75 South is P-1 and NWC is P-2.**

SRTA EXPRESS LANES SYSTEM PRICE PROPOSAL INSTRUCTIONS

9 **Quantities:** The quantities provided on the QUANTITIES TABS are good faith estimates by SRTA. If the Vendor entered quantities into the Pricing Tabs that are different from the estimates that SRTA has provided, then the Vendor must indicate the reason for the change in the remarks column. If the explanation is too detailed to appropriately address in the remarks column then the Vendor can provide notes at the bottom. The Vendor must provide a complete, compliant proposal. The Vendor is fully responsible for the implementation of the System and should include everything that will make that implementation a success. Quantities entries will be made in Column E "Total Count" in the white boxes provided.

10 **Lane Equipment:**

Travel Lanes and Shoulders 10 feet or greater = Fully Equipped Lanes
Fully Equipped Lanes include AVI, AVC, and VES.

Shoulders 4 feet and 6 feet = Limited Equipped Lanes
Limited Equipped Lanes include basic shoulder loops to detect presence and direction, and VES cameras.

Shoulders less than 4 feet will NOT be Equipped.

11 **Prices:** All cells requiring a price entry are numbered by a P1 or P2 and a grouped sequence number such as I-75 South "P-1 101 Zone Controller Application Software. Enter prices in the **white** highlighted blocks shown thus:
The worksheets will calculate the total pricing, but the Vendor is responsible for all calculations and entries.

12 **PDR -** There will be one Preliminary Design Review and Preliminary Design Document which will address both Projects. As indicated in the Progress Payment Tabs the price for PDR is included in the System Design and Documentation Pricing components. Successful completion of PDR will result in payment under both Projects.
SDDR - There will be a separate SDDR & SDDD for each Project.

13 **Shared Project Costs - (I-75 S 35%; NWC 65%)**

a. Reasonableness evaluation will be a general review of the overall proposal and address potential frontend loading of price items such as Mobilization. Mobilization shall be restricted to a maximum of 2.5%.

b. The proper allocation of costs between the two projects is very important because these projects are funded out of separate buckets. Proper allocation refers to certain costs that are **"joint costs"** such as:

Program Management and Documentation,
- Mobilization & Initial Deliverables
- Program Management and Plan Deliverables
- System Design and Documentation (Includes As Builts)
- Training

Toll Facility Host Software
Factory Acceptance Tests
Build-out, Installation and Integration of DR @ SRTA - Items P-1 255 and P-2 255

These pricing components should have a relative allocation between projects of approximately **35% for I-75 South and 65% for NWC.**

c. To assist in pricing the Projects the Notice to Proceed (NTP) for each project will be given at the same time. The Preliminary Design Review for each Project will be conducted concurrently and therefore paid at the same time.

SRTA EXPRESS LANES SYSTEM PRICE PROPOSAL INSTRUCTIONS

14 **TABS**

1. Title Tab

This tab contains the mandatory block for the Contractor's name, and presents the outline of the Workbook.

2. Instructions

This Tab is LOCKED
NO ENTRIES WILL BE MADE ON THIS TAB.

3. Summary Tab

This Tab is LOCKED.
This tab shows the summary tabulation of prices for each Project by the main categories presented in the pricing tabs. Please make sure the totals shown here are correct.
NO ENTRIES WILL BE MADE ON THIS TAB.

4. I-75 South Express Lanes - Price

The sheet shows blank cells for the unit prices and some quantities. The sheet will automatically calculate the total price by component and category. The Vendor must verify these calculations. The formulas are provided by SRTA as a courtesy, the Vendor bears full responsibly for proper calculations.

5. NWC Express Lanes - Price

The sheet shows blank cells for the unit prices and some quantities. The sheet will automatically calculate the total price by component and category. The Vendor must verify these calculations. The formulas are provided by SRTA as a courtesy, the Vendor bears full responsibly for proper calculations.

6. System Maintenance Price

This Tab provides System Maintenance Pricing based on Per Lane/Per Month, and the on-going WAN Costs.

The Vendor is to Price their Toll System and ITS System Maintenance by Project on a Per Lane/Per Month Basis using the Months and Lanes provided by SRTA. The Maintenance Period for each project will be for 60 Months commencing after the Warranty Period but not prior to System Acceptance. The Total shown for Maintenance and the WAN costs for the 60 month period must be carried over to the Individual Project Pricing Tab. (The spreadsheet is setup to carry over those totals.)

7. & 8. I-75 South Quantities & NWC Quantities

These Tabs are LOCKED
NO ENTRIES WILL BE MADE ON THESE TABS.
These are estimated quantities provided by SRTA. **The quantities have been estimated by Toll Zone/Gantry and are provided as a courtesy**. **The Vendor is responsible for the quantities required for a complete properly working system.** If quantities need to be changed, the Vendor is responsible to change those quantities and enter them on the Pricing Tab with an explanation of the difference.

SRTA EXPRESS LANES SYSTEM PRICE PROPOSAL INSTRUCTIONS

Some assumptions regarding Quantities:

1. Travel Lanes will include all Toll System components: AVI, VES, AVC
2. Full sized shoulders (10 feet or greater) will include all Toll System components: AVI, VES, AVC
3. All standard Shoulder Loops are reversible, include VES cameras in each direction and include 2 loops to detect direction and trigger the VES Camera.
4. AVI Readers can accommodate up to 3 AVI antennas
5. Site testing and acceptance will be carried out on a Gantry by Gantry basis.
6. Toll Facility Host - The current quantities shown on both the 75 South & NWC is one(1) Toll facility Host/System per Project and one Active Redundant Host per Project. (Actual quantities will be dependant on the Vendor's design.)

9. & 10. I-75 South & NWC Recommended Initial Equipment Inventories

The Vendor is to provide their recommended initial equipment inventory/Spare Parts inventory for each Project. This is the Spare Parts Inventory. The Vendor must include the quantities for each item and the price for each item that they recommend. The Initial Equipment Inventory pricing total is to be carried over to the Pricing sheet for each Project. **The Vendor may add, delete and/or change items as required.** The spare parts pricing sheets have been provided as a courtesy to the Vendor. However the items included in the Spare Parts inventory should be the Vendor's Recommended Spare Parts Inventory for each project. **A Required Network spares section was added. The Vendor must include a least one component of each line item in this section.**

11. Labor Rates

This Tab prices labor rates for supplemental work during the term of the contract.

Items 601 to 613 are typical for Labor Classifications, the Vendor may change these Classifications to match their own and the Vendor may add as many classifications as necessary. The Vendor is to provide hourly labor rates (including benefits, etc.) for each Classification for each year. These represent the rates to be paid for work over and above the normal scope of maintenance services, for example for extra work orders to modify an accepted design or integrate new technology not in the original scope of work.

12. & 13. I-75 South & NWC Progress Payments Matrixes

NO ENTRIES WILL BE MADE ON THESE TABS.

These tabs show how the Progress Payments will be made for each Project.
These Tabs will automatically populate based on the Pricing entries.

SRTA EXPRESS LANES TOLL COLLECTION SYSTEM ESTIMATED COSTS SUMMARY

	P1 I-75 SOUTH	P2 NWC	Total Systems
EXPRESS LANES SYSTEM HARDWARE	$0	$0	$0
EXPRESS LANES SYSTEM SOFTWARE	$0	$0	$0
EXPRESS LANES PROGRAM MANAGEMENT	$0	$0	$0
SYSTEM INSTALLATION	$0	$0	$0
EXPRESS LANES TESTING	$0	$0	$0
WARRANTY	$0	$0	$0
TOTAL SYSTEM CAPITAL PRICING	**$0**	**$0**	**$0**
TOTAL SYSTEM MAINTENANCE PRICING	**$0**	**$0**	**$0**
TOTAL SYSTEM PRICE PROPOSAL	**$0**	**$0**	**$0**

	Maintenance Year 1	Maintenance Year 2	Maintenance Year 3	Maintenance Year 4	Maintenance Year 5	Total
I-75 SOUTH TOLL SYSTEM MAINTENANCE	$0	$0	$0	$0	$0	**$0**
NWC TOLL SYSTEM MAINTENANCE	$0	$0	$0	$0	$0	**$0**
TOTAL TOLL SYSTEM MAINTENANCE COSTS						**$0**

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SRTA
PRICE PROPOSAL FORM
I-75 SOUTH EXPRESS LANES

(P-1) I-75 South Express Lanes Toll Collection System Pricing

by:

Unit and Total Purchase Prices

No.		Pay Item Description	Total Count	Unit of Measure	Contractor Unit Price	Total Price	Remarks
		Zone Controllers					
P1	1	Zone Controllers	0	Each	$0	$0	
P1	2	UPS - Zone Controllers	0	Each	$0	$0	
P1	3	Image Servers	0	Each	$0	$0	
		AVI Lane Equipment					
P1	5	AVI Reader	0	Each	$0	$0	
P1	6	AVI Antenna	0	Each	$0	$0	
		Violation Enforcement System (Includes all)					
P1	10	Lane VES Camera - Rear & Front W/Color & Monocrome	0	Each	$0	$0	
		Automatic Vehicle Classification					
P1	15	AVC - Smart Loops Detection/Classification (Inclusive of S/W & License)	0	Set	$0	$0	
P1	16	AVC - Reversible Smart Loops (Inclusive of S/W & License)	0	Set	$0	$0	
P1	17	AVC - Shoulder/Presence Loop	0	Set	$0	$0	
P1	18	AVC - Other	0	Each	$0	$0	
		Direction of Travel Indicators					
P1	19	Indicator lights	0	Each	$0	$0	
		CCTV System					
P1	21 & 23	CCTV Surveillance & DVAS Cameras	0	Each	$0	$0	
P1	24	CCTV Associated Devices & Work Effort (Server/Encoder/Storage/Control, etc.)	1	LS	$0	$0	
		TOC & TMC Monitoring Station					
P1	25	Equipment "Pods"	1	Each	$0	$0	
P1	26	Monitors 21" HD, (simultaneous display & selection of 16 selectable images)	70	Each	$0	$0	
P1	27	PC's (system software & camera / video control)	35	Each	$0	$0	
P1	28	All ancillary equipment (Keyboards, mice, KVM switch, cabling, monitor arms, etc	1	LS	$0	$0	
P1	29	Cabinets & Equipment Racks, etc,	1	LS	$0	$0	
		Communications & Network					
P1	31	Toll Facility LAN & Network Security - Layer 2 (*This includes implementation through Warranty*)	1	LS	$0	$0	
P1	32	Toll Facility WAN & Network Security - Layer 3 (*This includes implementation through Warranty*)	1	LS	$0	$0	
P1	33	Network Equipment and Cabling (Enclosures/Cabinets, Switches, Routers, Firewall, Patch Cords, GBICs, etc.)	1	LS	$0	$0	
		ITS & General Purpose Lane Sensors					
P1	51	GP & Mge Lanes Scan Sites-Antennas	0	Each	$0	$0	
P1	52	GP & Mge Lanes Scan Sites-Readers	0	Each	$0	$0	
P1	53	GP Lane Sensors - MDS (Integrate & Test Only)	26	Each	$0	$0	
P1	54	Sensor Servers	0	Each	$0	$0	
P1	56	UPS Units for Scan Sites; MDS sites	0	Each	$0	$0	
P1	57	UPS Units for Toll Rate CMS sites	8	Each	$0	$0	
		Total Lane Hardware				**$0**	**EXPRESS LANES HARDWARE**

SRTA
PRICE PROPOSAL FORM
I-75 SOUTH EXPRESS LANES

Toll Facility Host

P1	61	Toll Facility Host Server, System Components	0	Each	$0	$0	
P1	62	Active Redundant - Toll Facility Host Server and System Components	0	Each	$0	$0	
P1	63	**Image Review** & Processing System & Storage (OCR/ALRP/Manual)	0	Each	$0	$0	
P1	64	Image Review Workstations	4	Each	$0	$0	
P1	66	Toll Facility Host UPS	0	Each	$0	$0	
P1	67	Cabinets & Equipment Host, CSC, & Other	1	LS	$0	$0	
P1	68	DVAS workstation (Complete-PC,monitor 27 ", audit software,dashboards sw,UPS, etc)	1	Each	$0	$0	
P1	69	Dashboards Monitors, 55", OLED - Headquarters	4	Each	$0	$0	
		Total Toll Facility Host Hardware				**$0**	**TOLL FACILITY HOST HARDWARE**

Other Items

P1	91					$0	
P1	92					$0	
P1	93					$0	
P1	94					$0	
P1	95					$0	
		Total Other				**$0**	**TOTAL OTHER ITEMS**
						$0	**TOTAL SYSTEM HARDWARE**

(P-1) I-75 South Express Lanes Toll Collection System Pricing

by: [redacted]

Unit and Total Purchase Prices

No.	Pay Item Description	Total Count	Unit of Measure	Unit Price	Total Price	Remarks
	Lane & ITS Software					
P1 101	Zone Controller Application SW	0	ZC	$0	$0	
P1 102	Zone Controller COTS SW	0	ZC	$0	$0	
P1 103	ITS & Network Software	1	LS	$0	$0	
					$0	**LANE SOFTWARE**
	Toll Facility Host Software					
P1 110	Toll Facility Host Server Application SW	1	LS	$0	$0	
P1 111	Toll Facility Host COTS SW	1	LS	$0	$0	
P1 112	Toll Facility Host Image Processing Subsystem SW	1	LS	$0	$0	
P1 114	Dynamic Pricing SW	1	LS	$0	$0	
P1 115	Dashboard software etc	1	LS	$0	$0	
P1 116	GUI software etc	1	LS	$0	$0	
					$0	**TOLL FACILITY HOST SOFTWARE**
	Program Management and Documentation					
P1 201	Mobilization & Initial Deliverables	1	LS	$0	$0	
P1 202	Program Management and Plan Deliverables	1	LS	$0	$0	
P1 203	System Design and Documentation (Includes As Builts)	1	LS	$0	$0	
P1 208	Training	1	LS	$0	$0	
					$0	**PROGRAM MANAGEMENT**
	Lane & ITS System Installation					
P1 251a	Installation - Lane System & Integration	20	Per Lane	$0	$0	
P1 251b	Installation - Small Shoulder (Loops & Cameras)	8	Per Sm Shlr	$0	$0	
P1 252	Installation & Integration GP Scanner Sites, CMS Sites & ITS	22	Per Site	$0	$0	
P1 254	Installation & Integration- SRTA TOC Primary @ TMC	1	LS	$0	$0	
P1 255	Build-out, Installation and Integration of DR @ SRTA	1	LS	$0	$0	
					$0	**LANE & TOC SYSTEM INSTALLATION**
	Toll Facility Host System Installation					
P1 253	Installation - Toll Facility Host	1	LS	$0	**$0**	
					$0	**TOLL FACILITY HOST INSTALLATION**
	Testing					
P1 301	Factory Acceptance Tests	1	LS	$0	$0	
P1 302	Site Commissioning Acceptance Testing - Lane	7	Toll Zone	$0	$0	
P1 303	Site Commissioning Acceptance Testing - Host/Hub	2	LS	$0	$0	
P1 304	System Integration Testing	1	LS	$0	$0	
P1 305	End to End Testing	1	LS	$0	$0	
P1 306	System Acceptance Testing	1	LS	$0	$0	
P1 307	Project Acceptance Reporting and Approval	1	LS	$0	$0	
					$0	**SYSTEM TESTING**
	Initial Equipment Inventory					
P1 400	Initial Equipment Inventory - Tab 9	1	LS	**$0**	**$0**	**INITIAL EQUIPMENT INVENTORY**
	System Warranty					
P1 501	Toll System & ITS Warranty (1 Year)	1	LS	$0	**$0**	**SYSTEM WARRANTY**
	TOTAL I-75 SOUTH EXPRESS LANES SYSTEM PRICE				**$0**	**TOTAL SYSTEM**

SRTA
PRICE PROPOSAL FORM
I-75 SOUTH EXPRESS LANES

	Maintenance			
P1 502	Toll System & ITS Maintenance Svcs (5 Years)	**Total from Tab 6 - I-75 South**	**$0**	**SYSTEM MAINTENANCE**
P1	**TOTAL CONTRACT PRICE for I-75 SOUTH EXPRESS LANES**		**$0**	

(P-2) NWC Express Lanes Toll Collection System Pricing

by: [redacted]

Unit and Total Purchase Prices

No.		Pay Item Description	Total Count	Unit of Measure	Contractor Unit Price	Total Price	Remarks
		Zone Controllers					
P2	1	Zone Controllers	0	Each	$0	$0	
P2	2	UPS - Zone Controllers	0	Each	$0	$0	
P2	3	Image Servers	0	Each	$0	$0	
		AVI Lane Equipment					
P2	5	AVI Reader	0	Each	$0	$0	
P2	6	AVI Antenna	0	Each	$0	$0	
		Violation Enforcement System (Includes all)					
P2	10	Lane VES Camera - Rear & Front W/Color & Monocrome	0	Each	$0	$0	
		Automatic Vehicle Classification					
P2	15	AVC - Smart Loops Detection/Classification (Inclusive of S/W & License)	0	Set	$0	$0	
P2	16	AVC - Reversible Smart Loops (Inclusive of S/W & License)	0	Set	$0	$0	
P2	17	AVC - Shoulder/Presence Loop	0	Set	$0	$0	
P2	18	AVC - Other	0	Each	$0	$0	
		Direction of Travel Indicators					
P2	19	Indicator lights	0	Each	$0	$0	
		CCTV System					
P2	21 & 23	CCTV Surveillance & DVAS Cameras	0	Each	$0	$0	
P2	24	CCTV Associated Devices & Work Effort	1	LS	$0	$0	
		TOC & TMC Monitoring Station					
P2	25	Equipment "Pods"	0	Each	$0	$0	
P2	26	Monitors 21" HD, (simultaneous display & selection of 16 selectable images)	20	Each	$0	$0	
P2	27	PC's (system software & camera / video control)	10	Each	$0	$0	
P2	28	All ancillary equipment (Keyboards, mice, KVM switch, cabling, monitor arms, etc	1	LS	$0	$0	
P2	29	Cabinets & Equipment Racks, etc,	1	LS	$0	$0	
		Communications & Network					
P2	31	Toll Facility LAN & Network Security - Layer 2 (*This includes implementation through Warranty*)	1	LS	$0	$0	
P2	32	Toll Facility WAN & Network Security - Layer 3 (*This includes implementation through Warranty*)	1	LS	$0	$0	
P2	33	Network Equipment and Cabling (Enclosures/Cabinets, Switches, Routers, Firewall, Patch Cords, GBICs, etc.)	1	LS	$0	$0	
		ITS & General Purpose Lane Sensors					
P2	51	GP & Mge Lanes Scan Sites-Antennas	0	Each	$0	$0	
P2	52	GP & Mge Lanes Scan Sites-Readers	0	Each	$0	$0	
P2	53	GP Lane Sensors - MDS **(Integrate and Test only)**	63	Each	$0	$0	
P2	54	Sensor Servers	0	Each	$0	$0	
P2	56	UPS Units for Scan Sites; MDS sites	0	Each	$0	$0	
P2	57	UPS Unts for Toll Rate CMS sites	15	Each	$0	$0	
		Total Lane Hardware				**$0**	**EXPRESS LANES HARDWARE**

Toll Facility Host

P2	61	Toll Facility Host Server, System Components & Backup	0	Each	$0	$0	
P2	62	Active Redundant - Toll Facility Host Server and System Components	0	Each	$0	$0	
P2	63	**Image Review & Processing System** & Storage (OCR/ALRP/Manual)	0	Each	$0	$0	
P2	64	Image Review Workstations	8	Each	$0	$0	
P2	66	Toll Facility Host UPS	0	Each	$0	$0	
P2	67	Cabinets & Equipment Host, CSC, & Other	1	LS	$0	$0	
P2	68	DVAS workstation (Complete-PC,monitor 27 ", audit software,dashboards sw,UPS, etc)	1	Each	$0	$0	
P2	69	Dashboards Monitors, 55", OLED - Headquarters	4	Each	$0	$0	
		Total Toll Facility Host Hardware				**$0**	**TOLL FACILITY HOST HARDWARE**

Other Items

P2	91					$0	
P2	92					$0	
P2	93					$0	
P2	94					$0	
P2	95					$0	
		Total Other Items				**$0**	**TOTAL OTHER ITEMS**
						$0	**TOTAL SYSTEM HARDWARE**

(P-2) NWC Express Lanes Toll Collection System Pricing

Unit and Total Purchase Prices

by: [redacted]

No.	Pay Item Description	Total Count	Unit of Measure	Unit Price	Total Price	Remarks
	Lane & ITS Software					
P2 101	Zone Controller Application SW	0	ZC	$0	$0	
P2 102	Zone Controller COTS SW	0	ZC	$0	$0	
P2 103	ITS & Network Software	1	LS	$0	$0	
					$0	**LANE SOFTWARE**
	Toll Facility Host Software					
P2 110	Toll Facility Host Server Application SW	1	LS	$0	$0	
P2 111	Toll Facility Host COTS SW	1	LS	$0	$0	
P2 112	Toll Facility Host Image Processing Subsystem SW	1	LS	$0	$0	
P1 113	Dynamic Pricing SW	1	LS	$0	$0	
P2 114	Dashboard software etc	1	LS	$0	$0	
P2 115	GUI software etc	1	LS	$0	$0	
					$0	**TOLL FACILITY HOST SOFTWARE**
	Program Management and Documentation					
P2 201	Mobilization & Initial Deliverables	1	LS	$0	$0	
P2 202	Program Management & Deliverables	1	LS	$0	$0	
P2 203	System Design and Documentation (Includes As Builts)	1	LS	$0	$0	
P2 204	Training	1	LS	$0	$0	
					$0	**PROGRAM MANAGEMENT**
	Lane & ITS System Installation					
P2 251a	Installation - Lane System & Integration	46	Per Lane	$0	$0	
P2 251b	Installation - Small Shoulder (Loops & Cameras)	19	Per Sml Shdr	$0	$0	
P2 252	Installation & Integration GP Scanner Sites, CMS Sites & ITS	37	Per Site	$0	$0	
P1 254	Installation & Integration- SRTA TOC Primary @ TMC	1	LS	$0	$0	
P1 255	Build-out, Installation and Integration of DR @ SRTA	1	LS	$0	$0	
					$0	**LANE & TOC SYSTEM INSTALLATION**
	Toll Facility Host System Installation					
P2 253	Installation - Toll Facility Host	1	LS	$0	**$0**	**TOLL FACILITY HOST INSTALLATION**
	Testing					
P2 301	Factory Acceptance Tests	1	LS	$0	$0	
P2 302	Site Acceptance Testing - Lane	14	Toll Zone	$0	$0	
P2 303	Site Acceptance Testing - Host/Hub	1	LS	$0	$0	
P2 304	System Integration Testing	1	LS	$0	$0	
P2 305	End to End Testing	1	LS	$0	$0	
P2 306	System Acceptance Testing	1	LS	$0	$0	
P2 307	Project Acceptance Reporting and Approval	1	LS	$0	$0	
					$0	**SYSTEM TESTING**

	Initial Equipment Inventory					
P2 400	Initial Equipment Inventory - Tab 10	1	LS	**$0**	**$0**	**INITIAL EQUIPMENT INVENTORY**
	System Warranty					
P2 501	Toll System & ITS Warranty (1 Year)	1	LS	$0	**$0**	**SYSTEM WARRANTY**
	TOTAL NWC EXPRESS LANES SYSTEM PRICE				**$0**	**TOTAL SYSTEM**
	Maintenance					
P2 502	Toll System & ITS Maintenance Svcs (5 Years)	**Total from Tab 6 - NWC**			**$0**	**SYSTEM MAINTENANCE**
P2	**TOTAL CONTRACT PRICE for NWC**				**$0**	

I-75 South & NWC Express Lanes Toll Collection System

by: [redacted]

Maintenance Pricing by Year Per Lane/Per Month

I-75 SOUTH Toll Collection System and ITS Maintenance

	Maintenance Year				
	1	2	3	4	5
Maintenance Rate Per Lane/Per Month	$0	$0	$0	$0	$0
Number of Fully Equipped Lanes	20	20	20	20	20
Number of Months	12	12	12	12	12
Annual System Maintenance Costs - I-75 South	$0	$0	$0	$0	$0
Toll Facility LAN, WAN & Network Security Maintenance (This includes the duration of the Maintenance Period)	$0	$0	$0	$0	$0
Total Annual System & Network Maintenance	$0	$0	$0	$0	$0
Total 5 Years System Maintenance Costs - I-75 South	**$0**				

NWC Toll Collection System and ITS Maintenance

	Maintenance Year				
	1	2	3	4	5
Maintenance Rate Per Lane/Per Month	$0	$0	$0	$0	$0
Number of Fully Equipped Lanes	46	46	46	46	46
Number of Months	12	12	12	12	12
Annual System Maintenance Costs - NWC	$0	$0	$0	$0	$0
Toll Facility WAN & Network Control (This includes the duration of the Maintenance Period)	$0	$0	$0	$0	$0
Total Annual System Maintenance & WAN	$0	$0	$0	$0	$0
Total 5 Years System Maintenance Costs - NWC	**$0**				

Total System Maintenance

$0

I-75 South & NWC Express Lanes Toll Collection System

Table of Labor Rates for Supplemental Work

by:

EXTENDED SERVICES LABOR			Contract Year 2013	2014	2015	2016	2017	2018
		Total Hourly Rate (with benefits)						
	601	Project Manager						
	602	Maintenance Supervisor						
	603	Maintenance Technician						
	604	Installation Technician						
	605	Installation Supervisor						
	606	Tester						
	607	Systems Engineer						
	608	Systems Analyst						
	609	Tech Writer						
	610	Programmer						
	611	Data base Analyst						
	612	Network Analyst						
	613	Network Architect						
	620	Other (Provide Detail Listing)						
	621	Other (Provide Detail Listing)						
	622	Other (Provide Detail Listing)						

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0

Progress Payments - System Purchases I-75 South Express Lanes (P-1)

Project Progress Milestone	Price				Payment	Retainage
Mobilization & Initial Deliverables	**$0**					
NTP	10%				$0	
NTP +1 thru 15-Day - Master Project Schedule	30%				$0	
NTP + 16 thru 30-day planning documents	30%				$0	
NTP + 31 thru 60-day planning documents	30%				$0	
Each Paid as a group upon acceptance of ALL.						
Program Management and Plan Deliverables	**$0**				$0	
Anytime a Deliverable is not on time or unacceptable, Management Payments stop until remedied.	$0	Begin 24 monthly payments 60 days From Scheduled NTP				
Retainage at Final System Acceptance					10%	$0
System Design and Documentation (Includes System Reports and Audit)	**$0**					
System Req Matrix Acceptance	10%				$0	
PDR Acceptance	10%				$0	
SDDD Acceptance	30%				$0	
FAT Acceptance	30%				$0	
System As Built Drawings	10%				$0	
Retainage at Final System Acceptance					10%	$0
Factory Acceptance Tests & Plan	**$0**				90%	
FAT Acceptance & Approval	90%				$0	
Retainage at Final System Acceptance					10%	$0
				Site Commission		
Lane System Installation	**Price**	13% per TZ.	Toll Zones	Per Zone	**Total**	
Hardware - Lane, ITS & Network & Other	**$0**	13%	7	$0	$0	
Software - Lane, ITS & Network	**$0**	13%	7	$0	$0	
Installation -Lane	**$0**	13%	7	$0	$0	
Site Commissioning Testing - Lane	**$0**	$0	7	$0	$0	$0
Retainage at Final System Acceptance						$0
Host System Installation					**Accepted Installation**	
Hardware - Host	**$0**	80%			$0	
Software - Host	**$0**	80%			$0	
Installation - Host	**$0**	80%			$0	
Site Commissioning Testing - Host & Hubs	**$0**	$0	1		$0	
Successful Integration Testing		10%			$0	$0
Retainage at Final System Acceptance						$0
System Integration Testing & Plan	**$0**	90%			$0	
Retainage at Final System Acceptance		10%				$0
End to End Testing and Plan	**$0**	90%			$0	
Retainage at Final System Acceptance		10%				$0
System Acceptance Testing and Plan	**$0**	100%			$0	
						Retainage
Project Acceptance Reporting and Approval	**$0**	100%			$0	**$0**

Training & Manuals	**$0**	100%		$0		
Paid when Completed & Documents Submitted & Accepted						
Initial Equipment Inventory	**$0**	100%		$0		
(Paid after Final System Acceptance and Delivery)						
WARRANTY	**$0**			$0		
Monthly Payment	**$0**	Begin monthly payments from "Open to Tolling" for 12 Months				
TOTAL I-75S EXPRESS LANES SYSTEM PRICE	**$0**			**$0**	**$0**	**$0**
MAINTENANCE System - Host, Lane & ITS	**$0**			**$0**		
		Begin monthly payments at Warranty Expiration to length of Maintenance contract				
TOTAL CONTRACT PRICE				**$0**		

Notes:

1 **a. Program Management Payment:** Once the schedule is set for the monthly payments it cannot be changed except for early completion. Delays in the project or failure to achieve successful site acceptance will NOT extend this payment. It is capped at the Program Management Bid amount. Upon Early completion SRTA may pay the remaining balance as a lump sum. **THE CALCULATION FOR THIS ITEM HAS BEEN CHANGED PLEASE SEE b-1 BELOW.**

Any submittals not provided on time will result in the discontinuance of Payments until the submittal requirement is fulfilled.

b. PRICING - PAYMENT CHANGES - ADDENDUM-6

1) **Program Management and Plan Deliverables** - These costs must be split between I-75S and NWC (35%-65%) respectively. However, for **payment** pursuant to Section 16 of the Contract, SRTA will add the two Project categories together and spread the total out over 48 months. This quotient will provide a standard payment from NTP for 48 months. Notwithstanding the above, payments are still dependent upon the TSI Contractor providing the required submittals and documentation and otherwise complying with the Contract Documents.

Invoice Scenario For Example SRTA can request that Monthly Invoices be split on a % basis for example: Initially split 70% for I75S and 30% for NWC. In that case the I75S Price would be used up in 24 Months; The NWC would continue through the end of the 48 month period and total at the end to the Bid Prices for each.

2) **Hardware Payments** - Only after successful FAT may the TSI Contractor invoice SRTA pursuant to Section 16 of the Contract for 50% of the cost of SRTA pre-approved hardware purchases. These purchases must have prior written approval by SRTA, must show documentation and verification of delivery and quantity and accepted in proper working order before they are eligible for payment. The Progress Payments will still be calculated in the manner shown in Tabs 12 & 13 minus the cost paid of associated hardware per Gantry Installation.

2 **System Installation:**
Hardware, Software, Installation, Site Installation Testing are all included in this pay item; Payments based on Gantries installed at a set % payable only when Site has successfully passed Site Installation Testing

I-75 South Toll Zones Gantries:

G-1	G-2a	G-2b	G-3	G-5a	G-5b	G-6
1	1	1	1	1	1	1
13.00%	13.00%	13.00%	13.00%	13.00%	13.00%	13.00%

3 **Warranty:** Monthly Payments Begin after Open to Tolling, Warrant includes both the Electronic Toll Collection System and the ITS Components.

7 14.29% Average

91.00%

4 **System Maintenance** includes both the Electronic Toll Collection System and their ITS Components.

0

Progress Payments - System Purchases NWC Express Lanes (P-2)

Project Progress Milestones	Price				Payment	Retainage
Mobilization & Initial Deliverables	**$0**					
NTP	10%				$0	
NTP +1 thru 15-Day - Master Project Schedule	30%				$0	
NTP + 16 thru 30-day planning documents	30%				$0	
NTP + 31 thru 60-day planning documents	30%				$0	
Each Paid as a group upon acceptance of ALL.						
Program Management and Plan Deliverables	**$0**				$0	
Anytime a Deliverable is not on time or unacceptable, Management Payments stop until remedied.	$0	Begin 24 monthly payments 60 days From Scheduled NTP.				
Retainage at Final System Acceptance					10%	$0
System Design and Documentation (Includes System Reports and Audit)	**$0**					
System Req Matrix Acceptance	10%				$0	
PDR Acceptance	10%				$0	
SDDD Acceptance	30%				$0	
FAT Acceptance	30%				$0	
System As Built Drawings	10%				$0	
Retainage at Final System Acceptance					10%	$0
Factory Acceptance Tests, Plan & Report	**$0**					
FAT Acceptance & Approval	90%				$0	
Retainage at Final System Acceptance					10%	$0
				Site Commission		
Lane System Installation	**Price**	6.5% per TZ	Toll Zones	Per Zone	**Total**	
Hardware - Lane, ITS & Network & Other	**$0**	6.5%	14	$0	$0	
Software - Lane, ITS & Network	**$0**	6.5%	14	$0	$0	
Installation -Lane	**$0**	6.5%	14	$0	$0	
Site Commissioning Testing - Lane	**$0**	$0	14	$0	$0	$0
Retainage at Final System Acceptance						$0
Host System Installation	**Price**				Accepted Installation	
Hardware - Host	**$0**	80%			$0	
Software - Host	**$0**	80%			$0	
Installation - Host	**$0**	80%			$0	
Site Commissioning Testing - Host & Hubs	**$0**	**$0**	1		$0	
Successful Integration Testing		10%			$0	$0
Retainage at Final System Acceptance						$0
System Integration Testing & Plan	**$0**	90%			$0	
Retainage at Final System Acceptance		10%				$0
End to End Testing and Plan	**$0**	90%			$0	
Retainage at Final System Acceptance		10%				$0
System Acceptance Testing and Plan	**$0**	100%			$0	
						Retainage
Project Acceptance Reporting and Approval	**$0**	100%			$0	**$0**

Training & Manuals	**$0**	100%		$0		
Paid when Completed & Documents Submitted & Accepted						
Initial Equipment Inventory	**$0**	100%		$0		
(Paid after Final System Acceptance, Delivery and Approval)						
WARRANTY	**$0**			$0		
Monthly Payment	**$0**	Begin monthly payments from Open to Tolling for 12 Months				
TOTAL NWC EXPRESS LANES SYSTEM PRICE	**$0**			**$0**	**$0**	**$0**
MAINTENANCE System - Host, Lane & ITS	**$0**			**$0**		
	Begin monthly payments at end of Warranty Phase to length of Maintenance contract based on Tab 6					
TOTAL CONTRACT PRICE				**$0**		

Notes:

1 **a. Program Management Payment:** Once the schedule is set for the monthly payments it cannot be changed except for early completion. Delays in the project or failure to achieve successful site acceptance will NOT extend this payment. It is capped at the Program Management Bid amount. Upon Early completion SRTA may pay the remaining balance as a lump sum. **THE CALCULATION FOR THIS ITEM HAS BEEN CHANGED PLEASE SEE b-1 BELOW.**

Any submittals not provided on time will result in the discontinuance of Payments until the submittal requirement is fulfilled.

b. PRICING - PAYMENT CHANGES - ADDENDUM-6

1) **Program Management and Plan Deliverables** - These costs must be split between I-75S and NWC (35%-65%) respectively. However, for **payment** pursuant to Section 16 of the Contract, SRTA will add the two Project categories together and spread the total out over 48 months. This quotient will provide a standard payment from NTP for 48 months. Notwithstanding the above, payments are still dependent upon the TSI Contractor providing the required submittals and documentation and otherwise complying with the Contract Documents.

Invoice Scenario For Example SRTA can request that Monthly Invoices be split on a % basis for example: Initially split 70% for I75S and 30% for NWC. In that case the I75S Price would be used up in 24 Months; The NWC would continue through the end of the 48 month period and total at the end to the Bid Prices for each.

2) **Hardware Payments** - Only after successful FAT may the TSI Contractor invoice SRTA pursuant to Section 16 of the Contract for 50% of the cost of SRTA pre-approved hardware purchases. These purchases must have prior written approval by SRTA, must show documentation and verification of delivery and quantity and accepted in proper working order before they are eligible for payment. The Progress Payments will still be calculated in the manner shown in Tabs 12 & 13 minus the cost paid of associated hardware per Gantry Installation.

2 **System Installation:**
Hardware, Software, Installation, Site Installation Testing are all included in this pay item; Payments based on Gantries installed at a set % payable only when Site has successfully passed Site Installation Testing

NWC Toll Zones/Gantries

G-1	G-2a	G-2b	G-3a	G-3b	G-4a	G-4b
1	1	1	1	1	1	1
6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%

3 **Warranty:** Monthly Payments Begin after Open to Tolling, Warrant includes both the Electronic Toll Collection System and the ITS Components.

NWC Toll Zones/Gantries

G-5a	G-6	G-7a	G-7b	G-8a	G-8b	G-9
1	1	1	1	1	1	1
6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%

Average	7.14%
Gantries	14
At 6.5%	91.00%

4 **System Maintenance** includes both the Electronic Toll Collection System and their ITS Components.

APPENDIX M

TECHNICAL RESPONSE GUIDE

Appendix M

Technical Response Guide

I-75 South Express Lanes and 1-75 Northwest Corridor

Addendum #1 06-12-13 (updates shown in red text with yellow highlighting)

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1 Technical Response Guidelines

1.1 General Instructions

This Attachment to the RFP (hereafter " Technical Response Guide") contains instructions and a template for each TSI to use when submitting their proposal to the SRTA in response to the technical specification requirements contained in SRTA's *I-75 Express Lanes and I-75 Northwest Corridor Express Lanes* (hereafter "RFP"). TSIs should follow the prescribed format included in this Technical Response Guide.

The TSI's response to the RFP should closely follow the prescribed format as outlined here. Failure of a TSI to follow the prescribed format may result in that TSI's score being negatively impacted.

DO NOT INCLUDE ANY PRICING INFORMATION IN THIS Technical Response Guide. Inclusion of any pricing information in the Technical Response Guide may result in the immediate disqualification of the TSI without evaluation of the TSI's proposal.

TSIs should provide clear, concise, and reasonable responses that specifically address the requirements stated in the RFP. TSIs should not in any way "postpone" a response to RFP requirements (e.g. "TSI ABC would be happy to discuss how we will meet this requirement at a later time" is an example of a postponed response).

1. The TSI should use the electronic version of this Attachment provided with the RFP to respond to RFP requirements. The TSI should not make any changes to the initial fourteen (14) pages of this document, nor should changes be made to formatting or text styles in the overall document. It is important that the TSI not merge any table cells in the document.
2. The TSI should save their response file as the original filename prefixed with a TSI Identifier designating the TSI submitting the proposal (e.g., "Company ABC Technical Specifications Guide FINAL.doc") where "Company ABC" is replaced with the name of the TSI (abbreviations are acceptable – a full legal name is not required). All files submitted by the TSI should use the same TSI Identifier.
   - **IMPORTANT:** All electronic files must be provided in Microsoft Office-compatible formats.
3. The TSI shall return the completed Technical Response Guide, with the new file name, as part of its overall written proposal.

1.2 Response Instructions

The TSI shall respond to requirements contained in the RFP according to the following 3-part procedure. In some instances, the TSI shall complete all three parts for each section of requirements. In other

instances, only the first (Part A) or the first and second parts (Part A and Part B) should be completed for the individual sections. Examples of how to complete the Technical Response Guide are provided following the response instructions below.

Part A: Compliance

The requirements in the RFP contain the expected products and / or services to be provided by the TSI during the project. It is essential that the TSI indicate their concurrence with the requirements and that the TSI will meet the requirement as written. If the TSI has read, understood, and will comply with a requirement exactly as written, the TSI should:

1. Check the "Yes, as stated" box in Part A of the respective section. Checking "Yes, as stated" indicates that the TSI will comply with the requirements as stated in the RFP.
2. If the TSI proposes to fully comply with the requirement as written in the RFP, the TSI should not enter any additional information in Part A or Part B of the template.
3. See "Example A" in *Format of Required Responses*" below for an example of this type of response.

Part A: Deployment

For sections that SRTA deems it is important to understand if what is proposed is currently in production and collecting revenue, the TSI must indicate yes or no by checking one of the two boxes:

1. Wherever the two options are present, the TSI is required to check either "Yes, this solution has been deployed by you and collecting revenue", or "No, this solution will be custom developed for SRTA".
2. Checking "Yes…" will require the TSI to provide the location of any reference as well as a point of contact (POC), as stated in Part C for these sections. SRTA reserves the right to contact any POCs.

Part B: Compliance with Modification

If the TSI does not agree to comply with a requirement as stated in a particular section, and / or has one or more proposed modifications to requirement language, and / or has an alternative approach to meeting the requirement as stated, and / or would like to call attention to any value-add features above what is specified, the TSI should:

1. Check the "Yes, with modification" box in Part A of the respective section. Checking "Yes, with modification" indicates that the TSI will comply with the requirements in the RFP with modifications to the requirement or through an alternative approach.
2. Copy and paste the relevant requirement(s) from the body of the RFP into the cell in Part B of the template.
3. The TSI should then make its proposed revision to the requirement language by striking out word(s) and / or inserting new proposed language into the cell in Part B of the template.
    - **IMPORTANT:** TSIs should ensure that the text of the relevant original requirement is contained in the cell and that strike-throughs and / or additional language inserted by the TSI is clearly visible in order for the Evaluation Committee to see the original text along with the TSI's proposed changes.

- **IMPORTANT:** In the event that the TSI proposes changes to a sub-set of requirements in a respective section of the RFP, the TSI may copy only that portion of the RFP that is relevant to the proposed change (e.g. a paragraph or series of sentences). It is the TSI's responsibility to ensure that there is sufficient context regarding their proposed changes. One way of ensuring sufficient context is to include in Part B the original language in the RFP for the sentences immediately before and immediately after the language that the TSI proposes to change.
- **IMPORTANT:** If the Evaluation Committee is unable to obtain a clear understanding of the nature and / or impact of TSI's proposed changes, the TSI's score for that section may be impacted.
- **IMPORTANT:** If, in the opinion of the Evaluation Committee, the TSI's proposed modifications to requirement language and / or alternative approach to meeting the requirement as stated introduce a material deficiency in the TSI's proposed solution, the TSI's score for that section will be negatively impacted. **SRTA is under no obligation to accept the TSI's proposed changes**.

4. AFTER completing the proposed revision, the TSI may add a concise explanation concerning the reason(s) for the proposed revision within the cell in Part B. The explanation should be separate and distinct from the marked-up text and be preceded by the TSI's proposed changes.
5. The TSI should not view the possibility of requesting changes to RFP requirements as an opportunity to re-write major portions of the RFP. STRA expects the TSI to comply with the requirements as written, with changes made only for minor clarifications or if a TSI will not comply with the requirement as written.

Part C: Describe What or How

Many sections of the Technical Specifications Response Guide require that the TSI describe how it will meet the stated requirement(s) by either providing a specific product or performing a specific service. For requirements that require this type of response, the TSI should do the following:

1. Complete the Part A Compliance section according to the instructions provided above.
2. Complete the Part B Compliance with Modification section according to the instructions provided above *if the TSI is proposing changes to the requirement language*.
3. Review the instructions provided in Part C regarding the information sought by the SRTA concerning the solution or services proposed by the TSI.
4. Below the table cells and in the space indicated, provide a concise but complete description of how the TSI will meet the requirement(s) for the respective sections as stated in the RFP. The description provided by the TSI should be completely contained within the respective sections with minimal cross-referencing of sections. If additional information, such as example documents, preliminary plans, diagrams, charts, etc., is specifically required, the TSI may provide these documents as appendices to its response. The locations of such information in appendices shall be referenced and appendices page counts shall not be included in TSI response page count limitations. ~~If additional information is needed to fully explain the TSI's approach and description, and this information cannot be provided in the body of the Technical Specifications Response Guide, the TSI may provide an appendix to its response and clearly indicate where the additional information is located in the appendix~~.

The TSI should strive to minimize cross-references and / or referring to appendices whenever possible for readability and conciseness of the overall RFP response.

2 Examples Demonstrating Format of Required Responses

2.1.1 Example A: Compliance

Cross-reference to the section in the RFP describing SRTA requirements. DO NOT MODIFY.

By Checking "Yes, as stated" the TSI indicates that they will comply with RFP requirement as written for this section of the RFP.

3.14.7 System Hardware *(example for reference only)*

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☒ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No Response Required**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

No response is required for Part B based on the TSI's response to Part A.

No response is required for Part C for this section in this example.

2.1.2 Example B: Compliance With Modification

By Checking "Yes, with modification" the TSI indicates that they will comply with the requirement as modified in Part B. The TSI may use this option to describe any value-added information.

Cross-reference to the section in the RFP describing SRTA requirements. DO NOT MODIFY.

3.14.8 Configuration Files *(example for reference only)*

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☒ Yes, with modification (*Explain Below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** All parameters and settings required to operate the Lane Controller application will be maintained in configuration files. Access to configuration files required to support the Lane Controller operations will be password controlled, and access to these files will be limited to authorized personnel. Lane controller configuration files should be maintained ~~on the Back Office server~~ in the Confiruration Management System and downloaded along with the Lane Controller application file; however, authorized personnel will also be able to make changes to the configuration file resident in the Lane Controller while in the field. All Lane Controllers will have default configuration files that allow the lane to start-up automatically. *Explanation: configuration files are stored in the Configuration Management System which is part of the development / test environment and will be on a separate server from the Back Office application and database servers.*	
C.	**No Response Required**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

No response is required for Part C for this section in this example.

Response Required for Part B based on the TSI's response to Part A. Note highlighted text to be provided by the TSI clarifying the TSI's proposed solution.

Note explanation for the proposed change in requirements language.

2.1.3 Example C: Describe What or How

Cross-reference to the section in the RFP describing SRTA requirements. DO NOT MODIFY.

By Checking "Yes, as stated" the TSI indicates that they will comply with RFP requirement as written.

By Checking "Yes…" the TSI indicates that they have materially deployed the solution they are proposing. If the proposed solution is a custom solution, or has not been actively deployed, check "No…"

3.14.9 Variable Dynamic Toll Pricing *(example for reference only)*

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☒ Yes, as stated ☐ Yes, with modification (*Explain below in Pc* ☐ No, will not meet at all **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ No, this solution will be custom developed for SRTA
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	• **Describe the logic, functionality, and design criteria anticipated in support of Variable Dynamic Pricing.** • **Include specific information that describes either existing or envisioned Variable Dynamic Pricing functionality that will be delivered in support of this project.** • **If this solution has been deployed by you and collecting revenue, please provide location(s) and any differences from the required solution.**	

No response is required for Part B based on the TSI's response to Part A.

[*Provide a description of what or how for this section. Delete this text when completed*]

Narrative information requested in Part C should be provided by the TSI immediately below the table cells as indicated.

If the TSI indicated that the solution has been deployed in Part A, additional information is required. For every reference provided as an example, also please provide a point of contact. SRTA reserves the right to contact any POCs.

Response Required in Part C. Note the information sought by the SRTA concerning the solution or services proposed by the TSI.

2.1.4 Example D: Non-Compliance

By Checking "No, will not meet at all" the TSI indicates that they will not comply in any way with requirement of this section of the RFP. ***Note, however, that by making such an indication, the TSI may be disqualified from further consideration.***

Cross-reference to the section in the RFP describing SRTA requirements. DO NOT MODIFY.

3.14.7 System Hardware *(example for reference only)*

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☒ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No Response Required**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

No response is required for Part B based on the TSI's response to Part A.

No response is required for Part C for this section.

3 Technical Specifications

(Note: Responses to SLA requirements which are referenced in Section 3 shall be provided by the TSI in Appendix D - SLA Table.)

3.1 General Project Overview

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

3.2 In-Lane System Functional Requirements

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

3.2.1 Zone Controller

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all _____ **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ No, this solution will be custom developed for SRTA
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	1. **Describe all zone controller hardware (manufacturer and model), software, locations, redundancy, automatic failover, configurable capability, transaction record capability and processing, and stand-alone operation that will be provided in support of this project.** 2. **Describe how zone controllers will receive software, configuration, and time synchronization updates.** 3. **Describe the interface with MOMS to report alarm messages.** 4. **Describe how the TSI will accomplish the requirement: For each individual vehicle, up to two (2) transponders (issued by SRTA or interoperable agencies) shall be read in accordance with the SLA requirement(s) and these transponders will be processed and reported in that vehicle's Transaction Record(s).** 5. **Describe how the zone controller will meet the requirements in 3.2.1.6 in both manual and automated modes.** 6. **Describe how the TSI will meet the requirements of managing the Tag Validation List:** **a) TVL: The zone controller shall be capable of using the TVL as received from the Facility Host. The TVL file shall include License Plate information related to each Transponder. The zone controller shall be capable of accepting comprehensive (complete list once a day) and incremental (changes updated on a configurable interval, but not less than on an hourly basis) TVL files, and shall activate the most recent TVL upon receipt and after validation of the file.** 7. **If this solution has been deployed by you and collecting revenue, please provide location(s), point(s) of contact, and any differences from the required solution.**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.2.2 Uninterruptible Power Supply (UPS)

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe how the TSI will meet the requirement:** **a. UPSs at Gantry Locations shall be able to gracefully shut down all toll zone equipment within a configurable time frame except for the AVI subsystem equipment at the location. This will allow the AVI subsystem to remain in operation for a longer period of time (48 hours at a minimum) to continue to read transponders.** **2. Describe the equipment the TSI will use, to include manufacturer and model** **3. Describe the TSI's design considerations to support power continuation or restoration in the event of loss of both primary power and UPS.**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.2.3 AVI Equipment

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all _____ **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ No, this solution will be custom developed for SRTA
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	

C.	**1. Describe all AVI Equipment that will be provided in support of this project.** **2. Describe any multi-protocol deployments (three protocols), including location, projects, and protocols used** **3. Describe the 6C certified equipment the TSI will use, to include manufacturer and model** 4. **If this solution has been deployed by you and collecting revenue, please provide location(s), point(s) of contact, and any differences from the required solution.** 5. **Describe where the proposed readers will be located.**

[*Provide a description of what or how for this section. Delete this text when completed*]

3.2.4 Vehicle Detection, Separation, and Classification

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe how the TSI will implement the proposed inductive smart loop system, to include vendor information**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.2.5 Violation Enforcement System

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all _____ **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ No, this solution will be custom developed for SRTA

B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]
C.	**1. Describe all necessary hardware, software required, and how it will be used to support the VES requirements.** **2. Describe how the TSI will achieve SRTA's desire:** a) For cost efficiency purposes it is SRTA's desire to use the same set of front and rear cameras and illuminators in the opposite direction when a lane is operating in the reserved direction. Properly capture all license plates with sufficient sharpness to ready state jurisdictions. **3. Describe the manufacturer and model of the proposed cameras** **4. Describe how the TSI will support the requirement:** a) To support rapid detection of poor performing image captures, the VES shall provide event messages through MOMS that indicate if the image quality of a VES camera has degraded such that its average OCR confidence falls below a configurable threshold, or a camera is producing black (no picture) images 5. **If this solution has been deployed by you and collecting revenue, please provide location(s), point(s) of contact, and any differences from the required solution.**

[*Provide a description of what or how for this section. Delete this text when completed*]

3.2.6 CCTV Systems (In-Lane Systems)

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all _____ **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ No, this solution will be custom developed for SRTA
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	

C.	**1. Describe all CCTV systems that will be provided in support of this project:** **a. Manufacturer and model of DVAS hardware and software** **b. Manufacturer and model of CCTV cameras that will support:** **i. Traffic monitoring** **ii. Gantry location and security access monitoring** **c. Integration with Cohu Inc. Phoenix Viewer Express software** **2. If this solution has been deployed by you and collecting revenue, please provide location(s), point(s) of contact, and any differences from the required solution.**

[*Provide a description of what or how for this section. Delete this text when completed*]

3.2.7 Traffic all Lanes – MDS Sensors

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all _____ **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ No, this solution will be custom developed for SRTA
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe the process that the TSI will use to smooth the data coming from the roadside devices for input into dynamic pricing and reporting.** **2. Describe how the data from the MDS's will be collected, to include a system diagram of the flow of data.** **3. If this solution has been deployed by you and collecting revenue, please provide location(s), point(s) of contact, and any differences from the required solution.**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.2.8 GP Lane AVI Scan Sites (Travel Time Systems)

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe how the TSI will compile and furnish the AVI data into travel time graphs and reports.** **2. Describe how the TSI will utilize the real time AVI data as an input into the dynamic pricing algorithm.** **3. Describe the manufacturer and model of the proposed equipment.** **4. Describe any existing dynamic pricing system in production that currently utilizes GP Lane AVI reads for pricing and travel times.**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.2.9 Toll Rate CMS AVI Sites

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all _____ **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ No, this solution will be custom developed for SRTA
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	

C.	**1. Describe the Toll Rate CMS AVI solution that will be provided in support of this project** ~~**2. Describe how the TSI will compile and furnish the CMS AVI data into travel time graphs and reports.**~~ ~~**3. Describe how the TSI will utilize the real time CMS AVI data as an input into assigning and posting the effective toll rate time.**~~ **2. Describe the manufacturer and model of the proposed equipment.** ~~**4. Describe any existing dynamic pricing system in production that currently utilizes Toll Rate CMS AVI reads for toll rate assignment.**~~ **3. Describe how CMS AVI data will be utilized when there are multiple approaches for the same point of entry.** **4. If this solution has been deployed by you and collecting revenue, please provide location(s), point(s) of contact, and any differences from the required solution.**

[*Provide a description of what or how for this section. Delete this text when completed*]

3.2.10 Roadway Reversal System

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe how the TSI will address the hardwired connection furnished by GDOT and how the TSI contractor will use the signaling to provide the functionality desired.**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.2.11 Direction of Travel Indicators

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all

B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]
C.	**No response required for this section.**

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

3.2.12 Toll Rate CMS Integration

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe how the TSI will handle controller problems and communication outages to the sign(s).** **2. Describe how the TSI will post rates to the signs.**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.3 In Lane Hardware and Software Requirements

3.3.1 Hardware Requirements

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all

B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]
C.	**1. Provide a list of proposed equipment for a single two (2) travel lane two (2) shoulder implementation, to include manufacturer and model.**

[*Provide a description of what or how for this section. Delete this text when completed*]

3.3.2 Hardware Mean Time Between Failure (MTBF) Requirements

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP <u>as stated</u> or <u>with modification</u>?**	**TSI Response: Check <u>One</u>** ☐ Yes, <u>as stated</u> ☐ Yes, <u>with</u> modification (*Explain below in Part B*) ☐ No, will <u>not</u> meet <u>at all</u>
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Provide cut sheets or other similar statements of the equipment MTBF measurements.**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.3.3 Diagnostics

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP <u>as stated</u> or <u>with modification</u>?**	**TSI Response: Check <u>One</u>** ☐ Yes, <u>as stated</u> ☐ Yes, <u>with</u> modification (*Explain below in Part B*) ☐ No, will <u>not</u> meet <u>at all</u>
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

3.3.4 Customized Hardware

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Identify and describe any customized hardware the TSI will provide.**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.3.5 Enclosures and Cabinets

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.** ~~**1. Describe any additional cabinets/enclosures needed to meet the requirements.**~~	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

~~[*Provide a description of what or how for this section. Delete this text when completed*]~~

3.3.6 Bill of Materials (BOM)

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all

B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]
C.	**No response required for this section.**

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

3.3.8 In Lane Software Requirements

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Provide cut sheets for all COTS software required to implement the lane solution, to include Operating System.**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.4 Facility Host Functional Requirements

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe the TSI's hosting solution and architecture.**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.4.1 Transaction Processing

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all _____ **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ No, this solution will be custom developed for SRTA
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	1. **Describe the logic, functionality, and design criteria associated with transaction processing.** 2. **Discuss how the Facility Host system will handle transaction processing. Will the Lane Controllers push transactions to the Facility Host or will the Facility Host pull them from the Lane Controllers?** 3. **If this solution has been deployed by you and collecting revenue, please provide location(s), point(s) of contact, and any differences from the required solution.**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.4.2 Trip Building

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ No, this solution will be custom developed for SRTA
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	1. **Describe your solution, including specifics that communicate how SRTA's requirements for Trip Building will be met.** 2. **Describe the processes within the TSI's proposed systems for handling orphan/exceptioned transactions.** 3. **If this solution has been deployed by you and collecting revenue, please provide location(s), point(s) of contact, and any differences from the required solution.**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.4.3 Variable and Dynamic Pricing System

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ No, this solution will be custom developed for SRTA

B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]
C.	**1. Describe the logic, functionality, and/or design criteria anticipated in support of Variable Dynamic Pricing to meet SRTA requirements. Provide specific information about:** o **How ITS and Toll related data is displayed, configured, and incorporated** o **How variable and dynamic are scheduled and implemented through the GUI (rate tables)** o **The dynamic pricing algorithm** o **DP System viewer** **2. Describe how the TSI will utilize the real time CMS AVI data as an input into assigning and posting the effective toll rate time.** **3. Describe any existing dynamic pricing system in production that currently utilizes Toll Rate CMS AVI reads for toll rate assignment.** 4. **If this solution has been deployed by you and collecting revenue, please provide location(s) and any differences from the required solution, including screenshots. (Submit screenshots as an attachment to Appendix M and will be excluded from the page limit.)**

[*Provide a description of what or how for this section. Delete this text when completed.*]

3.4.4 Configurable Dashboard System

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all _____ **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ No, this solution will be custom developed for SRTA
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	

C.	**1. Describe the proposed Configurable Dashboard System.** **2. Describe the TSI's approach to soliciting SRTA feedback to design the dashboard system.** **3. Describe how BI data will be integrated into the dashboard, as well as the refresh rate.** **4. If this solution has been deployed by you and collecting revenue, please provide location(s) and any differences from the required solution, including screenshots. (Submit screenshots as an attachment to Appendix M and will be excluded from the page limit.)**

[*Provide a description of what or how for this section. Delete this text when completed*]

3.4.5 GP lane AVI Reads

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

3.4.6 Roadway Reversal Functionality

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all _____ **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ Yes, this solution has been deployed on a non-revenue generating road ☐ No, this solution will be custom developed for SRTA

B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]
C.	**1. Describe how the TSI envisions coordinating with the GDOT TMC SI.** **2. If this solution has been deployed by you, please provide location(s), point(s) of contact, and any differences from the required solution.** o **Differentiate between systems where the TSI is wholly operating the roadway reversibility and/or tolling system, versus operating the tolling system in conjunction with another party.**

[*Provide a description of what or how for this section. Delete this text when completed*]

3.5 Facility Host System Hardware

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Provide a list of the complete suite of equipment comprising the proposed Facility Host System. (Submit list as an attachment to Appendix M and will be excluded from the page limit.)** **2. Describe the Active Redundant architecture and how the system will achieve failover and replication of data** **3. What is the anticipated recovery time objective in case of a failure at one of the Facility Hosts?** **4. Have you deployed an Active Redundant or similar high availability project in the past? If so, please describe project and solution.**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.5.1 Facility Host Application Access

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Provide screen shots of the TSI's proposed Facility Host user interfaces. (Submit screen shots as attachments to Appendix M and will be excluded from the page limit.)**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.5.2 Facility Host Operating System and Software

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe the facility host system software. Include system diagrams. (Submit diagrams as attachments to Appendix M and will be excluded from the page limit.)**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.5.3 Backup and Archive Capability

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all

B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]
C.	**1. Describe how the TSI will meet SRTA's requirements.**

[*Provide a description of what or how for this section. Delete this text when completed*]

3.5.4 Multiple Facility Host Locations

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Do you plan to use the hubs or have offsite Facility Host locations for both projects?**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.5.5 Interfaces

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe the TSI's experience integrating roadside equipment to a third party BOS or vice versa.** **2. Describe the TSI's process for developing and documenting other third party applications, such as CMS, TMC, MDS, and CCTV**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.5.6 Standard Reporting Requirements

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe the reporting software proposed to meet reporting requirements.** **a. Specify reporting software/product(s) proposed.** **2. Provide samples of each standard report. (Submit sample reports as attachments to Appendix M and will be excluded from the page limit.)**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.5.7 Audit Support

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all _____ **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ No, this solution will be custom developed for SRTA
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe all system and transaction audit support and functionality from the lane to the third party BOS.** **2. Describe the process of reconciliation.** **3. If this solution has been deployed by you and collecting revenue, please provide location(s), point(s) of contact, and any differences from the required solution.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

3.6 SRTA Intelligent Transportation Management System (ITMS)

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

3.7 SRTA TOC

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all _____ **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ No, this solution will be custom developed for SRTA
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	

C.	**1. Describe the TSI's solution to meet the conceptual requirements, including proposed workstation configuration and video screens.** **2. If this solution has been deployed by you and collecting revenue, please provide location(s), point(s) of contact, and any differences from the required solution.**

[*Provide a description of what or how for this section. Delete this text when completed.*]

3.8 Maintenance Online Management Systems (MOMS)

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe the TSI's proposed MOMS, illustrating that it meets the requirements in the RFP.** **2. Indicate if the MOMS solution is COTS or otherwise.** **3. Define what level of MOMS access the TSI will provide to SRTA.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

3.9 Image Processing System

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all _____ **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ No, this solution will be custom developed for SRTA

B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]
C.	**1. Describe your Image Processing System, to include hardware, software, automated vs. manual processes, and functionality** **2. Define the current levels of automated system accuracy, and the methods utilized to achieve those levels, for the TSI's IPS:** o **OCR** o **VSR** **3. Indicate if the IPS system is web-based.** **4. Describe the TSI's experience with the license plate population that can be expected on the projected roadways.** **5. If this solution has been deployed by you and collecting revenue, please provide location(s), point(s) of contact, and any differences from the required solution.**

[*Provide a description of what or how for this section. Delete this text when completed*]

3.9.1 Image Database and Storage

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

3.9.2 Image Processing Subsystem Interfaces

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all _____ **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ No, this solution will be custom developed for SRTA
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	1. **Describe the Image Processing Subsystem Interfaces that will be provided in support of this project.** 2. **Describe the process for how the TSI's IPS will support the retransmission or recovery of data.** 3. **If this solution has been deployed by you and collecting revenue, please provide location(s), point(s) of contact, and any differences from the required solution.**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.9.3 Special Functions

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

3.9.4 Image Review and Processing

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all _____ **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ No, this solution will be custom developed for SRTA
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	1. **Describe the Image Review and Processing system that will be deployed in support of this project.** 2. **Provide screen shots from the proposed Image Review System. (Submit as attachments to Appendix M and will be excluded from the page limit.)** 3. **If this solution has been deployed by you and collecting revenue, please provide location(s), point(s) of contact, and any differences from the required solution.**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.9.5 IPS Search Functionality

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

3.9.6 IPS Reports

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

3.10 Security and Access Control System

3.10.1 Security Requirements

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all _____ **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ No, this solution will be custom developed for SRTA
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe the security controls that will be provided to secure information on the Toll Collection System computers and network.** **2. If this solution has been deployed by you and collecting revenue, please provide location(s), point(s) of contact, and any differences from the required solution.**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.10.2 Access Control Requirements

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all _____ **TSI Response: Check One** ☐ Yes, this solution has been deployed by you and collecting revenue ☐ No, this solution will be custom developed for SRTA
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe the access controls that will be provided to secure information on the Toll Collection System computers and network.** **2. If this solution has been deployed by you and collecting revenue, please provide location(s), point(s) of contact, and any differences from the required solution.**	

[*Provide a description of what or how for this section. Delete this text when completed*]

3.11 SRTA Network and Communications

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	

C.	**1. Describe the proposed network design, including a network diagram. (Submit diagram as an attachment to Appendix M and will be excluded from the page limit.)** **2. Define the TSI's proposed redundancy layer 2 and layer 3 failover scheme.**

[*Provide a description of what or how for this section. Delete this text when completed*]

4 Project Management, QA/QC, System Design Process, Documentation, Installation and Testing

4.1 Project Management and Meetings

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Provide a Preliminary Project Management Plan as described.** **2. Provide a Preliminary Master Project Schedule as part of the proposal.** **3. Provide an organizational chart and resumes of key personnel.** **(Submit all of these as attachments to Appendix M and will be excluded from the page limit.)**	

[*Provide a description of what or how for this section. Delete this text when completed*]

4.2 Quality Assurance and Quality Control Program

4.2.1 Quality Management Plan

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	

C.	**1. Describe the Quality Management Plan approach that will be implemented in support of this Project.** **2. Provide a Quality Management Plan being used by the TSI Contractor on a similar project. (Submit plan as an attachment to Appendix M and will be excluded from the page limit.)**

[*Provide a description of what or how for this section. Delete this text when completed*]

4.2.2 Records

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.2.3 Control of Purchase

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.2.4 Inspection and Verification

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.2.5 Handling, Storage, and Delivery

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.2.6 Inspection at Subcontractor or Vendor Facilities

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	

C.	**No response required for this section.**

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.3 Project Documentation

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.3.1 Software Development Plan

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	1. **Describe the structure of the Software Development team that will support this Project.** 2. **Provide the proposed Software Development Plan. (Submit plan as an attachment to Appendix M and will be excluded from the page limit.)**	

[*Provide a description of what or how for this section. Delete this text when completed*]

4.3.2 FCC Licenses

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.3.3 Safety Plan

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe the Safety measures that are anticipated to be deployed in support of the requirements of this RFP.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

4.3.4 Security Plan

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	

C.	**1. Describe the physical and logical security and access control measures that are anticipated to be deployed in support of the requirements of this RFP.**

[*Provide a description of what or how for this section. Delete this text when completed*]

4.3.5 Disaster Recovery Plan

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe the Disaster Recovery measures that are anticipated to be deployed in support of the requirements of this RFP.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

4.3.6 Configuration Management and Documentation Control Plan

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe the Configuration Management and Documentation Control Plan to be deployed in support of the requirements of this RFP.** **2. Provide an example of a Configuration Management and Document Control Plan that was deployed for a similar operation. (Submit example as an attachment to Appendix M and will be excluded from the page limit.)**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

4.3.7 As-built Drawings/Documents

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.3.8 Business Rules

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.** ~~**1. Describe the TSI Contractor's previous experience and processes for developing Business Rules for Tolling Organizations.**~~	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

~~[*Provide a description of what or how for this section. Delete this text when completed.*]~~

4.4 System Design Process and Related Documentation

4.4.1 Civil Contractor Design Coordination Meetings

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.4.2 System Requirements Document

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.4.3 Preliminary Design Review and Documentation

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all

B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]
C.	**No response required for this section.**

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.4.4 Detail Design Review and Documentation

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.4.5 System Detailed Design Document As-Built

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.4.6 Interface Control Documents

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe methodologies used for the development of Interface Control Documents.** **2. Describe the Interface Control Documents, and include at least a 1 sample ICD that will be developed in support of the project. (Submit sample ICD as an attachment to Appendix M and will be excluded from the page limit.)**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

4.4.7 System Design Approval

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.4.8 Engineering Design

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all

B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]
C.	**No response required for this section.**

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.5 Installation and Related Documentation

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.5.1 Installation Plan

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Provide the proposed Preliminary Installation Plan (I-75 South only). (Submit plan as an attachment to Appendix M and will be excluded from the page limit.)**	

[*Provide a description of what or how for this section. Delete this text when completed*]

4.5.2 Installation Meetings

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.5.3 Construction Coordination with SRTA/GDOT

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe any previous multi-party construction coordination experience in similar tolling project situations.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

4.5.4 Compliance with Installation Standards

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	

C.	**No response required for this section.**

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.6 Testing and Related Documentation

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	***(Added consolidated questions from Sections 4.6.1, 4.6.3, 4.6.4):*** **1. Provide a draft Master Test Plan. (Submit plan as an attachment to Appendix M and will be excluded from the page limit.)** **2. Provide samples of FAT and SAT reports from a similar project. (Submit sample reports as attachments to Appendix M and will be excluded from the page limit.)** **3. Describe all testing phases, testing methodologies, test results reporting procedures, and all test script development methodologies that will be implemented and utilized in support of this project. Descriptions should be provided for the following:** **a. Factory Acceptance Test (FAT)** **b. Hardware Production Test** **c. Infrastructure Acceptance** **d. First In-Lane Site Installation Test for each type of site** **e. Site Commissioning Test** **f. Integration Test** **g. End to End Test** **h. System Acceptance Test**	

[*Provide a description of what or how for this section. Delete this text when completed*]

4.6.1 Master Test Plan

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.** 1. ~~**Provide a draft Master Test Plan.**~~	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.6.2 Test Procedures

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.6.3 Test Reports

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	

C.	**No response required for this section.** **1.** ~~**Provide samples of FAT and SAT reports from a similar project.**~~

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.6.4 Formal Test Phases

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.** ~~**1. Describe all testing phases, testing methodologies, test results reporting procedures, and all test script development methodologies that will be implemented and utilized in support of this project. Descriptions should be provided for the following:**~~ ~~**a. Factory Acceptance Test (FAT)**~~ ~~**b. Hardware Production Test**~~ ~~**c. Infrastructure Acceptance**~~ ~~**d. First In-Lane Site Installation Test for each type of site**~~ ~~**e. Site Commissioning Test**~~ ~~**f. Integration Test**~~ ~~**g. End to End Test**~~ **h.** ~~**System Acceptance Test**~~	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.6.5 Factory Acceptance Test (FAT)

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all

B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]
C.	**1. Describe test facility provided by the Contractor that is representative of the I-75 Managed Lanes, Back Office and external interfaces.** **2. Describe the FAT Plan and Scope.** **3. Describe how transaction volumes will be simulated to represent the expected real-world load on the system.**

[*Provide a description of what or how for this section. Delete this text when completed*]

4.6.6 Hardware Production Test

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP <u>as stated</u> or <u>with modification</u>?**	**TSI Response: Check <u>One</u>** ☐ Yes, <u>as stated</u> ☐ Yes, <u>with</u> modification (*Explain below in Part B*) ☐ No, will <u>not</u> meet <u>at all</u>
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.6.7 Infrastructure Acceptance

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP <u>as stated</u> or <u>with modification</u>?**	**TSI Response: Check <u>One</u>** ☐ Yes, <u>as stated</u> ☐ Yes, <u>with</u> modification (*Explain below in Part B*) ☐ No, will <u>not</u> meet <u>at all</u>
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.6.8 In-Lane Sites Installation Tests

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.6.9 Integration Test

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.6.10 End to End Test

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	

C.	**No response required for this section.**

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.6.11 System Acceptance Test

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

4.6.12 System Audit

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	1. **Provide proposed System Audit Test Procedures. (Submit procedures as an attachment to Appendix M and will be excluded from the page limit.)**	

[*Provide a description of what or how for this section. Delete this text when completed*]

5 Training Plan and Program

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Provide a description of the TSI's training methodology, approach and documentation (maximum 2 pages)** **2. Provide a description of the TSI's change management approach to updating manuals (maximum 2 pages)**	

[*Provide a description of what or how for this section. Delete this text when completed*]

6 Maintenance

(Note: Responses to SLA requirements which are referenced in Section 6 shall be provided by the TSI in Appendix D - SLA Table.)

6.1 Transition

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

6.2 General Requirements

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe how the TSI will coordinate Maintenance Of Traffic (MOT), and who will perform the work.**	

[*Provide a description of what or how for this section. Delete this text when completed*]

6.3 Maintenance Plan

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Provide proposed Initial Maintenance Plan that covers at a minimum: (Submit plan as an attachment to Appendix M and will be excluded from the page limit.)** **a. Maintenance Support 24/7, including preventative, predictive, and response to alarms from MOMS and NMS** **b. Part Inventory controls** **c. Priority 1 communication methodology** **2. Provide proposed Organizational Chart. (Submit chart as an attachment to Appendix M and will be excluded from the page limit.)**	

[*Provide a description of what or how for this section. Delete this text when completed*]

6.4 Maintenance Requirements

6.4.1 Electronic Toll Collection System Equipment Maintenance

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe how the TSI plans on maintaining the variety of equipment referenced, including who would be performing the work.** **a. If the TSI is going to subcontract any of the work, describe how the TSI will ensure that SLA's are being met.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

6.4.2 Toll ITS Equipment Maintenance

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe who will perform ITS maintenance.** **2. Describe how ITS equipment will be monitored and reported.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

6.4.3 Network Systems Maintenance

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe who will perform network systems maintenance.** **2. Describe how network systems equipment will be monitored and reported.** **3. Describe the TSI's approach for troubleshooting network systems problems that involve other parties.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

6.4.4 Change Management Process

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe which change management software and/or process is used by the TSI.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

6.5 Maintenance Coverage

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe a high level overview of the TSI's Maintenance Coverage to address the following areas:** **a. Describe how the TSI will have primary and secondary coverage in both local and remote monitoring.** **b. Describe the help desk and ticketing software and how it is integrated into MOMS.** **c. Describe how the TSI will address issues during non-business hours.** **d. Define where the TSI's dedicated maintenance facilities will be located.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

6.6 Reliability and Availability Requirements

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.** ~~**1. Describe how the TSI will provide monthly assessment of availability and reliability measurements.**~~	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

~~[*Provide a description of what or how for this section. Delete this text when completed.*]~~

6.7 Preventive Maintenance

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	

C.	**1. Provide an example of a preventative maintenance plan and schedule that covers the elements of both projects. (Submit example plan as an attachment to Appendix M and will be excluded from the page limit.)** **a. Define subcontractors (ITS, Tolling, Fiber, MOT) that will provide maintenance work and specify which work they will perform.** **b. Provide an estimate of FTE's that will be required to perform preventative maintenance.** **c. Define how preventative maintenance will be scheduled and performed for equipment in general purpose lanes.** **d. Define how preventative maintenance will be tracked and reported.**

[*Provide a description of what or how for this section. Delete this text when completed.*]

6.8 Unscheduled Maintenance

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Provide an example of an unscheduled maintenance plan that covers the elements of both projects. (Submit example plan as an attachment to Appendix M and will be excluded from the page limit.)** **a. Define subcontractors (ITS, Tolling, Fiber, MOT, WAN) that will provide unscheduled maintenance work and specify which work they will perform.** **b. Provide an estimate of FTE's that will be required to perform unscheduled maintenance.** **c. Define how unscheduled maintenance will be coordinated and performed for equipment in general purpose lanes.** **d. Define how unscheduled maintenance will be tracked and reported.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

6.9 Corrective Maintenance

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Provide an example of a corrective maintenance plan that covers the elements of both projects. (Submit example plan as an attachment to Appendix M and will be excluded from the page limit.)** **a. Define subcontractors (ITS, Tolling, Fiber, MOT, WAN) that will provide corrective maintenance work and specify which work they will perform.** **b. Define how corrective maintenance will be tracked and reported.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

6.10 Hardware and Software Installation Log

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

6.11 Maintenance Administration, Tools, Material, and Training

6.11.1 Maintenance On-Line Management System

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Explain how MOMS is integrated with maintenance services.** **2. Define how the TSI would respond to MOMS alerts 24/7.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

6.11.2 Network Management System (NMS)

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe the TSI's experience with NMS systems including stand alone and integrated with other systems (MOMS).** **2. Define how the TSI would respond to network alerts 24/7.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

6.11.3 Maintenance Status Meetings

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

6.11.4 Tools and Materials

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe the vehicles, tools, and materials to be provided for maintenance technicians to perform maintenance tasks.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

6.11.5 TSI Contractor's Internal Maintenance Training

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all

B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]
C.	**1. Describe the TSI's training program and refresh frequency period that will ensure employees are properly trained, qualified and certified if applicable.**

[*Provide a description of what or how for this section. Delete this text when completed.*]

6.12 Equipment and Spare Parts Inventory Management

6.12.1 Spare Parts

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Provide an overview of the TSI's spare parts policy and procedures** **2. Provide a list of proposed spare parts for a facility host (Submit list as an attachment to Appendix M and will be excluded from the page limit.)** **3. Provide a list of proposed spare parts for a two lane, two shoulder tolling zone (Submit list as an attachment to Appendix M and will be excluded from the page limit.)**	

[*Provide a description of what or how for this section. Delete this text when completed*]

6.12.2 Equipment Inventory Management

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all

B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]
C.	**1. Provide an overview of the TSI's Equipment Inventory Management policies and procedures.** **2. Describe how the TSI will separate assets by facility.**

[*Provide a description of what or how for this section. Delete this text when completed*]

6.13 Out of Scope Work

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

6.14 Notification of Incident and Potential Revenue Loss

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	

C.	**1. Describe the proposed procedures for reporting to SRTA any incident or identified discrepancy that will potentially result in a loss of revenue, customer service or audit ability or which could impact system performance or availability.** **2. Describe the proposed procedures for correcting problems and/or remediation to minimize negative impact.** **3. Describe the proposed procedures for calculating/estimating the amount of the loss.**

[*Provide a description of what or how for this section. Delete this text when completed*]

6.15 Cooperation with Others

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

7 Optional Services and Systems

Toll Operation Center Staffing

A.	**If required by SRTA in the future, is the TSI willing and able to meet the optional requirements in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe and give examples of capabilities and experience providing these types of services in similar environments.** **2. Discuss the most likely approach regarding usage of TSI resources and/or sub-contractor resources to provide these types of services for SRTA. If subcontracted, identify the firm most likely to provide the service.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

Customer Service Center Operations Staffing

A.	**If required by SRTA in the future, is the TSI willing and able to meet the optional requirements in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe and give examples of capabilities and experience providing these types of services in similar environments.** **2. Discuss the most likely approach regarding usage of TSI resources and/or sub-contractor resources to provide these types of services for SRTA. If subcontracted, identify the firm most likely to provide the service.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

Image Review Processing Operations Staffing

A.	**If required by SRTA in the future, is the TSI willing and able to meet the optional requirements in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe and give examples of capabilities and experience providing these types of services in similar environments.** **2. Discuss the most likely approach regarding usage of TSI resources and/or sub-contractor resources to provide these types of services for SRTA. If subcontracted, identify the firm most likely to provide the service.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

Fiber Emergency Maintenance (Backbone and Lateral)

A.	**If required by SRTA in the future, is the TSI willing and able to meet the optional requirements in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe and give examples of capabilities and experience providing these types of services in similar environments.** **2. Discuss the most likely approach regarding usage of TSI resources and/or sub-contractor resources to provide these types of services for SRTA. If subcontracted, identify the firm most likely to provide the service.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

Back Office Account Management System

A.	**If required by SRTA in the future, is the TSI willing and able to meet the optional requirements in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe and give examples of capabilities and experience providing these types of services in similar environments.** **2. Discuss the most likely approach regarding usage of TSI resources and/or sub-contractor resources to provide these types of services for SRTA. If subcontracted, identify the firm most likely to provide the service.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

Violation Processing System

A.	**If required by SRTA in the future, is the TSI willing and able to meet the optional requirements in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe and give examples of capabilities and experience providing these types of services in similar environments.** **2. Discuss the most likely approach regarding usage of TSI resources and/or sub-contractor resources to provide these types of services for SRTA. If subcontracted, identify the firm most likely to provide the service.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

Special Projects

A.	**If required by SRTA in the future, is the TSI willing and able to meet the optional requirements in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**1. Describe and give examples of capabilities and experience providing these types of services in similar environments.** **2. Discuss the most likely approach regarding usage of TSI resources and/or sub-contractor resources to provide these types of services for SRTA. If subcontracted, identify the firm most likely to provide the service.**	

[*Provide a description of what or how for this section. Delete this text when completed.*]

Appendix D – Performance Requirements and Service Level Agreements

(Note: In addition to responses regarding SLA Terms and Conditions requirements in this Section, the TSI shall also provide with their proposal detailed responses to the SLA requirements defined in Appendix D - SLA Table workbook document.)

Terms and Conditions

1 Overview

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

2 Reports and Record Keeping

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

3 Key Performance Requirements

A.	**Will the TSI meet requirements as stated in the referenced section of the RFP as stated or with modification?**	**TSI Response: Check One** ☐ Yes, as stated ☐ Yes, with modification (*Explain below in Part B*) ☐ No, will not meet at all
B.	**TSI's proposed revision to the requirement language (if applicable)** [*Copy original requirement in this cell and show proposed revision to the requirement language. Delete this text when completed*]	
C.	**No response required for this section.**	

[*No TSI response required for Part C of this section. TSI's should delete this text.*]

APPENDIX N

CONTRACT

TOLL SYSTEM INTEGRATION CONTRACT

BETWEEN

THE STATE ROAD AND TOLLWAY AUTHORITY

AND

_____

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THIS TOLL SYSTEM INTEGRATION PROCUREMENT CONTRACT ("Contract") is made and entered into as of the _____ day of _____, 2013 ("Effective Date"), by and between the STATE ROAD AND TOLLWAY AUTHORITY, a body corporate and politic and an instrumentality and public corporation of the State of Georgia ("SRTA"), and _____, a _____ corporation authorized to do business in the state of Georgia (the "TSI Contractor"). SRTA and TSI Contractor may be referred to individually, as "Party" or collectively, as "Parties."

WHEREAS, SRTA desires to engage a qualified and experienced contractor to provide tolling systems integration services (e.g., design, installation, integration, implementation, and systems maintenance) for certain of SRTA's Toll Facilities, as more fully described in (a) the Request for Qualified TSI Contractors Tolling Systems Integrator/I-75 South Express Lanes Project and I-75 Northwest Corridor Express Lanes Project RFQC No. 92700-13-100214 and any addenda thereto and any documents referenced therein (collectively, the "RFQC"), (b) the Tolling Systems Integrator/I-75 South Express Lanes Project and I-75 Northwest Corridor Express Lanes Project RFP No. 92700-13-100214 and any addenda thereto and any documents referenced therein (collectively, the "RFP"), and (c) the Contract;

WHEREAS, the TSI Contractor has represented to SRTA that it is experienced and qualified and willing to provide all of the labor, materials, Equipment, and expertise needed to successfully provide the Toll System(s) as that work is more fully described in the RFP;

WHEREAS, SRTA has relied upon such representations and selected the TSI Contractor to furnish the Work; and

WHEREAS, pursuant to OCGA § 32-10-63(5), SRTA is authorized to contract for all Work that in the judgment of SRTA is necessary for completion of the design, construction, installation, testing, implementation, maintenance, and the provision of services and Deliverables (defined below in **Section 5.4-Project Schedule**) for the Projects under the Contract Documents and includes, without limitation, all plant, labor, materials, Equipment, systems, taxes, services and software and other facilities, installation, testing, operations and maintenance and other things necessary or proper for or incidental to the carrying out and completion of the terms of the Contract Documents ("Work").

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein, the receipt and sufficiency of which are hereby acknowledged, the Parties hereto, intending to be legally bound, agree as follows:

1. **Recitals.** The recitals set forth above are true and correct and are incorporated into the Contract.

2. **Definitions.** Certain capitalized terms used herein shall have the meanings assigned to them as set forth in **Exhibit A to this Contract**. Other capitalized terms used but not defined in the Contract have the respective meanings set forth in the RFP.

3. **Inclusion and Priority of Documents**. The RFP, which is incorporated herein by reference as **Exhibit B**, and the TSI Contractor's Technical Proposal (and any documents referenced therein)

submitted in response to the RFP, which is incorporated herein by reference as **Exhibit C** (collectively, the "TSI Contractor's Proposal"), are integral parts of this Contract. The RFP, the TSI Contractor's Proposal, this Contract (including all Change Orders, Amendments, documents and exhibits referenced in this Contract) shall be collectively referred to as the "Contract Documents." In the event of a conflict among the Contract Documents, the Contract Documents herein shall govern the contractual relationship between the TSI Contractor and SRTA, and shall control one over another in the following order: Any Amendments to the Contract, the Contract, the RFP, and the TSI Contractor's Proposal.

3.1 Overview. This Contract provides the terms and conditions under which the Parties shall perform their respective roles with regard to the Projects. The terms of the Contract, however, shall govern each Project separately. By way of example and not by limitation, the TSI Contractor shall invoice SRTA separately for each Project pursuant to the terms of **Section 16 (Payment Terms)**. Likewise, **chronic failure (Section 32.1.3)**, shall be measured on a Project basis and not using a measurement based on the performance of the Projects in the aggregate, and Liquidated Damages shall be calculated based on the TSI Contractor's performance of each Project independent of the other Project.

4. **Contract Term and Renewal.** This Contract shall begin on the Effective Date and shall continue until June 30, 2019 11:59 pm (local Atlanta time) (the "Initial Term"). SRTA may elect to renew this Contract on the same terms and conditions for up to four (4) additional renewal periods with a term of up to three (3) years each (each renewal a "Renewal Term"). The Initial Term and any and all Renewal Terms may be referred to collectively as the "Term." The renewal of the Contract shall be at the sole discretion of SRTA and evidenced by an Amendment signed by both Parties. Subsequent to the execution of the Contract by both Parties, the Work to be rendered by the TSI Contractor shall commence by project once SRTA issues the TSI Contractor a Notice to Proceed for a project.

5. **Time and Manner of Performance.**

5.1 Work in General. TSI Contractor agrees to provide and deliver all of the Work set forth in the Contract Documents. All of the Work and each component thereof shall conform to each and every standard, specification, provision, criteria and requirement as applicable and as set forth in the RFP and, in particular, with each and every standard, specification, provision, criteria and requirement of **Section 3 (Technical Specifications), Section 4 (Project Management, QA/QC, System Design Process, Documentation, Installation and Testing), Section 5 (Training Plan and Program) and Section 6 (Maintenance)** of the RFP. TSI Contractor assumes full responsibility for the performance of the Work in a good and workmanlike manner in compliance with all applicable codes and safety and public health regulations. All Equipment and supplies furnished by TSI Contractor will be new, manufactured by skilled, qualified and properly trained labor, be free and clear of all liens and encumbrances, and not violate any Intellectual Property rights of any third party. TSI Contractor shall perform the services involved in the Work in a workmanlike and professional manner, consistent with the highest level of care and skill exercised by other providers of similar services in the industry.

5.2 TSI Contractor's General Responsibilities. TSI Contractor shall furnish all design, engineering and other services, provide construction management and all Work, including all materials, Equipment, labor, and installations, and undertake all efforts necessary or appropriate, excluding only those materials, services and efforts which the Contract Documents expressly specify will be undertaken by the prime contractor to GDOT that will be responsible for the civil work on a particular Project (each a "Civil Contractor") or other Persons, to construct the Project and maintain it during construction, so as to achieve (a) a successful System Integration Test and Open to Tolling and as required in the RFP, including **Sections 4.5.3.4 (I-75S Toll Site and Toll Related ITS Turnover Schedule) and 4.5.3.5 (NWC Toll Site and Toll Related ITS Turnover Schedule) of the RFP** and (b) Project Acceptance. TSI Contractor's general responsibilities also include:

5.2.1 *Lane Equipment Installation.* TSI Contractor shall install, replace, and maintain in good condition throughout the Term, Equipment that complies with the requirements of the Contract Documents and that will identify vehicles equipped with a Transponder issued by SRTA (either directly by SRTA or through an SRTA-approved distributor) or, in the instance of interoperability, another toll operator .

5.2.2 *Properly Formed Transaction, Trip Building, Transmission to SRTA.* TSI Contractor shall be responsible for capturing data evidencing each Transaction Record and transmitting a properly formed Trip Transaction to SRTA (which will include all of the information required by the Contract Documents for each such Trip) in accordance with the RFP requirements. Without limiting the foregoing, TSI Contractor shall be responsible for determining the applicable toll for each Trip in accordance with the Dynamic Pricing System and transmitting the required data to SRTA pursuant to **Section 3** of the RFP. The TSI Contractor shall provide full reporting, audit trails and reconciliation functionality. Detailed level reports shall support summary level reports and data points (numbers) reconcile between them.

5.2.3 *Assistance with Enforcement and Collection Proceedings.* In connection with any dispute regarding a Trip, including in connection with enforcement and collection proceedings brought to collect tolls owed with respect to the Trip, at SRTA's request TSI Contractor, at its expense, shall provide reasonable assistance and cooperation to evidence the proper operation of the Express Lanes Toll Collection System and data furnished to SRTA's CSC as set forth in **Section 5.2.2 of this Contract.**

5.2.4 *Mitigation of Delay.* Use commercially reasonable efforts to mitigate delay to design and construction of the Project and mitigate damages due to delay in all circumstances, to the extent possible, including by re-sequencing, reallocating, or redeploying TSI Contractor's and its TSI Contractors' forces to other work, as appropriate.

5.2.5 *Disaster Recovery Plan.* Implementation of data backup and disaster recovery in accordance with **Sections 3.4, 3.7.1 and 4.3.5 of the RFP**.

5.2.6 *Requests from Other Government Entities.* Provision to the appropriate Governmental Entities of the State of Georgia of the information required to be furnished by SRTA and related to the Work or the Project pursuant to Laws.

5.3 Notice to Proceed. The performance time will begin with the issuance of a Notice to Proceed, which shall be in writing and signed by SRTA's Project Manager.

5.4 Project Schedule. All Work and each deliverable set forth in Sections 3, 4, 5, 6 and Appendix C (Deliverables Schedule) of the RFP (collectively, "Deliverables" and individually, "Deliverable") shall be performed by the TSI Contractor within the times specified in the Appendix C (Deliverables Schedule) or as otherwise set forth in other applicable section of the RFP, as may be amended in writing and signed by SRTA and an authorized representative of the TSI Contractor, and in full cooperation with SRTA, SRTA-designated Representatives, the Georgia Department of Transportation ("GDOT") and GDOT's contractors, including the Civil Contractor. TSI Contractor shall pursue the Work without delay and shall be responsible for liquidated damages in the event of a delay as set forth in Appendix D (Performance Requirements and SLAs) of the RFP and Section 28 of this Contract. The TSI Contractor shall perform its Work according to the Civil Contractor's Project Schedule, and the SRTA-approved Master Project Schedule which will take into consideration the requirements set forth in Sections 4.5.3.4 and 4.5.3.5 of the RFP. SRTA may also reasonably change or amend the Master Project Schedule to accommodate conditions encountered during the progress of the Project. Changes in the Project Schedule will not change the Contract Sum. Unless an extension of time is granted by SRTA pursuant to Section 17.3 (Delay and Extensions of Time) of this Contract, TSI Contractor will successfully, fully and entirely complete all Work by the successful testing of Project Acceptance date.

5.4.1 *Suspension of Work*. SRTA shall have the authority to suspend, in whole or in part, Work on the Project for (i) failure of the TSI Contractor to correct conditions unsafe for laborers or for the general public, (ii) failure of the TSI Contractor to carry out provisions of the Contract Documents, (iii) failure to carry out SRTA's directions, (iv) unsuitable weather, or other conditions considered unsuitable for the prosecution of all or part of the Work, or (v) for any other condition or reason deemed by SRTA to be in the public interest. Such suspensions shall be for such periods as SRTA deems necessary. TSI Contractor may qualify for an extension of time pursuant to **Section 17.3 (Delay and Extension of Time)** for suspensions that are the result of subsections (iv) or (v) above.

5.4.2 *Completion of Construction*. TSI Contractor shall be required to perform the in-road installation of Work and the required testing, along with the delivery of the Deliverables on each Project within the prescribed number of days as set forth in the RFP or Master Project Schedule, as applicable.

5.4.3 *Delays by TSI Contractor*. If TSI Contractor is responsible for any delays in the time and sequence of the Project Schedule, TSI Contractor shall pay SRTA for all costs and damages suffered by SRTA as a result of such delays.

5.5 Cooperation. TSI Contractor shall coordinate and cooperate, and require its subcontractors to coordinate and cooperate, with SRTA, GDOT, and any other Persons as provided in **Section 4 of the RFP** to facilitate the full, efficient, effective and timely performance of all such monitoring, inspection, sampling, measuring, testing, reporting, auditing, other oversight functions and all other aspects of the Work, as applicable. TSI Contractor shall cause its representatives and key project staff to be available at all reasonable times for consultation with SRTA.

5.5.1 *With SRTA and SRTA-designated Representatives.* SRTA shall be entitled to full and prompt cooperation of the TSI Contractor in all aspects of the Work for each Project on which TSI Contractor performs Work. TSI Contractor will respond to SRTA's requests for information or other requests for which TSI Contractor's input is needed within the times set forth in the RFP, and if no such time frame is provided for in the RFP, then TSI Contractor will respond to SRTA's requests within the timeframe reasonably requested by SRTA. In addition to the Documentation required to be submitted as set forth in **Section 4 of the RFP**, TSI Contractor shall furnish documentation as anticipated in this Contract, including Escrow Letters, and insurance certificates when and as required by SRTA.

5.5.2 *With the Civil Contractor.* SRTA shall be entitled to full and prompt cooperation of the TSI Contractor in all aspects of the Work. For each Project on which TSI Contractor performs Work, TSI Contractor is required to cooperate with each Civil Contractor, subcontractors and suppliers to the Civil Contractor (as applicable). The TSI Contractor will be required to perform its Work as set forth in the Civil Contractor's Project Schedule, as that schedule may be amended by GDOT and/or SRTA from time to time, and the SRTA-approved Master Project Schedule which will take into consideration the requirements set forth in **Sections 4.5.3.4 and 4.5.3.5 of the RFP**. Prior to the Civil Contractor finalizing the Civil Contractor's Project Schedule, the TSI Contractor will be required to coordinate and cooperate with the Civil Contractor, including giving input regarding the Civil Contractor's Project Schedule as it may relate to TSI Contractor's Work. TSI Contractor shall also cooperate with the Civil Contractor, beginning shortly after GDOT selects the Civil Contractor, regarding design and review of plans and drawings, Requests for Information, and as otherwise set forth in **Section 4 of the RFP**. TSI Contractor shall respond to such requests within the time frames set forth in the RFP and if no time frame is provided, then TSI Contractor must respond as reasonably requested by SRTA. TSI Contractor shall be professional and responsive and thorough in its response to any requested communication, assistance, request for information, as the same may be made by GDOT or the Civil Contractor so as not to delay any aspect of the Work or the work to be performed by the Civil Contractor or its subcontractors or other GDOT contractors. However, TSI Contractor shall only take direction from SRTA and SRTA-designated Representatives. If TSI Contractor alleges that the Civil Contractor or other entity's act or omission to act will result in a delay to TSI Contractor, then no later than two (2) Business Days after the earlier of the commencement of such delay or upon learning of the possibility of a delay, TSI Contractor shall file a written ~~claim~~ notice with SRTA's Project Manager, detailing with specificity the nature of

the cause of the delay. Failure of TSI Contractor to furnish such notice within the specified time period shall result in the TSI Contractor's waiver of any delay claim resulting from such act or omission to act.

5.5.3 *With Other Third Parties.* TSI Contractor is required to cooperate, as applicable, with other subcontractors and suppliers, utility companies, other governing authorities, and all other entities required to perform work on the Project or otherwise responsible for oversight, supervising, inspecting or performing any part of the Project.

5.5.4 *Performance of Work Directed by SRTA Only.* Notwithstanding any provision to the contrary, TSI Contractor shall only take direction from SRTA or SRTA-designated Representatives regarding any and all aspects of the Work. No other party has the authority to amend or change any aspect of the Project or otherwise direct TSI Contractor with regard to any and all aspects of the Work.

5.6 Project Meetings.

5.6.1 *Civil Contractor Design Coordination Meetings.* Pursuant to **Section 4.6 of the RFP**, TSI Contractor shall be required to participate in progress meetings related to the design, implementation and construction phases of each Project. For construction and implementation meetings that occur early in the Civil Contractor's Project Schedule, TSI Contractor may, upon SRTA's consent, participate in such meetings via telephone. As the Civil Contractor's construction progresses to the point where the TSI Contractor is required to participate in the preliminary and final walk throughs as set forth in **Section 4.5.3.3 (Toll Site Transition/Site Acceptance Requirements) of the RFP**, TSI Contractor shall participate in the construction progress meetings in person.

5.6.2 *Project Progress Meetings.* TSI Contractor shall participate in all Project Progress Meetings as set forth in **Section 4.1.3 of the RFP**, at least once per month, or such other frequency as requested by SRTA to review, discuss and resolve matters relating to coordination, services, quality control, performance, customer service, tolling, payment and other matters arising under the Contract Documents. The Parties shall schedule all meetings at on-site at SRTA's offices unless the Parties mutually agree otherwise.

5.6.3 *Other Internal Project Meetings.* TSI Contractor shall also participate in any other meetings as set forth in **Section 4.1 of the RFP**, as requested by SRTA and/or SRTA-designated Representatives. TSI Contractor and SRTA shall cause their respective representatives to be available at all reasonable times (generally, during regular business hours) for consultation with one another.

5.7 On-site Coordination.

5.7.1 *Control of Site/Third Party Claims*. TSI Contractor may have to perform Work on the roadway at the same time other contractors are performing their work on the

Project. TSI Contractor may enter the Project site solely to allow TSI Contractor and/or its subcontractor(s) to prepare for and perform the Work. TSI Contractor must coordinate with the Civil Contractor or other contractors, as applicable, regarding access to and from the Project site, and ensure familiarity with the locations in which TSI Contractor may stay within in order to perform the Work. TSI Contractor assumes all risk and liability resulting from or arising out of the acts and inactions of itself, its employees, agents, subcontractors, and suppliers, including but not limited to damage caused to the work performed or Equipment and supplies stored at the Project site.

5.7.2 *Incident Response.* In the event of an incident that may occur on or near the roadway and in which TSI Contractor or its subs may be involved, TSI Contractor shall for itself and its subcontractors, complete any forms and furnish the required information to SRTA or its designated representative. For any incidents that involve the Civil Contractor and/or its subcontractors, TSI Contractor shall complete the forms and furnish the necessary information as required by GDOT or follow other procedures as requested by SRTA or GDOT, as applicable.

5.8 SRTA's Project Manager. SRTA's Project Manager will determine in the first instance all questions of any nature whatsoever arising out of, under, in connection with, or in any way related to or on account of, the Contract Documents. The TSI Contractor agrees that in the event of dispute as to cooperation with the Civil Contractor, other contractors of SRTA or GDOT or with other Governmental Entities, SRTA's Project Manager shall decide all matters in the event of such a dispute and decisions made by SRTA's Project Manager shall be binding, subject only to **Section 31 (Dispute Resolution)** of this Contract.

6. Documentation.

6.1 Accuracy. All Documentation required to be provided to SRTA by the TSI Contractor shall be complete and accurate in all respects and tailored as necessary to the needs of each Project.

6.2 Ownership of Documentation. With the exception of COTS, which will be subject to their own standard terms, TSI Contractor hereby grants to SRTA a fully paid up, perpetual and irrevocable license with the right to use, duplicate and edit Documentation, created by TSI Contractor or TSI Contractor Parties and furnished pursuant to the Contract Documents. TSI Contractor shall obtain fully paid up, perpetual and irrevocable licenses in SRTA's name with the right to use, duplicate and edit Documentation, for Documentation created by third parties.

6.3 SRTA Reviews and Approvals. Notwithstanding any other provision to the contrary, any drawing, report, manual, design document, test plan or other data or Documentation submitted for SRTA's review shall be approved or disapproved within the timeframe set out in **Section 4 of the RFP** and if no timeframe is specified, then SRTA shall respond to TSI Contractor as set forth in **Section 10.2 (Time Periods)** of this Contract. If the item is disapproved then SRTA will provide comments that define the nature and extent of the deficiency. Any approval by SRTA shall not be deemed to relieve or otherwise waive any

of the TSI Contractors obligations or requirements under the Contract Documents, unless the same is the subject matter of an Amendment, and in no case shall such approval or Amendment be deemed a waiver of any applicable rule, regulation or Law.

6.4 TSI Contractor Responses. TSI Contractor shall incorporate SRTA's comments and revise Documentation accordingly. TSI Contractor shall provide the revised Documentation to SRTA within the timeframe set out in **Section 4 of the RFP** and if no timeframe is specified, then TSI Contractor shall furnish the revised Documentation no later than five Business Days after receiving SRTA's comments.

7. **GDOT RFPs**. GDOT issued a Request for Proposals to Develop, Design, Construct and Finance the Northwest Corridor Project through a Design Build Finance Agreement, Project Number CSNHS-0008-00(256), P.I. No. 0008256 (as subsequently amended) (collectively, the "GDOT NWC RFP"). GDOT also issued a Request for Proposals for the I-75 Express Lanes Project, Project Numbers CSNHS-0009-00(156), CSNHS-0009-00(157), P.I. No. 0009156, 0009157 (as may be subsequently amended) (collectively, the "GDOT I-75S RFP"). The GDOT NWC RFP and the GDOT I-75S RFP may be individually referred to as a "GDOT RFP" and collectively referred to as "GDOT RFPs." The GDOT RFPs are hereby incorporated into the Contract Documents by reference. The TSI Contractor is required to comply with those sections of the GDOT RFPs as those sections are specified in the RFP, as well as those sections of the applicable GDOT RFP that provide requirements for engineering design submittals, review times, Civil Contractor and TSI Contractor coordination, maintenance of traffic, and design and installation requirements that relate to any aspect of the Work. To the extent any provisions of the applicable GDOT RFP conflict with the provisions of the Contract Documents, the provisions of the Contract Documents shall take precedence.

8. **TSI Contractor Personnel.**

8.1 General. The TSI Contractor shall provide sufficient professional personnel and staffing to provide the Work and so as not to delay any aspect of the Work. TSI Contractor warrants and represents that all Persons assigned to perform under this Contract shall be employees or authorized subcontractors of TSI Contractor, shall be licensed in the State of Georgia (if required by Law) and shall be fully qualified to perform the Work. TSI Contractor shall include a similar provision in any agreement with any subcontractor and/or supplier selected to perform and/or to provide any Work. Personnel commitments, if any, made in TSI Contractor's Proposal shall not be changed unless approved by SRTA. TSI Contractor's failure to continuously provide adequate staffing to prosecute the Work competently and according to the Master Project Schedule may result in the termination of this Contract for TSI Contractor default. All of TSI Contractor's and TSI Contractor Parties' personnel shall comply with SRTA's confidentiality and security requirements while on SRTA's premises or otherwise performing the Work, including but not limited to obtaining criminal background checks and the execution of confidentiality agreements. All of TSI Contractor's and the TSI Contractor Parties' personnel shall comply with GDOT's requirements (security, lane closure, etc.) while performing Work in, near or about the roadway. TSI Contractor shall refer to the applicable GDOT RFP, each of which is incorporated herein by reference, for a more detailed description of the special provisions, rules and regulations with which TSI Contractor must comply when performing

Work in, on or near the roadway.

8.2 SRTA's Right to Remove. SRTA shall have the right to require the TSI Contractor to remove an employee from performing under this Contract based on cause or other reasonable standard. In the event of such removal, TSI Contractor will replace the employee with the appropriate skilled personnel within the time reasonably specified by SRTA.

8.3 TSI Contractor's Project Manager. TSI Contractor shall at all times provide a Project Manager approved by SRTA who (a) will have full responsibility for the prosecution of the Work, including design and construction of the Work, (b) will act as agent and be a single point of contact on all daily Project decisions and Project-related matters on behalf of TSI Contractor, (c) will be present or available at the Site at all times that Work is performed, and (d) will be available to respond to SRTA upon SRTA's request. Notwithstanding the above, the Project Manager may appoint a designee from time to time, with SRTA's approval, to be available or otherwise present whenever Work is performed. TSI Contractor agrees that TSI Contractor's Project Manager shall have the authority to make decisions and to bind TSI Contractor to decisions made by the TSI Contractor's Project Manager and to documents signed by the TSI Contractor's Project Manager in furtherance of the Project and/or the Work, provided however, that the TSI Contractor's Project Manager shall have no authority to bind the TSI Contractor to pricing or other Change Orders unless the same have been executed by TSI Contractor's _____. TSI Contractor may change the designated Project Manager as set forth in **Section 8.4 (Key Personnel) of the Contract**. TSI Contractor shall cause its Project Manager to cooperate and coordinate with SRTA and SRTA-designated Representatives in the administration of this Contract.

8.4 Key Personnel. TSI Contractor shall not substitute key personnel included in the organization chart(s) as required under **Section 4.1.1 (Project Management Plan)** of the RFP and assigned to this Contract without the prior written approval of SRTA. Any desired substitution shall be noticed to SRTA, accompanied by the names, experience and references of TSI Contractor's recommend substitute personnel. In addition to the information required to be included in the Project Management Plan pursuant to **Section 4.1.1 (Project Management Plan)**, the Project Management Plan shall also specify the on-site availability of Key Personnel. Notwithstanding any provision in the Contract Documents to the contrary, the TSI Contractor's Project Manager shall be considered one of the Key Personnel.

8.5 Prevailing Wages. TSI Contractor shall pay or cause to be paid to all workers employed by it or its subcontractors to perform the Work not less than the prevailing rates of wages, as provided in the statutes and regulations applicable to public work contracts. TSI Contractor shall comply and cause its subcontractors to comply with all Laws pertaining to prevailing wages. For the purpose of applying such Laws, the Project shall be treated as a public work paid for in whole or in part with public funds (regardless of whether public funds are actually used to pay for the Project). It is TSI Contractor's sole responsibility to determine the wage rates required to be paid. In the event rates of wages and benefits change while this Contract is in effect, TSI Contractor shall bear the cost of such changes and shall have no claim against SRTA on account of such changes.

8.6 Immigration Act. TSI Contractor and its subcontractors shall comply with the Georgia Immigration & Compliance Act ("Immigration Act"), O.C.G.A. § 13-10-90, *et seq*. TSI Contractor must certify compliance with the Immigration Act using the form attached as **Appendix R to the RFP**. The required certificates and affidavits must be filed with SRTA and copies maintained by TSI Contractor and each of the TSI Contractor Parties as of the Effective Date, recertified as of July 15 of each year and upon final completion of the Work for each Project. State officials, including officials of the Georgia Department of Labor and SRTA, retain the right to inspect and audit the Project and employment records of TSI Contractor and its subcontractors without notice during normal working hours until the Work under the applicable Project is complete, and as otherwise specified by Law.

8.7 No Discrimination. TSI Contractor shall not, and shall cause any subcontractor to not, discriminate on the basis of race, color, national origin, sex, age, religion or handicap in the performance of the services under this Contract. TSI Contractor shall carry out, and shall cause its subcontractors to carry out, applicable requirements of 49 CFR Part 26. Failure by TSI Contractor to carry out these requirements is a material breach of this Contract, which may result in termination hereof or such other remedy permitted hereunder as SRTA deems appropriate. TSI Contractor shall include this provision in every subcontract (including purchase orders) pertaining to the Work under this Contract.

8.8 Equal Employment. TSI Contractor confirms for itself and its subcontractors providing Work under this Contract that TSI Contractor and each such subcontractor has an equal employment opportunity policy ensuring equal employment opportunity without regard to race, color, national origin, sex, age, religion or handicap and that TSI Contractor and each such subcontractor maintains no employee facilities segregated on the basis of race, color, national origin, sex, age, religion or handicap. TSI Contractor shall comply with all applicable Equal Employment Opportunity and nondiscrimination provisions of the Law, and shall require the TSI Contractor Parties to comply with such Laws.

9 **Site Conditions**.

9.1 Site Investigation. TSI Contractor has carefully and thoroughly reviewed the site conditions where the Northwest Corridor Project and the 75 South Express Lanes Project will be located. For all other Projects, TSI Contractor will carefully and thoroughly review the site conditions of each such Project prior to executing an Amendment adding such Work to this Contract. For each such Project site, TSI Contractor is satisfied as to the general, local and site conditions that may affect cost, progress, performance or furnishing of the Work, unless otherwise set forth in the applicable Amendment. TSI Contractor agrees that the conditions at the Northwest Corridor Project and the 75 South Express Lanes Project are sufficient and no changes need to be made for TSI Contractor to perform completely and fully the Work as set forth in the Contract Documents. TSI Contractor agrees that the conditions of any other Project added to this Contract by way of Amendment are at the time such Amendment is signed sufficient and no changes need to be made for TSI Contractor to perform completely and fully the Work as set forth in the Contract Documents unless otherwise set forth in the applicable Amendment. The apparent silence of any specification as to any detail, or the apparent omission of detailed description

concerning any point, shall be interpreted to mean that only the best commercial practice is to prevail and only material and workmanship of the first quality may be used. Upon receipt of any notice of noncompliance issued by SRTA, TSI Contractor shall supply written proof of compliance within ten (10) Days.

9.2 Differing Site Conditions. TSI Contractor shall not proceed with performing Work or otherwise shall halt affected Work in progress upon discovering (a) subsurface or latent physical conditions at the Project site which differ materially from those indicated in the Contract Documents, (b) unknown physical conditions at the Project site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the Contract Documents, or (c) improper, incorrect or incomplete work performed by or being performed by the Civil Contractor or other contractors performing work on the Project to the extent that such work may impact, interfere with or otherwise hinder TSI Contractor's performance or quality of the Work. Immediately upon discovering any of the conditions described in this **Section 9.2**, but no later than two (2) Business Days after such discovery, TSI Contractor shall immediately and in writing notify SRTA's Project Manager. SRTA shall investigate the site conditions promptly after receiving TSI Contractor's notice. If the conditions do materially differ and as a direct result such materially changed conditions cause an increase or decrease in the TSI Contractor's cost of, or the time required for, performing any part of the Work, an equitable adjustment shall be made pursuant to this **Section 9.2** and the Contract shall be modified in writing accordingly.

No request by the TSI Contractor for an adjustment to the Contract price or for an extension of time under this clause shall be allowed, unless the TSI Contractor had given the written notice required in this **Section 9.2**.

10 Review and Oversight/Approvals.

10.1 Submittal, Review and Approval Terms and Procedures. This **Section 10** sets forth terms and procedures that shall govern the submission, review and approval of applicable Deliverables and any other document, plan, schematic, drawing or otherwise that the TSI Contractor will furnish to SRTA for SRTA's review and/or approval pursuant to the Contract Documents or the Project Management Plan and component plans thereunder (individually, "Submittal" and collectively, "Submittals"). In the event there are no provisions in the Contract Documents or Project Management Plan and component plans thereunder concerning submission, review and approval procedures, this Section shall govern and control.

10.2 Time Periods. Except as expressly set forth in **Section 4 of the RFP** or as provided below in **Sections 10.2.1 and 10.2.2** below or elsewhere in this Contract, whenever SRTA is entitled to review and comment or otherwise approve a Submittal, SRTA shall promptly respond and/or act upon such Submittal generally within twenty-one (21) Days from the date it receives an accurate and complete Submittal, together with a completed transmittal form acceptable to SRTA and all necessary information and documentation concerning the subject matter of the Submittal. Any period of review by SRTA in excess of thirty (30) Days, except where **Section 4 of the RFP** provides for a longer time period, may give rise

to an extension of time as set forth in **Section 17.3 (Delay and Extensions of Time) of this Contract**. If any item is disapproved then SRTA will provide comments that define the nature and extent of the deficiency.

10.2.1 *Time Periods.* The time periods set forth in the RFP for SRTA's review and approval of Submittals, as and to the extent required, shall apply to and restart with all re-Submittals which TSI Contractor may be required to provide.

10.2.2 *Extension of Time Periods.* All time periods for SRTA to act upon Submittals shall be extended by the period of any delay caused by (a) a Force Majeure Event, (b) change in Law, (c) issuance of a temporary restraining order or other form of injunction by a court that prohibits prosecution of any material portion of the Work, and (d) to the extent of any delay of the TSI Contractor or any TSI Contractor Parties.

10.3 Resolution of SRTA's Comments/Objections. SRTA's exception, objection, rejection or disapproval shall be deemed reasonable, valid and binding if based on any of the following grounds:

10.3.1 *Comply with Requirements*. The Submittal or subject provision thereof fails to comply with any applicable covenant, condition, requirement, term or provision of the Contract Documents or Project Management Plan and component plans thereunder;

10.3.2 *Good Industry Practice*. The Submittal or subject provision thereof is not to a standard equal to or better than the requirements of Good Industry Practice;

10.3.3 *Incomplete*. TSI Contractor has not provided all content or information required in respect of the Submittal or subject provisions thereof, provided that SRTA assumes no duty, obligation or liability regarding completeness or correctness of any Submittal, including a Submittal that is to be delivered to a Governmental Entity as a proposed Governmental Approval, or in order to obtain, modify, amend, supplement, renew, extend, waive or carry out a Governmental Approval;

10.3.4 *Law*. Adoption of the Submittal or subject provision thereof, or of any proposed course of action thereunder, would result in a conflict with or violation of any Law or Governmental Approval,

10.3.5 *Not a Typical SRTA Arrangement*. In the case of a Submittal that is to be delivered to a Governmental Entity as a proposed Governmental Approval, or in order to obtain, modify, amend, supplement, renew, extend, waive or carry out a Governmental Approval, it proposes commitments, requirements, actions, terms or conditions that are not arrangements that SRTA offers or accepts for addressing similar circumstances affecting its own projects; or

10.3.6 *Unprofessional*. The submittal contains a multitude of grammatical errors, or otherwise contains incorrect references, or is generally unprofessional.

10.4 TSI Contractor Review and Comments. TSI Contractor shall timely and promptly respond to all of SRTA's comments and objections to a Submittal and, except as provided below, make modifications to the Submittal as necessary to fully reflect and resolve all such comments and objections, in accordance with the review processes set forth in this **Section 10.4**. TSI Contractor agrees to undertake reasonable efforts to accommodate or otherwise resolve any such comments or objections through the review processes described in this **Section 10**. If TSI Contractor prefers not accommodate or otherwise resolve any comment or objection, TSI Contractor shall deliver to SRTA within a reasonable time period, not to exceed five (5) Business Days after receipt of SRTA's comments or objections, a written explanation why modifications based on such comment or objection are not required. The explanation shall include the facts, analyses and reasons that support the conclusion. The TSI Contractor's Project Manager and SRTA's Project Manager shall, subject to **Section 31 (Dispute Resolution) of this Contract**, resolve any conflict.

10.4.1 *Good Industry Practice.* The foregoing shall in no way be deemed to obligate TSI Contractor to incorporate any comments or resolve objections that would render the Submittal erroneous, defective or less than Good Industry Practice, except pursuant to a SRTA Change.

10.4.2 *Failure to Notify.* If TSI Contractor fails to notify SRTA within such time period, SRTA may deliver to TSI Contractor a written notice stating the date by which TSI Contractor was to have addressed SRTA's comments and that if TSI Contractor does not address those comments within five (5) Business Days after receipt of this notice, then that failure shall constitute TSI Contractor's agreement to make all changes necessary to accommodate and resolve the comment or objection and full acceptance of all responsibility for such changes without right to a Relief Event, Compensation Event or other Claim.

10.5 Limitations on TSI Contractor's Right to Rely. No review, comment, objection, rejection, approval, disapproval, acceptance, certification (including certificates of acceptance and Project Acceptance), concurrence, monitoring, testing, inspection, spot checking, auditing or other oversight by or on behalf of SRTA or GDOT or their representatives or agents, and no lack thereof by SRTA or GDOT, or their representatives or agents, shall constitute acceptance of materials or Work or waiver of any legal or equitable right under the RFP, at Law, or in equity. SRTA shall be entitled to remedies for unapproved deviations and nonconforming Work and to identify additional Work which must be done to bring the Work and Project into compliance with requirements of the RFP, regardless of whether previous review, comment, objection, rejection, approval, disapproval, acceptance, certification, concurrence, monitoring, testing, inspection, spot checking, auditing or other oversight were conducted or given by SRTA, the Civil Contractor, GDOT or other GDOT contractors, or their representatives or agents. Regardless of any such activity or failure to conduct any such activity by SRTA, the Civil Contractor, GDOT or other GDOT contractors, or their representatives or agents, TSI Contractor at all times shall have an independent duty and obligation to fulfill the requirements of the RFP. Any approval by SRTA shall not be deemed to relieve or otherwise waive any of the TSI Contractors

obligations or requirements under the Contract Documents, unless the same is the subject matter of an Amendment, and in no case shall such approval or Amendment be deemed a waiver of any applicable rule, regulation or Law. TSI Contractor agrees and acknowledges that any such activity or failure to conduct any such activity by SRTA, or SRTA-designated representatives:

10.5.1 is solely for the benefit and protection of SRTA;

10.5.2 does not relieve TSI Contractor of its responsibility for the selection and the competent performance of all TSI Contractor-Related Entities;

10.5.3 does not create or impose upon SRTA or GDOT any duty or obligation toward TSI Contractor to cause it to fulfill the requirements of the RFP;

10.5.4 shall not be deemed or construed as any kind of warranty, express or implied, by SRTA;

10.5.5 may not be relied upon by TSI Contractor or used as evidence in determining whether TSI Contractor has fulfilled the requirements of the Contract Documents; and

10.5.6 may not be asserted by TSI Contractor against SRTA as a defense, legal or equitable, to, or as a waiver of or relief from, TSI Contractor's obligation to fulfill the requirements of the Contract Documents.

10.6 TSI Contractor Not Relieved of Obligations. TSI Contractor shall not be relieved or entitled to reduction of its obligations to perform the Work in strict accordance with the RFP, or any of its other liabilities and obligations, including its indemnity obligations, as the result of any activity identified in **Section 10.5 above** or the failure to conduct any such activity. Such activity by SRTA shall not relieve TSI Contractor from liability for, and responsibility to cure and correct, any unapproved deviations, nonconforming Work or TSI Contractor Events of Default.

11 **Testing**. In addition to the requirements set forth in **Section 4 of the RFP**, SRTA shall have the rights set forth in this **Section 11**.

11.1 Inspection and Testing; Limitations. At all times during the Term of this Contract, SRTA shall have the right to conduct the monitoring, reviewing, inspection, testing, reporting, auditing and other oversight functions set forth in the Contract Documents, including without limitation:

11.1.1 conducting field monitoring and inspections on an audit basis as indicated in the RFP;

11.1.2 attending and witnessing TSI Contractor's tests and inspections; and

11.1.3 SRTA shall have the right to attend and witness any tests and verifications to be conducted pursuant to the Technical Provisions and applicable Management Plans. TSI Contractor shall provide to SRTA all applicable test results and reports (which may be provided in electronic format in accordance with the Technical Provisions) within ten (10) Days after TSI Contractor receives them.

11.2 Failure to Pass any Testing. If TSI Contractor fails in whole or in part any test required by **Section 4 of the RFP**, as such applicable provision in the RFP defines such failure, then:

11.2.1 SRTA shall withhold approval and any associated payments due until the completion of any and all corrective action and the successful completion of any and all retests; and

11.2.2 in the event of any re-testing, TSI Contractor shall pay for (a) the costs of SRTA employees to participate in and to attend each re-testing, including travel, meals and lodging (but not the cost of any SRTA employee salary), (b) the consulting fees and the costs of SRTA consultants to participate in and to attend, including travel, meals and lodging, and (c) all of TSI Contractor's costs and fees. SRTA employees and SRTA consultants shall comply with the State and SRTA travel policies. TSI Contractor shall make payment to SRTA for these expenses within thirty (30) Days of TSI Contractor's receipt of an invoice from SRTA listing such expenses.

12 **Integration with Work Performed by Other GDOT TSI Contractors**. The Work includes interfacing the Electronic Toll Collection System with GDOT's ITS systems. TSI Contractor will coordinate with the Civil Contractor and GDOT's TMC Contractor, as needed, to define and implement the interface (see **Section 3.5.5.3 of the RFP** for more details). Each Civil Contractor will perform all work associated with the design and construction of the applicable Project, to include all roadways and associated infrastructure necessary to construct the Project in accordance with the Civil Contractor's design schematic of the Project. Each Civil Contractor must coordinate with GDOT, SRTA, adjacent Governmental Entities and the TSI Contractor in the design of their respective Project. The TSI Contractor will be required to work closely with each Civil Contractor. The TSI Contractor shall also coordinate and work closely with SRTA, GDOT and the GDOT's TMC Contractor in the design and integration the SRTA TOC work area(s).

12.1 Minimize Disruption. Without limiting the foregoing, TSI Contractor shall cooperate and coordinate with SRTA, GDOT and any third party that owns, constructs, manages, operates or maintains a Related Transportation Project with regard to the construction, maintenance and repair programs and schedules for such Related Transportation Facilities, in order to minimize disruption to the operation thereof.

12.2 TSI Contractor Access to Plans. To assist TSI Contractor, SRTA shall provide to TSI Contractor during normal working hours, reasonable access to plans, surveys, drawings, as-built drawings, specifications, reports and other documents and information in the possession of SRTA, GDOT or their contractors and consultants pertaining to Related Transportation Facilities. TSI Contractor, at its expense, shall have the right to make copies of the same. TSI Contractor, at its expense, shall conduct such other inspections,

investigations, document searches, surveys and other work as may be necessary to achieve compatibility, integration and transition with those Related Transportation Facilities identified in the RFP.

12.3 Notice of Conflict or Potential Conflict. In the event TSI Contractor believes that the Civil Contractor, its subcontractors or other GDOT Contractors are not cooperating with or otherwise coordinating with TSI Contractor, TSI Contractor shall immediately advise SRTA but no later than two (2) Business Days after the TSI Contractor alleges that Civil Contractor is not cooperating with the TSI Contractor, detailing with specificity the nature of failure or lack of cooperation. Failure of TSI Contractor to furnish such notice within the specified time period shall result in the TSI Contractor's waiver of any delay claim resulting from such lack of cooperation.

13 Subcontracting and Assignment.

13.1 Assignment. TSI Contractor shall not assign, delegate, sublet or transfer this Contract or any rights under or interest in this Contract without the prior written consent of SRTA, which may be withheld for any reason, provided however corporate restructure shall not be deemed an assignment hereunder.

13.2 Subcontracting. Nothing contained herein shall prevent TSI Contractor from employing independent professional associates, subcontractors and suppliers as TSI Contractor may deem appropriate to assist in the performance of Work hereunder. However, TSI Contractor shall not subcontract Work to subcontractors and/or suppliers that are different from those subcontractors and/or suppliers listed in TSI Contractor's Proposal, without obtaining SRTA's prior written approval, which approval is within SRTA's sole discretion. SRTA shall have the right to require the TSI Contractor to remove a subcontractor and/or supplier of TSI Contractor from performing under this Contract, if in SRTA's reasonable opinion, such subcontractor and/or supplier:

13.2.1 is not performing its portion of the Work satisfactorily;

13.2.2 is failing to cooperate as required in the Contract Documents;

13.2.3 is posing a security risk to the Project or to SRTA's business;

13.2.4 is otherwise breaching a term of the Contract Documents that is applicable to that portion of the Work being performed by the subcontractor and/or supplier; or

13.2.5 presence on the Project is not in the best interest of SRTA.

In the event of such removal, TSI Contractor will replace the subcontractor and/or supplier with a suitable replacement within a reasonable time specified by SRTA.

13.3 TSI Contractor Remains Responsible. If TSI Contractor subcontracts any of the Work to be performed under this Contract, TSI Contractor shall be as fully responsible to SRTA for the acts, errors, or omissions of TSI Contractor's subcontractor and/or supplier and of the

persons employed by them as TSI Contractor is for the acts and omissions of persons directly employed by TSI Contractor. TSI Contractor shall be obligated to assist SRTA in the enforcement of any rights that SRTA has against subcontractor. Notwithstanding any subcontract or agreement with any subcontractor, TSI Contractor shall be fully responsible for all of the Work on this Project. Notwithstanding any provision to the contrary, TSI Contractor shall be responsible to SRTA for all terms, conditions, liabilities, and responsibilities under the Contract Documents regardless of whether TSI Contractor or its subcontractors, suppliers, independent contractors, agents or assigns perform any aspect of the Work.

13.4 Mandatory Terms in Subcontracts. Nothing contained in this Contract shall create any contractual relationship between any subcontractor of TSI Contractor and SRTA. Any subcontract entered into as a result of this Contract, except those exclusively regarding third-party materials, suppliers, and COTS hardware and software supplied by the TSI Contractor under the Contract, shall contain all applicable provisions of this Contract that in any way relate to a Deliverable or item of Work that the applicable TSI Contractor Party will perform and/or furnish, as well as provisions pertaining to, records, and payment methods. The TSI Contractor shall further ensure that all subcontracts entered into by TSI Contractor for any Work to be performed or Equipment or materials supplied grant SRTA all of the rights and privileges of such subcontract, including but not limited to (so long as SRTA is not in default of its obligations under this Contract) SRTA's right to secure materials, Equipment or services from the subcontractor that might be a part of the subcontractor's Work.

13.5 Timely Payments to Subcontractors/Violation of this Section. TSI Contractor warrants that it shall make timely payments for Work performed to any subcontractor or supplier hereunder and TSI Contractor shall indemnify and hold harmless SRTA and the State for any breach of this warranty.

13.6 Failure to Comply. Any assignments or subcontracts made in violation of **Sections 13.1 (Assignment) and/or 13.2 (Subcontracting)** shall be null and void.

14 **Relationship of the Parties.** Each Party, in the performance of this Contract, shall be acting in its individual capacity and not as an agent, employee, partner, joint venturer, or associate of the other Party. The employees, agents, partners or contractors of one Party shall not be deemed or construed to be the employees, agents, partners or contractors of the other Party for any purposes. Neither Party shall assume any liability of any type on behalf of the other Party or any of such other Party's employees, agents, partners or contractors. The Parties expressly understand and agree that TSI Contractor is an independent TSI Contractor of SRTA in all manner and respect and that neither Party to this Contract is authorized to bind the other Party to any liability or obligation or to represent in any way that it has such authority. TSI Contractor shall be solely responsible for all payments to its subcontractors, agents, consultants, suppliers, employees, partners or any other parties with which it does business including, but not limited to, paying all benefits, taxes and insurance, including workmen's compensation insurance, for its employees.

14.1 Joint Venture/Partnership. If TSI Contractor is a joint venture or partnership then each member of the joint venture or partnership shall be jointly and severally liable to SRTA and to the State for any and all obligations, responsibilities, liabilities, damages, liquidated damages, warranties or otherwise arising under the Contract Documents.

15 **Safety Precautions**. The TSI Contractor shall be solely and completely responsible for the safety of all persons and property in any way related to the Work and comply with the rules and regulations of OSHA, GDOT and any other Governmental Entity responsible for safety of labor, the Work performed in, on or about the lanes, and/or Work performed at any other work site related to the Project. The TSI Contractor alone shall be responsible for the safety, efficiency, and adequacy of its plant, appliances, and methods, and for any damage which may result from their improper construction, maintenance, or operations. The TSI Contractor shall erect and properly maintain at all times as required by the conditions and progress of the work proper safeguards for the protection of workmen and the public and shall post danger warnings against any hazards created by TSI Contractor's operations. TSI Contractor shall designate a responsible member of its organization whose duty shall be the prevention of accidents. In the absence of notice to the contrary, filed with SRTA in writing, this person shall be the superintendent of the TSI Contractor. TSI Contractor shall furnish any and all Material Safety Data Sheets applicable to TSI Contractor's work to SRTA prior to commencing work under this Contract.

16 **Payment Terms.** Rates on the pricing sheets include taxes, benefits, ancillary costs, overhead, profit and any other monetary component.

16.1 General. For satisfactory performance of the Work, SRTA hereby agrees to compensate the TSI Contractor in accordance with the prices set forth in **Exhibit E (Pricing Schedules)**.

16.2 Retention. Work to be performed shall be subject to a retainage of ten percent (10%) of the invoiced and paid amount associated with any aspect of the Work. The retainage shall be paid upon Final Invoice (defined below in **Section 16.13 (Final Payment)**), less any amounts due SRTA pursuant to other sections of the Contract Documents.

16.3 Trust Funds. All payments made by SRTA to TSI Contractor for the Work under the Contract Documents shall be held in trust by the TSI Contractor for the purpose of paying its employees and TSI Contractor Parties who provided any part of the Work.

16.4 Overpayment. In the event an overpayment is made to TSI Contractor under this Contract, TSI Contractor shall immediately refund to SRTA the full amount of any such erroneous payment or overpayment following TSI Contractor's written notice of such erroneous payment or overpayment, as issued by SRTA. Except in the case of a good faith dispute, if TSI Contractor fails to refund the erroneous payment or overpayment within a 30-Day period, SRTA shall be entitled to interest at one percent (1%) per month on the amount not repaid from the date of overpayment. The provisions in this Section shall survive the expiration or termination of this Contract.

16.5 Reduction of Payment for Non-conforming Services. If any defined action, duty or service or part required by the Contract is not performed by the TSI Contractor in

accordance with the requirements of the Contract, the value of such action, duty or service or part thereof will be determined by SRTA and deducted from any invoice claiming such items for payment. If the action, duty or service or part thereof has been completed and is not in conformance with the Contract Documents, the TSI Contractor will be notified and given the opportunity to correct any deficiencies within a time certain. Payment (for the non-conforming work) will be withheld by SRTA from any invoice until such time as the Work is corrected in accordance with the Contract Documents.

16.6 Withholding Payments. SRTA reserves the right to withhold payment or payments in whole or in part, and to continue to withhold any such payments for Work not completed or not completed in accordance with the Contract Documents. Any and all such payment previously withheld shall be released and paid to TSI Contractor promptly when the Work is subsequently performed in accordance with the Contract Documents.

16.7 Payment not Acceptance. Payment or use of any Work or portions thereof by SRTA shall not constitute an Acceptance of any Work not performed in accordance with the Contract Documents nor shall payment waive any preceding or then-existing breach or default by the TSI Contractor of any term, covenant or condition of the Contract Documents. Additionally, payment shall not extend or affect (a) the service of any notice, any dispute resolution procedures; (b) any time within which the TSI Contractor is required to perform any obligation; or (c) any other notice or demand.

16.8 Net 30 Days. SRTA agrees to pay TSI Contractor in accordance with its normal processes and procedures for all undisputed amounts within thirty (30) Days of receipt of a valid invoice, provided SRTA or SRTA-designated Representatives, as applicable, received, approved and/or issued an Acceptance for the particular component of Work or phase of Work and/or TSI Contractor successfully completed the Project Acceptance Testing set forth in the RFP.

16.9 Invoicing. The TSI Contractor shall deliver to SRTA an invoice on a monthly basis. Each invoice shall only include a request for payment for a Deliverable that was completed, tested and accepted, as those requirements are set forth in the Contract Documents for such Deliverable, the previous month. The TSI Contractor will submit an itemized billing, identifying the date and a description of the Equipment delivered, the address to where the Equipment was delivered, the documentation furnished or the labor and services rendered the previous month, the status of any on-going Work (i.e., the percent to completion of task or milestone), a detailed account or description of the Work performed during the time period to further or complete a component of Work, and notification if a component of the Work or milestone has been completed. Along with each invoice, the TSI Contractor will provide any necessary backup documentation, certifications and test results, as required in the Contract Documents.

16.10 No Disruption of Work. Except as specifically set forth in **Section 17.3 (Delay and Extensions of Time)**, under no circumstances whatsoever, shall Work to be provided by the TSI Contractor be withheld, disrupted or delayed due to non-payment by SRTA pursuant to any provision of **Section 16 (Payment Terms)** or for any other reason. TSI

Contractor's failure to comply with this **Section 16.10** shall be considered an Event of Default as set forth in **Section 32 (Default; Damages/Remedies)**.

16.11 Right of Set Off. SRTA may retain or set off any amount owed to it by TSI Contractor.

16.12 Full Compensation. All Work performed by the TSI Contractor in meeting the requirements of the Contract Documents shall be paid as set forth above, which shall constitute full compensation for the Work, including but not limited to (a) the cost of all insurance and bond premiums, taxes, home office, job site and other overhead, and profit relating to TSI Contractor's performance of its obligations under this Contract; (b) the cost of performance of each and every portion of the Work (including all costs of all Work provided by subcontractors and suppliers); (c) the cost of obtaining all Governmental Approvals and all costs of compliance with and maintenance of such Governmental Approvals; (d) all risk of inflation, currency risk, interest and other costs of funds associated with the progress payment schedule for the Work as provided herein; and (e) payment of any taxes, duties, permits and other fees and/or royalties imposed with respect to the Work and any Equipment, materials, supplies, documentation, labor or services included therein.

16.13 Final Payment. Final payment and retainage shall not be due to TSI Contractor until Project Acceptance and each and every component of the Work is delivered to and accepted by SRTA and there are no outstanding claims against TSI Contractor. TSI Contractor shall submit a final invoice to SRTA within thirty (30) Days of the Project Acceptance ("Proposed Final Invoice"). All prior invoices and payments shall be subject to correction in the Proposed Final Invoice. SRTA will review TSI Contractor's Proposed Final Invoice and respond with a written request for additional information or documentation, changes or corrections within sixty (60) Days of SRTA's receipt, accompanied by any claims, if applicable. Based on SRTA's response, TSI Contractor shall submit a final invoice ("Final Invoice") incorporating any changes or corrections made by SRTA, together with any additional requested information or documentation. If SRTA agrees with all requests for compensation in the Final Invoice, SRTA will pay the entire sum found due within thirty (30) Days of its receipt. If SRTA disputes any amounts submitted for compensation, SRTA shall notify TSI Contractor within a thirty (30) Day period, identifying those items in the Final Invoice that SRTA disputes, along with a written explanation of the basis of the dispute. If SRTA fails or refuses to act on a Final Invoice within the required time period, the amount submitted for compensation shall be deemed to have been accepted by SRTA on the last day of the period within which SRTA was required to respond. The provisions of **Section 16.8 (Net 30 Days)** shall not apply to the provisions of this **Section 16.13** and the Final Invoice.

16.14 Firm Price Period. The prices for each Project, as set forth in **Exhibit E (Pricing Schedules)**, shall be firm until the TSI Contractor performs five years of maintenance for each Project independent of the other Project. If the Contractor wishes to increase the price of any line item listed in **Exhibit E** (with the exception of warranty and maintenance pricing as that pricing is detailed **in Exhibit E Tabs 4, 5, and 6 of the Contract** which pricing shall remain firm as set forth in the first sentence of this **Section**

16.14) then no later than twelve months prior to conclusion of the Initial Term, Contractor shall notify SRTA of such intent and the new pricing proposed by Contractor.

17 **Contract Changes.**

17.1 Allowable Changes. Contract changes will only be allowed to address (1) variances in the original quantities tabulated pursuant to the RFP, provided however, the variances are due to a change in the scope of Work (by way of example and not by limitation, if the quantity increases because TSI Contractor's solution as set forth in the Proposal does not meet the requirements of the Contract Documents, then any increase in quantity may not be subject to a Change Order), (2) variances in the scope of Work where there is a different functionality beyond that contained in the Contract Documents and for which there is no appropriate pay item or category (the Parties understanding that such additional work may be subject to a new competitive procurement if deemed by SRTA to be in its best interest), (3) a decrease in the scope of Work, regardless of whether there is an appropriate pay item or category, (4) additional or reduction in tolling projects, (5) the decision by the State to cancel or otherwise reduce the scope of a Project, and (6) an extension of time to the extent a delay is caused by events listed in **Section 17.3 (Delay and Extensions of Time).** No change in or modification, termination or discharge of the Work or any component thereof, in any form whatsoever, shall be valid or enforceable unless it is in writing and signed by SRTA's Project Manager and an authorized representative of the TSI Contractor. Failure to comply with the terms of **Section 5.5.2 (With the Civil Contractor) of this Contract** will result in a denial of the claim to the extent such claim was allowed under items 1-4 of this **Section 17.1**.

17.2 Change Order. A Change Order shall consist of only such additions, deletions or other revisions to the Work which represent a change from the scope of Work and do not arise from the actions or inactions of the TSI Contractor, as determined by SRTA. The TSI Contractor shall perform at no additional cost to SRTA, all such additions, deletions and other revisions, the need for which arises from the actions or inactions of the TSI Contractor or TSI Contractor Parties. An increase or a decrease in the amount due to TSI Contractor pursuant to the Contract Documents as set forth in the Total System Price for the applicable Project **on Tab 4 or Tab 5, as applicable, of Exhibit E of the Contract** of TSI Contractor's Proposal (each the "Contract Sum") for the Work included in a Change Order shall be as set forth in the Change Order. A Change Order may result in acceleration or deceleration of the Project Schedule for performance of both the Change Order and any other Work directly affected by the Change Order, as agreed upon in writing by the TSI Contractor and SRTA, and included in the applicable Change Order.

17.2.1 *Change Order Proposal.* SRTA may initiate the Change Order procedure by a notice to the TSI Contractor setting forth the proposed Change Order. Within ten (10) Business Days thereafter, the TSI Contractor shall provide a detailed proposal which includes proposed prices and a proposed schedule for performance ("Change Order Proposal"). SRTA may extend the time within which TSI Contractor shall provide the detailed Change Order Proposal.

Granting any such extension shall be in SRTA's reasonable discretion and must be in writing signed by SRTA's Project Manager. The Change Order Proposal may be accepted by SRTA or modified by negotiations between the TSI Contractor and SRTA, whereupon a written Change Order, governed by the terms and conditions of this Contract, shall be executed by both Parties.

17.2.2 *Disputed Work.* If the Parties fail to reach agreement with respect to the Change Order Proposal, SRTA may nevertheless direct the TSI Contractor to proceed with the Work included in the Change Order Proposal (which for purposes of **Section 17 (Contract Changes)** shall be hereinafter defined as "Disputed Work"). In the event of such Disputed Work, the TSI Contractor shall be obligated to proceed immediately upon notice from SRTA to perform the Disputed Work and shall be compensated by SRTA in accordance with time and Equipment rates in **Exhibit E (Pricing Schedules)** of this Contract. If there are no applicable Equipment rates in **Exhibit E (Pricing Schedules)**, then SRTA shall pay TSI Contractor for the actual cost to obtain such Equipment and/or labor at the rate charged TSI Contractor plus a 9% markup. The TSI Contractor shall furnish weekly status reports regarding Disputed Work, including such documentation as SRTA may require in order to support all costs of the Disputed Work. The TSI Contractor agrees to maintain and furnish SRTA with time and materials records that will substantiate the TSI Contractor's costs for Disputed Work.

17.3 Delay and Extensions of Time. Subject to any limitations, claims submission requirements and other conditions set forth in the Contract Documents, and provided that no relief will be available to the extent that (i) the events are within TSI Contractor's or TSI Contractor Parties' control, or are due to any wrongful act, wrongful omission, negligent act or negligent omission, recklessness, willful misconduct, breach of Contract or Law or violation of a Governmental Approval of TSI Contractor or any of the TSI Contractor Parties; or (ii) the events (or the effects of such events) could have been avoided by the exercise of reasonable caution, due diligence, or other reasonable efforts by TSI Contractor or TSI Contractor Parties, SRTA will only grant an extension of time if the TSI Contractor is delayed in the progress of the Work and the delay is the direct result of (1) a negligent act of SRTA, (2) the performance of work by the Civil Contractor (or GDOT's other contractors) within the Right of Way that directly disrupts TSI Contractor's on-site Work, or (3) an event listed in **Section 44.3 (Time of the Essence/Force Majeure).** If and when such event occurs, then the time of completion set forth in the TSI Contractor's Schedule shall, unless otherwise agreed to in writing by the Parties, be extended equal to the time lost as a result of the delay. The TSI Contractor expressly agrees that the TSI Contractor's sole and exclusive remedy for delay shall be an extension of Contract time and that the TSI Contractor shall not be entitled to any damages and shall make no demand for any damages. No such extension shall be made for delay occurring more than ten (10) Days before claim thereof is made in writing to SRTA. In the case of a continuing cause of delay, only one claim is necessary, but no claim for a continuing delay shall be valid unless the TSI Contractor, within ten Days from the cessation of the delay, shall have given notice in writing to SRTA, with copy to SRTA, as to the amount of additional time claimed.

17.4 Delays Caused by Other Contractors. TSI Contractor shall not be entitled to any impact costs for delay for the first one hundred and twenty (120) cumulative Business Days of delay due to interference or work of separate contractors engaged by GDOT, SRTA or any other Governmental Entity with respect to the Project.

18 Hardware/Equipment/Materials/Supplies.

18.1 Equipment. TSI Contractor shall obtain in SRTA's name and SRTA shall own all of the Equipment as required by the Contract Documents. In particular, TSI Contractor shall purchase on behalf of SRTA all in lane and roadside equipment and hardware that will be deployed for each Project, including the controller cabinets and hub equipment. If the TSI Contractor offers a hosted solution, then anything on the roadside (e.g., network and tolling Equipment) will be owned by SRTA and all Equipment and hardware at the hosted site (e.g., servers, storage, etc.) will be owned by SRTA. For clarification purposes, the data remains at all times the sole property of SRTA and the software shall be licensed to SRTA as set forth in **Section 24.3 (License) of the Contract**. SRTA shall pay for these items as more specifically set forth on **Exhibit E (Pricing Schedules)**. The Equipment shall in all ways during the Term, conform to the requirements for each item of Equipment as set forth in the Contract Documents regardless of the fact that SRTA shall maintain ownership.

18.1.1 *Bill of Sale.* Any invoices furnished by TSI Contractor to SRTA for Equipment and Spares shall have an original and signed Bill of Sale in SRTA's name on a form substantially similar to that on **Exhibit H (Bill of Sale)** or other document reasonably acceptable to SRTA that fully evidences SRTA's ownership as required in the Contract Documents.

18.1.2 *FOB Destination.* Transportation of all software, Equipment, supplies and any other item that must be transported so that TSI Contractor may furnish the Work, shall be FOB Destination. Freight, handling, hazardous material charges, taxes, and distribution and installation charges shall be included in the total price of each item as set forth in **Exhibit E (Pricing Schedules)**. Any additional charges will not be honored for payment unless authorized in writing by SRTA. If a party other than TSI Contractor ships materials against this Contract, the shipper shall be instructed to show the purchase order number on all packages and shipping manifests to ensure proper identification and payment. A complete packing list shall accompany each shipment.

18.1.3 *Maintenance.* TSI Contractor shall maintain in good working order throughout the Term of the Contract, the Electronic Toll Collection System and all of its subsystems as set forth in **Section 6 and Appendix D of the RFP** and the approved Maintenance Plan.

19 Warranties.

19.1 Express Warranties. In addition to any express or implied warranties provided by Law and in the RFP, TSI Contractor hereby expressly represents and warrants the following:

19.1.1 *Accuracy of Responses.* All of TSI Contractor's responses included in the Proposal and the TSI Contractor's Qualification Statement as set forth in **Exhibits C and D** are true and correct in each and every instance as of the time each document, respectively, was submitted to SRTA for review.

19.1.2 *Licenses.* The TSI Contractor has and will maintain and keep in full force and effect during the Term of the Contract all required authority, licenses, certifications and permits, professional ability, skills and capacity necessary to perform the Work.

19.1.3 *Organization.* The TSI Contractor is a _____ duly organized and validly existing under the Laws of the State of _____, and has the requisite power and all required licenses to carry on its present and proposed activities in the State, and has full power, right and authority to execute and deliver this Contract and to perform each and all of the obligations of TSI Contractor provided for herein. TSI Contractor is duly qualified to do business, and is in good standing, in the State of Georgia.

19.1.3.1 TSI Contractor covenants and agrees that it will maintain its existence and will remain in good standing in the State of Georgia throughout the during the Term of the Contract and will maintain its existence for as long thereafter as any obligations remain outstanding under this Contract. The provisions of this **Section 19.1.3.1** shall survive the expiration or earlier termination of this Contract.

19.1.4 *Authorization by TSI Contractor.* The execution, delivery and performance of the Contract has been duly authorized by all necessary corporate, partnership or limited liability company action (as the case may be) of TSI Contractor; each person executing this Contract on behalf of TSI Contractor has been duly authorized to execute and deliver it on behalf of TSI Contractor; and this Contract has been duly executed and delivered by TSI Contractor.

19.1.5 *Authorization of Signer.* The person signing this Contract on behalf of the TSI Contractor has been duly authorized by TSI Contractor to execute and deliver same.

19.1.6 *Valid Contract.* This Contract constitutes the legal, valid and binding obligation of TSI Contractor, enforceable against TSI Contractor in accordance with its terms, subject only to applicable bankruptcy, insolvency and similar Laws affecting the enforceability of the rights of creditors generally and general principles of equity.

19.1.7 *No Default.* Neither the execution and delivery by TSI Contractor of this Contract, nor the consummation of the transactions contemplated hereby, is in conflict with or has resulted or will result in a default under, or a violation of, the governing instruments of TSI Contractor, any approvals or Laws applicable to TSI Contractor or any other material agreement to which TSI Contractor is a party.

19.1.8 *No Proceeding.* There is no action, suit, proceeding, investigation or litigation

pending and served on TSI Contractor which challenges TSI Contractor's authority to execute, deliver or perform, or the validity or enforceability of, this Contract or which challenges the authority of the TSI Contractor official executing this Contract; and TSI Contractor has disclosed to SRTA any pending and un-served or threatened action, suit, proceeding, investigation or litigation with respect to such matters of which TSI Contractor is aware.

19.1.9 *No Breach of Law.* TSI Contractor is not in breach of any applicable Law that would have a material adverse effect on the operations of any Project or TSI Contractor's ability to perform its obligations under this Contract.

19.1.10 *Real Party in Interest.* TSI Contractor is the legal and valid holder of the interest attributed to TSI Contractor under the Contract.

19.1.11 *Equipment, Hardware, Supplies and Materials.* TSI Contractor represents and warrants that during the Term of the Contract all hardware, Equipment, supplies and other material, including but not limited to Spares, supplied under the Contract Documents shall (1) comply with and conform to all performance, capabilities, accuracy, completeness, characteristics, specifications, configurations, standards, and functions required by the RFP, (2) have a minimum service life as set forth in the RFP, (3) shall be new, off the shelf, field proven and meet applicable ISO, IEEE and ANSI defined standards, as applicable, and (4) with regard to Equipment and hardware that will either be installed in the Project or otherwise purchased by SRTA pursuant to the Contract Documents, TSI Contractor will convey good and marketable title, and that all such Equipment and supplies shall be delivered to SRTA and remain free from all security interests or other liens or encumbrances. TSI Contractor also agrees to defend SRTA's title against all persons claiming ownership or other interest in the whole or part of any such Equipment or supplies furnished to SRTA under this Contract.

19.1.12 *Software.* TSI Contractor represents and warrants that during the Term of the Contract (1) with the exception of COTS, all Software that TSI Contractor will use to perform the Work shall be provided pursuant to the Contract Documents and free from defects and any update or revision to any of such software will be free from defects and will meet all specifications set forth in the Contract Documents, (2) TSI Contractor will, without charge to SRTA, correct any defects and make any fixes, additions, modifications or adjustments to any of such software or any update or revision to such software as may be necessary to keep the software in operating order in accordance with the Contract Documents, and (3) all software provided pursuant to the Contract Documents and any update or revision to any of such software will be free from viruses, worms, time bombs, back doors, Trap Doors, Trojan horses, Easter eggs, all other forms of malicious code and/or disabling devices or the like.

19.1.13 *Work/Labor.* TSI Contractor represents and warrants that during the Term of the Contract all documentation, services and labor shall (1) conform to the performance, capabilities, accuracy, completeness, characteristics, specifications, configurations, standards, and functions required by the RFP, (2)

the labor and services to be performed hereunder will be performed on time, and in a workmanlike manner, consistent with the highest level of care and skill exercised by other providers of similar labor and services under similar circumstances at the time the labor and services are provided.

19.1.14 *Documentation.* TSI Contractor represents and warrants that during the Term of the Contract all documentation, services and labor shall conform to the performance, capabilities, accuracy, completeness, characteristics, specifications, configurations, standards, and functions required by the RFP.

19.1.15 *Cooperation.* TSI Contractor represents and warrants that during the Term of the Contract TSI Contractor shall fully cooperate with SRTA, SRTA-Designated Representatives, GDOT, the Civil Contractor, GDOT's contractors and any other governing authority, in furnishing all the Work required by the Contract.

19.1.16 *Intellectual Property.* As used in this Contract, "Intellectual Property" shall mean any and all know-how, inventions, patents, copyrights, models, designs, trademarks, trade dress, trade secrets, discoveries, regulatory filings, or other information (whether or not patentable and whether or not in tangible or intangible form), and any other industrial or proprietary rights, and any documentation relating thereto, and any and all applications for any of the forgoing, whether or not registered as of the Effective Date or at any later date. Intellectual Property shall also mean software design submittals and related documentation required as set forth in the RFP. TSI Contractor represents and warrants that during the Term of the Contract (1) no aspect of the Work will violate or in any way infringe upon the rights of third parties, including proprietary information and non-disclosure rights, or any Intellectual Property rights, (2) TSI Contractor is the lawful owner or licensee of all software, hardware, methods, methodologies and any pre-existing Intellectual Property used in the Work contemplated hereunder and TSI Contractor has the right to permit SRTA access to, or use of, such software, hardware, methods, methodologies and Intellectual Property. The warranty set forth in this Section 19.1.16 shall be void to the extent a breach of warranty is caused solely by SRTA's use of the Intellectual Property for purposes not set forth in the Contract Documents or if the Intellectual Property has been modified by any entity other than TSI Contractor, TSI Contractor Parties, or any other entity not approved by TSI Contractor.

19.1.17 *Post-completion Warranty.* In addition to the warranties set forth in **Section 19 (Warranties)**, the post-completion warranty phase for each Project shall commence upon Open to Tolling of each Project and shall include all maintenance and production support for the Electronic Toll Collection System. The post-completion warranty phase will conclude either twelve (12) months after Open to Tolling occurs or upon successful completion of the System Acceptance Test as described in **Section 4.6.11 of the RFP**, whichever occurs later. The maintenance period for each Project shall begin upon the completion of the post-completion warranty period.

19.1.18 *Compliance with Laws, Rules and Regulations.* TSI Contractor represents and warrants that during the Initial Term and each Renewal Term of the Contract (1) TSI Contractor shall comply with **Section 4.5.3.1 (Traffic Control and Lane Closures) of the RFP** when performing installation, maintenance or any other type of Work in, on or about the lanes, (2) the Work will not be in violation of any applicable Law, rule or regulation, and TSI Contractor will obtain all permits and licenses required to comply with such Laws and regulations, (3) TSI Contractor is registered with the Secretary of State and authorized to perform the Work in the State of Georgia, and (4) TSI Contractor will comply in all respects with all other Laws, rules, regulations, ordinances of any governing authority that impact or relate in any way to the Project. Any changes to applicable Laws, rules, or regulations that are enacted after the Effective Date may be the subject of a Change Order only if a change to applicable Laws, rules, or regulations results in an actual and direct increase in cost to TSI Contractor. In such an event, the increased cost shall reflect the unit prices set forth in **Exhibit E (Pricing Schedules) of this Contract**, and if the labor or material is not included in **Exhibit E (Pricing Schedules) of this Contract**, then the Change Order shall reflect an increase in price of TSI Contractor's actual cost plus 9% markup.

19.2 Third Party Warranties. TSI Contractor shall assign to SRTA the manufacturers' or other third party warranties for any and all items of Work furnished to SRTA.

19.3 Hosting Location. Both facility host locations must be located within the Continental United States.

19.4 Survival. The representations and covenants of TSI Contractor contained in **Section 19.1 (Express Warranties) of this Contract** shall survive from for a period of two (2) years following the expiration or earlier termination of this Contract.

19.5 No-waiver. Neither any provision of this Contract nor any decision of SRTA shall relieve the TSI Contractor of responsibility for faulty materials, faulty workmanship, or omission of any Work. Any deviation in the Contract Documents that is evidenced by a Change Order signed by SRTA will constitute an acceptance by SRTA of such deviation from the applicable Contract requirement. Notwithstanding the preceding sentence, such deviation will still need to pass acceptance or other testing as may otherwise be required in the Contract Documents.

19.6 TSI Contractor duty to Remedy. TSI Contractor shall, within the time periods designated in the Contract Documents, correct, remedy, replace, re-execute, supply omitted or defective Work and pay for any damage to other work resulting therefrom, without expense to SRTA, including but not limited to shipping costs. If the RFP does not specify a warranty, then TSI Contractor shall replace any defective item of Work, including Deliverables, furnished in breach of the Contract Documents, no later than five (5) Business Days after the date of SRTA's written notification thereof.

19.7 SRTA Cure. If the TSI Contractor does not remove, make good the deficiency, correct, or remedy defective Work, or supply any omitted Work within the time periods set forth under the Contract Documents, and if no time is set in the RFP then unless otherwise agreed to in writing by the Parties, within ten (10) Days, then SRTA may, after five (5)

Days written notice to the TSI Contractor, remove the Work, correct the Work, remedy the Work or supply omitted Work at the expense of the TSI Contractor. If SRTA has not yet made payment to TSI Contractor, then SRTA may deduct the cost thereof from any payment then or thereafter due and owing the TSI Contractor. If final payment has been made to TSI Contractor, then TSI Contractor shall reimburse the cost to SRTA within thirty (30) Days of written demand therefore by SRTA. In case of emergency involving health, safety of property or safety of life, SRTA may proceed at once and without notice to TSI Contractor and TSI Contractor shall remain responsible for the cost thereof.

19.7.1 *Extension of Time to Cure.* If SRTA believes TSI Contractor is using its best efforts to make good the deficiency, correct, or remedy defective Work, or supply any omitted Work, then SRTA, in its discretion and taking into consideration SRTA's general business concerns and the need to ensure that there are no delays to the Master Project Schedule, Milestone Schedule and any other contractor's schedules (including the Civil Contractor), may extend the respective cure period set forth in its notice sent to TSI Contractor pursuant to **Section 19.7**.

19.8 Defective Work TSI Contractor Responsibility. Correction of defective Work or supplying of omitted Work whether or not covered by warranty of a manufacturer, TSI Contractor Party, remains the primary, direct responsibility of the TSI Contractor.

19.9 Warranty Process. During the applicable warranty period or thereafter during maintenance obligations, TSI Contractor will replace defective Work. Upon discovery of defective Work, TSI Contractor shall be responsible to replace the defective Work at no additional cost to SRTA.

19.10 Excessive Failure. In addition to the costs above, in the event of an Excessive Failure of any of the Work delivered to SRTA, the TSI Contractor shall be liable for all costs incurred by SRTA, including but not limited to labor, materials, costs involved with lane closures, and administrative costs. For purposes of the Contract Documents, **"Excessive Failure"** is defined as a defect in function, labor or materials that is present in ten percent (10%) or more of any line item, listed in **Tab 9 or Tab 10, as applicable, of Exhibit E (Pricing Schedules)**, which is placed into production.

19.11 Other Remedies. The remedies stated in **Section 19 (Warranties)** are in addition to the remedies otherwise available to SRTA, do not exclude such other remedies, and are without prejudice to any other remedies at law or in equity.

20 **Order Processing.** All orders for Equipment will be placed according to the terms herein. TSI Contractor shall forward a written email request to SRTA's Project Manager. This request shall include the name and quantity for each item of Equipment being ordered, price per item, and the address to which the items shall be delivered. This request must be received by SRTA's Project Manager at least 75 Days prior to the desired delivery date, unless otherwise agreed to in writing by SRTA's Project Manager. TSI Contractor shall also notify SRTA's Project Manager upon TSI Contractor's receipt of any Equipment. Such notification shall be in writing and detail

the Equipment delivered, the location where the RFID Equipment is being stored and the quantity received. Upon receipt of the equipment, the TSI Contractor will be responsible for the inventory process including the placement of asset ID labels on the equipment and providing information to SRTA from the MOMs system to include vendor, date purchased, detailed description, picture, cost, make, model, serial number and estimated useful life in years.

21 **Spare Parts.**

21.1 Spare Parts Inventory. The TSI Contractor will be solely responsible for maintaining an adequate inventory of Equipment, spares and consumables as set forth in the RFP (individually, "Spare" and collectively, "Spares"). SRTA shall own each Spare upon payment by SRTA to TSI Contractor (except in the event the TSI Contractor elects to utilize the initial Spares inventory during the warranty period set forth in **Section 6.2 of the RFP**, in which case the TSI Contractor is responsible for funding the replenishment of the inventory levels to their original quantities at no additional cost to SRTA), although TSI Contractor shall bear the risk of loss pursuant to **Section 22 (Risk of Loss) of the Contract**. The TSI Contractor will turn over to SRTA upon termination of the Contract the remaining inventory of Spares.

21.2 Quality Control. The TSI Contractor must ensure that all parts, components Equipment, materials, and other items purchased for use in the System are new. All Spares must be new, of good quality and designed to reliably carry out their functions within the System and meet the requirements of the Contract.

22 **Risk of Loss**. TSI Contractor shall have sole responsibility for risk of loss to TSI Contractor and TSI Contractor Party-owned facilities, Equipment and other goods. TSI Contractor shall have sole responsibility for risk of loss to the hardware, Equipment, material and supplies set forth in **Section 18.1 (Equipment) of this Contract** and **21.1 (Spare Parts Inventory)**. TSI Contractor shall assume the risk of loss for all Equipment and materials, until SRTA's Acceptance of the applicable Work, unless damage is the sole result of SRTA's gross negligence or willful misconduct**.** TSI Contractor assumes all risk of loss for Spares until a particular Spare is properly placed into the System and Accepted by SRTA. TSI Contractor shall maintain adequate insurance for the risk of loss assumed in this **Section 22**. Notwithstanding the above, if Equipment is installed in the lane and the road is open to tolling, if through no fault of TSI Contractor a third party motorist damages the Equipment, then TSI Contractor will not be responsible for the cost of repairs to the damaged Equipment or replacement of the damaged Equipment.

23 **Inspection of Work**. If the RFP or the Laws, ordinances, rules or regulations, or any Governmental Entity require any component of the Work to be tested or approved, the TSI Contractor shall give SRTA timely notice in writing of its readiness for inspection and testing, and if the inspection is by any authority other than SRTA, of the date fixed for such inspection. The TSI Contractor assumes the responsibility of furnishing all Work in accordance with this Contract. No provisions of this **Section 23** nor any inspection of the Work by SRTA, representatives of SRTA, or any other third party shall in any way diminish, relieve, or alter the responsibility and undertaking of the TSI Contractor; nor shall the omission of any of the foregoing to discover or to bring to the attention of the TSI Contractor the existence of any Work that is not in accordance with the Contract Documents in any way diminishes, relieves, or

alters the obligations of the TSI Contractor nor shall the aforesaid omission diminish or alter the rights or remedies of SRTA as set forth in this Contract.

24 **Intellectual Property**.

24.1 General. TSI Contractor shall provide SRTA with the Intellectual Property as set forth in the Contract Documents. Intellectual Property that will be delivered to SRTA shall include all documentation along with all licenses required by this **Section 24**. It is understood that in order to meet SRTA's requirements under the Contract Documents, modifications to the Intellectual Property may be necessary. SRTA shall have a license set forth below in **Section 24.3 (License)** to use the Intellectual Property provided under the Contract Documents and as modified to meet the particular requirements of the Contract Documents.

24.2 Source Code. TSI Contractor agrees to deposit the Source Code and Source Code documentation for TSI Contractor's Intellectual Property with a third-party escrow agent. TSI Contractor shall be responsible to pay all fees and expenses associated with any such Escrow Agreement. Such Source Code will be released to SRTA in accordance with the terms of an escrow agreement in substantially the same form as is attached in **Exhibit J (Escrow Agreement)**.

The license to use the Source Code and Source Code Documentation received pursuant to this **Section 24.2** and **Exhibit J (Escrow Agreement)**, shall be according to the terms set forth in **Section 24.3 (License)** for TSI Contractor's Intellectual Property.

24.3 License. TSI Contractor hereby grants to SRTA for the purposes set forth in the Contract Documents, an irrevocable, perpetual, non-exclusive, royalty free, non-transferrable (except as provided below), fully paid up right and license to use, reproduce (for back-up purposes), modify, adapt and disclose, and sublicense others to use, reproduce (for back-up purposes), modify, and adapt on SRTA's behalf, the TSI Contractor Intellectual Property in object code only, including with respect to Technology Enhancements, except for COTS software and firmware that will be subject to their respective license agreements ("License"). SRTA shall have no right to disassemble, reverse engineer or decompile the Software, except as set forth below. Notwithstanding the preceding sentence, SRTA shall have the right to transfer the applicable License to a successor in the event another entity is given the responsibility to maintain or otherwise operate tolls in the State of Georgia, provided that any such successor entity agrees to be bound by these License terms. This License includes the right to make and have made copies of any and all software (for back-up purposes), firmware and documentation and to use any and all such copies, reproductions, modifications, adaptations, improvements or derivative works for the purposes set forth in the Contract Documents. Source Code and Source Code Documentation shall be licensed to SRTA pursuant to the terms in this **Section 24.3** but only upon the occurrence of the events set forth in **Exhibit J (Escrow Agreement)**. There shall be no right to modify or adapt the source code except to maintain, enhance and operate the system on behalf of SRTA. Such right shall not include the ability to create derivative works. The TSI Contractor shall secure all required Licenses from TSI Contractor Parties, pursuant to the terms set forth above in the name of SRTA, and shall ensure that such Licenses are transferable to and assignable

by SRTA, without additional compensation. The TSI Contractor shall furnish SRTA with original License agreements it obtains from such TSI Contractor Parties upon request but no later than within five (5) Days after Project Acceptance. The TSI Contractor shall also provide to SRTA the computer programs, disks and documentation for all software and firmware it obtains from third parties.

The License shall include all updates, enhancements, modifications, upgrades, revisions, replacements, upgrades made to or in the place of software or any related documentation that corrects errors or safety hazards or support new models of computer hardware or Equipment with which the software is designed to operate or other changes that are logical improvements or extensions of the TSI Contractor's Intellectual Property provided herein, and all error corrections, patches and bug fixes and any other derivative works created by TSI Contractor or Contracting Parties during the Term as a result of this License ("Enhancements"). The fees for Enhancements after the applicable warranty period are included in TSI Contractor's maintenance services set forth in **Exhibit E (Pricing Schedules)**.

The License allows an unlimited number of end users to use TSI Contractor's Intellectual Property. Source Code and Source Code Documentation shall be used solely for the purposes of supporting and maintaining the TSI Contractor's Intellectual Property.

24.4 Exclusions. Subject to the License and rights granted to SRTA pursuant to **Section 24.3 of the Contract**, SRTA shall not at any time (a) sell any TSI Contractor's Intellectual Property or use, reproduce, modify, adapt and disclose, or permit any party to use, reproduce, modify, adapt and disclose, any such Intellectual Property for any other purpose not consistent with the Contract Documents, (b) except as expressly permitted by the Contract Documents, create derivative works based on the TSI Contractor's Intellectual Property; (c) reverse engineer, disassemble, or decompile the TSI Contractor Intellectual Property or Third Party Intellectual Property; (d) remove any identification or notices contained on the TSI Contractor's Intellectual Property.

24.5 Ownership. Title to the Equipment and other Work shall remain with the TSI Contractor until SRTA makes payment for such applicable Equipment and/or other Work. TSI Contractor's Intellectual Property, including Enhancements, Source Code and Source Code Documentation, shall remain exclusively the property of TSI Contractor or TSI Contractor Parties, as applicable, notwithstanding any delivery of copies thereof to SRTA and instead shall be furnished to SRTA pursuant to the license terms set forth in **Section 24.3 of this Contract**.

24.6 Work Product. All Work Product shall be owned by TSI Contractor, or its suppliers, unless it is identified by SRTA as Work for Hire Product prior to the commencement of such work by the TSI Contractor, with SRTA receiving an unlimited, non-exclusive, transferable, sub-licensable, perpetual, fully-paid and royalty-free license to use such Work Product for SRTA's legitimate business purposes, to include by way of example and not limitation, creating derivative works and decompiling. Work for Hire Product produced under the Contract Documents will be owned by SRTA with TSI Contractor receiving an unlimited non-exclusive, transferable, sub-licensable perpetual, fully-paid and royalty-free license to use such Work for Hire Product for TSI Contractor's legitimate

business purposes, to include by way of example and not limitation, creating derivative works and decompiling. Except with regard to any good faith unresolved dispute between the parties, in the event that any such Work for Hire Product are deemed not to be works made for hire for SRTA, the TSI Contractor hereby irrevocably assigns to SRTA all right, title and interest in all such Work for Hire Product, including, without limitation, all intellectual property rights with respect thereto, and further agrees to execute and deliver such other and further assignments, certificates of originality and other documents and instruments as reasonably requested by SRTA in order for SRTA to evidence and perfect its ownership of all rights with respect thereto. The TSI Contractor acknowledges and agrees that the provisions of this Contract apply regardless of any disputes, payment issues or other claims that may exist between the Parties, and that SRTA's ownership of all rights with respect to such Work for Hire Product is unconditional. Such Work for Hire Product shall include any and all modifications, improvements, adaptations, revisions, updates, releases, new versions, derivative works, and documentation (including any specifications, copies, notes, summaries or analyses) comprising, based on, derived from, or related to any Work for Hire Product initiated during the Term, including any of the foregoing that is conceived, discovered, invented, created, developed or made by TSI Contractor or TSI Contractor Parties. None of the TSI Contractor Parties shall have any proprietary interest in such Work for Hire Product. The TSI Contractor Parties shall not assert any ownership interest or conditions to executing assignments and other documents to evidence and perfect SRTA's ownership of all rights in and to same, and any claims that the TSI Contractor Parties may have against SRTA shall exclude claims challenging SRTA's of ownership of same. All Work for Hire Product becomes the property of SRTA, whether the work for which they are made is completed or not. In the event this Contract is terminated, all Work for Hire Product whether completed or not shall be delivered within ten (10) Days from the date of termination to SRTA. All drawings, technical manuals, other technical data and other material created pursuant to the Contract Documents either by the TSI Contractor or its subcontractors that is eligible for copyright shall be deemed to be a work for hire, and the title to and exclusive ownership of all such items shall be in SRTA to the extent not based on TSI Contractor's Intellectual Property.

25 **Intellectual Property Escrow**. SRTA and TSI Contractor acknowledge that TSI Contractor and the TSI Contractor Parties that supply software, Source Code, or other Intellectual Property may not wish to deliver the Intellectual Property directly to SRTA, and that TSI Contractor and/or TSI Contractor Parties desire to implement measures to protect such information from public disclosure to the extent permitted under applicable Law. Developer further acknowledges that SRTA nevertheless must be ensured access to such Intellectual Property at any time, and must be assured that the Intellectual Property is released and delivered to SRTA immediately. Therefore

TSI Contractor shall deposit the Intellectual Property with a neutral trustee. TSI Contractor shall (a) select, subject to SRTA's prior approval, an escrow company or other neutral custodian ("Escrow Agent") engaged in the business of receiving and maintaining escrows in the metropolitan Atlanta area, or in another location the Parties agree to in writing, of Source Code or other Intellectual Property, and (b) establish an escrow ("Intellectual Property Escrow") with the Escrow Agent in such location on terms

and conditions substantially similar to the ones attached hereto as **Exhibit J (Escrow Agreement)** for the deposit, retention and upkeep of Source Code, Source Code Documentation and/or other Intellectual Property and related documentation. Intellectual Property Escrow also may include TSI Contractor Parties as parties and may include deposit of their Intellectual Property. TSI Contractor shall be responsible for the fees and costs of the Escrow Agent. Notwithstanding the provisions of this Section, the Escrow Agent shall be subject to applicable Law related to public records pursuant to O.C.G.A. § 50-18-70.

25.1 Delivery to Escrow Agent. TSI Contractor shall make such delivery to the Escrow Agent not later than:

25.1.1 for pre-existing Source Code and Source Code Documentation, immediately upon execution of this Contract or, if provided by a TSI Contractor, execution of the relevant Contract;

25.1.2 for Source Code and Source Code Documentation incorporated into or used on or for the Project, prior to the applicable project being Open to Tolling;

25.1.3 for any Technology Enhancement, update, upgrade or correction of Source Code and Source Code Documentation incorporated into or used on or for the Project or any portion thereof, not later than fifteen (15) Days after the end of the calendar quarter in which it is first incorporated or used in any Project; and

25.1.4 for any other Intellectual Property, on the Effective Date if it exists as of such date, and otherwise within fifteen (15) Days after the end of the calendar quarter in which it is first incorporated or used in connection with the Project or the Work.

25.2 SRTA as Signatory. SRTA shall be a signatory the escrow agreement and each Intellectual Property Escrow with direct rights of enforcement against TSI Contractor and the Escrow Agent. Each escrow agreement shall provide that any amendment or supplement to such escrow agreement shall be subject to SRTA's prior written approval in its sole discretion.

25.3 Access and Inspection. Intellectual Property Escrows shall provide rights of access and inspection to SRTA at any time, subject to terms and conditions reasonably necessary to protect the confidentiality and proprietary nature of the contents of the Intellectual Property Escrows.

25.4 Survival of Escrow Agreement. The Intellectual Property Escrows shall survive expiration or earlier termination of this Contract regardless of the reason, until such time as both Parties agree, in their respective sole discretion, that the Intellectual Property contained therein is of no further use or benefit to the Project.

25.5 Intellectual Property Escrow Agreement. In accordance with **Sections 25.1 through 25.5**, TSI Contractor has elected to enter into an Intellectual Property Escrow Agreement,

dated as of the Effective Date, for escrowing TSI Contractor's Intellectual Property and Third Party Intellectual Property, in the form attached hereto as **Exhibit J (Escrow Agreement)**, or such modified form as has been approved in writing by SRTA.

26 **Confidentiality**. The Parties acknowledge that in order to perform the Work called for in this Contract, it may be necessary to disclose to each other certain confidential information ("Confidential Information"). TSI Contractor's Intellectual Property shall also be deemed Confidential Information. Each Party agrees that it shall not disclose, transfer, use, copy, or allow access to any such Confidential Information to any employees or to any third parties excepting those who have a need to know such Confidential Information in order to allow TSI Contractor to perform the Work, and who, in the case of third parties, have executed a nondisclosure agreement consistent with the provisions hereof.

26.1 Open Records Act. SRTA's and other state entities' obligations hereunder shall be subject to the provisions of the Georgia Open Records Act (O.C.G.A. § 50-18-70 *et seq*.), as it may be amended from time to time.

26.2 No Obligation of Confidentiality. Neither Party shall have any obligation of confidentiality with respect to any information which (i) is or becomes (through no improper action or inaction of the receiving Party or any of its affiliates, agents, consultants or employees) generally available to the public; (ii) can be demonstrated by the receiving Party to have been in its possession or known by it prior to the receipt under this Contract; (iii) is rightfully disclosed to the receiving Party by a third party without restriction; (iv) is disclosed by the receiving Party with the written approval of the disclosing Party; (v) is developed independently by the receiving Party without any reference, whether direct or indirect, to the Confidential Information of the disclosing Party; or (vi) is obligated to be disclosed by order of a court of competent jurisdiction or is subject to disclosure under the Georgia Open Records Act, provided the disclosing Party is promptly notified in order to resist or limit any such disclosure by the receiving Party.

26.3 Use of Confidential Information. Receiving Party shall use the Confidential Information solely for the purpose of providing the Work required under the Contract Documents and shall not in any way use the Confidential Information to the detriment of disclosing Party.

26.4 Return of Confidential Information. Except as otherwise provided in the Contract or by Law, the receiving Party shall return to disclosing Party any Confidential Information immediately on request but no later than upon the termination for whatever reason of this Contract.

27 **Defective Work**. A Deliverable may be unacceptable because it fails applicable Testing, it fails to perform as required under the Contract Documents, it fails to conform to the specifications of the RFP, or is furnished in breach of the Contract Documents. Deliverables that are defective may be rejected upon inspection or at any later time if the defects contained in the Deliverables or non-compliance with the specifications of the Contract Document were not ascertainable upon inspection. SRTA may provide written notice to the TSI Contractor of any item of Work that is not acceptable. If the TSI Contractor fails to cure the defect or replace the item of Work within the time set forth in any written notice then, in addition to SRTA's other rights and

remedies under the Contract and by Law, SRTA may cancel the Contract or applicable Change Order, contract with a different contractor and invoice TSI Contractor for any differential in price over the original Contract price. Such time frame set forth in the notice by SRTA to TSI Contractor shall be as reasonable as possible, taking into consideration SRTA's general business concerns and the need to ensure that the Master Project Schedule, Milestone Schedule and any other contractor's schedules (including the Civil Contractor) are not delayed. Rejected items may be regarded as abandoned if not removed by TSI Contractor as set forth in SRTA's written notice.

27.1 Temporary Work Around. If TSI Contractor or SRTA incorporate a work around in order to allow a function to perform, such work around will be considered temporary and such defect not cured until a fix is provided by TSI Contractor.

28 **Liquidated Damages**.

28.1 Time of the Essence. Time is an essential element of the Contract. SRTA will assess liquidated damages for TSI Contractor's failure to meet Project milestones according to **Table 28.2** below, failure to reopen the lanes as set forth in **Section 28.3 (Closure of Lanes; Failure to Reopen)**, or failure to meet service levels as set forth in **Appendix D (Performance Requirements and SLAs) of the RFP**.

28.2 Difficulty of Ascertaining Certain Damages. The amount of liquidated damages as set forth in **Table 28.2** below, in **Section 28.3 (Closure of Lanes; Failure to Reopen)** and in **Appendix D (Performance Requirements and SLAs) of the RFP** is fixed and agreed to by and between the TSI Contractor and SRTA because both Parties agree and acknowledge the impracticability and extreme difficulty of fixing and ascertaining the true value of the damages which SRTA will sustain by failure of the TSI Contractor to failure to meet Project milestones, failure to reopen the lanes as set forth in **Section 28.3 (Closure of Lanes; Failure to Reopen)**, and/or failure to meet the service levels set forth in **Appendix D of the RFP**, such as loss of revenue, service charges, interest charges, harm and inconvenience to the public, delays caused to other activities of SRTA by failure to perform this Contract, increase of inspection and administrative costs, and other damages, some of which are indefinite and not susceptible of easy proof, said amounts were actively negotiated between the Parties, and are in each instance agreed by both Parties to be a reasonable estimate of the amount of damages which SRTA will sustain in each instance and said amount shall be deducted from any monies due or that may become due to the TSI Contractor. Both Parties hereto acknowledge that any Liquidated Damages assessed by SRTA and paid by TSI Contractor to SRTA shall limit and constitute TSI Contractor's sole liability and SRTA's sole remedy with respect to the milestones and the service levels for which liquidated damages are assessed as enumerated in **Table 28.2 below** and in **Appendix D (Performance Requirements and SLAs)**.

Liquidated damages as specified in Table 28.2 and in **Appendix D (Performance Requirements and SLAs)** that are assessed by SRTA will be deducted from any money due the TSI Contractor, not as a penalty, but as a reasonable estimate of SRTA's damages; provided however, that due consideration shall be taken of any adjustment of

the time for performance granted under the provisions of **Section 17.3 (Delay and Extensions of Time)**.

28.2.1 *Cap on Liquidated Damages.* For any given calendar month in which liquidated damages were incurred, TSI Contractor shall not be responsible to make payment or otherwise be liable for liquidated damages in an amount greater than the Monthly Maintenance Fee for the month following the month in which liquidated damages were incurred. In the event liquidated damages are assessed in the last month of the Term of the Contract, then TSI Contractor shall not be responsible to make payment to SRTA for liquidated damages in an amount greater than the Monthly Maintenance Fee for the month in which liquidated damages were incurred.

28.2.2 *Unenforceability of Liquidated Damages.* If any liquidated damages are found for any reason to be void, invalid or otherwise inoperative so as to disentitle SRTA from claiming all or part of the liquidated damages, then SRTA is entitled to claim against the TSI Contractor damages at law or in equity for the TSI Contractor's failure to complete or otherwise perform the Work as set forth in **Section 27 (Defective Work) of the Contract** or in **Appendix D of the RFP**.

Each milestone in Table 28.2 references a section of the RFP or the Contract that provides more details and a precise description of the specific milestone and associated liquidated damages. The terms and conditions of the referenced section of the RFP or Contract shall control over the terms and conditions of Table 28.7 in the event of any conflict.

*Table 28.2**

General Description of Milestone	Milestone Deadline** Days Prior to Substantial Completion	Liquidated Damages Amount
Factory Acceptance Test (FAT) Completed	75S – No Later Than 360 NWC - No Later Than 420	$1,000 a day
First Site Installation Test (Toll Site Approved)	75S - No Later Than 163 NWC - No Later Than 219	$5,000 a day
100% of Toll and ITS Sites Integrated with Network	75S - No Later Than 70 NWC - No Later Than 70	$5,000 a day
System Integration Test Completed	75S - No Later Than 0 NWC - No Later Than 0	$10,000 a day

*** See referenced section of RFP or Contract for more details and a precise description of each milestone contained in Table 28.2.**

*** See* **Sections 4.5.3.4 and 4.5.3.5 of the RFP**.

~~*** See referenced section of RFP or Contract for more details and a precise description of each milestone contained in Table 28.2.**~~

28.3 Closure of Lanes; Failure to Reopen. Should the TSI Contractor fail to reopen lane(s) at the times specified in **Section 4.5.3.1 (Traffic Control and Lane Closures) of the RFP** or as otherwise directed in writing by GDOT, TSI Contractor shall pay liquidated damages in the amount of $5,000.00 per hour or any portion thereof.

28.4 No Waiver. Permitting the TSI Contractor to continue and finish the Work or any part of the Work after the expiration of the time allowed for completion or after any extension of time, shall not operate as a waiver of the rights of SRTA under this Section or any of section of the Contract.

28.5 TSI Contractor and Surety Jointly and Severally Liable. Notwithstanding any other provision to the contrary, the TSI Contractor's and the TSI Contractor's surety shall be jointly and severally liable for the liquidated damages assessed by SRTA pursuant to **Section 28 (Liquidated Damages).** In the event the TSI Contractor and/or the TSI Contractor's surety litigates the validity of these liquidated damages provisions, the TSI Contractor and the TSI Contractor's surety, jointly and severally, shall also be liable for including, without limitation, legal fees, expert fees, professional fees, costs, other expenses and/or damages incurred by SRTA. In the event the TSI Contractor and/or the TSI Contractor's surety litigates the assessment of any liquidated damages by SRTA, the TSI Contractor and the TSI Contractor's surety, jointly and severally, shall also be liable for including, without limitation, legal fees, expert fees, professional fees, costs, other expenses and/or damages incurred by SRTA if the imposition of any liquidated damages are upheld.

29 Indemnification.

29.1 TSI Contractor Liability for TSI Contractor Parties, etc. The TSI Contractor shall be responsible to SRTA from the time of the signing of the agreement or the beginning of the first work, whichever shall be earlier, for all injury or damage of any kind to person or to property resulting from any negligent act or omission to act, or breach, failure or other default by the TSI Contractor, or any of its subcontractors, agents, employees or others working at the direction of the TSI Contractor or on its behalf.

29.2 Indemnification. TSI Contractor hereby agrees to indemnify and hold harmless SRTA, the State of Georgia and its departments, agencies, authorities and instrumentalities and all of their respective officers, members, employees and directors (hereinafter collectively referred to as the "Indemnitees") from and against any and all claims, demands, liabilities, losses, costs or expenses, including attorneys' fees, due to liability to a third party or parties, for any loss due to bodily injury (including death), personal injury, and property damage arising out of or resulting from the performance of this Contract or any act or omission on the part of the TSI Contractor, its agents, employees

or others working at the direction of TSI Contractor or on its behalf, or due to any breach of this Contract by the TSI Contractor, or due to the application or violation of any pertinent Federal, State or local Law, rule or regulation. This indemnification extends to the successors and assigns of the TSI Contractor. This indemnification obligation survives the termination of the Contract and the dissolution or, to the extent allowed by Law, the bankruptcy of the TSI Contractor. If and to the extent such damage or loss (including costs and expenses) as covered by this indemnification is paid by the State Tort Claims Trust Fund, the State Authority Liability Trust Fund, the State Employee Broad Form Liability Fund, the State Insurance and Hazard Reserve Fund, and other self-insured funds (all such funds hereinafter collectively referred to as the "Funds") established and maintained by the State of Georgia Department of Administrative Services Risk Management Division (hereinafter "DOAS") the TSI Contractor agrees to reimburse the Funds for such monies paid out by the Funds.

29.3 DOAS. Risk Management will endeavor to notify affected insurers of claims made against the State that fall within this indemnity. In the event of litigation, SRTA will request the Attorney General to endeavor to keep the TSI Contractor and its general liability insurer as named on the insurance certificate informed regarding the claims and settlement.

29.4 Intellectual Property Indemnification. TSI Contractor represents and warrants that it will have at all times while performing the work and labor needed for the Work and SRTA will have, upon completion of the Work, all necessary patent, copyright, and any other necessary intellectual property rights to all Work furnished by TSI Contractor under the Contract and that all Work, as a whole and each of its components shall not infringe any third party patent, copyright, trademark, trade secret or other intellectual property right. In case any component of the Work is held to constitute an infringement of the United States patent rights or copyrights or other intellectual property rights of a third party and its use is enjoined, the TSI Contractor at the TSI Contractor's sole cost and expense, shall promptly (a) secure for SRTA, its representatives, agents, and designees the right to continue using the infringing item by suspension of the injunction or by procuring a perpetual, non-revocable, paid-up, royalty-free, assignable, non-exclusive license(s) to reproduce, publish, or otherwise use for SRTA's direct purposes; or (b) replace the infringing item with a non-infringing substitute that meets the requirements of the Contract Documents; or (c) modify the infringing item so that it becomes non-infringing provided the resulting Work meets the requirements of the Contract Documents. If the amount of time necessary to proceed with one of these options is deemed excessive by SRTA, SRTA may direct the TSI Contractor to select another option or risk default. Nothing in this provision shall be deemed to limit or condition SRTA's rights otherwise set forth in the Contract, including termination. TSI Contractor shall defend all suits or claims for infringement of any patent rights and shall defend, indemnify, save and hold SRTA, its agents, and assigns harmless from loss on account thereof resulting from the use by SRTA or any of its employees or agents of Equipment supplied under this Contract. This intellectual property infringement provision shall not apply to any infringement or alleged infringement which is the result of or arises out of SRTA, its employees or agents modifying or altering any part or component, alone or in combination with any other part or component, except as consented to by TSI

Contractor. The TSI Contractor's obligations under this Section are in addition to TSI Contractor's Insurance obligations.

29.5 Obligations not Mutually Exclusive. The TSI Contractor's obligations under this Section are in addition to TSI Contractor's obligations under **Section 34 (Insurance) of the Contract**.

30 **Limitation of Liability.**

30.1 SRTA. Except for a breach of **Section 24 (Intellectual Property)** or **Section 26 (Confidentiality) of the Contract**, SRTA shall not, under any circumstances, be liable for any incidental, consequential, special, punitive, exemplary or indirect damages, lost business profits or lost data arising out of this Contract, even if SRTA is informed of the possibility of such damages. SRTA's liability to TSI Contractor, if any, shall be limited to direct damages and in such case, only to the extent of the amount SRTA has paid to or owes TSI Contractor under this Contract for the twelve months immediately preceding TSI Contractor's claim.

30.2 TSI Contractor. Except for a breach of **Section 29.4(Intellectual Property Indemnification), Section 26 (Confidentiality)** or claims made against SRTA by third parties to the extent such claims are resulting from the negligent acts or omissions to act of TSI Contractor or TSI Contractor Parties, TSI Contractor's liability to SRTA shall be limited to direct damages and in no other event shall TSI Contractor be liable for any incidental, consequential, special, punitive, exemplary or indirect damages arising out of this Contract, even if TSI Contractor is informed of the possibility of such damages. Notwithstanding the preceding sentence limiting TSI Contractor's liability to SRTA, TSI Contractor shall nevertheless remain liable for lost business revenue (gross revenue) and lost data, and all other damages not specifically excluded in the first sentence of this **Section 30.2**, including but not limited to direct damages unless such loss is covered by liquidated damages as set forth in **Section 28 (Liquidated Damages)**. TSI Contractor's total liability to SRTA under this Contract, if any, shall not exceed three times the Contract Sum.

31 **Dispute Resolution.** In the event of any dispute whatsoever arising out of or relating to the Contract Documents, the Work or the Project, the disputing Party must furnish a written notice to the other Party, setting forth in detail the dispute. Such notice must be addressed to the other Party's Project Manager. Within five (5) Days after the receipt of the notice by the receiving Project Manager, the two Project Managers shall meet in SRTA's offices to attempt to resolve the dispute. If the Project Managers cannot resolve the dispute then, within fourteen (14) Days after the date of written notice by either Project Manager to the Executive Director of SRTA and the Managing Director of the TSI Contractor, the Executive Director of SRTA and the Managing Director shall meet in SRTA's offices to attempt to resolve the dispute. If the Executive Director of SRTA and the Managing Director cannot resolve the dispute or otherwise agree to extend the time within which to attempt to resolve the dispute, then either Party may pursue those remedies as allowed under this Contract.

32 **Default; Damages/Remedies**.

32.1 Event of Default. Subject to relief from its performance obligations pursuant to **Section 17.3 (Delay and Extensions of Time) of this Contract**, TSI Contractor shall be in breach under this Contract upon the occurrence of any one or more of the following events or conditions:

32.1.1 the TSI Contractor (a) fails to begin the applicable Work within thirty (30) Days following issuance of NTP, (b) fails to satisfy all conditions to commencement of the applicable Work (site RFP section dealing with site inspections and other preconditions) or (c) fails to commence such Work with diligence and continuity, by each deadline set forth in **Sections 4, 5, 6 and Appendix C of the RFP**;

32.1.2 the TSI Contractor has withheld, disrupted or delayed Work or any Deliverable due to non-payment by SRTA;

32.1.3 the TSI Contractor ~~incurs liquidated damages~~fails to meet the service levels as set forth in **Appendix D (Performance Requirements and SLAs) of the RFP** in the same category for more than three (3) consecutive months or fails to meet the service levels as set forth in **Appendix D (Performance Requirements and SLAs) of the RFP**~~incurs liquidated damages~~ in any category more than six (6) times in any rolling twelve (12) month period;

32.1.4 the TSI Contractor has failed to deliver the Work or a component thereof on a timely basis except to the extent of an excusable delay in accordance with **Section 17.3 (Delay and Extensions of Time) of this Contract**;

32.1.5 the TSI Contractor has assigned its rights and obligations under this Contract in violation of this Contract;

32.1.6 the Work or any component thereof has failed to meet the functional and/or performance criteria set forth in the Contract Documents;

32.1.7 the TSI Contractor has failed to provide "adequate assurances" within five (5) Days of SRTA's notice, when, in the opinion of SRTA, reasonable grounds for uncertainty exist with respect to the TSI Contractor's ability to perform any of its obligations under this Contract;

32.1.8 the TSI Contractor has failed to remedy defective work in accordance with **Sections 19 (Warranties), 27 (Defective Work) of this Contract** or the Maintenance requirements set forth in **Section 6 of the RFP** and **Exhibit G (Maintenance Terms) of the Contract**;

32.1.9 the TSI Contractor has failed to maintain bonds and insurance policies and coverages or fails to provide proof of bonds and insurance or copies of bonds and insurance policies, or fails to comply with any requirement of this Contract pertaining to the amount, terms or coverage of the same as required by **Sections 34 (Insurance) and 35 (Bonds) of this Contract**;

32.1.10 the TSI Contractor becomes insolvent or the TSI Contractor has taken advantage of any insolvency statute or debtor/creditor Law or the TSI Contractor's property or affairs have voluntarily been put in the hands of a receiver; or any case, proceeding or other action against the TSI Contractor was commenced in bankruptcy, or seeking reorganization, liquidation or any relief under any bankruptcy, insolvency, reorganization, liquidation, dissolution or other similar act or Law of any jurisdiction;

32.1.11 the TSI Contractor has failed to fully comply with the schedule or specific elements of, or actions required under any approved remedial plan furnished to SRTA pursuant to **Section 32.1.8 of this Contract** or otherwise;

32.1.12 the suspension or revocation of any license, permit, or registration necessary for the performance of the TSI Contractor's obligations under this Contract;

32.1.13 the TSI Contractor has suspended or failed to proceed with any properly authorized part of the Work;

32.1.14 the default in the performance or observance of any of the TSI Contractor's other obligations under the Contract Documents;

32.1.15 any representation or covenant in the Contract Documents made by TSI Contractor, or any certificate, schedule, report, instrument or other document delivered by or on behalf of TSI Contractor to SRTA pursuant to the Contract Documents is materially false, materially misleading or materially inaccurate when made or omits material information when made; or

32.1.16 after exhaustion of all rights of appeal, there occurs any suspension or debarment (distinguished from ineligibility due to lack of financial qualifications), or there goes into effect an agreement for voluntary exclusion, from bidding, proposing or contracting with any federal or State department or agency of (a) TSI Contractor, (b) any member of TSI Contractor with a material financial obligation owing to TSI Contractor for equity or shareholder loan contributions, (c) any affiliate of TSI Contractor for whom transfer of ownership would constitute a Change of Control, or (d) any Key TSI Contractor whose work is not completed.

32.2 Cure Periods. For the purpose of SRTA's exercise of other remedies and subject to remedies that this **Section 32.2** expressly states may be exercised before lapse of a cure period, TSI Contractor shall have the following cure periods with respect to the following Events of Default:

32.2.1 respecting an Event of Default under **Sections 32.1.2, ~~32.1.3,~~ 32.1.8, 32.1.10,** or **32.1.12,** a period of five (5) Days after SRTA delivers to TSI Contractor written notice of such Event of Default.

32.2.2 respecting an Event of Default under **Sections 32.1.1, 32.1.5, 32.1.6, 32.1.9, 32.1.13** or **32.1.15**, a period of fifteen (15) Days after SRTA delivers to TSI Contractor written notice of the Event of Default.

32.2.3 respecting an Event of Default under **Sections 32.1.3, 32.1.7, 32.1.14, 32.1.16** or **32.1.17** a period of thirty (30) Days after SRTA delivers to TSI Contractor written notice of the Event of Default; (b) as to **Section 32.1.16**, cure will be regarded as complete when the adverse effects of the breach are cured, and (c) as to **Section 32.1.17**, if the debarred or suspended Person is a managing member, general partner or controlling investor of TSI Contractor, cure will be regarded as complete when TSI Contractor proves it has removed such Person from any position or ability to manage, direct or control the decisions of TSI Contractor or to perform Work, and if the debarred or suspended Person is a Key Personnel cure will be regarded as complete when TSI Contractor replaces the Key Personnel with SRTA's prior written approval in its good faith discretion as provided in **Section 8.4 (Key Personnel)**.

32.2.4 respecting an Event of Default under **Sections 32.1.4** and **32.1.11,** no cure period, and there shall be no right to notice of an Event of Default under **Sections 32.1.4** and **32.1.11**.

32.3 SRTA Damages/Remedies. With the exception of those instances where liquidated damages have been assessed, upon the occurrence of an Event of Default, SRTA may, in addition to and without prejudice to all other contractual remedies and/or remedies allowed at Law or in equity, proceed to take any or all of the following actions:

32.3.1 withhold any money then due and/or thereafter due to TSI Contractor;

32.3.2 perform or cause to be performed for the account of TSI Contractor any contractual covenant in the performance of which the TSI Contractor is in default or make any payment for which the TSI Contractor is in default. The TSI Contractor shall pay to SRTA upon demand any amount paid or incurred by SRTA in the performance of such covenant. Any amounts which have been paid or incurred by reason of failure of the TSI Contractor to comply with any covenant or provision of this Contract shall bear interest at the Default Rate, which shall be defined as the Prime Rate plus five percent (5%), but in no case higher than the highest rate permitted by Law, from the date of payment by SRTA until paid by the TSI Contractor. Upon request, SRTA will provide reasonable documentation substantiating any claim for payment under this Subsection;

32.3.3 SRTA or SRTA-Designated Representatives shall have the right to immediately take possession of any or all of the materials, tools, technical specifications, drawings, Equipment, supplies and property of every kind, provided, purchased, maintained, leased, owned, or rented by the TSI Contractor, including but not limited to the Source Code, and the Equipment and hardware either paid for by SRTA, used by TSI Contractor to perform Work or otherwise stored by SRTA or at

the Project site; make available any or all of the foregoing items to a third party provider and/or procure other materials, plant, tools, Equipment, and supplies and charge the TSI Contractor therefor and the TSI Contractor shall be liable to SRTA for the expense of said labor, materials, plant, tools, Equipment, supplies and property;

32.3.4 collect lost revenue and other direct damages that were the result of the Event of Default. In the event that SRTA is unable to determine lost business revenue because data is lost or otherwise unavailable, then the Parties agree that lost business revenue shall be based on historical figures (traffic) maintained by SRTA;

32.3.5 obtain the Work, or a portion thereof, from a third party under substantially similar terms of this Contract, and recover from TSI Contractor all additional costs and expenses paid or incurred by SRTA as a result of the Event of Default, plus all additional costs paid or incurred by SRTA to obtain the replacement Work as set forth in **Section 32.3 (SRTA Damages/Remedies) of this Contract**;

32.3.6 terminate the Contract, in whole or in part; and

32.3.7 reduce the scope of Work.

32.4 SRTA Default. Subject to SRTA's exercise of its withholding rights and other remedies and rights under the Contract, if SRTA fails to pay TSI Contractor undisputed invoices when due under the Contract and fails to make such payments within ninety (90) Days of receipt of written notice from TSI Contractor of the failure to make such payments, TSI Contractor may, by giving written notice to SRTA, terminate this Contract as of a date specified in the notice of termination. TSI Contractor shall not have the right to terminate the Contract for SRTA's breach of the Contract except as specifically provided in this **Section 32.4**. In the event of termination of this Contract by TSI Contractor for a SRTA default as provided in this **Section 32.4**, SRTA shall be liable only for payments required by the terms of this Contract for Work which has been performed satisfactorily according to the Contract Documents, any restocking fees actually and reasonably incurred by TSI Contractor for any Work ordered but not used on the Project, and reasonable and actual wind down costs. SRTA prior to the effective date of termination, subject to SRTA's exercise of its rights and remedies under the Contract.

32.5 Extension of Time to Cure. If SRTA believes the TSI Contractor is using its best efforts to cure any events listed in **Section 32.1 (Event of Default)** then SRTA may in its discretion and taking into consideration SRTA's business needs and other general business considerations extend the respective cure period set forth in **Section 32.2 (Cure Periods)**.

33 **Termination**.

33.1 Termination for Cause. Upon an Event of Default, SRTA may, in its sole discretion, terminate this Contract in whole or in part. Termination shall take effect on the date set forth in SRTA's notice to TSI Contractor, which shall be no less than ten (10) Days after

the date of such notice. Upon such termination SRTA shall not be required to pay TSI Contractor any amounts for Work performed prior to the date of termination for which payment may be due and owing but not yet paid ("Remaining Payment"). In the event SRTA's expenses incurred or anticipated to be incurred as a result of TSI Contractor's breach are less than the Remaining Payment, SRTA shall remit such differential to the TSI Contractor. In the event SRTA's expenses incurred or anticipated to be incurred as a result of TSI Contractor's breach exceed the Remaining Payment, then TSI Contractor shall within thirty (30) Days of written notice from SRTA, make payment of the differential to SRTA. In addition to the rights and remedies in this **Section 33.1**, SRTA shall have all other rights and remedies against TSI Contractor which are available at Law or in equity.

33.2 Termination for Convenience. SRTA may terminate this Contract, in whole or in part, for convenience upon 30 Days written notice, which shall commence upon the date included in the notice. All Work, including Deliverables, shall at SRTA's option become the property of SRTA upon receipt of payment by TSI Contractor for the amount owed for such item of Work. In the event of a termination for convenience, SRTA shall only pay the TSI Contractor for Work performed through the termination date, any restocking fees actually and reasonably incurred by TSI Contractor for any Work ordered but not used on the Project, and reasonable and actual wind down costs. SRTA shall not be responsible for any other costs, fees and expenses of any nature whatsoever, including but not limited to administrative fees, legal fees, salary, or any other cost or expense, whether direct or indirect, whether foreseen or unforeseen. The TSI Contractor acknowledges that the remedy set forth in this **Section 33.2** is the TSI Contractor's sole and exclusive remedy against SRTA for termination for convenience and TSI Contractor hereby waives all other rights and remedies it may have against SRTA for termination for convenience.

33.3 Pre-existing Liability. No termination of this Contract shall excuse either Party from any liability arising out of any default as provided in this Contract that occurred prior to termination.

33.4 Compliance with Contract. Both Parties shall comply with all of the terms and conditions of the Contract Documents, including but not limited to the provisions of **Section 37 (Cooperation, Transition of Deliverables, End of Contract Responsibilities) of this Contract**, in the event SRTA exercises any of its rights under this **Section 33**.

33.5 Termination Procedures and Duties. Upon expiration of the Term or any earlier termination of this Contract for any reason, the provisions of this **Section 33.5** shall apply. TSI Contractor shall timely comply with such provisions independently of, and without regard to, the timing for determining, adjusting, settling and paying any amounts due TSI Contractor or SRTA on account of such termination.

33.5.1 Within three (3) Business Days after receipt of a notice of termination, TSI Contractor shall meet and confer with SRTA for the purpose of developing an interim transition plan for the orderly transition of Work, demobilization and transfer of the Project control to SRTA. The Parties shall use diligent efforts to complete preparation of the interim transition plan within a reasonable

timeframe, taking into consideration SRTA's business needs. The Parties shall use diligent efforts to complete a final transition plan within thirty (30) Days after such date. The transition plan shall be in form and substance acceptable to SRTA in its good faith discretion and shall include and be consistent with the other provisions and procedures set forth in this **Section 33.5**, all of which procedures TSI Contractor shall immediately follow, regardless of any delay in preparation or acceptance of the transition plan.

33.5.2 On the termination date, or as soon thereafter as is possible, TSI Contractor shall relinquish and surrender full control and possession of the Project to SRTA, and shall cause all persons and entities claiming under or through TSI Contractor to do likewise, in at least the condition required by the termination turnover requirements set forth in the transition plan. On the later of the termination date or the date TSI Contractor relinquishes full control and possession, SRTA shall assume responsibility, at its expense, for the Project, subject to any rights to damages that SRTA has against TSI Contractor where the termination is due to an Event of Default.

33.5.3 Within thirty (30) Days after notice of termination is delivered, TSI Contractor shall provide SRTA with true and complete list of all materials, goods, machinery, Equipment, parts, supplies and other property in inventory or storage (whether held by TSI Contractor or any person or entity on behalf of or for the account of TSI Contractor) for use in or respecting the Work or the Project, or on order or previously completed but not yet delivered from supplier(s) for use in or respecting the Work or the Project. In addition, on or about the termination date, TSI Contractor shall transfer title and deliver to SRTA or SRTA's designee, through bills of sale or other documents of title, as directed by SRTA, all such materials, goods, machinery, Equipment, parts, supplies and other property, provided SRTA assumes in writing all of TSI Contractor's obligations under any contracts relating to the foregoing that arise after the termination date.

33.5.4 TSI Contractor shall take all action that may be necessary, or that SRTA may direct, for the protection and preservation of the Project, the Work and such materials, goods, machinery, Equipment, parts, supplies and other property.

33.5.5 On or about the Termination Date, TSI Contractor shall execute and deliver to SRTA the following, together with an executed bill of sale or other written instrument, in form and substance acceptable to SRTA, acting reasonably, assigning and transferring to SRTA all of TSI Contractor's right, title and interest in and to the following:

33.5.5.1 all completed or partially completed drawings (including plans, elevations, sections, details and diagrams), specifications, designs, design documents, as-built and record plans, surveys, and other documents and information pertaining to the design or construction of the Project or the Utility Adjustments;

33.5.5.2 all books, records, reports, test reports, studies and other documents of a similar nature relating to the Work, the Project;

33.5.5.3 all data and information relating to the use of the Project, including all studies, reports, and other information provided that the transfer of any Intellectual Property shall be subject to **Sections 24.3(License)** and **25 (Intellectual Property Escrow) of this Contract**; and

33.5.5.4 all other work product and Intellectual Property used or owned by TSI Contractor or any Affiliate relating to the Work, the Project, provided that the transfer of any Intellectual Property shall be subject to **Sections 24.3 (License)** and **25 (Intellectual Property Escrow) of this Contract**.

33.5.6

TSI Contractor shall otherwise assist SRTA in such manner as SRTA may require prior to and for a reasonable period following the termination date to ensure the orderly transition of the Project and its management to SRTA, and shall, if appropriate and if requested by SRTA, take all steps as may be necessary to enforce the provisions of TSI Contractor's agreements with the TSI Contractor Parties pertaining to the surrender of the Project.

34 **Insurance**.

34.1 Insurance Certificates. The TSI Contractor shall procure the insurance coverages identified below at the TSI Contractor's expense and shall furnish SRTA an insurance certificate listing SRTA as the certificate holder and an endorsement listing SRTA as an additional insured for the negligent acts or omissions of TSI Contractor or the TSI Contractor Parties in relation to the commercial general liability and business automobile liability insurance. Such additional insured requirement may be met on a blanket additional insured basis. Evidence of insurance coverages shall be provided on the standard ACORD form acceptable to SRTA and the Georgia Office of the Insurance Commissioner. Should any of the policies described herein be cancelled before the expiration date thereof or revised in a material way, TSI Contractor shall notify SRTA within seven (7) Days of TSI Contractor's notice of such cancellation or change. The insurance certificate must provide the following:

34.1.1 name and address of authorized agent;

34.1.2 name and address of insured;

34.1.3 name of insurance company(ies);

34.1.4 description of policies;

34.1.5 policy number(s);

34.1.6 policy period(s);

34.1.7 limits of liability;

34.1.8 name and address of SRTA as certificate holder;

34.1.9 project Name and Number;

34.1.10 signature of authorized agent; and

34.1.11 telephone number of authorized agent.

34.2 Insurer Qualifications, Insurance Requirements. Each of the insurance coverages required below (i) shall be issued by a company licensed by the Insurance Commissioner to transact the business of insurance in the State of Georgia for the applicable line of insurance, and (ii) shall be an insurer (or, for qualified self-insureds or group self insureds, a specific excess insurer providing statutory limits) with a Best Policyholders Rating of "A-" or better and with a financial size rating of Class V or larger. Each such policy shall contain the following provisions:

34.2.1 TSI Contractor shall provide at least thirty (30) Days prior written notice of cancellation or nonrenewal to SRTA. Such notice shall be valid only as to the Project as shall have been designated by Project Number and Name in said notice. TSI Contractor shall provide written notice of any material changes to the policy to SRTA within three (3) Business Days of TSI Contractor's receipt of notice of any changes or proposed changes from the insurance company;

34.2.2 the policy shall not be subject to invalidation as to any insured by reason of any act or omission of another insured or any of its officers, employees, agents or other representatives ("Separation of Insureds");

34.2.3 each Insurer is hereby notified that the statutory requirement that the Attorney General of Georgia shall represent and defend the Indemnities remains in full force and effect and is not waived by issuance of any policy of insurance. In the event of litigation, any settlement on behalf of the indemnities must be expressly approved by the Attorney General. The TSI Contractor and its insurance carrier may retain, but are not obligated to retain, counsel to assist with the defense of the Indemnities, in which case there will be mutual cooperation between the Attorney General and such counsel. See O.C.G.A. § 45-15-12;

34.2.4 all deductibles shall be paid for by the TSI Contractor; and

34.2.5 self-insured retention, except for qualified self-insurers or group self-insurers, in any policy shall not exceed $50,000.00.

34.3 Required Insurance Coverages. The TSI Contractor also agrees to purchase insurance and have the authorized agent state on the insurance certificate that the TSI Contractor has purchased the following types of insurance coverages, consistent with the policies and requirements of O.C.G.A. § 50-21-37. The minimum required coverages and liability limits are as follows:

34.3.1 Workers' Compensation Insurance. The TSI Contractor agrees to provide at a minimum Workers' Compensation coverage in accordance with the statutory limits as established by the General Assembly of the State of Georgia. A group insurer must submit a certificate of authority from the Insurance Commissioner approving the group insurance plan. A self-insurer must submit a certificate from the Georgia Board of Workers' Compensation stating the TSI Contractor qualifies to pay its own workers' compensation claims. The TSI Contractor shall require all Subcontractors performing work under this Contract to obtain an insurance certificate showing proof of Workers' Compensation Coverage and shall submit a certificate on the letterhead of the TSI Contractor in the following language:

> *This is to certify that all subcontractors performing work on this Project are covered by their own workers' compensation insurance or are covered by the TSI Contractor's workers' compensation insurance.*

34.3.2 Employers' Liability Insurance. The TSI Contractor shall also maintain Employer's Liability Insurance Coverage with limits of at least:

34.3.2.1 Bodily Injury by Accident $1,000,000 each accident; and

34.3.2.2 Bodily Injury by Disease $1,000,000 each employee.

The TSI Contractor shall require all Subcontractors performing work under this Contract to obtain an insurance certificate showing proof of Employers Liability Insurance Coverage and shall submit a certificate on the letterhead of the TSI Contractor in the following language:

> *This is to certify that all subcontractors performing work on this Project are covered by their own Employers Liability Insurance Coverage or are covered by the TSI Contractor's Employers Liability Insurance Coverage.*

34.3.3 Commercial General Liability Insurance. The TSI Contractor shall provide Commercial General Liability Insurance (2001 ISO Occurrence Form or equivalent) that shall include, but need not be limited to, coverage for bodily injury and property damage arising from premises and operations liability, products and completed operations liability, blasting and explosion, collapse of structures, underground damage, personal injury liability and contractual liability. The CGL policy must provide at a minimum the following limits:

Coverage	***Limit***
1. Premises and Operations	$ 1,000,000.00 per Occurrence
2. Products and Completed Operations	$ 1,000,000.00 per Occurrence
3. Personal Injury	$ 1,000,000.00 per Occurrence
4. Contractual	$ 1,000,000.00 per Occurrence
5. General Aggregate	$ 4,000,000.00

Additional Requirements for Commercial General Liability Insurance are shown below at **Section 34.3.6**.

34.3.4 *Commercial Business Automobile Liability Insurance.* The TSI Contractor shall provide Commercial Business Automobile Liability Insurance that shall include coverage for bodily injury and property damage arising from the operation of any owned, non-owned, or hired automobile. The Commercial Business Automobile Liability Insurance Policy shall provide not less than $1,000,000 Combined Single Limits for each occurrence.

34.3.5 *Commercial Umbrella Liability Insurance.* The TSI Contractor shall provide a Commercial Umbrella Liability Insurance to provide excess coverage above the Commercial General Liability, Commercial Business Automobile Liability and the Workers' Compensation and Employers' Liability to satisfy the minimum limits set forth herein. The umbrella coverage shall follow form with the Umbrella limits required as follows:

$2,000,000 per Occurrence/$10,000,000 Aggregate

34.3.6 *Additional Requirements.* The insurance provided in **Sections 34.3.3, 4, and 5** shall also meet the following additional requirements:

34.6.1 the policy shall name as additional insureds the officers, members, and employees of SRTA; and

34.6.2 the policy must be on an "occurrence" basis.

34.3.7 *Disposition of Insurance Documents.* One original certificate of insurance with all endorsements attached must be deposited with SRTA for each insurance policy required.

34.4 Termination of Obligation to Insure. Unless otherwise expressly provided to the contrary, the obligation to insure as provided herein shall not terminate until the expiration or other termination of the Contract.

34.5 Failure of Insurers. The TSI Contractor is responsible for any delay resulting from the failure of his insurance carriers to furnish proof of proper coverage in the prescribed form.

34.6 Ongoing Coverage. TSI Contractor is responsible for tracking insurance coverages for itself and its subcontractors, for ensuring that coverages remain in force throughout the duration of the Contract, and for demonstrating to SRTA ongoing compliance with this **Section 34**.

34.7 General. The TSI Contractor's obligations under this **Section 34** are in addition to TSI Contractor's obligations under **Section 29 (Indemnification) of this Contract**.

35 **Bonds**. The TSI Contractor shall furnish the bonds required in this **Section 35**.

35.1 Payment and Performance Bond. The TSI Contractor shall furnish both a performance bond and a payment bond in the exact form set forth in **Exhibit F (Bond Forms)**.

35.2 Required Qualifications for Surety. The surety and insurance companies must be acceptable to SRTA. Only those sureties listed in the Department of Treasury's Listing of Approved Sureties (Department Circular 570) are acceptable to SRTA. All bonds at the time of issuance must be issued by a company authorized by the Insurance Commissioner to transact the business of suretyship in the State of Georgia, and shall have a Best Policyholders Rating of "A-" or better and with a financial size rating of Class V or larger.

35.3 Penal Amount of Bonds, State Law. The provisions of O.C.G.A. §§ 13-10-2, 13-10-40 and 13-10-60, shall be deemed to govern the requirements of the performance and payment bonds required under this Contract. Therefore pursuant to O.C.G.A. §§ 13-10-2, 13-10-20, 13-10-40 and 13-10-60, the bonds must be in a penal amount equal to at least 100% of the Contract Sum plus any Change Orders, less maintenance fees for the hardware, software and network services. Accordingly, the TSI Contractor warrants and agrees that, for any Change Order increasing the Contract Sum by five percent (5%) or more, it shall obtain a written amendment to each bond increasing the penal amount to 100% of the Contract Sum, effective as of the date of the Change Order. The premium increase, if any, may be properly included in the cost of the Change Order.

35.4 Bond Duration/Term. Provided the Initial Term has not expired, the performance bond provided under **Section 35** shall be released and returned to the TSI Contractor one year after Open to Tolling or upon successful completion of the System Acceptance Test, whichever occurs later. If the Initial Term expired and the applicable Project has not been Open to Tolling for a period of one year or one year has not passed since a successful completion of the System Acceptance Test, whichever occurs later, then the TSI Contractor must, ten (10) Days prior to the expiration of the Initial Term, provide a new performance bond for the duration of the Renewal Term according to the terms of this Section. Provided the Initial Term has not expired, the payment bonds provided under this **Section 35** shall be released and returned to the TSI Contractor within one year after Open to Tolling or upon successful completion of the System Acceptance Test, whichever occurs later, provided all claims for payment by any of the TSI Contractor Parties are fully and finally resolved and TSI Contractor furnishes SRTA with an Affidavit from each and every one of the TSI Contractor Parties on the applicable Project, certifying that the TSI Contractor Party, as applicable, received payment in full and has

no outstanding claims for payment against TSI Contractor for Work performed on the Project. If the Initial Term expired and the applicable Project has not been Open to Tolling for a period of one year or one year has not passed since a successful completion of the System Acceptance Test, whichever occurs later, then the TSI Contractor must ten (10) Days prior to the expiration of the Initial Term provide a new payment bond according to the terms of this Section. Thereafter, payment bonds shall be provided on an annual renewal basis for the maintenance services; with such annual renewal bonds being in the amount of 100% of the respective annual amount for the maintenance services.

36 **Records Retention and Audit Rights**. In addition to audit obligations as set forth in the RFP, TSI Contractor shall and shall cause each TSI Contractor Party to maintain accurate books, records, documents and other evidence concerning TSI Contractor's performance of Work under this Contract (hereinafter referred to as the "Records"). TSI Contractor agrees to make available, at all reasonable times during which this Contract is in effect the Records for inspection or audit by any authorized representative of SRTA or the Georgia State Auditor. Within no more than five (5) Days after the termination of this Contract for any reason, copies of all Records shall be given by the TSI Contractor to SRTA. Records that relate to appeals, litigation, or the settlements of claims arising out of the performance of this Contract, or costs and expenses of any such agreement as to which exception has been taken by the State Auditor or any of his or her duly authorized representatives, shall be retained by TSI Contractor until such appeals, litigation, claims or exceptions have been disposed. Notwithstanding anything to the contrary stated in this provision, nothing in this **Section 36** shall obligate the TSI Contractor to provide TSI Contractor's internal cost data for review or for audit. SRTA shall also at all times during the Term of this Contract have the right to conduct the monitoring, reviewing, inspection, testing, reporting, auditing and other oversight functions set forth in the Contract Documents, including monitoring and auditing TSI Contractor and its books and records to determine compliance with requirements of the Contract Documents and the approved Project Management Plan, including audit review of Design Documents, Plans, Construction Documents and other Submittals.

37 **Cooperation, Transition, End of Contract Responsibilities**.

37.1 Cooperation. In the event that SRTA enters into any agreement at any time with any other vendor(s) as allowed pursuant to **Section 44.20 (No Exclusivity) of this Contract** or for additional work related to the Work, TSI Contractor agrees to cooperate fully with such other vendors in order to facilitate the performance of work by such other vendor(s) and/or provision of the Work by the TSI Contractor and to refrain from any activity which would interfere with performance of work by such other vendor(s) and/or provision of the Work by the TSI Contractor.

37.2 Transition. Upon expiration or earlier termination of this Contract, TSI Contractor shall accomplish a complete transition of the Work from TSI Contractor to SRTA, or to any replacement provider designated by SRTA, and not cause through any act or omission of the TSI Contractor or the TSI Contractor Parties any interruption of, or adverse impact on the Work any component thereof or any other work provided by third parties. TSI Contractor shall cooperate fully with SRTA or such replacement provider and promptly take all steps required to assist in effecting a complete transition. All Work related to

such transition shall be performed at no additional cost.

37.3 End of Contract. The TSI Contractor shall perform the end of Contract responsibilities as specified in the Contract Documents or as otherwise directed by SRTA.

37.4 Failure to Comply. The Parties acknowledge and understand that TSI Contractor's failure to comply with the terms and conditions as stated in this **Section 37** may adversely affect SRTA and result in monetary loss to SRTA. SRTA shall assess, audit, and certify to the TSI Contractor monetary losses resulting from the TSI Contractor's failure to comply with the provisions of this **Section 37**. SRTA's reasonable determination as to the amount of the monetary loss suffered shall be conclusive and, unless an action is brought by TSI Contractor in a court of law pursuant to **Section 44.6 (Governing Law/Venue) of this Contract** within forty-five (45) Days of SRTA's determination of monetary loss and SRTA's determination is deemed unreasonable by such court, TSI Contractor shall compensate SRTA for any undisputed loss within thirty (30) Days of such a determination by SRTA or by the court of competent jurisdiction, as applicable.

38 **Conflicts of Interest**. The TSI Contractor represents and warrants that it, its principals, its employees, and all others in close association with it, have no conflict of interest or of time, directly or indirectly, that would prevent timely performance of the Work or the performance of Work in a manner that is free of appearance or fact of impropriety. The TSI Contractor promises not to allow such conflict to arise and promises to disclose such a conflict in the event that, nevertheless, one develops.

39 **Data Ownership/Access/Security**. All data, Transaction records, Trip records, system database and other logs, ITS Equipment output, including MVDS, CCTV, MOMs, or any data collected by the Electronic Toll Collection System, including all images, is the property of SRTA. If the data is organized and stored using COTS database or proprietary database software then the TSI Contractor must provide a secure network path and web service (often referred to as ETL) or direct ODBC connection to the database with appropriate permissions and credentials to extract data from the database. This includes, but not limited to, newly inserted or updated data in the database, database backups, and archives (offline backups). If it is preferred that extractions and queries not be done on the production database, then an active standby database will be provided at the Toll Facility Host or Toll Facility Host DR. In addition to TSI Contractor's obligations in **Section 26 (Confidentiality)**, TSI Contractor shall ensure that no unauthorized personnel will have access to individual facilities, cabinets, data and records, any personal information of existing or potential SRTA customers.

40 **Maintenance**. TSI Contractor shall perform the maintenance services and as those terms are more fully described in the RFP and **Exhibit G (Maintenance Terms)**.

40.1 Stale Transactions. Once the roadway associated with a Project is open to tolling and thereafter during TSI Contractor's performance of the maintenance services, if as a result of the acts or inactions of TSI Contractor or TSI Contractor Parties, the TSI Contractor fails to successfully transmit to SRTA's CSC a properly formed Trip and all of the information required by the Contract Documents for each such Trip in accordance with the RFP requirements within sixty (60) Days after the date the Trip occurred ("Stale Transactions"),

then TSI Contractor shall be responsible to make payment to SRTA for the amount of lost tolls represented by each Stale Transaction. TSI Contractor shall make payment to SRTA of such loss of revenue within thirty (30) Days of SRTA's notice to TSI Contractor.

41 **Exhibits.** The following Exhibits are incorporated by reference into and made a part of the Contract Documents:

Exhibit B- RFP
Exhibit C- TSI Contractor's Proposal
Exhibit D- TSI Contractor's Qualification Statement

The following Exhibits are attached hereto and incorporated into the Contract Documents:

Exhibit A- Definitions
Exhibit E- Pricing Schedules
Exhibit F- Bond Forms
Exhibit G- Maintenance Terms
Exhibit H- Bill of Sale
Exhibit I- TSI Contractor's Intellectual Property
Exhibit J- Escrow Agreement

42 **Incentive Payment**. If the TSI Contractor has successfully completed the Integration Test (see **Section 4.6.9 (Integration Test**) **of the RFP**) and is ready to perform the End to End Test at least fourteen (14) Days before the Substantial Completion Date, then the TSI Contractor is eligible for an incentive payment as set forth below in **Table 42**.

42.1 Bonus Payments Not Cumulative. The Incentive Payment Amounts below in Table 42 are not cumulative.

TABLE 42

Incentive Payment Schedule		
Days Completed Before the Scheduled Completion Date	**Incentive Payment 75 South**	**Incentive Payment NWC**
42 or more	$101,500	$175,000
41	$97,500	$168,000
40	$93,500	$161,000
39	$89,500	$154,000
38	$85,500	$147,000
37	$81,500	$140,000
36	$77,500	$133,000
35	$73,500	$126,000
34	$69,500	$119,000
33	$65,500	$112,000
32	$61,500	$105,000

31	$57,500	$98,000
30	$53,500	$91,000
29	$49,500	$84,000
28	$45,500	$77,000
27	$43,250	$73,500
26	$41,000	$70,000
25	$38,750	$66,500
24	$36,500	$63,000
23	$34,250	$59,500
22	$32,000	$56,000
21	$29,750	$52,500
20	$27,500	$49,000
19	$25,250	$45,500
18	$23,000	$42,000
17	$20,750	$38,500
16	$18,500	$35,000
15	$16,250	$31,500
14	$14,000	$28,000

42.2 Substantial Completion Date. For the purposes of calculating and determining eligibility for the incentive payment, the Substantial Completion date as defined in the applicable GDOT RFP shall be utilized as the date by which the TSI Contractor shall have successfully completed the Integration Test and is ready to perform End to End Testing. The Substantial Completion date that is defined on the Civil Contractor's GDOT-approved schedule upon turnover of the Communication Hub(s) Fiber Network as applicable for each Project shall be utilized for the calculation of this incentive payment.

42.3 No Extension of Substantial Completion Date. For the purposes of calculating and determining eligibility for the incentive payment, the Substantial Completion Date shall not be adjusted for any reason, cause or circumstance whatsoever, regardless of fault, weather, Force Majeure, other entities, unless otherwise determined by SRTA in its sole and absolute discretion.

43 **Loss of Revenue**. If TSI Contractor meets an applicable SLA, but SRTA nevertheless incurs a loss of Gross Revenue as a result of the acts or inactions of the TSI Contractor or the TSI Contractor Parties, then for each event in which SRTA incurs a loss of Gross Revenue that exceeds $5,000.00, the TSI Contractor shall be obligated to make SRTA whole and make payment to SRTA of all tolls associated with lost trips. In the event that SRTA is unable to determine lost Gross Revenue because data is lost or otherwise unavailable, then the Parties agree that lost Gross Revenue shall be based on historical figures (traffic) maintained by SRTA. SRTA, at its option, may either reduce the amount of the subsequent monthly maintenance fee or warranty fee, as applicable, by the amount of Gross Revenue due as set forth above or require TSI Contractor to make payment within thirty (30) Days of SRTA's notice to TSI Contractor.

43.1 ~~Potential~~ TSI Contractor Recommendation~~Correction~~. TSI Contractor may present to SRTA remedies that will prevent similar future events. If SRTA agrees that such remedies will prevent future similar events, then approval of the implementation of such remedies will not be unreasonably withheld by SRTA, taking into consideration SRTA's business needs and other general business considerations. By way of example and not by limitation, any correction that may result in a Stale Transaction as detailed in **Section 40.1 (Stale Transactions) of th Contract**, shall be deemed unreasonable. Agreed upon remedies will be executed at no cost to SRTA and not impact in any way any of SRTA's other requirements under the Contract Documents.

44 **Miscellaneous Provisions**.

44.1 Compliance with Laws. The TSI Contractor shall perform its obligations hereunder, and shall ensure that all of its subcontractors perform their obligations, in accordance with all applicable federal, State, and local government Laws, rules, regulations, orders and approvals, including but not limited to procedures and requirements relating to labor standards, compliance with Americans with Disabilities Act, anti-solicitation Laws, O.C.G.A. § 50-5-82, O.C.G.A. § 13-10-91, and auditing and reporting provisions, now or hereafter in effect, and any rules required by any federal grant funding payment by SRTA. Any changes to applicable Laws, rules, or regulations that are enacted after contract award may be the subject of a Change Order only if a change to applicable Laws, rules, or regulations results in an actual and direct increase in cost to TSI Contractor to comply with such changes. In such an event, the increased cost shall reflect the unit prices set forth in the TSI Contractor's Price Proposal included in the TSI Contractor's Proposal, and if the labor or material is not included in the TSI Contractor's Price Proposal, then the Change Order shall reflect an increase in price of TSI Contractor's actual cost plus 9% markup.

44.2 Parties Bound. This Contract will bind the respective heirs, executors, administrators, legal representatives, successors, and assigns of each Party.

44.3 Time of the Essence/Force Majeure. Time is of the Essence for this Contract. However, neither Party shall be liable to the other Party for any delay or failure of performance due to the occurrence of any of the following events that materially and adversely affects performance of TSI Contractor's or SRTA's obligations, provided that such events (or the effects of such events) could not have been avoided by the exercise of caution, due diligence, or reasonable efforts by the affected Party (a) war (including civil war and revolution), invasion, armed conflict, violent act of foreign enemy, military or armed blockade, or military or armed takeover of the Project, in each case occurring within the State; (b) any act of terrorism or sabotage that causes direct physical damage to the Project; (c) nuclear explosion or contamination, in each case occurring within the State; (d) riot and civil commotion on or in the immediate vicinity of the Project; (e) fire, explosion, flood, earthquake, hurricane, or tornado, in each case that causes direct physical damage to the Project; or (f) national or statewide (i.e., State of Georgia) strike that has a direct adverse impact on the TSI Contractor's ability to obtain materials, Equipment or labor for the Project. TSI Contractor's exclusive remedies for Force Majeure are set forth in **Section 17.3 (Delay and Extensions of Time) of this Contract**.

44.4 Trading with State Employees. The TSI Contractor warrants that the provisions of O.C.G.A. §§ 45-10-20 *et seq.* have not and will not be violated during the Term or any Renewal Term of this Contract.

44.5 Federal Intellectual Property Bankruptcy Protection Act. SRTA shall be entitled to all rights and benefits of the Federal Intellectual Property Bankruptcy Protection Act, Public Law 100-506, codified at 11 U.S.C. 365(n) and any amendments thereto.

44.6 Governing Law and Venue.

44.6.1 Governing Law. This Contract is a Georgia agreement made under the Laws of the State of Georgia. It will be enforced according to Georgia Law without regard to its conflict of Laws rules or any other rules directing referral to foreign Law or forums.

44.6.2 Uniform Commercial Code. Except to the extent provisions of the Contract are clearly inconsistent therewith, the applicable provisions of the Uniform Commercial Code as modified and adopted by the State shall govern this Contract. To the extent the Contract entails both the supply of goods and services such shall be deemed goods within the meaning of the Uniform Commercial Code, except when deeming such services as goods would result in a clearly unreasonable interpretation.

44.6.3 Venue. Any action arising out of or related to this Contract in any way shall be brought exclusively in the Superior Court of Fulton County, Georgia, and each Party hereby consents to the jurisdiction and venue of such Court and the appropriate appellate courts therefrom in any such action and irrevocably waives, to the fullest extent permitted by Law, any objection that it may now or hereafter have to the personal jurisdiction and venue of such court and to any claim of inconvenient forum. Each Party hereby agrees to execute an acknowledgment of service of process at the request of the other Party in any litigation related to this Contract. In the event that a Party does not provide an acknowledgment of service as agreed, each Party consents to service of process at that Party's address set forth in **Section 44.7 (Notices) of this Contract**.

44.7 Notices. All notices, notifications, requests, approvals, or other communications (excluding Invoices) required by or otherwise related to the Contract Documents shall be in writing and transmitted via hand delivery, overnight courier, or certified mail (return receipt requested), to the Parties at the respective addresses set forth below. Notices may also be sent by email or facsimile transmission provided that the recipient acknowledges receipt of the notice, notification, request, approval, or other communication, as applicable. Invoices shall be sent by U.S. Mail, postage prepaid, to the attention of Accounts Payable at SRTA's address set forth below. Notices shall be deemed received when actually received in the office of the addressee (or by the addressee if personally delivered) or when delivery is refused, as shown on the receipt of the U. S. Postal Service, private carrier or other person making the delivery. Notwithstanding the foregoing, notices sent by facsimile after 4:00 p.m. (local Atlanta

time) and all other notices received after 5:00 p.m. (local Atlanta time) shall be deemed received on the first Business Day following delivery (that is, in order for a fax to be deemed received on the same day, at least the first page of the fax must have been received before 4:00 p.m. (local Atlanta time)). Any technical communications pertaining to the Work shall be conducted between TSI Contractor's Project Manager and SRTA's Project Manager.

For SRTA:	*For the TSI Contractor:*
Att: Executive Director	Att: _____
47 Trinity Avenue, 4th Floor	_____
Atlanta, Georgia 30334	_____
Phone: (404) 893-6111	_____
Fax: (404) 893-6144	_____
Email: ctomlinson@georgiatolls.com	_____
With a copy to:	
General Counsel	_____

44.8 Taxes. The TSI Contractor will pay, prior to delinquency, all taxes lawfully imposed upon it that may arise with respect to this Contract.

44.9 Publicity. TSI Contractor shall not issue a press release or otherwise publicize the Work or this Contract without the prior written permission of SRTA's Director of Marketing and Communications.

44.10 Drug-Free Workplace. TSI Contractor hereby certifies that (a) a drug free workplace will be provided for the TSI Contractor's employees during the performance of this Contract, and (b) it will secure from any subcontractor hired to work in a drug free workplace the following written certification: "As part of the subcontracting agreement with (TSI Contractor's Name), (Subcontractor's Name), certifies to the TSI Contractor that a drug free workplace will be provided for the subcontractor's employees during the performance of this Contract pursuant to paragraph 7 of subsection B of Code Section 50-24-3."

44.10.1 TSI Contractor may be suspended, terminated, or debarred if it is determined that (a) the TSI Contractor has made false certification hereinabove, or (b) the TSI Contractor has violated such certification by failure to carry out the requirements of O.C.G.A. § 50-24-3.

44.11 Remedies Cumulative. With the exception of liquidated damages, the rights and remedies of SRTA under this Contract are cumulative of one another and with those otherwise provided by Law or in equity.

44.12 Integration of the Contract Documents. SRTA and TSI Contractor agree and expressly intend that, subject to **Section 44.14 (Severability) of this Contract**, this Contract, and

the other Contract Documents constitute a single, non-severable, integrated agreement whose terms are interdependent and non-divisible.

44.13 Waiver. No waiver of any term, covenant or condition of the Contract Documents shall be valid unless in writing and signed by the obligee Party. The exercise by a Party of any right or remedy provided under the Contract Documents shall not waive or preclude any other or further exercise thereof or the exercise of any other right or remedy as such right or remedy is specifically allowed under this Contract. No waiver by any Party of any right or remedy under the Contract Documents shall be deemed to be a waiver of any other or subsequent right or remedy under the Contract Documents. The consent by one Party to any act by the other Party requiring such consent shall not be deemed to render unnecessary the obtaining of consent to any subsequent act for which consent is required, regardless of whether similar to the act for which consent is given. Except as provided otherwise in the Contract Documents, no act, delay or omission done or permitted by one Party or its agents shall be deemed to waive, exhaust or impair any right, remedy or power of such Party hereunder, or to relieve the other Party from the full performance of its obligations under the Contract Documents. Either Party's waiver of any breach or failure to enforce any of the terms, covenants, conditions or other provisions of the Contract Documents at any time shall not in any way limit or waive that Party's right thereafter to enforce or compel strict compliance with every term, covenant, condition or other provision, any course of dealing or custom of the trade notwithstanding.

44.14 Severability. The invalidity or unenforceability of any clause, provision, section or part of the Contract Documents shall not affect the validity or enforceability of the balance of the Contract Documents, which shall be construed and enforced as if the Contract Documents did not contain such invalid or unenforceable clause, provision, section or part.

44.15 No Third Party Beneficiaries. Nothing contained in the Contract Documents shall be construed as conferring upon or giving to any person, other than the Parties hereto, any rights or benefits under or by reason of the Contract Documents.

44.16 Headings. The captions in this Contract are solely for convenience, and will not affect the interpretation of any terms of this Contract.

44.17 Counterparts. The Parties may execute this Contract in counterparts.

44.18 Construction of Contract. In the event this Contract must be interpreted by a court of competent jurisdiction as set forth in **Section 44.6 (Governing Law and Venue)**, the Parties expressly agree that this is a negotiated Contract that will not be construed against one Party over the other because such Party drafted the Contract.

44.19 Survival. In addition to those provisions, which by their terms would naturally survive termination of the Contract, **Sections 6 (Documentation), 9 (Site Conditions), 13 (Subcontracting and Assignment), 16 (Payment Terms), 18 (Hardware/Equipment/ Materials/Supplies), 19 (Warranties), 22 (Risk of Loss), 24 (Intellectual Property), 25**

(Intellectual Property Escrow), 26 (Confidentiality), 27 (Defective Work), 28 (Liquidated Damages), 29 (Indemnification), 30 (Limitation of Liability), 31 (Dispute Resolution), 32 (Default; Damages/Remedies), 33 (Termination), 34 (Insurance), 35 (Bonds), 36 (Records Retention and Audit Rights, 37 (Cooperation, Transition, End of Contract Responsibilities), **39 (Data Ownership/Access/Security), 43 (Loss of Revenue)** and **44 (Miscellaneous Provisions) of this Contract** shall survive the termination for whatever reason of this Contract.

44.20 No Exclusivity. This is a non-exclusive Contract. This Contract in no way precludes SRTA from obtaining like goods or services from other suppliers at any time. Such determination by SRTA shall be made at the sole discretion of SRTA, and shall be conclusive. Such determination shall only be made when it is deemed to be in the best interest of SRTA or the State to do so.

44.21 Entire Contract; Amendment. This Contract contains the entire agreement between the Parties with respect to its subject matter and supersedes all other prior and contemporaneous contracts and understandings between the Parties, whether oral or written. SRTA shall not be bound by any terms and conditions included in any packaging, invoice, catalog, brochure, technical data sheet, or other document prepared by the TSI Contractor which attempts to impose any condition in variance with or in addition to the terms and conditions contained herein. No amendment to this Contract shall be valid unless made in writing and signed by both Parties.

44.22 Registered Lobbyists. TSI Contractor represents and warrants that the TSI Contractor and its lobbyists, if any, are in compliance with the Lobbyist Registration Requirements in accordance with the Georgia Vendor Manual, which is incorporated herein by reference.

IN WITNESS WHEREOF, the Parties have caused this Contract to be signed, sealed and delivered as of the Effective Date.

State Road and Tollway Authority

By: _____
Christopher S. Tomlinson
Executive Director

Attest: _____
Bert Brantley
Deputy Executive Director

_____ (SEAL)

By:_____
Name
Title

By:_____
Name
Title

EXHIBIT A

Definitions

Abandonment means that TSI Contractor abandons all or a material part of the Project, which abandonment shall have occurred if (a) TSI Contractor demonstrates through acts or omissions an intent not to continue, for any reason other than a time extension event that materially interferes with ability to continue, to construct or operate all or a material part of the Project and (b) no significant Work (taking into account the Master Project Schedule, if applicable, and any time extension) on the Project or a material part thereof is performed for a continuous period of more than ten (10) Business Days.

Acceptance shall have the meaning assigned to it in the RFP.

Amendment shall mean a document that is properly signed by both Parties that changes the terms and conditions of this Contract.

Back Office shall have the meaning assigned to it in the RFP.

Business Day means Monday through Friday excluding State-recognized holidays.

Change Order means a written approval by SRTA, counter-signed by TSI Contractor, which shall set forth any adjustments to the Contract Sum and/or the Contract time as more further described in **Section 17.2 (Change Order) of the Contract**.

Civil Contractor means each contractor to GDOT that will be responsible for the civil work on a particular Project.

Construction Documents mean all shop drawings, working drawings, fabrication plans, material and hardware descriptions, specifications, construction quality control reports, construction quality assurance reports and samples necessary or desirable for construction of the Project and/or the utility adjustments included in the Work, in accordance with the RFP.

Construction Maintenance Limits means the physical boundaries of TSI Contractor's maintenance responsibilities for the Construction Work.

Contract means this binding Toll Systems Integration Procurement Contract between SRTA and TSI Contractor.

Contract Documents shall have the meaning assigned to it in **Section 3 (Inclusion and Priority of Documents) of the Contract**.

Contract Sum shall have the meaning assigned to it in **Section 17.2 (Change Order) of the Contract**.

Critical Path means the sequence of activities that must be completed on schedule for the entire Project to be completed on in accordance with the Milestone Schedule Deadlines. This is the longest

duration path through the Work plan, in terms of time, of logically connected activities on the Master Project Schedule ending with the relative Milestone Schedule Deadlines in respect thereof.

CSC Host means the central computer system of SRTA or its contractor that supports Customer Service Center account management functions for the Project.

Customer Service Center (CSC) means the facility used to service users of the State's Toll Facilities, including a database system that enables registration and maintenance of customer accounts.

Day(s) shall mean calendar days unless otherwise specified in the Contract as a Business Day.

Deliverables means all Work and each deliverable set forth in **Appendix C (Deliverable Schedule) of the RFP**.

Disputed Work shall have the meaning assigned to it in **Section 17.2.2 (Disputed Work) of the Contract**.

End-to-End Test shall have the meaning assigned to it in the RFP.

Enhancements shall have the meaning assigned to it in **Section 24.3 (License) of the Contract**.

Equipment means any hardware, equipment, supplies, item listed on **Exhibit E (Pricing Schedules)** or other item that is needed for the TSI Contractor to perform all or part of the Work.

Event of Default shall have the meaning assigned to it in **Section 32 (Default;Damages/Remedies) of the Contract**.

Excessive Failure shall have the meaning assigned to it in **Section 19.10 (Excessive Failure) of the Contract**.

Express Lanes Toll Collection System. The complete system provided by the TSI Contractor to meet the requirements of the Contract Documents.

Facility Host means a Toll Facility system that contains software required to accept tolling transactions (TSI Contractor, ALPR and video) from the tolling zone controllers; builds trips from combination of transaction inputs; determines toll for a trip; interfaces with SRTA BOS to provide the completed Trip Transaction.

Force Majeure Event means the occurrence of any of the following events that materially and adversely affects performance of TSI Contractor's obligations, provided that such events (or the effects of such events) could not have been avoided by the exercise of caution, due diligence, or reasonable efforts by TSI Contractor (a) war (including civil war and revolution), invasion, armed conflict, violent act of foreign enemy, military or armed blockade, or military or armed takeover of the Project, in each case occurring within the State; (b) any act of terrorism or sabotage that causes direct physical damage to the Project; (c) nuclear explosion or contamination, in each case occurring within the State; (d) riot and civil commotion on or in the immediate vicinity of the Project; (e) fire, explosion, flood, earthquake, hurricane, or tornado, in each case that causes direct

physical damage to the Project; or (f) national or statewide (i.e. State of Georgia) strike that has a direct adverse impact on the TSI Contractor's ability to obtain materials, Equipment or labor for the Project.

Good Industry Practice means the exercise of the degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from time to time from a skilled and experienced designer, engineer, or constructor, seeking in good faith to comply with its contractual obligations, complying with the RFP, all applicable Laws and Governmental Approvals, and engaged in the same type of undertaking in the United States under similar circumstances and conditions.

Governmental Approval means any permit, license, consent, concession, grant, franchise, authorization, waiver, variance or other approval, guidance, protocol, mitigation agreement, special provision, or memoranda of agreement/understanding, and any amendment or modification of any of them provided by Governmental Entities including State, local, or federal regulatory agencies, agents, or employees, which authorize or pertain to the Project or the Work.

Governmental Entity(ies) means any federal, State or local government and any political subdivision or any governmental, quasi-governmental, judicial, public or statutory instrumentality, administrative agency, authority, body or entity other than SRTA and GDOT.

GDOT means the Georgia Department of Transportation.

GDOT Specifications, Special Provisions, and Standards shall mean a collection of construction-related information that outlines any GDOT-specific construction methods, manuals, references, materials sampling & testing, and other procedures and requirements that contractors doing business in the State of Georgia must adhere to.

Gross Revenue

Immigration Act means the Georgia Immigration & Compliance Act, O.C.G.A. § 13-10-90, *et seq*. as set forth in **Section 8.6 (Immigration Act) of the Contract**.

Incident means any unplanned event during the course of construction.

Incident Management Plan means TSI Contractor's plan for detection and response to Incidents or Emergencies, as part of the PMP.

Wherever the word **"including" "includes"** or **"include"** is used in this Contract, it shall be deemed to be followed by the words "without limitation."

Indemnified Parties means SRTA, GDOT, the State, the State Transportation Board, and their respective successors, assigns, officeholders, officers, directors, commissioners, agents, representatives, consultants and employees. Indemnified Party shall mean any of the aforementioned.

Integration Test means that testing as described in Section 4.6.9 (Integration Test) of the RFP.

Intellectual Property means all current and future legal and/or equitable rights and interests throughout the world in know-how, patents (including applications), copyrights (including moral rights), copyright registrations and applications, trademarks (registered and unregistered), service marks, trade secrets, designs (registered and unregistered), utility models, circuit layouts, author's rights, algorithms, plant varieties, business and domain names, inventions, solutions embodied in technology, and other intellectual activity, and applications of or for any of the foregoing, subsisting in or relating to the Project, Project design data or Project traffic data as may exist now or hereafter come into existence, and all renewals and extensions thereof, including but not limited to toll-setting and traffic management algorithms, software used in connection with the Project (including but not limited to software used for management of traffic on the Project), firmware and Source Code. Intellectual Property is distinguished from physical construction and Equipment itself and from drawings, plans, specifications, layouts, depictions, manuals and other documentation that disclose Intellectual Property.

Intellectual Property Escrow means the arrangement set forth in **Section 25 (Intellectual Property Escrow) of the Contract**.

Law or **Laws** means (a) any statute, law, code, regulation, ordinance, rule or common law, (b) any binding judgment (other than regarding a Claim or Dispute), (c) any binding judicial or administrative order or decree (other than regarding a Claim or Dispute), (d) any written directive, guideline, policy requirement or other governmental restriction or (e) any similar form of decision of or determination by, or any written interpretation or administration of any of the foregoing by, any Governmental Entity, in each case which is applicable to or has an impact on the Project or the Work, whether taking effect before or after the Effective Date, including Environmental laws but excluding Governmental Approvals.

Liquidated Damages means such liquidated damages as may accrue and be due and payable by TSI Contractor to SRTA as set forth under **Section 28 (Liquidated Damages) of the Contract** and as set forth in **Appendix D of the RFP**.

Master Project Schedule shall mean the TSI's Project schedule, as more fully described in **Section 4 of the RFP**, as may be further adjusted pursuant to any Change Order, including on account of any permissible extensions of time pursuant to **Section 17.3 (Delay and Extensions of Time) of this Contract**.

Milestone Schedule means the schedule of deadlines set forth in **Appendix _ of the RFP**, as further adjusted pursuant to any Change Order or permitted extension of time pursuant to **Section 17.3 (Delay and Extensions of Time) of the Contract**.

Milestone Schedule Deadline means the critical milestones for commencement and/or completion of the Work as set forth in **Appendix _ of the RFP**, including without limitation the, all as may be adjusted upon approval of the Master Project Schedule.

Notice to Proceed shall have the meaning assigned to it in the RFP.

O.C.G.A. means the Official Code of Georgia Annotated.

Open to Tolling means the first day of operation and toll revenue is collected.

Person means any individual, corporation, joint venture, limited liability company, company, voluntary association, partnership, trust, unincorporated organization, Governmental Entity, or SRTA.

Project shall have the meaning assigned to it in the RFP.

Project Acceptance means successful completion of all tests described in **Section 4 of the RFP**, closure of all punch-list items, completion and submission of all required documents and meeting of other conditions as specified in the Contract Documents as acknowledged by SRTA.

Project Management Plan means the document that describes the system of management, staff, and measurable controls that will be utilized to meet the specifications of this RFP and will enable SRTA to monitor the progress and quality of the work performed on the Project(s). The PMP will include all aspects of change management, communications management, configuration management, human resources management, requirements management and will incorporate the quality management plan, risk management plan, and cost, Master Project Schedule and scope baselines.

Punch List means an itemized list of Construction Work that remains to be completed following Open To Tolling but as a condition to Project Acceptance, provided that the nature of any such incomplete Work, and the correction and completion of same, will have no material or adverse effect on the normal and safe use and operation of the Project.

Related Transportation Facility(ies) means all existing and future highways, streets and roads, including upgrades and expansions thereof, that is/are or will be adjacent to, connecting with or crossing under or over the Project, as specifically identified in the RFP.

RFP means the Tolling Systems Integrator/ I-75 South Express Lanes Project and I-75 Northwest Corridor Express Lanes Project RFP No. 92700-13-100214 and any addenda thereto and any documents referenced therein.

Right of Way or **ROW** means any real property (which term is inclusive of all estates and interests in real property), improvements and fixtures of the Project, in which SRTA has a leasehold estate and interest pursuant to the Estate for Years or other property right or interest, and any proposed Right of Way, which SRTA at any time after the Effective Date, shall acquire a leasehold estate or other property interest. The term specifically includes all air space, surface rights and subsurface rights within the limits of the Existing Right of Way.

SLA means Service Level Agreement as more specifically set forth in **Appendix D (Performance Requirements and SLAs) of the RFP**.

Source Code and **Source Code Documentation** means, with respect to any software, the full source language, human readable statement of such Software and complete source materials, user documentation and program maintenance documentation for such Software, including all available

flow charts, schematics and annotations which comprise the precoding detailed design specifications for such Software, together with all configurations, settings, compiler switches, library routines and files, data files, templates and the like necessary or desirable for creating the executable code form of such Software, all in a form suitable for reproduction by computer and photocopy Equipment, and all Software necessary to convert such source code into the executable code form of such Software. For purposes of this Contract, "open source software" shall also be considered Source Code. Source Code and Source Code Documentation also shall include all modifications, additions, substitutions, updates, updates and corrections made to the foregoing items.

SRTA-designated Representatives shall have the meaning assigned to it in the RFP**.**

SRTA's CSC means the central computer system of SRTA that supports customer service center account management functions for toll road facilities owned by SRTA.

State means the State of Georgia.

Submittal means any document, work product or other written or electronic end product or item required by the Contract Documents to be delivered or submitted to SRTA.

Substantial Completion Date means:

- ~~shall~~ as to the Northwest Corridor Project: the meaning assigned to that same term ~~have the meaning assigned to it~~ in the GDOT NWC RFP
- as to the 75 South Express Lanes Project: the meaning assigned in the **GDOT I-75S RFP** to the milestone date for "All Construction Work Completed" on the Schedule of Record for 75 South**.**

System Acceptance Testing shall have the meaning assigned to it in the RFP.

System Acceptance Testing Date shall have the meaning assigned to it in the RFP.

Term shall have the meaning assigned to it in **Section 4 (Contract Term and Renewal) of the Contract**.

Toll Facility means a roadway or a managed lane(s) within a roadway, for which travelers who are not toll-exempt pay a specified fee for usage.

Transaction Record shall mean the record created in an Express Lane containing the data captured by the Zone Controller for a vehicle passage. These Transaction Records are transmitted to the Facility Host where they are processed to create Actual Transactions that are posted to customer accounts.

Trip shall be used to describe the passage of a vehicle through an Express Lane Corridor from the point where the vehicle enters the Express Lane at an authorized entry location until it exits the Express Lane at an authorized exit location. A Trip may include a single Tolling Segment or multiple Tolling Segments. Vehicles associated with a Toll Account will be charged a toll for each Tolling Segment travelled over the course of the Trip.

Trip Transaction shall be used to designate a transaction ready to be posted to a customer account at SRTA's existing CSC or a violation transaction processed by SRTA's existing VPC. All Transaction Records received from Express Lane Tolling Gantries for a given transponder or license plate number are assembled into a single Trip Transaction for that Tolled Segment by the Facility Host System.

TSI Contractor shall have the meaning assigned to it in the Recitals.

TSI Contractor Parties means the TSI Contractor's agents, employees, independent contractors, assigns, contractors, subcontractors, suppliers, or any other entity or Person with whom TSI Contractor entered into an agreement to perform services or supply materials and/or Equipment or any other item of Work required of TSI Contractor under the Contract Documents.

TSI Contractor's Intellectual Property means Intellectual Property created by or on behalf of TSI Contractor or TSI Contractor Parties and used, applied or reduced to practice in connection with the Project or other Work that derives commercial value from its protection as a trade secret under State Law or from its protection under U.S. patent Law

TSI Contractor's Project Manager means the individual designated by TSI Contractor and approved in writing by SRTA in the position to take full responsibility for the prosecution of the Work and will act as a single point of contact on all matters on behalf of TSI Contractor as described in the approved Project Management Plan.

Work shall mean without limitation all plant, labor, materials, Equipment, systems, services, including administrative, software, firmware and other facilities, design, installation, construction, testing, operational and maintenance and other things necessary and proper for or incidental to the carrying out and completion of the terms of the Contract Documents.

EXHIBIT B

RFP

(Incorporated herein by reference)

EXHIBIT C

CONTRACTOR'S PROPOSAL
(Incorporated herein by reference)

EXHIBIT D

CONTRACTOR'S QUALIFICATION STATEMENT
(Incorporated Herein by Reference)

EXHIBIT E

PRICING SCHEDULES

METHOD OF COMPENSATION

TSI Contractor shall invoice for lump sum items in the month following the month in which such item was delivered, installed and received Acceptance, as determined by SRTA. Invoicing for Equipment that is priced on a unit price basis, will be made to the TSI Contractor for the units of Work completed, delivered, installed, tested and received Acceptance, as determined by SRTA, multiplied by the Contract unit price for the items. Partial payments may be made at designated points of the Equipment procurement process, but final payment will not be made until the System Acceptance Testing has been successfully completed and Project Acceptance occurred.

CONTRACTOR'S PRICING PROPOSAL BEGINS ON NEXT PAGE.

EXHIBIT F

BOND FORMS

PERFORMANCE BOND

Project No. and Name:

TSI Contractor:

Surety:

Name of State Entity: State Road and Tollway Authority

Bond Number:

KNOW ALL MEN BY THESE PRESENTS:

That _____ (Legal Name and Address of the TSI Contractor) as principal (hereinafter referred to as ("Principal"), and _____ (Legal Title and Address of Surety) as surety (hereinafter referred to as "Surety"), are held and firmly bound unto the GEORGIA STATE ROAD AND TOLLWAY AUTHORITY as Obligee (hereinafter referred to as "SRTA"), in the amount of _____ DOLLARS ($ _____), to which payment Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above bounden Principal has entered into a contract with SRTA bearing date of _____ for: _____ (Insert Name of Project), which said contract is incorporated herein by reference and made a part hereof, and is hereinafter referred to as the Contract.

NOW THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if the Principal shall promptly and faithfully perform and comply with the terms and conditions of said contract; and shall indemnify and save harmless against and from all cost, expenses, damages, injury or loss to which said SRTA may be subjected by reason of any wrongdoing, including patent infringement, misconduct, want of care or skill, default or failure of performance on the part of said Principal, his agents, subcontractors or employees, in the execution or performance of said contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

1. The said Surety to this bond, for value received, hereby stipulates and agrees that no change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the contract or to the work to be performed thereunder, or the specifications or drawings accompanying same, or the exercise of SRTA's right to perform work with separate contractors or to correct work pursuant to the terms of the Contract, shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the contract or to the Work or to the specifications or drawings. In addition, the Surety to this bond, for value received, hereby agrees to the provisions of Section 6 of the RFP referring to Penal Amounts of

Bonds, State Law for increases in the penal amount of this bond and waives notice from SRTA of any such changes.

2. If pursuant to the Contract Documents the Principal shall be declared in default by SRTA under the aforesaid Contract, the Surety shall promptly perform this bond agreement in accordance with its terms and conditions. It shall be the duty of the Surety to give an unequivocal notice in writing to SRTA, within twenty-five (25) days after receipt of a declaration of default, of the Surety's election to either remedy the default or defaults promptly or to perform the Contract promptly, time being of the essence. In said notice of election, the Surety shall indicate the date on which the remedy or performance will commence, and it shall then be the duty of the Surety to give prompt notice in writing to SRTA immediately upon completion of (a) the remedy and/or correction of each default, (b) the remedy and/or correction or each item of condemned work, (c) the furnishing of each omitted item of work, and (d) the performance of the contract. The Surety shall not assert its Principal as justification for its failure to give notice of election or for its failure to promptly remedy the default or defaults or perform the Contract.

3. It is expressly agreed by the Principal and the Surety that SRTA, if it desires to do so, is at liberty to make inquiries at any time of subcontractors, laborers, materialmen, or other parties concerning the status of payments for labor, materials, or services furnished in the prosecution of the work.

4. No right of action shall accrue on this bond to or for the use of any person or corporation other than SRTA named herein or the legal successors of SRTA.

5. For the purposes of this bond, the name and address of the Authorized State of Georgia Licensed Agent to whom correspondence and telecommunications may be addressed and/or with whom business concerning this bond may be conducted will be as follows:

   Name: Telephone:

   Address:

   City: State: Zip Code:

6. Further, this bond shall be the Performance Bond furnished under O.C.G.A. §§ 13-10-2, 13-10-20, 13-10-40 and 13-10-60 and shall be subject to increase in the penal amount of the bond pursuant to such statutes and the provisions of the Contract.

SIGNED AND SEALED THIS _____ DAY OF _____, 2010.

ATTEST (Seal)

_____
(Name of Principal)

_____ By_____
Secretary (Note 1) President

(Seal)

_____
(Name of Surety) (Note 2)

By: _____
_____ (Title)
Resident Georgia Agent *

Note 1. Please apply seal of Corporation over Secretary's Signature.
Note 2. Please apply seal of Surety and arrange for countersignature by a "Resident Georgia Agent" of Surety in order to comply with surety regulations of Georgia.

(*) Attach Power of Attorney

PAYMENT BOND

Project No. and Name:

TSI Contractor:

Surety:

Name of State Entity: State Road and Tollway Authority

Bond Number:

KNOW ALL MEN BY THESE PRESENTS:

That _____ (Legal Title and Address of the Construction Professional) as Principal (hereinafter referred to as the "Principal") and _____ (Legal Name and Address of the Surety) as Surety (hereinafter referred to as "Surety", are held and firmly bound unto the GEORGIA STATE ROAD AND TOLLWAY AUTHORITY. as Obligee (hereinafter referred to as "SRTA") for the use and benefit of claimants defined, hereinafter in the amount of: _____DOLLARS ($_____) to which payment Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns jointly and severally, firmly by these presents.

WHEREAS, the above bounden Principal has entered into a contract with SRTA dated _____ for _____(Insert Name of Project), which contract is incorporated herein by reference and made a part hereof, and is hereinafter referred to as the Contract.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal shall promptly make payment to all claimants as hereinafter defined, for all labor and materials supplied in the prosecution of the work provided for in said Contract, then this obligation shall be void, otherwise it shall remain in full force and effect subject, however, to the following conditions:

(1) The said Surety to this bond, for value received, hereby stipulates and agrees that no change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the contract or to the work to be performed thereunder, or the exercise of SRTA's right to perform work with separate contractors or to correct work pursuant to the terms of the Contract, shall in any wise affect its obligation on this bond, and it does hereby waive notice of any such change or changes, extension of time or extensions of time, alteration or alterations or addition or additions to the terms of the contract or to the Work. In addition, the Surety to this bond, for value received, hereby agrees to the provisions of Section 6 of the RFP referring to Penal Amounts of Bonds, State Law for increases in the penal amount of this bond and waives notice from SRTA of any such changes.

(2) A claimant is defined as any subcontractor and any person supplying labor, materials, machinery, or equipment in the prosecution of the work provided for in said contract.

(3) Every person entitled to the protection hereunder and who has not been paid in full for labor or materials furnished in the prosecution of the work referred to in said bond before the expiration of a period of ninety (90) days after the day on which the last of the labor was done or performed by him, or materials or equipment or machinery was furnished or supplied by him for which claim is made, shall have the right to sue on such payment bond for the amount, or the balance thereof, unpaid at the time of the commencement of such action and to prosecute such action to final execution and judgment for the sum or sums due him, provided, however, that any person having direct contractual relationship with a subcontractor, but no contractual relationship express or implied with the Principal furnishing said payment bond shall have (a) given written notice to said Principal within ninety (90) days from the day on which such person did or performed the last of the labor, or furnished the last of the materials or machinery or equipment for which such claim is made stating with substantial accuracy the amount claimed and the name of the party to whom the materials were furnished or supplied or for whom the labor was performed or done~~,~~ and (b) if the Principal has filed a Notice of Commencement with the Clerk of the Superior Court in the county in which the Project is located pursuant to O.C.G.A. § 13-10-62, given to said contractor a written Notice to TSI Contractor within 30 days from the filing of the Notice of Commencement or 30 days following the first delivery of labor, materials, machinery or equipment, whichever is later, setting forth:

A) The name, address, and telephone number of the person providing labor, material, machinery, or equipment; the name and address of each person at whose instance the labor, material, machinery or equipment is being furnished;

B) The name and the location of the work; and

C) A description of the labor, material, machinery, or equipment being provided and, if known, the contract price or anticipated value of the labor, material, machinery, or equipment to be provided or the amount claimed to be due, if any.

It is provided further that nothing contained herein shall limit the right of action to said 90-day period. Notice may be served by the depositing of a notice, registered mail, postage paid, duly addressed to the Principal at any place it maintains an office or conducts his business, or his residence, in any post office or branch post office or any letter box under the control of the Post Office Department or notice may be served in any manner in which the sheriffs of Georgia are

authorized by law to serve summons or process. Every suit instituted under this section shall be brought in the name of the claimant without SRTA being made a party thereof. The official who has custody of said bond is authorized and directed to furnish, to any person making application thereof who submits an affidavit that it has supplied labor or materials for such work and payment therefore has not been made, or that it is being sued on any such bond, a copy of such bond and the contract for which it was given, certified, by the official who has custody of said bond and contract shall be admitted in evidence without further proof. Applicants shall pay for such certified statements and such fees as the official fixes to cover the cost of preparation thereof, but in no case shall the fixed fee exceed the fees that the clerks of the superior courts are permitted to charge for similar copies.

(4) Further, this bond shall be the Payment Bond furnished in compliance with O.C.G.A. §§ 13-10-2, 13-10-60, 13-10-40 and 13-10-60 and shall be subject to increase in the penal amount of the bond pursuant to such statutes and the applicable provisions of the Contract.

(5) For the purposes of this bond, the name and address of the Authorized State of Georgia Licensed Agent to whom correspondence and telecommunications may be addressed and/or with whom business concerning this bond may be conducted will be as follows:

Name: Telephone:

Address:

City: State: Zip Code:

SIGNED AND SEALED THIS _____ DAY OF _____, 20_____.

ATTEST (Seal) _____
(Name of Principal)

_____ By_____
Secretary (Note 1) President

(Seal) _____
(Name of Surety) (Note 2)

By: _____
_____ (Title)
Resident Georgia Agent *

Note 1. Please apply seal of Corporation over Secretary's Signature.
Note 2. Please apply seal of Surety and arrange for countersignature by a "Resident Georgia Agent" of Surety in order to comply with surety regulations of Georgia.

(*) Attach Power of Attorney

EXHIBIT G

MAINTENANCE TERMS

EXHIBIT H

Bill of Sale

BILL OF SALE

This Bill of Sale is made on this _____ day of 201__ by _____ ("Seller").
Seller, in exchange for consideration of $_____, the receipt of which funds is acknowledged, hereby does grant, sell, transfer and deliver to the State Road and Tollway Authority, a body corporate and politic and an instrumentality and public corporation of the State of Georgia ("SRTA"), the following goods:

_____

_____

SRTA shall have full rights and title to the goods described above.

Seller is the lawful owner of the goods and the goods are free from all encumbrances. Seller has good right to sell the goods and will warrant, indemnify and defend the right against the lawful claims and demands of all persons.

This Bill of Sale is signed, sealed and delivered by Seller.

Name of Seller (SEAL)

By:_____
Its:

EXHIBIT I

TSI CONTRACTOR'S INTELLECTUAL PROPERTY

EXHIBIT J

ESCROW AGREEMENT

This **ESCROW AGREEMENT** (the "***Escrow Agreement***") is made and entered into this ___ day of _____2013 ("Effective Date"), by and among _____, ("***TSI Contractor***"), State Road and Tollway Authority ("***SRTA"***), and _____, ("***Escrow Agent***") (together with SRTA and TSI Contractor, collectively referred to as the "***Parties***," and each individually as a "***Party***") in connection with that certain Toll System Integration Procurement Contract, dated _____, 2013 and all documents incorporated by reference therein (collectively, the "***Contract Documents***").

1. Definitions. All capitalized terms and abbreviations used in this Agreement, but not expressly defined herein, have the respective meanings set forth in the Contract Documents.

2. Appointment of Escrow Agent.

2.1 Designation of Escrow Agent. TSI Contractor hereby nominates and appoints Escrow Agent as escrow agent for the uses and purposes hereinafter described, and Escrow Agent hereby accepts such appointment subject to the conditions and limitations of this Escrow Agreement. Unless a Release (as defined in Section 4 hereof) occurs, Escrow Agent shall continue to hold the Contractor's Intellectual Property and the Back Office Software (collectively and individually referred to throughout this Escrow Agreement as the "Contractor Deposited Software") until the termination or expiration of this Escrow Agreement.

2.2 Fee. Escrow Agent shall receive a fee for its services payable by TSI Contractor annually in accordance with the fee schedule attached hereto as Exhibit A (the "*Service Fees*"), due and payable on execution hereof and on each anniversary of such date so long as this Escrow Agreement is in effect. All Service Fees are due within thirty (30) calendar days from the date of invoice in U.S. currency and are non-refundable. Escrow Agent may update Service Fees with a ninety (90) calendar day written notice to TSI Contractor during the term of this Escrow Agreement; providing, however, in the event any such update results in a material increase in Services Fees, as determined in TSI Contractor's discretion, TSI Contractor and SRTA may upon written agreement replace Escrow Agent with another escrow agent. TSI Contractor is liable for any taxes related specifically to services purchased under this Escrow Agreement or shall present to Escrow Agent an exemption certificate acceptable to the taxing authorities. Applicable taxes shall be billed as a separate item on the invoice. TSI Contractor and SRTA agree that if this Escrow Agreement terminates during the term for any reason, other than for the fault of Escrow Agent, all prepaid fees shall be non-refundable, except to the extent termination results from a material increase in Service Fees as provided herein. Any Service Fees not collected by Escrow Agent when due shall bear interest until paid at a rate of one percent (1%) per month (12% per annum) or the maximum rate permitted by law, whichever is less. Notwithstanding the non-performance of any obligations of TSI Contractor to deliver the Contractor Deposited Software, Escrow Agent shall nevertheless be entitled to be paid all Service Fees that accrue while this Escrow Agreement is in effect.

2.3 Term. The term of this Escrow Agreement shall commence as of the Effective Date, and shall continue in effect until a Release occurs as provided in Section 4 hereof, or until this Escrow Agreement is otherwise terminated as provided herein. If the Effective Date is not specified above, then the last

date noted on the signature blocks of this Escrow Agreement shall be the Effective Date. Unless the Contractor Deposited Software held in escrow has been released to SRTA, upon termination of this Escrow Agreement, Escrow Agent shall return the Contractor Deposited Software to TSI Contractor. If reasonable attempts to return the Contractor Deposited Software to TSI Contractor are unsuccessful, Escrow Agent shall destroy the Contractor Deposited Software.

2.4 Termination for Nonpayment. In the event of the nonpayment of undisputed Service Fees owed to Escrow Agent, Escrow Agent shall provide all Parties written notice of Escrow Agent's intent to terminate this Escrow Agreement. Either SRTA or TSI Contractor shall have the right to pay any unpaid Service Fees to Escrow Agent to cure a payment default hereunder. If the past due payment is not received in full by Escrow Agent within thirty (30) calendar days of the date of such written notice, then Escrow Agent shall have the right to terminate this Escrow Agreement at any time thereafter by sending written notice to all Parties. Termination of this Escrow Agreement shall not relieve any Party of any payment obligation arising hereunder.

3. Conditions. The conditions of this escrow are as follows*:*

3.1 Deposit. TSI Contractor shall deposit the Contractor Deposited Software with an accurate and complete description of all Contractor Deposited Software sent to Escrow Agent for the use and benefit of SRTA. The Contractor Deposited Software delivered to Escrow Agent shall consist of technical data, including Source Code and Software Enhancements sufficient to allow SRTA to run and maintain Contractor Deposited Software Contractor Deposited Software and the Back Office Software itself or to retain a third party to do so on SRTA's behalf. Escrow Agent shall have the obligation to implement and maintain safeguards designed to protect the confidentiality of the Contractor Deposited Software. Escrow Agent shall treat the Contractor Deposited Software as confidential and proprietary information, and shall not, except as expressly permitted in this Escrow Agreement or with written consent of the Parties hereto, at any time use or disclose the Contractor Deposited Software except to the extent necessary to carry out the intent of this Escrow Agreement. To the extent Escrow Agent is required by a court or other governmental body to disclose or provide the Contractor Deposited Software or any information relating thereto to any such third party, Escrow Agent will immediately notify TSI Contractor and SRTA of the same, unless prohibited by law. After notifying the Parties, Escrow Agent may comply in good faith with any such order. Escrow Agent shall be under no obligation to challenge any such order; provided, however, Escrow Agent does not waive its rights to challenge any such order. Escrow Agent will cooperate with TSI Contractor or SRTA, as applicable, to support efforts to quash or limit any subpoena, at such Party's expense. Any Party requesting additional assistance shall pay Escrow Agent's standard charges or as quoted upon submission of a detailed request.

3.2 Representations. TSI Contractor represents that the Contractor Deposited Software is and shall at all times contain a duplicate of the Contractor Deposited Software described under the Contract Documents, as such may be updated or modified from time to time. TSI Contractor shall completely and accurately identify each item delivered to Escrow Agent using the form attached hereto as Exhibit B, and certify that the Contractor Deposited Software is the same as what is described under the Contract Documents and that the Contractor Deposited Software is not "copy protected" and can be copied onto magnetic media for use as permitted by this Escrow Agreement and the Contract Documents. TSI Contractor represents that it lawfully possesses all Contractor Deposited Software provided to Escrow Agent under this Escrow Agreement and that any Contractor Deposited Software liens or encumbrances will not prohibit, limit, or alter the rights and obligations of Escrow Agent under this Escrow Agreement.

TSI Contractor warrants that to the best of its knowledge, with respect to the Contractor Deposited Software, Escrow Agent's proper administration of this Escrow Agreement will not violate the rights of any third parties. Escrow Agent will conduct a visual inspection upon receipt of any Contractor Deposited Software and associated Exhibit B. If Escrow Agent determines that the Contractor Deposited Software does not match the description provided by TSI Contractor represented in Exhibit B attached hereto, Escrow Agent will notify TSI Contractor of such discrepancies and notate such discrepancy on the Exhibit B. Within five (5) days after receipt of the Contractor Deposited Software, Escrow Agent shall give SRTA written notice of the acceptance of the Contractor Deposited Software into the account. Escrow Agent shall have no responsibility to test, investigate or authenticate such Contractor Deposited Software, its identity or condition, and is entitled to rely upon the foregoing representation of TSI Contractor;

3.3 Updates. TSI Contractor shall, promptly upon, but no later than one month after, development or the release thereof, deposit into escrow with Escrow Agent any and all updates, modifications, new releases and other changes and corrections to the Contractor Deposited Software, including, but not limited to, the most recent version of the Contractor Deposited Software, and those other materials as herein required.

3.4 Inspection. SRTA shall have the right to inspect the Contractor Deposited Software in escrow upon at least ten (10) Business Days' advance written notice to determine the accuracy, completeness, sufficiency and quality of the Contractor Deposited Software deposited in escrow. The inspection must be conducted during normal business hours with costs and expenses borne by the Party requesting the inspection. The information collected during the audit shall be considered Confidential Information. The scope of any such inspection shall be limited to records pertaining to the services being provided to TSI Contractor or SRTA. Neither TSI Contractor nor SRTA shall be granted access to the vault or other secure areas of the Escrow Agent's facility. If TSI Contractor or SRTA elects to have its authorized representative perform such inspection, the authorized representative, shall be required to enter into a confidentiality agreement in form and substance similar to the terms of Section 26 (Confidentiality) of the Contract Documents. However, Escrow Agent reserves the right to refuse such access to anyone who is a competitor of Escrow Agent. While a Party and/or its authorized representatives are on Escrow Agent's premises, they agree to comply with Escrow Agent's safety and security policies. To the extent the deposit is incomplete or unsatisfactory as determined by SRTA, SRTA shall notify TSI Contractor of such deficiencies or incompleteness, and TSI Contractor shall promptly cure such deficiencies and/or inaccuracies.

4. Release and Delivery.

4.1 Release of the Contractor Deposited Software by Escrow Agent upon Demand. A copy of the Contractor Deposited Software shall be delivered by Escrow Agent to SRTA (the "*Release*") upon the occurrence of the following:

a) TSI Contractor notifies Escrow Agent in writing to effect such Release to SRTA;

b) Escrow Agent receives from SRTA an affidavit from SRTA that one of the following has occurred: (1) the dissolution, liquidation, cessation of business operations or insolvency of TSI Contractor, or the commencement of any action seeking the same, which action is acquiesced in by TSI Contractor or which is not dismissed within 120 days of the date upon which it was instituted; (2) the

appointment of a receiver, trustee, interim trustee or other custodian for TSI Contractor or for all or substantially all of TSI Contractor's assets; (3) the commencement of a case by TSI Contractor under the Federal Bankruptcy Code, or the bringing of an action or petition by TSI Contractor seeking relief under the Federal Bankruptcy Code or seeking similar relief or alleging that TSI Contractor is insolvent or unable to pay its debts as they mature; or (4) the commencement of a case against TSI Contractor under the Federal Bankruptcy Code, or an action or petition against TSI Contractor is brought under the Federal Bankruptcy Code, or any action is brought seeking similar relief or alleging that TSI Contractor is insolvent or unable to pay its debts as they mature, in each case which is consented to or acquiesced in by TSI Contractor or is not dismissed within 120 days of the date upon which it was instituted; or (5) the this Contract is terminated for material breach of Contract by the TSI Contractor.

For the avoidance of doubt, the Parties hereby acknowledge that Escrow Agent shall release Contractor Deposited Software within five (5) Business Days of receipt of SRTA's request for a Release, and in no event be required to evaluate the validity or accuracy of any such affidavit, statement, or notice.

4.2 TSI Contractor's Right to Object.

a) Within four (4) Business Days of receiving notice of any of the events described in Section 4.1 above, Escrow Agent shall send to TSI Contractor by certified mail, return receipt requested, a copy of such notice (to the extent possible). TSI Contractor shall have ten (10) days from the date it receives such notice to notify Escrow Agent and SRTA in writing of its objection, if any, to the Release. Such notice shall be on company letterhead and signed by an authorized TSI Contractor representative, and shall specify in detail TSI Contractor's objections to the Release.

b) If TSI Contractor sends such written notice of objection to Escrow Agent within such ten (10) day period, Escrow Agent shall notify both TSI Contractor's and SRTA's Authorized Person(s) (as set forth on the table attached hereto) that there is a dispute to be resolved pursuant to the Dispute Resolution Section (Section 31) of the Contract Documents

c) Notwithstanding TSI Contractor's objection, Escrow Agent shall deliver the Contractor Deposited Software to SRTA in accordance with SRTA's instructions, and SRTA shall be entitled to use and enjoy the Contractor Deposited Software for the purposes permitted herein and in the License Agreement, subject to the provisions and limitations thereof.

d) This Escrow Agreement shall terminate upon a Release, unless there is an ongoing dispute pursuant to Section 4.2(b). If there is an ongoing dispute after a Release, this Escrow Agreement shall remain active, pending (i) notice to Escrow Agent of agreement by the Parties of formal resolution of the dispute between SRTA and TSI Contractor, or (ii) re-deposit of the Contractor Deposited Software with Escrow Agent, provided all Service Fees continue to be paid to Escrow Agent.

e) If it is agreed or finally determined that SRTA did not have the right to receive the Contractor Deposited Software from Escrow Agent, SRTA shall return the Contractor Deposited Software to Escrow Agent along with a new Exhibit B, provided all Service Fees are paid to Escrow Agent, and SRTA and TSI Contractor shall continue to have any and all rights then available under the License Agreement.

f) In the event of re-deposit of the Contractor Deposited Software by SRTA after Release, SRTA agrees to be subject to the same procedures and representations which apply to TSI Contractor, as set forth in Section 3.1 of this Escrow Agreement.

g) In the event the Contractor Deposited Software is returned to Escrow Agent in accordance with the terms of this Escrow Agreement, then TSI Contractor and SRTA acknowledge and agree that Escrow Agent shall have no liability for any claim in connection with the Contractor Deposited Software arising after release of the Contractor Deposited Software by Escrow Agent to SRTA and prior to return of the Contractor Deposited Software to Escrow Agent to the extent such Release was not a result of a breach of this Escrow Agreement or violation of applicable laws. Escrow Agent shall have no liability in connection with any alteration, modification, loss, damage, destruction or disclosure of the Contractor Deposited Software that occurs after Escrow Agent releases the Contractor Deposited Software to SRTA to the extent such release was not a result of a breach of this Escrow Agreement or violation of applicable laws.

5. Escrow Agent Action. In the event of any dispute between TSI Contractor and SRTA regarding the rights provided hereunder, Escrow Agent shall have no responsibility to become a party to such dispute. In any such instance, Escrow Agent shall not be responsible for any alleged damage suffered or claimed either by TSI Contractor or SRTA as a result of their dispute or as a result of Escrow Agent delivering the Contractor Deposited Software to SRTA.

6. Notices. All notices and requests in connection with this Escrow Agreement shall be provided in accordance with, and upon those terms and conditions as described in, the applicable provisions of the Contract Documents. Notwithstanding the above, TSI Contractor and SRTA acknowledge that Escrow Agent has no knowledge of the terms and conditions contained in the Contract Documents and that Escrow Agent's only obligations shall be as set forth herein or in any other writing signed by Escrow Agent.

7. Limitations and Warranties.

7.1 Liability of Escrow Agent – Consequential Damages Waiver. IN NO EVENT SHALL ESCROW AGENT BE LIABLE TO ANOTHER PARTY FOR ANY INCIDENTAL, SPECIAL, PUNITIVE OR CONSEQUENTIAL DAMAGES, WHETHER ARISING IN CONTRACT, TORT OR OTHERWISE EVEN IF THE POSSIBILITY THEREOF MAY BE KNOWN IN ADVANCE TO ONE OR MORE PARTIES.

7.2 Warranties. ESCROW AGENT WARRANTS ANY AND ALL SERVICES PROVIDED HEREUNDER SHALL BE PERFORMED IN A WORKMANLIKE MANNER. EXCEPT AS SPECIFIED IN THIS SECTION, ALL CONDITIONS, REPRESENTATIONS, AND WARRANTIES INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, SATISFACTORY QUALITY, OR ARISING FROM A COURSE OF DEALING, USAGE, OR TRADE PRACTICE, ARE HEREBY EXCLUDED TO THE EXTENT ALLOWED BY APPLICABLE LAW. AN AGGRIEVED PARTY MUST NOTIFY ESCROW AGENT PROMPTLY UPON LEARNING OF ANY CLAIMED BREACH OF ANY WARRANTY. THIS DISCLAIMER AND EXCLUSION SHALL APPLY EVEN IF THE EXPRESS WARRANTY AND LIMITED REMEDY SET FORTH ABOVE FAILS OF ITS ESSENTIAL PURPOSE.

7.3 Indemnification. With the exception of gross negligence, willful misconduct or intentional misrepresentation on behalf of Escrow Agent, TSI Contractor and SRTA shall, jointly and severally,

indemnify and hold harmless Escrow Agent and each of its directors, officers, agents, employees, members and stockholders ("Escrow Agent Indemnitees") absolutely and forever, from and against any and all claims, actions, damages, suits, liabilities, obligations, costs, fees, charges, and any other expenses whatsoever, including reasonable attorneys' fees and costs, that may be asserted against any Escrow Agent Indemnitee in connection with this Agreement or the performance of Escrow Agent or any Escrow Agent Indemnitee hereunder.

8. Miscellaneous

8.1 The relationship of TSI Contractor and SRTA established by this Escrow Agreement is that of independent contractors. Nothing in this Agreement shall be construed to create any partnership, joint venture, agency or other similar relationship between TSI Contractor and SRTA. Neither party shall have any right, power or authority to assume, create or incur any expense, liability or obligation, express or implied, on behalf of the other.

8.2 No failure or delay of either party to exercise any rights or remedies under this Escrow Agreement shall operate as a waiver thereof, nor shall any single or partial exercise of any rights or remedies preclude any further or other exercise of the same or any other rights or remedies.

8.3 If any provision of this Escrow Agreement is held invalid or unenforceable in any circumstance by a court of competent jurisdiction, the remainder of this Escrow Agreement, and the application of such provision in any other circumstances and in any other jurisdiction shall not be affected thereby.

8.4 This Escrow Agreement will be enforced according to Georgia law without regard to its conflict of laws rules or any other rules directing referral to foreign law or forums. Any action related to this agreement in any way shall be brought exclusively in the Superior Court of Fulton County, Georgia.

8.5 This Escrow Agreement may be executed in one or more counterparts.

8.6 This Agreement is Exhibit J of the Contract Documents and incorporates by reference the terms of the Contract Documents which constitutes the entire agreement of the parties regarding the subject matter herein, superseding any and all previous agreements and understandings whether oral or written. No modification or waiver of the provisions of this Escrow Agreement shall be valid or binding on either party unless in writing and signed by both parties.

Signatures begin on following page.

IN WITNESS WHEREOF, the parties have duly executed this Escrow Agreement as of the day and year first above written.

_____ By_____ Name: Title: Date: Address: Facsimile:	_____ By_____ Name: Title: Date: Address: Facsimile:

	_____ By_____ Name: Title: Date: Address: Facsimile:

APPENDIX O

BID BOND

BID BOND

[Note: Use of Surety's standard Bid Bond form is acceptable as long as it substantially complies with the requirements of this Bid Bond Form]

KNOW ALL BY THESE PRESENTS, That we, _____ _____(*Contractor's Legal Name and Address*) as Bidder, hereinafter called the Principal, and _____ _____ (*Surety's Legal Name and Address*), a corporation duly organized under the laws of the State of _____(*Insert State of Corporate Organization*), as Surety, are held and firmly bound unto:

OWNER: _____

Attention: _____

Phone Number: _____

Facsimile Number: _____

as Obligee, hereinafter called the Obligee in the sum of _____ _____ Dollars ($ _____), for the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a Bid for _____
(*Owner's Project Number and Project Description*)

NOW, THEREFORE, if the Obligee shall accept the Bid of the Principal and (1) the Principal shall enter into a Contract with the Obligee in accordance with the terms of such Bid, and the Principal shall execute the Contract and give such bond or bonds as may be specified in the Bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) in the event of the failure of the Principal to enter such Contract and give such bond or bonds, and the Principal shall pay to the Obligee the difference not to exceed the difference hereof between the amount specified in said Bid and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by said Bid; then this obligation shall be null and void, otherwise to remain in full force and effect.

SIGNED AND SEALED THIS _____ DAY OFf _____, 20___

ATTEST (Seal)

_____
(Name of Principal)

_____
Secretary (Note 1)

By_____
President

(Seal)

_____
(Name of Surety) (Note 2)

By: _____
_____ (*Title*)
Resident Georgia Agent *

Note 1. Please apply seal of Corporation over Secretary's Signature.
Note 2. Please apply seal of Surety and arrange for countersignature by a "Resident Georgia Agent" of Surety in order to comply with surety regulations of Georgia.

(*) Attach Power of Attorney

APPENDIX P

SALES AND USE TAX FORM

Request For Proposals ("RFP")
Tolling Systems Integration and Maintenance

SALES AND USE TAX REGISTRATION

The purpose of this form is to obtain information regarding the vendor to determine whether the vendor may be considered a prohibited source as defined by O.C.G.A. Section 50-5-82. The information provided in this form will be submitted to the Georgia Department of Revenue.

Please complete the following information:

Vendor's Name:

Physical Location Address:

Federal Identification Number (FEI):

Have you ever been registered in the State of Georgia?

If so, please provide the following information, if applicable:

- State Taxpayer Identification Number (STI):
- Sales and Use Tax Number:
- Withholding Tax Number:

What type of service will you perform?

Will you sell any tangible personal property or goods?

Vendor Affiliate's Name:

- FEI:
- STI:
- Sales and Use Tax Number:
- Withholding Tax Number:

If there is more than one affiliate, please attach a separate sheet listing the information above.

Contact Information
Telephone Number:
E-mail Address:

APPENDIX Q

RESPONSIBILITY CERTIFICATION FORM

Appendix Q – Statement of Responsibility Form

INSTRUCTIONS:

THIS FORM MUST BE COMPLETED, SIGNED, NOTARIZED AND SUBMITTED WITH YOUR BID/PROPOSAL.

Please complete this form, answering every question. ***A "Yes" answer to any of the subparts of QUESTION NO. 3 requires a written explanation attached to the completed form, submitted on your company letterhead and signed by an authorized representative of the company. A "Yes" answer to any of the subparts of Question No. 3 will not necessarily result in denial of award, but will be considered in determining Offeror responsibility in the event SRTA undertakes an investigation into Offeror's responsibility status.*** For any explanation, indicate to whom it applies; identify the initiating agency and the dates of action.

Offerors are responsible for updating any information submitted in their Statement of Responsibility Certification Form if a change occurs prior to the award of the contract.

QUESTIONS:

1. Does Offeror certify that it has, or has the ability to obtain, adequate financial resources to perform the Services and Deliverables identified in the Agreement? This includes, but is not limited to, the ability to obtain required bonds and insurance from sureties and insurance companies authorized to do business in Georgia.

   _____YES _____NO

2. Does Offeror certify that it is able to comply with all contractual requirements and fulfill all of its contractual obligations, considering Offeror's other business obligations?

   _____YES _____NO

3. Within the past three (3) years, has Offeror's company, or any principal of Offeror (e.g., any owner, partner, officer, or major stockholder with 10% or more shares) been the subject of any of the following:

   (a) a judgment or conviction for any conduct constituting a felony under local, state or federal law, including, but not limited to, fraud, extortion, bribery, racketeering, labor, anti-trust, price-fixing, or bid collusion?

   _____YES _____NO

   (b) a criminal investigation or indictment for any conduct constituting a felony under local, state or federal law, including, but not limited to, fraud, extortion, bribery, racketeering, price-fixing, or bid collusion (to the best of Offeror's knowledge*)?

   _____YES _____NO

(c) an unsatisfied judgment, injunction or lien obtained by a Georgia state government agency including, but not limited to, judgments based on taxes owed and fines and penalties assessed by any Georgia state government agency?

_____YES _____NO

(d) an investigation for a civil violation by any local, state or federal agency (to the best of Offeror's knowledge*)?

_____YES _____NO

(e) a suspension, debarment or termination for cause from any local, state or federal government procurement process?

_____YES _____NO

(f) a suspension or termination for cause prior to the completion of the term of any local, state or federal government contract?

_____YES _____NO

(g) a denial of award for non-responsibility determination made by any local, state or federal government?

_____YES _____NO

(h) an agreement to a voluntary exclusion from contracting on any local, state or federal procurement?

_____YES _____NO

(i) an administrative proceeding or civil action seeking specific performance or restitution in connection with any local, state or federal procurement (to the best of Offeror's knowledge*)?

_____YES _____NO

(j) any bankruptcy proceeding?

_____YES _____NO

CERTIFICATION:

The undersigned: (i) recognizes that this questionnaire is submitted for the express purpose of assisting the State Road and Tollway Authority (SRTA) to make a determination regarding the eligibility for award of a contract, or to approve a subcontract; (ii) acknowledges that the SRTA, the State of Georgia, its agencies and political subdivisions may, in their sole discretion, by means which they may choose, verify the truth and accuracy of all statements made herein; (iii) acknowledges that submissions of false or misleading information may constitute fraud, may result in ineligibility for contract award, may be used as grounds for termination for default of any contract awarded in relation to this certification, may be considered by the SRTA, the State of Georgia, its agencies and political subdivisions in making responsibility determinations in other procurements, and may subject the Offeror or its representatives

to criminal liability; (iv) as the authorized representative of the Offeror, states that the information submitted on this certification form and any attached pages is true, accurate and complete.

The undersigned hereby attests that he/she is duly authorized by the Offeror to make the statements and representations contained herein and/or attached hereto, on behalf of such Offeror.

_____	_____
Legal Name of Offeror Company	Signature of Offeror's Authorized Representative
_____	_____
Address	Printed Name of Offeror's Authorized Representative
_____	_____
City, State, Zip	Title

State of _____ County of _____

Sworn to and subscribed before me on this _____day of _____200___.

_____
Notary Public

My Commission Expires: _____

Note: *As used herein, the term "to the best of Offeror's knowledge" shall refer to the current actual knowledge of Offeror and shall be construed, by imputation or otherwise, to refer to the knowledge of any agent, manager, representative or employee of Offeror but does not impose upon Offeror any duty of inquiry or investigation of the matter to which such actual knowledge, or the absence thereof, pertains. The fact that Offerors (or their principals) are under investigation will not necessarily result in a determination of non-responsibility; rather, SRTA will determine if the information and circumstances regarding such investigation are of such a nature or magnitude as to cause the SRTA to deem the bidder non-responsible in order to protect the interests of the SRTA and/or the State.

APPENDIX R

CONTRACTOR AND SUB-CONTRACTOR AFFIDAVITS

IMMIGRATION AND SECURITY FORM
(GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT AFFIDAVIT)

Contractor's Name:	
State Entity's Name:	
State Solicitation/ Contract No.:	

CONTRACTOR AFFIDAVIT

By executing this affidavit, the undersigned Contractor verifies its compliance with O.C.G.A. §13-10-91, stating affirmatively that the Contractor identified above has registered with and is participating in a federal work authorization program*, in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91.

The undersigned further agrees that, should it employ or contract with any subcontractor(s) in connection with the physical performance of services pursuant to this contract with the State Entity, Contractor will secure from such subcontractor(s) similar verification of compliance with O.C.G.A. § 13-10-91 on the attached Subcontractor Affidavit. Contractor further agrees to maintain records of such compliance and provide a copy of each such verification to the State Entity at the time the subcontractor(s) is retained to perform such service.

_____
EEV / E-Verify™ Company Identification Number

_____ _____
BY: Authorized Officer or Agent Date
(Contractor Name)

_____
Title of Authorized Officer or Agent of Contractor

_____
Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN
BEFORE ME ON THIS THE

_____ DAY OF _____, 20__

_____ [NOTARY SEAL]
Notary Public

My Commission Expires:

*any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603

IMMIGRATION AND SECURITY FORM
(GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT AFFIDAVIT)

Contractor's Name:	
State Entity's Name:	
State Solicitation/ Contract No.:	

ADDITIONAL INSTRUCTIONS TO CONTRACTOR: Identify all subcontractors used to perform under the state contract. In addition, you must attach a signed and notarized affidavit (third page of this form) from each of the subcontractors listed below. The contractor is responsible for providing a signed and notarized affidavit to the State Entity within five (5) days of the addition of any new subcontractor used to perform under the identified state contract.

Contractor's Name:	
Subcontractors:	

IMMIGRATION AND SECURITY FORM
(GEORGIA SECURITY AND IMMIGRATION COMPLIANCE ACT AFFIDAVIT)

Contractor's Name:	
Subcontractor's (Your) Name:	
State Entity's Name:	
State Solicitation/ Contract No.:	

SUBCONTRACTOR AFFIDAVIT

By executing this affidavit, the undersigned Subcontractor verifies its compliance with O.C.G.A. §13-10-91, stating affirmatively that the Subcontractor which is engaged in the physical performance of services under a contract with the Contractor identified above on behalf of the State Entity identified above has registered with and is participating in a federal work authorization program*, in accordance with the applicability provisions and deadlines established in O.C.G.A. 13-10-91.

_____
EEV / E-Verify™ Company Identification Number

_____ _____
BY: Authorized Officer or Agent Date
(Subcontractor Name)

_____
Title of Authorized Officer or Agent of Contractor

_____
Printed Name of Authorized Officer or Agent

SUBSCRIBED AND SWORN
BEFORE ME ON THIS THE

_____ DAY OF _____, 20__

_____ [NOTARY SEAL]
Notary Public

My Commission Expires:

*any of the electronic verification of work authorization programs operated by the United States Department of Homeland Security or any equivalent federal work authorization program operated by the United States Department of Homeland Security to verify information of newly hired employees, pursuant to the Immigration Reform and Control Act of 1986 (IRCA), P.L. 99-603