NORTH CAROLINA Turnpike Authority

DIGITAL TRANSFORMATION & MODERNIZATION

REQUEST FOR PROPOSALS

Mandatory Pre-Proposal Scope of Services Meeting
October 16, 2024
11:00 a.m. to 12:00 p.m. EDT
Online via Web Conference

Technical Proposal Due Date
December 4, 2024 (4:00 p.m. EDT)

Physical Delivery Address:
NC Quick Pass
200 Sorrell Grove Church Rd, Suite A
Morrisville, NC 27560
Attn: Eliza Davis

Issue Date: October 1, 2024

Updated through Addendum 2 (December 16, 2024)

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1. Notice of Request for Proposals

TITLE: Digital Transformation & Modernization Request for Proposals

ISSUING DATE: October 1, 2024

ISSUING AGENCY: North Carolina Turnpike Authority

CONTACT PERSON: Eliza Davis

1.1 Background and Purpose

The North Carolina Turnpike Authority (NCTA) is requesting written Technical and Price Proposals from qualified proposing Contractors ("Proposers") interested in providing an event-driven microservices-based "integration layer", referred to as the Tolling Integration Service and Data System of Record (TISDSR), to manage data exchange between NCTA's back-office applications, channels, Business-to-Business partners, and a new data system of record, all deployed in a cloud environment. This solution will establish the Services that will be integrated with NCTA's channels, Business-to-Business partners, and business applications in a future phase of this Digital Transformation & Modernization program. This solution will also include a new system of record for NCTA's data. The focus for the new integration layer is to maximize interoperability through loose coupling, hosting portability, reuse and to follow modern API development principles. It is also our intent to maximize resiliency by ensuring that services are atomic, and that the solution is fault tolerant by following event-driven, microservices architecture and design patterns. NCTA is also concerned with cost and ease of maintenance of the overall solution. This is a major driver for targeting cloud hosting, favoring cloud native solutions where possible, using COTS solutions when applicable, and minimizing the number of separate platforms, vendors and tools in the hope to streamline upgrade activities. Automation, via CI/CD pipelines and testing automation will support these concerns as well.

The North Carolina Turnpike Authority (NCTA), a business unit of the North Carolina Department of Transportation (NCDOT), was formed in 2002 by the North Carolina General Assembly. The mission of NCTA is to supplement the traditional non-toll transportation system by accelerating the delivery of roadway projects using alternative financing options and facilitating the development, delivery, and operation of toll roads.

NCTA operates approximately 54 miles of tolled expressway facilities on the North Carolina state highway network, including the Triangle Expressway near Raleigh and the Monroe Expressway near Charlotte. In addition, NCTA's toll collection program also provides back-office toll transaction processing and customer service for the I-77 Express Lanes in Charlotte, an NCDOT public-private partnership project. In addition, there are several toll projects under construction or development in North Carolina, including I-485 Express Lanes, Complete 540 Phase II (an extension of the Triangle Expressway), the Mid-Currituck Bridge, US-74 Express Lanes, and I-77 Express Lanes South.

NCTA's administrative and project development work is performed by professional teams comprised of NCTA staff, NCDOT staff, and consultants. This arrangement provides management oversight while assuring that necessary expertise is available when needed to advance projects in an efficient and timely

manner. NCTA has primary responsibility for this Request for Proposals (RFP) process including defining the requirements addressed in this RFP, the evaluation of the Proposals submitted by Proposers, and execution and oversight of the Contract.

Digital Transformation & Modernization Project Description

NCTA's goals for this Project and Requirements are outlined below.

1.1.1 NCTA Project Goals

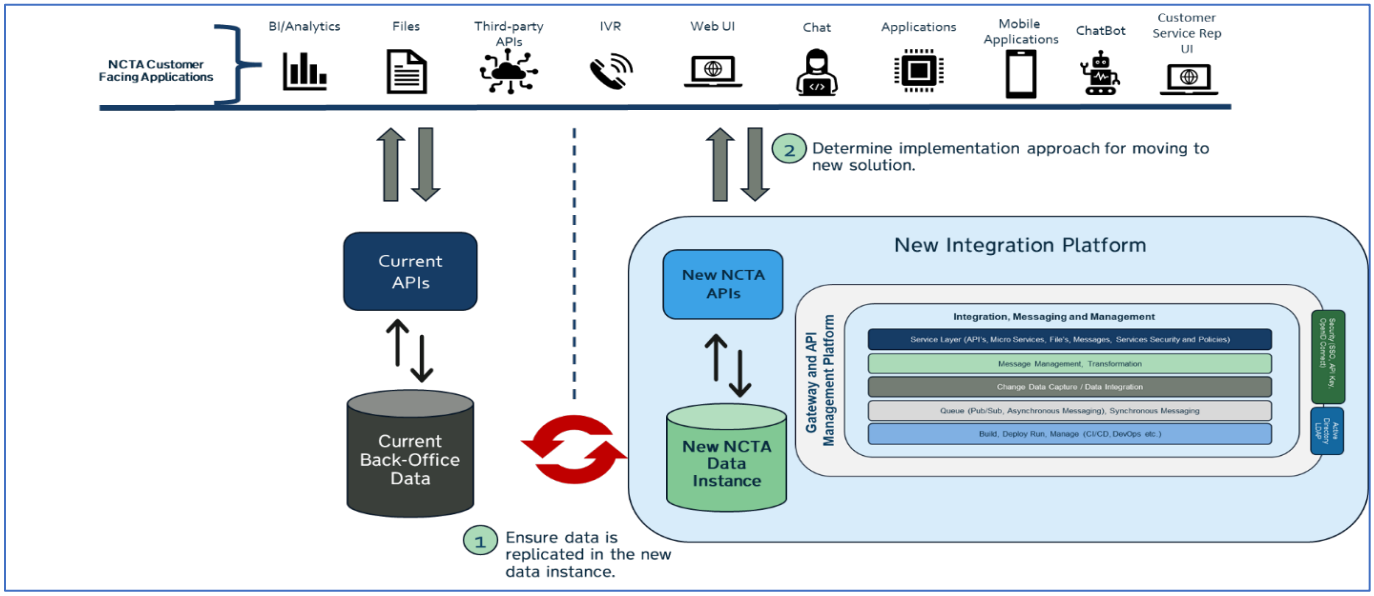
NCTA's Project goals are as follows:

- NCTA ownership of data, and access to that data, using methods agreed-to by both parties, including extraction of all data in a manner to be determined by NCTA.
- Maintain reasonable currency (N-1/N-2) for both hardware and software.
- Produce an end-state solution that satisfies the following conditions:
    - Easy to scale both horizontally and vertically.
    - Has real-time, transaction and full stack monitoring and alerting.
    - Guarantees delivery of all transactions, messages, files and data processed through, or retained in, the solution.
    - Minimizes Total Cost of Ownership (TCO), integration effort, maintenance frequency, the number of different technical products and/or technical products from different vendors, and the effort required to migrate to other hosting options.
    - Maximizes interoperability, reusability across channels, and solution availability.
    - Is fault tolerant.
    - Includes established CI/CD pipelines, with automated testing including regression testing and vulnerability testing.
    - Supports the integration of Business Intelligence/Analytical platforms and reporting software without negatively impacting production performance.
    - Has minimal down-time during cutover and application deployment.

1.1.2 Project High-Level Approach

The Contractor will have access to an NCTA database that will include all relevant data for this initiative to support development of the Tolling Integration Service and Data System of Record (TISDSR). (See *Diagram 1: High-Level Approach - NCTA Digital Transformation* below). The effort defined herein does not include production integration of any services with any of NCTA's channels, Business-to-Business partners or business applications. NCTA does request that the Contractor present an approach for the effort to integrate with NCTA's channels, Business-to-Business partners and business applications.

Diagram 1: High-Level Approach - NCTA Digital Transformation



1.2 NCTA Facilities

NCTA staff, NCDOT staff, and consultants provide management oversight for all NCTA projects from the following facilities: The NCDOT/NCTA Transportation Building (also known as the "Highway Building"), four NC Quick Pass® customer service centers, the NC Quick Pass Operations Center, the Metrolina Regional Transportation Management Center, and the Statewide Traffic Operations Center.

NCDOT/NCTA Transportation Building

The headquarters for the NCTA/NCDOT staff is at the State Transportation Building ("Highway Building") located at 1 South Wilmington Street in downtown Raleigh, NC.

NC Quick Pass Storefronts

NCTA operates three storefronts in North Carolina, which are located in Morrisville, Monroe, and Charlotte. The Morrisville Storefront, which serves the Raleigh/Durham region, is located just south of the Raleigh/Durham International Airport and near the northern terminus of the Triangle Expressway. The Monroe Storefront is located approximately two (2) miles from the Monroe Expressway, midway between the project termini. The Charlotte Storefront is located just inside the I-485 loop around Charlotte, near the midpoint of the I-77 Express Lanes. These storefronts are in the vicinity of NCTA toll facilities for customers to perform NC Quick Pass business activities in person. These storefronts are responsible for housing the following services:

- Customer account creation and closure, management, and maintenance.
- NC Quick Pass Transponder inventory distribution and maintenance.
- Account Conversion management; and
- Walk-in customer service (e.g., dispute resolution, account payments, and replenishments).

NC Quick Pass Operations Center

NCTA currently operates three (3) NC Quick Pass Operations Centers in North Carolina. One in Morrisville, which is co-located with the Morrisville Storefront. The second one is in Rocky Mount, which is co-located with other NC state buildings. The third one is in Winston-Salem. The NC Quick Pass Operations Centers house the call center, account management activities, and back-office operations activities, including Transponder programming and limited fulfillment. The NC Quick Pass Operations Centers also provide office space for the CSC management team, NCTA agency and consultant staff.

Metrolina Regional Transportation Management Center (MRTMC)

Highly trained NCTA operators monitor and manage traffic operations and coordinate incident response and maintenance/construction work for the Monroe Expressway from the Metrolina Regional Transportation Management Center (MRTMC) located in Charlotte at 2327 Tipton Dr. These operators are co-located with NCDOT managed operators who oversee the Charlotte regional road network. The NCTA operators are responsible for monitoring the Monroe Expressway from 5:30 a.m. to 9:30 p.m., 5-days a week using closed-circuit TV (CCTV) cameras, vehicle detectors, and Toll Zone security cameras. Additionally, they monitor roadside toll technology and facilities.

Statewide Transportation Operations Center (STOC)

NCTA operators at the Statewide Transportation Operations Center (STOC) Traffic Management Center (TMC) monitor the Triangle Expressway and take over management of the Monroe Expressway during the hours the MRTMC is not staffed. The STOC is located at the North Carolina National Guard's Joint Force Headquarters at 1636 Gold Star Drive in Raleigh. The operators have the same duties, responsibilities, and tools at their disposal as the operators at the MRTMC. The STOC is staffed 24-hours a day, 7 days a week, 365 days a year.

1.3 NCTA Toll Program

NCTA operates and manages the NC Quick Pass® Electronic Toll Collection (ETC) and Bill by Mail programs utilized for toll facilities in North Carolina.

NC Quick Pass Transponder Accounts

As of October 2024, there are over 610,000 active prepaid NC Quick Pass Transponder Accounts with over one million active Transponders. NC Quick Pass account holders have multiple Transponder options to fit specific travel needs, including paying tolls in other states. In addition, NC Quick Pass Transponder users receive a discounted toll rate on North Carolina toll facilities.

NC Quick Pass maintains partnership agreements with E-ZPass®, Florida's SunPass® and Georgia's Peach Pass®. The partnership with E-ZPass allows more than 51 million drivers who have E-ZPass Transponders to use toll facilities in North Carolina, while also allowing all 19 states to accept NC Quick Pass as a form of payment. Similar agreements with SunPass and Peach Pass offer numerous toll payment options for travelers in the southeastern United States.

Currently, approximately sixty-seven percent (67%) of tolls on the Triangle Expressway and I-77 Express Lanes are paid via prepaid Transponder accounts. On the Monroe Expressway, approximately fifty percent

(50%) of tolls are paid via prepaid Transponder accounts, a number expected to rise steadily as customers in the area become more familiar with the project.

NC Only Accounts

As of October 2024, there are over 1,000 active prepaid NC Only accounts. The NC Only account type is a type of NC Quick Pass account that allows customers without a Transponder to receive a discounted toll rate only on North Carolina toll roads. This account type is for customers who only drive on North Carolina toll facilities.

Bill by Mail (BBM)

As of October 2024, there are over two million active Bill by Mail (BBM) customers. Customers traveling toll roads in North Carolina without an NC Quick Pass Transponder Account (or interoperable Transponder) are invoiced at a higher toll rate through the BBM program. The registered owner of the vehicle is identified by license plate, and an invoice is mailed to the address registered with the NC Division of Motor Vehicles (NCDMV). If the bill is not paid within thirty (30) days from the date of the invoice, the vehicle's registered owner could incur fees, civil penalties, DMV registration holds, and/or be turned over to a collection agency.

NC Quick Pass Back Office System Technology and Operations

The NC Quick Pass Operations contractor provides customer service support using a separate contractor's existing Commercial Back Office System (CBOS). The CBOS manages all the North Carolina toll collection system functionality and serves as an Electronic Toll Collection (ETC) clearing house for all toll transactions produced in the State. The current system provides functionality for:

- Posting all lane transactions (ETC, image-based and interoperable) to Quick Pass and BBM accounts.
- Customer service and customer interaction (website, mobile app, Interactive Voice Recognition (IVR), email, text message, etc.
- Financial transactions and account replenishment.
- Financial and lane transaction reconciliations.
- Revenue management.
- Inventory management and tracking; and
- Reporting.

The CBOS maintains all NC Quick Pass Transponder and BBM accounts. Numerous interfaces required for interoperability, license plate lookup, document mailing, banking, credit card processing, collections, etc. are in place supporting on-going business processes.

1.4 NCTA Contact Person

Eliza Davis is the contact person on this RFP. Any questions in regard to this RFP shall be directed in writing to NCTA_Digital_RFP@ncdot.gov.

1.5 Information Posting

It is the responsibility of all prospective Proposers interested in responding to this RFP to routinely check the NCTA website at https://connect.ncdot.gov/business/turnpike for any revisions, question responses,

Addenda, and changes to schedule and announcements related to this RFP. NCTA also will develop an email distribution list of contact persons for those Proposers who attend the mandatory Pre-Proposal Scope of Services Meeting and will email this additional information to such contact persons; however, this does not relieve Proposers of the responsibility to be aware of all additional information related to this RFP posted via the website. NCTA and NCDOT grant permission to use its logo on Proposal Submittals.

2. General Information

2.1 RFP Inquiries and Notices

Any questions regarding this RFP shall be directed in writing to the contact person identified above in **Part I, Administrative,** Section 1.4. Only inquiries in writing will be accepted by NCTA, and only written responses will be binding upon NCTA. Any inquiries received after the deadline referenced in ***Table I-1: Procurement Schedule*** may or may not be answered by NCTA at NCTA's sole determination. All answers to inquiries will be posted on the NCTA web site at https://connect.ncdot.gov/business/turnpike. Proposers shall use the form provided in **Exhibit C-5, Proposer Questions Form** when submitting questions to be addressed by NCTA.

2.2 Policy Statement

This procurement shall be conducted in accordance with all applicable Federal and State laws and regulations, and the policies and procedures of NCTA, as those may be amended. All future amendments to any such laws, regulations and applicable NCTA policies and procedures shall be applicable to this procurement. A copy of the North Carolina Turnpike Authority Policies and Procedures for the Procurement of Commodities and Services (February 2009) may be obtained from NCTA.

2.3 Non-Solicitation Provision

From the date that this RFP is issued until the award of Contract is announced, Proposers shall only contact NCTA in the manner identified in **Section I, Administrative,** Section 1.4 with respect to any facet of this procurement. Proposers shall not be permitted to contact any NCTA or NCDOT employee, agent, or Evaluation Committee member with respect to this procurement. Violation of this provision shall result in the disqualification of the Proposer's Proposal.

2.4 Cost Incurred Responsibility

All costs incurred by any interested party in responding to this RFP shall be borne by such interested party. NCTA shall have no responsibility whatsoever for any associated direct or indirect costs.

2.5 Right to Reject

NCTA retains the right and option to reject any and all Proposals.

2.6 Responsiveness of Proposals

NCTA reserves the right to reject any Proposal as non-responsive if the Proposal fails to include any of the required information in the specified order, as further detailed in **Part IV, Proposal Content**.

2.7 Right to Cancel

NCTA reserves the right to cancel this RFP if it is determined to be in the best interest of NCTA to do so.

2.8 Right to Amend and Addenda

NCTA reserves the right to amend, insert, or delete any item in this RFP if it is determined to be in the best interest of NCTA. If it becomes necessary to revise any part of this RFP, a written Addendum to the solicitation will be sent via email to the RFP email list and will be posted to NCTA's website in accordance with **Part I, Administrative**, Section 1.5 Information Posting. NCTA expects to issue the last Addendum no later than the date for NCTA Inquiry Responses and Addendum (if required) Issued provided in ***Table I-1: Procurement Schedule***. NCTA will not be bound by, and the Proposer shall not rely on, any oral or written communication or representation regarding the RFP documents, except to the extent that it is contained in an Addendum to these RFP documents or in the questions and answers as posted on the NCTA web site. In the case of a conflict between Addenda the latest Addendum shall apply.

Proposers are required to confirm the receipt of all Addenda issued to this RFP by completing **Exhibit C-7, Acknowledgement of Receipt of Addenda** and including the completed form in the Technical Proposal Section 8.

2.9 Written Clarifications

NCTA may request written clarifications to Proposals. NCTA will identify in its request the due date for response. If the requested information is not received by the due date for response, the Proposer's scores may be adversely affected.

2.10 Oral and Referenced Explanations

NCTA will not be bound by oral explanations or instructions given by anyone at any time during the Proposal process or after Contract award. NCTA will not consider Proposer referenced information not included in the Proposal; however, NCTA may consider other sources in the evaluation of Proposals, such as reference reviews, financial ratings and Proposer oral presentations, for example.

2.11 Oral Presentations and Interviews

NCTA reserves the right to request oral presentations and interviews with Proposers if NCTA decides that oral presentation and interviews are in its best interests. If oral presentations and interviews are used, NCTA will develop a compliant list for the oral presentations and interviews based on the scores of the Technical Proposals. See **Part I, Administrative**, Section 4 Procurement Evaluation Process for more details.

In advance of any oral presentations and interviews, Proposers will be given detailed instructions on what the format and content of the presentation and interview will be, including what functionality, if any shall be demonstrated.

2.12 Proposal Submittal Deadline

Complete and separate Technical Proposals and Price Proposals shall be delivered by mail or to the front desk of the NC Quick Pass Morrisville Storefront location presented on the cover page of this RFP, before the due date and time provided in ***Table I-1: Procurement Schedule,*** where they will be logged in as received. NCTA will not accept Proposals delivered after the due date and time.

2.13 Submittal Responsibility

The responsibility for submitting a Proposal to NCTA on or before the stated time and date will be solely and strictly the responsibility of the Proposer. NCTA will in no way be responsible for delays caused by the United States mail delivery, common carrier or caused by any other occurrence.

2.14 Waivers

NCTA may waive minor informalities or irregularities in Proposals received where such is merely a matter of form and not substance, and the correction or waiver of which is not prejudicial to other Proposers. Minor irregularities are defined as those that will not have an adverse effect on NCTA's interest and will not affect the price of the Proposals by giving a Proposer an advantage or benefit not enjoyed by other Proposers.

2.15 Modification or Withdrawal of Proposals

NCTA will permit modifications to a Proposal after Proposal Submittal until the specified due date and time for accepting Proposals provided in ***Table I-1: Procurement Schedule***. The Proposal may be picked up by a representative of the Proposer provided that the request to modify is in writing, is executed by the Proposer or the Proposer's duly authorized representative and is submitted to NCTA. It is the Proposer's responsibility to resubmit a Proposal before the deadline in accordance with the instructions and requirements for Proposal submission detailed in this RFP.

A Proposer may withdraw a Proposal without prejudice prior to the Submittal deadline provided in ***Table I-1***, provided that the request is submitted in writing to the contact person noted in **Part I, Administrative,** Section 1.4 NCTA Contact Person, is executed by the Proposer or the Proposer's duly authorized representative and is submitted with NCTA.

2.16 Confidentiality and RFP Ownership

The North Carolina Turnpike Authority is a public agency of the State of North Carolina, subject to the North Carolina Public Records Act, Chapter 132 of the North Carolina General Statutes. NCTA may maintain confidential information, including any designated as trade secrets or otherwise proprietary, only in accordance with applicable Federal and State laws or regulations. NCTA, therefore, expects that Proposers will keep confidential information designations to a minimum. Any material labeled as confidential constitutes a representation by Proposer that it has made a reasonable effort in good faith to

determine that such material is, in fact, a trade secret under G.S. § 132-1.2. Proposer are urged and cautioned to limit the marking of information as a trade secret or as confidential so far as is possible.

Proposer, having formed a good faith opinion, upon consultation with legal or other knowledgeable advisors, that information submitted may contain a trade secret as defined in G.S. § 66-152 or other information exempted from the North Carolina Public Records Act pursuant to G.S. § 132-1.2, may so designate appropriate portions of Proposer Materials by marking the top and bottom of pages containing confidential information in boldface type "CONFIDENTIAL." NCTA, however, may serve only as a custodian of information a Proposer deems confidential. NCTA shall not act as an arbiter or defender of any claims related to assertions of confidential information. If a request is made for disclosure of information submitted, or an action is brought to compel NCTA to disclose information marked confidential pursuant to G.S. § 132-1 et seq. NCTA will notify the affected Proposer of such request or action.

In submitting Proposer Materials in response to this RFP, a Proposer agrees to: (i) defend its assertions of confidentiality by instituting appropriate legal proceedings, at its own expense and through its counsel, or intervening in an action brought against NCTA to compel disclosure, to defend its assertions of confidentiality; and (ii) hold the State and NCTA, and any officials or employees thereof harmless from any and all damages, costs, and attorney's fees awarded against the State and NCTA arising out of any such actions. Nothing in this section shall preclude the State or NCTA from participating in the defense of such actions, at its option and expense through its counsel. NCTA shall have no liability to a Proposer with respect to the disclosure of any information, including confidential information, subject to an order by a court of competent jurisdiction pursuant to G.S. § 132-9 or any other applicable law.

In accordance with G.S. § 136-28.5, bids and documents submitted in response to an advertisement, or this RFP shall not be public record until the NCTA issues a decision to award or not to award the Contract.

2.17 Contractual Obligations

NCTA will not be required to evaluate or consider any additional terms and conditions submitted with a Proposal. This applies to any language appearing in or attached to the document as part of the Proposer's Proposal. By execution and delivery of this RFP and Proposal, the Proposer agrees that any additional terms and conditions or changes to the terms and conditions, whether submitted purposely or inadvertently, shall have no force or effect unless such are specifically accepted by NCTA. Further, all exceptions must be taken in accordance with the instructions set forth in in **Part IV, Proposal Content**, Section 1.1 Content of Technical Proposal (I. Proposal Section 7).

2.18 Proposer's Bid

By submitting a Proposal to NCTA, the Proposer agrees that the Contractor's Technical Proposal and Price Proposal shall remain effective one hundred and eighty (180) Calendar Days after the deadline for submitting the Proposal. If NCTA determines it is in the best interest, NCTA may request that Proposers extend the date through which the Price Proposals are valid. Requests by NCTA for time extensions of

Price Proposal validity will not result in change to the prices as stated in the original Price Proposals unless so specified in the request to extend or subsequently agreed to by NCTA in writing.

2.19 Certificate to Transact Business in NC

As a condition of Contract award, each out-of-state Contractor that is a corporation, limited-liability company or limited-liability partnership shall have received, and shall maintain throughout the term of the Contract, a Certificate of Authority to Transact Business in North Carolina from the North Carolina Secretary of State, as required by North Carolina law.

2.20 Disadvantaged, Minority, Women Business Enterprises (Race and Gender Neutral) and Historically Underutilized Businesses

2.20.1 Policy

It is the policy of NCTA to comply with NCDOT's Disadvantaged Business Enterprises (DBE) Program and ensure that small businesses have an equal opportunity to compete fairly for and to participate in the performance of contracts financed in whole or in part by federal and state funds. NCDOT sets DBE, Minority Business Enterprises (MBE) and Women Business Enterprises (WBE) utilization goals for all construction projects. This Contract, for goods and services specific to establishing and operating a toll collection system, is not a construction contract and does not contain utilization goals. However, the Contractor is encouraged to give every opportunity to allow DBE/MBE/WBE Subcontractor participation on all contracts and supplemental agreements.

Pursuant to North Carolina General Statute G.S. 143-48, it is State policy to encourage and promote the use of small, minority, physically handicapped, and women Contractors in purchasing Goods and Services. As such, this RFP will serve to identify those Contractors that are minority owned or have a strategic plan to support the State's Historically Underutilized Business (HUB) program by the utilization of diverse firms as 1st or 2nd tier Subcontractors.

2.20.2 Obligation

In compliance with Title VI, 23 CRF 200, 230, 635, 117(d) and (e) and 49 CFR Parts 21 and 26, the Proposer and Subcontractor shall not discriminate on the basis of race, religion, color, creed, national origin, age, disability or sex in the performance of this Contract. Failure by the Proposer to comply with these requirements is a material breach of this Contract, which will result in the termination of this Contract or such other remedy, as NCTA deems necessary.

2.20.3 Participation

Due to the Scope of Work and Requirements for this Contract, specific goals are not established. However, NCTA encourages the utilization of Small Professional Services Firms (SPSF) Subcontractors and/or suppliers on professional services contracts led by NCDOT. All DBE/MBE and WBE firms currently certified by the NCDOT Unified Certification Program (UCP) automatically qualify as a SPSF.

NCTA invites and encourages participation in this procurement process by businesses owned by minorities, women, disabled, disabled business enterprises and non-profit work centers for the blind and

severely disabled. If applicable, Proposers are required to complete **Exhibit C-10, HUB Supplemental Vendor Information Form** and include the completed form in the Technical Proposal Section 8.

2.20.4 Subcontracting

The Contractor may subcontract the performance of required Services with other contractors or third-parties, or change Subcontractors, only with the prior written consent of NCTA. Contractor shall provide NCTA with complete copies of any agreements made by and between Contractor and all Subcontractors. The Contractor remains solely responsible for the performance of its Subcontractors. Subcontractors, if any, shall adhere to the same standards required of the Contractor. Any contracts made by the Contractor with a Subcontractor shall include an affirmative statement that NCTA is an intended third-party beneficiary of the contract; that the Subcontractor has no agreement with NCTA; and that NCTA shall be indemnified by the Contractor for any claim presented by the Subcontractor. Notwithstanding any other term herein, Contractor shall timely exercise its contractual remedies against any non-performing Subcontractor and, when appropriate, substitute another Subcontractor.

See form instructions for each requirement. For TIP, enter the "Type of Work"; for "Submitted by" enter Subcontractor name and name of person responsible for Subcontractor performance; for "Recommended by" enter name of prime Proposer and person responsible for delivery of Services. See instruction no. 7 on form. ***A Subcontractor Form RS-2 is required for all Subcontractors whether or not they are considered a SPSF entity.***

2.20.5 Directory of Approved Transportation Firms

For Subcontractors to be considered for SPSF utilization, a firm must be certified as SPSF and prequalified through North Carolina's Prequalification Unit. Real-time information about firms that are prequalified and Approved through North Carolina's Prequalification Unit, is available in the Directory of Firms. The Directory can be accessed at https://www.ebs.nc.gov/ContractorDirectory/default.html.

2.21 Federal Aid Requirements

Due to the potential of Federal Aid in implementations of various portions of NCTA Digital Transformation & Modernization, NCTA has provided related instructions and information in **Appendix A: Standard Special Provision Title VI**. Proposers shall also include the appropriate completed Non-Collusion Forms provided in **Exhibit C-6**, **Non-Collusion Forms** in Technical Proposal Section 8.

2.22 Insurance Requirements

The Contractor, at all times during the Term of this Agreement, shall maintain insurance in such form as is satisfactory to NCTA, and will furnish NCTA with continuing evidence of insurance as provided below. With respect to any insurance policy required pursuant to this Agreement, all such polices shall be issued by companies licensed to do business in the State of North Carolina and all such insurance shall meet all laws of the State of North Carolina. The Contractor shall at all times comply with the terms of such insurance policies, and all requirements of the insurer under any such insurance policies, except as they may conflict with existing North Carolina laws or this Contract.

NCTA shall be named as an "additional insured" on all applicable coverage. The Contractor shall provide NCTA with certificates issued by the insurer showing the required coverage to be in effect and showing

NCTA to be an additional insured. Such policies shall provide that the insurance is not cancelable except upon thirty (30) Calendar Days prior written Notice to NCTA. The certificates and policies shall provide that in the event of any material change in or cancellation of the policies reflecting the required coverage, thirty (30) Calendar Days advance Notice shall be given to NCTA or as provided in accordance with North Carolina law. Material change includes but is not limited to change in limits, coverage, or status of the policy. Copies of all insurance policies and endorsements shall be provided to NCTA upon request.

NCTA reserves the right to review all insurance coverage and amounts of insurance coverage on an annual basis and to require the Contractor to adjust the insurance coverage and amounts of insurance coverage based on industry standards for contracts of this size and type. Contractor shall timely pay all premiums and deductibles when due for all insurance coverage required herein.

The Contractor shall not commence any Work until it has obtained the following types of insurance, and a certificate of such insurance has been received and Approved by NCTA. Nor shall the Contractor allow any Subcontractor to commence Work until all insurance required of the Subcontractor has been obtained. The Contractor shall provide the required Certificates of Insurance to NCTA within fourteen (14) Calendar Days of Notice of Award.

During the term of the Contract, the Contractor at its sole cost and expense shall provide commercial insurance of such type and with such terms and limits as may be reasonably associated with the Contract. As a minimum, the Contractor shall provide and maintain the following coverage and limits:

1. Worker's Compensation - The Contractor shall provide and maintain Worker's Compensation Insurance, as required by the laws of North Carolina, as well as employer's liability coverage with minimum limits of $100,000.00, covering all of the Contractor's employees who are engaged in any Work under the Contract. If any Work is sublet, the Contractor shall require the Subcontractor to provide the same coverage for any of his employees engaged in any Work under the Contract.

2. Commercial General Liability Policy - Combined Single Limits: $1,000,000.00 per aggregate, $3,000,000.00 per occurrence The Commercial General Liability Policy shall include contractual liability coverage and must be on an "occurrence" basis. A Comprehensive General Liability Policy may be substituted for the Commercial General Liability Policy if the Comprehensive General Liability Policy has been endorsed to insure contractual liability, broad form property damage, and personal injury liability.

3. Professional Liability Policy- Any other provision herein to the contrary notwithstanding, the Professional Liability Policy must be with a company authorized to do business in the State of North Carolina, affording professional liability coverage for the professional services to be rendered in accordance with this Contract in the amount of at least one million dollars ($1,000,000). The Contractor shall maintain professional liability coverage for a minimum of three (3) years after completion of the Services rendered under this Contract.

4. Technology Errors & Omissions- The Contractor shall maintain Technology Errors & Omissions (E&O) liability (or technology professional liability coverage) insurance, covering liability for all professional products and services performed, including liabilities arising from acts, errors or omissions in rendering computer or information technology services including (1) systems analysis (2) systems programming (3)

data processing (4) systems integration (5) outsourcing development and design (6) systems design, consulting, development and modification (7) training services relating to computer Software or Hardware (8) management, repair and Maintenance of computer products, networks and systems (9) marketing, selling, servicing, distributing, installing and maintaining computer Hardware or Software (10) data entry, modification, verification, Maintenance, storage, retrieval or preparation of data output with a limit not less than five million dollars ($5,000,000) per occurrence. This insurance shall provide coverage for Software copyright liability and contractual liability. Such Technology E&O insurance coverage may be met through or combined with the Professional Liability Insurance referenced in paragraph d; however, if combined then the coverage requirement for Technology E & O insurance shall be equal or greater than the combined aggregate.

5. Crime – Crime Insurance with limits not less than $1,000,000.00. Said policy shall cover both theft and burglary.

6. Cyber Liability Insurance- The Contractor shall maintain Privacy and Network Security (Cyber Liability) insurance covering liability arising from (1) hostile action, or a threat of hostile action, with the intent to affect, alter, copy, corrupt, destroy, disrupt, damage, or provide unauthorized access/unauthorized use of a computer system including exposing or publicizing confidential electronic data or causing electronic data to be inaccessible (2) computer viruses, Trojan horses, disabling codes, trap doors, back doors, time bombs drop-dead devices, worms and any other type of malicious or damaging code (3) dishonest, fraudulent, malicious, or criminal use of a computer system by a person, whether identified or not, and whether acting alone or in collusion with other persons, to affect, alter, copy, corrupt, delete, disrupt, or destroy a computer system or obtain financial benefit for any party or to steal or take electronic data (4) denial of service for which the insured is responsible that results in the degradation of or loss of access to internet or network activities or normal use of a computer system (5) loss of service for which the insured is responsible that results in the inability of a third-party, who is authorized to do so, to gain access to a computer system and conduct normal internet or network activities (6) access to a computer system or computer system resources by an unauthorized person or persons or an authorized person in an unauthorized manner with a limit not less than ten million dollars ($10,000,000) per occurrence. This insurance shall provide coverage for personal injury (including emotional distress and mental anguish). Such Cyber Liability insurance coverage may be met through or combined with the Professional Liability Insurance referenced in the above paragraph 3; however, if combined then the coverage requirement for Cyber Liability insurance shall be equal or greater than the combined aggregate.

Pertaining to the above paragraphs 3, 4, 5, & 6 if coverage is written on a claim made basis, such insurance shall be maintained in force at all times during the term of this Agreement and for a period of three (3) years thereafter for Services completed during the term of this Agreement. Additionally, if a sub-limit applies to any elements of coverage, the policy endorsement evidencing the coverage above must specify the coverage section and the amount of the sub-limit.

Providing and maintaining adequate insurance coverage described herein is a material obligation of the Contractor and is of the essence of this Contract. The limits of coverage under each insurance policy maintained by the Contractor shall not be interpreted as limiting the Contractor's liability and obligations under the Contract.

Subcontractors Insurance: The Contractor shall either require each Subcontractor to obtain and maintain Workers' Compensation Insurance, Commercial General Liability, Business Automobile Liability and Professional Liability coverage similar to those required above in this section for the Contractor, or any other coverage deemed necessary to the successful performance of the Contract or cover Subcontractors under the Contractor's policies. Such coverage shall be in effect at all times that a Subcontractor is performing Work under the Contract. The Contractor shall have responsibility to enforce Subcontractor compliance with these or similar insurance requirements; however, the Contractor shall upon request provide NCTA acceptable evidenced of insurance for any Subcontractor. The Contractor shall assume all reasonability for risks or casualties of every description, for any and all damage, loss or injury, to persons or property arising out of the nature of the Work, including but not limited to the negligence or failure of its Subcontractors (as well as Contractor's employees) to comply with Contract Documents.

2.23 Prevailing Wages

Contractor shall pay or cause to be paid to applicable workers employed by it or its Subcontractors to perform the Work not less than the prevailing rates of wages. 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 the 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, Contractor shall bear the cost of such changes and shall have no claim against NCTA on account of such changes.

3. Schedule

Below, ***Table I-1: Procurement Schedule*** provides a planned schedule for this RFP process, listed in the order of occurrence. NCTA reserves the right to change any or all of these dates as it deems necessary or convenient in its discretion. In the event of such a date change, Proposers will be notified in accordance with **Part I, Administrative**, Section 1.5 Information Posting.

Table I-1: Procurement Schedule

Milestone	Date
RFP Issued	Tuesday, October 1, 2024
Mandatory Pre-Proposal Scope of Services Meeting	October 16, 2024 (11:00 AM – 12:00 PM EDT) Interested parties are required to email the NCTA contact noted in **Part I, Administrative**, Section 1.4, to register for the meeting. The meeting will be held online via web conference. The meeting may be recorded by NCTA and all attendees must state name so the company may be counted present. See further details below.
Proposer Questions Due	October 24, 2024 (4:00 PM EDT)
NCTA Response to Questions	Week of November 4, 2024

Milestone	Date
Technical Proposals Due	December 4, 2024 (4:00 PM EST)
Oral Interviews & Presentations (*Proposers to be notified as to the specific schedule within the time identified)*	Week of February 3, 2025 ~~Week of January 21, 2025~~
Notification of Proposers Shortlisted	February 17, 2025 ~~January 31, 2025~~
Price Proposals Due *(Only Shortlisted Proposers will submit a Price Proposal)*	February 24, 2025 (4:00 PM EST) ~~February 7, 2025 (4:00 PM EST)~~
Ranking of Proposers for Negotiations	Week of March 17, 2025 ~~Week of February 10, 2025~~
BAFO *(if needed)*	Week of March 24, 2025 ~~Week of February 17, 2025~~
Notice of Award	Week of March 24, 2025 ~~Week of February 17, 2025~~

Mandatory Pre-Proposal Scope of Services Meeting: NCTA will convene a **MANDATORY** Pre-Proposal **Virtual** Scope of Services meeting for interested firms on the date and time presented in ***Table I-1*** above. Interested parties are requested to email the NCTA Contact Person noted in **Part I, Administrative,** Section 1.4 NCTA Contact Person to receive additional information. NCTA has elected to host the meeting online via web conference only. The purpose of the meeting is to present details of the RFP, discuss the approach to the procurement, and provide attendees with an opportunity to ask questions about the RFP, the procurement approach, or NCTA requirements.

Attendance at the meeting **is required for all Proposers who will submit Proposals for the Project.**

4. Procurement Evaluation Process

An evaluation and negotiation process will be conducted as set forth in this Section 4 using a Best Value process to allow NCTA to award the Contract to the Proposer providing the Best Value and recognizing that Best Value may result in award to other than the lowest price or highest technically qualified Proposal. By using this method, the overall ranking may be adjusted up or down by the Evaluation Committee when considered with or traded-off against other non-price factors. "Best Value" procurement methods are authorized by G.S. §143-135.9 and in accordance with NCTA Policies and Procedures adopted by the NCTA Board February 18, 2009.

Pursuant to G.S. §143-135.9, the award decision is made based on multiple factors, including: total cost of ownership, meaning the cost of acquiring, operating, maintaining, and supporting a product or service over its projected lifetime; the evaluated technical merit of the Contractor's offer; the Contractor's past performance; and the evaluated probability of performing the specifications stated in the solicitation on time, with high quality, and in manner that accomplishes the stated business objectives and maintains

industry standards compliance. The intent of "Best Value" Information Technology procurement is to enable Contractors to offer and the Agency to select the most appropriate solution to meet the business objectives defined in the solicitation and to keep all parties focused on the desired outcome of procurement.

4.1 Technical Proposal Pass / Fail Screening

In response to this RFP, each Proposer shall submit a Technical Proposal in strict compliance with the Requirements outlined herein. Immediately following the Technical Proposal due date, as detailed in ***Table I-1***, an NCTA representative shall validate the completeness of each Technical Proposal, including all Technical Proposal sections, correctly completed forms, and required information. Technical Proposals which are incomplete may be rejected.

Note: Proposers are advised that NCTA is not obligated to ask for, or accept after the Technical Proposal due date, data that is essential for a complete and thorough evaluation of the Technical Proposal.

4.2 Technical Proposal Evaluation

1. The evaluation process will consist of a quantitative scoring and ranking of the Technical Proposals to ascertain which Proposer best meets NCTA's needs for the project. The Technical Proposals will be evaluated on their material content and their responsiveness and degree of adherence to **Part III, Scope of Work and Requirements** set forth in this document. The Evaluation Committee will review and evaluate the Technical Proposals and the other related Contract information submitted to ensure that the Proposer understands the **Part III, Scope of Work and Requirements** and has clearly expressed its intent to meet the Requirements of the Contract.
2. **Preliminary Technical Scoring.** Following Technical Proposal review, the Evaluation Committee will score the Technical Proposals with maximum potential technical score points for each Technical Proposal as shown in ***Table I-2*** below.
3. **Non-Compliant.** Any Technical Proposals scored below 70 out of 100 possible total points on the preliminary evaluation will be considered non-compliant and will not be considered further. Only Proposers that meet the minimum score of 70 will be considered compliant and asked to participate in Oral Interviews.
4. **Oral Presentations and Interviews.** NCTA may invite compliant Proposers to participate in oral presentations and interviews. The oral presentations and interviews and any required demonstrations conducted therein will provide an opportunity for the Evaluation Committee to further its understanding of the Technical Proposals.
5. **Updated Technical Scoring.** After the oral presentations and interviews, the Evaluation Committee may update its preliminary technical scoring. The updated scoring will consider both the Technical Proposal and the results of the oral presentations and interviews and demonstrations if conducted, with maximum potential technical score points for each Technical Proposal as shown in ***Table I-2*** below.

6. **Shortlist of Proposers.** After updated technical scoring is finalized, the Evaluation Committee will develop a shortlist of Proposers who will be invited to participate in Price Proposal submission.

4.3 Technical Proposal Scoring

The overall Technical Proposals are scored as shown in ***Table I-2*** below:

Table I-2: Technical Proposal Elements and Maximum Possible Points Breakdown

Technical Proposal Elements	Maximum Possible Points
Proposal Section 1: Proposer Qualifications	**5**
Proposal Section 2: Key Team Qualifications	**10**
Proposal Section 3: Approach to Scope of Work and Requirements	**35**
Proposal Section 4: Approach to Project Plan and Implementation	**25**
Proposal Section 5: Approach to Integration	**20**
Proposal Section 6: Approach to Maintenance	**5**
Maximum Possible Technical Points	**100**

Important Note: In addition to the Technical Proposal content requirements outlined in **Part IV, Proposal Content**, Section 1.1, the Evaluation Committee will consider the following factors when determining the Technical Proposal score for each Proposer:

- The number of, and degree of dependance on Subcontractors. A larger degree of dependance on Subcontractors will negatively impact a Proposer's score.
  - Note: This component will be part of the scoring for Proposal Section 2.
- An efficient approach to delivering the TISDSR that meets or exceeds the timeline in **Exhibit A: Project Implementation Schedule** will positively impact a Proposer's score.
  - Note: This component will be part of the scoring for Proposal Section 4.

4.4 Price Proposal Submission

The Evaluation Committee will open the Price Proposals received from the Shortlisted Proposers.

Note: Price Proposals are not to be submitted with the Technical Proposal submission.

4.5 Price Review and Scoring

The Price Proposals will be reviewed and scored as outlined below.

a) The Evaluation Committee will use a table based on the maximum quality credit percentage to assign a Quality Credit Percentage to each Technical Proposal based on that proposal's final technical score. The maximum quality credit percentage for this project will be 75%. The Evaluation Committee may assign point values to the nearest one-tenth of a point (e.g., 90.3). In

this event, the Quality Credit Percentage will be determined by linearly interpolating within ***Table 1-3*** shown below.

Table 1-3: Quality Credit Percentage for Technical Proposals

Technical Score	Quality Credit (%)	Technical Score	Quality Credit (%)	Technical Score	Quality Credit (%)
100	75.00%	90	50.00%	80	25.00%
99	72.50%	89	47.50%	79	22.50%
98	70.00%	88	45.00%	78	20.00%
97	67.50%	87	42.50%	77	17.50%
96	65.00%	86	40.00%	76	15.00%
95	62.50%	85	37.50%	75	12.50%
94	60.00%	84	35.00%	74	10.00%
93	57.50%	83	32.50%	73	7.50%
92	55.00%	82	30.00%	72	5.00%
91	52.50%	81	27.50%	71	2.50%
				70	0.00%

b) The Evaluation Committee will review the Price Proposals and apply the quality credit as defined above. If the Price Proposal is within the acceptable range of the Engineer's Estimate or NCTA's Plan of Finance budget the Proposer with the lowest adjusted price will be selected.

i. ***Table 1-4*** below shows an example of the calculation involved in this process. In this example, Vendor C is the successful Contractor and Vendor E failed to qualify as their Technical Score was below 70.

Table 1-4: Example of Quality Adjusted Price Ranking

	Technical Score	Quality Credit %	Price Proposal ($)	Quality Value ($)	Adjusted Price ($)
Vendor A	94.0	60.00%	$325,000.00	$195,000.00	$130,000.00
Vendor B	90.0	50.00%	$290,000.00	$145,000.00	$145,000.00
Vendor C	92.0	55.00%	$280,000.00	$154,000.00	$126,000.00
Vendor D	80.0	25.00%	$200,000.00	$50,000.00	$150,000.00
Vendor E	69.0	0.00%			
Note 1: Maximum Technical Score Percentage is 75%					
Note 2: Minumum Technical Score to Qualify is 70					

c) NCTA reserves the right to request a Proposer to confirm or withdraw the Price Proposal which deviates from the average of all other qualified Price Proposals by more than 15%.

4.6 Negotiations and Best and Final Offers (BAFOs)

NCTA reserves the right to negotiate with multiple Proposers concurrently or in serial at its sole discretion that are determined to be in a competitive range based upon the evaluation process described

above. NCTA may select none, one, or more than one Proposer. Finalist Proposers may be requested to provide Best and Final Offers (BAFOs) in response. If BAFOs are requested, NCTA will evaluate the BAFOs and adjust its evaluation of the Proposer's respective Proposal accordingly. Further, should negotiations with one Proposer not be successful, NCTA reserves the right to negotiate with the next ranked Proposer or Proposers at NCTA's sole determination.

5. Award and Execution of Contract

5.1 Notice of Award

Following evaluation and negotiations, NCTA may execute a Contract with the successful Proposer. NCTA will notify the successful Proposer in writing via a Notification of Award letter via email.

NCTA will issue an original Contract for execution by the successful Proposer. After the Contract is executed by NCTA, a duplicate copy will be mailed back to the Contractor.

Originals. The original copy will be retained in the NCTA Office.

6. Proposer Debrief

Once a Contract has been awarded, all Proposers will be afforded the opportunity for a debriefing with NCTA regarding the relative merits of their Technical and Price Proposal submittals.

7. Protest Procedure

Each Proposer, by submitting its Proposal, expressly recognizes the limitation on its rights to protest contained herein, expressly waives all other rights, and remedies, and agrees that the decision on any protest, as provided herein, shall be final and conclusive. These provisions are included in these RFP documents expressly in consideration for such waiver and agreement by the Proposers. If a Proposer disregards, disputes, or does not follow the exclusive protest remedies set forth in these RFP documents, it shall indemnify, defend, and hold NCTA and NCDOT, and their respective Board members, directors, officials, employees, Agents, representative, and consultants, harmless from and against all liabilities, expenses, costs, fees, and damages incurred or suffered as a result of such Proposer actions. The submission of a Proposal shall be deemed the Proposer's irrevocable and unconditional agreement with such indemnification obligation.

1. Any request for a protest meeting shall be in writing and filed with the NCTA Executive Director at the address specified below and shall be received within thirty (30) consecutive Calendar Days from the date of the Contract award. Any protest not set forth in writing, including oral objections, is not a protest and shall be null and void.

NCTA Executive Director

1578 Mail Service Center

Raleigh, NC 27699-1578

2. All protests shall include the following: 1) Name and Address of Protestor; 2) RFP Name and date of issuance; 3) Specific reasons for protest; and 4) Supporting exhibits, evidence, or documents to support the protest.
3. If the protest does not contain this information or if the Executive Director determines that a meeting would serve no purpose, the Executive Director may, within ten (10) consecutive Calendar Days from the date of receipt of the letter, respond in writing to the Proposer and refuse the protest meeting request.
4. If the protest meeting is granted, the Executive Director shall attempt to schedule the meeting within thirty (30) consecutive Calendar Days after receipt of the letter, or as soon as possible thereafter. Within ten (10) consecutive Calendar Days from the date of the protest meeting, the Executive Director shall respond to the Proposer in writing with the Executive Director's decision.
5. The Executive Director may appoint a designee to act on the Executive Director's behalf regarding these protest procedures.
6. Protest Submittal Requirements – See **Appendix B: North Carolina Turnpike Authority Policies and Procedures for the Procurement of Commodities and Services**.
7. All Proposals shall be irrevocable until the final administrative and judicial disposition of a protest.

Part II
Defined Terms & Acronyms

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1. Defined Terms

Term	Definition
Account	A customer Account in the NCTA CSC Commercial Back Office System (CBOS).
Addendum or Addenda	A document created to capture any clarification, update, amendment, addition, deletion or modification made to the RFP during the procurement process.
Agreement	Also referred to as the "Contract". It is the written Contract between NCTA and the respective Contractor covering all parts of this Project.
Agreement Term	The duration of the Agreement, including any authorized renewals and extensions. Also referred to as "Contract Term".
Amendment	Change in the Agreement executed in writing made by adding, altering, or omitting a certain part or terms.
Appendix	A collection of supplementary material for reference purposes only.
Approve	The term "Approve" and its variations (e.g., "Approval" or "Approved"), when capitalized in this Agreement refer to acceptance of a process, vendor, document, condition, action or Deliverable in writing by NCTA. Approval by NCTA shall not be construed to mean endorsement or assumption of liability by the NCTA nor shall it relieve the Contractor of its responsibilities under the Agreement.
As-Built Design	The final design as built and accepted by NCTA.
As-Intended To-Be Design	Design prior to the build for a given iteration.
Attachment	Any documentation, appended to this Contract, which does not establish a requirement for Deliverables.
Business Day	A day, excluding NCTA observed Holidays, Saturdays, and Sundays.
Business Intelligence / Analytics	A set of technological processes for collecting, managing and analyzing data to yield insights that drive strategic decision-making within an organization.
Business-to-Business	A business, often referred to as a vendor, that sells products, services, or information to another business.
Calendar Day	Every day, including weekends and Holidays, beginning at 12:00:00 a.m. and ending at 11:59:59 p.m.
Channels	Examples include: Web User Interface, Mobile Application, IVR.

Term	Definition
Code	The set of instructions, or a system of rules, written in a particular programming language.
Commercial Back Office System (CBOS)	Hardware and software provided by the CBOS contractor to support toll collection and customer service operations, including but not limited to: business interfaces to process payments for prepaid accounts, invoice customers, process payments for post-paid customers, and maintain customer accounts. The CBOS also interfaces with Interoperable Agencies in participating programs, mail house, Transponder order fulfillment, retail management, and to specialized third-party aggregators such as mobile applications, fleet, or commercial drivers.
Commercial Off-the-Shelf (COTS)	Commercial-off-the-shelf or commercially available off-the-shelf (COTS) products are packaged or canned (ready-made) hardware or software, which are adapted aftermarket to the needs of the purchasing organization, rather than the commissioning of custom-made, or bespoke, solutions.
Continuous Integration and Continuous Delivery (CI/CD) Pipeline	A serious of automated steps that software development teams use to create, test, and deploy.
Contract	See "Agreement".
Contract Documents	All of the documents that make up the Contract, including but not limited to: • Executed Agreement, including RFP, all executed RFP Addenda, BAFO, and Amendments; • **Part I, Administrative**; • **Part II, Defined Terms and Acronyms**; • **Part III, Scope of Work and Requirements,** as conformed; • **Part IV, Proposal Content;** • **Part V, Terms and Conditions**; • Contractor's Technical Proposal; • Contractor's Price Proposal; • Other Proposer Materials.
Contract Term	See "Agreement Term".
Contractor	The person, firm, corporation or entity undertaking the execution of the Work with whom NCTA has entered into an Agreement.
Customer Service Center (CSC)	The area in the lobby of the NC Quick Pass Operations Center, or other remote, stand-alone building where Customer Service Representatives service walk-in customers.

Term	Definition
Customer Service Representative (CSR)	An individual performing a customer interface position in the CSC, providing assistance such as account creation, payment processing, dispute resolution and correspondence to NCTA customers.
Deliverable(s)	All documentation, Integration Services (API), and any items of any nature submitted by the Contractor to the NCTA's Contractor Project Manager for review and Approval pursuant to the terms of this Agreement. Such as goods, software licenses, data, and documentation created during the performance or provision of services hereunder. See "Submittal".
Department/Division of Motor Vehicles (DMV)	An authority responsible for motor vehicles registrations and provides ownership data to NCTA for vehicle owner identification. See "NCDMV"
Deploy	The act of migrating software code, or connecting and provisioning hardware to any environment.
Evaluation Committee	The Committee NCTA will use to evaluate Proposer Materials as described in this RFP, to determine the Best Value Proposer.
Exhibit	A supplement to this Contract that establishes requirements for Deliverables.
Express Lane	A limited access expressway lanes or roadways separated from adjacent general-purpose lanes and employing payment of tolls to manage demand.
Extra Work Orders	Changes resulting in additions or deletions to the type or value of Services provided pursuant to this Agreement as directed by NCTA.
Go-Live	The date in which live operations commence.
Holidays	Days that are designated by NCTA as Holidays for purposes of this Agreement.
Tolling Integration Service and Data System of Record (TISDSR)	All parts of the solution resulting from this RFP including hardware, software, licenses, APIs/services, other code and configuration.
Interface	A point of interaction between two systems for the exchange of data.
Integration Services	All of the microservices that will be delivered through APIs (Application Programming Interface), to support integration between NCTA's channels, applications, data layer and Business-to-Business partners.
Interface Control Document (ICD)	The document that defines the file formats and related business policies for processing data or transactions between the CBOS contractor's system and third-party systems.

Term	Definition
Invoice Adjustment	A reduction in the Contractor's invoice for services resulting from penalties caused by the Contractor's failure to meet Performance Requirements.
JavaScript Object Notation (JSON)	Text-based format for representing data that's often used to transmit data between web applications and servers. It's a popular choice for data exchange because it's human-readable, language-independent, and easy to send to any application that needs it.
Liquidated Damages	Damages, whose amount the parties designate during the formation of a contract, for the injured party to collect as compensation upon a specific breach.
Maintenance	Services performed by the Contractor pursuant to **Part III, Scope of Work and Requirements**. May also be referred to as "Maintenance Services".
NCTA Designated Representatives	Person or persons authorized by NCTA to represent NCTA in all dealings with the Contractor.
North Carolina Department of Transportation (NCDOT)	A governmental agency in North Carolina responsible for building, repairing, and operating highways, bridges, and other modes of transportation, including ferries in the U.S. state of North Carolina.
North Carolina Division of Motor Vehicles (NCDMV)	See "Department/Division of Motor Vehicles (DMV)".
North Carolina Turnpike Authority (NCTA)	A Business Unit of NCDOT, responsible for supplementing the traditional non-toll transportation system serving the citizens of North Carolina by accelerating the delivery of roadway projects using alternative financing options and facilitating the development, delivery and operation of an integrated, creative system of toll roads.
NC Quick Pass Operations Center	The facility that houses the equipment, software, and personnel required to establish, manage, and maintain customer accounts; provide customer service; process transactions and prepare customer notifications and all other processing in accordance with NCTA's Business Policies.
NC Quick Pass Transponder Account	Pre-paid toll accounts collected through electronic toll collection. These accounts require the purchase and installation of a Transponder that is detectable when a vehicle travels through a toll zone. The appropriate toll amount due for the transaction is automatically deducted from the customer's account.
Notice	A formal communication addressing legal and Contractual matters, not applicable to daily Implementation and Maintenance communications.

Term	Definition
Notice to Proceed (NTP)	The written authorization by NCTA designating the date and time for the Contractor to commence Work.
Order of Precedence	The order in which Agreement documents control in the event of a conflict or ambiguity in such documents.
Performance Requirements	The required level of performance standards for this Contract as set forth in **Part V, Terms and Conditions** and **Part III, Scope of Work and Requirements.**
Plan(s)	Contractor Deliverable that identifies approach to a particular aspect of the Work submitted for Approval in accordance with **Part III, Scope of Work and Requirements.**
Price Proposal	Contractor pricing provided in response to this RFP and in accordance with the instructions provided herein.
Production Day(s)	A working day, excluding NCTA observed Holidays and Sundays.
Project	The total Work set forth in **Part III, Scope of Work and Requirements** and as further set forth and detailed in the Agreement Documents.
Proposal	See "Proposer Materials".
Proposer	An entity that has submitted Proposer Materials in response to this RFP.
Proposer Materials	Documentation submitted by the Proposer in response to this RFP.
Quality Assurance (QA)	A process which occurs after the final Work product is complete, to ensure the Work was completed as expected and required.
Quality Control (QC)	A process which occurs before a final product is produced or presented, to ensure the Work product is accurate.
Request for Proposal	Also referred to as the "RFP", this document describes the procurement process and provides the scope of services. The RFP forms the basis for the Agreement.
Requirements	Each of the required Work activities in numbered form as set forth in **Part III, Scope of Work and Requirements** that the Contractor shall perform, including but not limited to: implementation, functional, and Performance Requirements.
Requirements Traceability Matrix (RTM)	The structured collection of information that summarizes the requirements of the TISDSR submitted by the Contractor for Approval by NCTA and that serves to track completion of design, development and testing as further described in **Part III, Scope of Work and Requirements**.

Term	Definition
Services	The duties and obligations undertaken by the Contractor to fulfill the specifications, requirements, terms and conditions of the Agreement.
Service Organization Controls 2 (SOC2)	Cybersecurity compliance framework that helps ensure that third-party service providers store and process client data securely.
Software Development Lifecycle (SDLC)	The process of planning, writing, modifying, and maintaining software.
Subcontractor	Any person, firm or corporation, other than the Contractor's employees, who contracts to furnish labor, or labor and materials, at the Site(s) or in connection with the Services, whether directly or indirectly, on the Contractor's behalf and whether or not in privity with the Contractor. This definition specifically includes any third-parties used for staff augmentation with respect to this Project.
Submittal	See "Deliverable".
System Acceptance	The completion milestone of the TISDSR Design & Implementation Phase defined in **Part III, Scope of Work and Requirements and Part V, Terms and Conditions**. Upon System Acceptance, the TISDSR Maintenance Phase begins.
Technical Proposal	A Proposer's written response to the RFP, which provides a straightforward, concise description of the Proposer's ability to meet the Requirements of the RFP.
Toll Zone	A single Tolling Location covering one direction of traffic.
Total Cost of Ownership (TCO)	The purchase price of a particular asset, plus operating costs, over the asset's life span.
Transponder	In-vehicle radio frequency device, supported by NCTA (e.g. NC Quick Pass) and those of NCTA's interoperability partners, read by the RTCS and reader equipment in a toll lane.
Updates	Generally, refers to a patch released for existing Software to fix any identified bugs, errors or security issues; may also include providing support for new Hardware, as well as performance tuning.
Upgrade	Generally, refers to transforming existing Software to a new version; provides new features and functionalities rather than fixing existing bugs, errors or security issues but does not include significant new functionality.
Work	See "Services".

2. Acronyms

Acronym	Meaning
AAT	Automated API Testing
API	Application Programming Interface
BAFO	Best and Final Offer
BOM	Bill of Materials
BOS	Back Office System
CBOS	Commercial Back Office System
CI/CD	Continuous Integration / Continuous Delivery
CO	Change Order
COTS	Commercial Off-the-Shelf
CRUD	Create, Read, Update, and Delete
CSC	Customer Service Center
CSR	Customer Service Representative
DB	Database
DBE	Disadvantaged Business Enterprises
EL	Express Lanes
ETC	Electronic Toll Collection
FHWA	Federal Highway Administration
IAAS	Infrastructure as a Service
ICD	Interface Control Document
TISDSR	Tolling Integration Service and Data System of Record
IP	Internet Protocol
ITS	Intelligent Transportation Systems
IVR	Interactive Voice Response
IV&V	Independent Validation & Verification
JSON	JavaScript Object Notation
MAT	Manual API Testing
MRTMC	Metrolina Regional Transportation Management Center
NC	North Carolina
NCDIT	North Carolina Department of Information Technology
NCDOT	North Carolina Department of Transportation
NCTA	North Carolina Turnpike Authority
NDA	Non-Disclosure Agreement
NIST	National Institute of Standards and Technology
NTP	Notice to Proceed
PCI	Payment Card Industry
PCI-DSS	Payment Card Industry Data Security Standard

Acronym	Meaning
PDF	Portable Document Format
PM	Project Manager
PMP	Program Management Plan
POC	Proof of Concept
PSDD	Preliminary System Design Document
QA	Quality Assurance
QC	Quality Control
QMP	Quality Management Plan
RFP	Request for Proposal
ROV	Registered Owner Vehicle
RTCS	Roadside Toll Collection System
RTM	Requirements Traceability Matrix
SDLC	Software Development Lifecycle
SFTP	Secure File Transfer Protocol
SOC	Service Organization Controls
SOC2	Service Organization Controls 2
SOP	Standard Operating Procedure
SOW	Scope of Work
STOC	Statewide Transportation Operations Center
TCO	Total Cost of Ownership
TMC	Transportation Management Center
UAT	User Acceptance Testing
UI	User Interface
UPS	United Parcel Service
US	United States
USB	Universal Serial Bus
USPS	United States Postal Service

Part III
Scope of Work and Requirements

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1. Summary of Scope of Work

NCTA's goal with this procurement is to implement an event-driven, microservices-based "integration layer" to manage data exchange between NCTA's applications, channels, Business-to-Business partners, and the data system of record, all deployed in a cloud environment. The scope of this effort is limited to the Tolling Integration Service and Data System of Record (TISDSR) and does not include production integration with any system or application. With this effort, the Contractor will be responsible for the full stack of technology, cloud environment set-up, networking/access for NCTA staff, design, architecture, build, testing, implementation and documentation for the TISDSR. The Contractor will also perform project management, including planning, reporting and coordination for project interactions with all parties involved. The Contractor shall propose the SDLC they will follow and provide details regarding implementation schedules, milestones, meetings, and other Project concerns. The overall approach must be agreed upon by both the Contractor and NCTA.

As the TISDSR will not be in a production state at the end of this engagement, NCTA will require the Contractor to support the product resulting from this RFP and collaborate with any entity requiring integration with the TISDSR in future phases of NCTA's Digital Transformation and Modernization program. The selected Contractor will work with NCTA during implementation to determine details related to support operations and maintenance beyond the scope of this Contract.

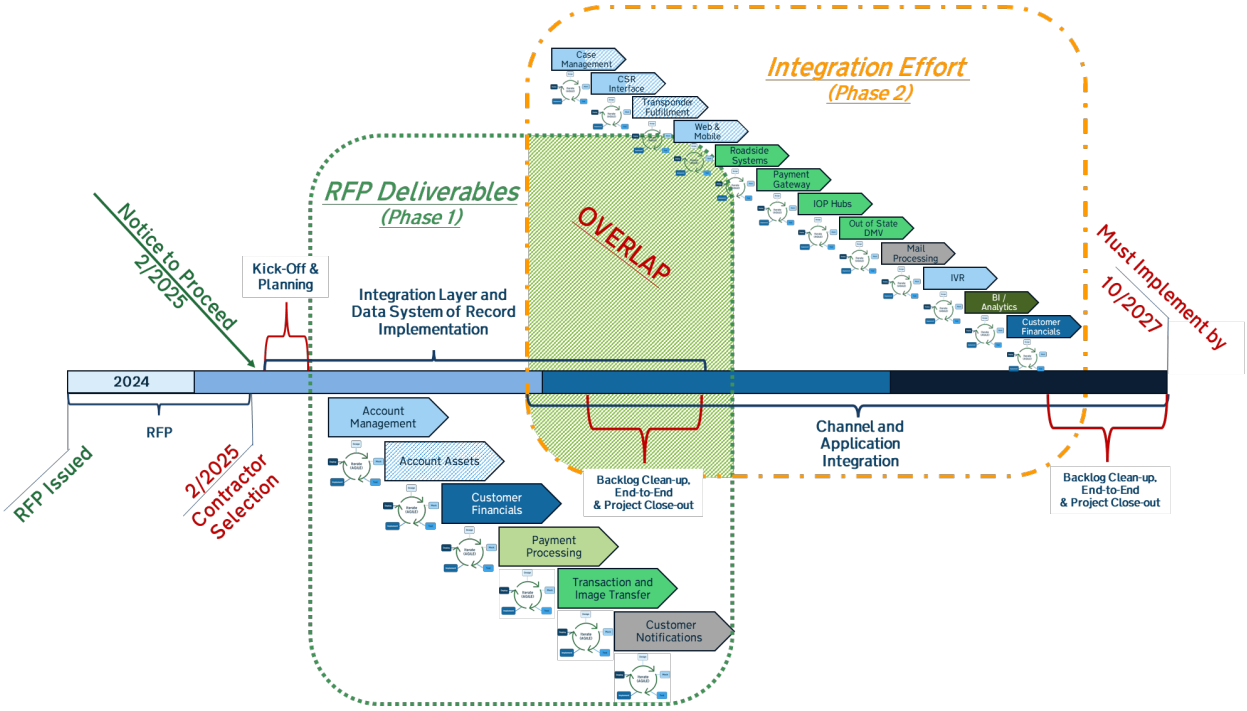
1.1 Service Requirements

1.1.1 Key Implementation Dates

The schedule tasks and milestone dates, outlined in **Exhibit A: Project Implementation Schedule** and ***Diagram 2*** below, are targets established by NCTA. The final Contract dates shall be developed and mutually agreed to by both the Contractor and NCTA, and captured in a final, baselined schedule. NCTA is open to all schedule proposals. The Contractor chosen to proceed with the final system design shall be required to meet the dates outlined in the final, baselined schedule agreed to by both the Contractor and NCTA. As part of a separate RFP, NCTA is targeting 2027 for the implementation of the entire program including application integration, application/new channel development – UI and Mobile application, and full solution implementation.

While this RFP is focused on building the TISDSR, and not integrating the TISDSR with NCTA's applications and channels, integration work will begin during the effort defined in this RFP. The timeline outlined in ***Diagram 2*** below illustrates the iterative creation of APIs (Scope of this RFP) and the iterative integration of NCTA applications and channels (Not in Scope for this RFP).

Diagram 2: NCTA Digital Transformation and Modernization Example Timeline



1.1.2 Tolling Integration Service and Data System of Record – TISDSR

The Contractor is responsible for the design, development, testing and implementation of the TISDSR and shall meet all requirements defined within this RFP. The Contractor selected under this procurement makes a binding commitment to coordinate activities, and cooperate reasonably, with NCTA, other active contractors, sub-contractors, consultants and representatives retained by NCTA for this TISDSR Implementation. Cooperation and coordination are required to avoid claims by NCTA or ultimate dismissal from the TISDSR Implementation.

1.2 Critical Areas of Scope for the TISDSR

Within the fully functioning TISDSR, the following areas are considered critical areas of scope. While the Contractor will be required to meet all of the requirements and business policies defined herein, the elements described in this section are the core functions of the system. These elements impact design and development efforts and may be complex in nature and will require thorough testing prior to deployment of the system and transition to the new system.

Note: The bulleted lists below are not comprehensive. Additional details are provided in the requirements included in **Part III, Scope of Work and Requirements**.

1.2.1 TISDSR Functionality and Design

Functionality:

The TISDSR shall support the following data functional capabilities and integration points:

- Account Management
- Account Assets
- Customer Financials
- Payment Processing
- Transaction and Image Transfer
- Customer Notifications

NCTA will provide data from our legacy vendor daily. NCTA will provide a specification for this file layout and update the file layout throughout the Project.

The Contractor shall build TISDSR components to support the following capabilities and channels:

- Case Management
- Customer Service Representative (CSR) Interface
- Transponder Fulfillment
- Web User Interface (UI) and Mobile Application
- Roadside Systems
- Payment Gateway
- IOP Hubs (EZIOP & SEHUB)
- Out of State DMV Look-up
- Mail Processing
- Interactive Voice Response (IVR)
- Business Intelligence / Analytics
- Customer Financials

The TISDSR components to support the capabilities and channels above should be fully functioning and ready for migration into a production environment.

Design:

- The TISDSR must be compliant with the following:
    - Payment Application Data Security Standard (PA-DSS) certified.
    - The current version of Payment Card Industry Data Security Standard (PCI-DSS)
    - The current version of National Institute of Standards and Technology (NIST) CSF
    - Systems and Organization Controls 2 (SOC 2 – Type 1) certified.
    - NCDIT standards https://it.nc.gov/resources/state-it-standards

- The Contractor shall apply common microservices design patterns ex: Database per Service, API Gateway Circuit Breaker, Command Query Responsibility Segregation (CQRS), etc.

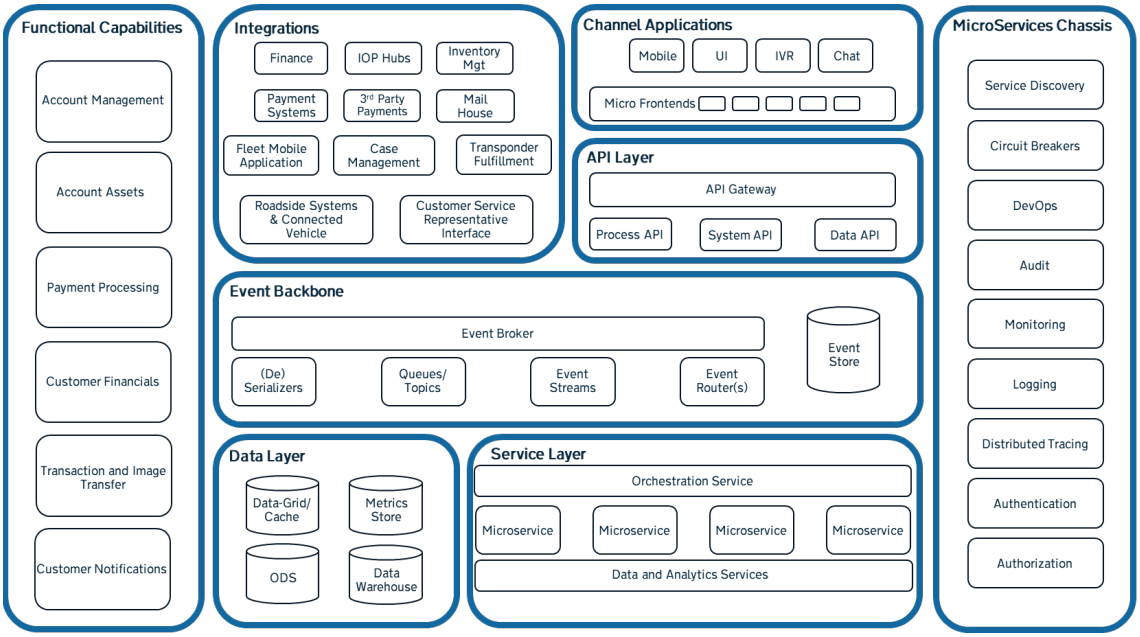
1.2.2 TISDSR Architecture

It is NCTA's intent to build a modern solution based on a microservices and event-driven based architecture that will produce an end-state that satisfies the following conditions:

- Easy to scale both horizontally and vertically.
- Has real-time, transaction and full stack monitoring and alerting.
- Guarantees delivery of all transactions, messages, files and data processed through, or retained in, the solution.
- Minimizes Total Cost of Ownership (TCO), integration effort, maintenance frequency, the number of different technical products and/or technical products from different vendors, and the effort required to migrate to other hosting options.
- Maximizes interoperability, reusability across channels, and solution availability.
- Is fault tolerant.
- Includes an established CI/CD pipeline, with automated testing including regression testing and vulnerability testing.
- Supports the integration of Business Intelligence/Analytical platforms and reporting software without negatively impacting production performance.
- Ensure the atomic processing of data.

The below reference architecture blueprint, ***Diagram 3***, outlines the solution as envisioned by NCTA. In general, it outlines an event-driven, microservices-based approach that leverages an API gateway for policy management, an API manager for policy configuration, an event broker/message manager, a service orchestrator, and components to support service discoverability, automation (CI/CD), support and system health (monitoring, audit, tracing, logging), authentication and authorization functions and overall Back Office Systems (Finance, UI, etc.) The Contractor's proposed solution can vary from this blueprint and the capabilities represented therein. The "Functional Capabilities", "Integrations" and "Channel Applications" boxes are representative of NCTA's data, integration points and channels.

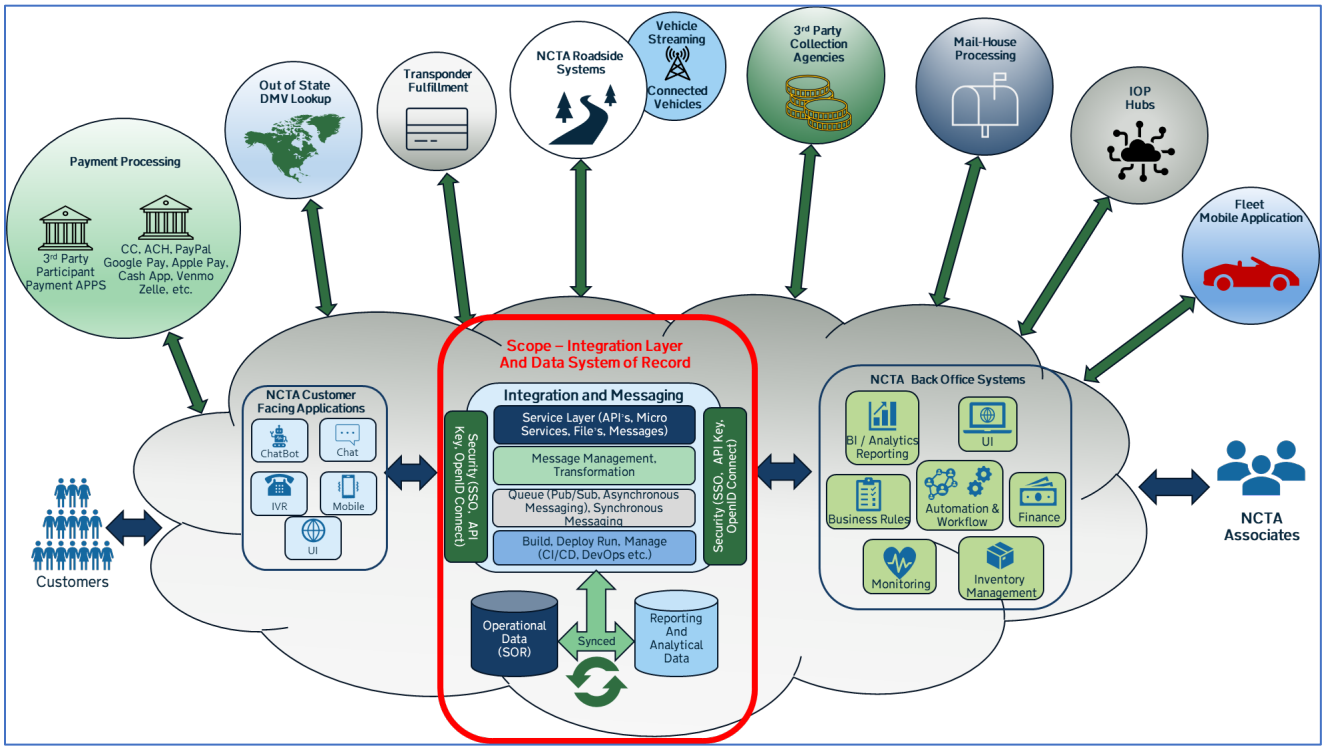
Diagram 3: NCTA Digital Transformation and Modernization Reference Architecture Blueprint



The ***Diagram 4*** below represents NCTA's conceptual view of the targeted end-state for the overall Digital Transformation and Modernization program. The deliverables for this effort are outlined by the red box and are limited to the Tolling Integration Service and Data System of Record (TISDSR) which will be deployed to an environment to be recommended by the Contractor. These deliverables will not be in a production state as a Phase 2 initiative will integrate the TISDSR with NCTA's channels, Business-to-Business partners, and business applications.

Note: In ***Diagram 4***, the scope of this RFP is highlighted with a red box.

Diagram 4: NCTA Digital Transformation and Modernization End-State



1.2.3 TISDSR Reporting

The Contractor shall provide reports on the performance of the TISDSR, including:

- Usage
- Optimization
- Uptime
- Transaction processing performance
- Hardware utilization

1.2.4 Communications and Networks

The Contractor shall provide a network architecture including:

- Network security, protection, and access
- Network configuration
- Redundancy, availability, capability

1.2.5 Monitoring Solutions

- The Contractor shall recommend a COTS monitoring solution to measure the performance of hardware, software and transaction processing.
- The COTS monitoring solution shall monitor system performance, API, and include threshold and real time alerts by criticality.

1.3 Milestones and Tasks

The Scope of Work includes the phases shown below.

1.3.1 TISDSR Design & Implementation Phase

This phase of Work commences after NCTA has selected a final Contractor and issued NTP. This development phase includes, but is not limited to:

- Completing the architecture and validation of the TISDSR system hardware and software components that will be installed and / or provisioned at a location to be determined.
- Finalizing all data models and data transformation specifications.
- Coordinating with NCTA to schedule and attend regular design meetings and other status meetings as directed by NCTA.
- Completion of Iterative System Design Documents.
- Completion of all required internal testing (e.g. unit testing, regression testing, etc.), and development of testing and defect tracking reports with a frequency to be determined.
- Documentation of the Contractor's approach to system testing.
- Providing regular updates to the Implementation Schedule and attending update meetings as requested/required by NCTA.
- Providing regular system functionality demonstrations to NCTA, based on a mutually agreed upon schedule between NCTA and the Contractor, and before each software release.
- Development of an updated Compensating Control Worksheet listing the security and compliance requirements that the Contractor cannot meet as currently specified and the system vulnerabilities that the Contractor cannot rectify including each compensating control and the Contractor's risk-based scoring methodology. NCTA must Approve all Compensating Controls relating to security and compliance requirements (e.g., PCI-DSS, NIST CSF, Statewide Information Security).
- Build CICD pipelines, with automated testing including regression testing and vulnerability testing.
- Testing of all functionalities for the TISDSR (e.g. unit, regression and Quality Assurance (QA) testing) and formal system testing, including:
    - Validation of Output of Services
    - Vulnerability Scan Reports
    - Internal and External Penetration Testing in in accordance with the current version of PCI-DSS.
- Installation/Provisioning of the TISDSR solution components.
- Development of TISDSR Design & Implementation Phase documentation for NCTA's review and Approval, including but not limited to:
    - Project Management Plan
    - Quality Management Plan
    - Project Communication Plan
    - Subcontractor Management Plan
    - Software Development Plan
    - Business Continuity / Disaster Recovery Architecture Plan
    - Requirements Traceability Matrix
    - Iterative System Design Document

  - Bill of Materials
  - Master Test Plan
  - Use Case Based Test Plans
  - Implementation Schedule, Including all System-related Milestones and Touchpoints
  - Security Configurations Documents that align with required security and compliance standards (e.g. PCI-DSS, NIST CSF, Statewide Security Policy)
  - Network and Dataflow Diagrams
  - Roles and Responsibilities Matrix that align with required security and compliance standards (e.g., PCI-DSS, NIST CSF)
- Draft database documentation, including thorough documentation of each database's structure and a plan for database management.
  - Other Documentation Items Required:
    - Cloud-based Architecture
    - Hardware Architecture
    - Flowcharts and/or sequence diagrams per service
    - Storage and Sizing Analysis
    - System Security (System Access)
- Provide regular updates to the Implementation Schedule and attend update meetings as requested/required by NCTA.
- Development of System Testing and Installation documentation for NCTA's review and Approval, including but not limited to:
  - Installation Plans and schedule, including all system-related milestones and any necessary system transition activities
  - Installation Punch List
  - Test Report Results Documentation
  - Updated Requirements Traceability Matrix
  - Maintenance Plan
- Finalizing testing results documentation, and/or testing punch lists for NCTA review and Approval, as necessary
- A Mechanism demonstrating to NCTA the functioning of all APIs/services.
  - NCTA will also provide specific scenarios to be demonstrated.

Note: The Contractor's staff member, or subcontractor, responsible for overseeing the installation of the system must be a Qualified Integrator and Reseller (QIR) as certified by the Payment Card Industry Security Standards Council (PCI SSC).

1.3.2 TISDSR Maintenance Phase

Details regarding maintenance and support of the TISDSR will be determined during the course of this effort. The Contractor will plan for, and schedule discussions with NCTA management to determine specific maintenance and support requirements. The scope of maintenance, post-delivery of the TISDSR, is limited to security patching, and necessary upgrades to applications and the database.

In the event that another vendor is chosen to maintain the TISDSR in the longer term, the Contractor must support Knowledge Transfer (see **Part III, Scope of Work & Requirements**, Section 2.1.13) and any migration activities necessary.

1.3.3 Project Closeout

This phase of Work includes the Project closeout activities, including, but not limited to the following:

- Updated documentation design and code reviews including but not limited to maintenance support review of development library
- Knowledge Transfer to NCTA or it's Designee
- Finalize Maintenance/Support Plan

2 TISDSR Design & Implementation Requirements

The project management, functional and technical Requirements contained within this section serve to describe NCTA's required system functionality. The Requirements are stated below, and any derived Requirements identified during the TISDSR Design & Implementation Phase will be added to the RTM.

2.1 Project Management

2.1.1 Project Management General Requirements

1.	The Contractor shall propose the Project Management Lifecycle and SDLC they will follow and provide details regarding release schedules, milestones, meetings, and other concerns. Both the Contractor and NCTA must agree upon the overall approach.
2.	Under the direction of NCTA, the Contractor shall manage the planning, implementation, and management of all aspects of the Project. The Contractor shall be responsible for coordinating its activities with NCTA and other stakeholders, which are directly or indirectly impacted by the TISDSR Implementation, and other entities as directed by NCTA. The Contractor shall also be responsible for documenting and reporting on all aspects of the Implementation.
3.	The Contractor shall be responsible for monitoring progress of the work throughout the duration of the contract, and also be prepared, on any day of the Contract, to show progress to NCTA on demand. The same management procedures, protocol and requirements shall apply to all work in this contract.

2.1.2 Implementation Requirements

The Contractor shall:

4.	Execute the work in accordance with the approach Approved by NCTA and other plans developed pursuant to the Contract.
5.	Prosecute all work required to deliver the products and systems.
6.	Manage the development and implementation of the work by assuring that all phases of the plan and schedule are accomplished without any delays, problems, or re-work. Delays due to changes both within and outside the Contractor's control shall require the prior Approval of NCTA.

7.	Administer the Contract by establishing and maintaining effective communication with all groups related to the TISDSR Implementation, as per the Project Communications Plan.
8.	Communicate the Scope of Work and Requirements to Contractor's staff and Subcontractors.
9.	Direct and coordinate activities to ensure that work progresses efficiently and is completed on schedule and within budget at the level of quality expected by NCTA.
10.	Collaboration on core elements of the system design, the system design and development process, and coordination with other stakeholders.
11.	Review of key aspects of the initial Project Management Plan, the initial Implementation Schedule, the Subcontractor Management Plan, Quality Management Plan, Project Communications Plan, and any other early coordination as required by NCTA.

2.1.3 Key Personnel

12.	The following roles shall be identified as Key Personnel throughout the term of the Contract: ***NCTA shall not be responsible for any travel or related expenses borne by Contractor.*** • Project Principal: Responsible for the overall conduct and performance of the Implementation; oversight of the Implementation; the performance of the Contractor Project Manager and a point of contact for any escalated issues that cannot be resolved by the Contractor Project Manager. • Contract Project Manager: Responsible for all day-to-day work; the overall execution and delivery of the Implementation and the day-to-day contact person for the Contractor. The assigned Contract Project Manager shall have decision making authority for the Contractor (e.g. related to system changes or Approval of budgets/costs for change requests) regarding the design, development, testing, implementation and maintenance of the system. The Contract Project Manager shall be 100% committed to this Implementation, shall work in the Raleigh-Durham area, and have at least 5 recent years of relevant experience. Information provided within the Contract Project Manager's resume shall demonstrate their background, knowledge, competence and experience in all areas of the Scope of Work. • Lead Business Analyst: Responsible for all requirements gathering, interaction with NCTA business stakeholders, interfaces with software development team to communicate business requirements into system requirements. The assigned Lead Business Analyst shall be 100% committed to this Implementation, work in the Raleigh-Durham area, and have at least 5 recent years of relevant experience. Information provided within the Lead Business Analyst's resume shall demonstrate their background, knowledge, competence and experience in requirements gathering, client interaction and developing system requirements. • Solution Architect: Responsible for the architecture, design and consultation for the development team for the Tolling Integration Service and Data System of Record (TISDSR) system (including subsystems, and internal and external interfaces). The assigned Solution Architect shall be 100% committed to this Implementation and have at least 7 years of relevant experience. Information provided within the Solution

	Architect's resume shall demonstrate their background, knowledge, competence and experience in managing and developing software solutions. • Product Owner: Responsible for the overall planning and implementation of the TISDSR testing program. Also responsible for integration and installation of the TISDSR. • Quality Assurance Manager: Responsible for consistent quality throughout the design, development, testing and implementation of the TISDSR through good QA and QC practices.
13.	Special requirements for the following Key Personnel roles:
	• The Contract Project Manager, and Lead Business Analyst shall be 100% allocated to this Project and work in Raleigh-Durham area throughout the term of the Contract.
	• The Solution Architect is required to work full time in Raleigh during the design portions of the Implementation Phase of the project. Full time in this context is defined as being 100% dedicated to the Project and working at least four days in a given work week on site in Raleigh. **Note**: NCTA will provide office space for up to 6-8 resources.
14.	The Contract Project Manager, Lead Business Analyst, and Solution Architect shall attend weekly status meetings in Raleigh, and other meetings as requested by NCTA.
15.	Other Key Personnel shall attend meetings via Teams or other conference tools agreed by NCTA and travel to the Raleigh metropolitan area as requested by NCTA during their active portions of the contract.
16.	NCTA shall have the right to request a replacement of Key Personnel at any time during the duration of Contract.
17.	In cases where a person identified as Key Personnel leaves the Contractor's team, becomes incapacitated, perishes, or fails to meet expectations, the Contractor shall first gain Approval and permission in writing from NCTA prior to making any proposed changes in personnel.

2.1.4 Implementation Schedule

18.	Implementation Schedule and Progress Schedules – The Contractor shall coordinate with NCTA on the development of an Implementation Schedule, using Microsoft Project, in adequate detail to coordinate and control all activities. The schedule shall also be used to notify NCTA of all Contractor(s) activities, but also able to be rolled up into a summary version for weekly status updates without unnecessary detail. The summary schedules are to be used in the progress meetings to show work progress and plan work necessary to meet the next major milestones.
19.	The Contractor shall coordinate with NCTA to agree on the contents, and the logic of the Implementation Schedule in order to baseline the schedule within forty (40) Calendar Days of receiving NTP.
20.	Once the Implementation Schedule has been baselined and Approved by NCTA, the schedule shall become part of the Contract, and the Contractor shall report all progress against the baseline schedule.
21.	The Contractor shall be responsible for monitoring and updating the Implementation Schedule, and reporting progress of the work throughout the duration of the Contract.

22.	The Contractor shall be responsible for updating and submitting the Implementation Schedule bi-weekly for NCTA's review and Approval. Once Approved by NCTA, the newly Approved schedule shall become part of the Contract, superseding the previously Approved schedule.
23.	Submission of the bi-weekly revisions to the Implementation Schedule shall not release or relieve the Contractor from full responsibility for completing the work within the time set forth in the previously Approved schedule.
24.	NCTA's Approval of the Implementation Schedule does not relieve the Contractor from any liability for Liquidated Damages.
25.	To accommodate NCTA's review of the Implementation Schedule, the Contractor shall submit all files in native and Portable Document Format (PDF) formats.
26.	The planning, design, installation, and completion of the work shall be undertaken and completed in accordance with the most recent Implementation Schedule accepted by NCTA.
27.	The Contractor shall use all practical means to conform fully to the activities and dates shown on the Approved Implementation Schedule. If the Contractor fails to continue to meet the Implementation Schedule, the Contractor will take whatever steps necessary to bring the work back on schedule at no additional cost to NCTA.
28.	The Contractor shall promptly report to NCTA all schedule and progress-related delays.
29.	The Contractor shall have a maximum of ten (10) Calendar Days to alert NCTA of the possibility of a missed milestone. If the Contractor is aware or should have been aware of a possible delay, they must notify NCTA in writing and propose a mitigation strategy to bring the work back on track.
30.	In the event of any schedule delay, the Contractor shall develop a revised schedule for NCTA's review and Approval. The Contractor must submit the revised schedule to NCTA immediately for review and Approval following the identification of a delay.
31.	If a schedule slip occurs due to circumstances beyond the Contractor's control, the Contractor shall notify NCTA and submit a revised Implementation Schedule within five (5) Business Days of being made aware of the schedule slip. Any failure or delinquency in submission of the schedule shall be treated as default on the part of the Contractor.

2.1.5 General Documentation Requirements

This section is intended to be general in nature and applies to all required documentation. For more specific Requirements for specific documents, refer to the appropriate sections below.

32.	All documentation the Contractor submits shall be in English, unless otherwise dictated by NCTA, and ensure NCTA's ability to understand the system solution.
33.	Document Retention - The Contractor shall maintain current versions of all required documentation electronically. The Contractor shall keep the documentation on NCTA SharePoint per the NCTA retention requirements.
34.	All documentation shall be maintained utilizing Microsoft Office tools. All documentation shall be maintained on a secure SharePoint site, to be designated by NCTA, for the duration of the Contract.
35.	Each document produced for the TISDSR shall contain a title sheet, table of contents, list of illustrations (if applicable), revision log, and list of reference drawings (if applicable).

36.	The Contractor shall ensure the standard for all documentation it produces during the term of the contract is sufficient to enable continued operations and maintenance of NCTA toll facilities in case of early termination of the Contractor.
37.	Should any documents reference other documents, the Contractor shall ensure all cross references are kept up to date and accurate throughout the term of the Contract.
38.	All drawings, graphs, plans, charts, illustrations, etc. shall be produced using computer aided drafting software (e.g. Microsoft Visio). Hand-written drawings shall not be acceptable.
39.	The Contractor shall keep accurate records of as-built drawings, diagrams and documents, including any deviations from original.
40.	The Contractor shall be responsible for producing a master record index of all documentation, utilizing current version numbers of all documentation, and keeping the index up to date throughout the Contract readily available on the NCTA provided SharePoint site.
41.	The content of all documentation shall become the property of NCTA who shall have the right to reproduce any portion of the documentation in part or in whole.
42.	Proposer and Contractor logos, confidentiality marks or other such markings shall not be included on any documentation or deliverables developed for NCTA, for any phase, without prior Approval obtained from NCTA in writing.

2.1.6 Project Management Plan

43.	The Contractor shall develop and submit to NCTA for review and Approval a Project Management Plan (PMP) per the Implementation Schedule.
44.	The Contractor shall be responsible for keeping the PMP up to date after significant changes to internal processes and/or procedures, the departure of key staff members or as requested by NCTA. Unless directed otherwise by NCTA, the Contractor shall update the PMP annually for NCTA's review and Approval.
45.	The PMP shall describe the approach to management of the overall Project.
46.	The Contractor shall include a description of their deliverable management processes and procedures in the PMP.
47.	The Contractor shall develop and provide a schedule, subject to NCTA Approval, for all deliverables including Standard Operating Procedures (SOPs).
48.	The Contractor shall be responsible for submitting all deliverables required by NCTA for NCTA's review, comment and Approval.
49.	The Contractor must have NCTA's Approval on all deliverables tied to milestone payments before payment is released by NCTA. NCTA shall have the ultimate determination as to whether or not a deliverable is Approved and final.
50.	Once the Contractor submits a deliverable for NCTA's review, NCTA may perform a cursory review of the deliverable to determine if the deliverable meets NCTA's requirements. NCTA may reject any deliverable if content is missing, the deliverable is incomplete, or NCTA determines the deliverable is unsatisfactory. Should NCTA reject a deliverable, NCTA will notify the Contractor in writing. Rejection of an incomplete deliverable shall be considered a Contractor-generated delay.

51.	The Contractor shall account for enough time in their development schedule to allow NCTA one (1) ten (10) Business Day review cycle, as well as allowing time for the Contractor's revision, on every deliverable. Multiple, simultaneous submittals by the Contractor to NCTA may extend NCTA's review times.
52.	To organize NCTA comments back to the Contractor, the Contractor shall provide NCTA with an empty comment matrix with each submittal. The comment matrix shall be used to track all open comments, as well as document final resolutions to comments until the deliverable is Approved.
53.	Once comments are received by NCTA, the Contractor shall be responsible for updating the deliverable to address any unresolved comments submitted by NCTA.
54.	When the Contractor has addressed all NCTA comments and produced a new version of the document, the Contractor shall then be responsible for coordinating with NCTA to schedule a final document review and comment resolution meeting. The Contractor shall ensure all key decision makers and subject matter experts for their system are available during the meeting so that all remaining open comments can be resolved. The Contractor shall then be responsible for producing and submitting a final document for NCTA's review and Approval.
55.	The Contractor must receive NCTA's written Approval of any document prior to the Contractor proceeding with any work related to the document, unless NCTA provides prior written authorization.
56.	If NCTA requests corrections or improvements to submitted deliverables, the Contractor shall resubmit the documentation and deliverables until such time as NCTA accepts the deliverable. Time required to resubmit and Approve any deliverable shall be considered a delay caused by the Contractor.
57.	Deviations from the requirements set forth in the Contract that may be contained within the Contractor's submitted deliverables, even if Approved by NCTA, shall not modify any requirement set forth in the Contract. Only formal requests to NCTA, from the Contractor, for changes that are formally Approved by NCTA shall modify the requirements set forth in the Contract.
58.	NCTA is not obligated to Approve any request of milestone payment if the associated document(s) or deliverable(s) do not reflect the requirements of the RFP, design documents or the Contract requirements. The Contractor shall request written Approval from NCTA for deliverables and activities related to payment milestones.

2.1.7 Quality Management Plan

59.	The Contractor shall develop a Quality Management Plan (QMP) covering all aspects of the work. The QMP shall outline the Contractor's internal Quality Control (QC) and Quality Assurance (QA) procedures during all phases of the Implementation. The Contractor shall be responsible for the quality of all services and performance related to the design of the TISDSR throughout the duration of the Contract.
60.	The Contractor shall publish all internal documentation and processes related to its quality management procedures and processes on the NCTA designated SharePoint site.

61.	The Contractor's QMP shall acknowledge that all deliverables and design documents shall be prepared in accordance with generally accepted practices for these types of services and the Contract.

2.1.8 Project Communications Plan

62.	The Contractor shall develop and submit a Project Communications Plan for NCTA's review and Approval. The plan shall address all communications, including formal and informal communications.
63.	The Communications Plan shall address all aspects of coordination with NCTA, its consultants, and other third parties as directed by NCTA.
64.	The Contractor, and its representatives, shall ensure an Approved NCTA representative is copied on, or apprised of, all communications with third parties regarding the TISDSR.
65.	The plan shall detail the Contractor's contact information and communication escalation plans in the event that the main contact is unavailable or unresponsive.

2.1.9 Subcontractor Management Plan

66.	If applicable, the Contractor shall be responsible for delivering a Subcontractor Management Plan for NCTA's review and Approval. This plan shall describe the Contractor's approach to managing Subcontractors they propose to deliver the Scope of Work detailed in this RFP. At a minimum, this plan should include:
	• Percentage of work covered by each proposed Subcontractor, and the number of staff proposed.
	• List the key personnel and/or Project Manager for each Subcontractor, as well as their contact information.
	• Indication of each area each Subcontractor shall be responsible for reporting/delivering.
	• Dispute resolution process between the Contractor and its Subcontractors.
	• Description of how the Contractor will ensure Subcontractor Deliverables are produced on time with quality.

2.1.10 Software Development Plan

67.	The Contractor shall be responsible for delivering a Software Development Plan for NCTA's review and Approval. This plan shall describe the Contractor's approach to system development they propose utilizing to deliver the Scope of Work detailed in this RFP.

2.1.11 Business Continuity / Disaster Recovery Architecture

68.	The Contractor shall be responsible for outlining and documenting Business Continuity / Disaster Recovery Architecture for NCTA's review and Approval. The architecture shall describe the Contractor's approach to business continuity and disaster recovery, including disaster recovery procedures, in a cloud-based environment should an event occur that disables or disrupts the TISDSR.

2.1.12 Maintenance Plan

69.	The Contractor shall provide a Maintenance Plan to organize planned maintenance, upgrades, and data management services for the Contractor's system consistent with NCTA's Business and Functional Requirements. The Maintenance Plan shall include at a minimum:
	• Planned software and hardware upgrades and maintenance schedules
	• Update test cases: As APIs evolve, both manual and automated tests should be updated.
	• Refactor automation: Make sure the automation scripts are optimized and reliable, focusing on maintaining them as the API changes over time.
	• Monitor for failures: Especially with automated tests in production, monitor for failures or anomalies that might need manual investigation.
	• Clearly defined roles, responsibilities, and coordination processes
	• Clearly defined process for testing backup and recovery with documentation for each recovery process

2.1.13 Knowledge Transfer

70.	The Contractor shall provide a plan for and actively transfer knowledge of the TISDSR to staff of NCTA's choosing. The knowledge transfer must be completed before project closeout and must be completed to NCTA's satisfaction. Knowledge transfer shall include at a minimum:
	• Runbook activities on how to start and stop all components of the solution.
	• How to run CI/CD deployment and testing.

2.1.14 Weekly Status Meetings

The Contractor is responsible for scheduling all meetings related to this effort for the life of the Contract, including but not limited to:

71.	The Contractor shall be responsible for coordinating with NCTA to arrange weekly status meetings. The Contractor and NCTA shall coordinate on day of the week for the meeting to occur, length of the meeting, meeting attendees and structure of the meeting.
72.	The Contractor PM shall utilize Microsoft Teams which will enable all meeting attendees to share and view documents in real-time during meetings.
73.	The Contractor shall develop all meeting agendas for recurring status meetings, and meetings called by the Contractor. The Contractor shall distribute to meeting invitees full meeting agendas a minimum of one (1) Business Day in advance of all meetings.
74.	The Contractor shall be responsible for documenting meeting notes and distributing a draft copy to all meeting attendees within one (1) Business Day for review. Should any meeting attendee submit comments and/or modifications to the Contractor, the Contractor shall have one (1) Business Day to update the meeting notes and distribute them to other meeting attendees. Meeting notes should be captured during every meeting.

2.1.15 Monthly Progress Reports

75.	The Contractor shall be required to submit a progress report monthly after receiving the Notice to Proceed (NTP) from NCTA.

76.	Monthly progress reports shall by submitted to NCTA no later than the 10th Business Day of every month.
77.	Monthly progress reports shall detail activity performed by the Contractor during the preceding month.
78.	The Contractor shall coordinate with NCTA, within the first thirty (30) Calendar Days after receiving the NTP, on the structure, content and level of detail to be included in each monthly progress report.

2.2 System Design and Testing

2.2.1 Requirements Traceability Matrix (RTM)

79.	The Contractor shall be responsible for developing and maintaining an RTM throughout the TISDSR Design & Implementation Phase. The RTM developed during TISDSR Design & Implementation Planning shall list all requirements and business policies. The RTM developed during System Testing & Installation Planning and beyond shall list all requirements and business policies, and cross reference specific areas where each requirement is covered. As the TISDSR Design & Implementation progresses, the Contractor shall be responsible for updating the RTM to identify where each requirement will be tested (e.g. test or test phase), how the requirement will be validated during each test and cross reference the test script where the requirement is tested.
80.	The Contractor shall develop the RTM using Microsoft Excel or Approved alternative, and coordinate with NCTA on the design, layout and overall format of the RTM.
81.	The Contractor shall continuously maintain and update the RTM.
82.	The Contractor shall only include requirements that NCTA has directed or agreed to, and the RTM shall track the original requirements, any modifications made to requirements, and contain notes on any changes made to requirements as agreed to by NCTA.

2.2.2 Preliminary System Design Document

The Contractor shall develop and submit the Preliminary System Design Document (PSDD) that describes the design specifics of the technology stack provided to meet the project scope of work with focus on micro services design patterns) API Gateway architecture and cloud-based computing / hosted services / infrastructure as a service.

83.	The Contractor shall be responsible for developing a Preliminary System Design Document (PSDD) which outlines the As-Intended To-Be Design of each iteration.
	• This design shall provide System overview (High level system description), System Architecture (software tools, middleware and hardware configuration).
	• This design shall include storage and sizing analysis.
	• This design shall include system access, network design and data security methodologies.
	• This design shall include all software components provided by Contractor or third-party.
	• This design shall include the database architecture, replication approach supporting high availability requirements.
	• This design shall include complete Bill of Materials, including Hardware, Software and support/Maintenance agreements.

2.2.3 Iterative System Design Document

84.	The Contractor shall be responsible for developing an Iterative System Design Document which outlines the As-Intended To-Be Design of each iteration.
	• This design shall provide System overview (High level system description), System Architecture (software tools, middleware and hardware configuration), and Data security.
	• This design shall include descriptions and visual representations, where applicable, of all, code, data flows, integrations, sequence diagrams and solution behavior.
85.	The Contractor shall be responsible for updating the Iterative System Design Document to reflect the As-Built Design of each iteration prior to System Acceptance.
	• This design shall provide System overview (High level system description), System Architecture (software tools, middleware and hardware configuration), and Data security.
	• This design shall include descriptions and visual representations, where applicable, of all, code, data flows, integrations, sequence diagrams and solution behavior.
86.	As part of System Acceptance, the Contractor shall submit the Iterative System Design Document to reflect the As-Built Design of each iteration for NCTA's Approval.

2.2.4 Bill of Materials

87.	The Contractor shall include the Bill of Materials (BOM) for all Equipment and Hardware supplied for the TISDSR.
88.	Prior to purchase of any hardware or software and as part of its design, the Contractor shall submit the final BOM to NCTA for Approval. No hardware or software shall be purchased by the Contractor prior to Approval of the BOM and the design, unless otherwise authorized in writing by NCTA authorized representative.
89.	The Contractor shall provide an initial BOM and Updates to the BOM whenever hardware or software changes occur and at a minimum on a semi-annual basis over the Contract Term. All hardware and software changes shall be subject to the Approval of NCTA.

2.2.5 Master Test Plan

90.	The Contractor shall be responsible for developing a Master Test Plan to address all of NCTA's testing phases.
	a. The Contractor shall develop a Master Test Plan that will be the basis for all testing conducted on the system, including internal and formal testing.
	b. The Master Test Plan shall outline the scope and testing concepts to be used to validate the systems from initial development throughout deployment and acceptance.
	c. The objective of the Master Test Plan is to ensure the Contractor's systems meet all contractual requirements and are tested and certified to be operational and compliant with the NCTA's system requirements and interoperable agencies.
	d. This plan shall detail all tests and aspects of the testing to be fulfilled with each test.
	e. The Master Test Plan shall contain at a minimum the following items:
	• Description of all the different test scenarios and events
	• Methodology of testing, including coordination with external entities (e.g. all integrators and all entities with which a data interface is required)

	Note: Unless otherwise directed and Approved by NCTA in advance of communications, NCTA and/or its designee shall be responsible for communicating with external entities on Application interface testing. If NCTA authorizes direct communication with one of its external entities, the Contractor shall copy the NCTA Project Manager on every written correspondence.
	• Proposed duration of test events
	• Staffing matrix, identifying names and responsibilities during each test
	• Number and types of other Contractor assistance needed to support testing
	• Sample test cases and procedures
	• How test failures will be handled
	• Any special tools, equipment, or personnel required for testing
	• Proposed schedule in days for all tests the Contractor is expected to perform
	f. The Master Test Plan shall be submitted to NCTA no later than sixty (60) Calendar Days after NTP.
	g. No formal testing can proceed without a NCTA Approved Master Test Plan.

2.2.6 General Testing Requirements

91.	The Contractor is responsible for all aspects of system internal testing (MAT and AAT) and formal testing (UAT).
92.	The Contractor shall be responsible for the completion of all required internal testing (e.g. unit testing, regression testing, etc.), and development of testing and defect tracking reports to be submitted every two (2) weeks for NCTA review.
93.	The Contractor shall conduct formal testing in various phases and stages to validate the system's integrity, reliability, and functionality.
94.	The Contractor shall use production volume data in preparation and execution for system testing.
95.	The Contractor shall provide required support personnel, test equipment and test environment(s) as Approved in the Master Test Plan.
96.	Should any issues or defects be discovered after the TISDSR service has been accepted, the Contractor shall go through the processes described in their PMP with regard to configuration management, code update and release. The Contractor shall never change the system without prior authorization from NCTA.
97.	The Contractor shall be responsible for Internal and External Penetration Testing in accordance with the current version of PCI-DSS and producing vulnerability scan reports.
98.	The Contractor shall be responsible for the development of a Compensating Control Worksheet addressing all system vulnerabilities that the Contractor cannot rectify, including the Contractor's risk-based scoring methodology. **Note**: NCTA must Approve all Compensating Controls relating to security and compliance requirements (e.g., PCI-DSS, NIST CSF, Statewide Information Security).

99.	The Contractor(s) shall provide and maintain separate non-production environments throughout the duration of the Contract term utilized for separate and distinct testing from the UAT environment. These are Automated API Testing (AAT), Manual API Testing (MAT), and User Acceptance Testing (UAT). The non-UAT environments shall be available to NCTA at all times (i.e. total transparency). All of these environments shall reside in the cloud, and access to NCTA shall be provided.
100.	All data stored within the test environment shall be the property of NCTA and shall not be purged without prior authorization from NCTA.

2.2.7 Detailed Test Cases and Test Procedures

101.	The Contractor shall develop formal test cases and procedures that emulate various conditions and scenarios that occur in the normal operations of the systems to verify the systems' functionality and the systems' ability to handle such conditions and scenarios.
102.	The Contractor shall develop separate test cases and detailed procedures shall be developed for each test phase (e.g., Automated API Testing, Manual Testing of APIs, User Acceptance Testing).
103.	Contractor's test cases and procedures shall be submitted and Approved by NCTA prior to beginning any testing. These submissions will be stored for audit purposes.
104.	The test procedures shall contain a step-by-step logical testing process with the purpose to demonstrate a level of acceptance for the item being tested. Note: Reference the sample test scenarios / results in **Attachment 4: Sample Scenario-Based Test Matrix**.

2.2.8 Test Reports

105.	The Contactor shall be responsible for developing test reports for every (MAT, AAT, UAT) test performed during the course of the TISDSR Design & Implementation.
106.	The Contractor shall submit a test report within five (5) Calendar Days following the completion of each individual test.
107.	Test reports shall document each test scenario and the outcome of every test, including but not limited to: the success or failure of script/procedure, any issues noted during the test, modifications made to test scripts during the test, items need to be completed to formally pass the test, recommendations for addressing issues discovered during testing, etc. Note: Reference the sample test scenarios / results in **Attachment 4: Sample Scenario-Based Test Matrix**.
108.	The Contractor shall coordinate with NCTA to dictate a priority level (critical-P1, high-P2, medium-P3, low-P4) for each issue / punch list item identified during each test. The Contractor shall be responsible for fixing and retesting P1 and P2 for NCTA's Approval before an individual test can be completed and Approved by NCTA.
109.	The Contractor shall coordinate with NCTA to develop a retesting schedule for lower priority items. If Approved by NCTA, items of lower priority may be retested or rolled into a future test phase.

110.	When NCTA has received all relevant documentation and deems that all punch list items have passed testing, the Contractor completes that test phase.
111.	The Contractor shall be responsible for producing a test observation log after every formal test. The observation log shall document all corrective actions that need to be taken to complete a formal test.
112.	The Contractor shall be responsible for completing all corrective actions identified during a formal test.
113.	Acceptance of any phase or aspect of testing shall not relieve the Contractor from their responsibility in meeting the complete functional and Performance Requirements.
114.	NCTA reserves the right to withhold Approval of the test, pending completion of the required corrective actions.
115.	Throughout system development efforts, the Contractor shall be required to submit development and internal test reports for NCTA review every two (2) weeks. Development and test reports shall include: the status of system development progress made, results of internal testing efforts, a list of defects discovered through internal system testing, and the status/priority of each defect at the time of the report's creation.

2.2.9 Manual API Testing (MAT)

116.	The Contractor shall define the scenarios to be tested, including positive, negative, boundary, and performance cases. Note: Reference the sample test scenarios / results in **Attachment 4: Sample Scenario-Based Test Matrix**
117.	The Contractor shall test APIs via tools like Postman, Curl Send requests to the API endpoints manually to verify functionality, response codes, and data.
118.	The Contractor shall validate responses by comparing the API responses against expected outcomes including status codes, response formats (JSON/XML), and data accuracy.
119.	The Contractor shall verify error handling and edge case testing, that might not be covered or easily automated, such as invalid inputs or unexpected behaviors or irregular system operations.
120.	The Contractor in case of test failures shall debug issues and document them for issue resolution.

2.2.10 Automated API Testing (AAT)

121.	The Contractor shall define the scenarios to be tested, including positive, negative, boundary, and performance cases. Note: Reference the sample test scenarios / results in **Attachment 4: Sample Scenario-Based Test Matrix**
122.	The Contractor shall use automation API testing framework tools like Postman, Rest Assured.

123.	The Contractor shall create automated test scripts to automate common functional tests, such as CRUD operations, input validation, and response verification.
124.	The Contractor shall automate repetitive tests using different data sets by leveraging data-driven testing techniques.
125.	The Contractor shall Automate performance tests to validate the API under stress (e.g., using tools like JMeter or Locust). Exact volume will be determined during the design phase.
126.	The Contractor shall automate scenarios where APIs are integrated into a larger workflows to ensure end-to-end functionality.
127.	The Contractor in case of test failures shall debug issues and document them for issue resolution.

2.2.11 User Acceptance Testing (UAT)

The UAT is intended to demonstrate system standalone functionality, accuracy, capacity, interfaces, modules and ease of use with simulated data to provide sufficient confidence to NCTA that the TISDSR is ready to be integrated with the integration touch points. While UAT relies on inputs or outputs from integration channels that are not available, these inputs and outputs shall be simulated in the UAT environment.

128.	The Contractor shall support NCTA's Independent Validation and Verification (IV&V) testing before NCTA Approves entry into UAT.
129.	The Contractor shall conduct UAT using NCTA Approved test case scenarios and procedures. It is the Contractor's responsibility to ensure that each requirement is certified and/or tested for compliance.
130.	The Contractor shall use hybrid approach for testing that includes Manual and automation tests. Start with manual testing for quick validation of new features and use automation for regression and repetitive scenarios. In a hybrid approach, the goal is to leverage automation where it's most efficient while using manual testing for complex, one-off scenarios or initial validation of new APIs.
131.	The Contractor shall use manual testing for edge cases. Some scenarios may be too complex or require subjective evaluation that can only be done manually (e.g., visual inspections of complex data or timing-specific validations).
132.	Upon completion of the UAT, the Contractor shall submit a test report that details the results of the test to NCTA for review and Approval. NCTA will determine if a re-test of the entire UAT or part of the UAT is required.
133.	Upon the successful completion of the UAT, any further changes to the software shall be fully documented and made only with the Approval of NCTA.
134.	Successful completion of the UAT and Approval by NCTA is required before the Contractor will be given the authorization to move forward with the development of the next (iteration) functional capability.

2.3 System Acceptance

The System Acceptance is the culmination of receiving User Acceptance Testing (UAT) for each of the iterations of the functional capability testing.

135.	The Contractor shall submit Approved UAT test reports from each of the iterations for NCTA review and Approval.
136.	The Contractor shall submit resolution or retest report of all the punch list items identified during the previous phases of test.
137.	The Contractor shall submit the Iterative As-Built-System Design Document for NCTA's Approval.
138.	The Contractor shall submit the following which must be approved by NCTA for final System Acceptance:
	• Final As-Built Approved Tolling Integration Service and Data System of Record (TISDSR) Design Documentation
	• Final As-Built Approved Tolling Integration Service and Data System of Record (TISDSR) Architecture Documentation
	• Approved Final System Hardware / Hosting / IMS / Cloud-based Design
	• Final As-Built Approved Security Configurations Documents that align with required security and compliance standards (e.g. PCI-DSS, NIST CSF, Statewide Security Policy)
	• Final As-Built Approved Network and Dataflow Diagrams
	• Final As-Built Approved Hardware Architecture
	• Final Approved Interface Control Documents
	• Final As-Built Approved System Security (System Access) Design
	• Final As-Built Approved database documentation
	• Final Approved Testing Results Documentation
	• Final Approved Maintenance Plan

3. Functional Requirements

3.1 General Requirements

139.	The TISDSR must be designed and implemented to guarantee delivery of all data processed through and stored within the TISDSR.
140.	The TISDSR shall include end-to-end monitoring and tracking of any file, transaction, message or data in general that is processed by the TISDSR.
141.	The TISDSR shall include monitoring of all hardware and software and support configurable reporting on performance and any defined SLAs.
142.	The TISDSR must support future integration with AI/Chat/Chatbot or like technology.
143.	The TISDSR shall support the automation of NCTA data retention requirements, ex: automated data migration to lower tier storage, automated deletion of records, etc.
144.	The TISDSR shall support the receipt and processing of ETC transactions, image-based transactions and interoperable transactions, and posting them to customer accounts in accordance with **Attachment 1: NC Quick Pass Business Policies** and **Attachment 6: Business Rules** defined and the requirements herein.

145.	The TISDSR shall be internationalized to allow for properly formatted input and output of non-US addresses and license plates, especially those from Mexico and Canada without solution changes. The internal elements (e.g. software code) of the solution shall support English only.
146.	The TISDSR shall be structured such that growth is accommodated, maximized performance is considered and access is easy.
147.	The TISDSR must be auditable, including CSR transactions, ETC transactions, image-based transactions, account balances, front counter and call center activity, adjustments, credit card transactions, payments, etc.
148.	The Contractor shall configure and size the TISDSR appropriately to support projected transaction volumes from existing and future toll projects. Today, NCTA is processing close to twenty (20) million transactions a month and expects the system to scale three (3) times at peak volume times. NCTA currently has over three (3) million active accounts, two (2) million Transponders, twenty (20) million vehicles, two (2) million customer correspondence a month, and expects the system to scale two (2) times. An incremental sizing approach wherein the solution is sized accordingly on a quarterly basis, is acceptable. **Note**: Should the Contractor choose to size the solution in an incremental manner, the Contractor shall develop and submit for Approval a plan that addresses all aspects of solution sizing including but not limited to data storage & communications bandwidth
149.	Services/APIs must be autonomous.
150.	Contractor shall manage all licenses and inform NCTA of renewals six (6) months in advance of contract end dates.
151.	The TISDSR shall support the following functional capabilities areas:
	• Account Management
	• Account Assets
	• Customer Financials
	• Payment Processing
	• Transaction and Image Transfer
	• Customer Notifications
152.	The Contractor shall build TISDSR components to support the following capabilities and channels:
	• Case Management
	• Customer Service Representative (CSR) Interface
	• Transponder Fulfillment
	• Web User Interface (UI) and Mobile Application
	• Roadside Systems
	• Payment Gateway
	• IOP Hubs (EZIOP & SEHUB)
	• Out of State DMV Look-up
	• Mail Processing
	• Interactive Voice Response (IVR)

	• Business Intelligence / Analytics
	• Customer Financials
153.	The Contractor will utilize an NCTA Asset Management solution (ServiceNow) to maintain the details of all solution assets that are part of this solution. It should include, but not be limited to:
	• Hardware components
	• Software version & compatibilities between solution components
154.	The Contractor shall provide staff for technical support, including but not limited to:
	• Solution monitoring
	• Performance and availability reporting
	• Installation of necessary database upgrades
	• Installation of necessary patches to all components of the solution
	• Resource engagement/consultation with integrators and any necessary documentation during integration with NCTA's channels, B2B partners and applications.

	• Backup and restore activities -
	  ○ Database Backups: Full back up once per week and incremental backups daily.
	  ○ Daily backups for applications and middleware

155.	The TISDSR shall record and store the date, time and all other transaction attributes of every transaction occurrence transmitted to the solution in accordance with NCTA's business policies, business rules, and interface control documents. Reference **Attachment 1: NC Quick Pass Business Policies** and **Attachment 6: Business Rules**.
156.	The TISDSR shall comply with NCTA's financial management and accounting policies, procedures and accounting treatment.
157.	The TISDSR shall provide timely, reliable and accurate financial information.
158.	The TISDSR shall support the application of payments to accounts, or a transaction, according to a predetermined order, such as first in-first out (FIFO), as defined by NCTA.
159.	The TISDSR shall provide the ability to locate and consolidate transactions by transaction type, payment type, payment location, in aggregate, by facility, lane and time. The solution shall also identify and report any duplicate, invalid and pending transactions.
160.	The Contractor shall propose commercial-off-the-shelf software, tools and hardware, where appropriate.
161.	The TISDSR shall track and store for future reporting all supported payment types and payment transactions.
162.	The TISDSR shall provide functionality to identify accounts when the current address is incorrect, or mail has been returned.
163.	The Contractor shall analyze NCTA's IVR solution - (877) 769-7277 to build services that will be integrated at a future date.
164.	The Contractor shall analyze NCTA's current website - https://www.ncquickpass.com/, to build services to support a new website with the same functionality.
165.	The Contractor shall analyze NCTA's Mobile Application *(NC Quick Pass)* for both iOS & Android, found on the app stores to build services to support a new mobile app with the same functionality.

166.	The TISDSR shall be designed such that any business intelligence and/or analytic tool integration will not impact customer performance.
167.	The Contractor shall check-in, and make available to NCTA staff, all source code, configurations, scripts and any other applicable components, to a source code management/version control solution, Approved by NCTA.

3.1.1 Monitoring and Logging

168.	The Contractor shall recommend a COTS monitoring and logging tool or tools for Approval by NCTA.
169.	The Contractor will be responsible for implementing the tool or tools that NCTA has Approved, including all identified monitoring and logging outlined in this RFP.

3.1.2 Email and Messaging

170.	Provide a service for outbound/inbound email and SMS text messaging that meets the outbound/inbound correspondence Requirements.

3.1.3 Archival and Purge Control Mechanisms

171.	Provide a service for fully automated and Configurable storage of historical data (archival) and the permanent deletion of inactive or obsolete data (purging).
172.	Provide a service to store 100 percent of the NCTA electronic information for seven (7) years, including but not limited to:
	• Data
	• Images
	• Documents
	• System logs and
	• Third-party files
173.	Archival and purge routines shall be Configurable for each impacted data element, including but not limited to:
	• Data
	• Images
	• Documents
	• System logs and
	• Third-party files
174.	Data shall be archived and purged on a configurable interval.

3.1.4 Payment Card Industry (PCI) Security Standards and Compliance

175.	The Contractor shall maintain payment card industry certification (PCI) while supporting the TISDSR.
176.	The Contractor shall ensure no cardholder data, such as Credit Card numbers or card verification value data, and no PII is present in any non-production environments, including but not limited to the replicated database, training, development and testing environments.
177.	The TISDSR shall provide security and audit measures in accordance with NIST CSF and PCI-DSS to ensure solution and data integrity.

178.	The TISDSR shall be fully auditable allowing authorized users to audit all solution actions in accordance with Sarbanes-Oxley legislation Service Organizational Control (SOC2 Type 2).
179.	The TISDSR shall support the creation of secure, read only auditing roles for internal and external audit groups.

3.1.5 Interfaces

3.1.5.1 General Requirements for External Interfaces

180.	Provide electronic automated Interfaces to the Agencies, Interoperable Agencies, Third-Party Service Providers and Business Partners in accordance with these Requirements.
181.	Provide for Guaranteed transmission of data for all Interfaces and portals.
182.	Provide for 100 percent Reconciliation of the transmitted data and files.
183.	The Contractor shall utilize secure file transmission Protocols (SFTP) for the transfer of data and/or files via Interfaces.
184.	Provide a service to transmit and receive multiple files during each scheduled batch.
185.	Provide a service to transmit and receive multiple files in a day.
186.	Utilize file naming conventions that prevent the over-write of data and/or files. For example, include the date and time of transmission.
187.	Utilize file handling and processing methods that provide a complete log of the data and/or file transfer process. For example, files that are successfully processed are moved to a processed folder.
188.	Validate records and identify errors in the received data and/or files:
	• mandatory fields
	• data formats
	• data validity (such as Customer Account number not found in the NCTA)
	• duplicate records
	• unexpected response
	• checksum/record count verification
	• incorrect status
189.	Reconcile the transmitted records to the records received and accepted by the receiving entity.
190.	Provide a service for Authorized Users to obtain the history of updates to a transaction.
191.	Provide a service to automatically archive successfully processed data and/or files after a Configurable number of days.

3.1.6 Processing Requirements

3.1.6.1 General Requirements

192.	The TISDSR shall support notifying customers via e-mail or text message requesting that customers update their account address should a valid e-mail or phone number exist on the account. The system shall provide bar code functionality for processing mail with no forwarding address, address does not exist and for change of address.

193.	The TISDSR shall support the ability to obtain more current address information from Approved source databases (e.g. NCDOT DMV, NCOA, collection agency/skip tracing, etc.) and add the address to the account, noting the source of the address update.
194.	The TISDSR shall validate address and name data received from outside sources (e.g. NCDOT DMV, NCOA, etc.), and update address data resulting in a reduced quantity of returned mail.
195.	The TISDSR shall maintain address history for each account.
196.	The TISDSR shall track the date and time any transaction posts to an account.
197.	The TISDSR shall immediately update account balance any time a financial transaction posts to an account.
198.	The TISDSR shall prevent any changes made to transaction data to effect prior accounting periods.
199.	The TISDSR shall support both automated and manual allocation of financial activities to various funds, accounts or programs.
200.	The TISDSR shall support the export of financial data in multiple formats for input into various NCTA Financial solutions, mapping the sub ledger to a General Ledger (GL).
201.	The TISDSR shall provide automated tools and controls that prevent monetary loss or informational abuse from internal and external users.
202.	The TISDSR shall assign a unique identifier to each payment transaction.
203.	The TISDSR shall support processing all authorized payments to accounts in near real-time, including account replenishments.
204.	The TISDSR shall provide the following payment functions to manage charges to customers and the revenues which result from those charges: • Payment Interfaces which include Manual (storefront, retail locations and special events), Lockbox (utilizing NCTA's contracted Lockbox services vendor), Point-of-Sale, IVR and Web self-service
205.	The TISDSR shall support reports showing all refund activity by date range within the solution. These reports shall be designed in coordination with NCTA during the design process.
206.	The TISDSR shall support a Roles and Responsibilities Matrix and prevent unauthorized users from modifying a customer's bankruptcy status.
207.	The TISDSR shall provide a mechanism to track and uniquely identify all accounts in bankruptcy status.
208.	The TISDSR shall prevent system generated payment processing errors. Payment processing errors include, but not limited to:
	• Double or over- charging (billing) of a customer's credit card, debit card, or bank account (via ACH).
	• Improperly drawing down a customer's account causing an improper replenishment.
209.	The TISDSR shall accurately post transactions to the correct account in near real-time.
210.	The TISDSR shall generate and store transaction dates and posting dates when posting transactions.
211.	The TISDSR shall identify the source of all transactions and map the transaction data to the proper customer account.

212.	Support comprehensive Account management Service that allows for the setup and Maintenance of all Account Types and Attributes in accordance with the NCTA Business Rules.
213.	The TISDSR shall accurately track and account for all transactions, customer account activities and other toll-related financial activities conducted by the solution.
214.	The TISDSR shall support payments received through the lockbox interface to be applied to the appropriate account and transaction.
215.	The TISDSR shall contain functionality to route unidentified image-based transactions license plate data, via external interface(s), to local DMVs or other third-party services for identification of vehicle owners via license plate lookup.
216.	The TISDSR shall support a service to identify the owners of out-of-state license plate from a third-party.
217.	The TISDSR shall support home authority and reciprocal authority transaction posting for all Interoperable transactions.
218.	The TISDSR shall support integration with NCTA's Lockbox services vendor.
219.	The TISDSR shall support integration with NCTA's payment vendor. (First Data Merchant Services).
220.	The TISDSR shall provide functionality to process, track and reconcile all exceptions received from the NCTA lock box.
221.	The TISDSR shall capture and store all toll transaction rates transmitted from a RTCS host solution(s) with each transaction.
222.	The Contractor shall coordinate with NCTA, other contractors, other designees and concessionaires to develop and/or implement services to NCTA and concessionaire Express Lane RTCSs to receive and process transactions and fully formed image-based transactions with their associated images.
223.	The TISDSR shall track each transaction utilizing a unique identifier from the RTCS host through to final settlement/payment.
224.	The TISDSR shall track unpaid image-based transactions (e.g. via a unique status code) as they age within the solution.
225.	The TISDSR shall track the reason for each image-based transaction ownership reassignment, in accordance with NCTA business policies.
226.	The TISDSR shall track each transaction utilizing a unique identifier from the Roadside Toll Collection System (RTCS) host through to final settlement/payment.
227.	The TISDSR shall automatically and immediately attempt to post transactions to a single customer account once files from a RTCS host have been received and processed.

4. Functional Capabilities

4.1 Account Management

4.1.1 General Account Management

228.	Provide a service to apply NCTA Business Rules and Account Requirements for each valid Account Type and Attribute combination:

	• Multiple (one or more) payment options (hierarchical usage sequence for auto-replenishment methods - Primary, Secondary Payment type). Payment Options can be used for recurring payment or stored card.
	• Replenishment amounts and Low balance thresholds.
	• Account balance.
	• Discount Plan (First Responder, Government, Transit, Standard) applied to any of their License Plates or Transponders or Account.
	• Transponders (1 to many)
	• Number of Vehicles on an Account. For example, a Business Account can have minimum of 1 vehicle, or Private Account can have a maximum of 10 vehicles.
	• Multiple Contact (First Name, Middle name, Last name, Suffix,) for an account.
	• Multiple Doing Business As (DBA) for an account. A Rental or Fleet company could have registered DBA differently across states.
	• Multiple Email (Primary and Secondary) and Multiple Phone (Home, Work, Mobile) linked to contact.
	• Multiple Address (Street-1, Street-2, City, State, Country and County, Address source: Customer, CSR, DMV, NCOA, USPS) for an account.
	• Configuration of mandatory/optional fields required during Account setup. Find API specification and account matrix.
229.	Provide a Service to create and maintain Accounts via methods:
	• Self-Service Website
	• Self-Service Mobile Application
	• Self-Service Mobile Website
	• Customer service agent Application
	• In Batch mode using information provided by the ROV Lookup Service Provider
230.	Provide a Service for the creation and Maintenance of Account Types:
	• Prepaid Accounts
	• Postpaid Accounts
231.	Provide a Service for the Maintenance of Account Attributes designated as:
	• NC Quick Pass Personal
	• NC Quick Pass Business
	• NC Only (Plate Only)
	• NC Quick Pass Government
	• NC Quick Pass Transit
	• NC Quick Pass First Responder
	• Toll Invoice Account (Bill By Mail)
232.	Provide a Service to convert a Postpaid Account to a Prepaid Account while maintaining the same Account number and all Account history.
233.	Provide a Service to change Account Attributes while maintaining the same Account number and all Account history.

234.	Provide a Service (Configurable) to merge or combine Prepaid Accounts into a Prepaid Account or Postpaid Accounts into a Prepaid Accounts.
235.	Provide a Service for two (2) or more Accounts to be linked but remain separate and distinct Accounts, allowing the customer and the NCTA staff to view all linked Accounts at one time. Accounts are linked using the matching criteria (Same Plate and Last name, Same Last Name and Address, Same First Name and Address).

4.1.2 Account Statuses

236.	Provide the functionality to apply NCTA Business Rules for each Account Statuses:
	• Active.
	• Pending Open (Prepaid Accounts only) - Status until account creation payment is successfully applied to the account.
	• Pending Convert (BBM, NC Only accounts only) - Status until account conversion payment is successfully applied to the account.
	• Pending Close (Prepaid Accounts only) and (Provide "X" days in this status before Account is closed).
	• Inactive (Per NC Quick Pass Business Policy) - Any account with no customer triggered financial activity in the last 24 months.
	• Suspended (Prepaid Accounts only) - When Account balance is below $0.
	• Closed (Postpaid when account balance is $0, Prepaid after Pending Closed for "X" days).
237.	Provide a Service for customer Notification (Configurable) when the Account changes Status.
238.	Provide a Service to resume the Account creation process (using a Reference number - provided at start of the process) that was abandoned before completion or intentionally saved for later retrieval if the Account remains in Pending Open status.
239.	Provide a Service to automatically change the pending open Account to a closed status if a Configurable period of time has elapsed, and the minimum information required for opening the Account is still missing.
240.	Provide a Service to automatically set Accounts to pending close status upon a request to close the Account.
241.	Provide a Service to set account to Pending Close status to:
	• Removing payment methods on the Account
	• Closing vehicle subscriptions
	• End subscriptions for Transponders and License Plates on the Account
	• Capturing reason for Account closure
	• Determining the refund amount
242.	Provide a Service for the reactivation of an Account in the pending close and closed statuses.
243.	Provide a Service to prevent transactions from Posting to closed Accounts.
244.	Provide a Service (Configurable) to automatically initiate Account closure procedures for Accounts that are inactive and customer has not requested to keep the account Active.

4.1.2 Account Flags

245.	Provide a Service to get or set Account Flags based on conditions and events:
	• Bad (Nixie) Address
	• Bad Email Address
	• Inactive Account
	• Account Holder Deceased
	• Excessive ITOL threshold has been exceeded
	• Account is in Pending Close status
	• Account has an Open Case
	• Account has a non-revenue Discount Plan applied to any of their License Plates or Transponders
	• Returned check
	• At least one Credit Card is expired or is expiring within a Configurable number of days
	• Account has at least one suspended auto-replenishment method
	• Account has unpaid invoice(s)
	• Account has transactions in collections
	• One or more License Plates on the Account has been placed on Registration Stop
246.	Provide a Service to fetch all active Flags on an Account upon accessing the Account information.
247.	Provide a Service to automatically clear Flags no longer active on an Account.

4.1.3 Account Address

248.	Provide a Service for customers to have multiple addresses and contact information on the Account and require that the primary address and contact be identified. All updates and deletes should be stored as history with updated date.
249.	Provide a Service to identify the source when a CSR enters the customer address manually into the NCTA.
250.	Provide a Service to interface with US and Canada Address standardization to:
	• Verification, to ensure the address exists
	• Normalization, to standardize U.S. addresses, such as "Drive" becomes "Dr."
	• Selection from all potential address results
251.	Provide a Service to accept or reject the recommended changes provided during address validation or normalization.
252.	Provide a Service for multiple active addresses, including all prior addresses for all Account Types, in address standardization form:
	• Mailing (standardized)
	• Different sources (Customer, CSC agent, Collections, NCOA, Skip tracing)
	• Shipping (standardized)
	• DMV (ROV lookup provided address standardized)
	• Billing (standardized)

253.	Provide a Service to store address history and make all addresses accessible in the Account with the normalized one being the effective/current mailing address. For example, if an address was changed during the address normalization, both the original address and the normalized one are stored on the Account.
254.	Provide a Service to ensure Bill-By-Mail accounts always have the DMV provided address (Prevent deletion of DMV provided Address).
255.	Provide a Service to enter a forwarding address, obtained from returned mail communicated via Interface from an external vendor or manually input, only if the new address has an effective date after the last updated date. For example, a forwarding address provided by external vendor should not override address provided by manual input after the date external vendor received address update.

4.1.4 Contacts

256.	Provide a Service to update Account holder's name.
257.	Provide a Service to designate multiple authorized Account contacts.
258.	Provide a Service to capture Email address and Phone number for the Account contacts.
259.	Provide a Service for email address validation by comparing a re-keyed email address. The addition of unmatched entries shall not be allowed.
260.	Provide a Service to send a secure email requesting validation of an email address via delivered code or link for NCTA validation or other alternate validation methods.
261.	Provide a Service to validate selected sets of emails via third-party email address validation service providers by sending a list of email addresses and capturing results (real-time or on a Configurable schedule to periodically validate).
262.	Provide a Service to Flag email addresses as "bad" based upon the results of the email validation process, without removing them from Accounts.
263.	Provide a Service to validate a PIN used for identifying an authorized contact. The PIN shall be masked (not visible to CSRs).
264.	Provide a Service to have multiple communication channels: • phone • cell phone • additional phone numbers • email • additional email addresses • text • mail
265.	Provide a Service to select a preferred communication channel for specific customer communications. Each communication channel will have a default communication method (Example: Account balance notifications will be via email).

4.1.5 Account Notes

266.	Provide a Service to enter and categorize comments on Accounts.
267.	Provide a Service to edit and remove comments made by CSRs.

268.	Provide a Service to insert system-generated comments on Configurable actions initiated by the CSC agents. Examples (Customer disputes, dismissals, transfer of responsibility, plate change, corrections)
269.	Provide a service to securely email the PIN to the valid primary email address on the Account and require that the PIN be subsequently changed.
270.	Provide a Service to log all Account changes and provide a service to view details, including but not limited to:
	• Prior value
	• The new value
	• User ID
	• Date/time
	• User information, such as NCTA CSC agent, Authorized User or customer originated
271.	Provide the Account Summary in a printer-friendly format to be used for, including but not limited to:
	• handing to walk-in customers;
	• inserting with mail Transponder Fulfillment;
	• mailing to customers and
	• sending to customers via secure email.

4.1.6 Interface to Email Address Standardization Service Provider

272.	Provide a Service to Interface with a third-party Email Address Standardization Service Provider for the functionality described within these Requirements and in accordance with ICDs, to be developed during Project Design.

4.1.7 Interface to Address Standardization Service Provider

273.	Provide a Service to Interface with a third-party Address Standardization Service Provider for the functionality described within these Requirements and in accordance with ICDs to be developed during Project Design.

4.2 Account Assets

4.2.1 Transponder Inventory

4.2.1.1 Inventory Definition and Tracking

274.	Provide a Service to create and track multiple inventory types, for example different types of Transponders and other inventory items.
	• Provide a Service to manage any number of Transponder types, currently available:
	• Sticker Transponders
	• First responder sticker Transponders
	• Transit sticker Transponders
	• Motorcycle sticker Transponders

	• Hard-case portable Transponders
	• Hard-case portable HOV 3 position Transponders
	• Bumper-mount Transponders
275.	Provide a Service to receive Transponder inventory boxes:
	• inventory Item description
	• Model number
	• manufacturer (TransCore, Kapsch, Starz, Neology etc.)
	• lot, case and tray information
	• Transponder communication Protocol (Single protocol - TDM, Sego, 6C, Mult-protocol TDM & Sego, and Tri-protocol (TDM, Sego and 6C)
	• Transponder style (sticker, hard-case, bumper).
276.	Provide a Service to upload a file (manifest) with bulk inventory information using the starting and ending numbers in a range. Prior to importing, the file is validated (invalid files shall not be imported and an error message shall be presented). Individual Transponder inventory item attributes as following:
	• Model number
	• Procurement cost
	• Sales price
	• Manufacture date
	• Date received
	• Manifest number
	• Inventory number
	• Expiration (if applicable)
	• Date assigned/purchased
	• Location assigned to customer from
	• Staff/NCTA assigned by
	• Replacement
	• Warranty start date
	• Warranty period
	• Purchase order number/statement or invoice number
	• Transponder Prefix by Protocol (0033 – 6C, 033 – TDM and 0710 – Sego)
	• Transponder number (10-digit serial number)
	• Transponder Manufacturer's number
	• Transponder class (Class programmed on Transponder - 72 - Class 1, 527 - Class 2 and 727 - Class 3
	• Status
	• Inventory location
277.	Provide a Service to track Individual inventory items by location at end of day:
	• Warehouse (Transponder fulfillment vendor location)
	• Walk-in customer service locations

	• In transit between customer service locations
	• Multiple individual Retailers
	• Multiple individual CSRs
	• Customer Account
278.	Provide a Service to ensure individual inventory pieces are only in a single location at any one time.
279.	Provide a Service to restrict transitions among various inventory Item locations, for example inventory in the "Assigned to CSR" location cannot go to the "Return to Manufacturer" location; it can only go to "inventory" location or "Customer Account" location.
280.	Provide a Service to assign a status to each individual Transponder inventory Item.

4.2.1.2 Interface to Transponder Fulfillment Vendor

281.	Provide a Service to Interface with the Transponder Fulfillment vendor for the functionality described within these Requirements and in accordance with existing ICDs.

4.2.1.3 Inventory Fulfillment

282.	Provide a Service to create an inventory Item sale transaction including but not limited to:
	• full price sale with Sales Tax
	• full price sale without Sales Tax
	• Warranty sale
	• No sale (replacement)
283.	Provide a Service to assign multiple types of inventory items to Accounts and record the Transponder number to the Customer's Account.
284.	Provide a Service to fulfill Transponder orders, including but not limited to:
	• Individually by type of Transponder
	• By range of Transponders
285.	Provide a Service to reassign inventory items from one Account to another.
286.	Provide a Service to replace an existing individual inventory Item on an Account with a different item.
287.	Provide a Service to issue Individual inventory items to customers via various distribution methods, including but not limited to:
	• By mail
	• By web
	• By mobile app
	• Walk-in
	• Through Retailers
288.	Provide a Service for customer inventory orders to be fulfilled at time of request. For example, at a walk-in Customer Service Center location with the customer present.
289.	Provide a Service for customer inventory orders to be fulfilled and mailed to the customer when the customer is not physically present. For example, a Transponder was requested during a call to a CSR or using the Self-Service Website.

290.	Provide a Service to alert when the vehicle requires an externally mounted Transponder (bumper mount) or special mounting location.
291.	Provide a Service to track customer inventory orders as a single order regardless of the number of items requested. For example, if a customer wants two (2) of type A inventory items and two (2) of type B inventory items, that order will be a single customer inventory order.
292.	Provide a Service for customer inventory orders to be partially fulfilled. For example, while there may not be enough of a certain type of inventory Item to complete the order, those that are available can be fulfilled.
293.	Provide a Service to make modifications to the inventory orders prior to fulfilling them. For example, a CSR may need to change the Transponder type because the customer's vehicle requires an externally mounted Transponder (bumper mount) or add another Transponder to the order based on a customer request.
294.	Provide a Service to notify the customer that an inventory Item(s) has been placed in the mail.
295.	Provide a Service to return inventory items to stock and update the status, if applicable while preserving full traceability. For example, if a Transponder comes back in returned mail, the System shall retain the history of the Account the Transponder was added to and that it came back undeliverable.
296.	Provide a Service to send and receive files containing Fulfillment orders, inventory assignments and other information required to support the outsourced process.
297.	Provide a Service to track inventory items which are lost by the outsourced Fulfillment provider separately from inventory items lost by customers.

4.2.1.4 Inventory Sales Tax

298.	Provide a Service (Configurable) to assess and collect the appropriate sales tax on Transponder and other taxable inventory sales. When purchasing Transponder at physical location the tax rate is based on the locations county in North Carolina. When requesting Transponder via mail, web or mobile APP, Sales tax rate shall be determined based upon the requestors residency county in North Carolina or flat out of state Tax rate to which goods are shipped.
299.	Provide a Service to exempt certain transactions from sales tax. For example, when inventory items are sold to customers who possess a resale permit or are otherwise exempt from paying sales tax.
300.	Provide a Service to track Transponder returns and appropriately account for sales tax.

4.2.1.5 Transponder Warranty Replacement for the Customer

301.	Provide a Service for customers to return their old Transponder and receive a replacement Transponder of the same type.
302.	Provide a Service for customers to return Transponders to the NCTA and receive a refund of the purchase price if the Transponder is defective and still within the manufacturer's warranty period.
303.	Provide a Service to send a replacement Transponder to the customer upon the receipt of the warranty claim.
304.	Provide a Service to track the return of the old Transponder and update the Account upon the successful receipt of the old Transponder.

4.2.1.6 Customer Return of Transponder

305.	Provide a Service to establish and maintain Transponder return thresholds and their resale status, based on where the Transponder was purchased. For example, if the Transponder was purchased at CVS, the customer can return their Transponder within 30 days.
306.	Provide a Service to accept Transponder returns if they are within the established return threshold.
307.	Provide a Service to over-ride the Transponder return threshold and accept the return Transponder but require the entry of comments.
308.	Provide a Service to note all Transponder returns on the Customer Account.

4.2.1.7 Retailers

309.	Provide a Service to sell inventory to Retailers.
310.	Provide a Service to track sales to Retailers.
311.	Provide a Service to receive a manifest file from the Transponder fulfillment vendor with details on all Transponders shipped to Retailers.
312.	Provide a Service to create an invoice for Transponders sold to the Retailers.
313.	Provide a Service to track inventory returns from Retailers.
314.	Provide a Service to issue refunds to Retailers.

4.2.2 Transponders

315.	Provide for Configurable Transponder statuses:
	• Initializing (prior to Fulfillment)
	• Pending Activation (Retail Transponder not registered)
	• Active (Customer Account) - Prepaid Only Valid in Transponder Status File (when balance is greater than or equal to $0, Invalid when balance is less than $0). Postpaid Account is valid irrespective of the balance.
	• Lost (Customer Account)
	• Stolen (Customer Account)
	• Lost In Mail (After Fulfillment before customer receives)
	• Retained (Customer deactivates Transponder)
	• Defective (Customer Returned Transponder defective)
316.	Provide a Service for recording Transponder issue date and time.
317.	Provide a Service to record and associate a payment for every Transponder sold (including Sales Tax, County Tax)
318.	Provide a Service to change Transponder statuses, such as when a customer calls to report a Transponder has been Lost or when Activating a Retail Transponder.
319.	Provide a Service to track a Transponder's status transitions, status change timestamp, and maintain status history.
320.	Provide a Service to notify customer when the Transponder changes status.
321.	Provide a Service for a customer to register a retail Transponder by requiring customers to enter the Transponder number and manufacturer's validation code when activating a retail Transponder.

4.2.3 Vehicles and License Plates

	Provide a Service to associate information with a License Plate:

322.	• License Plate type
	• License Plate jurisdiction
	• License Plate issue date
	• Vehicle make (from a drop-down list)
	• Vehicle model (from a drop-down list)
	• Vehicle year
	• Indication the License Plate is a temporary License Plate (expiration date is required)
	• Linked Transponder
	• DMV lookup date
323.	Provide a Service to manage a drop-down list of vehicle makes and models:
	• Vehicle manufacturer
	• Vehicle make
	• Transponder exception specifying that the make and model requires an externally mounted Transponder or special mounting locations for windshield Transponders and
	• Vehicle class
324.	Provide a Service to add multiple License Plates and associated vehicle information to an Account.
325.	Provide a Service to associate multiple Transponders to an Account.
326.	Provide a Service for a Transponder to be optionally linked with a vehicle License Plate on an Account.
327.	Provide a Service for customers to change the License Plate associated with a Transponder on their Account.
328.	Provide a Service, when adding a new License Plate to an Account, to automatically identify other Account(s) associated with that License Plate:
	• Invoice Accounts that have unpaid transactions (Return message to make payment on the other account before this plate can be added)
	• Accounts where the License Plate is active on another Prepaid Account (Return message that the plate is already linked to another account)
329.	Provide a Service for recording the history of ROV information provided by DMV as a response and parsed data associated with each License Plate.
330.	Provide a Service for transferring vehicle(s) and associated License Plate(s) between Accounts. At any given time, plate can be active only on one account.
331.	Provide a Service to prevent removal of vehicle(s) on Bill-By-Mail account with an outstanding dues. At any given time, plate can be active only on one account.

4.2.4 Discount Plans

332.	Provide a Service to assign Discount Plans at the Account or Transponder or Plate level.
333.	Provide a Service to enroll customers in Discount Plans in multiple ways:
	• Automatically based on eligibility (First Responder, Government or Transit)
	• Customer elects to participate (Ride Share, Motorcycle)

334.	Provide a Service for individual participation in a discount plan to be terminated if the customer no longer meets the required criteria.

4.2.5 Prepaid Account Replenishment

335.	Provide Configurable replenishment parameters for all Account Types and Payment Method:
	• Low Balance or Replenishment Threshold (configurable percentage of Replenishment Amount) Example: For Personal Account with Auto Replenishment 25%
	• minimum replenishment threshold (a minimum of $5)
	• minimum replenishment amount required ($10)
	• replenishment amount based on the number of Transponders on the Account - for first two, Transponders is $10 and subsequent each Transponder is additional $10
	• replenishment amount based on the number of Vehicles on the Account - for first two, vehicles is $10 and subsequent each Vehicle is additional $10
	• replenishment amount based on the replenishment type (manual or automatic)
	• replenishment amounts calculated based on average use for a Configurable period of time (30 days)
	• number of months used to calculate monthly average use (One month)
	• number of replenishment failures before next method is attempted
	• number of declines before a replenishment method is suspended, based on appropriate reject reasons
	• replenishment amount by payment type, such as default replenishment amount for cash replenishment might be higher than for Credit Card replenishment
336.	Provide a Service for Authorized Users to identify and set individual Accounts that are not subjected to auto-replenishment recalculation.
337.	Provide a Service for automatic Account replenishments via Credit Card.
338.	Provide a Service for automatic Account replenishments via ACH, with options for checking or savings Accounts.
339.	Provide a Service to support replenishment attempts and determine the required actions on the Account, based upon the reason the payment method is declined. For example, if a credit card is declined because it was reported stolen, no additional attempts will be made on that card.
340.	Provide a Service for a stepped approach to failed auto-replenishments where an attempt is made to collect from the primary replenishment method a Configurable number of times, followed by the secondary method and continuing until attempts have been made to replenish from all replenishment methods.
341.	Provide a Service to make the secondary payment method the primary replenishment method when the primary method has been suspended and the secondary method was successful.
342.	Provide a Service for automatically suspending an auto-replenishment method because of a Configurable number of declines.
343.	Provide a Service for automatically removing the suspension of an auto-replenishment method when there is an update to the Credit Card number, expiration date or any other related information. Replenishment Amount and Threshold should be recalculated based on the new payment method.

344.	Provide a Service for automatically removing the suspension of an auto-replenishment method when there's an update to the ACH routing number, Account number or any other related information. Replenishment Amount and Threshold should be recalculated based on the new payment method.
345.	Provide a Service to store payment information on the Account but not have it as part of the hierarchical auto-replenishment list of payment methods. Such payment methods shall be used for manual Account replenishment.
346.	Provide a Service for the manual replenishing of Accounts, regardless of payment method.
347.	Provide a Service to remove all auto-replenishment methods from an Account.
348.	Provide a Service to check Account balances each time a transaction is posted to an Account, as well as automatically submit an auto-replenishment attempt using the primary valid replenishment method when replenishment criteria is met.

4.2.6 Postpaid Authorized Payment Account

349.	Provide a Service to add a payment method to a Postpaid Account.
350.	Provide a Service to automatically pay the Toll invoice using the payment method on the Account, after Configurable number of days after the invoice was issued.

4.3 Customer Financials

4.3.1 General Financial Requirements

351.	Provide an integrated, Configurable, self-balancing GAAP-compliant Accounting Module for all transactions.
352.	Provide for double entry recording of all financial transactions.
353.	Create journal automatic entries for recording and tracking all transactions and payment events.
354.	Provide an audit trail for each transaction.
355.	Every payment that resulted in a receivable being marked paid shall be traceable to the receivable(s) it paid.
356.	Every paid receivable shall be traceable to one or more payments that were allocated to its payment.
357.	The Contractor shall develop a journal entry template for every NCTA transaction that impacts revenue, liability balances (for example, Prepaid Accounts) or asset balances (for example, Accounts receivable) to be Approved by the NCTA Toll Revenue Group.

4.3.2 Transaction Recording

358.	All entries to the System shall consider payable and receivable balances between:
	• the customer and the NCTA
	• the NCTA and the NC Roadways
	• the NCTA and Interoperable Agencies (E-Zpass Hub/ SEHUB)
	• the NCTA and Third-Party Service Providers
359.	The System shall record a payable to the NC Roadways simultaneously with the recording of a customer payment against a transaction.
360.	Create all financial entries as individual records, which may be used in combination with other financial entries to make a net effect, but do not allow the original entry to be modified. For

	example, a transaction was originally posted to an Account at the Bill-By-Mail rate of $1.00, and later it is determined the transaction shall be charged at the NCTA rate of $0.85, in which Case, a credit of $1.00 is posted to reverse the original transaction and the correct amount of $0.85 is Posted. The sum of the original transaction and all adjustments shall not be lower than zero (for example, a credit adjustment shall not exceed the original transaction amount).
361.	Ensure each debit entry to a financial Account has a corresponding and equal credit amount and each credit entry to a financial Account has a corresponding and equal debit amount so the financial Accounts balance at all times.

4.3.3 General Payment Processing Requirements

362.	Provide a Service to process the below payment transactions:
	• Transponder Sale, which includes tax
	• Retail Transponder Sale, which includes tax
	• Chargebacks
	• Check bounce fees
	• Bankruptcy
	• Reversals
	• Waivers
	• Adjustments
	• Balance Transfer (Payment across Prepaid or Postpaid accounts)
	• Voids
	• Refunds (except for cash)
363.	Provide a Service for the processing of all payments and account replenishments:
	• Account Prepaid balance
	• Tolls
	• Processing fees
	• Civil Penalties
	• Invoices
	• Transponder sales (Full price, Returns under Warranty, Tax Exemption)
	• Discount Plans
	• Inventory purchases from Retailer or Transponder manufacturer
364.	Provide a Service to identify and process over payments upon customer request:
	• Do balance transfer to an alternate Account
	• Refund overpaid amounts
	• Apply overpaid amounts to Account balance

4.3.4 Payment Methods and Handling

365.	Provide a Service to configure the payment source and payment type that is not acceptable for a specified notification type.
366.	Provide a Service to calculate the required payment during Account creation based on the Prepayment requirements, based on number of Transponders, Sales Tax or Vehicles items and replenishment type (auto or manual);

367.	Provide a Service to store Credit Card and bank account information for one-time payments (for example, permit customers to enter Credit Card information once and then use that stored Credit Card to make one-time payments on their Account without being required to rekey the Credit Card information).
368.	Provide a Service to accept payments, including but not limited to:
	• one-time payments
	• recurring fixed amount payments
	• recurring payments a Configurable, fixed number of days after the invoice is issued
	• recurring payments triggered by Account balance
369.	Provide a Service to accept payments from Retailers and Money Services Providers (ex: MoneyGram).
370.	Provide a Service to accept payments from the collections agencies.
371.	Provide a Service to process payments directly in the NCTA for invoices in collections.
372.	Post payment transaction(s) to the Account when payment related actions occur:
	• successful payment processing
	• Account balance change
	• unsuccessful payment processing, for example recording a failed attempt
	• payment confirmation
373.	Provide a Service to accept electronically and process payment information from:
	• the Lockbox Service Provider
	• from a Banking Services Provider or other financial institution(s) (for ACH clearing)
	• a Merchant Service Provider(s)
	• collections agencies
	• a Money Service Provider(s)
	• the NCTA payment processing staff
374.	Provide a Service to prevent the acceptance of checks after a Configurable number of bounced checks in last 12 months.
375.	Provide a Service to prevent the acceptance of credit cards after a Configurable number of chargebacks in last 12 months.
376.	Provide a Service for an Authorized User to correct or reverse payments applied in error, including to payments applied to multiple transactions or Accounts, via Cases.
377.	Provide a Service to prevent corrections to or reversals of payments that have already been refunded, for example, payments that have been reversed entirely cannot be reversed again or refunded.
378.	Prevent payment reversals when the funds have already been refunded including when a single payment has been spread across multiple Accounts.
379.	Provide a Service to set a Configurable period of time an Account can remain in pending close status. For example, Accounts with a request to close remain in this status to allow for final transactions to clear. Account replenishments continue to occur when an Account is in pending close status.
380.	Provide a Service to record Payments from the following payment sources. The number and names of payment sources shall be Configurable.

	• merchant accounts
	• lockbox
	• Collection
	• Money service provider (MoneyGram)
	• check payments (processed at NCTA and walk-in centers)
	• cash payments (processed at NCTA and walk-in centers)
	• Interoperable Agencies
	• Retailers
381.	Provide tracking of payment transactions by:
	• Transaction Date
	• Posting Date
	• Account Number
	• Transaction Type (Payment, Reversal, Refund, Replenishment)
	• Payment Type (Visa, MC, Discover, AMEX, ACH) and
	• Payment channel (Web, IVR, Mobile APP, CRM, LPA, Lockbox, Collection, Money Service Provider)
382.	Provide a Service to apply multiple payment methods for a single payment. For example, for a $25.00 amount due allow payment of $15.00 from a Credit Card associated with the Account and $10.00 cash.
383.	Provide a Service where the reversal of any payment shall result in the items paid being marked as unpaid, having the same effect as if those items had never been paid, including the re-opening of transactions and fees that were dismissed/waived.
384.	Provide a Service to use the available Account balance as payment for all inventory items (for example, Transponders, Sales tax, Prepaid balance).
385.	Provide a Service to prevent double-payments by Authorized user or customer from making two identical payments for the following configurations. (For Example: Front-end such as Web or Back-end Lockbox payment from applying twice)
	• Posting Date (Configurable within 60 seconds)
	• Account Number
	• Payment amount
	• Transaction Type (Payment, Reversal, Refund, Replenishment)
	• Payment Type (Visa, MC, Discover, AMEX, ACH)
	• Payment channel (Web, IVR, Mobile APP, CRM, LPA DMV, Lockbox, Money Service Provider)
386.	Provide a Service that includes payment method details (Credit Card or ACH numbers obscured last 4 digits) and amount to be paid prior to the Authorized User being allowed to submit a payment.
387.	Provide a Service to set a Configurable payment hierarchy that determines the order in which payments are applied, including but not limited to:
	• by Roadway
	• in FIFO/LIFO order

	• by Toll Transaction Date
	• by Toll Posting Date
	• by payment item type (such as Invoiced Tolls, un-invoiced Tolls, processing fees and civil penalties)
	• by combination of date and transaction type
388.	Provide a Service to apply Payments to Customer Account balances in the following Configurable order (default order is automatically assigned by the NCTA):
	• Oldest Tolls in collections
	• Oldest fees in collections
	• Oldest penalties in collections
	• Oldest past due Tolls
	• Oldest past due fees
	• Oldest past due penalties
	• current Tolls not yet invoiced
	• current fees not yet invoiced
	• unapplied (for example an Account-level credit/over payment)
389.	Provide a Service to specify which transactions or fees are paid, when making a partial payment. In this case the default Posting order is overridden.
390.	Provide a Service that provides line item for the payments. For example: Payment gets applied for multiple Transponder sales, Sales Taxes and Prepaid Balance. Show aggregated line items and payment reference number (uniquely generated for each payment).
391.	Provide a Service to trace each payment to the transactions paid and each transaction paid or overpayment:
	• Invoices
	• Tolls
	• Prepaid Tolls
	• Transponder Sales, Sales Tax and County Taxes
	• processing fees
	• civil penalties

4.3.5 Check/Money Order Processing

392.	Provide a Service, when accepting check or money order payments, to credit accounts immediately on payment to the account.
393.	Provide a Service to reverse all forms of check or money order payment if declined or returned by the Banking Services Provider, including the assessment of applicable fees.

4.3.6 Cash Processing

394.	Provide a Service to accept cash as a form of payment, to credit accounts immediately on payment to the account.
395.	Provide a Service to process cash payment reversals.
396.	Provide a Service to set Configurable threshold amounts and role-based limits for cash payment reversals.

397.	Provide a Service to require Approval for cash payment reversals.

4.3.7 Refunds and Disbursements

398.	Provide a Service for the automated processing of refunds (in Case of successful Account closures) and queue eligible refunds.
399.	Determine eligibility and issue refunds to customers based on various activities on the Account:
	• closure of an Account
	• adjustments to Interoperable payments received
	• customer request for an over payment refund
	• unapplied checks/money order
	• over payment of an invoice where no outstanding invoices or unbilled Tolls exist for a Configurable period
400.	Provide a Service to issue refunds using the same method that the payment was received. For example, a check payment will be refunded by check and Credit Card to the same Credit Card.
401.	Provide a Service to issue refunds by check when the Credit Card which was used for the original payment has been closed or cannot otherwise accept the refund.
402.	Provide a Service to review all eligible refunds and initiate the refund process.
403.	Provide a Service to input all details regarding the check refund issued:
	• check number
	• date check was issued
	• check payee details
	• the date the check cleared the bank
	• the reference number
	• reason for issuing the check
404.	Provide a Service to void a refund or disbursement check, which shall restore the payable balance.
405.	Provide a Service to void and reissue a refund or disbursement check.
406.	Provide a Service to manually override the refund payee information, for example, when a refund is due to a deceased customer's estate.
407.	Provide a Service to initiate refunds from unapplied payments (for example when a payment that was made to the NCTA in error is deposited but is not applied to an Account and needs to be refunded).
408.	Provide a Service for automated refunds, up to a Configurable amount, to the Account holder of any positive balance on the Account at the time of closing.
409.	Provide a Service that shall support the processing of disbursements:
	• customer refunds
	• settlement with NC Roadways
	• settlement with Interoperable Agencies (E-ZPass Hub or other Hubs)
	• settlement with Retailers
	• settlement with Third-Party Service Providers
410.	Provide a Service (Configurable) to set the criteria for refund eligibility. Circumstances that might trigger a refund.

	• closing of an Account
	• positive balance on a Postpaid Account and there are no outstanding invoices or unbilled Tolls that need to be paid
	• over payment of a customer invoice and there are no outstanding invoices or Toll transactions that need to be paid.
411.	Provide a Service to obtain Approvals before refund processing is performed to eligible refunds.
412.	Provide a Service to issue refunds to the payment method that was used to create the credit balance.
413.	Provide a Service to issue electronic refunds (for example, by Credit Card or ACH) to the Credit Card or bank account used to make the payment, including but not limited to those Credit Card or bank accounts that are not stored on the Customer Account. For example, the NCTA can utilize a payment reference number to trace back to a payment method without the need for the System to retain the card information.
414.	Provide a Service to issue refunds by check if the Account does not provide for an electronic method.
415.	Provide a Service to issue refunds by check for over payments on:
	• prepaid Tolls
	• unapplied balance
416.	Provide a Service to prevent refunds of greater than the amount of the original transaction amount, adjusted for any prior refunds.
417.	Provide a Service for automated processing of refunds after a Configurable hold period.
418.	Provide a Service to input all details regarding a check that is issued:
	• check number
	• date check was issued
	• details of check payee
	• date check cleared the bank
	• the reference number
	• reason for issuing the check
	• notes
419.	Provide a Service to send a refund Notification electronically and/or by mail to all customers who are issued a refund.

4.3.8 Shift Management

420.	Provide a Service to automatically open a shift for an Authorized User at the time of first applicable transaction.
421.	Provide a Service to include user, location, shift date (shift-ID) for all transactions processed during the shift.
422.	Provide a Service to provide total amount collected during Shift-ID.
423.	Provide a Service to close a shift once it is balanced.

4.3.9 Adjustments and Reversals

424.	Provide a Service to make corrections, adjustments and reversals to transactions while preserving the original transaction, including the original Transaction Date and amount. Any corrections, adjustments or reversals shall be tied to, but not change, the original transaction.
425.	All corrections, adjustments and reversals shall be posted to the current Date (Posting date).
426.	Provide a Service to transmit details of all corrections, adjustments and reversals to NC Roadway transactions via an amended RTCS Disposition Service.
427.	Provide a Service for full reversals of any type of transaction with a reason code (Configurable), preserving complete history.
428.	Provide a Service for partial reversals of any type of transaction with a reason code (Configurable), preserving complete history.
429.	Prevent the sum of any corrections, adjustments or reversals done to a transaction to exceed the amount of the original transaction.
430.	Provide a Service to configure all relevant parameters related to establishing role-based thresholds for System transactions.
	• Adjustments
	• Debits
	• Credits
	• reversals
431.	Provide a Service that details tracking of individual adjustments, credits and/or reversals and categorize each separately.
432.	Provide a Service to transfer transactions (financial or Tolls) to another Account. For example, a check posted incorrectly to an Account gets reversed and re-posted to the appropriate Account.

***4.3.10** Fees, Penalties and Transactions*

433.	Provide a Service to support the assessment of fees and fines (automatically and manually) to Accounts.
434.	Provide a Service to apply fees and fines:
	• at the Account level (statement fee)
	• at the invoice level (Processing fees, Civil penalties)
	• at the transaction level (Check bounce fees)
435.	Provide a Service to charge Configurable, Account-related fees, with different Configurable amounts depending on Account Type and Attributes:
	• Returned Payment Fee
	• Excessive ITOL fee, configurable 15% of tolls posted (transaction date) as ITOLs in a month with a minimum of 10 transactions
	• Statement fee, depending on method of delivery - Mail and frequency – Quarterly
436.	Provide a Service to assess the returned payment fee to the first Account for which the payment was applied if a payment was made to multiple Accounts.

4.4 Payment Gateway Integration

4.4.1 Interface to Payment Gateway

437.	Provide a Service that complies with PCI and all applicable merchant card association agreements and other applicable regulations for the exchange of Credit Card and Debit Card payments. **Note:** Payment Gateway API specifications can be found here: https://developer.cardpointe.com/cardconnect-api#rESTful-implementation
438.	Provide a Service to accept all major Credit Cards:
	• Visa
	• MasterCard
	• American Express
	• Discover Card
439.	Provide a Service that complies with the Electronic Payment Association (NACHA) operating rules and other applicable regulations for the exchange of Automated Clearing House (ACH) payments.
440.	Provide a Service that complies with strong end-to-end encryption for sensitive information stored within databases or secure transmissions.
441.	Provide Configurable masks for encrypted information, for example, display the first three (3) and last four (4) digits on screens and reports:
	• Credit Card number
	• bank account number
	• bank routing number
442.	Provide a Service that Interfaces with the Approved Merchant Service Provider Payment Gateway (such as CardConnect) for the purpose of settling Credit Card, Debit Card and ACH transactions in real-time with fully automated payment clearing and processing for all electronic payment methods.
443.	Provide a Service to prevent double-requests going to Payment Gateway from making two identical payments; For a matching request, use the unique Order-ID from the previous request to check status from Payment Gateway. If previous request was successful on the payment gateway, then post the payment to NCTA customer account and update status. if previous request failed, then create a new Order-ID and make a new request to Payment Gateway. (for Example: Web payment calls payment service)
	• Posting Date (Configurable within 60 seconds)
	• Account Number
	• Payment amount
	• Transaction Type (Payment, Replenishment)
	• Payment Type (Visa, MC, Discover, AMEX, ACH)
	• Payment channel (Web, IVR, Mobile APP, CRM, Batch)
444.	Provide a Service that sends replenishment requests for accounts that have balance below replenishment threshold and capture the results (success or failures) returned from the Merchant

	Service Provider and update Accounts accordingly. All successful payments made via Credit Card have an authorization code for the transaction.
445.	Provide a Service that provides an audit trail for every request prior to calling Merchant Service Provider (MSP) API and send out alert via the logging and monitoring solution regarding failures or loss of communication in the processes that interface with Merchant service provider.
446.	Provide a Service that provides an audit trail and exception handling for one sided (Orphan transactions) where payment is recorded at Merchant Service Provider Payment Gateway (such as CardConnect) but not posted to the NCTA customer's account. One sided Orphan transactions shall be voided before settlement window and reversed after the settlement window.
447.	Provide a Service that queries Merchant Service Provider Payment Gateway (such as CardConnect) for a settlement date and reconcile against NCTA posted requests. Any discrepancies shall be reported and reversed.
448.	Provide a Service to update Customer Accounts with settlement date and funding date from the Merchant Service Provider services.
449.	Provide a Service that provides Authorized Users with the detailed reasons for Credit Card declines,
	• invalid card number or bank account number
	• name mismatch
	• card security code mismatch
	• Zip code mismatch
	• address mismatch
450.	Provide a Service to notify customers about various auto-replenishment activities. For example, replenishment was successful with secondary payment method, or replenishment failed.
451.	Provide a Service to add payment information, for example Credit Card or ACH, on the Account and automatically process a payment when a configurable amount of time (on Invoice Due date) has elapsed after the invoice creation date.

4.4.2 Interface to Banking Services Provider

452.	Provide a Service to Interface to the Banking Services Provider(s) holding the account(s) from which disbursement checks are drawn to support the functionality described within these Requirements and in accordance with ICDs to be developed during Project Design.

4.4.3 Interface to Money Services Provider

453.	Provide a Service to Interface with third-party Money Services Providers (MoneyGram) for the functionality described within these Requirements and in accordance with existing ICDs.

4.4.4 Interface to Credit Card Update Service Provider

454.	Provide a Service to Interface to the Agencies' Approved Credit Card Update service provider for the functionality described within these Requirements and in accordance with ICDs to be developed during Project Design.

4.4.5 Credit Card Updater Service

455.	Provide a Service to obtain updated data from the Credit Card update service provider. Data shall include:
	• updated Credit Card expiration date
	• updated Credit Card number, including when Credit Card fraud is detected by the Credit Card update service
	• updated Credit Card issuer
	• updated Credit Card type
	• updated name on the Credit Card
	• updated address on the Credit Card

4.4.6 Interface to Merchant Service Provider

456.	Provide a Service to Interface to the Agencies' Approved Merchant Service Provider Payment Gateway (such as CardConnect) for the functionality described within these Requirements and in accordance with ICDs to be developed during Project Design.
457.	Contractor must pass data to the merchant that is not subject to Downgrade.

4.4.7 Credit Card Processing

458.	Provide a Service that provides secure Interface to the Merchant Service Provider for Credit Card payments.
459.	Provide a Service to issue refunds to Credit Cards.
460.	Provide a Service to track data related to Credit Card inquiries, for example, capture date of inquiry, disposition date and disposition results when inquiries about Credit Card charges are received.
461.	Provide a Service for Credit Card chargebacks and permit investigation of the details as Cases.
462.	Provide a Service for Authorized Users to reverse Credit Card chargebacks.
463.	Provide a service to credit Accounts immediately upon a successful Credit Card payment authorization.
464.	Provide a Service to validate the formatting for all Credit Card information before submitting it to the Merchant Service Provider:
	• Credit Card number, by applying the appropriate validation algorithm immediately upon exiting the Credit Card number field
	• expiration date, by verifying the expiration date is not in the past or too far out in the future
	• name on the card, by ensuring it is not blank or under a certain number of characters
	• ZIP code, by verifying it is not blank or an invalid number of characters
	• billing address, by ensuring it is not blank
	• the card security code, by verifying it is not blank or an invalid number of characters, depending on the card type
465.	Provide an automated Interface to reconcile transactions initiated with the Merchant Service Provider(s).

4.4.8 ACH Processing

466.	Provide a Service that provides secure Interface to the Merchant Service Provider for ACH payment.
467.	Provide a Service to process both ACH debits and ACH credits with the Merchant Service Provider or Banking Services Provider.
468.	Provide a Service to verify the account information with the Merchant Service Provider prior to initiating an ACH debit.
469.	Credit Customer's Account immediately upon initiating an ACH debit.
470.	Provide a Service to reverse an ACH payment if declined by the Banking Services Provider.
471.	Provide a Service to validate (at field level) the ACH bank routing number by applying the appropriate validation algorithm.
472.	Provide an automated Interface to reconcile transactions initiated with the Merchant Service Provider(s).

4.4.9 Interface to Lockbox Service Provider

473.	Provide a Service to Interface to an Approved Lockbox Service Provider for the functionality described within these Requirements and in accordance with ICDs to be developed during Project Design.

4.4.10 Lockbox Processing

474.	Provide a Service to receive file from Lockbox, process, post to the appropriate Accounts, and reconcile payments transmitted by the Lockbox Service Provider.
475.	Provide a Service to associate checks and stubs received at the Lockbox Service Provider to the proper Account. Lockbox shall provide the check images associated with the payment.
476.	Provide a Service to receive and process Lockbox Exceptions and ensure payments are appropriately accounted for:
	• correspondence items and customer comments associated with payments
	• payments the Lockbox Service Provider is unable to associate to an Account (to post to a System account)
	• payments that the NCTA is unable to post to a System Account
477.	• Provide a service for Authorized Users to research and determine the disposition of Lockbox Exceptions, including but not limited to:
	• Posting payment to the Account,
	• refund payment to customer, or
	• hold as un-allocated funds.
478.	Provide a Service to accept Lockbox Exceptions and to automatically create Cases/Service Request for Lockbox Exceptions. For example, if a check was received without a payment coupon it cannot be associated with an Account and research must occur.
479.	Provide a Service to electronically receive and process correspondence received at the lockbox, for example changes of address.
480.	Provide an automated Interface to reconcile lockbox deposits.

4.5 Transaction, Image Transfer, and Processing

4.5.1 File Transfers

481.	Provide a Service to support file transfers between two systems using FTP/SFTP methods to allow NCTA system to receive as well as transmit to third party vendor systems. File transfer parameters shall allow following configurations:
	• Source and Target IP address
	• Transmission Type (FTP/SFTP)
	• Username/Hash password
	• Direction of transmission; (Upload / Download)
	• Number of transmission attempts
	• Source and Target Folder
482.	Provide a Service which optimizes outgoing file transfers NCTA system.
483.	Provide a Service shall support a Configurable retransmission parameter that controls how many times a failed transmission is retried.
484.	Provide a Service change to the designated sub-directory (if so configured) after successfully connecting to the third-party vendor system.
485.	Provide a Service shall attempt to retransmit failed transmissions the configured number of times.
486.	Provide a Service shall move all successfully transmitted files to an associated processed.
487.	Provide a Service shall move all unsuccessfully transmitted files to an associated error directory.

4.5.2 Transponder Status File

488.	Provide a Service to generate Full Transponder Status file (XTAG - Per RTCS API File specification ICD) for NC Roadways regardless of their status, until such time that the Transponder is physically removed from NCTA inventory. Transponder Status in (XTAG) depends on the following:
	• Transponder Status (Active, Lost, Stolen, Inventory, Defective)
	• Account Status (Active, Closed)
	• Account Type (Personal, Business, HOV, First Responder, Motorcycle, Government, Transit)
	• Financial Status (Prepaid - Good, Low Balance, Zero Balance, PostPaid - Good)
489.	Provide a Service to generate Incremental Transponder Status file (XTAG - Per RTCS API File specification ICD) for NC Roadways when the status of Transponder changes since the last Full Transponder Status file was generated.

4.5.3 Transaction Transfer

490.	Provide a Service that can Receive and process Transponder-Based and Image-Based Transactions from each NC Roadways. Per the RTCS API Interface document. Validate the Transponder-Based Transactions and Image-Based Transactions transmitted by the NC Roadways meet the processing criteria of:
	• The Transponder-Based Transactions and Image-Based Transactions meet the Requirements of the RTCS API ICD
	• When a Resubmitted or Correction transaction is received from the NC Roadways

	• Transponder-Based Transactions where the Transponder was associated to an Account with sufficient balance to pay the Toll. If the Account does not have sufficient funds to pay the Toll then a request for the Image-Based Transaction is sent to the NC Roadways via RTCS Disposition service
	• Image-Based Transactions have License Plate number, Jurisdiction and License Plate type (if required for states) Country and have the associated images for Bill-By-Mail invoicing
	• For Image-Based Transactions, Image Transfer service shall pull associated images from the NC Roadway system using a unique transaction sequence number with options to pull: 1) All associated images 2) Only best selected image (overview and ROI) 3) Toll Rate Sign and side camera images.
	• Image-Based Transactions with images shall attempt to 1) post the Image-Based Transaction as an ITOL Transaction to a Prepaid Account or 2) if the License Plate is on the Plate file (ICLP) received from an Interoperable Agency, the Image-Based Transaction is transmitted to the Interoperable Agency. If the Posting fails, the transaction will be sent to Bill-By-Mail service.
	• Categorize failed transactions into error codes and exception codes for reconciliation and disposition purposes.
	• Accept and process corrected transactions that have been previously rejected. All correction transactions shall reverse the original transaction and repost transaction.
491.	Reject transactions submitted by the NC Roadways based upon a Configurable maximum number of days between the occurrence of the transaction (Transaction Date) and the time it was received at the NCTA. This parameter shall be Configurable for Transponder-Based Transactions (m) and Image-Based Transactions (n).
492.	Validate the transactions to ensure compliance to Interface Requirements and established parameters for each NC Roadways and identify errors and exceptions.
493.	Reject submitted Transponder-Based and Image-Based Transactions that have failed the verifications and cannot be processed further as submitted for collecting Tolls at the NCTA. The NC Roadways can correct the rejected transactions and re-submit the corrected transactions to the NCTA for processing if appropriate and the Configurable maximum time has not elapsed. Such rejected transactions include but are not limited to:
	• transactions are older than the established parameters
	• transactions do not belong to an Agency on the NC Roadways list
	• transactions do not belong to a Plaza on the NC Roadway's Plaza list (The NC Roadways can correct such transactions and resubmit them or the NC Roadways can update the Agency's Plaza list and resubmit the rejected transactions to the NCTA for processing)
	• internal Transponder identification number is not valid
	• Transponder is unrecognized
	• Transaction has an invalid axle count value
	• transaction is an exact duplicate of a posted NCTA Transponder-Based Transaction on the Account
	• transaction is an exact duplicate of a posted ITOL Transaction on the Account
	• transaction is an exact duplicate of a Bill-By-Mail Transaction on the Account

	• transaction was rejected by the Interoperable Agency
	• transaction is not in compliance with the Approved ICD (the NC Roadways can correct such transactions and resubmit them)
494.	Provide a Service to configure duplicate transaction verification for each NC Roadways, based on various criteria, as outlined in **Attachment 1: NC Quick Pass Business Policies** and **Attachment 6: Business Rules**
	• NC Roadways or Interoperable Agency Roadways
	• Plaza
	• direction of travel
	• transaction time differential
	• transaction type (Transponder and Image)
	• Account Type
	• Account Attributes
495.	Provide a disposition Service to each NC Roadways for each submitted transaction in the form of an RTCS Disposition Service, when amendments and adjustments, as described in the ICD, are made to the transaction.
496.	Provide a Service that shall transmit RTCS Disposition Service Amendments for all changes in status and amount in accordance with the RTCS Disposition Service ICD.
497.	Provide a Service to Reconcile transmitted transaction counts and errors by Transmission Date and Transaction Date. Send status of transaction transmission and/or verification errors to the logging and monitoring solution.
498.	Create transmission failure Alerts based on Configurable parameters: missing Plazas and Configurable variances from expected values.

4.5.4 Interoperable Customers on NC Roadways Facilities

499.	Provide a Service to Receive and validate Transponder-Based Transactions and Image-Based Transactions from each NC Roadways. Validate the Transponder-Based Transactions and Image-Based Transactions transmitted by the NC Roadways meet the processing criteria of:
	• Transmit Transponder-Based Transactions and Image-Based Transactions to the appropriate Interoperable Agency.
	• Transponder-Based Transactions where the Transponder is not in the Inventory table (ITM - Transponders are not issued by NCTA, NCTA currently only issues Transponders starting with a Transponder prefix of 0033).
	• Image-Based Transactions have License Plate number, Jurisdiction and License Plate type (if required for states) Country that matches to ICLP file sent by Interoperable Agency.
	• Receive transaction disposition from the Interoperable Agencies for each transmitted Transponder-Based Transaction and Image-Based Transaction. If the transaction is rejected by Interoperable Agencies, the transaction will be sent to Bill-By-Mail service.
500.	Send the amended status to the originating NC Roadway facility using RTCS Disposition Service notifying the transaction disposition.
501.	Provide a Service to track payables and receivables between the NCTA and the Interoperable Agencies.

4.5.5 Image Transfer and Processing Service

502.	Provide a Service to configure the minimum and maximum number of images associated with Transponder-Based and Image-Based Transactions by Plaza, by Vehicle Class and by Agency. Each Agency has a different Image capture System and therefore may capture and make available a different number of images. The services shall:
	• acquire images for transactions initially identified to not have images
	• retry the acquisition of images for transactions initially identified to not have images
503.	When the NCTA requires an image, obtain the image from the NC Roadways using Image-Based Transactions Image Transfer service and store it in the NCTA storage. Match the acquired image with its transaction.
504.	Identify transactions for which images were expected but are missing and generate an Operational Alert Notification to the logging and monitoring solution if images are missing for more than a Configurable number of transactions.
505.	Reject the transaction with No Image status when image cannot be obtained after a Configurable amount time for a specific Roadway.
506.	Categorize and transmit the status of the failed images into error codes and exception codes to specific Roadway distribution list.

4.5.6 Transmission Error Identification

507.	Identify when the actual number of Transponder-Based Transactions and Image-Based Transactions received from a NC Roadways is a Configurable percentage below the expected number for each Plaza and lane and send an Operational Alert Notification to the logging and monitoring solution.
508.	Identify when the actual number of images acquired is a Configurable percentage below the expected amount for each Plaza and lane and send an Operational Alert Notification to the logging and monitoring solution.
509.	Identify if there are missing images from a specific Plaza (Configurable number over a Configurable period of time) and send an Operational Alert Notification to the Application logging and monitoring solution.

4.5.7 Interoperability (Transponder and License Plate Status File)

510.	Provide a Service to generate Full Transponder Status file (ITAG - Per IAG File specification ICD) for Interoperable roadways regardless of their status, until such time that the Transponder is physically removed from NCTA inventory. Transponder Status in (ITAG) depends on the following:
	• Transponder Status (Active, Lost, Stolen, Inventory, Defective)
	• Account Status (Active, Closed)
	• Account Type (Personal, Business, HOV, First Responder, Motorcycle, Government, Transit)
	• Financial Status (Prepaid - Good, Low Balance, Zero Balance, PostPaid - Good)
511.	Provide a Service to generate Incremental Transponder Status file (ITGU - Per IAG File specification ICD) for Interoperable roadways when the status of Transponder changes since the last Full Transponder Status file (ITAG) was generated.

512.	Provide a Service to generate Full License Plate File (ICLP - Per IAG File specification ICD), to remain in the file until seven (7) days after the subscription end date in the NCTA.
	• At least a Transponder linked to an account
	• Account Type (Personal, Business)
	• Account Status (Active)
	• Financial Status (Prepaid - Good, Low Balance, Zero Balance)

4.5.8 NC Quick Pass Customers on Interoperability Agency Facilities

513.	Provide a Service that can transmit and exchange data and files between the NCTA and Interoperable Agencies via one or more HUBs shall be in compliance with the existing ICDs (ICTX, ITXC), and any version updates made to them, to meet the Requirements of the Scope of Work.
514.	Provide a Service that can Receive and process Transponder-Based Transactions and Image-Based Transactions from the Interoperable Agency. Validate that the NCTA Transponder-Based Transactions and Image-Based Transactions transmitted by the Interoperable Agencies meet the criteria:
	• NCTA Transponder-Based Transactions and Image-Based Transactions meet the Requirements of the Interface Control Document (ICD).
	• NCTA Transponder-Based Transactions and Image-Based Transactions submitted are not later than Configurable months of the transaction date.
	• NCTA Transponder-Based Transaction or Image-Based Transaction is not a duplicate of a transaction that was already posted to the Account.
	• NCTA Transponder-Based Transactions and Image-Based Transactions transmitted by the Interoperable Agencies are Guaranteed where the associated Account had positive balance at the time of the transaction.
	• NCTA Transponder-Based Transactions where the Transponder was associated to an Account with sufficient balance to pay the Toll.
	• Image-Based Transactions have a License Plate number, Jurisdiction and optional plate type, and the License Plate is associated to an Account with sufficient balance to pay the Toll.
	• Categorize failed transactions into error codes and exception codes for reconciliation and disposition purposes.
	• Accept and process corrected transactions that have been previously rejected. All correction transactions shall reverse the original transaction and repost transaction.
515.	Provide a Service that can generate a file with the transaction disposition to Interoperable Agencies for each submitted NCTA Transponder-Based Transaction and Image-Based Transaction (ICRX or IRXC Per IAG File specification ICD).

4.5.9 Transaction Filters

516.	Provide a Service to support filtering transactions by a combination of filter criteria:
	• NC Roadways
	• NCTA Account Number
	• Vehicle Class

	• Transaction type (Transponder-Based or Image-Based)
	• Transponder number; or License Plate; Jurisdiction and Plate Type
	• Start and end date criteria
	• Aging level (Collections, Registration Stops)
517.	Apply filters to each NC Roadway's transactions based on the Agency filter rules.
	• Plate corrections List - for matching plates to filter criteria - use the correction plate number, jurisdiction. Example for matching ACE135, NC correct value is ACB135, NC.
	• Vehicle Class Correction List - for matching Transponder or plates to filter criteria - use the corrected vehicle class. Example for matching Transponder 03316700002 with vehicle class of 1 correct it to class 2.
	• Escalation - for matching account number to filter criteria - exclude the account from escalating beyond the Aging level.

4.5.10 Transaction Posting – General

518.	Provide a Service to set and maintain Configurable rules that define the order and sequence in which transactions are processed for Posting to the various Account Types.
519.	Provide a Service to set and maintain Configurable rules that define the order in which the transactions will be processed and their final outcome to:
	• type of the transaction (Transponder-Based TTOL or Image-Based ITOL)
	• the submitting Agency (NC Roadways or Interoperable Agency)
	• Account Status (Active, Pending Closed, Closed)
	• Account Type (Personal, Business, HOV, First Responder, Motorcycle, Government, Transit)
	• the presence of a Transponder (Transponder-Based) in the transaction and Transponder Status at the time of the transaction (Active, Lost, Stolen, Inventory, Defective)
	• the presence of a License Plate number, Jurisdiction, Plate type and country (Image-Based) in the transaction and subscription at the time of the transaction and the availability of an image.
	• whether the payment is Guaranteed or not, Financial Status at time of posting (Prepaid - Good, Low Balance, Zero Balance, Post-Paid, Good).
520.	Provide a Service to transmit Interoperable Transponder-Based Transactions to Interoperable Agencies to post to the Interoperable Agency Customer Accounts. Interoperable is defined as Either Transponder or License plate that does not exist in NCTA customer database.
521.	Provide a Service to validate NCTA Transponder-Based Transactions and Account conditions, and support processing transactions with Transponders:
	• post a NCTA Transponder-Based Transaction to a NCTA Prepaid Account with sufficient balance to pay Toll in full
	• post a NCTA Transponder-Based Transaction to a NCTA Prepaid Account that can pay the Toll partially
	• post a NCTA Transponder-Based Transaction to a NCTA Prepaid Account that is above the Insufficient Balance Threshold

522.	Provide a Service to post NCTA Transponder-Based Transactions to a Government or Transit Postpaid Account.
523.	If a Transponder-Based Transaction cannot be posted to an Account, but it contains the License Plate data, then depending on the reject reason the NCTA shall process the transaction as an Image-Based Transaction. For example, if a Transponder-Based Transaction was rejected by an Interoperable Agency due to insufficient balance on the Account, then the transaction can be processed as Image-Based Transaction.
524.	If a Transponder-Based Transaction cannot be posted to an Account and is rejected by the NCTA, the NC Roadways can resubmit the transaction as an Image-Based Transaction. The NCTA shall provide a service to reprocess such transactions as Image-Based Transactions in accordance with the processing order.
525.	Transmit Interoperable Image-Based Toll Transactions to Interoperable Agencies only for the License Plates that were included in the ICLP provided by the Interoperable Agency for the day in which the Image-Based Toll transactions occurred.
526.	Provide a Service to validate the transaction and Account conditions, and support processing Image-Based Transactions in the Configurable sequence described to:
	• post an Image-Based Transaction to a Prepaid Account with balance enough to pay the Toll in full as an ITOL transaction
	• post an Image-Based Transaction to a Prepaid Account that can pay the Toll partially as an ITOL Transaction
	• post an Image-Based Transaction to a Prepaid Account as a Bill-By-Mail Transaction
	• post an Image-Based Transaction to an Interoperable Agency (using ICLP file) as an ITOL Transaction
	• post an Image-Based Transaction to an existing Postpaid Account as a Bill-By-Mail Transaction
	• queue the Image-Based Transaction for posting as a Bill-By-Mail Transaction when a new Postpaid Account is created using the License Plate ROV
527.	Provide a Service to configure whether payments are Guaranteed for both Transponder-Based Toll Transactions and Image-Based Toll Transactions for each Interoperable Agency:
	• post a NCTA Transponder-Based Transaction that is Guaranteed (based on NCTA ITAG file status for the transaction date) for Interoperable Agencies to the NCTA Account, regardless of the Account balance.
	• post a NCTA Image-Based Toll Transaction that is Guaranteed (based on NCTA ICLP file with active plate subscription that links to ITAG file status of 1,2 for the transaction date) for Interoperable Agencies to the NCTA Account, regardless of the Account balance.
	• process Transponder-Based Transactions and Image-Based Transactions to an Account based on date and time the transaction was received by the NCTA first-in, first-out (FIFO).
528.	Provide a Service to attempt to post a Toll transaction (home or Interoperable) that did not post to the Account initially at Configurable intervals for a Configurable amount of time.
529.	Provide a Service for Posting valid Toll transactions to Accounts and applying applicable discounts for Discount Plans associated with the Account, Transponder or License Plate.

530.	Provide a Service for Posting Tolls based on the particular Tolling location. For example, if the Transponder is linked to first responder account type or has a first responder plan for a particular facility, then transactions for that Transponder are charged $0.00 for transactions on that facility.
531.	Provide a Service to post transactions to a Postpaid Account if the transaction was previously rejected by an Interoperable Agency. For example, if the Transponder-Based Transaction is not Guaranteed it could be rejected by the Interoperable Agency. In that case the NCTA could process it as an Image-Based Transaction (provided there is a retrievable image from the NC Roadways Agency) to be posted to a Postpaid Account.

4.5.11 Reprocessing of ITOL Transactions

532.	Provide a Service to post ITOL to an Account even when the License Plate was added to the Account and associated to the Transponder after the time of the transaction.
533.	Provide a Service to check any pending Bill-By-Mail transactions on a License Plate within subscription. If a match is found then Post transaction at NCTA rate to the Account with Vehicle as ITOL and remove all unpaid (processing fees, penalties and dismiss transactions from the Bill-By-Mail Account. (Plate Sweep)
534.	Provide a Service to reverse all ITOL transactions when a customer provides a new ROV for the license plate, remove all unpaid (processing fees, penalties) and process as Image-Based transaction per the processing rules with the exception to use provided ROV for Account creation. (Transfer of Responsibility TOR)
535.	Provide a Service to reverse all ITOL transactions when associated License Plate is identified as incorrect, remove all unpaid (processing fees, penalties) and process as Image-Based transaction per the processing rules with the corrected License Plate within an atomic transaction. (Plate Correction)

4.5.12 Toll Posted Rates

536.	Provide a Service to apply the appropriate Toll to the Transponder-Based Transaction and the Image-Based Transaction based on various (Configurable) conditions, including but not limited to:
	• type of transaction received from the NC Roadways, for example first responder;
	• type of transaction received from the Interoperable Agencies (Transponder or Image)
	• type of vehicle classification (axle based versus length based) for example Express Lanes use Length and Expressway use Axles
	• transaction attributes (location, date time)
	• Account balance (Above $0 and below $0)
	• type of transaction at the time of Posting (NCTA, or Bill-By-Mail);
	• Discount Type (Personal, Business, HOV, First Responder, Motorcycle, Government, Transit)

4.5.13 Registered Owner of Vehicle (ROV) Identification

537.	Provide a Service to establish separate, Configurable ROV lookup parameters to obtain the registered owner of a License Plate, based on various criteria:

	• Type of Plate, for example if the License Plate is temporary plate, the DMV lookup is performed once per week
	• Account has a bad address Flag then ROV lookup is performed at Configurable intervals on Configurable Bill-By-Mail Transactions until a new address is obtained
	• Set the length of time (Configurable) before ROV information needs to be rechecked for each Jurisdiction before the License Plate registration information is considered stale and must be acquired again; if the lookup fails to acquire address, the last known address shall be used.
	• Jurisdiction, for example if the License Plate belongs to a Jurisdiction where the License Plates goes with the vehicle when it is sold (California, Hawaii) versus (license plate goes with the Owner - FL, NC, MD), then the ROV lookup is performed more often
	• Interface type (API or Batch)
	• transaction attributes
	• Account Attributes (At time of posting to a Prepaid Account with a balance below Insufficient funds $0.00)
538.	Provide a Service to re-submit License Plates for ROV lookup a Configurable number of times and after a Configurable period of time if the License Plate is returned from the ROV Lookup Provider with no match or an error. The configuration shall be based on the type of plate, type of error and the status of the communications.
539.	Automatically trigger Account Creation service to create a new Postpaid Account for the License Plate using the ROV results if there is no match per matching criteria and use the posting service to post the Image-Based Transaction as a Bill-By-Mail transaction depending on the Toll facility where the transaction originated.
540.	Return the Image-Based Transaction to the sending NC Roadway, if ROV lookup is not successful the RTCS Disposition service shall return DMV Reject disposition code. The NC Roadways can correct the License Plate data and re-send the correction information to the NCTA for processing.
541.	Provide a Service to establish mandatory plate type Requirements based on Jurisdiction and plate type, including the entry of prefix and suffix. Transactions that do not meet the mandatory plate requirement will be transmitted to the Agency via the RTCS Disposition Service as unbillable.
542.	Provide a Service to retain all historical ROV lookup information for a vehicle as received from the lookup.

4.5.14 Bill-By-Mail Escalated to Collections

543.	Provide a Service to utilize multiple collections agencies and to place eligible transactions in collections based on Configurable criteria:
	• Dollar amount at time of referral, for example, below configurable amount $100 to Collection Agency 1 and Greater than $100 to Collection Agency 2
	• Past due amount on the Account eligible for collection
	• Customer Last name prefix, for example: Last name starting from "A to M" to Collection Agency 1 and from "N to Z" to collection Agency 2
	• Prior placements (by customer name, Account number, License Plate number and Jurisdiction)

544.	Provide a Service to identify Accounts with unpaid transactions, fees and penalties that are eligible for the collection process based upon Configurable criteria:
	• age of debt (greater than 90 days from the first Invoice due date)
	• skip accounts with no toll activity in the last configurable months (For example: Account meets all of eligibility criteria, but has no recent toll activity in the last 18 months)
	• total amount owed (if customer is in-state and amount owed is greater than $500 or age of debt is older than configurable (17) months)
	• if customer is out-of-state; age of debt is older than configurable (3) months
545.	Provide a Service to create and transmit a Placement for each invoice cycle for Accounts eligible for collections, when transactions become eligible for collection. Refer to Collections ICD
546.	Provide a Service to accept payments for Placements in collections at the NCTA.
547.	Provide a Service to accept payments for Placements in collections at the collections agency.
548.	Provide a Service to automatically reassign transactions to collections any time a payment is applied to a transactions at NCTA.
549.	Provide a Service for Authorized Users to send an Account to collections that does not meet the minimum eligibility Requirements for collection.
550.	Provide a Service to associate with the Account all correspondence transmitted to the customer from the Collection Agency.
551.	Provide a Service to accept updated addresses from the Collection Agency and update Customer Accounts based on Configurable parameters.
552.	Provide a Service to automatically assign new transactions that reach the collections status or workflow stage to the same Collection Agency that any previous transactions on that Account have been assigned (for example, all transactions for a given Account will always be assigned to the same Collection Agency).
553.	Provide a Service to automatically reassign transactions to collections any time a payment used to pay transactions in collections is reversed in the NCTA (for example, when a customer makes a payment for transactions in collections and that payment is returned by the Banking Services Provider, the Posting of the returned item in the NCTA shall automatically reassign those transactions to the Collection Agency).

4.5.15 License Plate Registration Stop and Release

554.	Provide a Service to place/release Registration Stops using the NCDMV interface for license plates with NC jurisdiction.
555.	Provide a Service to set and maintain the eligibility parameters for the License Plate Registration Stop process based upon Configurable criteria:
	• Plate Jurisdiction (Only NC plates)
	• days past due (greater than 90 days from the first Invoice due date)
556.	Provide a service to skip the License Plate Registration Stop process based upon Configurable criteria:
	• NCTA Name and Address received at lookup and does not match DMV name and address at the time of placing stop
	• skip accounts with no toll activity in the last configurable months (For example: Account meets all of eligibility criteria, but has no recent toll activity in the last 18 months)

	• exceptions list of plates
	• exceptions list of Accounts
557.	Provide a Service to notify the customer of the License Plate Registration Stop.
558.	Provide a Service to indicate License Plate Registration Stop and release status, date of request and status.
559.	Provide a Service to release the License Plate Registration Stop if the past due amount for a License Plate has been successfully resolved, for example, outstanding balance is paid or dismissed. No Name and address validations are required before releasing the Registration stops.
560.	Provide a Service to re-request the License Plate Registration Stop if a payment that was received resulted in the release of Registration Stop is subsequently reversed (for example, if a check is returned or if a chargeback is received).
561.	Provide a Service for Authorized Users to manually initiate the release of a License Plate Registration Stop without resolution of past due amounts.
562.	Provide a Service that provides the data elements received from NCDMV web service call.
563.	Provide a Service to automatically display Flags on all Account screens based upon current License Plate Registration Stop status.

4.6 Customer Notifications & Correspondence

4.6.1 Customer Notifications – Outgoing

564.	Provide a Service to automatically associate all outbound Notifications with the appropriate Account and Case, if applicable.
565.	Provide a Service to automatically initiate customer communications and Notifications based on Account events. See **Attachment 9: Correspondence List** which provides the complete list of notifications and correspondence. Mail-House (JSON Interface) with fields will be provided during Design phase.
566.	Provide a Service to provide agency default and customer preferred Notifications (primary and secondary) for an Account through distribution channels:
	• Mail
	• Email
	• in-person at walk-in center
	• text messaging
	• push notifications
567.	Provide a Service to use a secondary notification channel for notifications if the primary notification channel is marked as bad. For example, a Credit Card failure notification may be mailed to the customer if the email address is marked as bad.
568.	Provide a Service to transmit Notification items as a data file for printing and distribution.

4.6.2 Customer Statements – Prepaid Accounts

569.	Provide a Service to generate the statements on the Statement Anniversary Day when the Account has a balance greater than or equal to $0. Statement Anniversary Day is the day account was opened or converted to Prepaid account. Valid values are between 1 and 28, Account opened on 29, 30 and 31 would have anniversary date of 1.

570.	Provide a Service for distributing statements and assessing fees based on the following:
	• delivery channel (mail) - $5.00 Statement Processing Fees
571.	Provide a Service to generate Prepaid Account statements that detail all Account activity:
	• Previous Statement Balance on the Account
	• Statement Date, Account Number, Replenishment Method
	• Statement Period
	• Toll transaction activity on the Account (Posting date, Transaction Date, Time, Transponder or License Plate, location, Toll amount and running balance)
	• Payments on the Account (replenishment and one-time payments)
	• Adjustments and Credits
	• other financial activity on the Account (affecting balance)
	• purchases of Transponders, other (possibly Sales tax, county tax) items
	• fees assessed on the Account
	• Statement Closing Balance on the Account

4.6.3 Customer Invoices Special Case – Prepaid Accounts

572.	Provide a Service to generate Prepaid Account-based invoicing on the Invoice Anniversary Day when Account balance is below the Insufficient Balance Threshold or last statement date, where the monthly invoice reflects the entire outstanding balance for the License Plates that incurred the Tolls.

4.6.4 Customer Invoices – Postpaid Accounts

573.	Provide a Service to generate the Account-based invoices on the Invoice Anniversary Day only if there is an outstanding due on the Account. Invoice Anniversary Day for Bill-By-Mail account is the day the first toll was posted first toll that drove the account negative.
574.	Provide a Service to evaluate and record each Open Bill-By-Mail account on the Anniversary Day. Invoices shall not be generated If there are no outstanding dues on the Account. See attached scenarios when an invoice is generated.
575.	Provide a Service to pick the one vehicle images for each license plate number associated to the toll transaction appearing on the invoice, at time of sending image to mail-house for Invoice generation.
576.	Provide a Service (Configurable) to set and maintain invoice generation and transaction aging parameters, including but not limited to:
	• the number of days from when the transaction posted to the Account to when the Account is eligible for initial invoice, for example, initial invoice is created a Configurable (35) number of days after the first transaction is posted to the Account
	• invoice generation and aging timeline, for example, generate the monthly invoice 35 days from the Anniversary Day, and amount owed is considered past due if not paid within five (5) days (of the due date)
	• invoice due date constraints, such as invoices are due on a Business Day that is a federal or state Holiday, then the invoice shall be due the first business day after the Holiday

	• grace period for aging unpaid transactions on a notice, for example, a five (5) day grace period is applied before transactions are considered past due and a late fee is assessed to the Account.
	• eligibility criteria, for example, if customer has at least one (Configurable) unpaid Toll transaction or other financial transaction within the billing cycle then include the transaction in the monthly invoice
	• aging thresholds and values, for example, if the past due amount on the Account is more than $0.00 and is more than thirty (35) days past due then processing fee ($6.00) is assessed; In a calendar year processing fee will not exceed $48.
	• aging thresholds and values, for example, if the past due amount on the Account is more than $0.00 and is more than thirty (70) days past due then civil penalty ($25.00) is assessed and no penalty assessed in the last six month; In a calendar year civil penalty will not exceed $50.
	• fee and penalty structure are to be assessed at the invoice level
577.	Provide a Service to continue to progress transactions through the escalation stages even when a good mailing address cannot be found to mail an invoice.
578.	Provide a Service to prevent the charging fees or penalties on invoices to Accounts that have the bad address (Nixie) flag.
579.	Provide a Service to prevent the charging fees or penalties on invoices to specialty Accounts (Government and Transit).
580.	Provide a Service to place a hold on invoice and enter a hold reason, hold expiry date and Alert criteria.
581.	Provide a Service to prevent the further processing of an invoice if there is a hold placed on it.
582.	Provide Configurable parameters for determining eligibility for progressing transactions to the next stage, including but not limited to:
	• Account Type
	• Filters
	• due date
	• unpaid Tolls on the Account
	• unpaid amounts (fees or penalties) on the Account
	• last toll activity on the account (Example: Accounts with no new unpaid toll transaction in the last 3 invoice cycle)
583.	Provide a Service to dismiss selected transactions at any stage.
584.	Ensure that historical data about customers and previous invoices and statements transmitted to customers do not change (remain in their original form) regardless of changes in the parameters.
585.	Provide a Service at each status or workflow stage to perform the following actions, including but not limited to:
	• identify the transactions and License Plates that are eligible for the next stage
	• add applicable fees
	• add applicable penalties
	• generate next Notification for the time frame established
	• transmit the Notification to the customer

586.	Provide a Service to reassign transactions at any stage to a different owner and force the transactions to an earlier stage if needed. For example, when a customer disputes an invoice with proof that vehicle was in the care, custody and control of another individual at the time of the transaction, then such transactions are reassigned to the new owner and new owner is invoiced. (TOR).
587.	Provide a Service to enter a forwarding address, obtained from returned mail communicated via Interface from an external vendor or manually input, which will result in an invoice being sent to the new address. Invoice shall be sent to most recent updated DMV or Mailing address. For example: An Invoice will be sent to Mailing address, if provided by the customer after address was received from DMV. An Invoice will be sent to DMV address, if DMV provided an updated address after the customer or USPS provided address.

4.6.5 Notification Tracking and Distribution

588.	Provide a Service to track Notification delivery response for each individual Notification.
589.	Provide a Service to mark returned mail as undeliverable and set the Flag indicating the address is bad.
590.	Provide a Service to prevent Notifications from being sent to addresses with a Flag indicating the address is bad or to continue to send such Notifications.
591.	Provide a Service (Configurable) to send a Notification to a customer regarding an undeliverable mail situation by using a different distribution channel.
592.	Provide periodic Configurable checks for bad (bounced) emails and mark them as undeliverable after a Configurable number of failed delivery attempts.
593.	Provide a Service to mark phone and fax numbers as bad after a Configurable number of failed contact attempts.
594.	Provide a Service (Configurable) to send a Notification to a customer regarding a bad phone/fax number situation by using a different distribution channel.
595.	Provide a Service for an Authorized User to initiate an automated Skip Tracing process.
596.	Provide a Service, when a mailing address is found to be bad, to perform a skip trace and add the acquired mailing address or other contact information to the Account and identify the source of the address as skip trace.

5. Integrations

The Contractor shall architect, design and build the TISDSR such that it will integrate with the capabilities and channels identified in this Section in phase 2 of NCTA's Digital Transformation and Modernization program. The Contractor shall engage with NCTA and any relevant vendor to ensure that the next phase integration will be accomplished as seamlessly as possible and shall support these integration efforts with any solution provider selected for subsequent phases of the Program.

5.1 Interactive Voice Response (IVR)

597.	The Contractor shall build APIs/services for future integration with NCTA's IVR solution - ***(877) 769-7277*** and shall support integration efforts in subsequent phases of the Program.

5.2 Web Responsive User Interface (UI)

598.	The Contractor shall build APIs/services for future integration with NCTA's current website - ***https://www.ncquickpass.com/***, and shall support integration efforts in subsequent phases of the Program.

5.3 Mobile Application

599.	The Contractor shall build APIs/services for future integration with NCTA's Mobile App (iOS & Android) and shall support integration efforts in subsequent phases of the Program.

5.4 Interface to NCTA Roadway Agency Host Systems

600.	Provide an Interface to the individual Agencies' existing Host Systems to obtain and acknowledge 100 percent of all transactions and images in accordance with the existing ICDs.
601.	The NCTA RTCS Interface shall be capable of the following:
	• To Receive and Transmit Home and Away Agency Full & Incremental Transponder status file.
	• To Receive Original, Corrections or Resubmittal transactions that occurred on NC Turnpike Roadways.
	• To Pull Image transactions (1 to 8 images) for image-based transactions that occurred on NC Turnpike Roadways.
	• To Send Interim and final disposition for every transactions that occurred on NC Turnpike Roadways.

5.5 Interface to NCDOT DMV for Registered Owner Vehicle (ROV)

602.	Provide the Interface to the NCDMV for the ROV lookup functionality described within these Requirements and in accordance with Web Services specification.

5.6 Interface to Out-of-Sate DMV Lookup Source

603.	Provide Direct Interface to up to seven (7) state's DMVs (states other than North Carolina) in accordance with ICDs/API's. ICDs shall be provided during the Design Phase.
604.	Provide the Interface to the third-party lookup services provider of out-of-state DMVs for the functionality described within these Requirements and in accordance with ICDs.

5.7 Interface to Interoperable Agencies E-ZPass Hub

605.	Provide the Interface to the Interoperable Agencies for the functionality described within these Requirements and in accordance with existing ICDs (IAG 1.60.xx) specification or greater:
	• To Receive and Transmit NC Quick Pass Full & Incremental Transponder status file.
	• To Receive and Transmit NC Quick Pass Full License Plate file.

	• To Transmit Away Agency Transactions and corrections that occurred on NC Turnpike Roadways and Receive Reconciliation for the submitted transactions.
	• To Receive NCTA customer Transactions and corrections from the Away Agency Roadways and Transmit Reconciliation for the received transactions.
	• To Receive and transmit Acknowledgement files for the above file exchanges.

5.8 Case Management Interface

606.	The Contractor shall build APIs/services for future integration with NCTA's case management solution, which allows access to customer data.

5.9 Customer Service Representative (CSR) Interface

607.	The Contractor shall build APIs/services for future integration with NCTA's Customer Service Representative (CSR) facing application, which includes all the functionality of self-service provided on the website and handling customer disputes, payment reversals/adjustments, and shift management, and shall support integration efforts in subsequent phases of the Program.

5.10 Interface to Print/Mail Service Provider

608.	Provide a Service to Interface with a third-party print/mail service provider for the functionality described within these Requirements and in accordance with ICDs.

5.11 NCDOT Finance

609.	The Contractor shall build APIs/Services for future integration with NCDOT's finance solution and shall support integration efforts in subsequent phases of the Program.

5.12 Interface to Collections Agencies and Collections Agencies Portal

610.	Provide an Interface to the collections agencies for the functionality described within these Requirements.

5.13 Business Intelligence/Analytics Integration

611.	The Contractor shall insure the TISDSR will be designed such that NCTA will be able to leverage BI/Analytics tools to integrate without any negative impact to production performance.

5.14 Transponder Fulfillment

612.	The Contractor shall build APIs/services for future integration with NCTAs Transponder fulfillment vendor and shall support integration efforts in subsequent phases of the Program.

5.15 Disaster Recovery Architecture Plan

613.	The Contractor shall be responsible for developing and submitting a comprehensive Disaster Recovery Architecture Plan, including Disaster Recovery Procedures, in accordance with current the versions of NIST CSF, PCI-DSS and the Statewide Security Manual for review and Approval by NCTA.
614.	The cloud service provider shall configure the collective cloud-based environment in such a manner that disruption of service at a single location shall not interrupt cloud-based service provision in any way.
615.	The Contractor shall design the cloud-based infrastructure to seamlessly failover to another infrastructure and/or cloud to ensure minimal interference with system availability after a disaster event in order to provide NCTA with business continuity at all times.
616.	The Recovery Time Objective (RTO) shall be five (5) hours.
617.	The Recovery Point Objective (RPO) shall be one (1) minute.

5.16 Information Security

618.	The TISDSR shall be certified PCI compliant prior to the commencement of operations and shall remain compliant for the duration of the Contract. The Contractor shall provide an annual certification of PCI compliance in accordance with the most recent PCI standards. NCTA shall establish the annual certification date, to be Approved by NCTA management.
619.	The TISDSR shall utilize state-of-the-art security features, securing customer information per all applicable standards issued by the PCI Security Standards Council. **Note:** PCI compliance requirements shall override any conflicting requirements herein.
620.	The Contractor shall compile scan results into a report, noting any issues uncovered during the scan, and the Contractor's recommendation for resolution. The Contractor shall submit the report to NCTA for review.
621.	The Contractor shall be required to validate PCI-DSS Compliance as a Service Provider using a third-party Qualified Security Assessor (QSA), who will conduct an annual onsite assessment and submit a completed ROC (Report of Compliance), including a signed Attestation of Compliance (AOC), and a compliant executive summary of the most recent network scan as their validation documentation.
622.	The choice of QSA shall be mutually agreed upon by the Contractor and NCTA.
623.	The Contractor shall be responsible for all costs related to the annual assessment audits, all costs associated with obtaining and maintaining PCI certification, and the use of a PCI- Approved scanning vendor.

5.17 Database Design

624.	The TISDSR database(s) shall utilize the latest, fully stable release of the proposed database software at all times. NCTA may grant a temporary exception to this requirement at its sole discretion. Periodic updates to maintain compliance shall be considered part of routine maintenance and no additional compensation will be provided.
625.	All data hosted in the TISDSR shall be readily accessible by NCTA staff for the duration of the agreement. All data shall be owned by NCTA in its entirety.

626.	The Contractor shall be responsible for maintenance of the database(s) and for providing all upgrades, security patches and updates as required and Approved by NCTA.
627.	The Contractor shall house all data such that it is available for real- time access throughout the life of the contract.
628.	The Contractor shall propose state-of-the-art security measures to protect solution data against corruption, loss, intrusion and theft.
629.	The Contractor's Cloud Service Provider shall implement an Information Security Management solution (ISMS) that is ISO/IEC 27001:2013 compliant in order to ensure the security of the system and associated data.
630.	The Contractor's Cloud Service Provider shall, at their own expense, under-go a formal compliance audit by an independent, accredited certification body in order to receive certification of ISO/IEC 27001:2013 compliance. The Contractor shall provide evidence of compliance to NCTA prior to solution go-live and maintain compliance during the term of the Contract.
631.	Access to TISDSR database(s) shall be tightly controlled, and access shall be provided via strict user authentication.
632.	Access to all data stored shall be limited to authorized personnel including NCTA and Contractor personnel and shall be password controlled and vaulted. (SOC 2 Type 2 compliance)
633.	Access control privileges will be role-based and use active directory (or similar) groups, group membership and group permissions to control user access to components of the TISDSR. **Note**: Access control privileges shall extend to all solutions and applications using the NCTA network.
634.	The Contractor shall develop a Roles and Responsibilities Matrix during the API Design and Implementation phase, and coordinate with NCTA on its review and Approval.
635.	The TISDSR database(s) shall support version control and record traceability at the field level for auditing database functions.
636.	Each user shall have only one user ID and one password for access to any part of the TISDSR to which they are authorized to access. User identification will be facilitated by NCTA.
637.	The TISDSR shall have the ability to require passwords to be changed periodically. The solution shall be configurable so that the period may be changed without additional programming. Password challenge, authentication, length, reuse and expiration shall be designed in accordance with NCTA and Microsoft Active Directory (or similar) standards.
638.	All system, applications, network electronics and software shall be free of all known security vulnerabilities, worms and viruses. The Contractor shall coordinate with NCTA to deploy anti-virus software as required.
639.	The access control shall apply to all solutions and applications using the network.
640.	The TISDSR shall comply with NCTA's security/audit policies, the current versions of NIST CSF, PCI-DSS, and the Statewide Security Manual found in **Attachment 2 – State of North Carolina, Statewide Information Security Manual.**
641.	The TISDSR shall incorporate a configurable intrusion detection application.

642.	The Contractor shall ensure that the software and data back-ups are maintained, are current, and are available to NCTA to facilitate the transition of production processing from the primary host facility to another host in the event of contract termination or other reason.
643.	Database documentation - The Contractor shall provide thorough detailed documentation of the database(s) structure.
644.	Database growth - The database(s) shall allow for expansion to accommodate NCTA's planned projects and growth of the solution in general, accounting for changes in technologies and operational policies.
645.	Implement secure storage of audit logs, collect machine state and all items required for thorough forensic investigations

5.18 Date & Time

646.	The master clock shall be a part of the Contractor's solution and shall utilize an industry standard timing source NTP (Network Time Protocol).
647.	All network switches and components shall support SNTP (Simple Network Time Protocol) to synchronized date/time to all other solutions comprising the system.
648.	All computers, servers, routers and switches shall be synchronized at a minimum to the nearest 1/100 of a second.

5.19 Hosting

649.	The system shall provide an automatic archive capability with the ability to backup data to an off-site facility or demonstrate air gap backup solution.
650.	All data shall be retained for a minimum of configurable months for the duration of the Contract.
651.	The TISDSR shall support integration with the NCTA General Ledger solution (SAP) and shall have the ability to integrate with major accounting packages and shall be in a data format as may be used by the State of North Carolina required to process proper postings and a journal entries.
652.	The Contractor shall obtain, and provision cloud-based service(s) as required to support the functionality described herein.
653.	The Contractor shall provide secure, reliable network connectivity with sufficient bandwidth to accommodate the traffic and data volumes. Alternative (backup) network connecting pathways shall be available to facilitate continuous operation in the event of a primary path disruption.
654.	The TISDSR shall be available on twenty-four (24) hours a day, seven (7) days a week production schedule excluding scheduled maintenance activities Approved by NCTA.
655.	Scheduled downtime for pre-planned maintenance shall be scheduled in advance and agreed upon by NCTA.
656.	The Contractor shall ensure that all third-party software utilized within the cloud is licensed by the Contractor in NCTA's name.
657.	The cloud-based infrastructure utilized to provide the collective system Host functionality shall be geographically and functionally redundant such that service provision cannot be interrupted by the loss of a single cloud hosting site.
658.	The Contractor shall have methods for satisfying all security concerns for each component of the solution including the physical site, hardware and software, and the environment in general.

659.	The TISDSRs security shall comply with all applicable standards issued by the PCI Security Standards Council, including the PCI DSS and the PA_DSS, and the current version of NIST CSF throughout the term of the contract.
660.	Access control privileges will be role-based and use active directory (or similar) groups, group membership and group permissions to control user access to configuration parameters, and other functionalities per the Approved Roles and Responsibilities Matrix, as determined.

5.20 Contractor Support

661.	The Contractor shall provide staff for technical support, system monitoring and other services, as directed by NCTA, for all personnel engaged with Contractor's system and according to the Approved Roles and Responsibilities Matrix, including but not limited to:
	• Issue resolution and troubleshooting
	• Maintenance records management and tracking
	• System monitoring to include dashboard functionality and associated alerts
	• Database monitoring, maintenance, and optimization
	• System and data back up support
	• Equipment, software and third-party vendor support for procurements, leases, licenses, equipment repair, etc.
	• System and data migrations and upgrades
	• Warranty Tracking

5.21 Maintenance

662.	The Contractor shall be responsible for maintenance of the databases and application platforms (ex: OpenShift, Kafka, Database) and for providing all upgrades, security patches and updates as required and Approved by NCTA.
663.	The Contractor shall create support and maintenance documentation that would allow another vendor to maintain and run the TISDSR including but not limited to:
	• Runbooks
	• Maintenance Plan
	• Configuration Information
	• SDLC environment

6 Software Service Contract

The Contractor shall complete a software service contract for any kind of integration activity. This information can be in a document or in the service repository, to be recommended by the Contractor. NCTA will consider alternatives provided that they have details about the software service contracts. The software service contract should describe functional requirements; that is, what a provider will give to any consumer that chooses to abide by the terms of the contract. The contract should define what functionality is provided, what data it will return, or typically some combination of both. Contracts must also specify non-functional requirements that detail not what the service does, but the way in which it does it. This includes information both about the responsibility of the providers for providing their

functionality and/or data as well as the expected responsibilities of the consumers of that information and what they will need to provide in return, such as availability, security, and other quality of service considerations. An accord is an expression of the visible aspects of service behavior and so contracts never include the data that providers and consumers actually exchange or any specifics about how a provider or a consumer will meet the requirements of the contract, there might be multiple contracts for a single service. The ***Table 3-1*** below describes the broad format of the software service contract.

Table 3-1: Software Service Contract Attributes

Attribute Type	Attribute	Description
General Condition	Description	Name of the service. Should indicate in general terms what it does, but not be the only definition. A narrative of what the service does, and its relevance to the integration architecture.
General Condition	Source	The source of the service, which may be a document or a module.
General Condition	Type	The type of the service to help distinguish it in the layer in which it resides, e.g., data, process, functionality, presentation, functional.
General Condition	Version	The version of the service accord.
Attribute Type	Attribute	Description
Business Requirement	NCTA Subject Matter Expert Name	Name of the point of contact for service being described.
Business Requirement	Service name "caller"	Name of the consuming service.
Business Requirement	Service name "called"	Name of the provider service.
Business Requirement	Functional Requirements	The functionality in specific bulleted items of what exactly this service accomplishes.
Business Requirement	Importance to the process	What happens if the service is unavailable
Business Requirement	Quality of information required	The quality that is expected from the service consumer in terms of input and what quality is expected from the service provider in terms of output.
Business Requirement	Quality of service	Determines the allowable failure rate.

Attribute Type	Attribute	Description
Business Requirement	Service Level Accord	Determines the amount of latency the service is allowed to have to perform its actions.
Non-functional Requirements	Throughput	Volume of transactions estimated
Non-functional Requirements	Throughput period	The period in which those transactions are expected
Non-functional Requirements	Service times	The available hours/days the service is needed; for example, 7 to 4 Saturday to Wednesday.
Non-functional Requirements	Peak profile short term	The profile of the short-term level of peak transactions; for example, 50% increase between hours of 10 to 12 am.
Non-functional Requirements	Peak Profile long term	The profile of the long-term level of peak transactions; for example, 50% increase at month end.
Non-functional Requirements	Security requirements	Who can execute this service in terms of roles or individual partners, etc. and which invocation mechanism they can invoke.
Technical Requirements	Invocation	The invocation means of the service. This includes the URL, interface, etc. There may be multiple invocation paths for the same service. There may be the same functionality for an internal and an external client, each with a different invocation means and interface.
Technical Requirements	Invocation	Preconditions any pre-conditions that must be met by the consumer (authentication, additional input, etc.).
Technical Requirements	Behavior characteristics	The criteria and conditions for successful interaction and any dependencies (on other service interactions, etc.). This should include any child services that will be invoked/spawned by this service (in addition to dependencies on other services).

The Contractor shall follow the above-mentioned software service contract for each and every integration/ interaction that is going to happen between TISDSR and different internal as well as external application.

7 Performance Requirements

The Contractor shall design and build the TISDSR to meet all Performance Requirements detailed in ***Table 3-2*** below.

Table 3-2: Performance Requirement Details

Performance Objective	Required Service	Performance Standard	Method of Measurement
TISDSR Availability	The services must operate continuously throughout the year and can be down up to two (2) hours in a given year (or 8 minutes and 45 seconds a month) due to Contractor failure. Performance calculation excludes Approved maintenance and patching activities.	≥99.98%	Instrumentation, Monitoring Tools, reports
TISDSR Responsiveness	Every API/service (Get) shall perform within a sufficiently immediate timeframe. Responsiveness testing will be conducted using an approved validation technique under controlled conditions utilizing standard analytic tools, and search, sort, group, and filter functionality shall be excluded.	≤2 Seconds (2,000 ms)	Instrumentation, Monitoring tools, reports
Note: The services shall be considered down if any portion of the solution cannot be accessed. The Contractor shall ensure that the services do not demonstrate degraded performance. The services will be considered degraded where any Performance Requirements are not met. Examples of degraded System performance include, but are not limited to, the following: • System runs slow. • System causes loss of functionality. • System prevents access to NCTA staff or customers.			
Batch Account Creation	The account creation service shall add account details, contacts, standardized address, and vehicle within a maximum of thirty (30) seconds.	99% within fifteen (15) seconds 100% within thirty (30) seconds	Instrumentation, Monitoring tools, Reports
Toll Transaction Scalability	The Toll transaction posting service shall support two hundred (200) toll transactions posting to the customer accounts per second.	100%	Instrumentation, Monitoring tools, reports

Performance Objective	Required Service	Performance Standard	Method of Measurement
Invoice Generation Scalability	The Invoice generation services (including identifying toll and financial transactions during the period, verify account balance against activities, escalations and charging fees) shall support forty (40) invoices per minute before sending Invoices to the Mail-house for composition.	100%	Instrumentation, Monitoring tools, reports
Prepaid Statement Generation Scalability	The Prepaid statement generation services (including identifying toll and financial transactions during the period, verify account balance against activities and charging mailing fees) shall support sixty (60) statements per minute before sending Invoices to the Mail-house for composition.	100%	Instrumentation, Monitoring tools, reports
File processing	All valid files the service receives must be acknowledged and posted to the destination and archived within five (5) minutes or within an otherwise approved timeframe.	90% within 5 minutes 100% within 2 hours	Instrumentation, Monitoring tools, Reports
Payment Processing	From initiation to completion, the payment processing service must ensure that the transaction is posted through the payment gateway with valid API response (success or failure excluding when the payment gateway is not responding) and accurately posted to the customer's account within a maximum of thirty (30) seconds.	99% within 30 seconds 100% within one (1) minute	Instrumentation, Monitoring tools, Reports
Payment Transaction Scalability	The Payment transaction posting service shall support fifty (50) payment transactions posting to the customer accounts per minute.	100%	Instrumentation, Monitoring tools, reports

Part IV
Proposal Content

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1. Technical Proposal Response and Submission Instructions

1.1 Content of Technical Proposal

Technical Proposals shall be prepared simply and economically, providing a straightforward, concise description of the Proposer's ability to meet the requirements of the RFP. Portions of the Proposal that are excluded from these page limitations are shown below in ***Table 4-1*.**

Table 4-1: Technical Proposal Page Limitations

Proposal Sections to be Completed by a Proposer	Page Count Limitations
Cover Letter	Up to 2 pages
Executive Summary	Up to 2 pages
Section 1: Proposer Qualifications	Limited to a combined total of 5 pages (excluding all table of contents, list of tables, or list of figures) and a font of 12 point.
Section 2: Key Team Qualifications	
Section 3: Approach to Scope of Work and Requirements	Limited to a combined total of 45 pages (excluding all table of contents, list of tables, list of figures), and a font of 12 point.
Section 4: Approach to Project Plan and Implementation	
Section 5: Approach to Integration	
Section 6: Approach to Maintenance	
Section 7: Adherence to Part V, Terms and Conditions	No limitations
Section 8: Forms & Submittals	No limitations
Appendix 1: Audited Financial Statements (Two Years)	No limitations

The Technical Proposal shall be submitted in the format shown below. The cover sheet for the completed Proposal, provided as **Exhibit C-1, Forms**, shall be included at the front of the Technical Proposal package submitted to NCTA, as directed in this Section 1.1 below. The cover sheet is not subject to page limitations.

Each lettered item designates a specific and separate section to be included in the Proposal:

A. Cover Letter

The Proposal shall include a cover letter signed by an officer of the firm with signature authority to enter into the proposed Contract with NCTA. This letter should be very brief and provide the corporate commitment that the Proposal meets the scope, schedule, and requirements of the RFP. The letter shall also include the name of the Project Principal and Contractor Project Manager.

B. Executive Summary

The executive summary shall be a brief overview, summarizing the Technical Proposal, and explaining how the Proposal being offered best addresses the evaluation criteria listed in this RFP. Describe your understanding of NCTA's needs, the Proposer's qualifications, the Proposer's approach in developing the overall solution, the coordination with NCTA and other contractors, and specify how the system's integrity will be protected and enhanced over the life of the Contract.

C. Proposal Section 1: Proposer Qualifications

Provide the following information regarding the Proposer's qualifications, including Subcontractors. Provide the information in the specific format provided below:

1. A brief history and description of the Proposer's organizational structure, including size, number of employees, capability, and area(s) of specialization.
2. A copy of the Proposer's audited financial statements for the past two consecutive years as Appendix 1. (Note in your response to this item that it has been provided in Proposal Appendix 1). If a Proposer does not produce audited financial statements, the Proposer shall submit any financial statements that it does have (e.g. lines of credit, statements compiled by an outside accounting firm, etc.) and any other information Proposer feels is pertinent in establishing the financial stability of its business/organization. NCTA reserves the right to review other publicly available information with regard to the Proposer's financial stability, as part of the evaluation. If a Proposer has questions about what evidence of the Proposer's financial stability will be acceptable to NCTA, the Proposer should communicate with NCTA as set forth in **Part I, Administrative**, Section 2.9 Written Clarifications.
3. A detailed statement providing the Proposer background information relative to the following:
    a. Any criminal felony conviction, or conviction of any crime involving moral turpitude, including, but not limited to fraud, misappropriation, or deception, of the Proposer, its officers, or directors, or any of its employees or other personnel to provide Services on this Project, of which the Proposer has knowledge or a statement that it is aware of none;
    b. Any criminal investigation for any offense involving moral turpitude, including, but not limited to fraud, misappropriation, falsification, or deception pending against the Proposer of which it has knowledge or a statement it is aware of none.
    c. Any regulatory sanctions levied against the Proposer or any of its officers, directors or its professional employees expected to provide Services on this Project by any state or federal regulatory agencies within the past three years or a statement that there are none. As used herein, the term "regulatory sanctions" includes the revocation or suspension of any license or certification, the levying of any monetary penalties or fines, and the issuance of any written warnings.
    d. Any regulatory investigations pending against the Proposer or any of its officers, directors or its professional employees expected to provide Services on this

Project by any state or federal regulatory agencies of which the Proposer has knowledge or a statement that there are none, and

e. Any civil litigation, arbitration, proceeding, or judgments pending against the Proposer during the three (3) years preceding submission of its proposal herein or a statement that there are none.

The Proposer's responses to these requests shall be considered to be continuing representations, and Proposer's failure to notify NCTA within thirty (30) Calendar Days of any criminal litigation, investigation or proceeding involving the Proposer or its then current officers, directors or persons providing Services under this contract during its term shall constitute a material breach of contract. The provisions of this paragraph shall also apply to any Subcontractor utilized by Proposer to perform Services under this Agreement.

4. A detailed discussion of the Proposer's qualifications and experience related to **Part III, Scope of Work and Requirements** required by this RFP, including Subcontractors' relevant experience in the following area:

   a. Completed, in the last two (2) calendar years, at least two (2) projects of similar scope and size (examples in Integration,freeware middleware application, real-time routing) in one of the following industries: Transportation/Tolling, Telecommunications, Financial, or Healthcare.

      Note: If the Proposer does not have experience in the Transportation/Tolling industry relevant to **Part III, Scope of Work and Requirements** required by this RFP, and/or experience with Tolling business processes, please provide a plan that details how the Proposer will gain the relevant expertise.

5. A recent Client List using **Exhibit C-3, Forms**, including a detailed description of the size, total dollar value and specific services provided for each client to which the Proposer provided similar services within the past two (2) calendar years. Specify the name, address, and telephone number of the individual responsible at the client organization for the supervision of such services. Include in Proposal Section 8 and note in your response to this item that it has been provided in Proposal Section 8.

6. The Proposer Company Reference Form using **Exhibit C-4, Forms**. Include in Proposal Section 8 and note in your response to this item that it is provided in Proposal Section 8. The completed form must include at least two (2) references to demonstrate that the Proposer, in combination with its Subcontractors, has successfully developed and delivered at least two projects of similar size and scope. The Proposer shall have successfully maintained the implemented projects for at least one (1) calendar year. NCTA may or may not conduct reference checks for information provided by Proposers.

D. Proposal Section 2: Key Team Qualifications

Provide the following information regarding the Proposer's Key Team qualifications, including Subcontractors. Please number and provide the information in the specific format provided below.

1. Identify the following Key Personnel proposed for this project, including their percentage of time on site (NCTA Project office), and overall percentage time commitment to this Project. A tabular approach to presenting this information is suggested.

    - Project Principal: Responsible for the overall conduct and performance of the Implementation; oversight of the Implementation; the performance of the Contractor Project Manager and a point of contact for any escalated issues that cannot be resolved by the Contractor Project Manager.
    - Contract Project Manager: Responsible for all day-to-day work; the overall execution and delivery of the Implementation and the day-to-day contact person for the Contractor. The assigned Contract Project Manager shall have decision making authority for the Contractor (e.g. related to system changes or Approval of budgets/costs for change requests) regarding the design, development, testing, implementation and maintenance of the system. The Contract Project Manager shall be 100% committed to this Implementation, shall work in the Raleigh-Durham area, and have at least 5 years of relevant experience. Information provided within the Contract Project Manager's resume shall demonstrate their background, knowledge, competence and experience in all areas of the Scope of Work.
    - Lead Business Analyst: Responsible for all requirements gathering, interaction with NCTA business stakeholders, interfaces with software development team to communicate business requirements into system requirements. The assigned Lead Business Analyst shall be 100% committed to this Implementation, work in the Raleigh-Durham area, and have at least 5 years of relevant experience. Information provided within the Lead Business Analyst's resume shall demonstrate their background, knowledge, competence and experience in requirements gathering, client interaction and developing system requirements.
    - Solution Architect: Responsible for the architecture, design and consultation for the development team of the Tolling Integration Service and Data System of Record (TISDSR) system (including subsystems, and internal and external interfaces). The assigned Solution Architect shall be 100% committed to this Implementation and have at least 7 years of relevant experience. Information provided within the Solution Architect's resume shall demonstrate their background, knowledge, competence, and experience in managing and developing software solutions.
    - Product Owner: Responsible for the overall planning and implementation of the TISDSR testing program. Also responsible for integration and installation of the TISDSR.
    - Quality Assurance Manager: Responsible for consistent quality throughout the design, development, testing and implementation of the TISDSR through good QA and QC practices.

2. Describe the experience of each person identified as Key Personnel, and how it relates specifically to the Scope of Work in this RFP. The resources will be available throughout the Term of the Agreement. Any changes in Key Personnel shall be presented in writing to NCTA for review and Approval prior to making such change.
3. Provide resumes (not to exceed two (2) pages per team member), for each person identified as Key Personnel to include the following information: education, professional registrations [type, number, and state(s) where registered], years of experience, years with firm and actual work performed by the individual. (Include in Proposal Section 8 and note in your response to this item that it has been provided in Proposal Section 8).
4. Complete the List of Subcontractors Form from **Exhibit C-2**, **Forms**, which includes Subcontractor name, address, work to be performed, and estimated percentage of total work value to be performed. Also complete the RS-2 Form for each Subcontractor as further instructed in **Part I, Administrative**, Section 2.20.4 Subcontracting. (Include both the completed list of Subcontractors and the RS-2 Form in Proposal Section 8 and note in your response to this item that they have been provided in Proposal Section 8).

E. Proposal Section 3: Approach to Scope of Work and Requirements

Provide responses to the items below regarding the Proposer's approach to the Scope of Work and Requirements. Please number responses and provide the information in the specific format provided below.

1. Discuss Proposer's technical approach, including a description of the general system architecture, to satisfy all of the functional requirements for the TISDSR, focusing on micro services (identify design patterns) and API Gateway architecture and cloud-based computing / hosted services / infrastructure as a service.
2. Specifically address how the Proposer's solution and architecture will accommodate changes in technology given changing business needs, anticipated upgrades, growth and technology advances during the Contract Term.
3. Identify all third-party software, with associated version numbers, and vendors, including operating system; database; security software; monitoring tools and software and freeware (patched and support personnel) for the Proposer's solution. Also identify other Proposer projects where such software is deployed.
4. Describe the Proposer's system security design that prevents virus attacks and unauthorized access and identify detection and alerting mechanisms in place in the event of attempted or successful intrusions. Detail compliance with Payment Card Industry and secure by design requirements and ongoing certification.
5. Discuss Proposer's adherence to the Performance Requirements and explain how the Proposer will meet or exceed specific Performance Requirements set forth in **Part III, Scope of Work and Requirements**.
6. Discuss the Proposer's approach to integrate data from NCTA's database into the new data system of record, as well as test, validate and maintain historical data within the new system. The Proposer's approach should include, but not be limited to:

a. Description of the process to integrate data from NCTA's database.

Note: NCTA will provide detailed information about the database structure and elements as outlined in **Attachment 8: Entity Relationship Diagrams.** Additional information with migrated data will be available at the start of each Iterations.

b. Roles, responsibilities, and a schedule for data loading and validation.

7. Discuss Proposer's approach to API/Services testing to support the Scope of Work in this RFP.

a. Proposer's overall test plan approach, including internal (e.g. modular testing, regression testing, etc.) as well as external, milestone/user acceptance testing, go-live validation.

b. Describe the Proposer's test script generation and review process, incorporating use of a requirements traceability matrix.

c. Describe the Proposer's quality assurance approach with regard to testing, including automation and regression testing suites.

d. Describe the Proposer's approach for demonstrating the proper functioning of the API/Services to NCTA.

8. Provide a Bill of Materials (BOM) using **Exhibit C-8, Forms** that meets the requirements set forth and described in **Part III, Scope of Work and Requirements.** The BOM **s**hould detail all Equipment and third-party products provided and will become the basis for the complete, Approved technology list. (Note in your response to this item that the Bill of Materials has been provided in Proposal Section 8). The BOM should fully match the Equipment and third-party products in the Price Proposal. (Do not include any pricing in this version of the BOM).

9. Complete and submit a Requirements Traceability Matrix (RTM) using **Exhibit C-9, Forms**. The matrix lists all of the Requirements set forth in **Part III, Scope of Work and Requirements**.

a. Proposers are not to alter the Requirements listed in the RTM in any way and must use the matrix provided in **Exhibit C-9, Forms**. The Proposer shall submit both a PDF version & Excel version of the completed matrix. (Note in your response to this item that the RTM has been provided in Proposal Section 8).

b. In Exhibit C-9, reference 'Tab 1: Instructions' for further instructions on how to properly fill out and complete 'Tab 2: RTM'.

10. Complete and submit the HUB Supplemental Vendor Information Form using **Exhibit C-10, Forms**. (Note in your response to this item that it has or has not been provided in Proposal Section 8).

a. **Note**: This form is only required if it's applicable to the Proposer. See RFP Part I, Section 2.20.3 for additional information.

F. Proposal Section 4: Approach to Project Plan and Implementation

Provide responses to the items below regarding the Proposer's approach to the Digital Transformation and Modernization Implementation. Please number and provide the information in the specific format provided below.

NCTA has established milestone and key implementation dates for the Implementation that are subject to change at the sole determination of NCTA. These milestones are provided in **Part III, Scope of Work and Requirements**. This list of milestones is not intended to include all Implementation milestones, but to present planned major milestones to allow the Proposer sufficient detail to develop a meaningful Preliminary Implementation Schedule as a part of its Technical Proposal. Proposers may identify certain interim milestones on the Implementation Schedule; however, it is critical that the milestones in **Exhibit A: Project Implementation Schedule** are achieved within the timeframe agreed to by both NCTA and the Proposer.

With these points in mind, Proposers shall provide the following information:

1. Provide a Preliminary Implementation Schedule that has been developed using Microsoft Project (submitted in both Microsoft Project and PDF file formats) that meets or exceeds the schedule guidelines set forth above and is based on the **Part III, Scope of Work and Requirements**. All major elements of the Scope of Work shall be addressed in the Preliminary Implementation Schedule, including draft submissions, review cycles and final Approvals.
   Note: The Preliminary Implementation Schedule is not counted towards the page limit for this section.
2. Describe the SDLC the Proposer wishes to leverage and include hi-level dates for component delivery, meeting cadence and progress reporting.
3. Describe the project governance structure describing project management processes, methodologies and procedures, risk and issue management, escalation mechanism, team structure, capability and resource deployment plan.
4. Discuss the Proposer's approach to Project Management for the design, development, testing, and implementation of the TISDSR, addressing the PMP requirements of **Part III, Scope of Work and Requirements**. Specifically discuss the approach to the following Project Management elements:
   a. Project Implementation Schedule.
   b. Design, cloud-service procurement, software development, implementation and testing, training and maintenance;
   c. Resources and availability of resources;
   d. Correspondence and report delivery, tracking, reviews, Approvals, etc.;
   e. Quality Control Plan - A plan that describes the Proposer's procedures and techniques for Quality Control and Quality Assurance in all areas including development of the system requirements to reflect functional requirements, business policies and design documentation; cloud-service procurement; software development; implementation and

testing; and trouble tracking. Each Proposer shall specifically address Quality Control (how quality is being ensured) and Quality Assurance (assurance that Quality Control is effectively being performed).

5. Specifically address what elements, such as processes, procedures, communications, meetings, issues tracking, and quality control will be in place during the design, development, testing, implementation of the TISDSR to ensure timely communication and resolution of problems with NCTA, their consultants and other contractors without the intervention of NCTA.
6. Provide an Implementation Organization Chart that shows planned staffing for all levels and phases of the Project Implementation.
7. Discuss the Proposer's approach to staffing, and the intended level of effort. Include location of staff. Provide details on staffing at least one level below the Key Team Personnel.

G. Proposal Section 5: Approach to Integration

Provide responses to the items below regarding the Proposer's approach to integration, and transition to production, which would occur as a separate Phase, but begin during implementation of the TISDSR. NCTA is not requesting pricing of the integration effort, but instead how the Proposer would approach integration. Please number and provide the information in the specific format provided below.

1. Discuss the Proposer's preferred approach for integrating the TISDSR to NCTA's Channels, applications and Business-to-Business partners in the timeframe specified, highlighting the major challenges and issues to meeting the Implementation milestones established in **Part III, Scope of Work and Requirements**. Identify key elements of the approach. Identify and describe any anticipated potential problems or issues associated with the current schedule; the Proposer's approach to resolving these problems and any special assistance that will be requested from NCTA to meet the schedule.
2. Describe the technologies used and what they would be used for.
3. Describe the Proposer's approach to any modifications to the API's (the APIs resulting from this RFP) during integration.
4. Describe how the Proposer will ensure that there is minimal interruption of service during migration to production.
5. Describe the SDLC the Proposer would use to complete integration with the API's.
6. Discuss the plan for coordination of NCTA and Proposer's Integration responsibilities.
7. Provide typical Integration Organization Charts that shows staffing for all levels and locations. Describe the Proposer's approach to maintain the Requirements Traceability Matrix.

H. Proposal Section 6: Approach to Maintenance

Provide responses to the items below regarding the Proposer's approach to maintenance of the TISDSR. The scope of maintenance, post-delivery of the TISDSR, is limited to security patching, and necessary upgrades to applications and databases.

1. Discuss the Proposer's approach to maintain the TISDSR as defined in **Part III, Scope of Work and Requirements**. Identify key elements of the approach. Identify and describe any anticipated potential problems or issues.
2. If another Contractor is selected to maintain the TISDSR in the longer term, please describe how the Proposer would facilitate migration (if necessary) of all ILSDR application components and how the Proposer would transfer knowledge related to the TISDSR to the new vendor.

I. Proposal Section 7: Adherence to Part V, Terms & Conditions

1. The Proposer must submit its Proposal on the basis of the terms and conditions set out in **Part V, Terms and Conditions**. NCTA may reject any Proposal that is conditioned on the negation of Terms and Conditions set out in **Part V, Terms and Conditions** or to other provisions of the RFP as specifically identified above.
2. The Proposer must clearly identify any proposed exceptions to the Terms and Conditions in this Proposal Section 7, which will be considered in accordance with **Part I, Administrative**, Section 2.17 Contractual Obligations. The Contractor waives the right to raise new exceptions and alternatives during and after negotiations, however, any details not yet defined in the documents by NCTA may still be negotiated.

J. Proposal Section 8: Forms and Submittals

Proposers shall provide all Proposal forms required to be submitted as part of the RFP in Section 8 of the Proposal, unless otherwise specifically directed. Proposers shall submit properly completed forms that have been provided in **Exhibit C, Forms**. Please refer to ***Table 4-2*** below for a Technical Proposal Forms and Submittal checklist. The checklist identifies the location of the form or the Submittal requirement in the RFP and also where the form or Submittal is to be included in the Proposal.

Proposers shall not modify any of the forms unless specifically instructed by NCTA to do so. Completion of forms will be checked during the initial Pass/Fail screening of the submitted Proposals. Proposals not adhering to this requirement may be considered as non-compliant.

Table 4-2: Technical Proposal Forms and Submittal Checklist

Form #	Form/Submittal Name	Location in RFP	Location of Form/Submittal in Proposal
Technical Proposal Forms to be Submitted			
C-1	Proposal Cover Sheet	Exhibit C-1	Technical Proposal
C-2	List of Subcontractors and RS-2 Form	Exhibit C-2	Technical Proposal Section 8
C-3	Recent Client List	Exhibit C-3	Technical Proposal Section 8
C-4	Proposer Company Reference Form	Exhibit C-4	Technical Proposal Section 8

Form #	Form/Submittal Name	Location in RFP	Location of Form/Submittal in Proposal
C-5	Proposer Questions Form	Exhibit C-5	N/A: To be used for submission of Proposer questions to NCTA
C-6	Non-Collusion Forms	Exhibit C-6	Technical Proposal Section 8
C-7	Acknowledgment of Receipt of Addenda	Exhibit C-7	Technical Proposal Section 8
C-8	Bill of Materials	Exhibit C-8	Technical Proposal Section 8
C-9	Requirements Traceability Matrix	Exhibit C-9	Technical Proposal Section 8
C-10	HUB Supplemental Vendor Information Form **Only if applicable to the Proposer*	Exhibit C-10	Technical Proposal Section 8
Other Technical Proposal Submittals			
N/A	Resumes	See Part IV – Section 1.1.D	Technical Proposal Section 8
N/A	Preliminary Implementation Schedule	See Part IV – Section 1.1.F	Technical Proposal Section 8
N/A	Implementation Phase Organization Chart	See Part IV – Section 1.1.F	Technical Proposal Section 8
N/A	Integration Phase Organization Chart	See Part IV – Section 1.1.G	Technical Proposal Section 8

K. Proposal Appendices - The Proposer shall submit the following materials in the form of Proposal Appendices:

- Appendix 1 – Audited Financial Statements (Two Years)

1.2 Format of Technical Proposal

1. **Form of Technical Proposal.** Submit Technical Proposals only electronically on a USB flash drive.

   a. The electronic copy shall be provided in a searchable (NOT SCANNED) *.pdf format. All Sections listed in ***Table 4-1*** (Cover Letter, Executive Summary, Proposal Sections 1 – 8) shall be a separate *.pdf file. Any Proposal Exhibits or information prepared either as graphics or with other programs such as scheduling programs shall be viewable in a *.pdf file without any other software required for Proposal review.

   b. On a separate USB flash drive, Proposers shall also submit a redacted electronic copy of the Technical Proposal (Proprietary and Confidential Information Excluded). Any proprietary information identified as confidential and proprietary in accordance with G.S. § 132-1.2 and the Terms and Conditions of this RFP, should be excluded.

2. **Number of Copies.** One (1) USB flash drive containing all portions of the Technical Proposal shall be provided and one (1) USB flash drive containing a redacted copy of the Technical Proposal shall be provided. Two (2) USB flash drives in total shall be submitted.

3. **Page Presentation.** Technical Proposal text shall be single-spaced, a minimum of 12-point Times New Roman font. Each page header and/or footer should include the Proposer's name and Technical Proposal section, along with page numbers and date of the Proposal.

   NCTA will not be responsible for reviewing portions of proposals with illegible text. Headers and footers may be in different size font from that specified but no less than 9-point font.

4. **Easy to Read and Cross-Reference.** The Proposers need not duplicate or quote in detail from attached reference materials provided that a summary is included in the technical section and a clear and easy means to locate references to the information is provided. The reference shall include the document name, page number(s) in the document, and paragraph numbers(s) or line number(s) where the referenced information is located. Underlining, boxing, highlighting, etc. that will call attention to referenced information in a manner that will assist in locating it is recommended.

5. **Writing Style.** Proposal Documentation should provide an example of what project design documentation will look like. NCTA prefers economy of words, direct writing, active voice, and minimum of marketing superlatives. NCTA also prefers facts and written evidence with references or data that supports Proposers statements or assertions in the document.

6. **Trade Secrets and Confidential Information.** NCTA is a public agency of the State of North Carolina, subject to the North Carolina Public Records Act, Chapter 132 of the North Carolina General Statutes. NCTA may maintain confidential information, including any designated as trade secrets or otherwise proprietary, only in accordance applicable Federal and State laws or regulations. NCTA, therefore, expects that Proposers will keep confidential information designations to a minimum.

   A Proposer, having formed a good faith opinion, upon consultation with legal or other knowledgeable advisors that information submitted may contain a trade secret as defined in G.S. § 66-152 or other information exempted from the North Carolina Public Records Act pursuant to G.S. § 132-1.2, may so designate appropriate portions of its Proposal by marking the top and bottom of pages containing confidential information in boldface type "CONFIDENTIAL." NCTA, however, may serve only as a custodian of information a Proposer deems confidential. NCTA shall not act as an arbiter or defender of any claims related to assertions of confidential information. If a request is made for disclosure of information submitted, or an action is brought to compel NCTA to disclose information marked confidential pursuant to G.S. § 132-1 et seq. NCTA will notify the affected Proposer of such request or action.

   In submitting a Proposal in response to this RFP, a Proposer agrees to: (i) defend its assertions of confidentiality by instituting appropriate legal proceedings, at its own expense and through its counsel, or intervening in an action brought against NCTA to compel

disclosure, to defend its assertions of confidentiality; and (ii) hold the State and NCTA, and any officials or employees thereof harmless from any and all damages, costs, and attorney's fees awarded against the State and NCTA arising out of any such actions. Nothing in this section shall preclude the State or NCTA from participating in the defense of such actions, at its option and expense through its counsel. NCTA shall have no liability to a Proposer with respect to the disclosure of any information, including confidential information, subject to an order by a court of competent jurisdiction pursuant to G.S. § 132-9 or any other applicable law.

In accordance with G.S. § 136-28.5, bids and documents submitted in response to an advertisement, or this RFP shall not be public record until the NCTA issues a decision to award or not to award the Contract.

1.3 Submission of Technical Proposal

All Technical Proposal USB flash drives shall be submitted in a sealed envelope, bearing on the outside the following information:

Technical Proposal:

DIGITAL TRANSFOPRMATION & MODERNIZATION RFP

Submitted By:

PROPOSER'S NAME

PROPOSER'S ADDRESS

CITY, STATE, ZIP CODE

PROPOSER'S PHONE NUMBER

The USB flash drives for the Technical Proposals shall be delivered to the address provided below. If hand delivering, please reach out to the NCTA Contact Person to coordinate the receival.

Physical Delivery Address

NC Quick Pass

200 Sorrell Grove Church Rd, Suite A

Morrisville, NC 27560

Attn: Eliza Davis

2 Price Proposal Submission Instructions

2.1 Content of Price Proposal

All Short-listed Proposers shall complete the below form as their Price Proposal submission.

1. **Exhibit B-2: Price Proposal Forms** in accordance with the instructions outlined in **Exhibit B-1: Price Proposal Instructions**
    a. Any costs for Work that is not provided in the Price Proposal will be assumed as no charge to NCTA.
    b. Proposals shall not include any assumptions in their Price Proposals. If the Proposer includes assumptions in its Price Proposal, NCTA may reject the Proposal.

2.2 Format of Price Proposal

All Short-listed Proposers shall submit Price Proposals following the below format.

1. **Form of Price Proposal.** Submit Price Proposals only electronically on a USB flash drive.
    a. The file format for the electronic copy of the Price Proposal shall be both Microsoft Excel and PDF.
2. **Number of Copies.** One (1) USB flash drive containing the Price Proposal shall be submitted.

2.3 Submission of Price Proposal

All Price Proposal USB flash drives shall be submitted in a sealed envelope, bearing on the outside the following information:

Price Proposal:

DIGITAL TRANSFOPRMATION & MODERNIZATION RFP

Submitted By:

PROPOSER'S NAME

PROPOSER'S ADDRESS

CITY, STATE, ZIP CODE

PROPOSER'S PHONE NUMBER

The USB flash drives for the Price Proposals shall be delivered to the address provided below. If hand delivering, please reach out to the NCTA Contact Person to coordinate the receival.

Physical Delivery Address

NC Quick Pass
200 Sorrell Grove Church Rd, Suite A
Morrisville, NC 27560
Attn: Eliza Davis

Part V
Terms & Conditions

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1. Contract Terms and Conditions

1.1 Term of Contract

The term of the Contract shall commence upon Notice to Proceed with the TISDSR Design & Implementation Phase ongoing until System Acceptance by NCTA, unless terminated, canceled, or extended as otherwise provided herein. The phases are further described as follows:

- TISDSR Design & Implementation Phase – The Design & Implementation (including Preliminary System Design Document, Iterative System Design Document, development and testing of the six functional capabilities) shall begin on Notice to Proceed and shall continue until System Acceptance by NCTA.
- TISDSR Maintenance Phase (Optional) – The Maintenance Phase shall begin upon System Acceptance by NCTA to include two (2) two (2)-year optional Digital Transformation & Modernization extensions to be executed at the sole discretion of NCTA, with the first extension commencing upon the end of the TISDSR Design & Implementation Phase. During this phase, for any integration effort, NCTA will issue Extra Work Orders required to support additional Scope of Work.
- NCTA will provide a minimum of ninety (90) Calendar Days-notice if NCTA elects to exercise the extension option.

NCTA shall fix the Notice to Proceed date after the Contract has been fully executed by the Contractor and by NCTA, and all Approvals required by NCTA contracting procedures have been obtained. NCTA shall not be responsible for reimbursing the Contractor for goods provided nor Services rendered prior to the appropriate signatures and the arrival of the Notice to Proceed date of the Agreement.

1.2 Payment Terms and Conditions

1. Payment terms are net thirty (30) Calendar Days after receipt of a correct invoice within 45 days of services rendered. NCTA is responsible for all payments under the Contract. A "correct" invoice is one that contains an accurate description of the amounts due, is in the Approved format, has no errors, includes all required supporting information including payment Approvals, and meets all other Requirements for invoicing set forth in **Part III, Scope of Work and Requirements**.
2. The Contractor shall invoice NCTA in accordance with the amounts set forth in the Price Proposal.
3. The Contractor shall invoice NCTA based on milestone payments set forth in **Exhibit D, Payment Schedule**.
4. NCTA may exercise any and all rights of set off as permitted in the Set Off Debt Collection Act (Chapter 105A-1 et. seq. of the N.C. General Statutes) and applicable Administrative Rules. Upon Contractor's written request of not less than thirty (30) Calendar Days and Approval by NCTA, NCTA may:

a. Forward the Contractor's payment check(s) or other mutually acceptable means directly to any person or entity designated by the Contractor, or

b. Include any person or entity designated in writing by Contractor as a joint payee on the Contractor's payment check(s), however

c. In no event shall such Approval and action obligate NCTA to anyone other than the Contractor and the Contractor shall remain responsible for fulfillment of all Contract obligations.

1.2.1 TISDSR Design & Implementation Phase

NCTA and the Contractor have agreed to a lump sum compensation amount as set forth in the final Contract documents for Implementation Work to achieve System Acceptance, as described in **Part III Scope of Work and Requirements**. Such compensation shall be paid upon receipt and be based on the prices shown in the Contractor's Implementation Price Proposal. The Contractor shall not be entitled to receive more than the established lump sum amount for Implementation, except as may be modified in accordance with Section 2, Contract Changes and Termination, of these Terms and Conditions.

1.2.2 TISDSR Maintenance Phase

The Maintenance compensation for each month shall commence upon System Acceptance and be based on the prices shown in the Contractor's Maintenance Price Proposal.

1.3 Performance Requirements and Invoice Adjustments

The Contractor shall track its performance against the Performance Requirements shown in **Part III, Scope of Work and Requirements,** Section 7.

1.3.1 Liquidated Damages

1. Liquidated damages per Calendar Day shall be assessed for the Contractor's failure to reach System Acceptance by the agreed upon Implementation Schedule. The Contactor shall be assessed damages in the amount of $10,000 for missing System Acceptance. The Contractor shall be assessed damages in the amount of $1,000 per day for each subsequent Calendar Day of delay up to a maximum of 10% of the total Contract.

2. Payment adjustments will be assessed not as a penalty, but as liquidated damages for not meeting the Performance Requirements set forth in **Section III Scope of Work and Requirements**, Section 7 Performance Requirements. During the performance of the Services, which includes any Extra Work Orders, if the Contractor does not meet or exceed the Performance Requirements identified therein, NCTA shall reduce the amount it would otherwise pay to the Contractor for such Services subject to the reduction amounts and limits set forth in therein.

3. NCTA may recover any and all liquidated damages by deducting the amount thereof from any monies due or that may become due the Contractor(s), notwithstanding any liens, Notices of liens or actions of Subcontractors, and if said monies are insufficient to cover said damages, then the Contractor shall promptly pay any remaining amounts due on demand.

4. Nothing herein contained shall be construed as limiting NCTA's rights to recover from the Contractor any and all other amounts due or that may become due to NCTA, or any and all

costs and expenses sustained by NCTA for improper performance hereunder, or for breach or breaches in any other respect including, but not limited to, defective workmanship or materials.

1.3.2 Risk of Loss

The Contractor assumes the following distinct and several risks without limitation, whether they arise from acts or omissions (whether negligent or not) of the Contractor or of any of its Subcontractors and suppliers, excepting those risks which arise from negligent acts or omissions of the NCTA:

1. The risk of loss or damage to any property of the NCTA arising out of or alleged to have arisen out of or in connection with the performance of Services pursuant to this Agreement; the risk of loss or damage to any property of the Contractor's agents, employees, and Subcontractors arising out of, or alleged to have arisen out of, or in connection with the performance of Services pursuant to this Agreement.

1.4 Audits and Financial Reporting

1.4.1 Annual Audited Financial Statements

The Contractor shall submit on an annual basis its current audited financial report, financial statements, and any associated notes for the term of the Contract.

1.5 Contractor Cooperation

1. During the course of this Agreement, NCTA may undertake or award other agreements for additional Work, including but not limited to separate agreements with different contractors, vendors and or internal/external agencies related to **Part III, Scope of Work and Requirements**. It is critical that close coordination with interfacing contractors, vendors and/or other agencies as directed by NCTA occurs throughout the term of this Agreement. Contractor shall fully cooperate with NCTA and the parties to all other contracts and carefully integrate and schedule its own Work with said parties.
2. NCTA will expect all contractors to comply with all Requirements, special provisions and other terms and conditions applicable to the Contract(s) at all times during the performance of the Contract(s). In the event of a dispute between contractors, clarifications may be sought from NCTA; provided Contract Terms, conditions or obligations shall remain in effect, excepting in instances wherein a Change Order or other Contract modification is duly executed in writing in accordance with this **Part V**, **Terms and Conditions**; however, contractors shall engage in all efforts to resolve disputes prior to participation of NCTA and further, such participation by NCTA does not imply or represent a NCTA responsibility for resolution or payment of claims that arise out of a dispute between two contractors.
3. Should problems in coordination with other contractors occur, the Contractor shall make NCTA aware of these problems immediately and shall take steps to address the problems and mitigate any delays or additional costs. Contractor shall not commit or permit any act that will interfere with the performance of Work by any other contractor or by NCTA.
4. Additional Coordination and Cooperation Requirements

a. The Contractor shall work closely with NCTA and any other contractors who will be working for NCTA for the purpose of coordinating any activity which may affect both contractors.

b. Should problems in coordination with other contractors occur, the Contractor shall make NCTA aware of these problems immediately and shall take steps to address the problems and mitigate any delays or additional costs. Contractor shall not commit or permit any act that will interfere with the performance of Work by any other contractor or by NCTA.

c. The Contractor shall cooperate with all other contractors to avoid any delay or hindrance to the other contractors or forces. NTCA reserves the right to perform other or additional Work (including material sources) at any time, by the use of other forces.

d. Each contractor shall be responsible to the other for all damage to Work to persons or property caused to the other by their Operations, and for loss caused the other due to unnecessary delays or failure to finish the Work within the time specified for completion.

1.6 Authority of the NCTA Project Manager

1. For purposes of this Contract the Chief Technology Officer is deemed the NCTA Project Manager. The Contractor hereby authorizes the NCTA Project Manager to determine in the first instance all questions of any nature whatsoever arising out of, under, or in connection with, or in any way related to or on account of, this Agreement including, without limitation: questions as to the value, acceptability and of the Services; questions as to either party's fulfillment of its obligations under this Agreement; negligence, fraud or misrepresentation before or subsequent to execution of this Agreement; questions as to the interpretation of **Part III, Scope of Work and Requirements**; and claims for damages, compensation and losses.
2. The NCTA Project Manager shall act as the designated representative of NCTA in all matters relating to this Agreement.
3. The NCTA Project Manager may give orders to the Contractor to do Work that they determine to be necessary for the Contractor to fulfill the Contractor's obligations under this Agreement.
4. If requested by the Contractor, the NCTA Project Manager will promptly provide appropriate explanations and reasons for his determinations and orders hereunder.
5. The Contractor shall be bound by all determinations or orders and shall promptly obey and follow every order of the NCTA Project Manager, including the withdrawal or modification of any previous order and regardless of whether the Contractor agrees with the NCTA Project Manager's determination or order. Orders shall be in writing, unless not practicable, in which event any oral order must be confirmed in writing by the Project Manager as soon thereafter as practicable.

1.7 TISDSR Design & Implementation Phase

The Contractor shall proceed with the TISDSR Design and Implementation Phase upon receiving the Notice to Proceed, and progress through implementation as defined and required in the **Part III, Scope of Work and Requirements**.

1.8 TISDSR Maintenance Phase

The Contractor shall maintain all built components of the TISDSR beginning at the point of deployment and ending upon the expiration of the Contract term. Integration responsibilities shall begin upon completion of the TISDSR Design & Implementation Phase and shall continue until the expiration of the Initial Contract Term, and also shall include any Contract renewals or extensions thereof. Commencement of the Maintenance Phase shall not relieve the Contractor of any of its responsibilities to complete all Requirements set forth in **Part III, Scope of Work and Requirement**s, and does not waive any of the rights of NCTA in this regard.

1.9 Project Completion

Project Completion shall be deemed to have occurred when all obligations under this Agreement have been successfully performed by the Contractor, including but not limited to all retentions owed to the Contractor have been released by NCTA and, when NCTA has delivered a Notice of Project completion to the effect of the foregoing.

Note: NCTA's beneficial use of the Deliverables of this RFP during any phase prior to Project Completion shall not constitute Acceptance of any Deliverable, nor shall such use give rise to equitable claim for adjustment.

1.10 Order of Precedence

The Contract is subject to the terms and conditions of this solicitation, which, in case of conflict, shall have the following Order of Precedence:

1. Executed Agreement, including RFP, all executed RFP addenda, BAFO (if applicable), and Amendments.
2. **Part III, Scope of Work and Requirements**, including Addenda.
3. **Part V, Terms and Conditions**, including Addenda.
4. Contractor's Price Proposal.
5. Contractor's Technical Proposal, including Exhibits and Appendices

1.11 Warranties

1.11.1 System Warranty during Maintenance / Integration Phase

A full System warranty shall be provided by the Contractor on all System Equipment, Hardware and Software for the term of the Maintenance Phase and any extensions thereof. As a result, during the Maintenance Phase, NCTA shall not pay any additional charges above the prices set forth in the Contractor's agreed-to Price Proposal for the Maintenance Phase Work, other than Work related to agreed-to Force Majeure events or agreed-to out of scope work requested by NCTA, pursuant to these **Part V, Terms and Conditions**. Notwithstanding the foregoing, in the period after installation and prior to Acceptance, all system Maintenance and Support Work shall also be at Contractor's sole expense. Such Work shall be at no charge to NCTA and shall include replacement or update, whether pre-or post-Acceptance, on any unit of Equipment, Hardware or Software, or part or component thereof, which

NCTA deems defective or insufficient, or which NCTA deems to have failed to comply with **Part III, Scope of Work and Requirements**. All transportation, labor and fees associated with restocking cancelled or returned orders shall also be the responsibility of the Contractor. All defective Equipment replaced by the Contractor will become the property of the Contractor.

The provisions of this Section 1.11, Warranties, shall survive the expiration, cancellation, or termination of this Agreement.

1.11.2 Software Warranties

1. The Software needed to operate the API shall be as set forth in **Part III, Scope of Work and Requirements**. NCTA's Acceptance of the Software shall occur in accordance with the provisions of **Part III, Scope of Work and Requirements.** The Contractor warrants that, upon NCTA's Acceptance of and for the Contract Term, including any extensions thereof, the Software and each module or component and function thereof shall:

    a. Be free from defects in materials and workmanship under normal use;

    b. Remain in good working order, be free from viruses; trap doors; disabling devices; Trojan horses; disabling codes; back doors; time bombs; drop-dead devices; worms, and any other type of malicious or damaging code or other technology or means which has the ability to interfere with the use of the System by NCTA or its designees, or permit access to NCTA's computing systems without its knowledge or contrary to its system connectivity policies or procedures;

    c. Not interfere with NCTA operations and the collection of toll revenue;

    d. Operate and function fully, properly and in conformity with the warranties in this Agreement, and

    e. Meet the Requirements set forth in this RFP.

2. The Contractor represents and warrants that upon NCTA's Acceptance of and for the Contract Term, including any extensions, the Software will:

    a. Operate fully and correctly in the operating environment identified in **Part III, Scope of Work and Requirements**, including by means of the full and correct performance of the Software, and all Updates, Enhancements, or new releases of the Software, on or in connection with the Equipment, any Updates, Enhancements, or new releases to such Equipment, and any other Software used by or in connection with any such Equipment;

    b. Be fully compatible and interface completely and effectively with the Equipment, including other Software programs provided to NCTA hereunder, such that the other Software and Equipment combined will perform and continuously attain the standards identified in **Part III, Scope of Work and Requirements**, and

    c. Accurately direct the operation of the System, as required by **Part III, Scope of Work and Requirements**, and the descriptions, specifications and Documentation set forth therein and herein.

3. During the term of the Contract, including any extensions, the Contractor shall provide Services to maintain the Software provided hereunder in good working order, keeping it free from defects such that the System shall perform in accordance with this Agreement, the Scope of Work and Requirements, and the warranties set forth herein.

4. The Contractor shall provide technical support and shall remedy any failure, malfunction, defect or non-conformity in Software, in accordance with **Part III, Scope of Work and Requirements**, but in any event not later than the deadline(s) in **Part III, Scope of Work and Requirements**, Section 7 Performance Requirements.

5. The Contractor shall provide NCTA the most current release of all Software available on the date of delivery to maintain optimum performance pursuant to this Agreement.

6. The Contractor shall promptly provide Notice to NCTA in writing of any defects or malfunctions in the Software provided hereunder, regardless of the source of information. The Contractor shall, with NCTA's Approval, promptly correct all defects or malfunctions in the Software or Documentation discovered and shall promptly provide NCTA with corrected copies of same, without additional charge. If the Software can only be corrected in conjunction with additional or revised Hardware, the Contractor shall provide such Hardware to NCTA, and the cost of such Hardware shall be borne solely by the Contractor.

7. After the completion of the TISDSR Design and Implementation Phase, the Contractor shall make no enhancements to the TISDSR software or hardware without NCTA's prior, written authorization. Should the Contractor need to make a modification or enhancement to the TISDSR to address a defect or malfunction, the Contractor shall provide NCTA with a written explanation of all changes made immediately after the change is made.

8. No Updates or enhancements shall adversely affect the performance of the System, in whole or in part, or result in any failure to meet any Requirements of **Part III, Scope of Work and Requirements**.

9. With regard to Software, the Contractor shall provide Software Services in accordance with **Part III, Scope of Work and Requirements**.

10. The Contractor shall obtain Maintenance agreements for third-party Software in accordance with **Part V, Terms and Conditions,** Section 1.11.3 Third-Party Warranties. The Contractor shall secure such Maintenance agreements for the same duration and upon the same terms and conditions as the Maintenance provisions between the Contractor and NCTA. All third-party contracts and licenses shall be assignable to NCTA.

11. In the event that the TISDSR does not satisfy the conditions of performance set forth in **Part III, Scope of Work and Requirements**, the Contractor is obligated to promptly repair or replace such Software at the Contractor's sole cost and expense or, if expressly agreed to in writing by NCTA, provide different Equipment or Software, and perform Services required to attain the Performance Requirements set forth in **Part III, Scope of Work and Requirements**.

12. In the event of any defect in the media upon which any tangible portions of the Software is provided, the Contractor shall provide NCTA with a new copy of the Software.

13. Without releasing the Contractor from its obligations for warranty (during an applicable warranty period), support or Maintenance of the Software, NCTA shall have the right to use

and maintain versions of the Software provided by the Contractor which are one or more levels behind the most current version of such Software and to refuse to install any Updates or enhancements if, in NCTA's discretion, installation of such Updates or enhancements would interfere with its CSC Operations. The Contractor shall not, however, be responsible or liable for the effect of any error or defect in the version of the Software then in use by NCTA that occurs after the Contractor has both (i) offered, by written Notice to NCTA, a suitable correction (by way of Update, enhancement or otherwise) of such error or defect and (ii) provided NCTA a reasonable opportunity to implement such existing correction, provided that the Contractor establishes that neither the implementation nor the use of such correction would limit, interfere with, adversely affect, or materially alter the Interoperability, functionality or quality of the System.

14. All provisions of this Section 1.11 Warranties referring or relating to obligations to be performed pursuant to an applicable warranty period that extends beyond the term hereof, shall survive the expiration, cancellation, or termination of this Agreement.

1.11.3 Third-Party Warranties

In addition to the foregoing warranties, the Contractor shall assign to NCTA, and NCTA shall have the benefit of, any and all Subcontractors' and suppliers' warranties and representations with respect to the System and Services provided hereunder. The Contractor's agreements with Subcontractors', suppliers and any other third-parties shall require that such parties (a) consent to the assignment of such warranties and representations to NCTA, (b) agree to the enforcement of such warranties and representations by NCTA in its own name, and (c) furnish to NCTA, the warranties set forth herein. At NCTA's request, the Contractor shall provide supporting Documentation which confirms that these warranties are enforceable in NCTA's name.

1.11.4 Service Warranties

The Contractor warrants that all Services shall be performed in a high-quality, professional manner by qualified and skilled personnel in compliance with NCTA's Requirements as set forth in **Part III, Scope of Work and Requirements**. In the event NCTA determines that any Services do not conform to the foregoing warranty, NCTA shall be entitled to elect one of the following remedies: (i) revision of the Services by the Contractor until NCTA deems them to be in conformity with the warranty in this section, at no charge to NCTA; (ii) refund from the Contractor for all fees paid in connection with the Services, which NCTA deems were not as warranted, subject to the provisions of **Part V, Terms and Conditions**, such that the Contractor is not required to refund fees for non-provision of Services for which Liquidated Damages have been assessed, (iii) reimbursement by the Contractor for NCTA's costs and expenses incurred in having the Services re-performed by NCTA or someone other than the Contractor. Notwithstanding the foregoing, nothing in this Section shall be construed to limit NCTA's rights pursuant to **Part V, Terms and Conditions,** Section 2.6.2 Termination for Cause.

1.11.5 Data Accuracy

The Contractor acknowledges and understands that the data and/or information it provides to NCTA will be relied upon by to NCTA and other persons or entities that are now or will in the future be under Agreement with NCTA. Should information derived and provided by Contractor be inaccurate and cause NCTA to incur damages or additional expenses, NCTA shall notify Contractor and the Contractor shall

immediately place any applicable insurance carrier on Notice of a potential claim. This provision shall survive termination of this Agreement, and the Contractor agrees to waive any applicable limitation periods consistent with enforcement of this provision.

1.11.6 Additional Warranties

The Contractor warrants the following:

1. All guarantees and warranties made herein are fully enforceable by NCTA acting in its own name.
2. Warranties provided in this Section 1.11 are in addition to warranties set forth in the General Conditions.

1.11.7 Pervasive Defects

The Contractor agrees to promptly remedy, at no cost to NCTA, any defects determined by NCTA to be Pervasive. A defect is "Pervasive" if NCTA determines that any Equipment, component, sub-component or Software is experiencing continued or repetitive failure that requires constant replacement or repair. The Contractor shall perform an investigation of the issues and prepare a report that includes a reason for the failure and their Plan for remedy. Such correction shall be in a manner satisfactory to NCTA and that permanently addresses the problem and corrects the defect so that such defect does not continue to occur.

The obligations set forth in this section shall be in addition to any warranty obligations set forth in this Agreement. The provisions of this section shall survive the expiration or earlier termination of this Agreement.

1.11.8 General Guaranty

Neither Acceptance of the Project, System and/or Services or payment therefor, nor any provision in this Agreement, nor partial or entire use of the System and Services by NCTA shall constitute an Acceptance of System and Services not performed in accordance with this Agreement or relieve the Contractor of liability for any express or implied warranties or responsibility for faulty materials or workmanship.

1.12 Software and License

A Software license and escrow agreement shall be attached to the final Contract as an Exhibit. The license and escrow agreement shall include the terms and conditions set forth below.

1.12.1 Description of Software Licenses

1. The Contractor shall provide to the NCTA an unlimited, perpetual, universal, irrevocable, non-exclusive, fully paid-up, royalty-free, sublicensable and transferrable license: (i) to use, operate, maintain, disclose, modify, adapt, and improve any and all Software and other Equipment; notwithstanding the foregoing, any modifications not made by the Contractor, its Subcontractors or agents shall be subject to Contractor validation in order to continue to maintain applicable warranties. (ii) to use all resulting versions, modifications, adaptations and improvements of any and all Software and other Equipment; (iii) to make, have made, use, distribute and display copies, reproductions, and derivative works of any and all Software and Documentation; and (iv) to permit any other person or entity providing Services to NCTA to do any and all of the foregoing (i)

through (iii). The foregoing license includes the right to use any Systems, processes, methods, applications, technical data specifications and other Documentation (including those provided by the Contractor, any third-party or currently used by NCTA) comprised or practiced by the Equipment or that are necessary or useful to operate the System.

2. For Third-Party Software, the Contractor shall provide to the NCTA all necessary licenses and rights in Third Party Software to allow any other Third-Party on behalf of the NCTA, to install, execute, copy, modify, display, distribute, perform, access and otherwise use the Third-Party Software for all purposes specified in or contemplated by the Contract. The Contractor shall secure such Licenses from the providers of such third-party Software and ensure that such Licenses are transferable to and assignable by the NCTA.

1.12.2 Scope of Software Licenses

All rights and licenses granted to NCTA under this Agreement shall be exercisable at any time by NCTA and each of the persons and entities provided Services by the Contractor. The license shall permit NCTA to add at any time, entities or persons to receive Contractor Services with no additional license fees charged to NCTA. The foregoing shall apply to NCTA, and such persons and entities and their respective successors and assigns. Contractor shall include, without requirement of any payment or provision of any consideration other than or in addition to that which is expressly specified by this Agreement, the right of NCTA and each other person or entity referred to in this subparagraph:

1. To utilize the System (including all Equipment or related Documentation), in whole or in part, in connection with Services provided by or to NCTA or such other persons or entities, without regard to present or future location, including for purposes of technical support, Operations, Maintenance or repair;
2. To make multiple copies of the Software and related Documentation for purposes of the exercise of NCTA's rights and licenses hereunder;
3. To use the Software and related Documentation on or in connection with multiple processors, components obtained by or on behalf of NCTA from the Contractor or from third parties, and Systems (including the System) utilized by NCTA or any person or entity providing Services to or on behalf of NCTA.
4. To maintain and modify the Software subject to the Contractor validation set forth in Section 1.12.1. Description of Software Licenses subparagraph (i) and to use the resulting versions and modifications thereof.
5. To sell or distribute user technology, device or method permitting public access to and use of the user Interface of the System, to any person or entity, and
6. To exercise any and all such rights and licenses under this Agreement through the services of its employees, agents, independent contractors or subcontractors, or such other persons or entities as it may employ or engage in its own discretion, and to disclose the Software and related Documentation, in whole or in part, to such persons or entities for such purposes.

For the avoidance of doubt, nothing in this Agreement shall restrict or preclude NCTA from providing to any other person or entity, or any such other person or entity from using, any of the Equipment, Software or other materials provided to NCTA hereunder by the Contractor, in connection with the

provision of any products or Services to or on behalf of NCTA, or to any person or entity providing Services to or on behalf of NCTA.

Pre-existing Contractor Software shall remain the property of the Contractor and nothing in this Agreement shall be construed to provide title to such Software to NCTA, subject to the License provided as set forth in Section 1.12.1. Description of Software Licenses.

1.12.3 Scope of Software Procurement

1. By signing this Contract, the Contractor represents that it possesses all rights, title and interests in the Software and other licensed materials, and all portions thereof, or otherwise has the right to grant to the NCTA the Licenses for the Software and other licensed materials including, but not limited to, and without additional payments, to sub-license, install, copy, making, distributing, perming, accessing, executing, and o/or otherwise using the software solely for all purposes specified in or reasonably contemplated by this Contract for Integration Services (API). This representation shall cover Software and other materials owned and/or developed by the Contractor as well as Software and other materials owned and/or developed by its Subcontractors, Consultants, and Suppliers.
2. For third-party Software and other materials, the Contractor shall maintain copies of the License Agreements it obtains from such third-party Software providers. The Contractor shall also maintain the computer programs, disks, and Documentation for all third-party Software and other materials it obtains. Such third-party License Agreements shall include, to the extent commercially available, the rights to use and assign such License to the NCTA, and for the NCTA without any further payments to transfer or otherwise use such rights as stated in this Paragraph.
3. The Contractor (and its Subcontractors, Consultants, and Suppliers) shall retain all proprietary rights in and to all Equipment and Software used to provide the Services except to the extent such Equipment and Software, and other materials have been customized to satisfy the requirements of the Work.
4. Nothing in this Contract shall preclude the NCTA from providing, sharing, sublicensing, or otherwise transferring to any other person(s) or entity(ies), including, nor any such person(s) or entity(ies) from using, any of the Equipment and/or Software provided hereunder, and the associated specifications, technical data and other documentation relating to and in connection with providing goods or Services.

1.12.4 Scope of Software Ownership/Customization

1. The Contractor understands that Integration Services (API) might be customized, and the Contractor shall provide the requested Software Customizations including all relevant source and object code(s) to the NCTA, and which may be provided, shared, sub- licensed or otherwise transferred by the NCTA to other designees. The cost proposal for the customized software shall include (i) maintenance fees charged to the Authority; (ii) any other mandatory or optional Consultant or third-party charges which the NCTA will incur; and (iii) any costs or savings internal to the NCTA which will result from the Software Customization.

2. When the source and object code is completed, tested and accepted by the NCTA, the Contractor shall deliver said source code to the NCTA. The NCTA, or any person authorized by

the NCTA, may revise and modify this source code. The Contractor shall, upon the NCTA's request, install the Software Customizations and shall provide such services as required, at no additional cost, to enable other designees to continue the intended use of the Software. Following the NCTA's acceptance of all customizations, such customizations, shall thereafter be considered a part of the Software for all purposes under this Contract. The Contractor shall provide the NCTA, if so requested, with written confirmation of the date the customization was applied to the Software, and any and all documentation relating to the Software and or update thereto, along with such documentation, information, or other material for use and maintenance of the software modification and customization, including all rights to use or transfer the Documentation and other materials.

3. Upon acceptance of the TISDSR, the Contractor shall provide the NCTA with all information necessary to use the Software, including, but not limited to, source and object code on industry standard media and source code listings in human readable form (as well as the compilers, assemblers and associated tools and utilities used to render source code executable, to modify it and to examine it), control files, operating systems, data base systems, network packages, all test procedures for all tests, test data, test documentation and test results. The NCTA may share this information with designees for the performance of any activity related to the operations of the Integration Services (API).

1.13 Software and Intellectual Property

Contractor represents that custom Software (developed or modified) may be necessary under this Contract. If Contractor develops or modifies the Software to meet the Deliverables under this Contract, it will provide to NCTA all firmware upgrades, service releases, and patch releases as part of this Contract subject to Contractor's commercial terms for software/firmware license rights to embedded intellectual property. In the event NCTA and Contractor mutually agree that development of custom Software for NCTA would be of unique benefit to NCTA, separate and apart from the embedded intellectual property rights Contractor has licensed to NCTA, the following provisions of 1.13 shall apply.

1.13.1 Internal/Embedded Software License and Escrow

1. This section on software licenses applies to any source code developed or modified specifically for NCTA, system or application customizations and configuration settings, internal embedded software, firmware and unless otherwise provided in this NCTA RFP, or in an attachment hereto.

2. Deliverables are the property of the State of North Carolina. Proprietary Contractor materials licensed to NCTA shall be identified to NCTA by Contractor prior to use or provision of services hereunder and shall remain the property of the Contractor. Embedded software or firmware shall not be a severable Deliverable. Deliverables include 'Work Product" and means any expression of Licensor's findings, analyses, conclusions, opinions, recommendations, ideas, techniques, know-how, designs, programs, enhancements, and other technical information, but not source and object code or software. All Software source and object code is the property of Licensor and is licensed nonexclusively to NCTA, at no additional license fee, pursuant to the terms of the

software license contained herein, and in the Supplemental Terms and Conditions for Software and Services or the License Agreement if incorporated in the Solicitation Documents.

3. Deliverables shall be considered works for hire provided by Contractor for the NCTA and shall belong exclusively to NCTA and its designees, unless specifically provided otherwise by mutual agreement of the Contractor and NCTA. If by operation of law any of the Deliverables, including all related intellectual property rights, is not owned in its entirety by NCTA automatically upon creation thereof, the Contractor agrees to assign, and hereby assigns to NCTA and its designees the ownership of such Deliverable, including all related intellectual property rights. The Contractor agrees to provide, at no additional charge, any assistance and to execute any action reasonably required for NCTA to perfect its intellectual property rights with respect to the aforementioned Deliverables.

   Notwithstanding any provision of this Contract to the contrary, any preexisting work or materials including, but not limited to, any routines, libraries, tools, methodologies, processes or technologies (collectively, the "Development Tools") created, adapted or used by the Contractor in its business generally, including any or all associated intellectual property rights, shall be and remain the sole property of the Contractor, and NCTA shall have no interest in or claim to such preexisting work, materials or Development Tools, except as necessary to exercise its rights in the Deliverable. Such rights belonging to NCTA shall include, but not be limited to, the right to use, execute, reproduce, display, perform and distribute copies of and prepare derivative works based upon the Deliverables, and the right to authorize others to do any of the foregoing, irrespective of the existence therein of preexisting work, materials and Development Tools, except as specifically limited in the solicitation documents or any attachment or exhibit to this Contract.

   The Contractor and its subcontractors shall be free to use and employ their general skills, knowledge and expertise, and to use, disclose, and employ any generalized ideas, concepts, knowledge, methods, techniques or skills gained or learned during the course of performing the services under this Contract, so long as the Contractor or its subcontractors acquire and apply such information without disclosure of any confidential or proprietary information of the State and NCTA, and without any unauthorized use or disclosure of any Deliverable resulting from this Contract.

4. Deliverables comprising goods, equipment or products (hardware) may contain software for internal operation, or as embedded software or firmware that is generally not sold or licensed as a severable software product. Software may be provided on separate media or may be included within the hardware at or prior to delivery. Such software is proprietary, copyrighted, and may also contain valuable trade secrets and may be protected by patents. Contractor grants the State and NCTA a license to use the Code (or any replacement provided) on, or in conjunction with, only the Deliverables purchased, or with any system identified in the solicitation documents. The State and NCTA shall have a worldwide, nonexclusive, non-sub licensable license to use such software and/or documentation for its internal use. NCTA may make and install copies of the software to support the authorized level of use. Provided,

however that if the hardware is inoperable, the software may be copied for temporary use on other hardware. NCTA shall promptly affix to any such copy the same proprietary and copyright notices affixed to the original. NCTA may make one copy of the software for archival, back-up or disaster recovery purposes. The license set forth in this Section shall terminate immediately upon NCTA's discontinuance of the use of the equipment on which the software is installed. The software may be transferred to another party only with the transfer of the hardware. If the hardware is transferred, NCTA shall (i) destroy all software copies made by NCTA, ii) deliver the original or any replacement copies of the software to the transferee, and iii) notify the transferee that title and ownership of the software and the applicable patent, trademark, copyright, and other intellectual property rights shall remain with Vendor, or Vendor's licensors. NCTA shall not disassemble, decompile, reverse engineer, modify, or prepare derivative works of the embedded software, unless permitted under the solicitation documents.

5. Outsourcers, facilities management or service bureaus retained by NCTA shall have the right to use the Deliverables thereof to maintain the NCTA's business operations, including data processing, for the time period that they are engaged in such activities, provided that: 1) NCTA gives notice to Contractor of such party, site of intended use of the Deliverables, and means of access; and 2) such party has executed, or agrees to execute, the Contractor's standard nondisclosure or restricted use agreement which executed agreement shall be accepted by the Contractor ("Non-Disclosure Agreement"); and 3) if such party is engaged in the business of facility management, outsourcing, service bureau or other services, such third-party will maintain a logical or physical partition within its computer system so as to restrict use and access to the program to that portion solely dedicated to beneficial use for the NCTA. In no event shall the State or NCTA assume any liability for third-party's compliance with the terms of the Non-Disclosure Agreement, nor shall the Non-Disclosure Agreement create or impose any liabilities on the State or NCTA.

   Any third-party with whom NCTA has a relationship to perform a NCTA function or business operation, shall have the temporary right to use Deliverables, provided that such use shall be limited to the time period during which the third-party is using the Deliverables for the function or business activity.

6. The parties acknowledge and agree that the State and NCTA shall own all right, title and interest in and to the copyright in any and all software, technical information, specifications, drawings, records, documentation, data and other work products first originated and prepared by the Contractor for delivery to NCTA ("Deliverables"). To the extent that any Contractor Technology is contained in any of the Deliverable, the Contractor hereby grants the State and NCTA a royalty-free, fully paid worldwide, perpetual, non-exclusive license to use such Contractor Technology in connection with the Deliverable for NCTA's business purposes. Contractor shall not acquire any right, title and interest in the copyrights for goods, any and all software, technical information, specification, drawings, records, documentation, data or derivative works thereof, or other work products provided by the State or NCTA to Contractor.

7. As NCTA's business operations may be altered, expanded or diminished, licenses granted hereunder may be transferred or combined for use at an alternative or consolidated site not originally specified in the license, including transfers between Agencies ("permitted license transfers"). NCTA will not have to obtain the Approval of Contractor for permitted license transfers but must give thirty (30) Calendar Days prior written notice to Contractor. There shall be no additional license or other transfer fees due Contractor.
8. The Contractor shall provide to NCTA an executable copy of all Software developed for NCTA, to include source code documentation and application information. Included with the provision of source code, the Contractor shall demonstrate to NCTA that the provided executables are the correct software for the systems as delivered.

1.13.2 Software Maintenance/Support Services

1. This general requirement applies unless otherwise provided in NCTA's solicitation document or in an attachment hereto.
2. For the first year and all subsequent Contract years, Contractor agrees to provide the following Services for the current version and one previous version of any Software provided with the Deliverables, commencing upon installation of the Deliverables or delivery of the Software:
    a. **Error Correction.** Upon NCTA verification of an error or defect Software, the Contractor shall use reasonable efforts to correct or provide a working solution for the error or defect Contractor's expense. NCTA shall comply with all reasonable instructions or requests of Contractor in attempts to correct an error or defect in the Program. Contractor and the State shall act promptly and in a reasonably timely manner in communicating error or defect logs, other related information, proposed solutions or workarounds, and any action as may be necessary or proper to obtain or effect Maintenance Services under this paragraph.
    b. Contractor shall notify NCTA of any material errors or defects in the Deliverables known, or made known to Contractor from any source during the Contract Term that could cause the production of inaccurate or otherwise materially incorrect, results. Contractor shall initiate actions as may be commercially necessary or proper to effect corrections of any such errors or defects.
    c. **Updates.** Contractor shall provide to NCTA, at no additional charge, all new releases and bug fixes (collectively referred to as "Changes") for any Software Deliverable developed or published by Contractor and made generally available to its other customers at no additional charge. All such Updates shall be a part of the Program and Documentation and, as such, shall be governed by the provisions of this Contract.
    d. **Telephone Assistance**. Contractor shall provide NCTA with telephone access to technical support engineers for assistance in the proper installation and use of the Software, and to report and resolve Software errors and defects in accordance with Requirements of this RFP.

1.13.3 Patent, Copyright and Trade Secret Protection

1. Contractor has created, acquired or otherwise has rights in, and may, in connection with the performance of Services for NCTA, employ, provide, create, acquire or otherwise obtain rights in various concepts, ideas, methods, methodologies, procedures, processes, know-how, techniques, models, templates and general-purpose consulting and Software tools, utilities and routines (collectively, the "Contractor Technology"). To the extent that any Contractor Technology is contained in any of the Deliverables including any derivative works, the Contractor hereby grants NCTA a royalty-free, fully paid, worldwide, perpetual, non-exclusive license to use such Contractor Technology in connection with the Deliverables for NCTA's purposes.

2. Contractor shall not acquire any right, title and interest in and to the copyrights for goods, any and all Software, technical information, specifications, drawings, records, Documentation, data or derivative works thereof, or other work products provided by NCTA to Contractor. NCTA hereby grants Contractor a royalty-free, fully paid, worldwide, perpetual, non-exclusive license for Contractor's internal use to non-confidential Deliverables originated and prepared by the Contractor for delivery to NCTA.

3. The Contractor, at its own expense, shall defend any action brought against the State to the extent that such action is based upon a claim that the services or deliverables supplied by the Contractor, or the operation of such deliverables pursuant to a current version of Contractor-supplied Software, infringes a patent, or copyright or violates a trade secret in the United States. The Contractor shall pay those costs and damages finally awarded against the State in any such action. Such defense and payment shall be conditioned on the following:

    a. That the Contractor shall be notified within a reasonable time in writing by NCTA of any such claim; and,

    b. That the Contractor shall have the sole control of the defense of any action on such claim and all negotiations for its settlement or compromise provided, however, that NCTA shall have the option to participate in such action at its own expense.

4. Should any services or software supplied by Contractor, or the operation thereof become, or in the Contractor's opinion are likely to become, the subject of a claim of infringement of a patent, copyright, or a trade secret in the United States, NCTA shall permit the Contractor, at its option and expense, either to procure for NCTA the right to continue using the goods/Hardware or Software, or to replace or modify the same to become non- infringing and continue to meet procurement specifications in all material respects. If neither of these options can reasonably be taken, or if the use of such goods/Hardware or Software by NCTA shall be prevented by injunction, the Contractor agrees to take back such goods/Hardware or Software, and refund any sums NCTA has paid Contractor less any reasonable amount for use or damage and make every reasonable effort to assist NCTA in procuring substitute Deliverables. If, in the sole opinion of NCTA, the return of such infringing Deliverables makes the retention of other items of Deliverables acquired from the Contractor under this Contract impractical, NCTA shall then have the option of terminating the Contract, or applicable portions thereof, without penalty or termination charge. The Contractor agrees to take back such Deliverables and refund any sums NCTA has paid Contractor less any reasonable amount for use or damage.

5. Contractor will not be required to defend or indemnify NCTA if any claim by a third-party against NCTA for infringement or misappropriation (i) results from the State's alteration of any Contractor-branded product or Deliverable, or (ii) results from the continued use of the good(s) or Services and Deliverables after receiving Notice they infringe a trade secret of a third-party.
6. Nothing stated herein, however, shall affect Contractor's ownership in or rights to its preexisting intellectual property and proprietary rights.

1.13.4 Tolls Data Ownership and Security

1. All data, records, and operations history information shall remain property of the NCTA at all times during the life of the Contract and after Contract termination.
2. The Contractor(s) shall ensure that no unauthorized personnel will have access to individual facilities, cabinets, data and records, payment histories, any personal information of existing or potential NCTA toll customers. Paper records shall be locked when not in use; Systems shall have secure password and ID controls for any data access. Contractor shall comply with the North Carolina Statewide Information Security Manual. Currently found at http://it.nc.gov/document/statewide-information-security-manual, as may be amended from time to time throughout the term of the Contract. Further, data, records, operations history, or customer account information shall be stored or housed in the continental United States.
3. Contractor shall notify NCTA of any security breaches immediately following discovery of the breach in accordance with the NC Identity Theft Act, G.S. § 75-60 *et seq.*
4. In accordance with G.S. § 136-89.213, customer account information is confidential and not subject to public disclosure.
5. Contractor shall ensure that all subcontractors and third parties performing tasks with respect to the Contract comply with the data security provisions contained in this section.

2 Contract Changes and Termination

2.1 General

The following Contract changes are allowable within the scope of this Contract:

1. Change Orders – The NCTA anticipates issuing Change Orders for Work required to modify, enhance or otherwise improve the Digital Transformation & Modernization operations associated with NCTA's program.
2. Extra Work Orders – The NCTA anticipates issuing Extra Work Orders to address variances in the specifications or **Part III, Scope of Work and Requirements** beyond that of the Approved Operational Concept and for which there is no appropriate pay item or category. Extra Work Orders will be issued within the sole discretion of the NCTA, and such additional Work may be subject to a new competitive procurement as deemed to be in the best interest of the NCTA.
3. Task Orders – The NCTA anticipates issuing Task Orders for Work required to enhance Ongoing Operational Services in accordance with labor rates proposed and set forth in the Price Proposal.

4. Time Extensions – The NCTA anticipates issuing Time Extensions, as necessary, to modify Digital Transformation & Modernization Implementation milestones for reasons out of the control of the Contractor. Unless otherwise agreed to by the NCTA in writing, the Contractor's Payment Schedule and Price Proposal, including labor rates identified in the Price Proposal, shall apply to all of the above Contract changes. If cost for additional Work and/or Services cannot be established on the basis of the Price Proposal or the Payment Schedule, a catalog or market price of a commercial product sold in substantial quantities, or on the basis of prices set by law or regulation, the Contractor is required to submit to the NCTA detailed cost breakdowns, including information on labor and materials costs, overhead and other indirect costs.

2.2 Change Orders

1. NCTA may elect to have the Contractor perform the Change Order Work. In this case, the Contractor shall provide a detailed Operational Proposal and Price Proposal for the order and await Approval and Notice to Proceed from NCTA before incurring any expenses for which the Contractor expects reimbursement.
2. If NCTA advertises the Change Order Work, NCTA may elect to use the Contractor to assist NCTA in the procurement of additional Hardware, Software or Services, and/or integrate the Change Order Work into the TISDSR or operations workflow. In this case, NCTA would obtain these Services through a negotiated and Approved Task Order.

2.3 Extra Work Orders

An Extra Work Order will ONLY be a change in the Scope of Work and Requirements requiring different operational services than that covered by the existing Contract or a change to a Contract Term and condition with an impact. Some examples include:

1. Large-scale changes the Contractor's Scope of Work.
2. Changes to insurance or legal Requirements.

2.4 Task Orders

The Task Order process may be utilized by NCTA to request services from the Contractor to assist the NCTA with specific tasks or services related to the operations. Prices for Task Orders shall be prepared in accordance with the hourly labor rates contained in the applicable operations staffing price sheets. While NCTA makes no guarantee that Task Order Work will be requested, the Contractor should be prepared to provide assistance and support to NCTA for tasks that may include but not be limited to:

1. Temporary changes in Approved operational procedures materially impacting staffing or processes;
2. Attendance, participation, and/or representation at meetings outside of the Work described in this RFP;
3. Assistance and support related to tasks directly related to toll collection such as expanded Interoperability Work efforts, and;
4. Additional or temporary staffing needed to assist NCTA with special projects.

2.5 Time Extensions, Schedule Changes and Submittals

2.5.1 Time Extensions and Schedule Changes

1. Within ten (10) Calendar Days of receiving NTP from NCTA, the Contractor shall update any schedules submitted with their Materials and submit the updated schedule(s) to NCTA for Approval.
2. The Contractor shall clearly label each update against the Approved Implementation Schedule, pursuant to the Requirements of the Approved Project Management Plan. Submission of the updates against the Approved Schedule shall not release or relieve the Contractor from full responsibility for completing the Work within the time set forth in the Approved Schedule. If the Contractor causes delays and fails or refuses to implement measures sufficient to bring its Work back into conformity with the current Approved Schedule, its right to proceed with any or all portions of the associated Work may be terminated under the provisions of the Contract. However, in the event that NCTA, in its sole determination, should permit the Contractor to proceed, the NCTA's permission shall in no way operate as a waiver of its rights nor shall it deprive NCTA of its rights under any other provisions of the Contract.
3. NCTA will Approve Time Extensions ONLY for Force Majeure causes or acts by NCTA which have been documented to have impeded the Contractor's progress.
4. Any changes to the Approved Schedule require Approval and may require an Amendment to the Contract.
5. Unless otherwise expressly agreed to by NCTA, the Contractor shall not receive extra compensation or damages for any time extension Approved by NCTA for completion of additional and/or altered Work. However, the Contractor shall be fully compensated for such Work as agreed upon by NCTA and the Contractor in the Change Order or the supplemental agreements.

2.5.2 Submittals

Contractor's Submittal Requirements and Submittal schedule shall be as set out in Contractor's Approved Program Management Plan and Approved Project Implementation Schedule, as required in **Part III, Scope of Work and Requirements**. The baseline schedule Approved after Notice to Proceed shall establish accepted dates by which Contractor shall submit required documents and other items necessary for provision of this Project. NCTA's written Approval will be required for these Submittals. NCTA will Approve or reject such Submittals, providing an explanation of any reasons for rejection in a form agreed to in the Project Management Plan. In any instance where NCTA does not provide Approval, rejection or written notification of an extended review period by the due date specified in the Approved Baseline Schedule, the Contractor shall notify NCTA in writing that the NCTA response is due. NCTA's right to extend the review period is intended to allow flexibility in special circumstances where the nature of the Submittal requires more involved review, and not as a diminution of NCTA's obligation to promptly review Submittals. NCTA reserves the right to reject Submittals that are not complete or correct and to extend the review period accordingly.

Contractor shall not be held responsible for delays in schedule due to delays in Approvals and permits completely beyond the control of the Contractor. Notwithstanding the foregoing, Contractor shall make every effort to work around and mitigate the impact of delay.

2.6 Contract Termination

2.6.1 Termination General Requirements

1. The Contract issued for Digital Transformation & Modernization will terminate at the end of the Contract Term(s) set forth above, inclusive of any Implementation and Integration and/or extension periods as noted in **Part V, Terms and Conditions**, Section 1.1 Term of Contract.
2. NCTA may terminate the Contract(s), in whole or in part, for default subject to the default provisions set forth below.
3. Any required Notices of termination made under this Contract shall be transmitted via U.S. Mail, Certified Return Receipt Requested, or personal delivery to the Contractor's contract administrator. The period of Notice for termination shall begin on the day the return receipt is signed and dated or upon personal delivery to the Contractor(s) contract administrator.
4. The parties may mutually terminate this Contract by written agreement at any time.
5. NCTA may terminate this Contract, in whole or in part, pursuant to the Terms and Conditions in the Solicitation Documents.
6. NCTA will notify the Contractor(s) at least ninety (90) Calendar Days prior to the termination of the Contract in the absence of cause. This notification will require the Contractor(s) to initiate actions in preparation for leaving the NCTA Project site and handing off system operations to replacement entities. These actions shall include:
    a. Acknowledgement of receipt of End of Contract notification, and
    b. Act in accordance with **Part V, Terms and Conditions**, Section 2.7 End of Contract and Transition.

2.6.2 Termination for Cause

1. In the event any Services furnished by the Contractor during performance of any Contract Term fails to conform to any material requirement of the Contract, and the failure is not cured within the specified time after providing written Notice thereof to Contractor, NCTA may cancel and procure the Work or Services from other sources; holding Contractor liable for any excess costs occasioned thereby. The rights and remedies of NCTA provided above shall not be exclusive and are in addition to any other rights and remedies provided by law or under the Contract. The Contractor shall not be relieved of liability to NCTA for damages sustained by NCTA arising from Contractor's breach of this Contract; and the NCTA may, in its discretion, withhold any payment due as a setoff until such time as the damages are finally determined or as agreed by the parties. Voluntary or involuntary Bankruptcy or receivership by Contractor shall be cause for termination.
2. Cause shall mean a material breach of this Agreement by the Contractor. Without limiting the generality of the foregoing and in addition to those instances referred to elsewhere in this Agreement as a breach, a material breach shall include the following:
    a. The Contractor failed to secure data and/or operate in accordance with this Agreement;
    b. The Contractor materially inhibited NCTA's collection of toll revenue;

c. The Contractor has not submitted acceptable Deliverables to NCTA on a timely basis;

d. The Contractor proves incapable of meeting the Requirements set forth in **Part III, Scope of Work and Requirements**;

e. The Contractor refused or failed, except in cases for which an extension of time is provided, to supply enough properly skilled workers or proper materials to properly perform the Services required under this Agreement;

f. The Contractor failed to meet required PCI certification Requirements;

g. The Contractor failed to make prompt payment to Subcontractors or suppliers for materials or labor;

h. The Contractor has become insolvent (other than as interdicted by the bankruptcy laws), or has assigned the proceeds received from this Agreement for the benefit of its creditors, or it has taken advantage of any insolvency statute or debtor/creditor law or if the Contractor's property or affairs have been put in the hands of a receiver;

i. Any case, proceeding or other action against the Contractor is 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, which case, proceeding or other action remains undismissed, undischarged or unbonded for a period of thirty (30) Calendar Days;

j. The Contractor fails to maintain insurance policies and coverages or fails to provide proof of insurance or copies of insurance policies as required by this Agreement;

k. Any warranty, representation, certification, financial statement or other information made or furnished to induce NCTA to enter into this Agreement, or made or furnished, at any time, in or pursuant to the terms of this Agreement or otherwise by the Contractor, or by any person who guarantees or who is liable for any obligation of the Contractor under this Agreement, shall prove to have been false or misleading in any material respect when made;

l. Any intentional violation by the Contractor of the ethics provisions, or applicable laws, rules or regulations;

m. The Contractor has failed to obtain the Approval of NCTA where required by this Agreement;

n. The Contractor's Audited Financial Statements or those of its parent company submitted to NCTA do not fairly represent the Contractor or its parent's true financial position;

o. The Contractor has failed in the representation of any warranties stated herein;

p. The Contractor makes a statement to any representative of NCTA indicating that the Contractor cannot or will not perform any one or more of its obligations under this Agreement;

q. The Contractor fails to remedy Pervasive Defects;

r. Any act or omission of the Contractor or any other occurrence which makes it improbable at the time that the Contractor will be able to perform any one or more of its obligations under this Agreement;

s. Any suspension of or failure to proceed with any part of the Services by the Contractor which makes it improbable that the Contractor will be able to perform any one or more of its obligations under this Agreement;

t. A pattern of repeated failures to meet a Performance Requirement(s) as defined in **Part III, Scope of Work and Requirements**;

u. The suspension or revocation of any license, permit, or registration necessary for the performance of the Contractor's obligations under this Agreement, or

v. The default in the performance or observance of any of the Contractor's other obligations under this Agreement and the continuance thereof for a period of thirty (30) Calendar Days after Notice given to the Contractor by NCTA.

3. **Cure/Warning Period**. Prior to terminating the Contract(s) for cause, the NCTA will issue a Notice of cure/warning to the Contractor(s) thirty (30) Calendar Days prior to the termination date. The Notice will be transmitted via U.S. Mail Certified Return Receipt Requested or personal delivery to the Contractor(s) contract administrator, and the period of Notice for termination shall begin on the date the Return Receipt is signed and dated or upon personal delivery to the Contractor contract administrator. The Notice will specify the corrective actions/Work required to be taken by the Contractor to come into compliance with the terms and conditions of the Contract(s). If the corrective actions/Work is performed within the cure/warning period, in a manner acceptable to the NCTA, the Contract will remain in effect in accordance with the terms and conditions thereof.

4. **Termination Without Notice of Cure/Warning**. If the NCTA has issued two Notices of cure/warning to the Contractor, upon the issuance of the third or subsequent Notice the NCTA reserves the right to terminate the Contract without further Notice. The failure of the NCTA to exercise this right on any occasion shall not be deemed a waiver of any future right.

2.6.3 Termination for Convenience Without Cause

The NCTA may terminate the Contract(s) without cause, in whole or in part by giving ninety (90) Calendar Days prior Notice in writing to the Contractor. The Contractor shall be entitled to sums due as compensation for Deliverables provided and Services performed in conformance with the Contract. In the event the Contract is terminated for the convenience of the NCTA, the NCTA will pay for all Work performed and products delivered in conformance with the Contract up to the date of termination. This is an incidental item within **Part III, Scope of Work and Requirements**, but without separate compensation.

2.7 End of Contract Transition

The Contractor acknowledges that the Services it provides under the terms of the Contract are vital to the successful operation of the NCTA program, and that said Services shall be continued without interruption. In the event that this Agreement is terminated for convenience or default or upon the Agreement completion date or expiration of the Agreement Term or any extensions thereof, the

Contractor shall cooperate with NCTA to facilitate a smooth succession to the NCTA's selected successor for the Services, whether the successor is NCTA or a third-party. The Requirements for this End of Contract Transition are contained in **Part III, Scope of Work and Requirements**. Costs for such End of Contract Transition are included in the current Contract, and the Contractor shall perform such Work without additional compensation.

The Contractor acknowledges that the Services provided under the terms of this Contract are vital to the successful operation of NCTA's program, and that said Services shall be continued without interruption. If NCTA determines that additional Services by Contractor are necessary after the expiration of the Contract to facilitate a smooth succession, the Contractor must also provide for up to six (6) months after the expiration or cancellation of the Agreement additional transition assistance requested by NCTA, to allow for the expired or canceled portion of the Services to continue without interruption or adverse effect, and to facilitate the orderly transfer of such Services to the State or its designees. Such transition assistance will be deemed by the parties to be governed by the terms and conditions of the Agreement, (notwithstanding this expiration or cancellation) except for those Contract terms or conditions that do not reasonably apply to such transition assistance. If additional Services are required and requested by NCTA, the State shall pay the Contractor for any resources utilized in performing such transition assistance at the most current rates provided by the Agreement for Contract performance. If the State cancels the Agreement for cause, then the State will be entitled to offset the cost of paying the Contractor for the additional resources the Contractor utilized in providing transition assistance with any damages the State may have otherwise accrued as a result of said cancellation.

3 General Terms and Conditions

3.1 Standards

Any Deliverables shall meet all applicable State and federal Requirements and regulations. Contractor will provide and maintain a Quality Assurance system or program that includes any Deliverables and will tender or provide to NCTA only those Deliverables that have been inspected and found to conform to the Requirements of this Contract. All Deliverables are subject to operation, certification, testing and inspection, and any accessibility specifications.

3.2 Acceptance Criteria

NCTA shall have the obligation to notify Contractor, in writing ten (10) Calendar Days following provision, performance (under a provided milestone or otherwise as agreed) or delivery of any Services or other Deliverables described in the Contract are not acceptable. The Notice shall specify in reasonable detail the reason(s) a given Deliverable is unacceptable. Acceptance by NCTA shall not be unreasonably withheld; but may be conditioned or delayed as required for installation, review and/or testing of Deliverables. Final Acceptance is expressly conditioned upon completion of any applicable inspection and testing procedures. Should a Deliverable fail to meet any specifications or Acceptance criteria, NCTA may exercise any and all rights hereunder. Deliverables discovered to be defective or failing to conform to the specifications may be rejected upon initial inspection or at any later time if the defects or errors contained in the Deliverables or non-compliance with the specifications were not reasonably ascertainable upon initial inspection. If Contractor fails to promptly cure or correct the defect or replace or re-perform the

Deliverables, NCTA reserves the right to cancel the Contract, contract with a different contractor, and to invoice the original Contractor for any differential in price over the original Contract price.

3.3 Personnel

1. Contractor shall not substitute Key Personnel assigned to this Contract without prior written Approval by NCTA. Any desired substitution shall be noticed to NCTA, accompanied by the names and references of Contractor's recommended substitute personnel. NCTA will Approve or disapprove the requested substitution in a timely manner. NCTA may, in its sole discretion, terminate the services of any person providing Services under this Contract. Upon such termination, NCTA may request acceptable substitute personnel or terminate the Contract Services provided by such personnel. The Contractor agrees to provide NCTA with resumes of the replacement, acceptable, substitute personnel within thirty (30) Calendar Days of receiving a request from NCTA to terminate the services of any person providing Services under this Contract and agree to make that person or persons available for interviews by NCTA.
2. Unless otherwise provided by NCTA, the Contractor shall furnish all necessary personnel, Services, and otherwise perform all acts, duties and responsibilities necessary or incidental to the accomplishment of the tasks specified in the Agreement. Contractor shall be legally and financially responsible for its personnel including, but not limited to, any deductions for social security and other withholding taxes required by state or federal law. Contractor shall be solely responsible for acquiring any equipment, furniture, and office space not furnished by the NCTA necessary for Contractor to comply with the Contract. Contractor personnel shall comply with any applicable State facilities or other security rules and regulations.

3.4 Subcontracting

The Contractor may subcontract the performance of required Services with other contractors or third-parties, or change Subcontractors, only with the prior written consent of NCTA. Contractor shall provide NCTA with complete copies of any agreements made by and between Contractor and all Subcontractors. The Contractor remains solely responsible for the performance of its Subcontractors. Subcontractors, if any, shall adhere to the same standards required of the Contractor. Any contracts made by the Contractor with a Subcontractor shall include an affirmative statement that NCTA is an intended third-party beneficiary of the contract; that the Subcontractor has no agreement with NCTA; and that NCTA shall be indemnified by the Contractor for any claim presented by the Subcontractor. Notwithstanding any other term herein, Contractor shall timely exercise its contractual remedies against any non-performing Subcontractor and, when appropriate, substitute another Subcontractor.

3.5 Contractor's Representation

1. Contractor warrants that qualified personnel shall provide Services in a professional manner. "Professional manner" means that the personnel performing the Services will possess the skill and competence consistent with the prevailing business standards in the information technology industry. Contractor agrees that it will not enter into any agreement with a third-party that might abridge any rights of NCTA under this Contract. Contractor will serve as the prime Contractor under this Contract. Should NCTA Approve any Subcontractor(s), the Contractor shall be legally responsible for the performance and payment of the Subcontractor(s). Names of any third-party

contractors or subcontractors of Contractor may appear for purposes of convenience in Contract Documents; and shall not limit Contractor's obligations hereunder. Third-party subcontractors, if Approved, may serve as Subcontractors to Contractor. Contractor will retain executive representation for functional and technical expertise as needed in order to incorporate any Work by third-party subcontractor(s).

2. **Intellectual Property.** Contractor represents that it has the right to provide the Services and other Deliverables without violating or infringing any law, rule, regulation, copyright, patent, trade secret or other proprietary right of any third-party. Contractor also represents that its Services and other Deliverables are not the subject of any actual or threatened actions arising from, or alleged under, any intellectual property rights of any third-party.
3. **Inherent Services.** If any Services or other Deliverables, functions, or responsibilities not specifically described in this Contract are required for Contractor's proper performance, provision and delivery of the Services and other Deliverables pursuant to this Contract, or are an inherent part of or necessary sub-task included within the Services, they will be deemed to be implied by and included within the scope of the Contract to the same extent and in the same manner as if specifically described in the Contract. Unless otherwise expressly provided herein, Vendor will furnish all of its own necessary management, supervision, labor, facilities, furniture, computer and telecommunications equipment, software, supplies and materials necessary for the Vendor to provide and deliver the Services and Deliverables.
4. Contractor warrants that it has the financial capacity to perform and to continue to perform its obligations under the Contract; that Contractor has no constructive or actual knowledge of an actual or potential legal proceeding being brought against Contractor that could materially adversely affect performance of this Contract; and that entering into this Contract is not prohibited by any Contract, or order by any court of competent jurisdiction.

3.6 Other General Provisions

3.6.1 Governmental Restrictions

In the event any restrictions are imposed by governmental Requirements that necessitate alteration of the material, quality, workmanship, or performance of the Deliverables offered prior to delivery thereof, the Contractor shall provide written notification of the necessary alteration(s) to NCTA. NCTA reserves the right to accept any such alterations, including any price adjustments occasioned thereby, or to cancel the Contract. NCTA may advise Contractor of any restrictions or changes in specifications required by North Carolina legislation, rule or regulatory authority that require compliance by the State. In such event, Contractor shall use its best efforts to comply with the required restrictions or changes. If compliance cannot be achieved by the date specified in the Contract, NCTA may terminate this Contract and compensate Contractor for sums due under the Contract.

3.6.2 Prohibition Against Contingent Fees and Gratuities

1. Contractor warrants that it has not paid, and agrees not to pay, any bonus, commission, fee, or gratuity to any employee or official of the State for the purpose of obtaining any contract or award issued by the State. Contractor further warrants that no commission or other payment was or will be received from or paid to any third-party contingent on the award of any contract by the State, except as shall be expressly communicated to NCTA in writing prior to Acceptance of the

Contract or award in question. Each individual signing below warrants that he or she is duly authorized by their respective Party to sign this Contract and bind the Party to the terms and conditions of this Contract. Contractor and their authorized signatory further warrant that no officer or employee of the State has any direct or indirect financial or personal beneficial interest,

in the subject matter of this Contract; obligation or contract for future award of compensation as an inducement or consideration for making this Contract. Subsequent discovery by the State of non-compliance with these provisions shall constitute sufficient cause for immediate termination of all outstanding contracts. Violations of this provision may result in debarment of the bidder(s) or Contractor(s) as permitted by State or Federal law.

2. Gift Ban - By Executive Order 24, issued by Governor Perdue, and G.S. § 133-32, it is unlawful for any vendor or contractor (i.e., architect, bidder, contractor, construction manager, design professional, engineer, landlord, offeror, seller, subcontractor, supplier, or vendor), to make gifts or to give favors to any State employee of the Governor's cabinet agencies (i.e., Administration, Commerce, Correction, Crime Control and Public Safety, Cultural Resources, Environment and Natural Resources, Health and Human Services, Juvenile Justice and Delinquency Prevention, Revenue, Transportation, and the Office of the Governor). This prohibition covers those vendors and contractors who: (a) have a contract with a governmental agency; or (b) have performed under such a contract within the past year; or (c) anticipate bidding on such a contract in the future. For additional information regarding the specific Requirements and exemptions, vendors and contractors are encouraged to review Executive Order 24 and G.S. § 133-32.

3.6.3 Equal Employment Opportunity

Contractor shall comply with all Federal and State Requirements concerning fair employment and employment of the disabled and concerning the treatment of all employees without regard to discrimination by reason of race, color, religion, sex, national origin or physical disability.

3.6.4 Inspection at Contractor's Site

NCTA reserves the right to inspect, during Contractor's regular business hours at a reasonable time, upon Notice of not less than two (2) weeks, and at its own expense, the prospective Deliverables comprising equipment or other tangible goods, or the plant or other physical facilities of a prospective Contractor prior to Contract award, and during the Contract Term as necessary or proper to ensure conformance with the specifications/Requirements and their adequacy and suitability for the proper and effective performance of the Contract.

3.6.5 Advertising / Press Release

The Contractor absolutely shall not publicly disseminate any information concerning the Contract without prior written Approval from the State or its Agent. For the purpose of this provision of the Contract, the Agent is the NCTA Contract Administrator unless otherwise named in the solicitation documents.

3.6.6 Confidentiality

To promote maximum competition in the State competitive bidding process, the State may maintain the confidentiality of certain types of information described in G.S. § 132-1 et. seq. Such information may include trade secrets defined by G.S. § 66-152 and other information exempted from the Public Records Act pursuant to G.S. § 132-1.2. Contractor may designate appropriate portions of its response as

confidential, consistent with and to the extent permitted under the Statutes and Rules set forth above, by marking the top and bottom of pages containing confidential information with a legend in boldface type "CONFIDENTIAL". By so marking any page, the Contractor warrants that it has formed a good faith opinion, having received such necessary or proper review by counsel and other knowledgeable advisors that the portions marked confidential meet the Requirements of the Rules and Statutes set forth above. However, under no circumstances shall price information be designated as confidential. The State may serve as custodian of Contractor's confidential information and not as an arbiter of claims against Contractor's assertion of confidentiality. If an action is brought pursuant to G.S. § 132-9 to compel the State to disclose information marked confidential, the Contractor agrees that it will intervene in the action through its counsel and participate in defending the State, including any public official(s) or public employee(s). The Contractor agrees that it shall hold the State and any official(s) and individual(s) harmless from any and all damages, costs, and attorneys' fees awarded against the State in the action. The State agrees to promptly notify the Contractor in writing of any action seeking to compel the disclosure of Contractor's confidential information. The State shall have the right, at its option and expense, to participate in the defense of the action through its counsel. The State shall have no liability to Contractor with respect to the disclosure of Contractor's confidential information ordered by a court of competent jurisdiction pursuant to G.S. § 132-9 or other applicable law.

a. Care of Information: Contractor agrees to use commercial best efforts to safeguard and protect any data, documents, files, and other materials received from the State or NCTA during performance of any contractual obligation from loss, destruction or erasure.

b. Contractor warrants that all its employees and any Approved third-party contractors or subcontractors are subject to a non-disclosure and confidentiality agreement enforceable in North Carolina. Contractor will, upon request of the State, verify and produce true copies of any such agreements. Production of such agreements by Contractor may be made subject to applicable confidentiality, non-disclosure or privacy laws, provided that Contractor produces satisfactory evidence supporting exclusion of such agreements from disclosure under the N.C. Public Records laws in G.S. § 132-1 et. seq. The State may, in its sole discretion, provide a non-disclosure and confidentiality agreement satisfactory to the State for Contractor's execution. The State may exercise its rights under this subparagraph as necessary or proper, in its discretion, to comply with applicable security regulations or statutes including, but not limited to 26 USC 6103 and IRS Publication 1075, (Tax Information Security Guidelines for Federal, State, and Local Agencies), HIPAA, 42 USC 1320(d) (Health Insurance Portability and Accountability Act), any implementing regulations in the Code of Federal Regulations, and any future regulations imposed upon the Office of Information Technology Services or the N.C. Department of Revenue pursuant to future statutory or regulatory Requirements.

c. Nondisclosure: Contractor agrees and specifically warrants that it, its officers, directors, principals and employees, and any Subcontractors, shall hold all information received during performance of this Contract in the strictest confidence and shall not disclose the same to any third-party without the express written Approval of the State.

d. Contractor shall protect the confidentiality of all information, data, instruments, studies, reports, records and other materials provided to it by NCTA or maintained or created in accordance with this Contract. No such information, data, instruments, studies, reports, records and other materials in the possession of Contractor shall be disclosed in any form without the prior written consent of

the NCTA. Contractor will have written policies governing access to and duplication and dissemination of all such information, data, instruments, studies, reports, records and other materials.

e. All Project materials, including Software, data, and Documentation created during the performance or provision of Services hereunder that are not licensed to the State or are not proprietary to the Contractor are the property of the State of North Carolina and must be kept confidential or returned to the State, or destroyed. Proprietary Contractor materials shall be identified to the State by Contractor prior to use or provision of Services hereunder and shall remain the property of the Contractor. Derivative Works of any Contractor proprietary materials prepared or created during the performance of provision of Services hereunder shall be subject to a perpetual, royalty free, nonexclusive license to the State.

3.6.7 Deliverables

Deliverables, as used herein, shall comprise all Hardware, Contractor Services, professional services, Software and provided modifications to the Software, and incidental materials, including any goods, Software or Services access license, data, reports and Documentation provided or created during the performance or provision of Services hereunder. Deliverables not subject to owner licensing or leasing are the property of the State of North Carolina. Proprietary Contractor materials licensed to the State shall be identified to the State by Contractor prior to use or provision of Services hereunder and shall remain the property of the Contractor. Deliverables include "Work Product" and means any expression of Contractor's findings, analyses, conclusions, opinions, recommendations, ideas, techniques, know-how, Designs, programs, enhancements, and other technical information, but not source and object code or Software.

3.6.8 Late Delivery, Back Order

Contractor shall advise NCTA immediately upon determining that any Deliverable will not, or may not, be delivered at the time or place specified. Together with such Notice, Contractor shall state the projected delivery time and date. In the event the delay projected by Contractor is unsatisfactory, NCTA shall so advise Contractor and may proceed to procure substitute Deliverables or Services.

3.6.9 Assignment

Contractor may not assign this Contract or its obligations hereunder except as permitted by this paragraph. Contractor shall provide reasonable Notice of not less than thirty (30) Calendar Days prior to any consolidation, acquisition, or merger. Any assignee shall affirm this Contract atoning to the terms and conditions agreed, and that Contractor shall affirm that the assignee is fully capable of performing all obligations of Contractor under this Contract. An assignment may be made, if at all, in writing by the Contractor, Assignee and the State setting forth the foregoing obligation of Contractor and Assignee.

3.6.10 Insurance Coverage

During the term of the Contract, the Contractor at its sole cost and expense shall provide commercial insurance of such type and with such terms and limits as may be reasonably associated with the Contract. As a minimum, the Contractor shall provide and maintain the coverage and limits, as set forth in **Part I, Administrative**, Section 2.22, Insurance Requirements.

3.6.11 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) Business Days after the receipt of the Notice by the receiving Project Manager, the two Project Managers shall meet in NCTA's offices to attempt to resolve the dispute. If the Project Managers cannot resolve the dispute, then, within fourteen (14) Calendar Days after the date of written Notice by either Project Manager to the Executive Director of NCTA and the Project Principal, the Executive Director of NCTA and the Project Principal shall meet in NCTA's offices to attempt to resolve the dispute. If the Executive Director of NCTA and the Project Principal 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.

3.6.12 Default

1. In the event any Services or Deliverable furnished by the Contractor during performance of any Contract Term fails to conform to any material requirement of the Contract specifications, Notice of the failure is provided by NCTA, and the failure is not cured within thirty (30) Calendar Days, or Contractor fails to meet the Requirements of Section 3.2 Acceptance Criteria herein, NCTA may cancel and procure the articles or Services from other sources; holding Contractor liable for any excess costs occasioned thereby, subject only to the limitations provided in the Contract and the obligation to informally resolve disputes as provided in these Terms and Conditions. Default may be cause for debarment. NCTA reserves the right to require performance guaranties from the Contractor without expense to the State. The rights and remedies of NCTA provided above shall not be exclusive and are in addition to any other rights and remedies provided by law or under the Contract.
2. If Contractor fails to deliver or provide correct Services or other Deliverables within the time required by this Contract, NCTA may provide written Notice of said failure to Contractor, and by such Notice may require payment of a penalty.
3. Contractor will use reasonable efforts to mitigate delays, costs or expenses arising from assumptions in the Contractor's offer documents that prove erroneous or are otherwise invalid.
4. Should NCTA fail to perform any of its obligations upon which Contractor's performance is conditioned, Contractor shall not be in default for any delay, cost increase or other consequences due to NCTA's failure. Any deadline that is affected by any such failure in assumptions or performance by NCTA shall be extended by an amount of time reasonably necessary to compensate for the effect of such failure.
5. Contractor shall provide a Plan to cure any default or delay if requested by NCTA. The Plan shall state the nature of the default, the time required for cure, any mitigating factors causing or tending to cause the default, and such other information as the Contractor may deem necessary or proper to provide.

3.6.13 Waiver of Default

Waiver by either party of any default or breach by the other Party shall not be deemed a waiver of any subsequent default or breach and shall not be construed to be a modification or novation of the terms of

this Contract, unless so stated in a writing and signed by authorized representatives of NCTA and the Contractor and made as an Amendment in accordance with the terms of this Contract.

3.6.14 Limitation of Contractor's Liability

1. Where Deliverables have been Approved by NCTA and are under NCTA's exclusive management and control, the Contractor shall not be liable for direct damages caused by NCTA's failure to fulfill any responsibilities of assuring the proper use, management and supervision of the Deliverables and programs, audit controls, operating methods, office procedures, or for establishing all proper checkpoints necessary for NCTA's intended use of the Deliverables.
2. The Contractor's liability for damages to NCTA for any cause whatsoever, and regardless of the form of action, whether in contract or in tort, shall be limited to two times the value of the Contract.
3. The foregoing limitation of liability shall not apply to the payment of costs and damage awards referred to in the paragraph entitled "Patent, Copyright, and Trade Secret Protection", to claims covered by other specific provisions calling for Liquidated Damages or specifying a different limit of liability to claims for injury to persons or damage to property caused by Contractor's negligence or willful or wanton conduct or for claims for losses relating to the loss of, unauthorized access to, or unauthorized disclosure of data. This limitation of liability does not apply to the receipt of court costs or attorney's fees that might be awarded by a court in addition to damages after litigation based on this Contract.

3.6.15 Contractor's Liability for Injury to persons or Damage to Property

1. The Contractor shall be liable for damages arising out of personal injuries and/or damage to real or tangible personal property of NCTA, employees of NCTA, persons designated by NCTA for training, or person(s) other than Agents or employees of the Contractor, designated by NCTA for any purpose, prior to, during, or subsequent to delivery, installation, acceptance, and use of the Deliverables either at the Contractor's site or at NCTA's place of business, provided that the injury or damage was caused by the fault or negligence of the Contractor.
2. The Contractor agrees to indemnify, defend and hold NCTA and the State and its Officers, employees, Agents and assigns harmless from any liability relating to personal injury or injury to real or personal property of any kind, accruing or resulting to any other person, firm or corporation furnishing or supplying Work, Services, materials or supplies in connection with the performance of this Contract, whether tangible or intangible, arising out of the ordinary negligence, willful or wanton negligence, or intentional acts of the Contractor, its officers, employees, agents, assigns or Subcontractors, in the performance of this Contract.
3. Contractor shall not be liable for damages arising out of or caused by an alteration or an attachment not made or installed by the Contractor.

3.6.16 General Indemnity

1. The Contractor shall hold and save NCTA, its officers, Agents and employees, harmless from liability of any kind, including all claims and losses, with the exception of consequential damages, as normally construed, accruing or resulting to any other person, firm or corporation furnishing or supplying Work, Services, materials or supplies in connection with the performance of this

Contract. The foregoing indemnification and defense by the Contractor shall be conditioned upon the following:

a. NCTA shall give Contractor written Notice within thirty (30) Calendar Days after it has actual knowledge of any such claim(s) or action(s) filed; and

b. The Contractor shall have the sole control of the defense of any such claim(s) or action(s) filed and of all negotiations relating to settlement or compromise thereof, provided, however, that NCTA shall have the option to participate at their own expense in the defense of such claim(s) or action(s) filed.

3.6.17 Changes

The Contract is awarded subject to the provision of the specified Services and the provision of other Deliverables as specified herein. Any changes made to the Contract proposed by the Contractor are hereby rejected unless accepted in writing by NCTA. NCTA shall not be responsible for Services or other Deliverables provided other than those specified in the Contract.

3.6.18 Time is of the Essence

Time is of the essence in the performance of this Contract. Contractor and NCTA will mutually develop and agree to a schedule of implementation, operation, etc. Contractor and Subcontractors will be required to adhere to the Approved schedule.

3.6.19 Independent Contractors

Contractor and its employees, officers and executives, and Subcontractors, if any, shall be independent Contractors and not employees or Agents of the State. This Contract shall not operate as a joint venture, partnership, trust, authority or any other business relationship.

3.6.20 Transportation

Transportation of Deliverables shall be FOB Destination unless otherwise specified in this RFP. Freight, handling, hazardous material charges, and distribution and installation charges shall be included in the total price of each item. Any additional charges shall not be honored for payment unless authorized in writing by NCTA. In cases where parties, other than the Contractor ship 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 of invoices. A complete packing list shall accompany each shipment.

3.6.21 Notices

Any Notices required under this Contract shall be delivered to the Contractor or NCTA be delivered in writing by U.S. Mail, Commercial Courier or by hand, unless otherwise specified in the Solicitation Documents.

3.6.22 Titles and Headings

Titles and Headings in this Contract are used for convenience only and do not define, limit or proscribe the language of terms identified by such Titles and Headings.

3.6.23 Amendment

This Contract may not be amended orally or by performance. Any Amendment must be made in written form and signed by duly authorized representatives of NCTA and Contractor in conformance with Contract Requirements.

3.6.24 Taxes

The State of North Carolina is exempt from Federal excise taxes and no payment will be made for any personal property taxes levied on the Contractor or for any taxes levied on employee wages. Agencies of the State may have additional exemptions or exclusions for Federal or State taxes. Evidence of such additional exemptions or exclusions may be provided to Contractor by Agencies, as applicable, during the term of this Contract. Applicable State or local sales taxes shall be invoiced as a separate item and not included in the Price Proposal.

3.6.25 Governing Laws, Jurisdiction and Venue

1. This Contract is made under and shall be governed and construed in accordance with the laws of the State of North Carolina. The place of this Contract or purchase order, its situs and forum, shall be Wake County, North Carolina, where all matters, whether sounding in contract or in tort, relating to its validity, construction, interpretation and enforcement shall be determined. Contractor agrees and submits, solely for matters relating to this Contract, to the jurisdiction of the courts of the State of North Carolina and stipulates that Wake County shall be the proper venue for all matters.
2. Except to the extent the provisions of the Contract are clearly inconsistent therewith, the applicable provisions of the Uniform Commercial Code as modified and adopted in North Carolina 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.

3.6.26 Force Majeure

Neither party shall be deemed to be in default of its obligations hereunder if and so long as it is prevented from performing such obligations as a result of events beyond its reasonable control, including without limitation, fire, power failures, any act of war, hostile foreign action, nuclear explosion, riot, strikes or failures or refusals to perform under subcontracts, civil insurrection, earthquake, hurricane, tornado, or other catastrophic natural event or act of God. Force Majeure events shall not otherwise limit NCTA's rights to enforce contracts.

3.6.27 Compliance with Laws

The Contractor shall comply with all laws, ordinances, codes, rules, regulations, and licensing Requirements that are applicable to the conduct of its business, including those of Federal, State, and local agencies having jurisdiction and/or authority.

3.6.28 Severability

In the event that a court of competent jurisdiction holds that a provision or requirement of this Contract violates any applicable law, each such provision or requirement shall be enforced only to the extent it is

not in violation of law or is not otherwise unenforceable and all other provisions and Requirements of this Contract shall remain in full force and effect. All promises, requirement, terms, conditions, provisions, representations, guarantees and warranties contained herein shall survive the expiration or termination date unless specifically provided otherwise herein, or unless superseded by applicable Federal or State statute, including statutes of repose or limitation.

3.6.29 Federal Intellectual Property Bankruptcy Protection Act

The Parties agree that NCTA 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.

3.6.30 Ineligible Contractors

As provided in G.S. § 147-86.59 and G.S. § 147-86.82, the following companies are ineligible to contract with the State of North Carolina or any political subdivision of the State: a) any company identified as engaging in investment activities in Iran, as determined by appearing on the Final Divestment List created by the State Treasurer pursuant to G.S. § 147-86.58, and b) any company identified as engaged in a boycott of Israel as determined by appearing on the List of restricted companies created by the State Treasurer pursuant to G.S. § 147-86.81. A contract or subcontract with the State or any of its political subdivisions by any company identified in a) or b) above shall be void ab initio.

3.6.31 Availability of Funds

Any and all payments to Contractor are expressly contingent upon and subject to the appropriation, allocation and availability of funds to NCTA for the purposes set forth in this Contract. If this Contract is funded in whole or in part by Federal funds, the Agency's performance and payment shall be subject to and contingent upon the continuing availability of said Federal funds for the purposes of the Contract. If the term of this Contract extends into fiscal years subsequent to that in which it is Approved, such continuation of the Contract is expressly contingent upon the appropriation, allocation and availability of funds by the N.C. Legislature for the purposes set forth in the Contract. If funds to effect payment are not available, the Agency will provide written notification to Contractor. If the Contract is terminated under this paragraph, Contractor agrees to take back any affected Deliverables and Software not yet delivered under this Contract, terminate any Services supplied to the Agency under this Contract, and relieve NCTA of any further obligation thereof. The State shall remit payment for Deliverables and Services accepted prior to the date of the aforesaid Notice in conformance with the payment terms.

3.6.32 E-Verify

Pursuant to G.S. § 143-133.3, the State shall not enter into a contract unless the awarded Contractor and each of its subcontractors comply with the E-Verify Requirements of N.C. General Statutes, Chapter 64, Article 2. Contractors are directed to review the foregoing laws. Any awarded Contractor must submit a certification of compliance with E-Verify to the awarding agency, and on a periodic basis thereafter as may be required by the State.

3.6.33 Historically Underutilized Businesses

Pursuant to N.C.G.S. §§ 143-48 and 143-128.4 and any applicable Executive Order, the State of North Carolina and NCTA invites and encourages participation in this procurement process by businesses

owned by minorities, women, disabled, disabled business enterprises and non-profit work centers for the blind and severely disabled. Additional information may be found at: http://ncadmin.nc.gov/businesses/hub/.

3.6.34 No Waiver

Notwithstanding any other language or provision in the Contract, nothing herein is intended nor shall be interpreted as a waiver of any right or remedy otherwise available to NCTA under applicable law. The waiver by NCTA of any right or remedy on any one occasion or instance shall not constitute or be interpreted as a waiver of that or any other right or remedy on any other occasion or instance.

3.6.35 Entire Agreement

1. This RFP and any documents incorporated specifically by reference represent the entire agreement between the parties and supersede all prior oral or written statements or agreements. This RFP, any addenda hereto, and the Contractor's Proposal Documents are incorporated herein by reference as though set forth verbatim.
2. All promises, Requirements, terms, conditions, provisions, representations, guarantees, and warranties contained herein shall survive the contract expiration or termination date unless specifically provided otherwise herein, or unless superseded by applicable Federal or State statutes of limitation.

3.6.36 Sovereign Immunity

Notwithstanding any other term or provision in the Contract, nothing herein is intended nor shall be interpreted as waiving any claim or defense based on the principle of sovereign immunity or other State or federal constitutional provision or principle that otherwise would be available to the NCTA under applicable law.